

**TECHNICAL MANUAL**

**OPERATOR, UNIT, DIRECT SUPPORT  
AND GENERAL SUPPORT  
MAINTENANCE MANUAL  
(INCLUDING REPAIR PARTS AND  
SPECIAL TOOLS LIST)**

**FOR**

**WATER PURIFICATION BARGES  
(NSN 1930-01-234-2165)  
VOLUME 17  
WORKBOAT, LIFESAVING AND FIREFIGHTING  
EQUIPMENT**

**This technical manual is an authentication of the manufacturer's commercial literature and does not conform with the format and content requirements normally associated with the Army technical manuals. This technical manual does, however, contain all essential information required to operate and maintain the equipment**

**DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited**

**\*This manual supersedes TM 55-1930-209-14&P-17, 30 January 1989.**

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**HEADQUARTERS, DEPARTMENT OF THE ARMY  
15 OCTOBER 1992**

## **WARNINGS AND SAFETY NOTICES**

### **WARNING**

**DANGEROUS VOLTAGES AND HAZARDOUS MATERIALS  
ARE USED IN THIS EQUIPMENT.  
DO NOT TAKE CHANCES!**

### **GENERAL WARNINGS**

- Always redtag electrical equipment, controls, circuits, and switches before beginning repairs.
- Do not service or adjust high voltage electrical equipment when alone.
- Do not overload circuits.
- Always use authorized, insulated tools and test equipment when working on electrical equipment.
- Remove all jewelry before working on or around electrical equipment with exposed current-carrying areas.
- Do not wear clothing with exposed metal fasteners when working on electrical equipment.
- Always use approved breathing apparatus when working with chemicals.
- Avoid chemical contact with eyes, skin, and clothing.
- Always wear safety glasses, gloves, and rubber aprons when handling chemicals.
- Wear protective clothing and safety glasses as required when working on barge equipment.
- Always wear approved ear protection in noise hazard areas.

### **SPECIFIC WARNINGS**

- Do not connect any new circuit to an existing circuit.
- Do not energize circuits if water condensation is present.
- If any sparks are seen, stop operation immediately. Determine cause and take corrective action.
- Never touch radio antennas of fixed-base radio transmitters. When transmitting, antennas contain high voltage.
- Always use approved breathing apparatus when handling material in multimedia filters and chlorination unit descaling acid crystals. Do not breathe dust from these materials.
- Avoid breathing vapors from coagulant aid chemicals. Use in a well-ventilated area. In case of chemical contact with skin, wash with water. For eyes, immediately flush at eyewash station and obtain medical help as soon as possible.
- Always wear work gloves and shirts with full length buttoned sleeves when handling fuel oil and gasoline.



- Do not smoke or have open flames within 10 feet when handling fuel oil or gas. Only minimum number of personnel necessary to conduct fueling operation is permitted in area.
- Before starting any repairs on compressed air system, always release pressure from air receiver and compressor and open and redtag circuit breakers.
- On air compressor, do not adjust automatic regulator switch (pressure switch) and pilot valve settings.
- To avoid flying particles lodging in eyes, do not use compressed air to "dust-off clothing or workspace.
- Stay clear of anchor cables when operating anchor winches.
- Always wear safety glasses or face shield when using power tools.
- Always wear lifevests when on weatherdeck and throughout the barge during storm conditions. Lifevests are to be worn at all times aboard workboat.
- Only qualified persons will operate and maintain arc and fuel gas welders.
- When welding, always make sure those working with or near the welder wear proper clothing: heavy, hole-free gloves, heavy shirt, cuffless trousers, high shoes, and cap. Keep clothing dry and free of oil and other flammable substances.
- Use dry heavy canvas drop cloth to cover work area and adjacent deck when arc welding.
- Before welding on bulkheads, deck plating and similar surfaces, always check carefully to make sure that the other side of the surface to be welded does not hide fuel or compressed gas tanks, flammable or hazardous materials, or electrical equipment or wiring.
- When welding, keep your head out of the fumes and make sure area is well ventilated.
- Before welding on surfaces which have been cleaned with cleaning solutions containing chlorinated hydrocarbons, always wash with water, dry and ventilate area thoroughly.
- Use shield with proper filter lens when welding. Do not allow others near welding operations to assist or observe without proper eye protection. This must include side shields during slag chipping operations.
- Warn personnel in area during welding operations not to look at arc or expose themselves to hot spatter or metal.
- In an extreme emergency, when welding is required in void 2 port, shut down chlorination system. Close all valves. Cover the parts of chlorination system not being welded with a heavy canvas drop cloth. Turn on vent 8 and, if available, provide additional forced air ventilation.

- Before welding on fuel oil or sludge tank, make sure tank is gas-free by: 1) removing all liquid from tank, 2) cleaning tank thoroughly, 3) seeing that tank is thoroughly dry, and 4) force ventilating tank
- Connect arc welding work cable as close to welding area as possible. Work cables connected to barge framework or other locations far from welding site increase the possibility of the welding current passing through lifting chains, crane cables or other possible circuit paths. This can create fire hazards or weaken lifting chains or crane cables until they break or fall.
- Always weld with all doors, portholes, and hatches propped open and necessary ventilation systems operating.
- Take frequent breaks away from the area where you are welding.
- Do not take oxygen and acetylene tanks into confined areas when welding.
- Always use a friction lighter to start oxyacetylene torch.
- Always maintain all welding equipment in proper working condition. If you have any doubts about the safety of any welding equipment do not use the welder.

### **ELECTRICAL SHOCK SAFETY STEPS**

Five safety steps to follow if someone is the victim of electrical shock.

1. Do not try to pull or grab individual.
2. Turn off electrical power when possible.
3. If you can not turn off electrical power, pull, push, or lift person to safety using a wooden pole, rope, or some other insulating material.
4. Get medical help as soon as possible.
5. After the injured person is free of contact with the source of electrical shock, move the person a short distance away and, if needed, start CPR immediately.

**INTRODUCTION TO****TM 55-1930-209-14&P-17**

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Troop Support Command, ATTN: AMSTR-MMTS, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished directly to you.

**1. SCOPE**

TM 55-1930-209-14&P covers the Reverse Osmosis Water Purification Barges, Models 300-WPB-1, 300-WPB-2 and 300WPB-3, NSN 1930-01-234-2165. This manual consists of twenty-one volumes.

**2. REVERSE OSMOSIS WATER PURIFICATION BARGES**

The Reverse Osmosis Water Purification Barges provide up to 300,000 gallons of drinking water per 24 hour period. The drinking water, converted from seawater or brackish water, is for use by a Rapid Deployment Force in a forward area. When needed, the drinking water can be pumped to a shore facility or to another vessel. This manual provides operation and maintenance procedures for all the component systems on the barges.

**3. VOLUME 1 -- NORMAL OPERATIONS**

This volume provides information and procedures on normal Reverse Osmosis Water Purification Barge operations, including barge movement and deployment, communications and electrical power systems, drinking water' production, shutdown, and required operational maintenance. Emergency shutdown procedures are also provided.

**4. VOLUME 2 -- SEAWATER SYSTEM**

This volume describes operation and maintenance of the seawater system which supplies seawater to the Reverse Osmosis Water Purification Units (ROWPU's) for processing to the air conditioning unit for cooling to the ballast tank for barge trimming to the chlorination unit for priming and cooling, and to the diesel generators for cooling.

**5. VOLUME 3 -- REVERSE OSMOSIS WATER PURIFICATION UNIT (ROWPU) SYSTEM**

Volume 3 provides operation and maintenance procedures for the ROWPU System which processes seawater or brackish water to produce drinking water. Normally, this system processes seawater supplied by the seawater system (TM 55-1930-209-14&P-2) to create product water. Chlorine is then added to this product water by the chlorination system (TM 55-1930-209-14&P-4). The resultant drinking water is discharged into four storage tanks that are part of the drinking water system (TM 55-1930-209-14&P-5).

**6. VOLUME 4 -- CHLORINATION SYSTEM**

Operation and maintenance procedures for the chlorination system onboard the Water Purification Barges are contained in this volume. This system produces chlorine in a sodium hypochlorite solution, upon demand, to water processed by the ROWPU system just before the water enters the four drinking water storage tanks.

## 7. VOLUME 5 -- DRINKING WATER SYSTEM

The drinking water system provides storage for water produced by the ROWPU's and includes pumps and valves to move this water from onboard storage tanks to the shore discharge system, to another vessel, or overboard. The drinking water system also provides a pressurized water supply for drinking and washing onboard the barges.

## 8. VOLUME 6 -- SHORE DISCHARGE SYSTEM

This volume provides operation and maintenance procedures for the shore discharge system which transfers drinking water from barge storage tanks to holding/storage facilities ashore.

## 9. VOLUME 7 -- COMPRESSED AIR SYSTEM

Volume 7 describes the operation and maintenance of the compressed air system which provides compressed air to five air stations in the ROWPU space, one in the workshop, and one on stem weatherdeck. This system also provides compressed air to two air stations for blowdown of seachests in void 2 starboard and void 4 port. Compressed air is used on the barges to operate air-powered impact tools, to propel air through the shore discharge hose, to blowdown seachest, and for general cleaning blowdown.

## VOLUME 8 -- FUEL OIL SYSTEM

This volume provides operation and maintenance procedures for the fuel oil system which functions as a centralized receiving storage and distribution system for diesel fuel used for barge operations. This onboard fuel system provides fuel for two 155 kW diesel ship service generators, a 20 kW ship auxiliary generator, two ROWPU high-pressure pump diesel engines, and a fueling station for the barge workboat.

## 11. VOLUME 9 -- ELECTRICAL POWER SYSTEMS

Operation and maintenance procedures for the two electrical power systems installed aboard the Water Purification Barges are contained in Volume 9. The normal electrical power system generates, controls and distributes all electrical power for operating the water purification system and its auxiliary systems. The emergency electrical system supplies 24 Vdc from a battery bank to 24 Vdc equipment and converts to 24 Vdc through an inverter to 120 Vac to power emergency lighting and equipment.

## 12. VOLUME 10 -- LIGHTING SYSTEM

Volume 10 contains operation and maintenance procedures for the onboard lighting systems for the Water Purification Barges. This system supplies interior and exterior lighting. Normal and emergency interior lighting is provided in the deckhouse ROWPU space, dayroom, workshop, and voids. Exterior lighting consists of searchlights and floodlights for use at night or during reduced visibility. Lights on the weatherdecks and standard navigation and status lights are for use during operation and towing.

## 13. VOLUME 11 -- EQUIPMENT MONITORING SYSTEM

This volume provides operation and maintenance procedures for the equipment monitoring system which monitors the operation of several equipment components onboard the Water Purification Barges. This system monitors operating conditions such as amount of drinking water in storage tanks and temperature of diesel engine cooling water. Sensors detect unacceptable operating conditions, the main processor flashes at double intensity and remote alarms (horns, strobe lights and buzzer alert crewmembers that corrective action is necessary.

14. VOLUME 12 -- COMMUNICATIONS SYSTEM

Operation and maintenance procedures for the communications system are provided in Volume 12. This system consists of three separate communications methods, radio communications, foghorn and intercom telephones.

15. VOLUME 13 -- HANDLING EQUIPMENT

This volume contains operation and maintenance procedures for handling equipment used for lifting, transporting and repositioning equipment and materials onboard the barges. The system includes a bridge crane, bow crane and a void 4-trolley hoist.

16. VOLUME 14 -- ANCHOR, MOORING, AND TOWING EQUIPMENT

Volume 14 describes the operation and maintenance procedures for the anchor mooring, and towing equipment on the Water Purification Barges. This equipment provides a method to hold (anchor) the barges in a fixed position offshore, at dockside, or next to another vessel and a method to move the barges from one location to another.

17. VOLUME 15 -- MISCELLANEOUS EQUIPMENT (DAYROOM, WORKSHOP, ACCESSES, AND SANITATION SYSTEMS)

Volume 15 address operation and maintenance procedures for miscellaneous equipment installed on the Water Purification Barges. This equipment includes the dayroom on the forward starboard side of deckhouse, the workshop on the forward portside of deckhouse, accesses such as deckhouse doors and portholes and various accesses to and from the voids, and two separate sanitation systems (toilets and bilge). Additional equipment addressed in this volume includes: guard rails, rubber fendering, removable rubber floor mats, eyewash stations, component labels, caution, warning and danger signs, and storage areas.

18. VOLUME 16 -- VENTILATION, HEATING, AND AIR CONDITIONING SYSTEMS

This volume contains operation and maintenance procedures for the deckhouse and voids ventilation systems and the heating and air conditioning (HAC) system installed on the Water Purification Barges. The ventilation system provides fresh air circulation in the deckhouse and voids with 17 hatches and 10 ventilation fans. The HAC controls the temperature in the dayroom and deckhouse.

19. VOLUME 17 -- WORKBOAT, LIFESAVING, AND FIREFIGHTING EQUIPMENT

Volume 17 includes procedures for the operation and maintenance of:

- a. Workboat -provides water transportation for crewmembers and visitors, small cargo items, transportation of the messenger line for the shore discharge hose and similar work-related tasks associated with operating the Water Purification Barges.
- b. Lifesaving Equipment -installed on the barges and consisting of 2 liferafts, 15 Type II and 24 Type V lifevests and 4 lifesaving rings.

- c. Firefighting Equipment -installed on the barges and consisting of Halon 1301 system, 2 CO2 hose reel units, a smoke detector system, 17 portable C02 fire extinguishers, 5 dry chemical fire extinguishers, 5 self-contained breathing apparatuses, and a portable, engine driven firefighting pump. The workboat also has a 10-pound, portable, dry chemical fire extinguisher.

20. VOLUME 18 -- SUPPORTING APPENDICES FOR VOLUMES 1-17.

Volume 18 contains the Maintenance Allocation Chart, Components of End Item List, Tools and Test Equipment List, Expendable/Durable Supplies and Materials List and the Repair Parts and Special

All of the information contained in this volume is common to volumes 1-17 and does not appear in each individual volume. Appendix A in volumes 1-17 provides information unique to each volume. Appendix B in volumes 1-17 provides manufacturers manuals and instructions unique to the system described in each volume. Appendixes C-G are located in Volume 18.

21. VOLUME 19 -- PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Volume 19 contains PMCS pertinent to all onboard systems for the Reverse Osmosis Water Purification Barges.

22. VOLUME 20 -- SUPPLEMENTAL DATA

Volume 20 contains the Basic Issue Items List, and additional Authorization List for all onboard systems for the Reverse Osmosis Water Purification Barges.

23. VOLUME 21 -- WINCH, DOUBLE DRUM, DIESEL

This volume contains operation and maintenance procedures for the 20-ton double drum diesel engine winch used on the Water Purification Barges. Appendix B of Volume 21 contains the Maintenance Allocation Chart and the Repair Parts and Special Tools List for the winch.

TECHNICAL MANUAL  
NO. 55-1930-209-14&P-17

HEADQUARTERS  
DEPARTMENT OF THE ARMY,  
WASHINGTON D.C., 15 OCTOBER 1992

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OPERATORS', UNIT, DIRECT SUPPORT  
AND GENERAL SUPPORT  
MAINTENANCE MANUAL  
(INCLUDING REPAIR PARTS AND  
SPECIAL TOOLS LIST)

FOR

WATER PURIFICATION BARGES  
(NSN 1930-01-234-2165)  
VOLUME 17  
WORKBOAT, LIFESAVING AND FIREFIGHTING EQUIPMENT

**REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS**

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Troop Support Command, ATTN: AMSTR-MMTS, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished directly to you.

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\* Supersedes TM 55-1930-209-14&P-17, 30 January, 1989

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**NOTE**

The following appendices, common to all TM's in this series, are in TM-55-1930-209-14&P-18.

**MAINTENANCE ALLOCATION CHART (MAC)  
 TOOLS AND TEST EQUIPMENT LIST (TTEL)  
 EXPENDABLE /DURABLE SUPPLIES AND MATERIALS LIST (ESML)  
 REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)  
 REPAIR PARTS LIST TO FIGURE NUMBER CROSS-REFERENCE LIST**

**NOTE**

The following appendices, common to all TM's in this series, are in TM 55-1930-209-14&P-20.

**COMPONENTS OF END ITEM LIST (COEIL) AND BASIC ISSUE ITEMS LIST (BIILL)  
 ADDITIONAL AUTHORIZED ITEMS LIST (AAL)**

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## CHAPTER 1 INTRODUCTION

**1-1 Purpose.** This technical manual (TM) describes operation and maintenance of the workboat, lifesaving, and firefighting equipment for Water Purification Barges. Information on other systems onboard is in TM 55-1930-209-14&P-1 thru P-16. TM 55-1930-209-14&P-18 and TM 55-1930-209-14&P-20 contain appendices common to all TM's. Location of major barge components is shown in Figure 1-1.

**1-2 Scope.** This information is discussed in each chapter providing information on that item.

**1-3 Warranties and guarantees.** Warranties and guarantees are listed in chapters pertaining to equipment covered by that warranty or guarantee.

**1-4 Maintenance forms and records.** These are explained in DA PAM 738-750, The Army Maintenance Management System (TAMMS).

**1-5 Destruction of Army materiel to prevent enemy use.** Perform as directed in TM 750-244-3.

**1-6 Storage.** For storage of this equipment, refer to chapter providing information on that item.



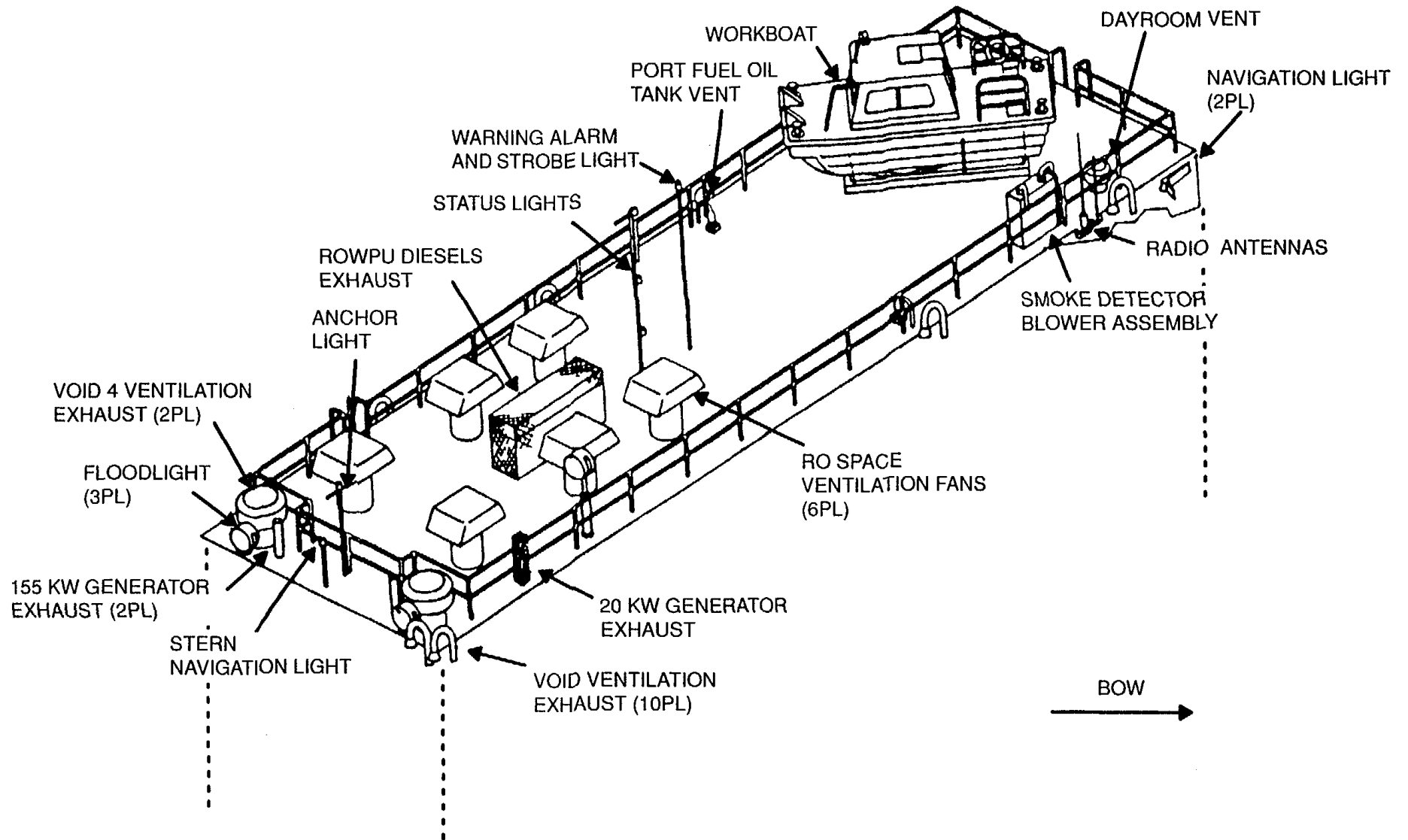


Figure 1-1. Major Components of ROWPU Barge Systems and Equipment - Deckhouse Roof  
(Sheet 1 of 3)

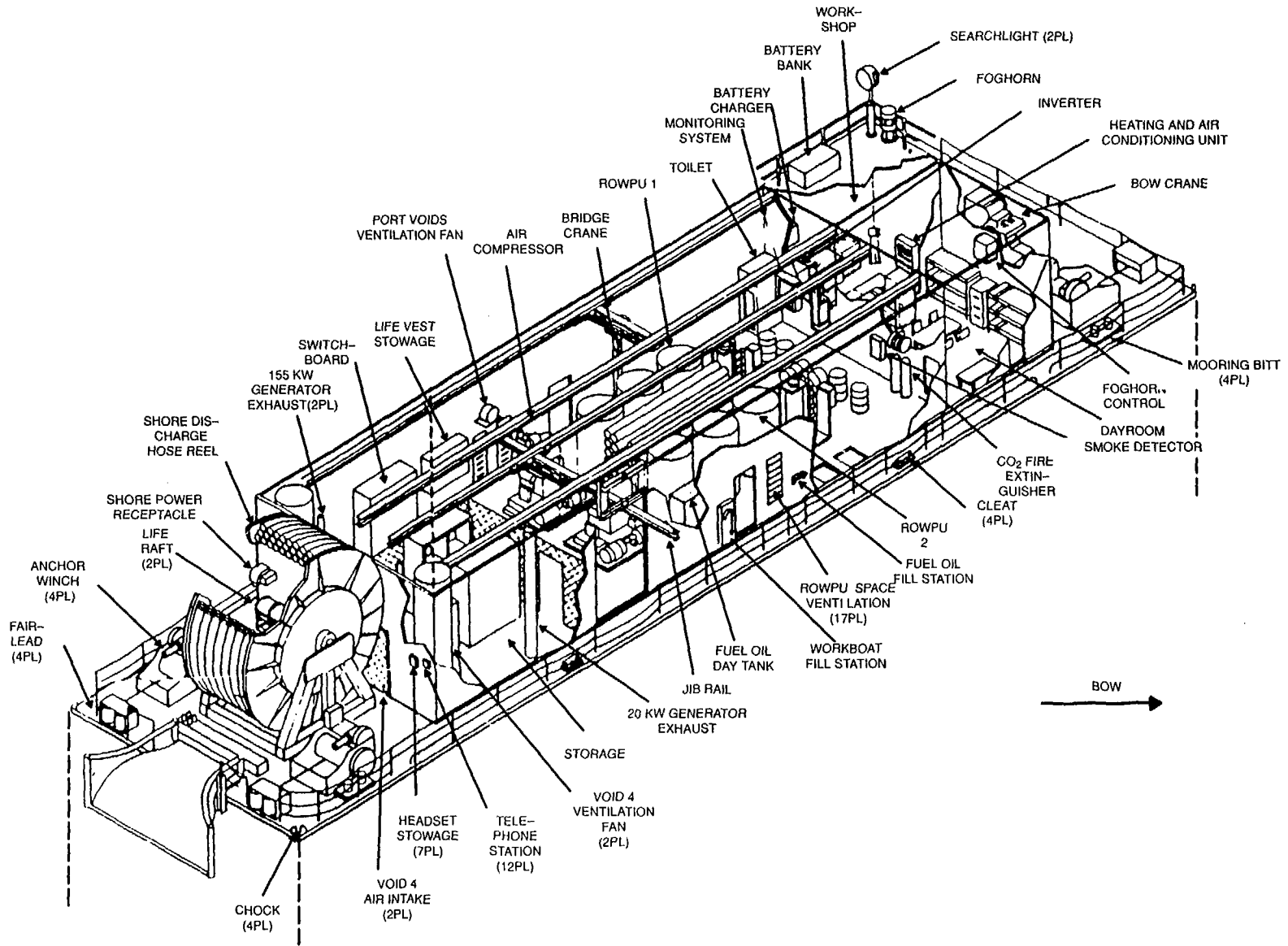


Figure 1-1. Major Components of ROWPU Barge Systems and Equipment - Deckhouse (Sheet 2 of 3)

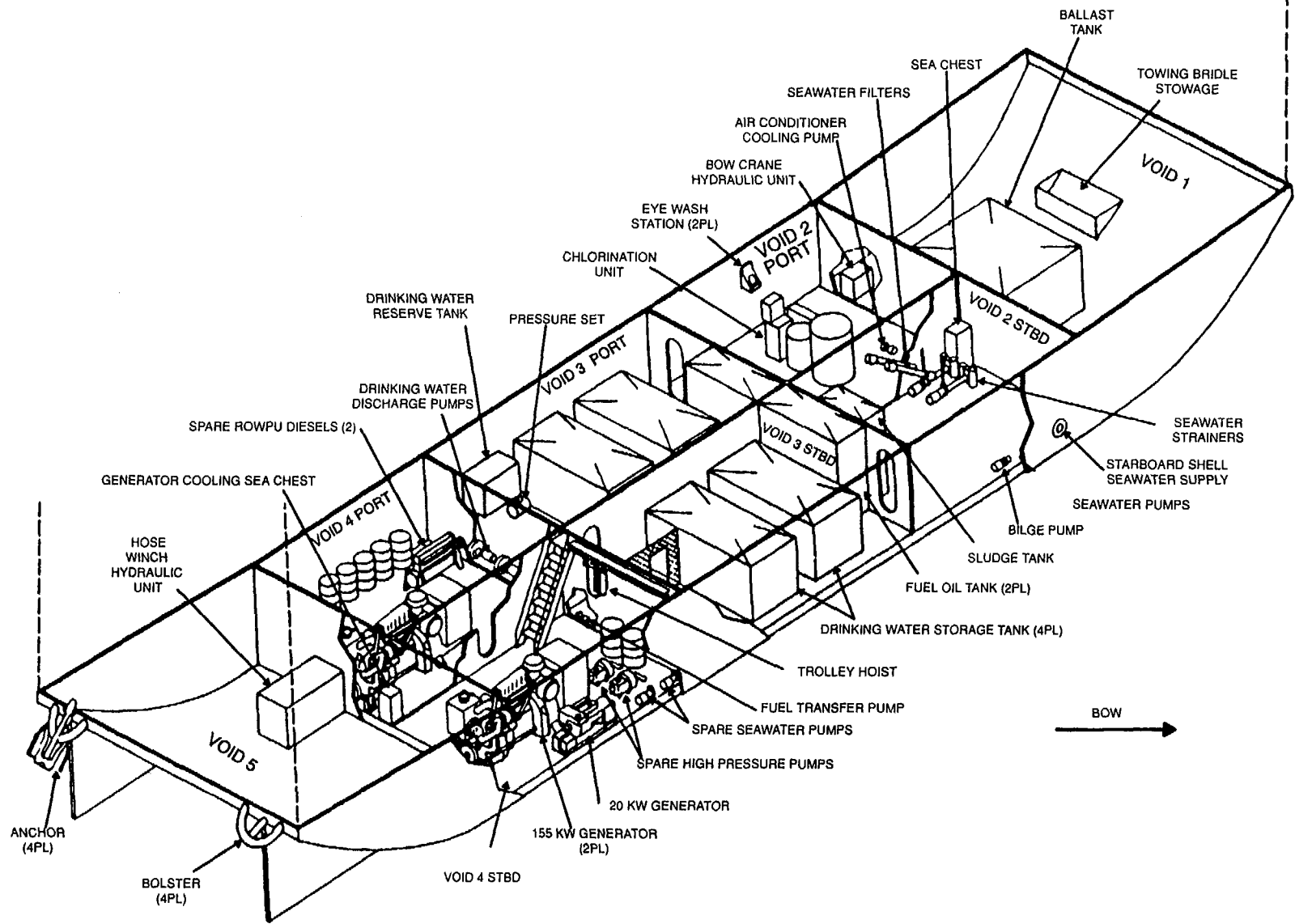


Figure 1-1. Major Components of ROWPU Barge Systems and Equipment - Voids (Sheet 3 of 3)

## CHAPTER 2 WORKBOAT

### Section I. Description and data

**2-1 Purpose.** This workboat provides water transportation for crewmembers and visitors, small cargo items, transporting the messenger line for shore discharge hose and similar work-related tasks associated with operating the water purification barge.

#### 2-2 Description and components

**2-2.1** Workboat (see Figures 2-1 and 2-2) is a 23-foot, reinforced aluminum-hulled, triple-V-bottomed craft with a forward cabin for six passengers plus the operator and a flush after-deck for small cargo and messenger line reel unit. Closed cell flotation foam has been used to fill the forward compartment, under the cabin floor, and small compartments on both sides of the engine compartment. Workboat has two push knees on the bow, an aluminum tubular protective frame around the outboard drive, and two bow and two stern mooring bits. Workboat has a diving ladder that fits into sockets on either port or starboard just aft of cabin and forward of aft guardrail. Lifesaving equipment includes eight lifevests stowed under cabin benchseats and a ring lifebuoy with floating marker light and line.

**2-2.2** Power is supplied by a six cylinder inline turbocharged diesel engine, inboard/outboard configuration, driving a single propeller. Engine revolutions per minute (rpms) and engagement are controlled by one lever at the operator's station. Steering is by hydraulically operated controls at the operator's station. Complete instrumentation, including a 4-inch compass and engine hour meter, is included at the operator's station. Workboat has two automatic bilge pumps, and a 50-gallon diesel fuel tank in the engine compartment.

**2-2.3** Workboat, when not in daily use, is stowed in its cradle on deckhouse top. It is held in place by three strap winches on each side. These straps are hooked into three eyes on each side of the boat just under the rubber bumper. The boat is launched from storage using a three-point suspension harness attached to specially constructed points on the hull and lifted overboard by a hydraulic bow crane and lowered into the water. The boat is lifted from the water and stored on the cradle in the same manner.

**2-2.4** Major components are the following:

- a. Hull, aluminum, 23 ft, Monark 2308-C
- b. Switch, ON/OFF master, Perko 9601
- c. Radio, VHF/FM commercial marine band
- d. Depthfinder, digital, Aqua Probe model 550
- e. Switch, panel, Perko 517
- f. Switch, 3-position, Perko 366
- g. Panel, fuse, Perko 647-6
- h. Bar, ground, Perko 627-6
- i. Panel, engine, Volvo Penta
- j. Meter, engine hour
- k. Compass, 4-in., HB 70 Ritchie
- l. Gauge, fuel, Tempo w/fuel sender
- m. Helm, Teleflex Seastar HH5201
- n. Controls, More D67978
- o. Cables, control, Morse
- p. Pump, trim, Volvo Penta

- q. Horn, Pollack, 41-201 w/switch
- r. Wiper, American Bosch WWF1 2C1
- s. Light, dome, Perko 300-2
- t. Light, white 360-degree, Aqua Signal 33513-003
- u. Light, sides, Aqua Signal 33511-102/33510-102 (2)
- v. Engine, Volvo Penta AQAD-40
- w. Box, battery (2)
- x. Battery, 12-volt, Delco (2)
- y. Switch, selector, Perko 8501
- z. Tank, fuel, 50-gal, MonArk
- aa. Vent, tank, 1/2-in. coupling, MonArk
- ab. Fill, deck, diesel, Perko 1328
- ac. Fitting, through hull, Rule
- ad. Filter, fuel, Racor 500 MA
- ae. Valve, shutoff, Tempo 300SOV
- af. Pump, stripping, TAT 350
- ag. Pump, bilge, Rule 2000 (2)
- ah. Switch, bilge, Rule 41-A (2)
- ai. Switch, float, Mayfair 601 (2)

### 2-2.5 Special components mounted on workboat

- a. Reel, aluminum, w/mount
- b. Line, messenger, 3000 ft, 5/8 in, kevlar, 8000 lb test pull

Reel with mount is attached to a sliding base that is bolted on rear workboat deck over engine compartment and holds messenger line. Sliding base is on outside of engine compartment and allows reel to be moved forward against workboat cabin for easier access to engine compartment. It can be moved to the rear to allow use of aft door from cabin and for dispensing messenger line from shore to barge. Reel and mount are locally fabricated. Messenger line, in conjunction with shore winch pulls shore discharge hose from barge to shore. See TM 55-1930-209-14&P-6 for deployment of the messenger line.

This reel with mount and the messenger line are not listed on the drawings referenced in Appendix A or in any of the appendices in TM 55-1930-209-14&P-18 and TM 55-1930-209-14&P-20. This paragraph constitutes authority for local purchase of these items when necessary to replace current items. This paragraph constitutes authority for local purchase of these items when necessary to replace current items.

**2-3 Capabilities.** This boat has a rated load capacity of 4000 pounds, or six passengers, operator and 2600 pounds. The messenger reel and line, when mounted, weigh 670 pounds, and workboat's load capacity must be reduced by this amount. A full fuel tank of 50 gallons of diesel fuel provides about 3 hours of operations. Depending on the type of propeller fitted, speed, load, sea conditions and amount of maneuvering, this fuel should provide a one-way range of about 70 miles.

**2-4 Special limitations.** Although the aluminum hull is reinforced, it is neither designed nor constructed to be run ashore. When running in shallow water, the outboard drive should be raised to full "beach" position to reduce possibility of damage to the outboard drive. In this position, the outboard drive produces less thrust.

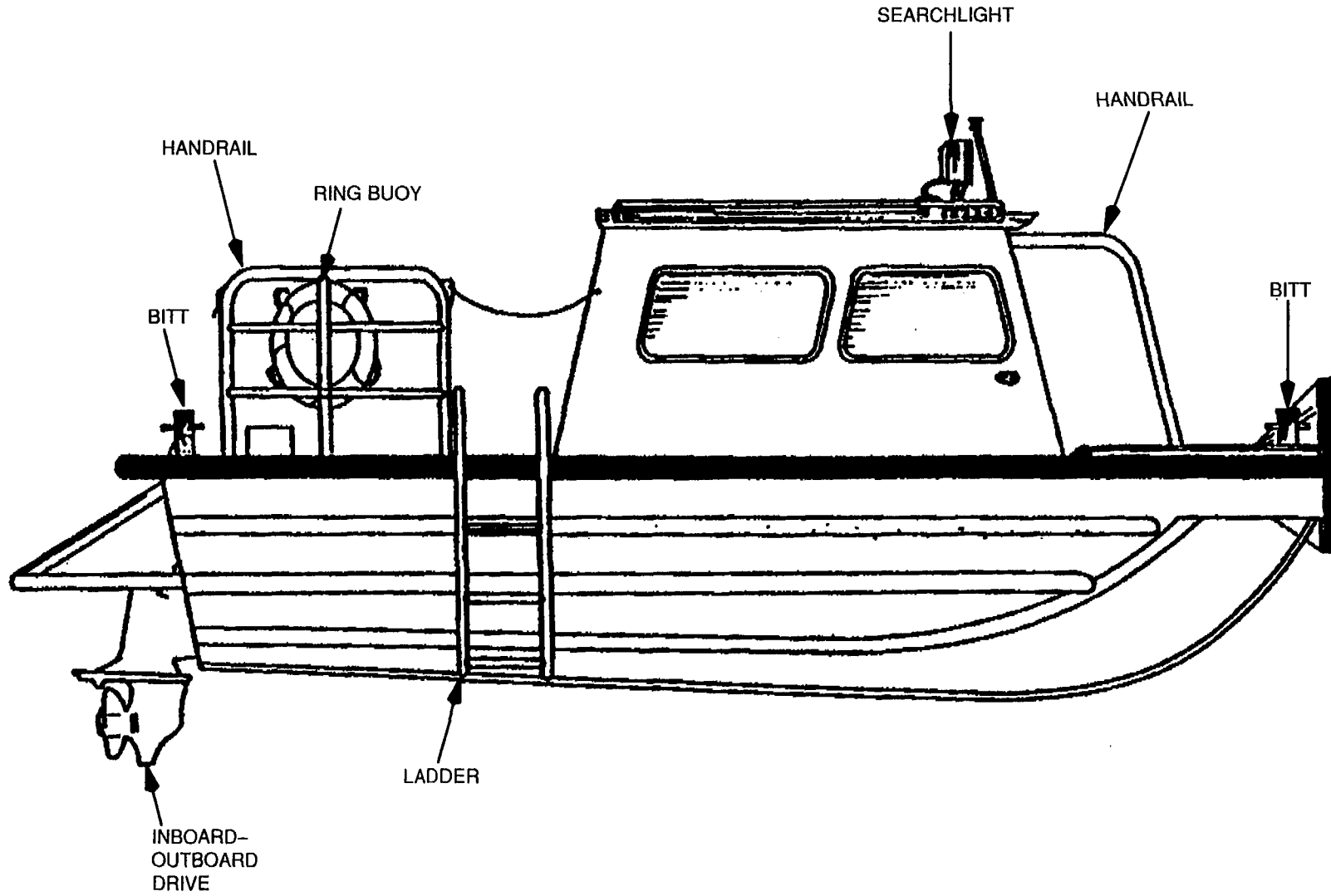


Figure 2-1. Workboat Profile

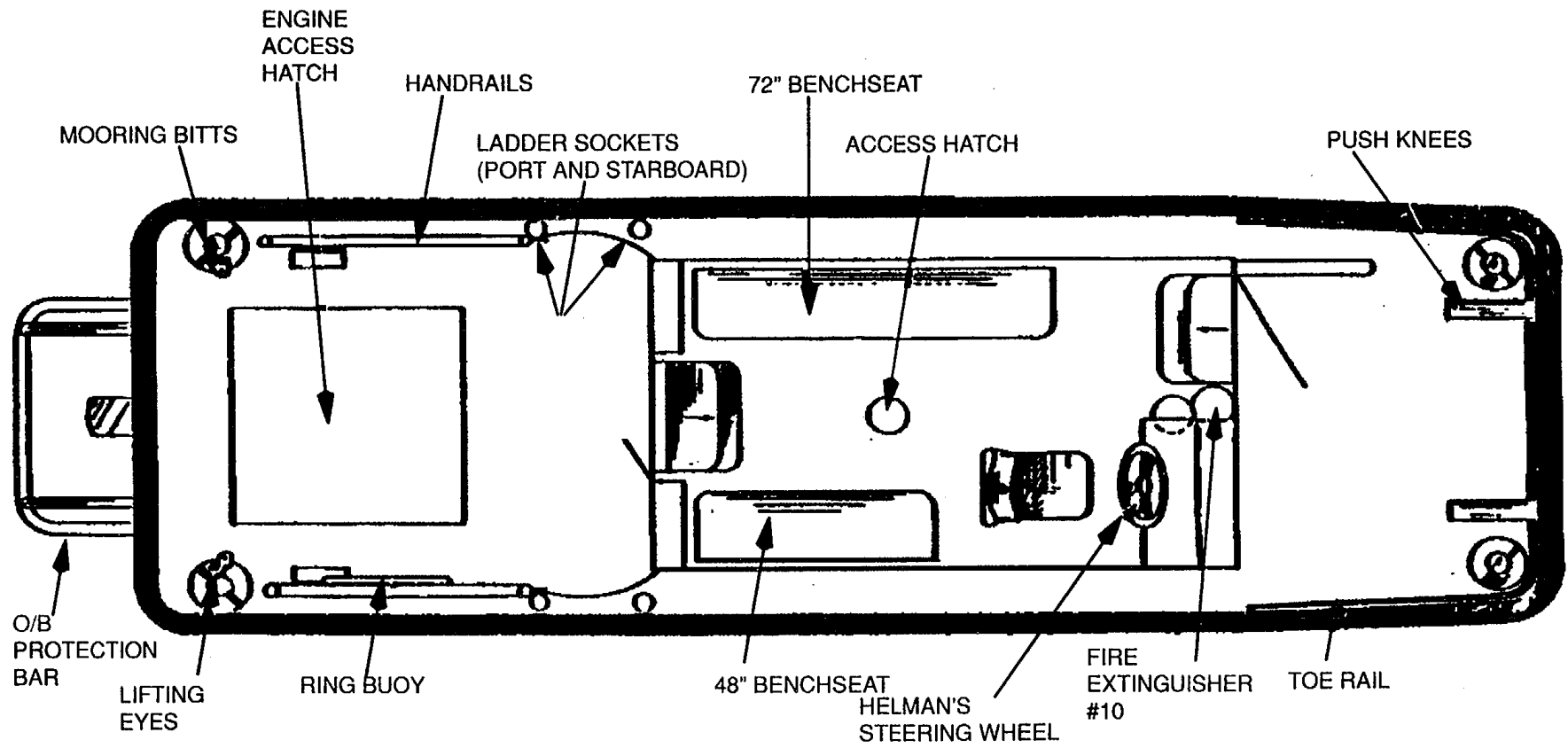


Figure 2-2. Location of Workboat Components

**2-5 Performance characteristics.** According to factory tests, with only operator onboard and using a 3-bladed, 1 6-inch propeller with 21-inch pitch, boat has a top speed of 30 mph at a maximum attainable rpm of 3150. Boats are now equipped with 3-bladed, 1 6-inch propellers with 19-inch pitch, and factory performance data is not available for this combination. These boats, at full rpm, have a turning radius of about 90 feet.

**2-6 Equipment specifications**

- a. Boat hull
  - Manufacturer MonArk Boat Company
  - CAGEC 07921
  - Part no. 2308CLF
  - Length overall 26 ft. 0 in. w/pushknees & outboard protector
  - Draft 1 ft. 3 in. empty w/outboard drive UP
  - Beam 8 ft. 0 in.
  - Weight 5360 lb
- b. Engine
  - Manufacturer AB Volvo Penta
  - S-405 08 Gothenburg, Sweden
  - US importer Volvo Penta of America
  - CAGEC 61724
  - US supplier MonArk Boat Company
  - CAGEC 07921
  - Type 6-cylinder inline diesel, turbocharger w/aftercooler and heat exchanger. Engine mounted inboard w/outboard drive
  - Part no. AQAD-40
  - Horsepower 155 hp at 3600 rpm
- c. Final drive
  - Manufacturer AB Volvo Penta
  - US importer Volvo Penta of America
  - CAGEC 61724
  - Type Swingup outboard drive
  - Part no. 290
  - Reduction 1.61 to 1
  - Propeller 3-blade, stainless steel, 19-in. pitch, 16-in. diameter, right-hand rotation
- d. Depthfinder
  - Manufacturer Aqua Meter Instrument Corp.
  - CAGEC 50819
  - Type Digital
  - Part no. 550
  - Accessory Transducer
- e. Radio, VHF/FM commercial marine band  
See TM 55-1930-209-14&P-12 for details.

**2-7 Items furnished**

**2-7.1** Components installed as an integral part of the workboat are listed on parts lists in drawings referenced in Appendix A and in Components of End Item List in TM 55-1930-209-14&P-20.

**2-7.2** Common and bulk items for the workboat are listed in Expendable Supplies and Materials List in TM 55-1930-209-14&P-20.

**2-7.3** Repair parts and special tools onboard, including those for the workboat, are listed in Repair Parts and Special Tools List in TM 55-1930-209-14&P-18.

**2-8 Items required but not furnished.** All required items are furnished.

**2-9 Tools and test equipment.** Use existing tools and equipment onboard the barge. A complete list of tools and test equipment is in Tools and Test Equipment List in TM 55-1930-209-14&P-18.



**2-10 Controls and indicators.** Operator controls and indicators are at operator's station in workboat cabin on forward starboard side (Figure 2-3). Workboats have same controls and indicators, but the locations of dashboard-mounted items vary among different boats. The following sections provide general location and operating instructions for controls and indicators in the workboat cabin.

**2-10.1 Searchlight.** Searchlight controls protrude from cabin overhead, above and forward of wheel.

- a. Direct light by rotating handle around vertical shaft. Light is directly attached to shaft.
- b. Raise lightbeam by pulling down on handle.
- c. Lower lightbeam by pushing up on handle.
- d. Switch is on operator's electrical control panel.

**2-10.2 Operator's electrical control panel.** Mounted on the dashboard, this panel has ON/OFF switches for searchlight, windshield wipers, cabin dome light, engine room light, and running lights. Switches are on left side of panel, labels are in the middle and fuse containers are on right side.

**2-10.3 Windshield wiper.** Windshield wiper motor is mounted above windshield, and ON/OFF switch is on electrical control panel.

**2-10.4 Boat horn.** Horn is mounted on top of cabin, and horn button is on operator's dash. Push to blow horn.

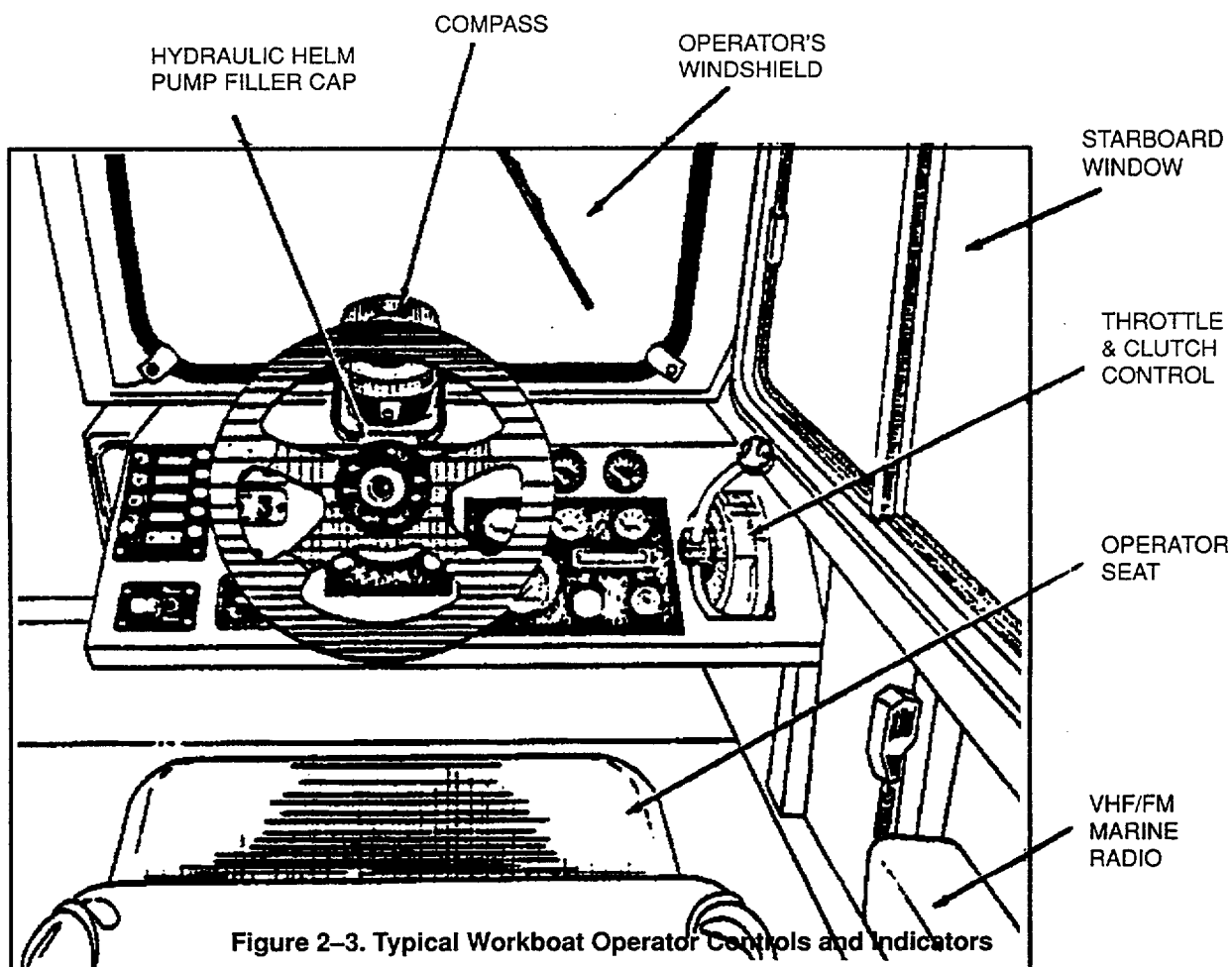


Figure 2-3. Typical Workboat Operator Controls and Indicators

**2-10.5 Bilge pump switches and indicators.** Controls for two bilge pumps are on the workboat instrument panel. Each bilge pump has a fuse container. A three-way bilge pump switch mounted on the dashboard controls both pump functions. Switch positions are MAN (manual ON) to the right, OFF in the middle, and AUTO (automatic) to the left. The three-way switch is spring loaded to OFF and must be held to the right (MAN) to keep the pumps working in this mode. Normal switch position is AUTO. The three-way switch will remain in AUTO position unless turned to OFF. A red warning light indicates when the bilge pumps are operating.

Bilge pump switches bypass the master switch and are connected with the battery select switch located in the engine compartment. This allows the bilge pumps to work on the AUTO switch setting when bilge float switches activate them and all other electrical power on the workboat has been shut off.

The automatic switch system assures the workboat bilge is always pumped out, even when unattended. It also extends the life of the bilge pumps and workboat battery by automatically shutting the pumps off when the water has been pumped out from the bilge.

**2-10.6 Outboard drive controls** Two panels on operator's dash indicate and control status of outboard drive. Red warning light on panel comes on when outboard drive is in TILT range. A series of small green lights indicates position of outboard drive. A toggle switch and a pushbutton control the outboard position:

- a. Push black rubber-covered toggle switch UP to move outboard drive up.
- b. Push this switch DOWN to move outboard drive down.
- c. Push in on black rubber covered button and then push up on black toggle switch to move outboard drive to TILT position. Red position light will come on.

**2-10.7 Magnetic compass.** A four-inch, fully gimballed, compass is mounted on the top center of the dashboard. The compass is equipped with 45-degree lubber lines, night lighting, and built-in magnetic compensator. Disassembly and troubleshooting instructions are contained in Appendix B, Manufacturers' Service Manuals/ Instructions.

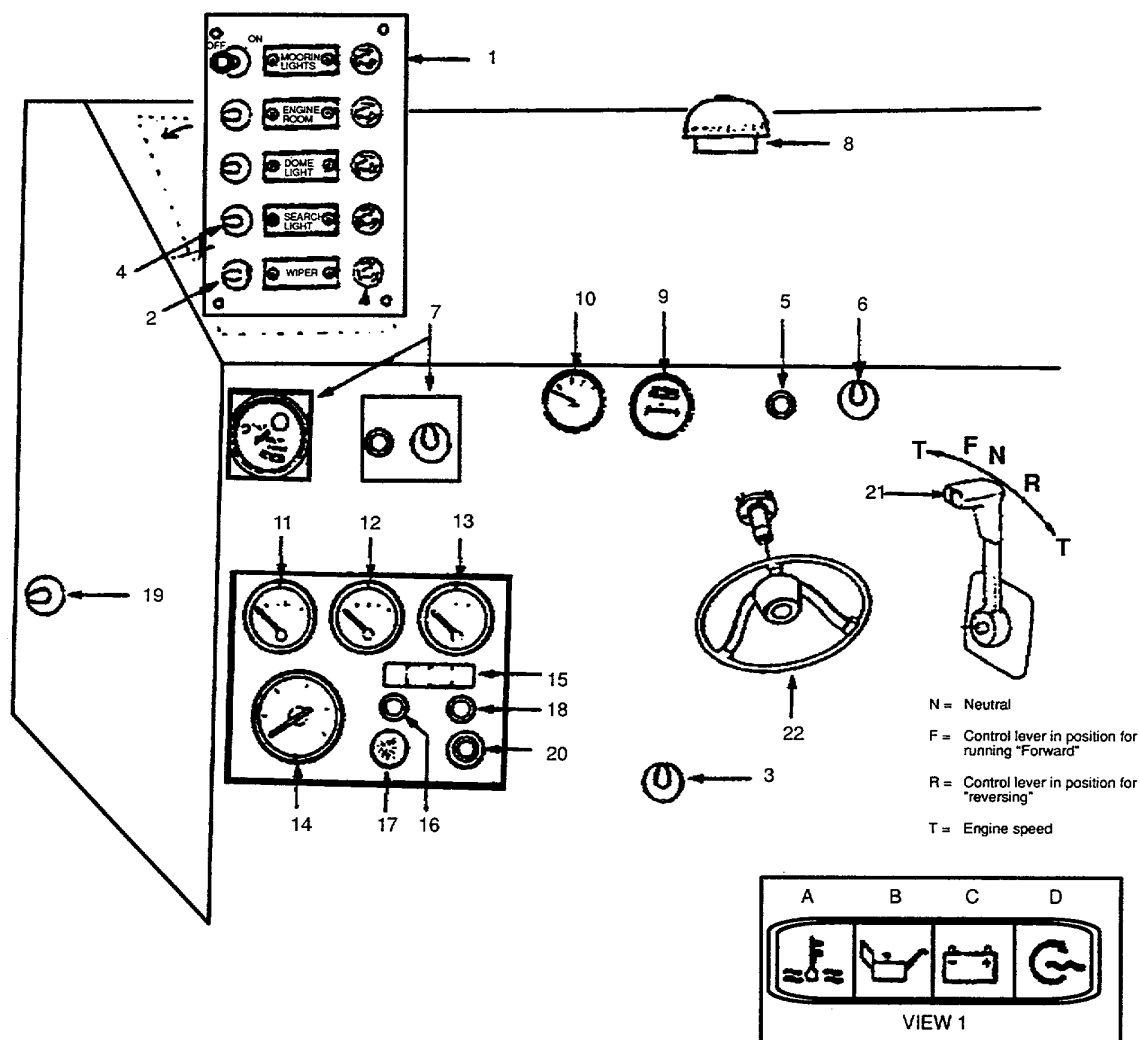
**2-10.8 Steering pump filler.** Filler for hydraulic steering is on top of wheel housing behind wheel. See paragraph 2-22 a. for servicing.

**2-10.9 Engine hourmeter.** Mounted on dashboard, meter records and indicates hours of engine operation and is used as basis for workboat maintenance program.

**2-10.10 Fuel gauge.** Mounted on the dashboard, fuel gauge is electrical and is turned on when master switch is turned on. Indicates E for empty on left, F for full on right and 1/4, 1/2, and 3/4 markings in between. Gauge does not have a warning light for low fuel condition.

**2-10.11 Volvo engine instrument panel.** This panel, on the dashboard, displays a coolant temperature gauge, oil pressure gauge, voltmeter, tachometer, instrument warning light cluster, alarm buzzer test button, and instrument light and light switch (Figure 2-4).

- a. Temperature gauge, in upper left corner of engine instrument panel, shows closed circuit coolant temperature. Normal coolant temperature should be between 165 and 195°F. When coolant temperature exceeds 195°F, left light in warning light cluster shows red and portrays international symbol for a thermometer. Instrument panel alarm buzzer also sounds.
- b. Oil pressure gauge is in center of three gauges across top of engine instrument panel. Gauge markings indicate from 0 on the left to 120 psi on the right, with intermediate marks for 30, 60, 80, and 100 psi. Lower arc of numbers is for metric measurement of oil pressure. Normal operating temperature for a warm engine should be between 30 and 100 psi. When oil pressure drops too low, second light from left on warning light cluster shows red with the international symbol for an oil can. Instrument panel alarm buzzer also sounds.



- 1. ELECTRICAL CONTROL PANEL
- 2. WINDSHIELD WIPER SWITCH
- 3. BOAT HORN SWITCH
- 4. SEARCHLIGHT SWITCH
- 5. BILGE PUMP INDICATOR
- 6. BILGE PUMP SWITCH
- 7. OUTBOARD DRIVE CONTROLS
- 8. MAGNETIC COMPASS
- 9. ENGINE HOURMETER
- 10. FUEL GAUGE
- 11. TEMPERATURE GAUGE
- 12. OIL PRESSURE GAUGE
- 13. VOLTMETER GAUGE
- 14. TACHOMETER
- 15. INSTRUMENT WARNING LIGHTS (SEE VIEW 1)
  - A. HIGH TEMPERATURE WARNING
  - B. LOW OIL PRESSURE WARNING
  - C. NO BATTERY CHARGE WARNING
  - D. GLOW PLUG CONNECTED INDICATOR
- 16. ENGINE ALARM BUZZER TEST
- 17. ENGINE ALARM BUZZER
- 18. INSTRUMENT PANEL LIGHTSWITCH
- 19. MASTER SWITCH
- 20. IGNITION SWITCH
- 21. THROTTLE AND SHIFT CONTROLS
- 22. STEERING WHEEL

Figure 2-4. Workboat Instrument Panel and Operating Control

- c. Voltmeter gauge is in right corner of engine instrument panel and indicates amount of charging from alternator into battery or batteries selected with battery selector switch on aft edge of engine compartment. When alternator ceases to provide a charge to the batteries, third light from the left in instrument warning light cluster glows red and shows a battery symbol.
- d. Tachometer is in lower left corner of engine instrument panel and indicates engine rpm in 100's. Tachometer indicates up to 5000 rpm and does not show a redline. Warm-up idle speed is normally between 900-1200 rpm. Normal idle speed is about 600 rpm. Normal operating range, depending on load, sea conditions and propeller, is between 1000 and 3800 rpm.
- e. Instrument warning light cluster is right of tachometer and below oil pressure and voltmeter gauges and shows four warnings. From left to right, these are; coolant temperature (shown with a thermometer), oil pressure (shown with an oil can), battery charging (a battery) and glowplugs engaged (large, C-shaped arrow with wave in the middle).
- f. Engine alarm buzzer test button is below instrument warning light cluster. Push button to test buzzer. Buzzer should sound. Alarm buzzer is below buzzer test button.
- g. Instrument light switch is also below instrument warning light cluster. Push to turn on instrument lights. Push to turn off instrument lights.

**2-10.12 Master switch.** Master switch is on port side of operator's dashboard, facing the passageway from the front entrance to the cabin. It has two positions, ON and OFF. Bilge pumps are not connected through the master switch and must be turned off with bilge pump controls on the dash.

**2-10.13 Ignition/electrical switch.** This switch requires a key to operate. Switch has five positions (Figure 2-5):

- a. O - Turns off all electrical circuits associated with engine (except bilge pumps)
- b. R - Stops engine
- c. 1 - Turns on engine accessories and instrument panel
- d. 2 - Turns on engine glow plugs
- e. 3 - Turns starter and starts engine

**IGNITION/ELECTRICAL SWITCH**

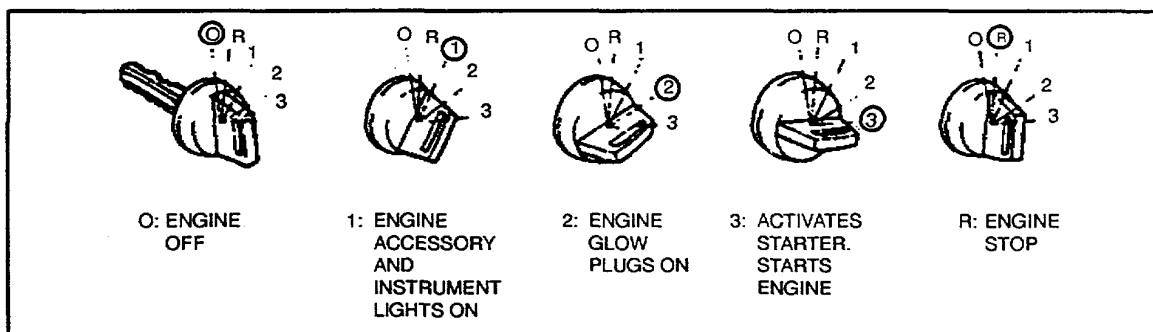


Figure 2-5. Ignition/Electrical Switch Operating Positions

**2-10.14 Throttle and clutch controls** These are combined in one lever to right of operator's dashboard. When lever is vertical to its pedestal, controls are in neutral and engine is idling. Pushing lever forward shifts drive to forward, and continued movement forward increases throttle. Pulling lever back shifts drive to reverse, and continued movement back increases throttle. To disengage throttle from clutch control, place lever in neutral, push in and hold button at bottom of lever, push lever slightly forward and then release button. Lever now becomes throttle control and drive mechanism stays in neutral. This is normally done when engine is started so warm-up idle speed can be set on throttle.

**2-10.15 Marine band VHF/FM radio.** This is mounted below window frame on starboard side of operator's position. Figure 2-6 shows controls and indicators for this radio.

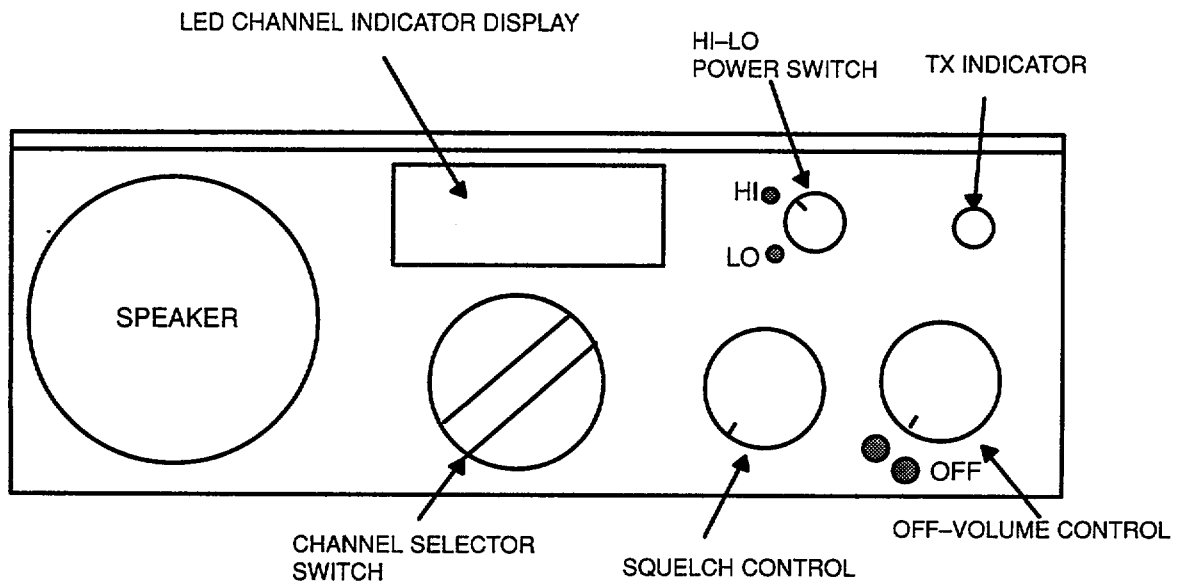


Figure 2-6. VHF/FM Marine Radio Control Panel

**2-10.16 Depthfinder controls and indicators.** These are mounted aft of VHF/FM radio on starboard side of operator's position and shown in Figure 2-7.

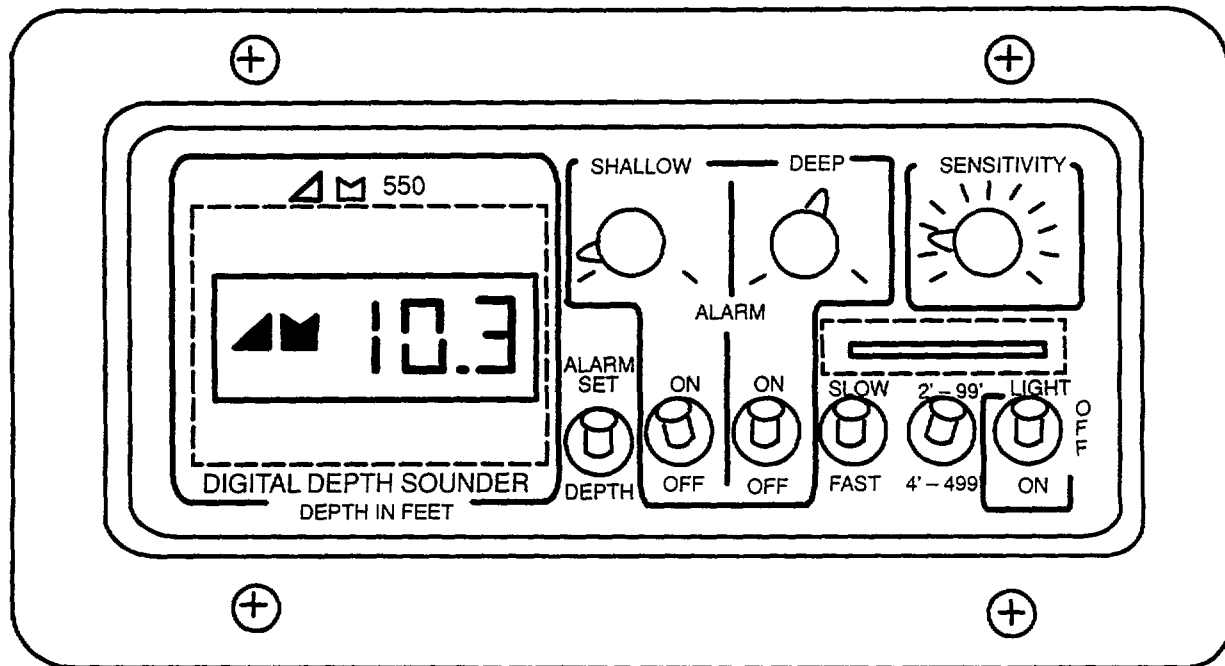


Figure 2-7. Depthfinder Controls and Indicators

**2-10.17 Engine maintenance controls and indicators.** These are shown in Figure 2-8.

## 2-11 Prestart procedures

### NOTE

These procedures start with the workboat in the water and secured to side of the barge with four lines using the small workboat cleats on the forward two-thirds of the barge on either side. This is the area with the vertical fenders. Procedures for launching from and returning the boat to its storage cradle on the deckhouse top are provided in paragraph 2-17.

- Make an overall visual check of workboat's condition. Check boat's hull and installed equipment, such as running lights and searchlight, and also make sure it is properly secured with lines and bumpers.
- Open cabin and make sure master switch is OFF. Obtain engine hatch tool from under operator's seat (Figure 2-8).
- If necessary, move messenger line reel unit (see Figure 2-9) as far forward as possible. Pull pins on sliding tracks on each side of unit, shove unit forward against the stops and replace pins.
- Using engine hatch tool, rotate lock nuts on each corner one half turn counterclockwise and slowly open engine compartment (aft deck closure). Escaping air may indicate that water is entering engine compartment and forcing air out.
- Check engine compartments to make sure there are no diesel fuel, water, oil or hydraulic fluid leaks. Tighten filters and fittings or take other corrective action as necessary.

- f. Check oil level. Dipstick is on top of engine between branches of intake manifold (Figure 2-8). Oil level should be between top and bottom of rough hatchmark area of the stick. Fill with oil, when necessary, through the oil filler cap on top of the engine. Use diesel lubricating oil CD (MIL-L2104), SAE 20W30, above 50°F and oil CD, SAE 10W, below 50°F.
- g. Check coolant level in heat exchanger by opening cap at front of engine. If necessary, fill to upper edge of splash plate on thermostat housing. Coolant must be either a 50-50 mixture of fresh, clean water and corrosion-protective antifreeze or fresh, clean water with a corrosion-protective additive. If coolant level is very low, check again after engine has started and is idling. If necessary, add additional coolant to bring it to upper edge of splash plate.
- h. At rear of engine compartment, make sure battery selector switch is set to ALL position.
- i. Close engine hatch, turn lock nuts on each corner one-half turn clockwise and return engine hatch tool to storage under operator's seat cushion.

## 2-12 Starting procedures

- a. At operator's station, make sure all electrical circuits are OFF except for bilge pumps. The bilge pump switch should be on AUTO.
- b. Turn master switch ON.
- c. Insert key into ignition switch and turn clockwise from OFF to position 1. This turns on engine electrical accessories (Figure 2-5).

### CAUTION

**Engine must NOT be started with outboard drive in TILT range. When engine is in TILT UP position, water pickup point on outboard drive is out of water and engine can not receive seawater to cool closed coolant system.**

- d. Lower outboard drive, if in the TILT range. Small red light on outboard drive panels is on if outboard drive is in TILT range.
- e. Release engine throttle control from clutch control by placing throttle/clutch control lever in neutral position, and while holding in on button at bottom of lever, move lever forward (Figure 2-3).
- f. Check fuel gauge on instrument panel. If it is necessary to refuel, make sure radio and other electrical accessories are off.

### WARNING

**During fueling operations, neither open flame nor smoking is permitted within 10 feet of fueling operations. Only minimum number of persons necessary to conduct fueling are permitted in area.**

- g. Make sure engine compartment hatch is secured in place.
- h. Attach grounding wire from barge to workboat, making sure clamp has a good contact on metallic part of workboat.
- i. Using Perko special key or large screwdriver, open fuel filler cap on port side aft of cabin.
- j. While monitoring fuel gauge on instrument panel at operator's station, fill workboat fuel tank from barge fueling station. Do NOT fill workboat fuel tank full. Leave room for expansion of cool fuel coming from voids storage tank into warmer workboat fuel tank.
- k. Close workboat fuel filler cap.

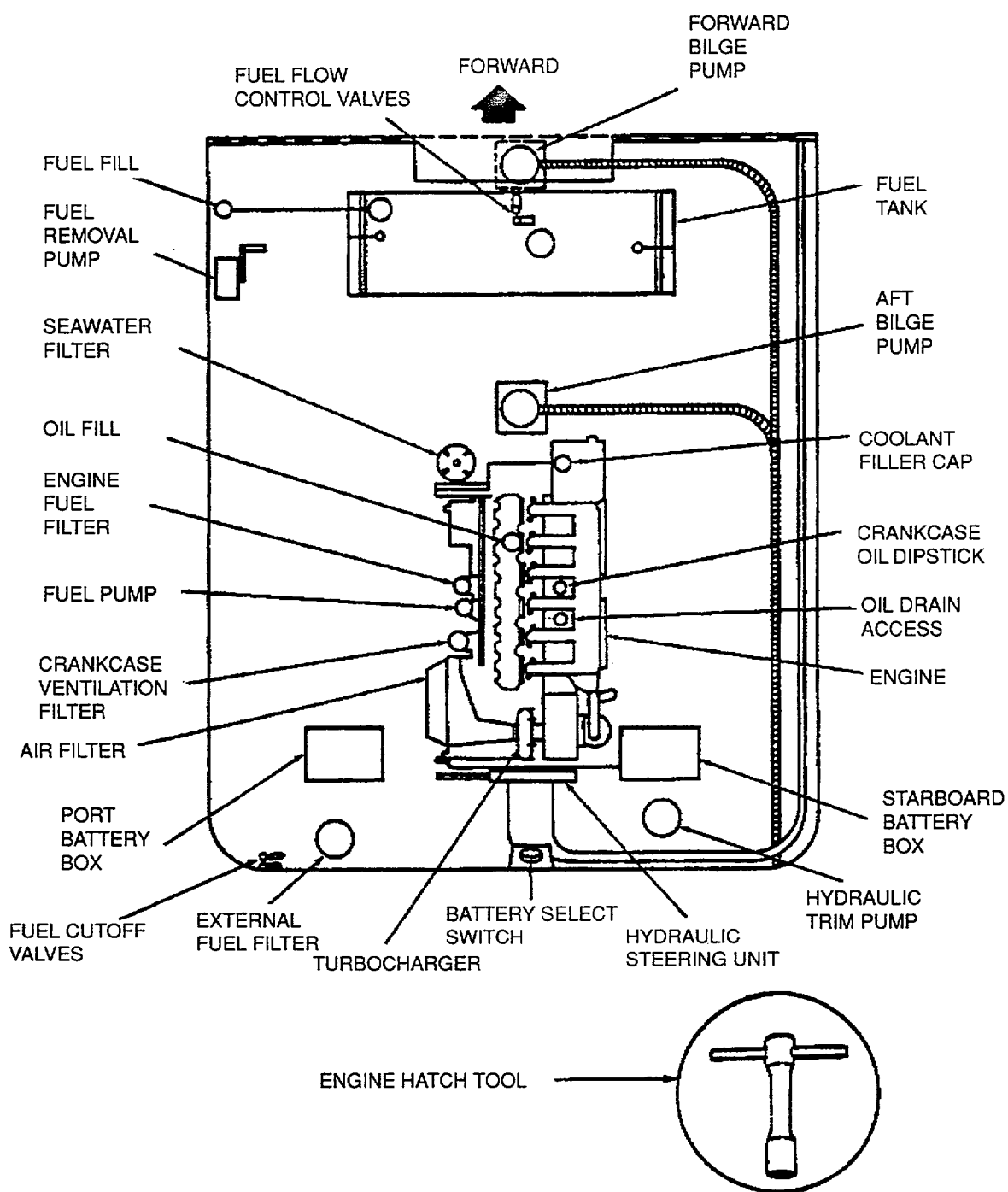
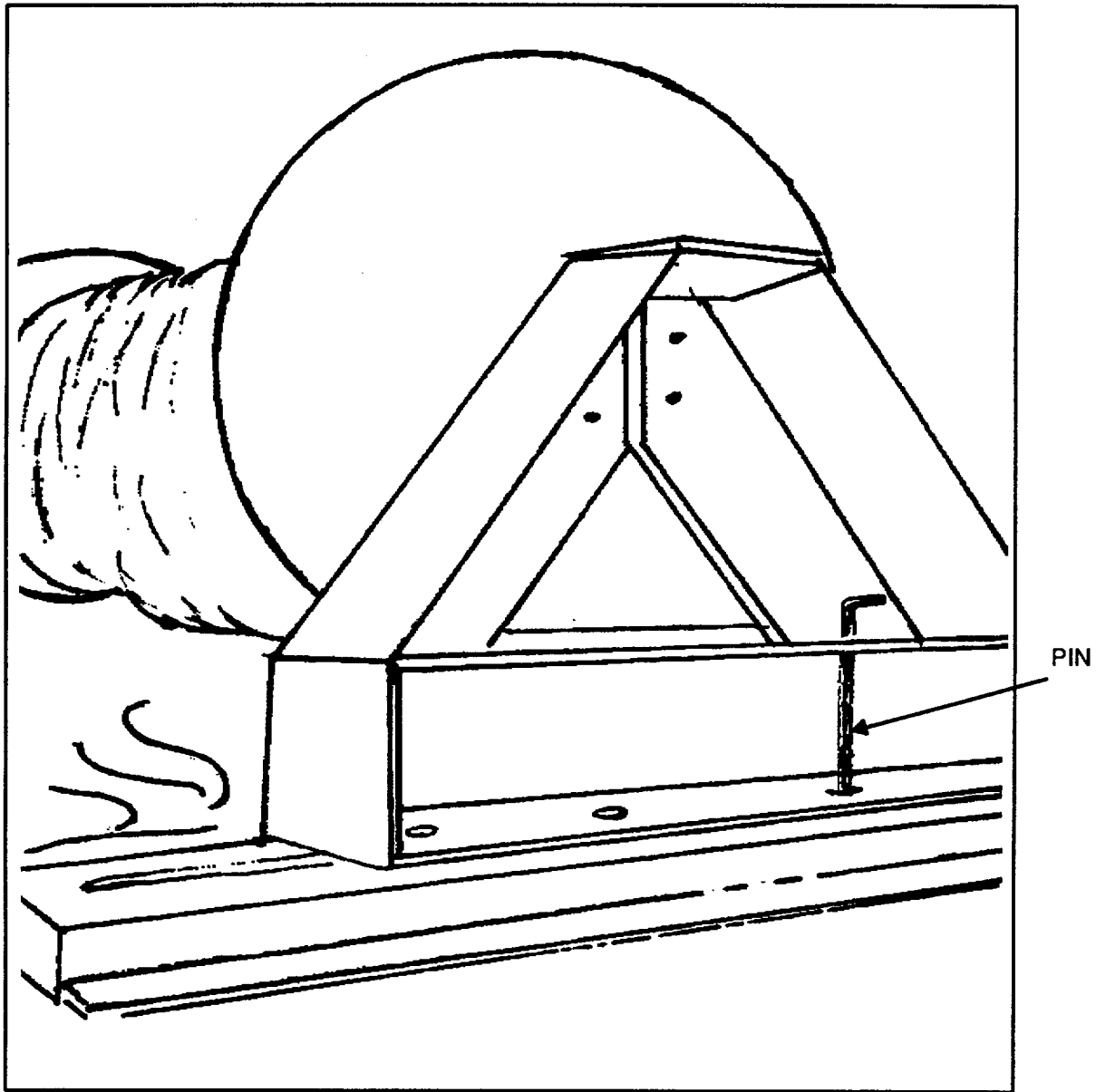


Figure 2-8. Engine Maintenance Controls and Indicators





MOUNTED AFT OF WORKBOAT CABIN ABOVE ENGINE COMPARTMENT, UNIT SLIDES AFT FOR EASIER ACCESS TO CABIN AND FORWARD FOR ACCESS TO ENGINE COMPARTMENT. UNIT IS HELD IN PLACE BY TWO PINS ON EACH SIDE (ONLY ONE PIN SHOWN).

*Figure 2-9. Messenger Line Reel Unit*

- l. Remove grounding wire from workboat and reattach to fueling station.
- m. Clean any fuel oil spills immediately.
- n. Turn ignition switch to position 2, activating diesel engine glow plugs. If engine is cold, hold in this position for 30 seconds. An automatic cold starting device is built into fuel injection pump. This warm-up of glow plugs is not necessary on a warm engine.

**WARNING**

**Operator and passengers onboard workboat must wear ear protectors whenever engine rpm exceeds 1500 rpm.**

- o. After warming glow plugs, turn starter switch OFF and then to position 3 for starting.
- p. When engine starts, release starter switch. Starter switch will return to position 1 All Accessories and Indicators.

**NOTE**

**At idle, voltmeter should show a plus (+) reading. At operating speed, hot engine oil pressure should register in 59.7 - 71.1 lbf/in<sup>2</sup> range.**

- q. With engine at idle, check instruments. Normal oil pressure and voltmeter readings should register in mid-range on gauges. Shut engine OFF immediately by turning switch to R if Low Oil Pressure warning lamp or No Charging warning lamps are lit, or if engine alarm sounds. Notify shift supervisor or Bargemaster to initiate troubleshooting procedures in the Owner's Manual, Appendix B.
- r. Run engine at high idle (900-1200 rpm) until gauges reach normal operating ranges. Check that cooling water is being discharged overboard.
- s. Reduce engine speed to normal idle (600 rpm) and check that engine is running smoothly.
- t. Pull throttle/clutch control lever to neutral position. This will engage clutch control mechanism with engine speed control.
- u. While still tied to the barge, move control lever to forward at idle. Check that boat starts moving forward. Go immediately to neutral and then do the same in reverse.
- v. With throttle/clutch control lever in neutral, turn wheel strongly to starboard and then to port. Have observer check that outboard drive moves in response to wheel movements.
- w. If all inspections and starting procedure checks (see paragraphs 2-11 and 2-12) have met all power, control, and safety requirements, start loading passengers and/or cargo. If these requirements are not met, notify the shift supervisor or Bargemaster immediately to initiate corrective action before loading any passengers and/or cargo. See paragraph 2-21 for trouble shooting Volvo engine, outboard drive, and engine instruments and the emergency procedures to be followed during boat emergencies.

**WARNING**

**Make sure all passengers are wearing lifevests and ear protectors and have been briefed on emergency procedures to include location of lifesaving equipment.**

## 2-13 Operating procedures

**2-13.1 Radio operations.** Very High Frequency/Frequency Modulation (VHF/FM) commercial marine radio (Figure 2-6) operates in 156 to 162 MHz frequency range with 25 watts of Radio Frequency (RF) power. Channels 01, 02, 03 and 15 receive only weather and environmental announcements. Channel 15, per Federal Communications Commission (FCC) regulations, operates on an output of only 1 watt. When barge is deployed in US coastal waters and radio is not involved in two-way communications, monitor channel 16. Commercial and United States Coast Guard (USCG) vessels initiate contact on this channel.

Table 2-1. Frequency/Channel Chart for Commercial Marine Radio in USA

<u>Channel</u>	<u>TX frequency</u>	<u>Rx frequency</u>	<u>Channel assignment</u>
01	- - -	162.550	Weather
02	- - -	162.400	Weather
03	- - -	162.475	Weather
05	156.250	156.250	Port operations-intercept-ship/coast
06	156.300	156.350	Intercept safety
07	156.350	156.350	Commercial intership-ship/coast
08	156.400	156.400	Commercial intership
09	156.450	156.450	Noncommercial intership-ship/coast
10	156.500	156.500	Commercial intership-ship/coast
11	156.550	156.550	Commercial intership-ship/coast
12	156.600	156.600	Port operations-intercept-ship/coast
13	156.650	156.650	Navigational intership-ship/coast
14	156.700	156.700	Port operations-intercept-ship/coast
15	- - -	156.750	Environmental-ship/coast
16	156.800	156.800	DISTRESS, SAFETY, and calling
17	156.850	156.850	State control-ship/coast
18	156.900	156.900	Commercial intership, ship/coast
19	156.950	156.950	Commercial intership, ship/coast
20	157.000	157.000	Port operations-intercept-ship/coast
21	157.050	161.650	Port operations
22	157.100	157.100	USCG liaison-EMERGENCY
23	157.150	157.150	US government
24	157.200	161.800	Public - ship/coast
25	157.250	161.850	Public - ship/coast
26	157.300	161.900	Public - ship/coast
27	157.350	161.950	Public - ship/coast
28	157.400	162.200	Public - ship/coast
65	156.275	156.275	Port operations-intercept-ship/coast
66	156.325	156.325	Port operations-intercept-ship/coast

Table 2-1. Frequency/Channel Chart for Commercial Marine Radio in USA (continued)

<u>Channel</u>	<u>TX frequency</u>	<u>Rx frequency</u>	<u>Channel assignment</u>
67	156.375	156.375	Commercial intership
68	156.425	156.425	Noncommercial intership-ship/coast
69	156.475	156.475	Noncommercial intership-ship/coast
70	156.525	156.525	Noncommercial intership
71	156.575	156.575	Noncommercial intership-ship/coast
72	156.625	156.625	Noncommercial intership
73	156.675	156.675	Port operations-intership-ship/coast
74	156.725	156.725	Port operations-intership-ship/coast
77	156.875	156.875	Commercial intership
78	156.925	156.925	Noncommercial intership-ship/coast
79	156.975	156.975	Commercial intership-ship/coast
80	157.025	157.025	Commercial intership-ship/coast
81	157.075	157.075	US government only
82	157.125	157.125	US government only
83	157.175	157.175	US government only
84	157.225	161.825	Public - ship/coast
85	157.275	161.875	Public - ship/coast
86	157.325	161.925	Public - ship/coast
87	157.375	161.975	Public - ship/coast
88	157.425	157.425	Commercial intership

**NOTE**


**Coordinate channel selection with other vessels requiring communication. Know their call signs. Channels and associated transmit/receive frequencies are listed in Table 2-1.**

- a. Verify that antenna lead and power leads are properly attached to radio set.
- b. Set radio power supply power switch to ON.
- c. Rotate OFF/VOLUME control clockwise to midposition on dial.
- d. Rotate squelch control fully counterclockwise.
- e. Set channel selector switch to desired channel.
- f. Rotate squelch control clockwise until background noise disappears. This is proper squelch setting. Moving squelch control beyond this setting reduces the radio's ability to receive messages from distant stations.
- g. Set desired HI/LO power setting. Switch should be in LO position when conditions permit. Use HI position when radio contact can not be made on LO position or when considerable distance separates the radio sets.

- h. When receiving a message, adjust volume control to desired listening level.
- i. To transmit, push PUSH-TO-TALK (PTT) button on microphone and hold it down while giving message. Hold microphone about 1 inch from your mouth and speak slowly and distinctly, directly into microphone. When finished, release PTT switch to receive incoming message. Transceiver can not receive incoming message while transmitting; wait until incoming message is complete before depressing PTT switch.

**2-13.2 Depthfinder operations.** The Aqua Probe Model 550 digital depthfinder (Figure 2-7) operates like a computer that is programmed to filter and interpret return signals from sea bottom. It is set and operated according to the following paragraphs:

- a. Make sure power cable and transducer cables are firmly installed in bottom of depthfinder unit.
- b. Preset the digital depthfinder.
  - (1) Turn the power switch (Light-OFF-ON) (Figure 2-6) to center, OFF position.
  - (2) All other switches must be in the down position.
  - (3) Set SENSITIVITY and SHALLOW alarm knobs to minimum settings.
  - (4) Set DEEP alarm knob to maximum setting.
- c. Turn power on by turning toggle switch to: (1) ON (down position) for daylight operations (2) LIGHT (up position) for night operations

This activates the liquid crystal display (LCD) with an Aqua Meter logo  appearing on the left side of the display. (For night operations the LCD is illuminated with a soft red glow.) The words NO ECHO will appear in the lower left corner of the LCD at zero sensitivity.

#### NOTE

**If the workboat is over a very hard-packed sandy or rock bottom in shallow water, the depthfinder may, at zero sensitivity setting, receive enough return signals to provide a depth reading.**

- d. Set SENSITIVITY control for normal depth readings.
  - (1) Advance the control knob to that point where water depth just starts to be displayed and the NO ECHO reading disappears. This is called the sensitivity threshold point.
  - (2) From the threshold point, advance the SENSITIVITY control knob two graduations higher than the threshold point.
  - (3) Periodically repeat step (1) and (2) to assure that the two-graduations-above-threshold setting is being maintained. Significant changes in bottom condition, depth, and sub-surface interference, among other factors, can affect the echo return strength.

#### CAUTION

**Depth range will not register shallower depths than the range selected but can register deeper depth.**

- e. Select DEPTH range by setting range-finding switch at 2 ft 99 ft (shallow range).
- f. Set UPDATE RATE front panel switch down to FAST to display new LCD readouts approximately twice each second. The FAST update rate is used both for normal shallow water operations and when navigating in dangerous areas. The SLOW update rate is used when cruising in known areas or rough water.

- g. Setting the SHALLOW ALARM circuit.

**NOTE**

**Circuit sounds an audible alarm if boat is navigated into area where water depth is SHALLOWER than alarm setting. It can also be used as navigational tool to give notice when a bottom contour line on a marine chart has been reached.**

- (1) Set the SHALLOW ALARM toggle switch to ON (up) position. (The Deep Alarm toggle switch must be off.
- (2) Set the ALARM SET/DEPTH toggle switch to the ALARM SET (up) position.
- (3) Adjust the SHALLOW ALARM knob slowly until LCD displays 06.0 feet (depth of the outboard drive plus a safety factor when workboat is loaded). SHALLOW ALARM may be set to alert operator of any desired depth within SHALLOW ALARM depth range (Shallow Range: 1.9 ft to 99.9 ft).

**CAUTION**

**When using the SHALLOW ALARM system, remember that depthfinder transducer is mounted on workboat stern. Although the transducer sends and receives signals in a cone-shaped pattern from the stern to and from sea bottom, the SHALLOW ALARM system is not foolproof at predicting water depth in front of the workboat, especially when the workboat is operated at higher rates of speed.**

- (4) Set the ALARM/SET toggle switch to DEPTH (down) position to resume reading water depth on the LCD. The SHALLOW ALARM is now set and activated.

- h. Setting the DEEP ALARM circuit:

- (1) Set SHALLOW ALARM toggle switch to OFF position.
- (2) Set the DEEP ALARM toggle switch to ON (up) position.
- (3) Set the ALARM SET/DEPTH toggle switch to the ON (up) position.
- (4) Adjust the DEEP ALARM knob slowly to the desired alarm depth (Deep Range: 4 ft 500 ft).
- (5) Set the ALARM/SET toggle switch to DEPTH (down) position to resume reading water depth on the LCD. The DEEP ALARM is now set and activated.

- i. The SHALLOW and DEEP alarms must be set separately but both may be operated simultaneously.

With both the SHALLOW ALARM and DEEP ALARM toggle switches turned ON, the depthfinder is able to alert the operator when maximum and minimum depth settings have been exceeded. Refer to Appendix B for detailed instructions for using, operating, and troubleshooting the Aqua Probe Model 550 depthfinder.

- j. Preventive maintenance instructions for the depthfinder are contained in Chapter 2, TM 55-1930-209-14&P-19.

**NOTE**

**For additional information on depthfinder operations, read pages 9 thru 14 of the Aqua Probe Owner's Handbook in Appendix B.**

**2-13.3 Workboat operations**

- a. Castoff from barge, ensuring that mooring lines are secured and not creating a safety hazard on deck or in the water.
- b. At idle speed, maneuver away from barge.

- c. For long distance or long periods of operation, cruising maximum speed is about 200 rpm below maximum attainable rpm. Set throttle for maximum power and allow boat to reach its maximum rpm. Then, reduce rpms to 200 below the maximum rpm.

**NOTE**

**Depending on load and sea conditions, normal cruising should range between about 2600 rpm (where boat may fall off plane) and a maximum cruise of about 3300 rpm. These parameters, based on use of a 16 inch diameter propeller with 19 inch pitch, may change when a different propeller is fitted.**

- d. Monitor engine instruments for proper readings. Coolant temperature should be 165 to 195°F. Make sure cooling water is flowing overboard.
- e. Adjust outboard drive by using power trim switch to maintain best running conditions. This will show on the trim gauge within the TRIM range.
- f. When running in shallow water or water of unknown depth, adjust outboard drive into BEACH range. Reduce engine speed to very low or idle speed; push IN button on trim control on dash and push toggle switch UP to adjust drive as indicated on trim gauge. This must be done ONLY when engine is at low speed or idle. Once in BEACH range, engage either forward or reverse and increase speed. With this setting, propeller will not develop as much thrust.

**CAUTIONS**

**Never shift to reverse when boat is planing.**

**If accidentally running in very shallow water, shift engine to neutral and raise outboard drive to full TILT position to preclude damage to drive. Power can not be applied to drive while in TILT position.**

**NOTE**

**Reverse can be engaged while in TRIM or BEACH range of the trim plane gauge.**

**2-14 Emergency procedures**

**2-14.1 General.** The two most dangerous situations for small boats are to have a fire onboard or accidentally run aground under power. This assumes that good judgment and knowledge of weather and sea conditions would preclude being capsized or swamped in heavy seas.

**2-14.2 Fire prevention.** The best firefighting technique on the workboat is to prevent a fire from starting. This requires strict compliance with preventive measures such as:

- a. Keep engine compartments clean and free of debris, rags, oil and fuel spills.
- b. Keep bilges clean and pumped out.
- c. Clean any fuel oil or lubricating oil spills immediately.
- d. No smoking in cabin.
- e. Keep fuel lines and filters tight to preclude seepage and leaks.

**2-14.3 Firefighting techniques**

- a. Send a distress signal via radio, flares, or horn.
- b. Make sure all persons onboard are wearing their lifevests.
- c. Since wind created by boat's movement may fan the fire or blow away firefighting chemicals, bring boat to a standstill if sea conditions permit.

- d. Smother engine fires by leaving engine hatch tightly closed. Use firefighting chemicals through air intakes on each side or smother fire by closing air intakes. Use blankets, tarps, cushions, etc., to completely close air intakes.

**NOTE**

**Portable, dry powder fire extinguisher onboard (10 pound capacity) is effective against fires involving fuel oil, electrical wiring and equipment, and plastics.**

- e. Carry extinguisher to upwind side of fire, if possible. Pull safety pin, aim nozzle at base of fire, preferably on upwind side, and pull trigger. If chemical is to be effective, it must not be blown away by the wind.
- f. After extinguishing fire, examine onboard electrical and mechanical systems for possible damage. If towing is necessary, proceed in accordance with paragraph 2-15.2.

**2-14.4 Running aground prevention.** Before maneuvering or operating in an area, study charts and know depths and possible underwater obstacles. In unknown waters, use depthfinder and proceed at idle speed with forward lookouts. If possible, leave outboard trim switch in TRIM range so reverse can be engaged to stop and prevent grounding or striking underwater obstacles.

**2-14.5 Recovery procedures when aground**

- a. Send a distress signal via radio, flares, or horn.
- b. Make sure all persons onboard are wearing lifevests.
- c. Check for possible persons overboard. Begin rescue operations.
- d. Check for possible personal injury due to sudden stop. Render first aid if necessary. If radio contact is available, notify rescuing effort of personal injuries.
- e. Check hull around outboard drive for cracks, splits, bent metal, and leaks. Check both outside of hull and inside engine compartment.
- f. If possible, raise outboard drive and examine casing for cracks, and bent or broken metal. Check propeller for bent or broken blades. If possible, lower outboard drive and check if operational.
- g. Check other portions of hull for damage and leaks.
- h. Make sure bilge pumps are ON.
- i. If hull does not leak and engine/outboard drive operates, attempt to back off grounding. If this is possible, check for leaks as boat comes clear of grounding.
- j. Plug and control leaks in the hull. Use cushions, blankets, jackets, or other material to plug holes or cracks.

**WARNING**

**Workboat has flotation foam in forward compartment, under cabin floor, and on outside of engine compartment. However, foam has not been tested and may not be sufficient to prevent boat from sinking.**

**2-15 Operations under unusual conditions**

**2-15.1 General.** Several unusual conditions may occur in small craft operations. Towing another boat or being towed by another boat are the most common.

**2-15.2 Being towed by another boat**

- a. Discuss towing procedures with operator of the towing boat and establish a communications system, preferably two-way voice radio, between boats.
- b. If possible, make a towing bridle by using heavy line at least 30 feet long. Fashion a loop in the middle and fasten each end to one of the forward bits. Attach bridle to bits so that it can be quickly and easily disconnected. Secure towing line to loop in middle of this emergency-towing bridle.



**CAUTION**

**Make sure towing bridle and line do not become entangled in propeller of towing boat.**

- c. Raise outboard drive to maximum UP position possible during towing.
- d. Before towing starts, prepare a sea anchor to use as a brake to control forward movement of the towed boat.

**WARNING**

**Keep decks clear in case towing line breaks. Such lines are extremely dangerous if they break under tow.**

**CAUTION**

**Tow at very low speed.**

- e. Do not allow towing boat to tow workboat to dock or to barge. Terminate tow away from dock or barge. Final maneuvering should be done with handlines and/or by pushing and nudging boat into position.

**2-15.3 Towing another boat**

- a. Discuss towing procedures with operator of towed boat and establish a communications system, preferably two-way voice radio, between boats.
- b. Make a towing bridle by using heavy line at least 30 feet long. Make a loop in the middle and fasten each end to one of the stern bitts. Attach bridle to bitts so that it can be quickly and easily disconnected. Secure towing line to loop in middle of this emergency-towing bridle.

**CAUTION**

**Make sure towing bridle and line do not become entangled in propeller of towing boat.**

- c. Make sure towed boat does not overrun towing boat. Prevent possible collision by using a sea anchor on towed boat and by using a towline with sufficient length to allow water friction to stop towed boat before it overruns the towing boat.

**WARNING**

**Keep decks clear in case towing line breaks. Such lines are extremely dangerous if they break under tow.**

**CAUTION**

**Tow at a very low speed.**

- d. Do not tow disabled boat to dock. Cast off with plenty of maneuvering room. Work disabled boat to dock with handlines or nudging with workboat pushknees.

**2-16 Shutdown procedures**

- a. Come along starboard side of barge. Keep workboat drive in neutral and idle the engine.

**CAUTION**

**If workboat is tied to other than barge and in shallow water where depth may vary due to tides, tilt outboard drive to full tilt UP position.**

- b. Secure workboat to barge with sufficient bumpers and four lines: bow, stern, and two springlines.
- c. Unload passengers and cargo.
- d. Turn off radio by turning OFF/VOLUME control counterclockwise until it clicks OFF. Turn radio off before turning off master switch.

- e. When engine has been idling for at least 2 minutes, stop engine by turning ignition switch to R.
- f. Make sure engine compartment hatch is secured in place.
- g. Attach grounding wire from barge to workboat, making sure clamp has a good contact on a metallic part of the workboat.

**WARNING**

**During fueling operations, neither open flame nor smoking is permitted within 50 feet of fueling operation. Only minimum numbers of persons necessary to conduct fueling are permitted in area.**

- h. Using special Perko wrench or large screwdriver, open fuel filler cap in deck on port side aft of cabin.
- i. Refuel workboat from barge fueling station. Monitor fuel gauge located on instrument panel. Do NOT completely fill workboat fuel tank but allow space for expansion of cooler fuel flowing from voids storage tank into warmer workboat fuel tank.
- j. Secure fueling station hose and equipment.
- k. Close workboat fuel filler cap.
- l. Remove grounding wire from workboat and reattach to fueling station.
- m. Make every effort to prevent fuel oil spills and clean any spills immediately.

**CAUTION**

**Never turn master switch off until engine has stopped.**

- n. Turn master switch OFF.
- o. If necessary, move messenger line reel unit as far forward as possible. Pull pins on sliding tracks on each side of unit, shove unit forward and replace pins.
- p. Use engine hatch tool (stored under operator's seat) to turn closure nuts on each corner one-half turn and slowly open engine compartment (aft deck closure). Escaping air may indicate that water is entering the engine compartment and forcing the air out.
- q. Check compartment to make sure there are no fuel oil, lubricating oil, hydraulic fluid or water leaks. Tighten filters and fittings or take other corrective action as necessary.
- r. Check oil level. Dipstick is on top of engine between branches of intake manifold (Figure 2-6). Oil level should be between marks on the stick. Fill with oil, when necessary, through oil filler cap on top of the engine. Use diesel lubricating oil CD (MIL-L-2104), SAE 20W30, above 50°F and oil CD, SAE 10W, below 50°F.
- s. Do NOT attempt to check coolant levels at this time.
- t. Close engine hatch and secure by turning closure nuts on each corner one-half turn. Return engine hatch tool to storage under operator's seat cushion.
- u. Before leaving boat, make sure bilge pump switch is in AUTO and store or secure all loose items.

## **2-17 Deployment and recovery**

**2-17.1 General.** During storage and movement of the barge, workboat is normally carried in a specially constructed cradle on forward section of deckhouse top and covered with a tarpaulin. The workboat is secured in the cradle by three tiedown straps on each side of the cradle. These straps hook into three eyelets on each side of the workboat and are pulled tight with a crank and ratchet set on the side of the cradle. For long overseas movement, these tiedown straps may be supplemented with four steel turnbuckles, one on each corner of the workboat. These are attached to eyelets welded to the deckhouse top and into special fittings on the workboat forward knees and the stern bits.

**2-17.2 Bow crane procedures.** From deckhouse top stowage, the workboat is deployed and recovered through use of the bow crane. The bow crane is mounted on the bow weatherdeck and is shown in Figure 2-10 in its traveling configuration. Complete instructions for operating and maintaining the bow crane are contained in TM 551930-209-14&P-13. When being used to deploy or recover the workboat, obey the following precautions:

**WARNINGS**

**Never use the crane to move the workboat when the barge is rolling 50 or more.**

**Always use the shortest possible boom reach that will provide a safe clearance of all obstacles.**

**Never use a boom extension of more than 35 feet 7 inches for moving the workboat.**

**Never use this crane for moving the workboat when the barge is rolling 5% or when Safety NCOIC deems it unsafe.**

**2-17.2.1 Bow crane operating controls** Bow crane operating controls are located forward on the deckhouse top. These controls consist of five movement levers (Figure 2-10 for Barge 1 and Figure 2-11 for Barges 2 and 3).

**2-17.2.2 Bow crane prestart procedures**

- a. Check barge maintenance log on bow crane and its hydraulic system. Make sure there are no discrepancies that would prohibit operating the bow crane.
- b. Make sure switchboard circuit breaker P16 is ON.

**CAUTION**

**Due to high pressure in hydraulic system, crane can NOT be operated with any visible leaks. These must be repaired prior to use. Correct leaks in flexible hose, hardpiping or joints. Do not confuse seepage around hydraulic packing on actuator arms with leaks. A small amount of such seepage is acceptable.**

- c. In void 1, visually inspect hydraulic pump, motor and hydraulic system hard piping for leaks or damage. Do not use system until such leaks have been repaired.
- d. Remove filler cap on hydraulic tank and make sure fluid level is within 1 inch of bottom of filler neck. If fluid is below this level, add hydraulic fluid before using crane. Screw on filler cap tightly before starting hydraulic pump.

Crane operator, for safety reasons, must stand on port side of control panel. Two or more control handles may be moved at the same time.

Control 1 Controls turning of crane. Push away and crane turns counterclockwise. Pull back and crane moves clockwise.

Control 2 Controls inner boom movement. Push away and inner boom moves up. Pull back and inner boom moves down.

Control 3 Controls outer boom movement. Same as control 2.

Control 4 Controls boom extension. Push away and boom retracts. Pull back and boom extends.

Control 5 Controls winch. Push away and winch cable retracts. Pull back and winch cable extends.

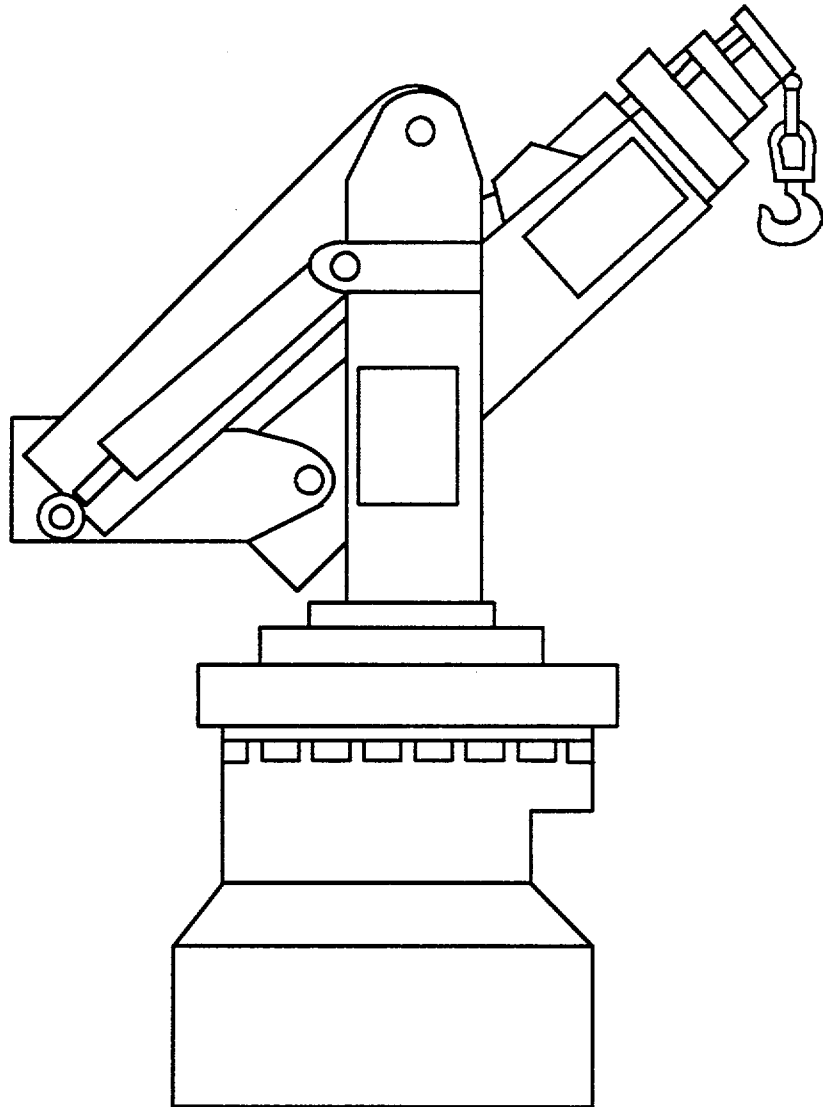


Figure 2-10. Bow Crane in Traveling (Stowed) Configuration

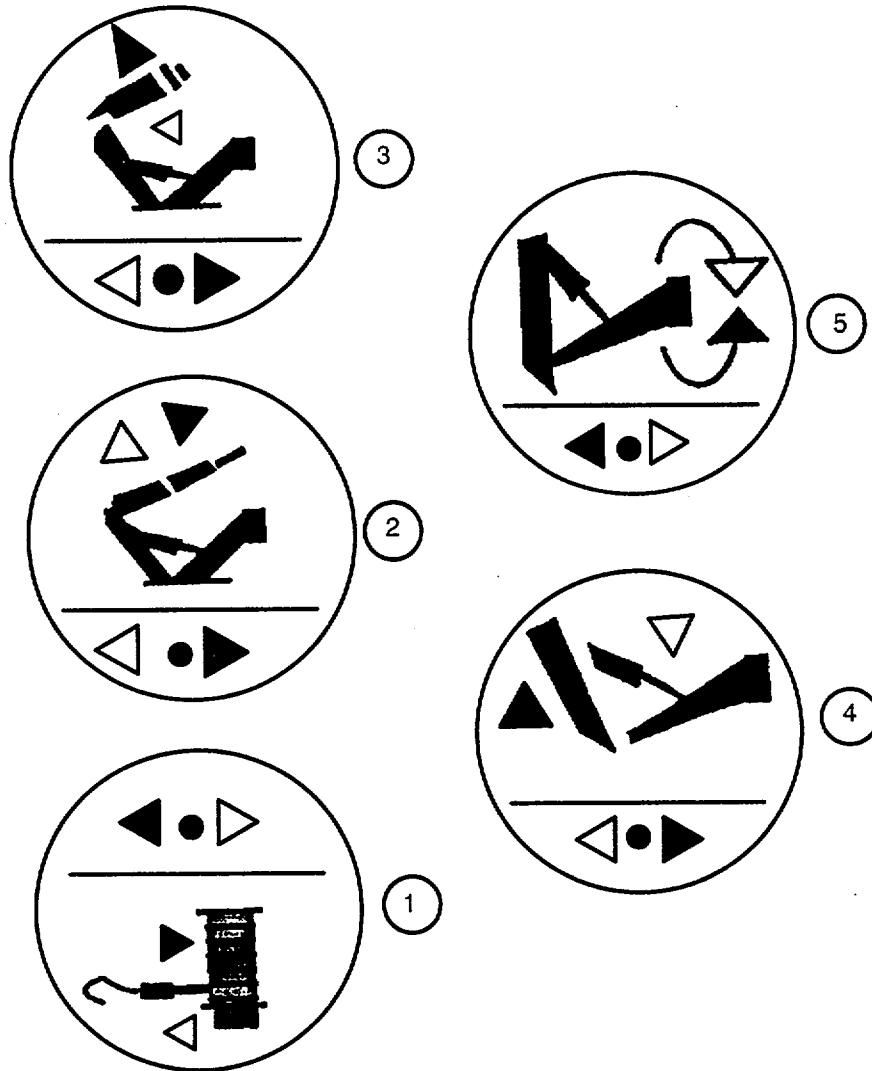


Figure 2-11. Bow Crane Control Panel (Barges 2 and 3)

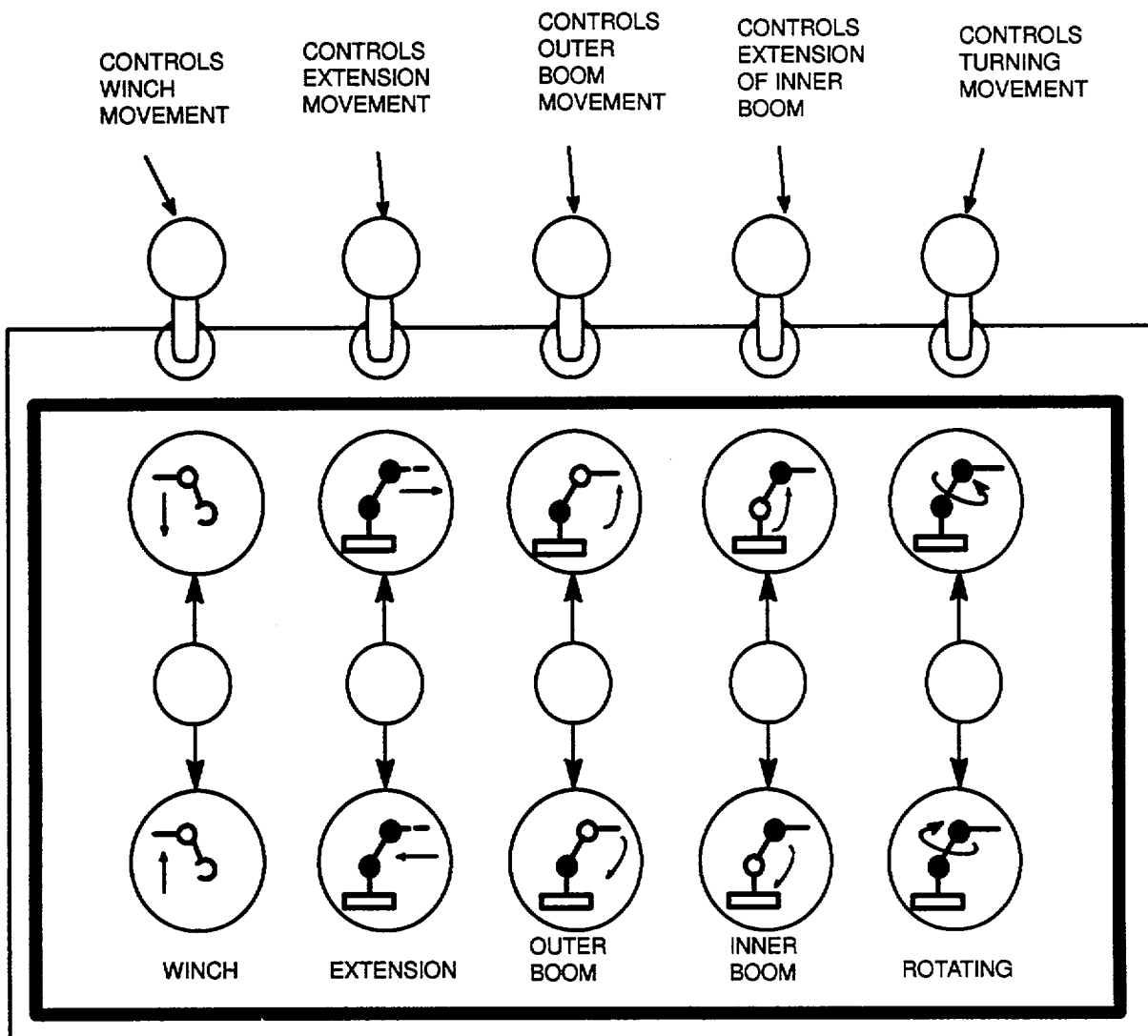


Figure 2-12. Bow Crane Control Panel (Barge 1)

- e. In void 1, push up on top switch on hydraulic pump controller (aft bulkhead) and set side switch to AUTO position.
- f. On forward weather deck, visually check exposed hardpiping and flexible hydraulic lines for cracks or leaks. Check crane base to ensure it is secure and make sure forward J weather deck is clear of any material that might obstruct bow crane movement.
- g. Inside watertight control box on deckhouse top, activate anti-two block system.
- h. Inside watertight control box, push START button on START/STOP panel. High-pitched whine of hydraulic pump indicates crane is ready for use.
- i. Using crane control sticks, deploy crane from traveling position. Extend all booms to their maximum length and slew crane around in at least one complete circle. During these movements, check for any change in pitch of the hydraulic pump noise and any jerky, sticking or uneven movement of any part of the crane. Note these symptoms, and check crane carefully before using. See TM 55-1930-209-14&P-13 for details on crane maintenance.

### 2-17.3 Workboat deployment procedures

#### WARNING

**Crewmembers, crane and workboat must never touch VHF/FM antenna mounted outboard of starboard railing. Antenna may contain high voltages that will seriously injure personnel.**

- a. Move crane to position hook over center of workboat in its cradle on deckhouse top.
- b. On workboat, make sure two seawater drain plugs on bottom of hull are installed with properly fitting gaskets and are tight.
- c. Take boat-lifting harness from storage in cabin and attach to three lifting points on workboat; two eyes on bottom of stern mooring bitts and one eye under cabin floor. Open aft cabin top hatch to allow front lifting harness to reach crane hook without damaging cabin top.
- d. Place lifting harness ring in crane winch hook and use crane winch to take up slack in harness.

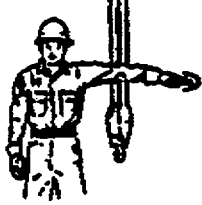
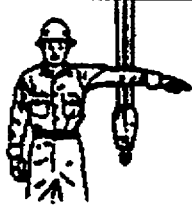
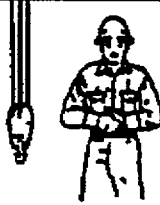
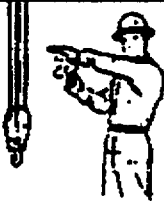
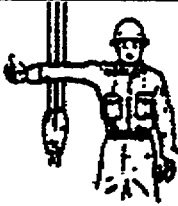
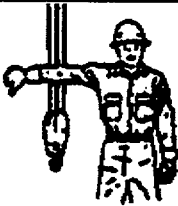


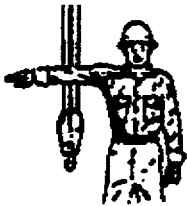





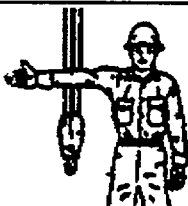
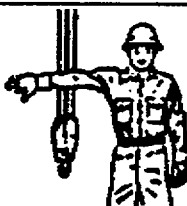




#### CAUTION

**Non-Commissioned-Officer-in-Charge (NCOIC) must supervise crane operator and crewmembers on control lines to control boat movement. Crane operator can not see all portions of workboat when it is being moved. To control crane movement, NCOIC uses hand signals (Figure 2-13) or walkie-talkies to give directions to crane operator.**

- e. Attach at least two control lines to boat to prevent swinging, twisting and yawing when crane lifts boat from cradle.
- f. Check crane winch hook and harness alignment to make sure it will lift boat vertically.
- g. When ready, release tension on three tiedown straps on each side of cradle (Figure 2-14) and station crewmembers on control lines. Using crane winch, lift boat about 6 inches vertically from cradle.
- h. If all is under control, unhook three tie-down straps on each side of cradle.
- i. Lift boat vertically to clear all items on deckhouse top and slew crane in a counterclockwise direction to move boat over starboard side. Keep control lines tight (see Figure 2-15).
- j. Keep control lines tight to control boat during movement.

#### WARNING

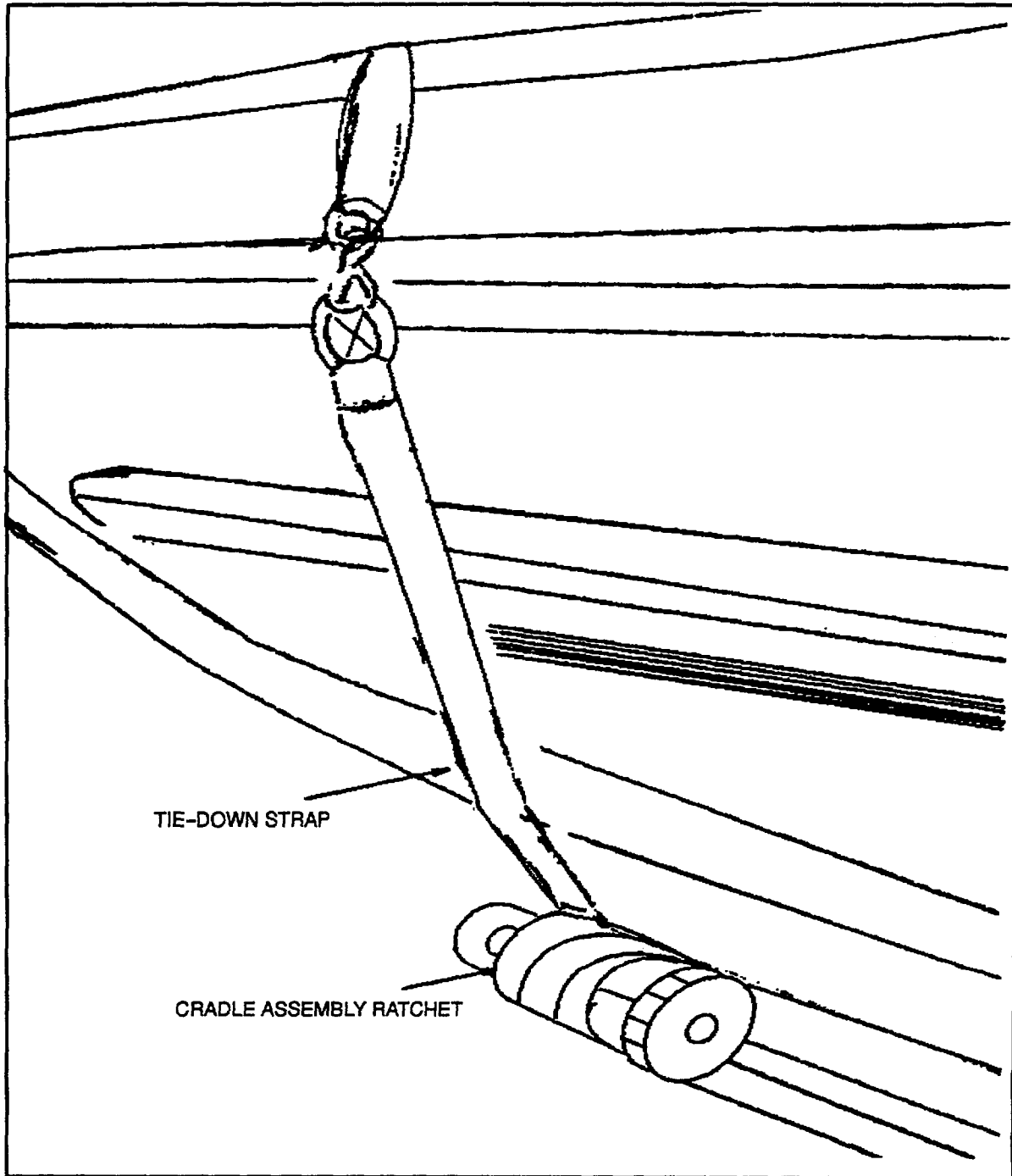
**In moving workboat with crane, workboat and crane must never pass over crane operator or other crewmembers.**

 <p>EMERGENCY STOP</p>	 <p>STOP</p>	 <p>DOG EVERYTHING</p>	 <p>MOVE SLOWLY</p>
 <p>RAISE BOOM</p>	 <p>LOWER BOOM</p>	 <p>USE MAIN HOIST. TAP FIST ON HEAD</p>	 <p>USE WHIP LINE. TAP ELBOW WITH ONE HAND</p>
 <p>SWING</p>	 <p>TRAVEL. MAKE PUSHING MOTION</p>	 <p>TRAVEL. (ONE TRACK) LOCK THE TRACK ON SIDE INDICATED BY RAISED FIST. TRAVEL OPPOSITE TRACK IN DIRECTION INDICATED BY CIRCULAR MOTION OF OTHER FIST. (FOR CRAWLER CRANES ONLY)</p>	 <p>TRAVEL. (BOTH TRACKS) USE BOTH FIST. IN FRONT OF BODY, MAKING A CIRCULAR MOTION, ABOUT EACH OTHER, INDICATING DIRECTION OF TRAVEL. FORWARD OR BACKWARD. (FOR CRAWLER CRANES ONLY)</p>
 <p>HOIST</p>	 <p>LOWER</p>	 <p>RAISE THE BOOM AND LOWER THE LOAD. THUMB POINTING UP, FLEX FINGERS IN AND OUT.</p>	 <p>LOWER THE BOOM AND RAISE THE LOAD. THUMB POINTING DOWN, FLEX FINGERS IN AND OUT.</p>
 <p>RETRACT BOOM. (TELESCOPING BOOMS) ONE FIST THUMB POINTING OUTWARD AND HEEL OF FIST TAPPING CHEST</p>	 <p>EXTEND BOOM. (TELESCOPING BOOMS) ONE FIST IN FRONT OF CHEST WITH THUMBS TAPPING CHEST.</p>	 <p>EXTEND BOOM. (TELESCOPING BOOMS) BOTH FISTS IN FRONT OF BODY WITH THUMBS POINTING OUTWARD.</p>	 <p>RETRACT BOOM. (TELESCOPING BOOM) BOTH FISTS IN FRONT OF BODY WITH THUMBS POINTING TOWARD EACH OTHER</p>

NOTE: USE ARMY STANDARD HAND SIGNALS TO DIRECT CRANE OPERATOR IN MOVEMENT OF CRANE AND WORKBOAT.

Figure 2-13. Standard Military Hand Signals for Controlling Cranes





THREE TIE-DOWN STRAPS ON EACH SIDE OF WORKBOAT CRADLE ATTACH TO THREE EYES ON EACH SIDE OF WORKBOAT. AFTER ATTACHING TO WORKBOAT, TIGHTEN RATCHET WITH A TURNING BAR.

*Figure 2-14. Workboat Cradle Tie-Down with Ratchet*

- k. Slowly lower boat into water, keeping harness taut to maintain control of boat until tielines secure the workboat to the barge.
- l. When boat is secure, lower crane winch hook, remove lifting harness ring from hook and from three eyes on workboat. Stow harness under port passenger seat in workboat cabin. Free control lines and stows with lifting harness.

#### **2-17.4 Workboat recovery procedures**

- a. To recover the workboat from the water, reverse deployment procedures.
- b. Prior to starting recovery, perform all after operation checks and inspections on the workboat as discussed in paragraph 2-16 and complete any scheduled maintenance services as discussed in paragraph 2-22.
- c. Raise outboard drive to full UP (TILT) position.
- d. Fold down radio antenna, spotlight, and anchor light mast flat with cabin top.
- e. When boat is in its cradle and the three tiedown straps on each side have been fastened to boat and pulled tight, remove two seawater drain plugs and store them under operator's seat in the cabin.
- f. Remove marine radio and depthfinder and store in barge dayroom. Turn spotlight face down toward cabin roof. Store diving ladder and life ring buoy with rope and light in cabin. Secure cabin.

**2-17.5 Bow crane shutdown procedures** Upon completion of workboat deployment or recovery, or other activity using the bow crane, these shutdown procedures must be followed:

#### **CAUTION**

**To avoid damage to bow crane and its hydraulic control system, crane must always be returned to its folded position for storage and travel.**

- a. Draw back extension boom to its innermost position.
- b. Fold outer boom in position under inner boom.
- c. Swing lower boom into pedestal tunnel and pull up until pulley wheel almost touches pedestal. Do not let pulley touch the crane base.
- d. In watertight control box, press STOP button on START/STOP panel and close and secure box.
- e. In void 1, on hydraulic pump controller, turn side switch OFF and pull down top switch.

#### **NOTE**

**If bow crane must be left in unfolded position, apply a light coat of grease or hydraulic fluid to all exposed chromium-plated parts of crane hydraulic cylinder system. Wipe this coating clean before using the crane. If crane must be left in this position, exercise it daily. See TM 55-1930-209-14&P-13 for details on crane operation.**

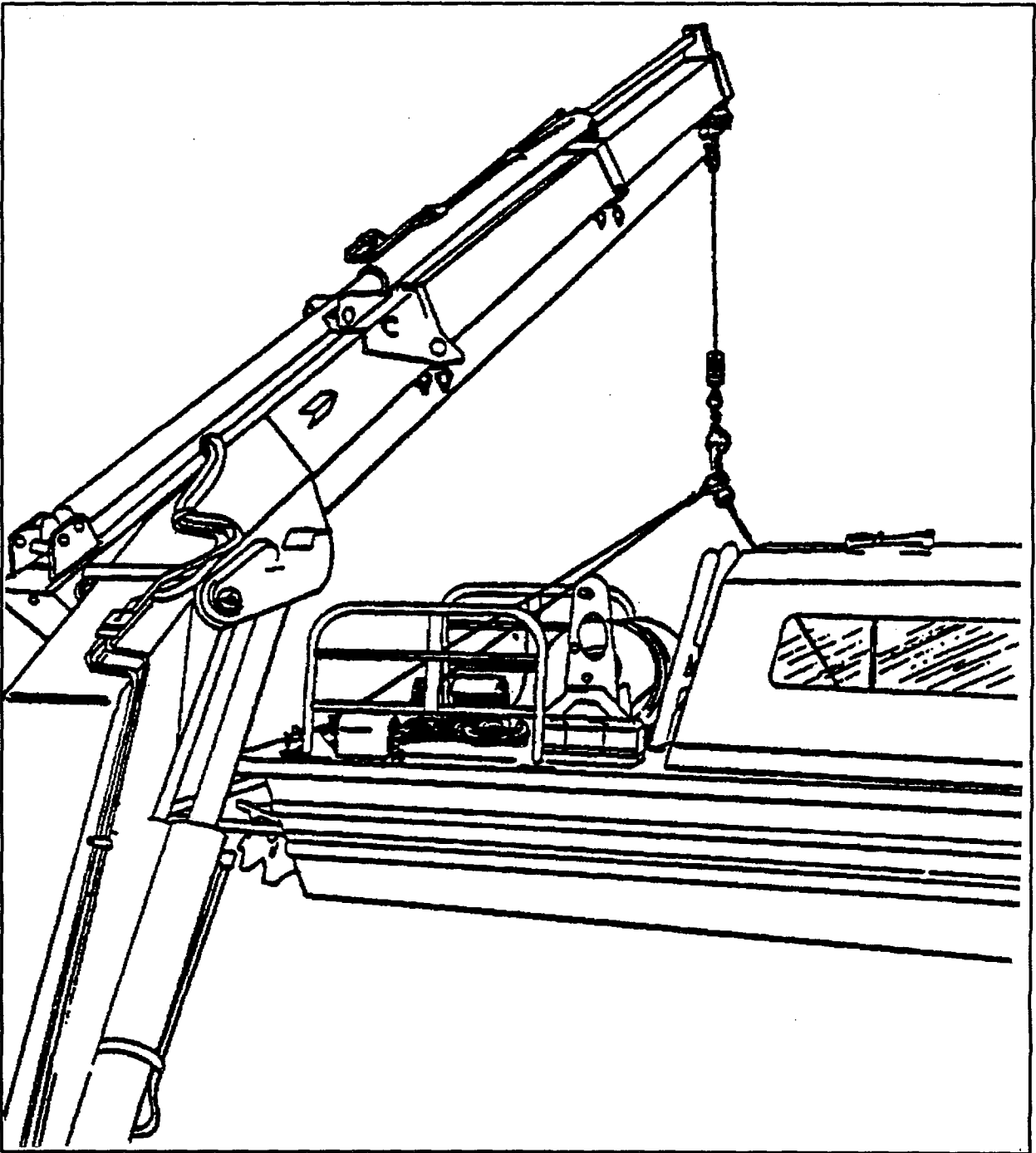


Figure 2-15. Bow Crane Lifts Workboat with Three-Point Suspension Harness

## 2-18 Operations under extreme conditions

**2-18.1 Operations in extreme heat.** This boat has been designed with oversize engine compartment vents to provide sufficient airflow for operations in tropical conditions. In temperatures above 50°F, use diesel-lubricating oil CD (MIL-L-2104), SAE 20W30, for engine and outboard drive. Other lubricating requirements do not change with changes in temperature or season.

**2-18.2 Operations in high humidity conditions.** High temperatures and high humidity combine to produce large amounts of condensation. Since diesel engines must have fuel free of water, take precautions to prevent condensation creating water in the fuel system.

- a. Refuel often and keep fuel tank as close to full as possible. However, allow space for fuel expansion due to heat.
- b. Do not allow boat to remain idle with a partially filled tank as this provides area for water condensation in the tank.
- c. When operating continuously in these conditions, change fuel filters every 100 hours instead of the normal 200-hour interval.

**2-18.3 Operations in extreme cold.** Barge and workboat will not normally be deployed to locations with ambient temperatures below freezing. However, in temperatures below 50°F, follow these procedures:

- a. Use diesel lubricating oil CD (MIL-L-2104), SAE 10W, for engine and outboard drive.
- b. Warm glow plug longer prior to starting engine.
- c. Warm engine longer before using power.

## Section III. Maintenance instructions

### 2-19 Maintenance concept

**2-19.1** Unit level and Intermediate Direct Support/Intermediate General Support (IDS/IGS) maintenance on the workboat will be performed onboard by crewmembers to the greatest extent possible.

**2-19.2** Any I DS/IGS maintenance beyond capability of crewmembers is provided by a shore-based area support maintenance unit. This unit also determines if depot support maintenance is required.

**2-19.3** Intermediate support maintenance is accomplished by replacing components or major end items.

**2-19.4** Unless other intermediate support maintenance procedures are directed, IDS/IGS maintenance normally is provided by an Army Transportation Corps floating craft intermediate support GS maintenance unit serving terminal operating area. Components to be disposed of are processed by this unit.

**2-19.5** Maintenance allocation chart for the workboat is in TM 55-1930-209-14&P-18. For maintenance of other systems onboard the barge, consult appropriate manuals.

**2-20 Preventive maintenance checks and services** See TM 55-1930-209-14&P-17, Appendix C for preventive maintenance checks and services for the workboat. See TM 55-1930-209-14&P-19 for complete preventive maintenance checks and services for all systems on the ROWPU Barge.

## 2-21 Troubleshooting

- a. For troubleshooting Volvo engine, outboard drive and engine instruments see Volvo Penta Owners Manual in Appendix B. For boat emergency procedures, see Section 5-Emergency Procedures on page 18 of the Monark Boat Company Owner's/Operator's Manual in Appendix B.
- b. For other mechanical and electrical components onboard, refer to manufacturers' instructions/fact sheets in Appendix B.

## 2-22 Maintenance instructions

### WARNING

**Turn off electrical power before performing any maintenance. Tag appropriate switches and circuit breakers with: "WARNING-DO NOT ACTIVATE. REPAIRS BEING MADE." Observe safety precautions listed in this manual and in manufacturer's instruction/manuals.**

- a. For maintenance of Volvo engine, outboard drive and engine instruments, see appropriate sections of Volvo Penta Owners Manual, Workshop Manual and Parts Manual.
- b. For other mechanical and electrical components onboard, refer to manufacturers' instructions/fact sheets in Appendix B.

## Section IV. Storage

**2-23 Short-term storage.** If barge is to be taken out of service for more than 7 days and less than 30 days, and workboat is not needed during short-term storage, follow procedures in paragraph 2-23 for stowing workboat on its cradle on the deckhouse top.

**2-24 Administrative storage.** If barge is to be taken out of service for more than 30 days but less than 6 months, barge remains a unit responsibility and shall be maintained by unit personnel.

**2-24.1 Administrative storage procedures.** If workboat is to be placed in administrative storage with barge, follow procedures in paragraph 2-17.4, with these additions:

- a. Complete all services up to and including 200 hour or Annual Services.
- b. Make sure master switch is OFF.
- c. Make sure bilge pumps are OFF.
- d. Turn battery, selector switch, at rear of engine compartment, to OFF.
- e. Disconnect both cables from both batteries and wrap ends with cloth and friction tape. Secure so they can not contact any part of battery or hull.

**2-24.2 Administrative storage inspection.** Workboat should be inspected every 60 days while in administrative storage. Check for pilferage, general deterioration and corrosion. Correct as required.

**2-25 Long-term storage.** If barge is to be taken out of service for 6 months or more, turn it in to depot for preparation and placement into long-term storage. Workboat must accompany barge.

If barge is in administrative storage and is to be taken out of service and placed in depot long-term storage (6 months or more), process barge and workboat for normal operations before releasing to depot.

### Section V. Manufacturers' manuals/instructions

**2-26 General.** Manufacturers' operation and maintenance manuals listed below provide additional information on workboat components. A ready reference copy is in Appendix B. It may be necessary to refer to these manuals and engineering drawings listed in Appendix A while performing procedures in this manual.

<u>Component</u>	<u>Document Title</u>	<u>Manufacturer</u>
Engine Model AQAD-40	Owners Manual AQAD40B/280 (Publ. No. 5174 3/1983)  Workshop Manual, engine unit (Publ. No. 77737571 5/1981) AQAD 40/280 Parts Manual Owner/Operators Manual	Volvo Penta of America P.O. Box 927 Rockleigh, NJ 07647 Ph: (201) 768-7300
Workboat Model 2308CLF		MonArk Boat Company P.O. Box 210 Monticello, AK 71655 Ph: (501) 367-5361 Telex: 783028
Workboat Steering	Installation Instructions SeaStar Hydraulic Outboard Steering	Teleflex 1650 W. 2d Avenue Vancouver, BC, Canada, V6J1H4 Ph: (654) 736-2231 Telex: 04-50 8802
Workboat Throttle/Drive Control	Morse Controls Instruction Sheet	Morse Controls Incom Internat'l., Inc. 21 Clinton Street Hudson, OH 44230 Ph: (216) 653-9161
Workboat Compass	Helmsman Compass Unit	E.S. Ritchie and Sons P.O. Box 548 Pembroke, MA 02359 Ph: (617) 826-5131
Workboat Fire Extinguisher Workboat Navigation Lights	Owners Manual for Amerex hand portable fire extinguisher The New Powerboat Lights	Amerix Corporation Trussville, AL 35173 Aqua Signal Browning Marine, Inc. 33W 48 Fabian Parkway West Chicago, IL 60185 Ph: (312) 232-6425 TWX: 9102303110
Workboat Bilge Pump Switches	Bilge Pump Switches and Kits	Rule Industries Pate and Industries Park, Gloucester, MA 01930 Ph: (617) 281-0440
Workboat Filters	Marine Diesel-Fuel Filter/Water Separators - Installation, Operation Parts and Service Data	RACOR Industries, Inc. P.O. Box 3208 Modesto, CA 95353 Ph: (209) 521-7860 Telex: 359-408

<u>Component</u>	<u>Document Title</u>	<u>Manufacturer</u>
Workboat Windshield Wiper	Installation Instructions	Tele-dynamics Division Hamilton Standard Electronics tronics Systems, Inc. 525 Virginia Dr. Ft. Washington, PA 19034
Workboat Battery	9600 Series Ignition Protected Main Battery Switches	PERKO, Inc. 16490 NW 13th Avenue Switch P.O. Box 64000-D Miami, FL 33164
Workboat Switches	Push and Pull Switches	
Workboat Switch Panel	Switch Panel	
Workboat Fuel Gauge Kit	Electric Fuel Gauge and Sending Unit	
Workboat Dome Light	Dome Light Fact Sheet	
Workboat Depthfinder Model 550	Aqua Probe Digital Depth Instrument Owner's Handbook	Aqua Meter Instrument Corp. 465 Eagle Rock Avenue Roseland, NJ 07068

**Section VI. Warranties/guarantees**

**2-27 General.** Information on warranties/guarantees for workboat components is listed below.

<u>Component</u>	<u>Manufacturer</u>	<u>Duration</u>	<u>Coverage</u>
Workboat	MonArk Boat Co. P.O. Box 210 Monticello, AK 71655 Ph: (501) 367-5361 Telex: 783028	180 days from delivery	Boat only
Engine/transmission	Volvo Penta of America PO. Box 927 Rockleigh, NJ 07647 Ph: (201) 768-7300	12 months from delivery	Parts & labor
Depthfinder	Aqua Meter Instrument Corporation	1st year from date of purchase	Free from defects in materials and workmanship. Repair or replace any electronic part, except depthfinder transducer or speedometer sender. (See warranty in Appendix B.)
		2nd and 3rd year	

## CHAPTER 3 LIFESAVING EQUIPMENT

### Section I. Description and data

**3-1 Description.** Lifesaving equipment, shown in Figure 3-1, consists of 2 liferafts, 15 type II, and 24 type V lifevests and 4 lifesaving ring buoys. This equipment, as installed onboard, is shown on drawings listed in Appendix A.

**3-1.1 Liferafts.** Two eight-person liferafts are stowed in maintenance-free containers, one on the forward weatherdeck portside and one on the aft weatherdeck portside. If barge is sinking and time allows, two people throw liferaft container overboard. Pulling on the painter/lanyard launches and inflates the liferaft. If time does not allow for manual launching, liferaft automatically launches and inflates as barge sinks.

**3-1.2 Lifevests.** Twenty-four type V and nine type II lifevests are on the barge for crewmembers and visitors. One of the type II vests is stowed under each of the nine bunks in the dayroom. Six type II lifevests are stowed in the workboat cabin under the starboard passenger benchseat. The 24 type V lifevests are stowed in a dedicated stowage bin on ROWPU space aft port bulkhead, just forward of electrical switchboard. These vests are bright orange, with PVC flotation material. "Work Vests" model are supplied for wear while doing physical work.

**3-1.3 Lifesaving ring buoys.** Four lifesaving ring buoys are located on the weatherdeck, two on each side of the deckhouse, two forward and two aft. Each is attached to a 90-foot rope and equipped with a floating marker light.

**3-2 Capabilities.** Two liferafts, with 16 lifevests, provide emergency water safety for 16 people for up to 24 hours. Four lifesaving buoys provide a more limited degree of water safety for individuals awaiting immediate rescue.

**3-3 Special limitations.** Since liferafts are not equipped with food or drinking water and do not have sails or a rudder, they are limited to providing shelter from the elements and waiting in place until rescued. Life buoys cannot sustain an injured or unconscious person in a lifesaving manner.

**3-4 Performance characteristics.** These liferafts are designed primarily to protect personnel until rescue vessels arrive. They are equipped with two small paddles for maneuvering only. Life buoys and lifevests are designed to sustain a conscious person in the water while awaiting immediate rescue, not for moving any distance while in the water.



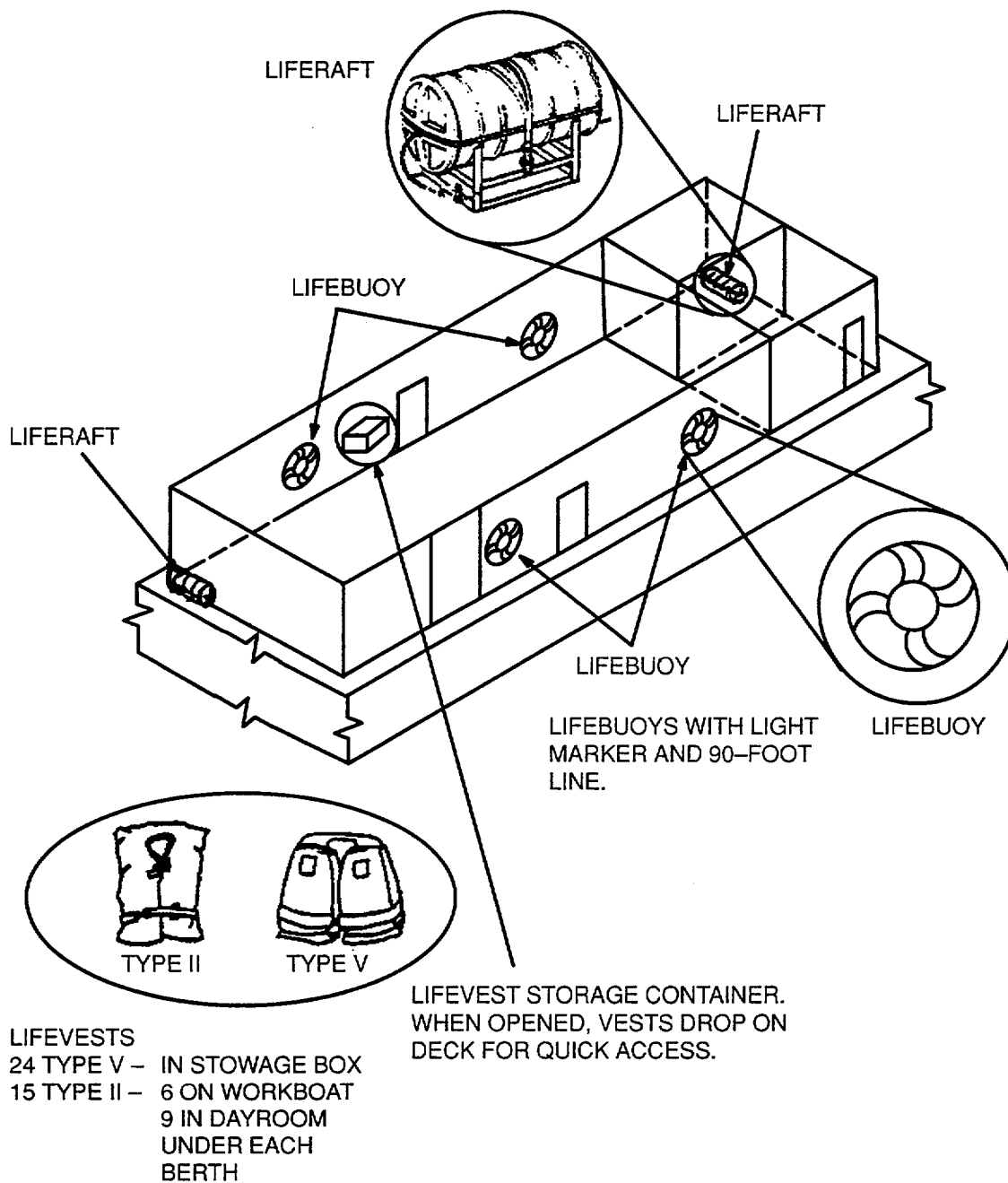


Figure 3-1. Location of Lifesaving Equipment

**3-5 Equipment specifications**

- a. Liferaft
  - Manufacturer Switlik Parachute Co., Inc.
  - CAGEC 78673
  - USCG part no. 160.051/15/0
  - Capacity 8 people
  - Size - cradle 23 in. wide by 14 1/2 in. long. 21 in. in dia.
  - Size - inflated 9 ft. long by 7 ft. 5 in. wide by 3 ft. 11 in. high (with canopy)
  - Standard equipment
    - Insulated canopy
    - Insulated inflatable floor
    - Painter/lanyard
    - CO<sub>2</sub> cylinder and head
    - Sea anchor
    - Towing bridles
    - Righting strap
    - Life lines
    - Heaving line
    - Paddles (2)
    - Automatic locator light
    - Automatic interior light
    - Rainwater storage bags
    - Rainwater catchments
    - Inflating and bilge pump
    - Leak stoppers
    - Repair kit
    - Safety plugs
    - Floating knife and sheath
  - Quantity 2
- b. Ring buoy
  - Military specification MIL-R-16847E
  - CAGEC 04356
  - USCG part no. 160.050
  - Class 2
  - Type Lifesaving ring buoy with holder
  - Size 30-in. dia.
  - Quantity 4
- c. Rope
  - Military specification MIL-R-24049A
  - CAGEC 19207
  - Type I
  - Part no. 11677925
  - Circumference 1-1/4 in.
  - Length 90 ft.
  - Material Polypropylene
  - Quantity 4
- d. Light marker, distress
  - Military specification MIL-L-24532(I)
  - CAGEC 78366
  - Type Floating, automatic with mounting bracket
  - Part no. S1161
  - Quantity 4

e. Battery, marker light	
Military specification	MIL-B-18/5C
CAGEC	81350
Part no.	BA-23
Quantity	8
f. Lifevest	
Manufacturer	Manhattan Marine & Electric Co.
CAGEC	76155
Flotation material	Unicellular PL foam
Approved	USCG
Type	V
Quantity	24
Part no.	160.053
Type	II
Part no.	160.052
Quantity	15

**3-6 Items furnished**

**3-6.1** Lifesaving components are listed on parts list in drawings listed in Appendix A and In Components of End Item List in TM 55-1930-209-14&P-20.

**3-6.2** Common and bulk items onboard are listed in Expendable Supplies and Materials List in TM 55-1930-209-14&P-20.

**3-6.3** Repair parts and special tools onboard are listed in Repair Parts and Special Tools List in TM 55-1930-209-14&P-18.

**3-7 Items required but not furnished.** All required items are furnished.

**3-8 Tools and test equipment.** Use existing tools and equipment onboard. A complete list of tools and test equipment onboard is in Tools and Test Equipment List in TM 55-1930-209-14&P-18.

**Section II. Operating instructions**

**3-9 Manual operation of eight-person liferaft**

- a. Depress hydrostatic release plunger to free tie-down straps and release container from cradle (Figure 3-2).
- b. Pull out painter/lanyard until nylon is visible and attach painter/lanyard to cradle (if not attached).
- c. Make sure messenger end of painter/lanyard is firmly secured by a crewmember or attached to barge.
- d. Position two people, one on each end, to lift container and throw it overboard.
- e. When container hits water, pull painter/lanyard with a sharp tug to activate CO<sub>2</sub> inflation system. Liferaft starts to inflate, breaks packing bands and raft is freed from container. Within 30 seconds, raft is fully inflated, ready for boarding. Lanyard/painter controls raft.

**3-10 Automatic deployment of eight-person liferaft.** As barge sinks to a depth of about 10 to 15 feet, hydrostatic pressure trips release on tie-down straps, freeing container from its cradle (see Figure 3-2). Container, still attached to the barge by the lanyard/painter, floats to the surface. The sinking barge pulls the lanyard/painter triggering the CO<sub>2</sub> inflation system. As raft starts to inflate, it breaks the packing bands and pops from its container. Within 30 seconds, raft is fully inflated and ready for boarding. As barge continues to sink, it breaks the weaklink portion of the painter/lanyard and raft floats free.

**3-11 Using life buoys.** Throw life buoys like a saucer or frisbee, horizontally with a low trajectory. When using a buoy with a line attached, throw the buoy beyond the person in the water and then pull towards them. This technique increases probability that person in the water will be able to reach the buoy or grab the line and thus reach the buoy.

### WARNING

**All crewmembers and visitors must wear lifevests while on the workboat and on the barge weatherdeck. Personnel must wear lifevests in deckhouse or voids when barge is in Sea State 3 condition.**

**3-12 Using lifevests.** Twenty-four Type V and 15 Type II lifevests are on the barge for crewmembers and visitors. The twenty-four Type V lifevests are stowed in a dedicated stowage bin in the ROWPU space, on the portside bulkhead, just forward of the electrical switchboard. The fifteen Type II lifevests are stowed in two places. Six are stowed under the seat of the workboat and nine are stowed, one under each bunk.

The barge is also supplied with workvests for use while doing physical work.

## Section III. Maintenance instructions

### 3-13 General

#### 3-13.1 Maintenance concept

**3-13.1.1** Unit level and IDS/IGS maintenance on lifesaving equipment is performed onboard by barge crew members whenever possible.

**3-13.1.2** Any IDS/IGS maintenance support beyond capability of crewmembers is provided by a shore-based area support maintenance unit. This unit also determines if depot support maintenance is required.

**3-13.1.3** Intermediate support maintenance is accomplished by replacing components or major end items.

**3-13.1.4** Unless other intermediate maintenance support procedures are directed, IDS/IGS maintenance normally is provided by an Army Transportation Corps floating craft maintenance unit serving the terminal operating area. Components to be disposed of are processed by this unit.

**3-13.1.5** The Maintenance Allocation Chart is in TM 55-1930-209-14&P-18. For maintenance on other equipment on the barge, consult appropriate manuals.

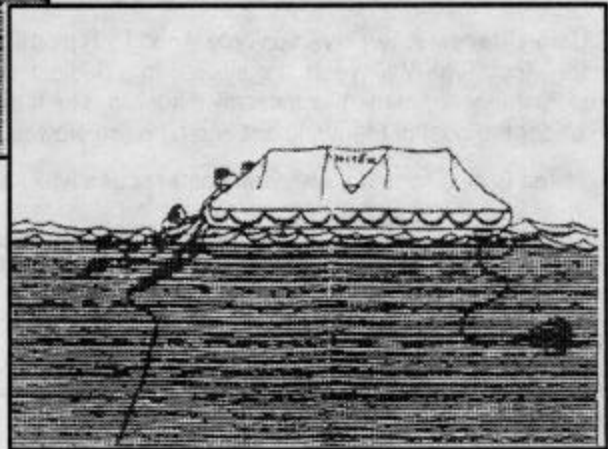
**3-13.2 Maintenance instructions.** Maintenance instructions are presented in paragraph 3-14, Preventive maintenance checks and services.

**3-14 Preventive maintenance checks and services.** See TM 55-1930-209-14&P-17, Appendix C for preventive maintenance checks and services for the lifesaving equipment. See TM 55-1930-209-14&P-19 for complete preventive maintenance checks and services for all systems on the ROWPU Barge.

**AUTOMATIC OPERATION**



After vessel sinks to depth of 10–15 ft., hydrostatic trip releases stowage case which ascends to the surface.



Raft completely inflated and ready for boarding within 30 seconds. Buoyancy of raft causes weak link to break.

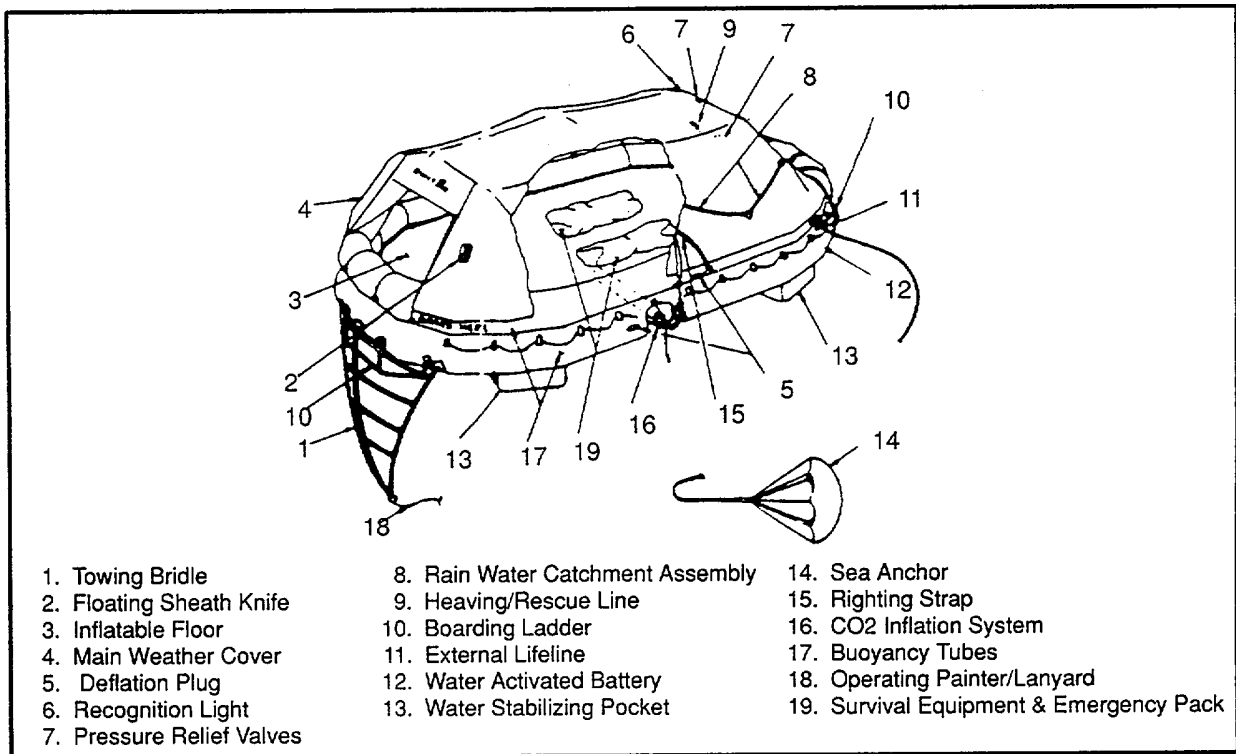
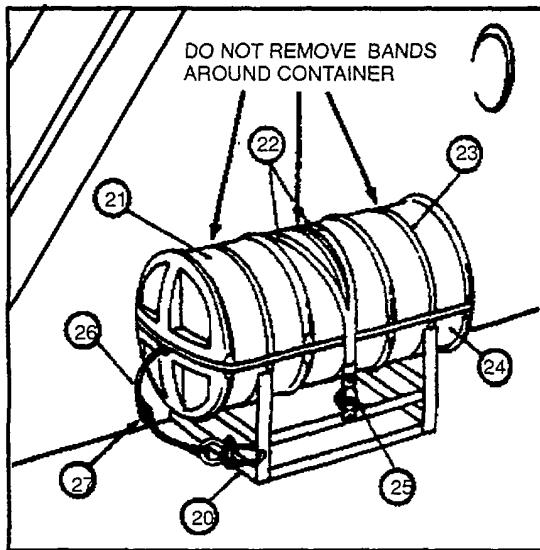
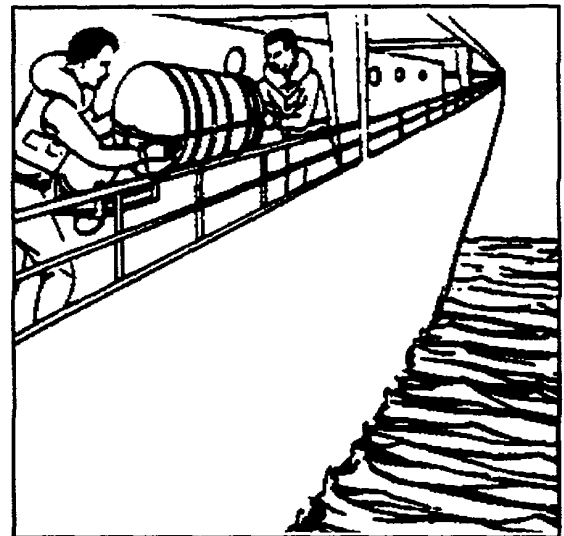


Figure 3-2. Eight-Man Liferafts - Manual and Automatic Operation (Sheet 1 of 2)

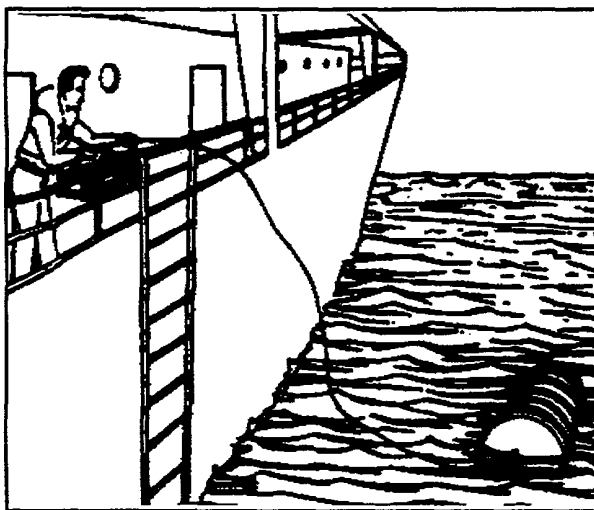
MANUAL OPERATION



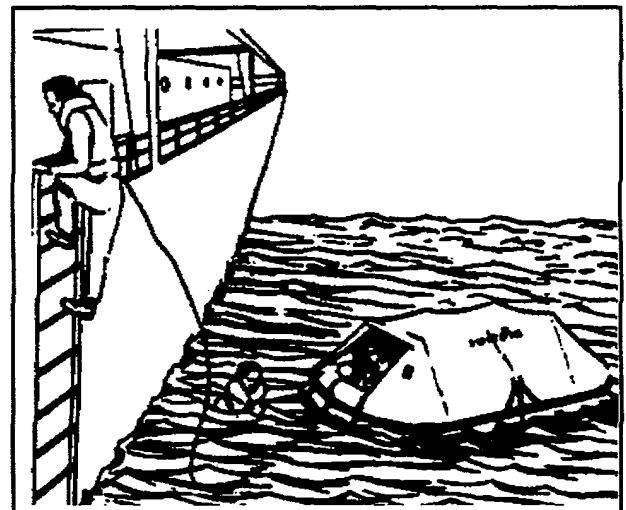
- 20. Cradle
- 21. Inflatable Life Raft (inside)
- 22. Tie-down Strap
- 23. Stainless Steel Bands (DO NOT REMOVE)
- 24. Fiberglass Container
- 25. Hydrostatic Release
- 26. Painter/Lanyard
- 27. Weak Link



- 1. Push plunger at hydrostatic release to release tie-down straps.
- 2. (LEAVE WEAK LINK ATTACHED TO SHIP). Pull out painter/lanyard until nylon shows. Attach nylon painter/lanyard to cleat provided.
- 3. DO NOT REMOVE bands around container. They will break when painter/lanyard is pulled.
- 4. Throw raft overboard.



- 1. With raft and case in water, pull operating painter/lanyard. Bands will break and raft will inflate.
- 2. Leave painter/lanyard attached to cradle.



- 1. Raft will inflate out of the container as shown.
- 2. Board raft immediately.
- 3. Remove knife from pocket on canopy.
- 4. Cut raft painter/lanyard from vessel.
- 5. Follow survival instructions inside of raft Read manuals thoroughly.

Figure 3-2. Eight-Man Liferrafts - Manual and Automatic Operation (Sheet 2 of 2)

**Section IV. Storage**

**3-15 Short-term storage.** If barge is to be taken out of service for more than 7 days and less than 30 days and lifesaving equipment is not needed during short-term storage, follow these procedures:

- a. Remove four life buoys, associated lines, and lights from exterior mountings. Remove batteries and clean battery containers. Store buoys and associated equipment in deckhouse storage.
- b. Inventory lifevests, perform weekly periodic maintenance inspection as specified in Appendix C, TM 55-1930-209-14&P-17. Make sure all lifevests, including those normally carried on workboat, are properly stowed in designated bin in deckhouse.

**3-15.1 Administrative storage.** If barge is to be taken out of service for more than 30 days but less than 6 months, barge remains a unit responsibility and shall be maintained by unit personnel. Lifesaving equipment does not require inspection during administrative storage.

**3-15.2 Administrative storage procedures.** To place lifesaving equipment in administrative storage with barge, follow procedures in paragraph 3-15, with these additions:

- a. Remove both liferaft containers from holding brackets on fore and aft weatherdeck and store inside the ROWPU space.
- b. Remove lifevests from storage bin and hang in open air within the deckhouse.
- c. Check for pilferage, general deterioration and corrosion. Correct as required.

**3-16 Long-term storage.** If barge is to be taken out of service for 6 months or more, turn it in to depot for preparation and placement into long-term storage. If barge is in administrative storage and is to be taken out of service and placed in depot long-term storage (6 months or more), process barge and lifesaving equipment for normal operations before releasing to depot.

**Section V. Warranties/guarantees**

**3-17 General.** Information on lifesaving equipment warranties/guarantees is provided below.

<u>Component</u>	<u>Manufacturer</u>	<u>Duration</u>	<u>Coverage</u>
Eight-man liferaft	Switlik Parachute Co. Marine Division 1325 E. State St. Trenton, NJ 08607 Ph: (609) 587-3300	1 year	Material & workmanship

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## CHAPTER 4 FIREFIGHTING EQUIPMENT

### Section I. Description and data

**4-1 Description.** Barge firefighting equipment consists of a Halon 1301 system, 2 CO<sub>2</sub> hose reel units, a smoke detector system, 17 portable CO<sub>2</sub> fire extinguishers, 5 dry chemical fire extinguishers, 5 self-contained breathing apparatuses, and a portable, engine-driven firefighting pump. Location of this equipment onboard is shown in Figure 4-1 and as installed, on drawings listed in Appendix A. In addition, there is a 10-pound, portable, dry chemical fire extinguisher on the workboat.

**4-1.1 Halon 1301 system.** This consists of two 312-pound capacity steel cylinders filled with Halon 1301 with weighing bar and frame (Figure 4-2), a pressure operated switch to activate sirens, safety port, discharge indicator, 20-second discharge relay, control head, stop valve, piping and nozzles. The cylinders are super pressurized under nitrogen gas to 360 psi (at 70°F). One is a spare and not hooked into active system. System also includes two remote pull boxes to manually activate the system and two pressure operated sirens. Both the active cylinder and manifold assembly and spare cylinder (Figure 4-3) are located on port bulkhead aft of switchboard. One manual operating pull is on starboard bulkhead amidships; the other is adjacent to ladder from ROWPU space into port void 4.

**4-1.2 CO<sub>2</sub> hose/reel units.** Each of these two units (Figure 4-4) consists of one hose reel and rack assembly holding 75 feet of 1/2-inch hose, a horn/valve assembly, control head, cylinder valve, and two 100-pound CO<sub>2</sub> cylinders. These are pressurized to 850 psi (at 70°F). Unlike the Halon system where one cylinder is a spare, both CO<sub>2</sub> cylinders are active and connected through a common manifold to the discharge hose and nozzle. One unit is on the ROWPU space forward bulkhead near the door to the dayroom, and the other is in the center of ROWPU space aft of the diesel high pressure pumps. Reels are mounted about 7 feet above the deck with the cylinders immediately below. Each two cylinder unit is activated by operating a control on top of the left cylinder.

**4-1.3 Marine smoke detector system.** This system has a smoke detector cabinet with display panel (Figure 4-5), on the ROWPU space forward bulkhead starboard side. It also has a suction blower cabinet on the deckhouse top, and two alarm bells: one above the detector cabinet and another in the dayroom. There are air sampling accumulators in each void, and associated pipes and tubing connect these elements. When operated, suction blower assembly on deckhouse top pulls air through air accumulators in the voids, to the smoke detector cabinet and then to suction blower assembly and into the atmosphere. As air passes through the cabinet, it passes through a lightbeam. If smoke is in the air, it scatters this lightbeam triggering a photo-electric cell which activates the system. Alarms sound in ROWPU space and dayroom. Lights on front of smoke detector cabinet indicate the space(s) in which smoke is being produced. In addition, there is an olfactory (sniffer) valve near the smoke detector cabinet. This provides a crewmember with a sample of the smoke and allows his/her human senses to analyze the smoke. This system operates on 115 Vac from the void lighting panel. It does NOT activate any firefighting equipment.

#### 4-1.4 Portable fire extinguishers

**4-1.4.1 CO<sub>2</sub> fire extinguishers.** The 17 standard 15-pound CO<sub>2</sub> extinguishers have a black dispensing horn, carrying handle and activating trigger. Because of their potential for generating toxic fumes, they are recommended for use in open, ventilated areas. They are placed primarily in the ROWPU space, workshop, and dayroom. They may be located in some of the voids. They are usually mounted on a bulkhead about 5 feet above the deck.

**4-1.4.2 Dry chemical fire extinguishers.** There are 5 standard, 10 pound, dry chemical fire extinguishers on the barge. Because they do not generate toxic fumes, they are recommended for use in close, confined spaces, such as the voids. They are normally located in the voids and mounted on a bulkhead about 5 feet above the deck. In addition, there is one 10 pound, dry chemical extinguisher in the workboat cabin.



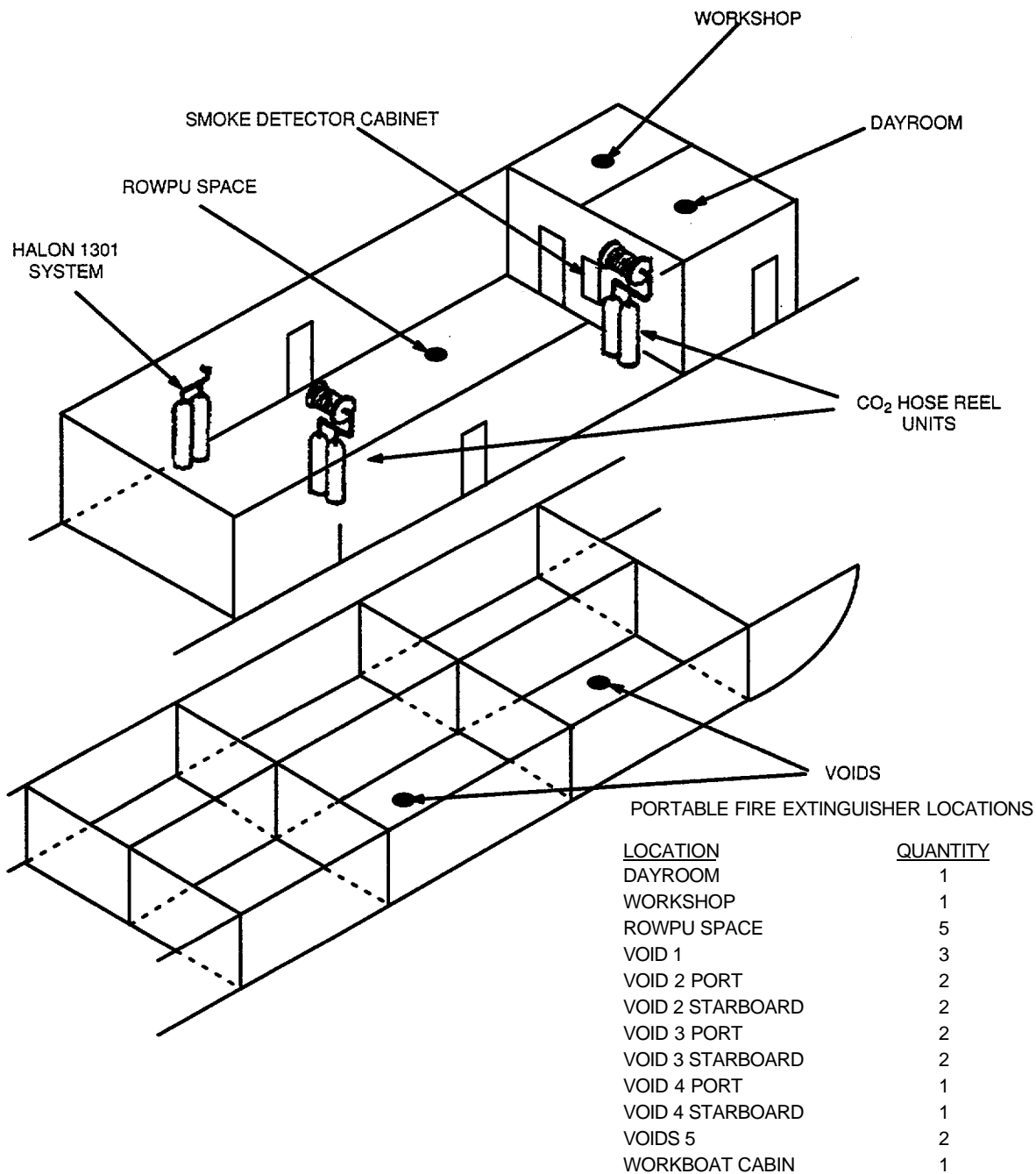
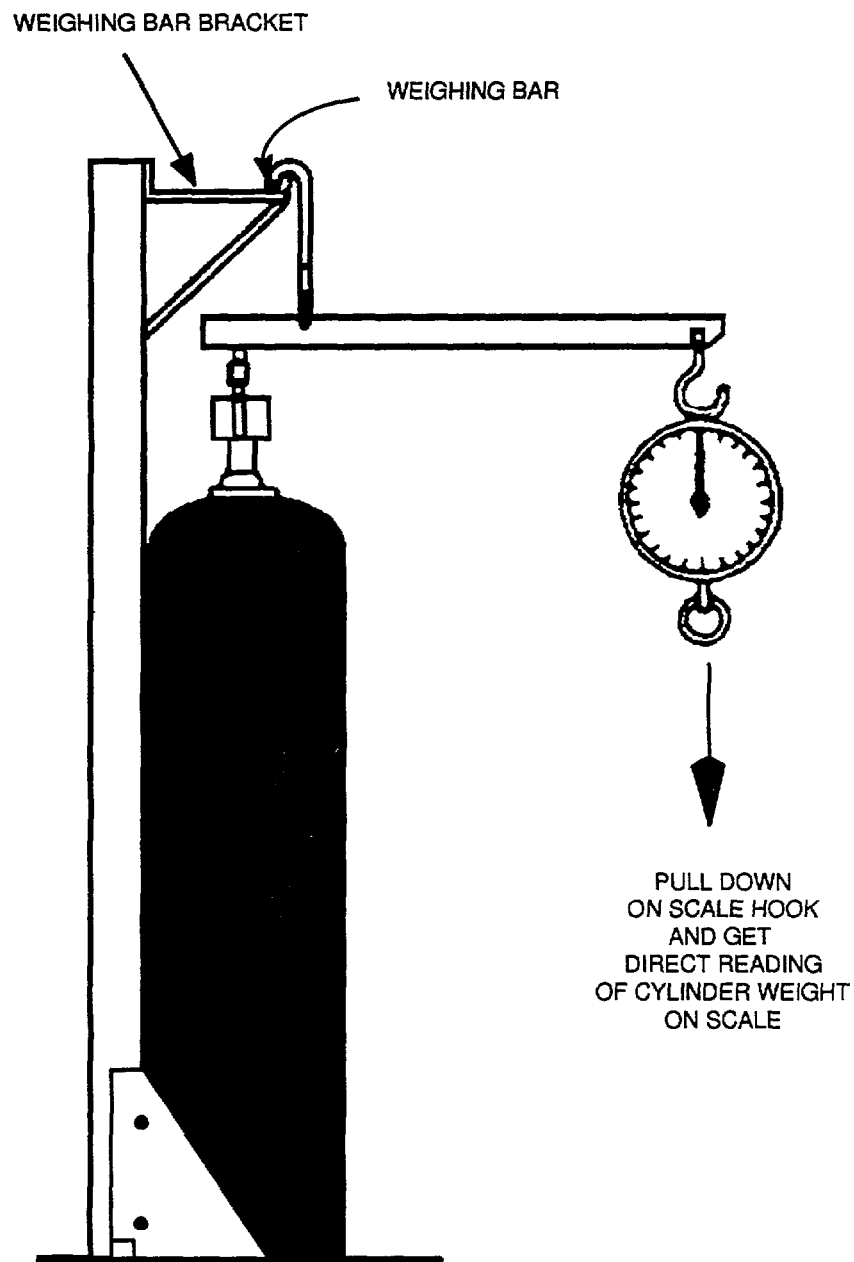
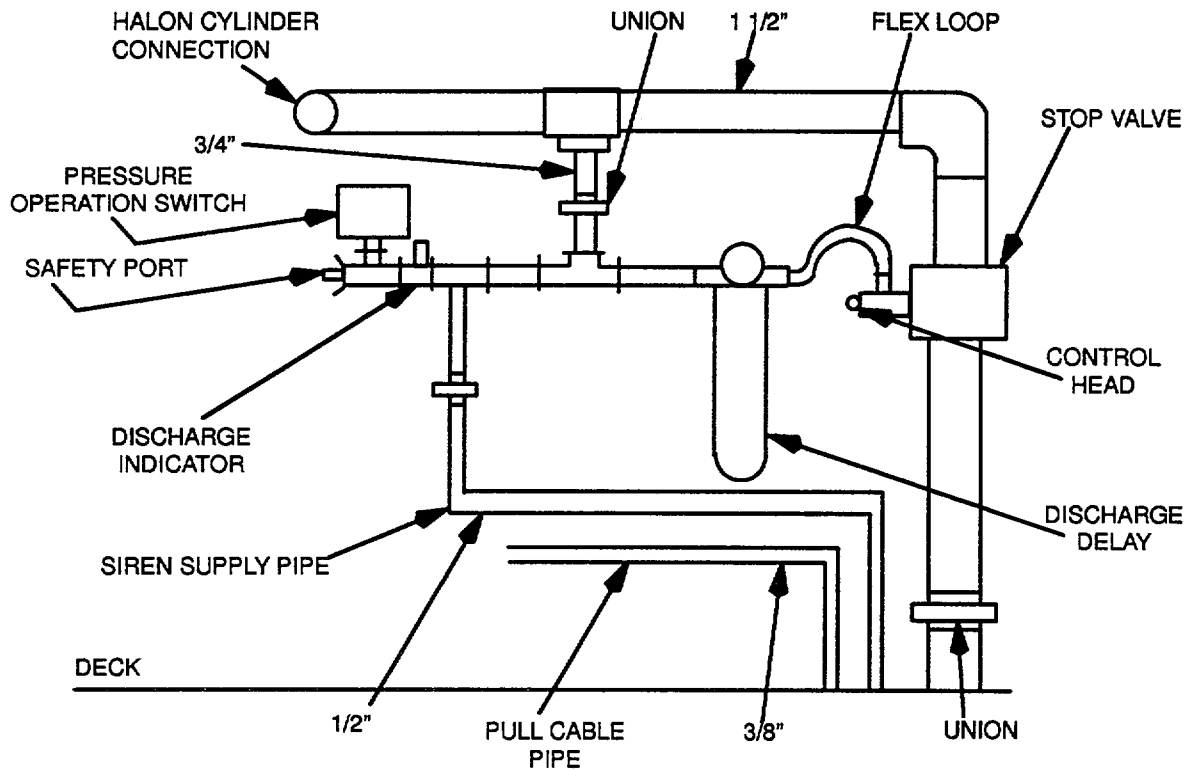


Figure 4-1. Location of Firefighting Equipment



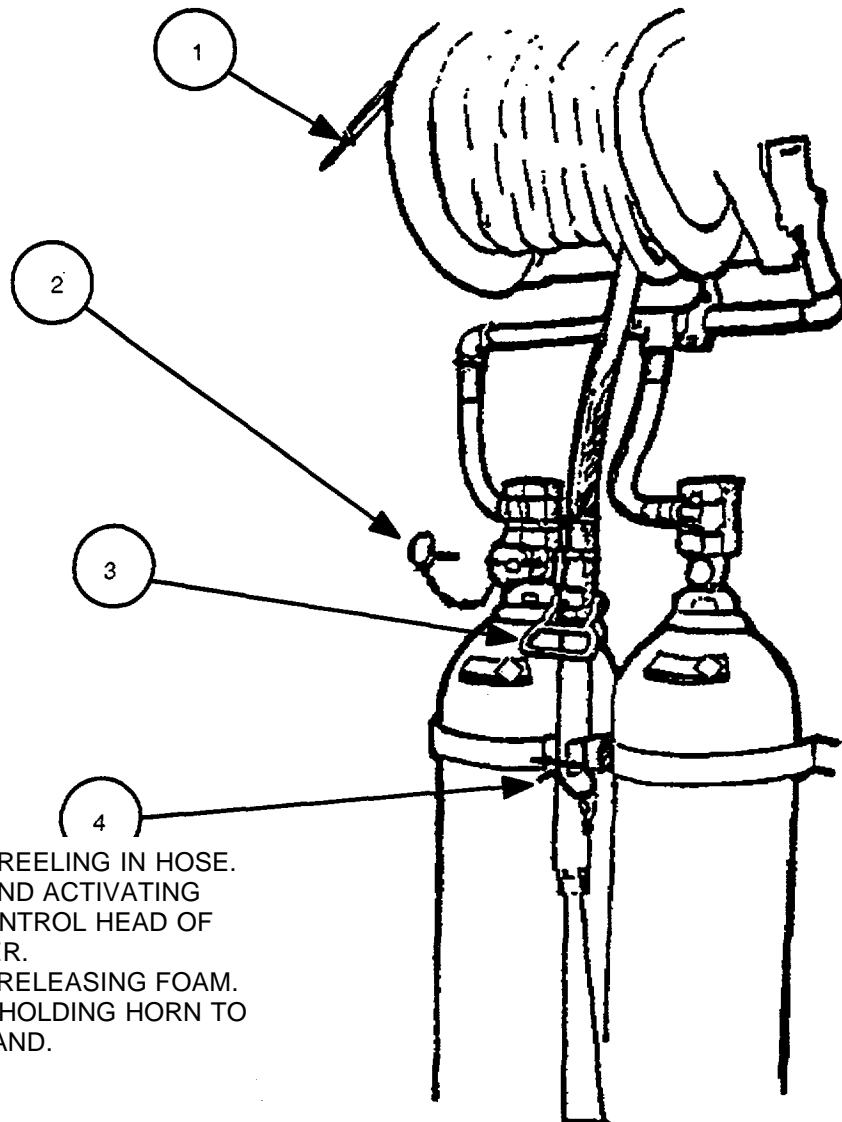
INSTALLED AFT OF SWITCHBOARD ON PORTSIDE OF ROWPU SPACE. WEIGHING BAR AND FRAME ABOVE CYLINDERS PERMITS WEIGHING OF CYLINDERS WITHOUT DISCONNECTING THEM FROM SYSTEM.

Figure 4-2. Halon 1301 System Weighing Bar



THIS DIAGRAM SHOWS CONNECTIONS FROM HALON CYLINDER CONNECTION AT UPPER LEFT, TO UNION CONNECTION ON LOWER RIGHT THAT PIPES HALON CHEMICALS TO NOZZLES IN VOIDS 4.

Figure 4-3. Sketch of Halon Manifold Assembly



1. HANDLE FOR REELING IN HOSE.
2. SAFETY PIN AND ACTIVATING LEVER ON CONTROL HEAD OF LEFT CYLINDER.
3. HANDLE FOR RELEASING FOAM.
4. RELEASE PIN HOLDING HORN TO CYLINDER STAND.

TWO CO<sub>2</sub> HOSE REEL UNITS ARE IN ROWPU SPACE; ONE ON FORWARD BULKHEAD NEXT TO DAYROOM DOOR AND THE OTHER IS CENTER OF ROWPU SPACE AFT OF ROWPU HIGH-PRESSURE PUMPS.

Figure 4-4. CO<sub>2</sub> Hose/Reel Units

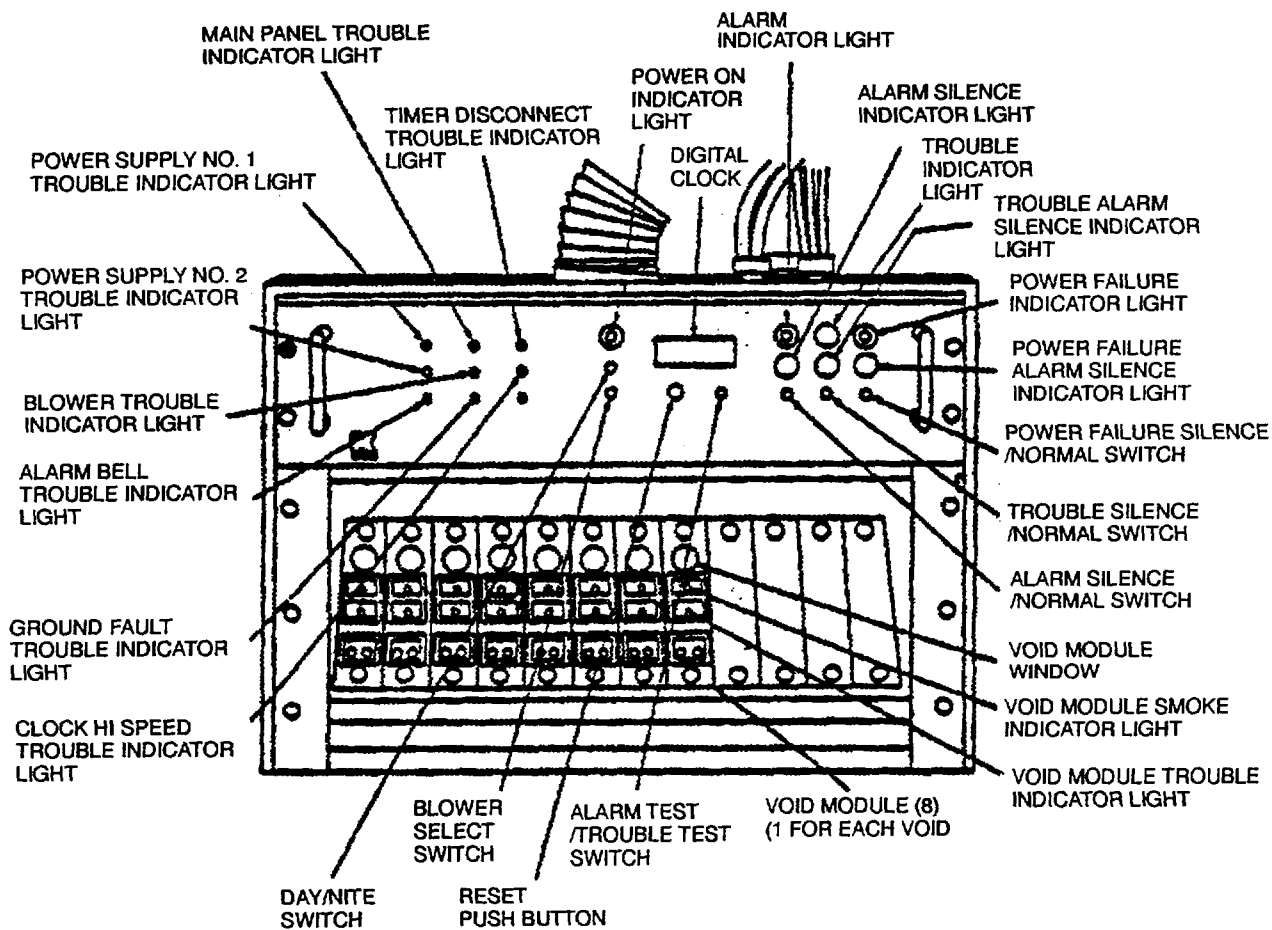


Figure 4-5. Front Panel of Marine Smoke Detector Cabinet

**4-1.5 Self-contained breathing apparatus (SCBA).** There are 5 SCBA's stored onboard in their fiberglass storage containers (Figure 4-6). Two large units, in black containers, have a 24 to 30 minute capacity. One is stored in the workshop and the other in the ROWPU space. Three small units in green containers, have a 9 to 15 minute capacity. One is stored in void 2 port, another is mounted on the side of the AC unit in the workshop and the third is mounted on the forward side of the switchboard. Each SCBA has a facepiece assembly with breathing tube, pressure demand air regulator with air hose, low pressure warning bell, air cylinder valve assembly with pressure gauge and on/off air valve, and a pressurized air tank. These items are fastened to a web harness and aluminum backboard that fit over the shoulders and support the cylinder and cylinder valve assembly on the user's back. The regulator is attached to the waist belt of the harness on the user's front left side. Although units look alike and have many interchangeable parts, they are not interchangeable. Large units can only use 30 minute tanks, and small units can only use 15 minute tanks.

**4-1.6 Portable firefighting pump, PE-250.** This US Navy issue item is a self-contained, gasoline engine driven, portable, single stage centrifugal water pump, model PE-250 (Figure 4-7). The pump is directly coupled to an axial, fan-cooled, 2 cylinder, 2 cycle gasoline engine that has a manual rope starter supplemented by a battery powered electric starter. The pump is automatically primed by a vacuum pump driven by the engine. It can be manually primed if necessary. Pump controls include throttle, choke, starter switch, prime switch and ignition switch on an engine control panel. Gauges include a pump pressure gauge and ampere gauge. The pump, engine, priming pump, starting battery and controls and indicators are mounted inside a tubular steel frame 24 inches long, 21 inches wide, and 20 inches high. This pump assembly, without fuel, weighs 159 pounds. It is secured in a special bracket aft of the ROWPU HP diesel pumps near the aft CO<sub>2</sub> hose reel unit with two quick-disconnect pins. Major accessories include three 10-foot suction hoses, a 20-foot exhaust hose, a three-way gate valve, foot valve and strainer, adapter, and fuel tank. The separate fuel tank holds 6 gallons of gasoline/oil mixture. It is secured in a special bracket with tiedown strap on the starboard forward corner of the hose reel structure on the stem weatherdeck. The hoses are stored on a special bracket in void 5 portside behind the hose reel hydraulic pump unit. Instructions for operation and maintenance of this unit are in NAVSEA S6225-EF-MMA-010/MODEL PE-250, Technical Manual, Installation, Operation, Maintenance and Repair Instructions with Parts List, Portable Fire Fighting Service Gasoline Engine Driven Centrifugal Pump Model PE-250. This is referenced in this manual as NAVSEA S6225 PE-250 manual. There are copies onboard all barges. Additional copies are available using normal technical manual requisitioning procedures.

## 4-2 Capabilities

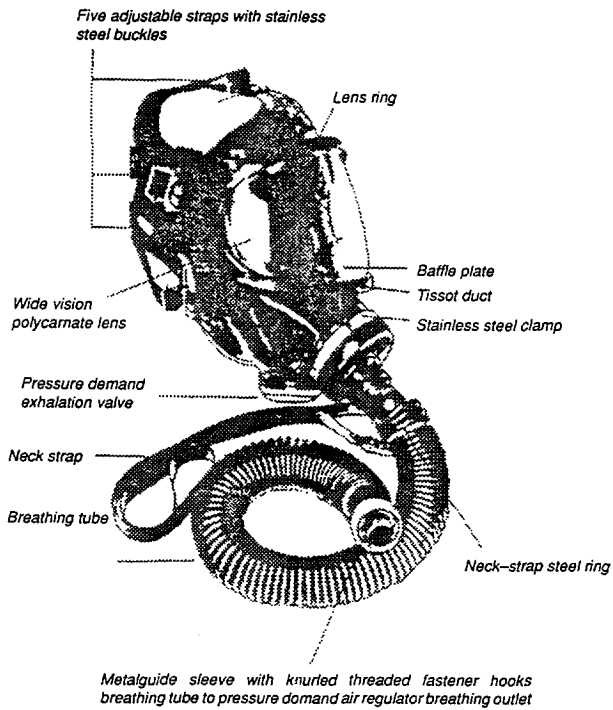
**4-2.1 Halon 1301 system.** When activated, this system suppresses all three types of fires: burning wood-type materials (cellulose) (type A), flammable liquids (type B), and electrical fires (type C). The system extinguishes fires via nozzles systematically positioned in the port and starboard voids 4, when all forced air ventilation systems are turned off and the hatches and doors are closed.

**4-2.2 CO<sub>2</sub> hose/reel units.** The CO<sub>2</sub> units, like the Halon system, are effective against fires classified as types A, B and C.

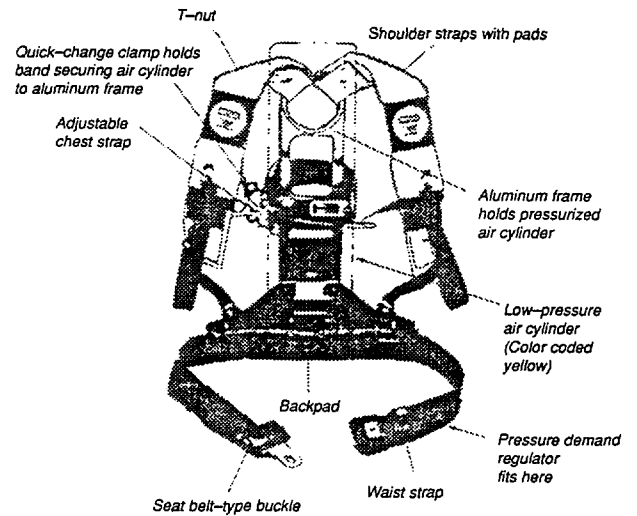
**4-2.3 Marine smoke detector system.** This system has the capability of detecting smoke in one or more voids at the same time, sounding an alarm to alert crewmembers and identifying, with a flashing panel light, which void is producing smoke.

**4-2.4 Portable fire extinguishers.** Both the CO<sub>2</sub> and the dry chemical, portable extinguishers are effective against all three types of fires: burning wood type (cellulose) materials, flammable liquids and electrical types. The CO<sub>2</sub> units are recommended for use ONLY in open, well-ventilated areas. The dry chemical units are best suited for use in close, confined areas. The amount of liquid in both types of extinguishers is very limited. Use these extinguishers quickly and aggressively to put out fires.

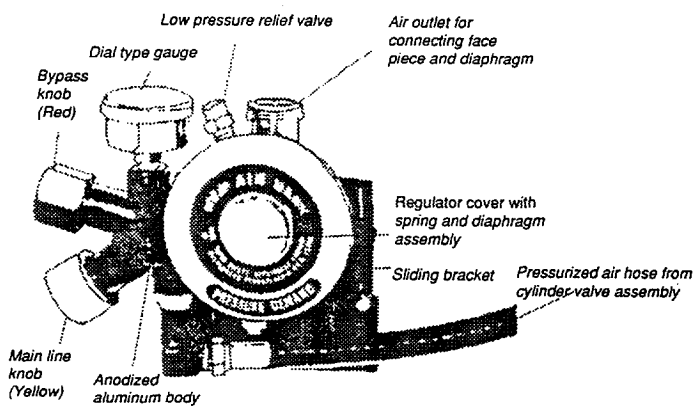
**4-2.5 Self-contained breathing apparatus (SCBA).** When properly maintained and used, these units protect the user from all smoke and toxic fumes that may be created onboard. The two large units use pressurized tanks that provide fresh air for about 24 to 30 minutes. Use them primarily for firefighting and rescue operations and when required in handling certain chemicals needed for ROWPU operations. The three small units provide air for about 9 to 15 minutes. Use them for escape from or through a compartment filled with smoke and toxic fumes.



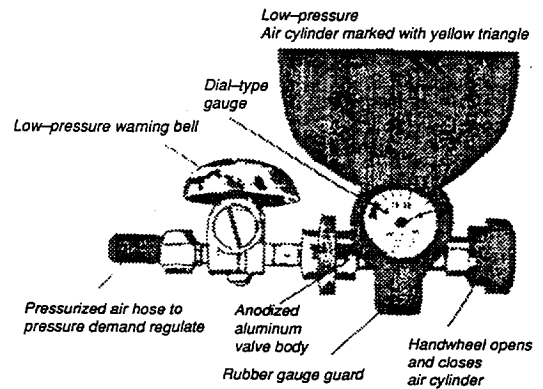
**Facepiece and Breathing Tube**



**Carrier and Harness Assembly**



**Pressure-Demand Regulator**



**Cylinder Valve Assembly**

**4-2.6 Portable firefighting pump, PE-250.** This pump draws seawater (or other water source) through an overboard suction hose and pumps it through hoses and nozzles under high pressure to fight fire. It can also pump large volumes of water at low pressure for damage control (pumping out flooded compartments) and housekeeping work. It is rated at 250 gallons per minute at 100 psi at 5,200 rpm. The water pressure and amount will vary with the height of lift from the water source to pump and the types of exhaust hoses and nozzles used.

### 4-3 Special limitations

**4-3.1 Halon 1301 system.** The Halon system in voids 4 is a total Halon flooding system. When it is activated and the voids are closed off, crewmembers should not stay in that area for more than 5 minutes. This is the recommended time length for a Halon concentration of 7 percent or less by volume as is used in this system. Staying beyond this time limit may cause your heart to beat irregularly (arrhythmia). This normally clears up when the person breathes fresh air again. Halon dispensing nozzles deliver Halon completely around the area containing the fire and normally smother the fire without making contact with the flames.

#### WARNING

**If Halon is exposed to flames or hot surfaces above 900°F, it decomposes and creates several chemicals. In heavy concentrations, these chemicals can be harmful to humans. This decomposition also produces a highly irritating, sharp, acrid odor. This odor becomes severe well in advance of any really hazardous levels of these dangerous chemicals. Smelling this irritating odor should be considered a strong warning to leave the area.**

**4-3.2 CO<sub>2</sub> system.** CO<sub>2</sub> extinguishes a fire by reducing the oxygen in the air to a point where combustion cannot exist.

#### WARNING

**When large amounts of CO<sub>2</sub> have been used in an enclosed place, the lack of oxygen is harmful to humans.**

**4-3.3 Marine smoke detector system.** This system provides smoke detection only for air in the voids. It does not sample air in the ROWPU space, workshop or dayroom.

**4-3.4 Portable fire extinguishers.** These have limited capacity, which may not be enough to put out the fire. Crewmembers fighting a fire with a portable unit must be prepared to use one of the larger systems or several of the small portable units until the fire is out.

**4-3.5 Hazardous fumes and chemicals from fires.** Fires, as they burn certain products, produce a variety of toxic materials and fumes. Among these fumes is carbon monoxide, an odorless, colorless gas fatal to humans in concentrations of 1.5 percent or greater by volume. The amount of carbon monoxide produced varies according to what material is burning and how completely it burns. Large amounts of smoke and acrid fumes are good indicators of the presence of large amounts of carbon monoxide and other toxic materials. These materials may still be present after the fire is extinguished and should be considered in cleanup operations following a major fire onboard.

**4-3.6 Self-contained breathing apparatus (SCBA).** These units, even when properly worn, are heavy and awkward and restrict the user's movement in tight spaces. They are further limited by the amount of fresh air they provide: 30 minutes for large units, 15 minutes for small units. This is further reduced by the low pressure warning bell, which sounds approximately 6 minutes before all air in the tank is exhausted. Heeding this warning bell effectively reduces operating time to about 24 to 26 minutes for large units and 9 to 11 minutes for small units. The barge does not have an onboard capacity to refill air cylinders.

**4-3.7 Portable firefighting pump, PE-250.** Pump is powered by a 2 cycle engine that requires a very careful mixture of oil and gasoline to keep it running. If mixture has too much oil, it fouls the spark plugs, clogs the muffler and loses power. If mixture does not have enough oil, the engine loses power, runs hot and may get so hot it will damage the engine. Engine use is further restricted by the amount of gasoline onboard. Normally, the pump's only fuel supply is the 6-gallon external tank stored in a special bracket on the stem starboard weatherdeck.



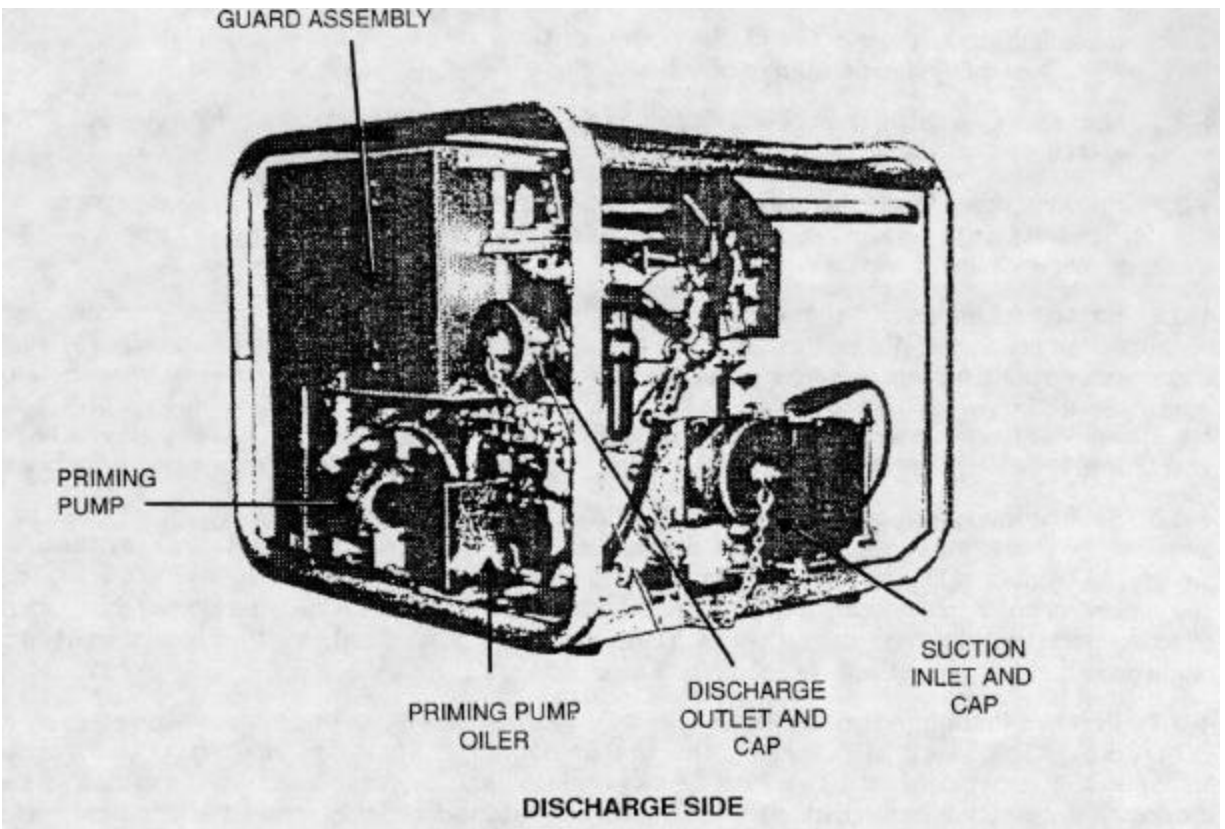
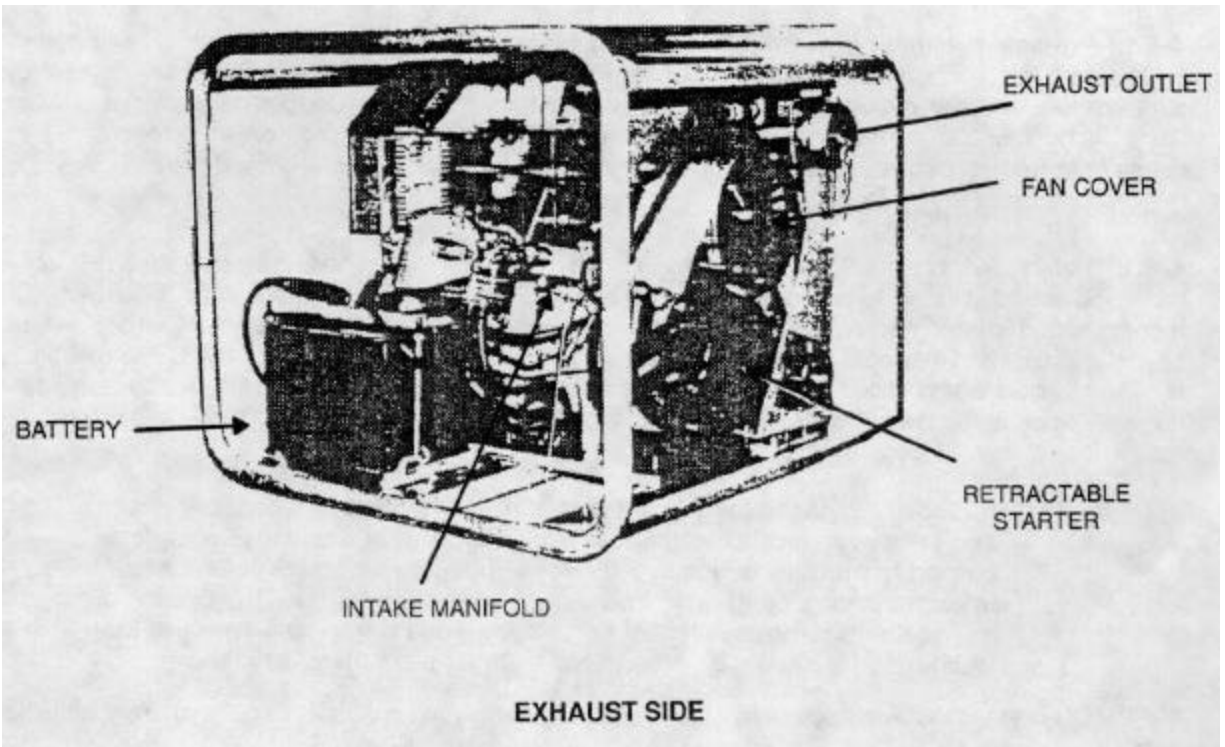


Figure 4-7. Portable Firefighting Pump, PE-250

**4-4 Equipment specifications**

**4-4.1 Halon 1301 system**

- a. System specification
  - Manufacturer Walter Kidde
  - Division of Kidde, Inc.
  - CAGEC 33525
  - Part no. Halon 1301 fire suppression
- b. Component specifications
  - (1) Pull box
    - Manufacturer Walter Kidde
    - Division of Kidde, Inc.
    - CAGEC 33525
    - Part no. 871403
    - Type Manual w/glass
    - Material Aluminum
    - Quantity 2
  - (2) Corner pulley
    - Manufacturer Walter Kidde
    - Division of Kidde, Inc.
    - CAGEC 33525
    - Part no. 803808
    - Type Watertight
    - Material Brass
    - Quantity 26
  - (3) Dual pull mechanism
    - Manufacturer Walter Kidde
    - Division of Kidde, Inc.
    - CAGEC 33525
    - Part no. 840058
    - Size 3/8 in. nominal
    - Material Brass
    - Quantity 1
  - (4) Bracket
    - Manufacturer Walter Kidde
    - Division of Kidde, inc.
    - CAGEC 33525
    - Part no. 60532
    - Material Steel
    - Quantity 2
  - (5) Siren
    - Manufacturer Walter Kidde
    - Division of Kidde, Inc.
    - CAGEC 33525
    - Part no. 981574
    - Type Pressure operated
    - Quantity 2
  - (6) Discharge indicator
    - Manufacturer Walter Kidde
    - Division of Kidde, Inc.
    - CAGEC 33525
    - Part no. 875553
    - Size 1/2 in.
    - Connection Threaded (NPT)
    - Material Aluminum
    - Quantity 1

(7) Safety outlet	
Manufacturer	Walter Kidde
	Division of Kidde, Inc.
CAGEC	33525
Part no.	844346
Size	3/4 in.
Connection	Threaded (NPT)
Material	Brass
Quantity	1
(8) Discharge relay	
Manufacturer	Walter Kidde
	Division of Kidde, Inc.
CAGEC	33525
Part no.	896677
Size	3/4 in.
Connection	Threaded (NPT)
Quantity	1
(9) Flex loop	
Manufacturer	Walter Kidde
	Division of Kidde, Inc.
CAGEC	33525
Part no.	844226
Size	3/8 in. nominal
Quantity	1
(10) Cylinder	
Manufacturer	Walter Kidde
	Division of Kidde, Inc.
CAGEC	33525
Part no.	897793
Capacity	312 lb w/valve
Material	Steel
Quantity	2
(11) Cylinder strap	
Manufacturer	Walter Kidde
	Division of Kidde, Inc.
CAGEC	33525
Part no.	281866
Material	Steel
Quantity	4
(12) Control head	
Manufacturer	Walter Kidde
	Division of Kidde, Inc.
CAGEC	33525
Part no.	870652
Type	Lever operated
Material	Brass
Quantity	1
(13) Discharge nozzle	
Manufacturer	Walter Kidde
	Division of Kidde, Inc.
CAGEC	33525
Part no.	29474463
Type	Split fan
Material	Brass
Quantity	2

(14)Wire rope cable	Walter Kidde
Manufacturer	Division of Kidde, Inc.
CAGEC	33525
Part no.	3450T24
Size	1/16 in.
Material	Galvanized steel
Quantity	As required

**4-4.2 CO<sub>2</sub> hose/reel unit**

Manufacturer	Walter Kidde, Inc.
CAGEC	Industrial and Marine Fire Protection Systems Divisions
Part no.	62142
Type	HR-1
CO <sub>2</sub> bottle weight	2 CO <sub>2</sub> bottle/hose reel
Quantity	200 lb each
	2

**4-4.3 Marine smoke detector system**

a. System specification	
Manufacturer	Walter Kidde, Inc.
CAGEC	Industrial and Marine Fire Protection Systems Divisions
Part no.	62142
Quantity	KMSD w/o repeater
	1

b. Component specifications

(1) Smoke accumulator	
Manufacturer	Walter Kidde, Inc.
CAGEC	Industrial and Marine Fire Protection Systems Divisions
Part no.	62142
Type	964008
Size	Standard
Connection	3/4 in. nominal
Material	Threaded, female
Quantity	Brass
	9

(2) Flex hose	
Supplier	McMaster-Carr Supply Co.
CAGEC	39428
Part no.	5497K23
Size	3 1/2 in. ID
Material	Teflon, neoprene coated
Quantity	As required

(3) Flex hose	
Supplier	McMaster-Carr Supply Co.
CAGEC	39428
Part no.	5497K11
Size	3/4 in. ID
Material	Teflon, neoprene coated
Quantity	As required

(4) Olfactory valve	
Manufacturer	Walter Kidde, Inc. Industrial and Marine Fire Protection Systems Divisions
CAGEC	62142
Part no.	219410
Size	3/4 in.
Connection	Threaded (NPT)
Material	Brass
Quantity	1
(5) Detector cabinet assembly	
Manufacturer	Walter Kidde, Inc. Industrial and Marine Fire Protection Systems Divisions
CAGEC	62142
Part no.	486149-08
Quantity	1
(6) Blower cabinet assembly	
Manufacturer	Walter Kidde, Inc. Industrial and Marine Fire Protection Systems Divisions
CAGEC	62142
Part no.	898649
Quantity	1

**4-4.4 Portable fire extinguisher, CO<sub>2</sub>**

Military specification	MIL-E-24269
Type	CO <sub>2</sub> w/ mounting bracket
Part no.	873752
CAGEC	99539
Weight	15 lb
Quantity	17

**4-4.5 Portable fire extinguisher, dry chemical**

Manufacturer	Walter Kidde Inc. Industrial and Marine Fire Protection Systems
CAGEC	62142
Type	Dry chemical
Part no.	40-B:C
Weight	16 lb
Quantity	5

**4-4.6 Fireman's axe**

Federal specification	GGG-A-926
CAGEC	15852
NSN	4210-00-142-4949
Type	II, pickhead
*Quantity	2

**4-4.7 Self-contained breathing apparatus in carrying case**

Manufacturer	Mine Safety Appliances Company
CAGEC	40912
Part no	M476013
Model	Ultralite Cub
Type	15 minute service
Quantity	3

**4-4.8 Self-contained breathing apparatus (SCBA)**

Manufacturer/CAGEC.	Mine Safety Appliances Company
CAGEC	40912
Part no	473652
Model	Ultralite Pressure Demand Air Mask
Type	30 minute service
Quantity	2

**4-4.9 Portable firefighting pump, PE-250**

Manufacturer	Purex Industries, Inc. Prosser-East Division (For the US Navy)
CAGEC	81884
Model	PE-250
Part no.	S6225-EF-MMA-010
Type	Centrifugal
Capacity	250 gpm @ 16 ft
Quantity	1

Additional information is in NAVSEA S6225.

**4-4.10 Smoke detector alarm bell**

Manufacturer	Henschel Corporation
CAGEC	28199
Part no.	20-162
Type	8, watertight
Rating	115 Vac, 87 decibels
Quantity	2

**4-5 Items furnished**

**4-5.1** Components installed as part of the barge are listed on the parts lists in drawings referenced in Appendix A and in the Components of End Item List in TM 55-1930-209-14&P-20.

**4-5.2** Common and bulk items are listed in the Expendable Supplies and Materials List in TM 55-1930-209-14&P-20.

**4-5.3** Repair parts and special tools onboard are listed in the Repair Parts and Special Tools List in TM 55-1930-209-14&P-18.

**4-6 Items required but not furnished.** All items required are furnished.

**4-7 Tools and test equipment.** Use existing tools and equipment. A complete list of tools and test equipment onboard is in the Tools and Test Equipment List in TM 55-1930-209-14&P-18.

**Section II. Operating instructions**

**4-8 Halon 1301 system**

**WARNING**

**Halon cylinders are pressurized, and any improper use or handling may cause serious bodily injury or equipment damage.**

There are three ways to trigger this system (Figure 4-8):

- a. Break glass and pull on red PULL handle on remote control box adjacent to ladder from ROWPU space into port void 4.
- b. Break glass and pull on red PULL handle on remote control box on starboard bulkhead amidships.

- c. Pull on safety chain on control head on top of active cylinder, on port bulkhead aft of switchboard, and then move activation handle 90° (Figure 4-9).

**NOTE**

**When one of these handles is pulled, it activates two warning horns (one on each side in voids 4), turns off voids ventilation system, and starts a 20-second delay mechanism. After this delay, Halon is automatically discharged from nozzles on ceiling of both voids 4.**

**WARNING**

**When warning horn sounds in voids, personnel must immediately:**

- (1) Close hatch between voids 4 and 3.
- (2) Leave door open between starboard and port voids 4.
- (3) Close hatch to void 5.
- (4) Evacuate the voids.

**WARNING**

**Halon system is designed to extinguish any class A, B, and C fires in voids 4 only if hatch between starboard and port voids is OPEN and hatches to voids 3 and 5 are CLOSED.**

**4-9 CO<sub>2</sub> hose/reel units**

- a. Trigger either of these two units by pulling out safety pin-ring (Figures 4-4 and 4-10) from control head and activating lever on top of master cylinder. Pull activating lever to open position.

**WARNING**

**Do not pull hose from reel by pulling on handle. Handle is used to release CO<sub>2</sub>.**

- b. Pull hairpin retainer pin near top of black nozzle horn to release nozzle horn from stored position. Hold nozzle horn and hose and pull out amount of hose necessary to reach fire. Hose is held in tension and does not free-wheel off reel.

**WARNINGS**

**If any breeze or wind is present in area of fire, persons fighting the fire MUST**

- **stay upwind (breeze on the back) from fire to stay out of fumes and oxygen-starved area created by the CO<sub>2</sub>.**

**Operator must hold nozzle horn by handle or wear thick gloves to protect**

- **hands. Flesh must not touch nozzle horn while it is discharging. If hand is wrapped around nozzle horn when it discharges CO<sub>2</sub>, the hand will freeze to horn in just a few seconds. If this happens, pour water on hand to free it from nozzle. Do not try to pull hand away; this will tear the skin and be very painful.**

- c. Get as close as possible to fire. Aim nozzle at fire and release CO<sub>2</sub> by pulling handle on base of nozzle horn.
- d. Use plenty of CO<sub>2</sub> as soon as possible on fire. Continue to blanket burning area until fire is completely smothered and out.

- e. When fire is out, reel in hose using reeling-in hose handle.
- f. Notify supporting fire marshal of requirement to recharge CO<sub>2</sub> bottles.

#### 4-10 Marine smoke detector system

##### 4-10.1 Prestart procedures

- a. Make sure smoke detector cabinets in ROWPU space and blower assembly cabinet on deckhouse top are not damaged, and air hose and electrical connections are tight and secure.
- b. Close (ON) power panel 3 circuit breaker 3P13 to supply power to void lighting panel.
- c. Close (ON) void lighting panel 3 circuit breaker 3P13-9 to supply power to smoke detector system.

#### NOTE

**Operate blower no. 1 on odd-numbered days and blower no. 2 on even days.**

- d. Supply power to smoke detector system (Figure 4-5) by setting BLOWER SELECT toggle switch to M1 or M2. Make sure green power indicator light on cabinet panel comes on.
- e. Set DAY/NITE toggle switch to DAY. If dark in ROWPU space, switch to NITE.
- f. Set following toggle switches to NORMAL:
  - (1) ALARM SILENCE/NORMAL
  - (2) TROUBLE SILENCE/NORMAL
  - (3) POWER FAILURE SILENCE/NORMAL
- g. Check all indicators and alarms by operating ALARM TEST/TROUBLE TEST switch as follows:
  - (1) Hold switch in ALARM TEST position to simulate presence of smoke in each of eight voids (Figure 4-5). Make sure red smoke indicator light on each module and red ALARM INDICATOR light come on and alarms sound in ROWPU space and dayroom.
  - (2) Release switch and push blue RESET button to silence alarms and return system to normal operation. If lights indicate trouble, troubleshoot according to paragraph 4-18.
  - (3) Hold switch in TROUBLE TEST position to simulate trouble condition. Make sure trouble buzzer on detector cabinet sounds, amber VOID MODULE TROUBLE indicator light on each of eight modules comes on and the following amber indicator lights in ZONE TROUBLES come on:
    - (a) Power supply no. 1
    - (b) Power supply no. 2
    - (c) Alarm bell
    - (d) Main panel
    - (e) Blower
    - (f) Ground fault
    - (g) Timer disconnect
    - (h) Clock HI speed
  - (4) Release switch to return system to normal operation. If lights indicate trouble, troubleshoot according to paragraph 4-18.
- h. Smoke detector system is now operational.



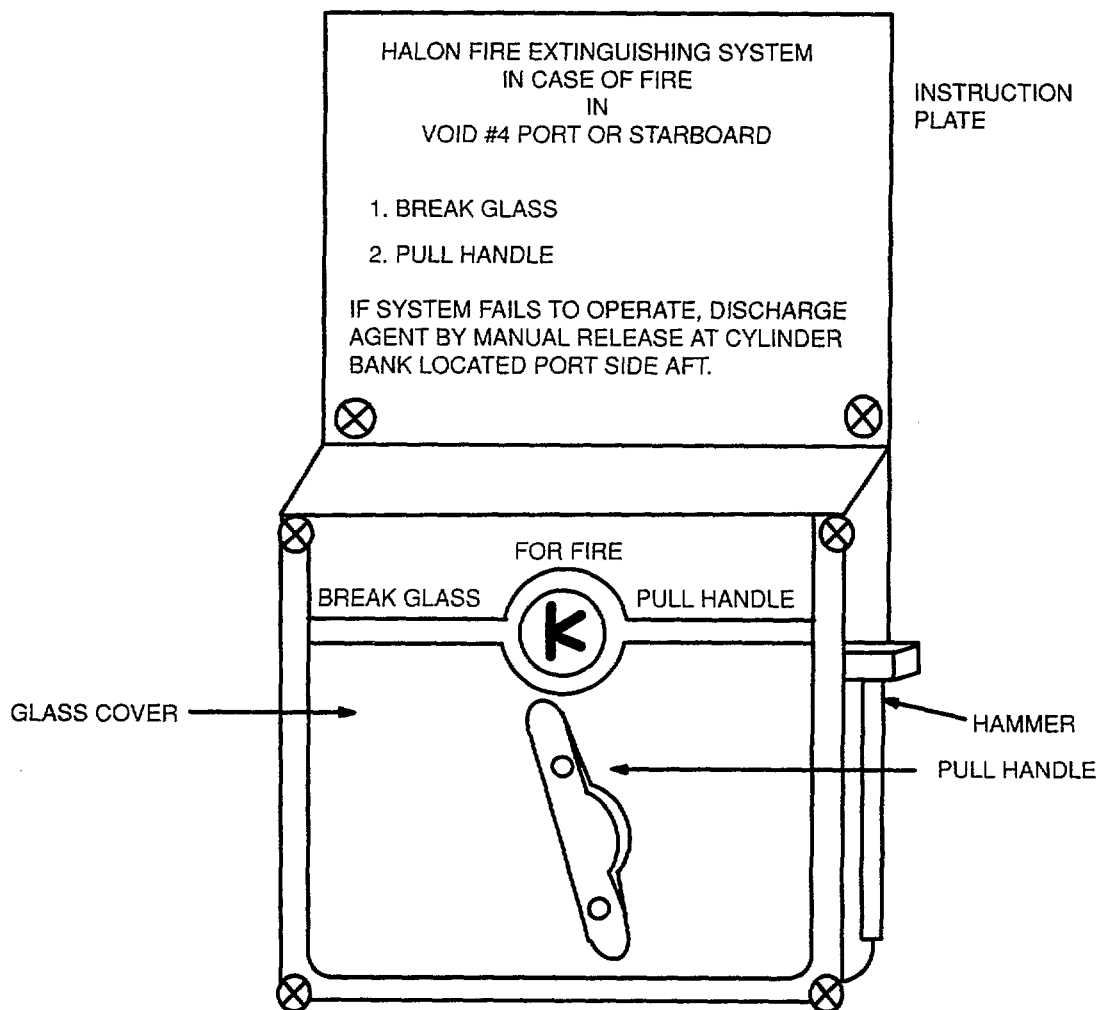


Figure 4-8. Halon System Remote Control Box

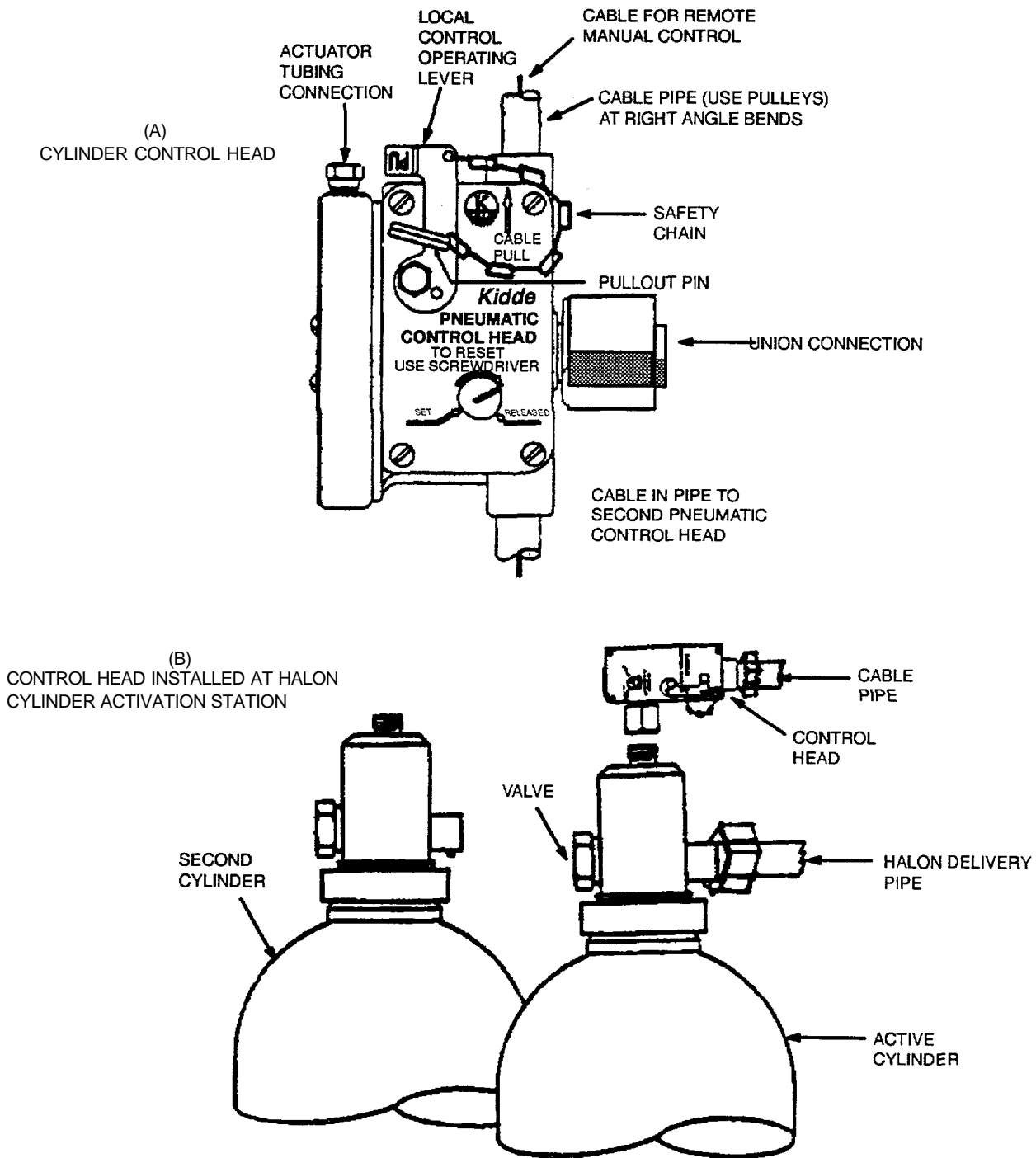


Figure 4-9. Halon System Cylinder Activation Station

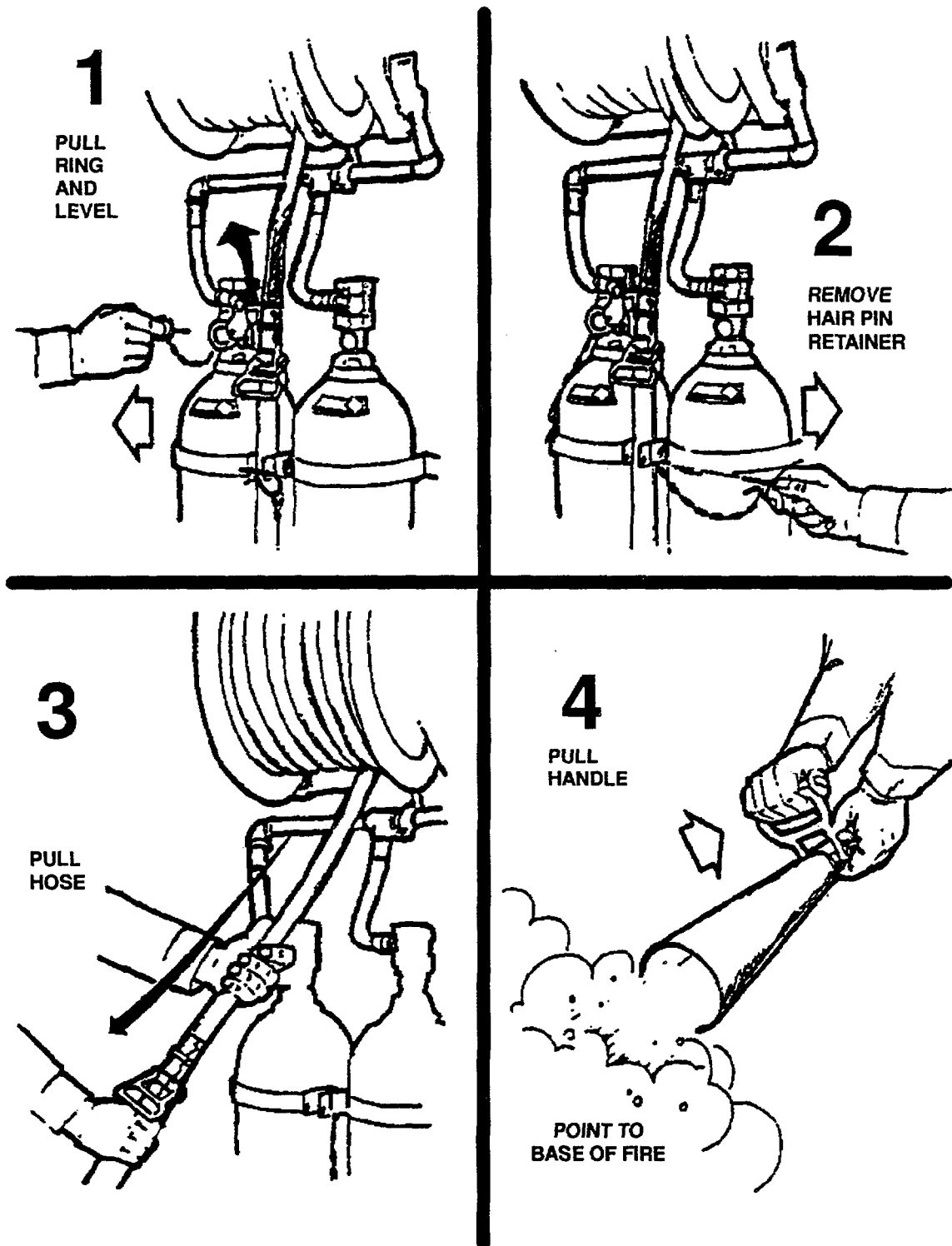


Figure 4-10. Operation of CO<sub>2</sub> Hose/Reel Unit

**4-10.2 Normal operations**

- a. Make sure flag in each of eight detection void modules shows NORMAL
- b. Make sure digital clock is operating as indicated by a flashing decimal point on numerical display.
- c. While smoke detector system is operating, periodically check indicator lights on smoke detector cabinet and listen for buzzer and alarms.

**4-10.3 Emergency procedures for smoke.** When alarms sound, indicating smoke in one or more of the voids:

- a. Check if alarms are sounding due to a problem with the alarms by observing if ALARM BELL TROUBLE indicator light in ZONE TROUBLE or any of the eight VOID MODULE TROUBLE indicator lights is on. If these lights are on, follow procedures in paragraph 4-10.4. If not on, continue with next step.
- b. Determine the location generating smoke by checking VOID MODULE window and red SMOKE indicator light of the eight void modules.
- c. Open olfactory valve and sniff air being discharged by blower to determine possible source of smoke.
- d. Activate emergency procedures as necessary. If fire is producing the smoke, use dry chemical portable fire extinguishers in the voids or activate the Halon 1301 system for fires in void 4. See paragraph 4-8 to operate Halon 1301 system and paragraph 4-11 to operate dry chemical fire extinguishers.
- e. Silence alarms by setting ALARM SILENCE/NORMAL switch to SILENCE. Both red ALARM and VOID MODULE SMOKE indicator lights go out and amber ALARM SILENCE light comes on.
- f. Observe VOID MODULE window in detection module. When air is free of smoke, push blue RESET button to reset smoke detector cabinet panel.

**NOTE**

**When panel resets, trouble buzzer on detector cabinet will sound until ALARM SILENCE/NORMAL switch is returned to NORMAL.**

- g. Set ALARM SILENCE/NORMAL switch to NORMAL. Amber SILENCE indicator light goes out.
- h. Smoke detector system is now operating normally.

**4-10.4 Emergency procedures for malfunctions.** If smoke detector cabinet trouble buzzer sounds, do the following:

- a. Make sure blue POWER FAILURE indicator light comes on.

**NOTE**

**When a power failure occurs, blue POWER FAILURE indicator lamp on smoke detector cabinet comes on and trouble buzzer indicates that one of the following has occurred: loss of main power, fuse opening or simultaneous failure of both power supply no. 1 and power supply no. 2.**

- b. Silence buzzer by setting POWER FAILURE SILENCE/NORMAL alarm switch to SILENCE.
- c. Make sure blue POWER FAILURE indicator light goes out and amber POWER FAILURE ALARM SILENCE indicator light comes on.
- d. Troubleshoot as discussed in paragraph 4-18 to determine cause of failure.

**NOTE**

**As soon as power is restored, trouble buzzer will sound.**

- e. Silence buzzer by setting POWER FAILURE SILENCE/NORMAL switch to NORMAL. Make sure amber POWER FAILURE ALARM SILENCE indicator light goes out.

- f. If power failure was only problem, smoke detector system is now operational.

**NOTE**

**When any supervised item in ZONE TROUBLE fails, amber TROUBLE indicator lights on smoke detector cabinet go on and trouble buzzer sounds. Individual amber lights in ZONE TROUBLE also come on indicating specific trouble.**

- g. soon as buzzer sounds, make sure amber TROUBLE indicator light comes on.
- h. Check the following amber indicator lights in TROUBLE ZONE to determine item causing trouble. Also check amber TROUBLE indicator light of each individual void module to determine malfunctioning module:
  - Power supply no. 1
  - Power supply no. 2
  - Alarm bell
  - Main panel
  - Blower
  - Ground fault
  - Timer disconnect
  - Clock HI speed
  - Individual void modules
- i. Silence buzzer by setting TROUBLE SILENCE/NORMAL switch to SILENCE.
- j. Make sure amber TROUBLE indicator light goes out and amber TROUBLE ALARM SILENCE indicator light comes on.

**NOTE**

**If power supply no. 1 or power supply no. 2 is source of trouble, panel automatically switches to other power supply.**

- k. Determine item causing trouble, and troubleshoot according to paragraph 4-18.

**NOTE**

**As soon as trouble is eliminated, amber indicator light in TROUBLE ZONE and TROUBLE indicator light(s) go out and trouble buzzer sounds.**

- l. Make sure amber indicator lights go out. Silence buzzer by setting TROUBLE SILENCE/NORMAL switch to NORMAL. Make sure amber TROUBLE indicator light goes out and amber TROUBLE ALARM SILENCE indicator comes on.
- m. Smoke detector system is now operational.

#### **4-11 Portable fire extinguishers**

**4-11.1 General.** Most fires, with the exception of explosions, start small and can be extinguished within 2 minutes, if attacked quickly and correctly. If fire involves fuel or electricity, turn off the source immediately.

#### **4-11.2 Dry chemical portable extinguishers**

- a. Lift extinguisher from bracket keeping extinguisher upright. Any other position affects its performance and fire may not be extinguished.
- b. Continue to hold extinguisher upright, pull safety pin and free hose and nozzle from clamp.
- c. Aim nozzle at base of fire, squeeze lever and sweep nozzle from side to side. Get as close to fire as possible. If a breeze or draft is present in area, stay upwind of fire.
- d. Slowly move closer to fire so discharge stream or cloud reaches all portions of burning area. If discharge stream from extinguisher scatters burning material, move back until this scattering action stops. (Operator too close to fire.)

- e. After fire appears to be out, watch for several more minutes for possible "flashbacks" or small recurrences of flame.
- f. Start cleanup operations immediately after fire is extinguished. Dry chemical agents from extinguisher may corrode equipment and machinery if not cleaned immediately.
- g. Immediately notify supporting fire marshal of requirement to recharge empty extinguishers.

**4-11.3 CO<sub>2</sub> portable extinguishers.** Procedures in paragraph 4-11.2 apply to use of CO<sub>2</sub> extinguishers, with these modifications:

- a. With CO<sub>2</sub>, for operator safety, it is even more important that operator stay upwind (breeze on the back) of fire.
- b. Cleanup after fire can be done with less haste since CO<sub>2</sub> chemicals are not as corrosive as dry chemicals.

## **4-12 Self-contained breathing apparatus (SCBA)**

### **4-12.1 Preparing and putting on SCBA**

#### **WARNINGS**

**All SCBA's onboard must contain an air cylinder marked with a large yellow stripe or triangle. Different SCBA's, although similar in appearance, use different types of air cylinders. Those onboard use low-pressure, natural air (not oxygen) pressured to 2216 psi when full and marked with a yellow stripe or triangle. Other SCBA's have similar cylinders pressured to 4500 psi and marked with green. If a SCBA is attached to the wrong type of cylinder, it may initially check out but could fail during use.**

**The SCBA may not provide a satisfactory face seal with certain physical characteristics such as beards or full sideburns. An improper seal around the facepiece limits the protection provided by the SCBA and the user risks death or serious bodily injury.**

- a. Remove SCBA from fiberglass storage container and make sure air cylinder is marked with large yellow triangle. Check that cylinder valve assembly pressure gauge (Figure 4-6) shows 2200 psi, indicating a full air tank. Pressure reading of 800 psi or less indicates air tank is no longer usable. Pressure reading above 1300 lbs indicates air tank may provide air for about 5 minutes before low pressure warning bell sounds.
- b. Put on SCBA by using one of these two methods:
  - (1) Over-the-head method
    - (a) Extend shoulder straps to their full length.
    - (b) Lean forward so the flat of the back is horizontal.
    - (c) With backplate facing up and cylinder control assembly nearest the operator's face, grasp the cylinder and backplate between cylinder clamp and waist belt with both hands.
    - (d) Lift SCBA straight up and over the head and place it on the shoulders. Shoulder straps should fall into place over the shoulders, and the cylinder control assembly is now in the small of the operator's back.
    - (e) Adjust straps before straightening up. Fasten waist belt tight. If further adjustment is required, lean forward until back is horizontal and make adjustments. Using chest strap is optional.

- (2) Putting-on-a-vest method
  - (a) Extend narrow shoulder straps
  - (b) Pick up SCBA by shoulder straps and put on as though putting on a vest.
- (c) Lean forward until back is horizontal and adjust straps. Fasten waist belt tight. If further adjustment is required, lean forward and make adjustments. Use chest strap if desired.
- c. On regulator on user's front left side, close bypass (red) valve on right side of regulator.
- d. On cylinder valve assembly, open valve all the way (at least three turns of knob). Reach this with right hand behind the back or have someone else open this valve. As this valve is opened, a low-pressure warning bell should ring momentarily. If this does not ring, SCBA is not serviceable. Use another SCBA.
- e. On regulator, place palm of left hand over facepiece air hose outlet on top of regulator and firmly block it to make it leakproof. Regulator is spring-loaded, and air will escape automatically if not blocked.
- f. On regulator, open main line (yellow) handwheel all the way and watch regulator pressure gauge. It should read the same as pressure noted on cylinder valve assembly gauge before putting on SCBA. If not, either cylinder valve or main line valve is not completely open and must be fully opened.
- g. On cylinder valve assembly, turn off air pressure and watch regulator gauge. Pressure reading should not change. If it does, correct the leak or use another SCBA.
- h. Again, open cylinder valve assembly valve all the way.
- i. On regulator assembly, close main line valve.
- j. Remove hand facepiece air hose outlet.
- k. Put on face mask:
  - (1) Pull out facepiece headband straps so ends are at the buckles.
  - (2) Grip the facepiece headband straps with thumbs hooked on the inside and forefingers on the outside of the straps with the opening towards the face.
  - (3) Place chin in bottom of facepiece and pull headbands over the head. Place head pad in the center of the back of the head.
  - (4) Make sure straps are flat against the head.
  - (5) First tighten lower straps by pulling back on tabs on strap ends.
  - (6) Next tighten side straps in same way.
  - (7) Place both hands on head pad and push it towards the neck.
  - (8) Adjust neck and side straps again.
  - (9) Finally adjust top strap, if necessary, to place facepiece lens in best position for viewing.
- l. Close air breathing tube by squeezing very tightly, take a deep breath and hold it for 10 seconds. Facepiece should collapse against the face and hold if facepiece is airtight. If not, adjust headband straps until facepiece fit is airtight.
- m. Exhale air to check exhaust valve. If user feels air moving across face, valve is not working. Do not use this SCBA.

### WARNING

**Facepiece must provide airtight fit before entering toxic area. Full sideburns and beards may make it very difficult to get facepiece to fit.**

- n. Connect facepiece breathing tube to regulator by inserting fitting into regulator receptacle and tightening knurled knob.

- o. On regulator, open main line valve all the way.
- p. Make final test of entire system by breathing normally. Regulator should provide air in response to normal breathing pattern.

#### 4-12.2 Using SCBA

- a. Breathe normally through the nose. Regulator responds by adjusting airflow to user's need. If heavy exertion prompts heavier breathing, regulator adjusts accordingly. However, heavier breathing uses more of the compressed air in the cylinder and shortens the time that clean air can be provided.
- b. Before entering the toxic area, know which size SCBA is being used and how much time is available on the cylinder. Plan work accordingly.
- c. When the low pressure warning bell sounds, immediately leave the toxic area and go to an area known to have clean air.

#### 4-12.3 Removing SCBA

- a. Make sure area provides clean air; no toxic gases present.
- b. Close cylinder valve on backpack.
- c. Remove breathing tube from regulator by unscrewing knurled knob and pulling tube from regulator opening. Air system vents itself automatically.
- d. Close main line (yellow) valve by turning knob until it stops.
- e. Push thumbs under headband straps on each side and pull out to loosen straps.
- f. Hold facepiece by bottom assembly and swing out, up, and over the head.
- g. Release chest strap.
- h. Release waist belt-buckle.
- i. Slip one arm out of shoulder strap and swing SCBA off the back. Place SCBA flat on hard surface, being careful not to damage valve assembly and gauge or regulator and gauge.
- j. For after-use maintenance, see Inspection after each use on page 4, MSA Inspection and Maintenance Procedures in Appendix B.

**4-13 Portable firefighting pump, PE-250.** See Chapter 2, NAVSEA S6225 PE-250 manual.

**4-14 Recovery from fire.** To reduce operational time lost due to fire, recovery is as important as extinguishing the fire. Recovery includes cleaning damaged area of toxic material, fumes and smoke; removing fire extinguishing chemical residue; cleaning damaged equipment and/or material; repairing or replacing any damaged equipment; replacing used extinguishers and cylinders; and reactivating all extinguishing systems.

- a. For general fires, clean the air in the affected area of toxic material, smoke, and fumes. If all ventilation systems were turned off, and they remain operational, turn on ventilation systems immediately. Open doors and hatches to maximize ventilation.

#### NOTE

**If a fire occurred in void 4, a Halon system pressure switch automatically turned off the ventilation system. Reset the pressure switch so ventilation system can operate. Refer to operation of Halon system, paragraph 4-8.**

- b. For a fire in Void 4, turn on void 4 ventilation system for at least 15 minutes before entering the burned area without protective breathing apparatus.
- c. If area must be entered immediately, wear appropriate protective clothing and use a self-contained breathing apparatus. DO NOT use a filter type or canister mask.



- d. Wear protective clothing and approved breathing apparatus. Establish all possible ventilation, then flush away chemical residue using fresh water hoses. Flush residue into drains and pump into sludge tank if possible.
- e. When area has been thoroughly cleaned of smoke, fumes, and chemical residue, clean and/or remove of damaged material and equipment. For this phase, consult operator and technical manuals applicable to the damaged equipment.
- f. Notify the supporting fire Marshall of the requirement to recharge used CO<sub>2</sub>, dry chemical or Halon 1301 extinguisher cylinders. If necessary, replace used Halon 1301 cylinder with full cylinder at the activation station and reset Halon system for normal operation.

**4-15 Operations under extreme conditions.** Firefighting equipment onboard is not affected by conditions of excessive temperature or humidity.

### **Section III. Maintenance instructions**

#### **4-16 General**

##### **4-16.1 Maintenance concept**

**4-16.1.1** Unit level IDS/IGS maintenance on firefighting equipment is performed onboard by barge crewmembers whenever possible.

**4-16.1.2** Any IDS/IGS maintenance beyond the crewmember capability is provided by a shore-based area support maintenance unit. This unit also determines if depot support maintenance is required.

**4-16.1.3** Intermediate support maintenance is accomplished by replacing components or major end items.

**4-16.1.4** Unless other intermediate support maintenance procedures are directed, IDS/IGS maintenance normally is provided by an Army Transportation Corps floating craft intermediate support maintenance unit serving terminal operating area. Components to be disposed of are processed by this unit.

**4-16.1.5** Maintenance Allocation Chart is in TM 55-1930-209-14&P-18. For maintenance on other equipment on the barge, consult appropriate manual.

**4-16.2 Maintenance instructions.** Maintenance instructions are presented in paragraphs that follow: paragraph Appendix C, Preventive maintenance checks and services; Appendix C, Periodic checks and services; paragraph 4-18, Troubleshooting; and paragraph 4-19, Maintenance instructions.

**4-17 Preventive maintenance checks and services.** Since firefighting equipment is used only in emergencies where quick reaction time is essential, preventive maintenance is incorporated into periodic checks and services. See TM 55-1930-209-14&P-17, Appendix C for preventive maintenance checks and services for firefighting equipment. See TM 55-1930-209-14&P-19 for complete preventive maintenance checks and services for all systems on the ROWPU Barge.

#### **4-18 Troubleshooting**

- a. Troubleshooting procedures for firefighting equipment and smoke detection system, when applicable, have been incorporated into periodic checks and services in TM 55-1930-209-14&P-19 or are available in applicable manufacturer's manuals in Appendix B.
- b. Troubleshooting procedures for the PE-250 pump are in Chapter 5, NAVSEA S6225.

**4-19 Maintenance procedures.** Maintenance procedures for firefighting equipment have been incorporated into periodic checks and services in TM 55-1930-209-14&P-17, Appendix C and/or are available in applicable manufacturers' manuals in Appendix B.

- a. Portable firefighting pump, PE-250. Maintenance procedures are in Chapters 6 and 7, NAVSEA S6225.
- b. Smoke detector-system. Maintenance consists of replacing smoke detector module, blower cabinet, detector cabinet, lamps, fuses, or relays.
  - (1) To replace fuses, lamps, and relays, remove front panel on smoke detector cabinet. Remove faulty element and install new one. Replace front panel and verify that trouble indicator no longer lights.
  - (2) To replace smoke detector module, detector cabinet or blower cabinet, refer to both installation drawings referenced in Appendix A and manufacturer's maintenance manuals in Appendix B. Make sure all power is off to the system. Disconnect wiring and airhose, remove mounting hardware and remove malfunctioning item. Reverse procedures to install new item and verify that trouble indicator no longer lights.

#### **Section IV. Storage**

**4-20 Short-term storage.** If barge is taken out of service for more than 7 days but less than 30 days, firefighting equipment does not require any special storage procedures.

**4-21 Administrative storage.** If barge is taken out of service for more than 30 days but less than 6 months, barge remains a unit responsibility and shall be maintained by unit personnel.

**4-21.1 Administrative storage procedures.** If placed in administrative storage and firefighting equipment is not required, process it for storage as follows:

- a. Perform next scheduled inspections and services as required in TM 55-1930-209-14&P-17, Appendix C.
- b. Store all portable fire extinguishers in central location in ROWPU space.

**4-22 Long-term storage.** If barge is taken out of service for 6 months or more, turn it in to depot for preparation and placement into long-term storage. If barge is in administrative storage and is to be taken out of service and placed in depot long-term storage (6 months or more), check firefighting equipment for normal operation before releasing to depot.

**Section V. Manufacturers' service manuals/instructions**

**4-23 General.** Manufacturers' service manuals/instructions listed below, provide additional information on firefighting equipment. A copy of each manual/instructions is in Appendix B. It may be necessary to refer to both the manual/instructions and drawings listed in Appendix A, while performing procedures in the manual/instructions.

<u>Component</u>	<u>Document Title</u>	<u>Manufacturer</u>
Halon 1301	K-7120, Operation & Maintenance Manual Kidde Halon 1301 Systems Wake Forest, NC 27587	Walter Kidde Division of Kidde, Inc. Walter Kidde Drive
CO <sub>2</sub> Hose/Reel Unit	F-40571, Instruction Manual	
Smoke Detector	F-41775C, Instructions for Operation and Maintenance	
SCBA's	Air Cub Breathing Apparatus Instruction Sheet Air Mask Pressure Demand Type Instruction Sheet  Ultralite Cub Apparatus Parts List  Ultralite Air Mask Parts List  Inspection and Maintenance Procedures and Checklist  Air Mask Maintenance Safety Precautions  Pressure Demand Exhalation Valves	Mine Safety Appliances Company Pittsburgh, PA 15208
Pump, PE-250	NAVSEA S6225	US Navy

**Section VI. Warranties/guarantees**

**4-24 General.** Information on firefighting equipment warranties and/or guarantees is supplied below:

<u>Component</u>	<u>Manufacturer</u>	<u>Duration</u>	<u>Coverage</u>
Halon 1301	Walter Kidde	12 months	Faulty labor & material
CO <sub>2</sub> Hose Reel	Walter Kidde	12 months	Faulty labor & material
Smoke Detector	Walter Kidde	12 months	Faulty labor & material
SCBA's	Mine Safety Appliances Co.	90 days	Faulty labor & material
Pump, PE-250	Government furnished equipment (GFE) supplied by US Navy		

**APPENDIX A**

**REFERENCES**

**A-1 Drawings**

US Army Belvoir Research, Development and Engineering Center (97403)

13226E1914	Miscellaneous Foundations
13226E1915	Life Saving/Fire Extinguishing Equipment
13226E1047	Smoke Detector System
13226E1948	Halon System

**A-2 Fire Protection**

TB 5-4200-200-10 Hand Portable Fire Extinguishers Approved by Army Users

**A-3 Demolition to Prevent Enemy Use**

TM 750-244-3 Procedures for Destruction of Equipment to Prevent Enemy Use

**A-4 Maintenance**

DA PAM 738-750 The Army Maintenance Management System (TAMMS)

TB 43-0144 Painting of Vessels

NAVESEA S6225-EF-MMA-010/MODEL PE-250

Installation, Operation, Maintenance and Repair Instructions with Parts List:  
Portable Fire Fighting Service Gasoline Engine Driven Centrifugal Pump PE-250

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**APPENDIX B**  
**MANUFACTURERS' SERVICE MANUAL/INSTRUCTIONS**

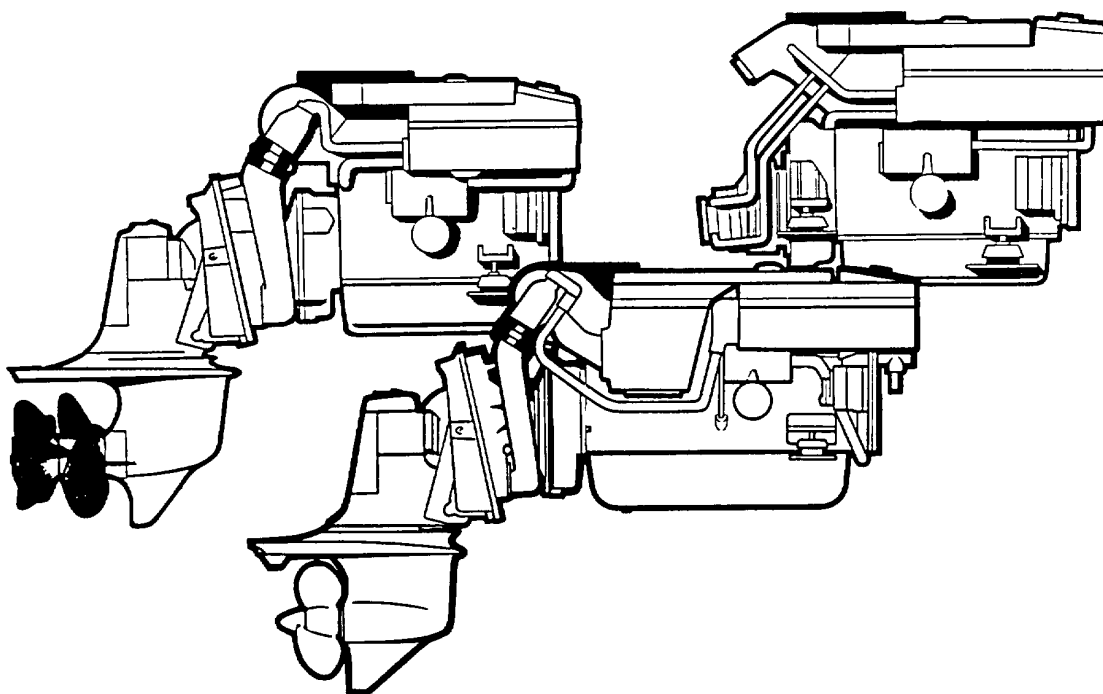
<u>Component</u>	<u>Document title</u>	<u>Manufacturer</u>
Marine Engine	Owner's Manual Publ. No. 5174 3/1983	Volvo Penta
Engine	Parts Manual AQAD 40/280 Publ. 2382	Volvo Penta
Workboat	Owner's/Operator's Manual	Monarch Boat Company
Hydraulic Outboard Steering	Installation instructions	SeaStar
Powerboat Lights	Safety and Instructions	Aqua Signal
Bilge Pump Switches and Kits	Instructions	Mayfair
Marine Diesel-fuel filter/ Water Separators	Installation, Operation, Parts, and Service Data	Racor Industries
Main Battery Switches	Manual	Perko, Inc.
Digital Depth Instrument	Owner's handbook	Aqua Meter
Life Rafts	Owner's Manual and Specifications	Switlik Parachute Co, Inc.
ROWPU Barge	Operation and Maintenance Manual	Paxton Company
Hose Reel and Hose Rack Systems	Instruction Manual	Walter Kidde
Smoke Detector	Instructions for Operation and Maintenance	Walter Kidde
Breathing Apparatus	Instructions for Use and Maintenance	Mine Safety Appliances, Co.
Air Mask	Instructions for Use and Maintenance	Mine Safety Appliances, Co.
Breathing Apparatus	Parts List	Mine Safety Appliances, Co.
Air Mask	Parts List	Mine Safety Appliances, Co.
Air Mask	Inspection and Maintenance Procedure	Mine Safety Appliances, Co.

Publ. no 5313  
5/1984

**OWNER'S MANUAL  
BETRIEBSANLEITUNG  
MANUEL D'INSTRUCTIONS  
LIBRO DE INSTRUCCIONES  
MANUALE ISTRUZIONI  
INSTRUKTIONSBOK**

MD30, MD40

AQAD30/DP, MD30/MS2, TMD30/MS3C, TAMD30/MS3C  
AQAD40/290,DP, TMD40/MS3C, TAMD40/MS3C



**VOLVO  
PENTA**

## FOREWORD

A warranty certificate is supplied with each new engine.

Included in the warranty certificate is a delivery card which is to be completed by the dealer or boat seller and forwarded to Volvo Penta.

A new engine must be run-in with due care during the first 20 hours of operation.

Change the oil and oil filter after the engine has been run for 20–50 hours.

## VORWORT

*Jedem Motor wird ein kundendienstheft beigelegt.*

*Das Kundendienstheft hat eine Lieferungskarte, die von der Vertretung oder vom Bootverkäufer ausgefüllt und an Volvo Penta weitergeleitet wird.*

*Ein neuer Bootsmotor erfordert vorsichtiges Einfahren während der ersten 20 Betriebsstunden.*

*Nach 20–50 Betriebsstunden ist der Schmieröl in Motor und Ölfilter zu wechseln.*

## AVANT-PROPOS

Tous les moteurs sont accompagnés à la livraison d'un carnet d'entretien.

Le carnet d'entretien contient une fiche de livraison, qui doit être transmise à Volvo Penta, après avoir été remplie par le concessionnaire ou par le vendeur du bateau.

Un moteur marin neuf exige un rodage prudent durant les 20 premières heures de service.

L'huile moteur et le filtre à huile doivent être remplacés après 20–50 heures de service.

## PREFAZIONE

*Ogni motore è accompagnato da un libretto di garanzia.*

*I termini della garanzia sono specificati nel libretto stesso che vi consigliamo di leggere attentamente.*

*Un motore marino nuovo deve essere rodato con cura durante le prime 20 ore di funzionamento.*

*Sostituire l'olio ed il relativo filtro dopo la prime 20–50 ore di motor.*

## INTRODUCCION

Cada motor es suministrado con un cuaderno de servicio que incluye una tarjeta de informe, que debe ser llenada por el concesionario, o por el vendedor de la embarcación, para ser enviada a Volvo Penta. Un motor marino nuevo exige un rodaje cuidadoso durante las primeras 20 horas de funcionamiento. Después de 20–50 horas de funcionamiento, debe cambiarse el aceite lubricante del motor y el filtro.

## FÖRORD

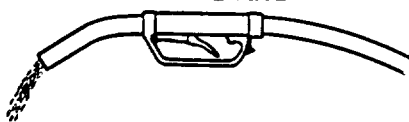
*Med varje motor följer ett servicehefte.*

*Serviceheftet har leveranskort, som skall ifyllas av återförsäljaren eller båtförsäljaren och vidarebefordras till den lokala Volvo Penta representanten.*

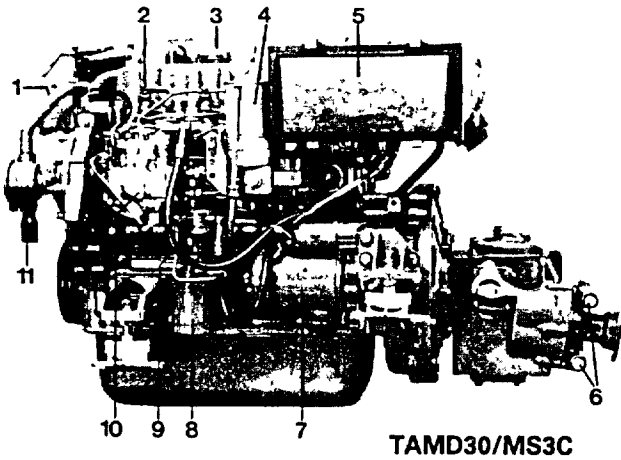
*En ny motor fordrar en försiktig inkörning under de första 20 drifttimmarna.*

*Efter 20–50 timmars driftstid skall motorns smörjolja samt oljefilter bytas.*

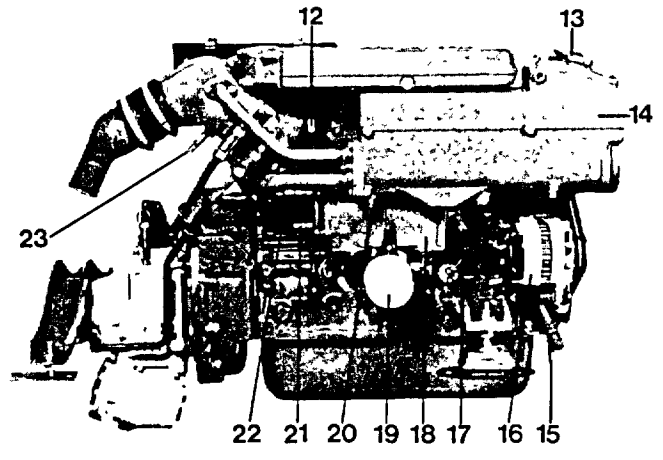
**DIESEL**



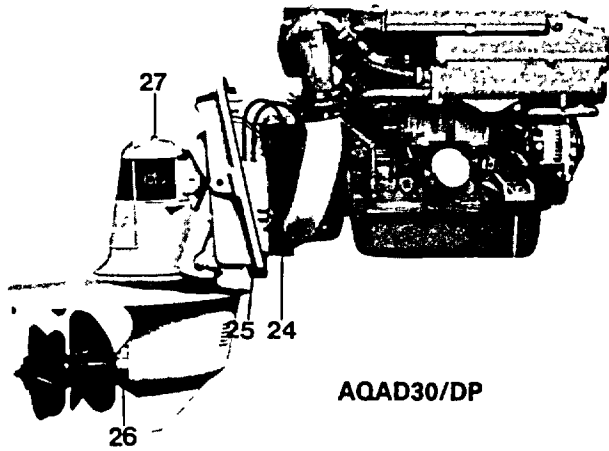
# MD30



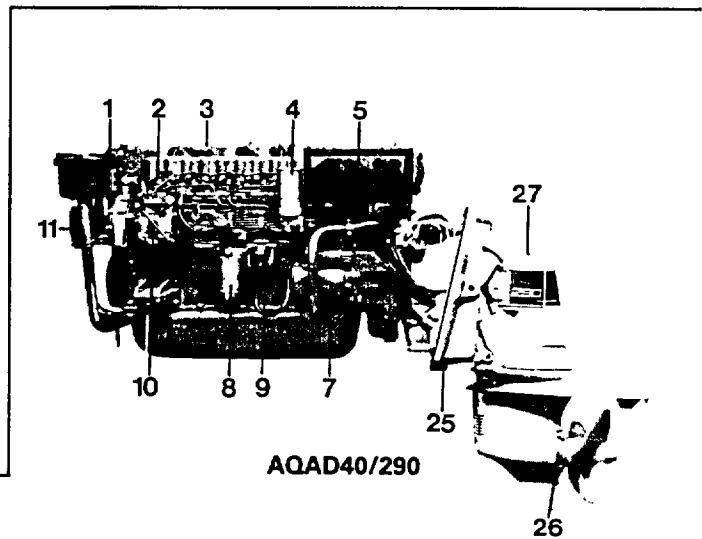
TAMD30/MS3C



MD30/MS2V

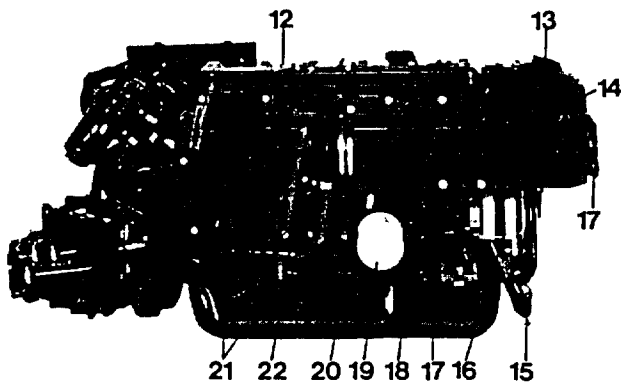


AQAD30/DP

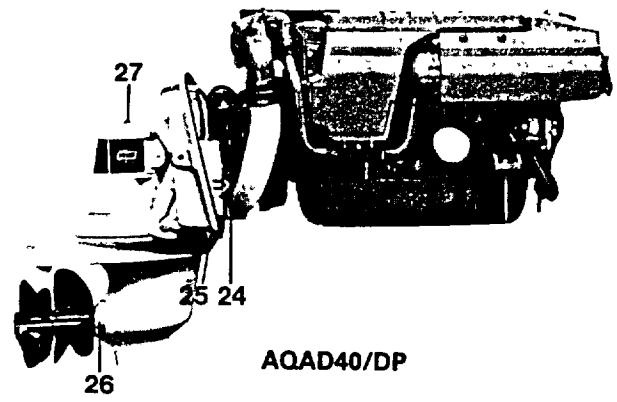


AQAD40/290

# MD40

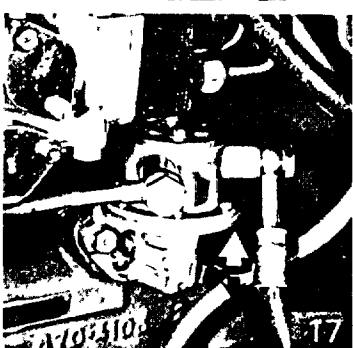
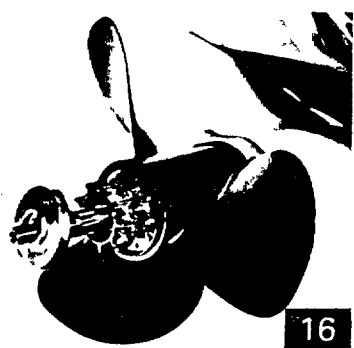
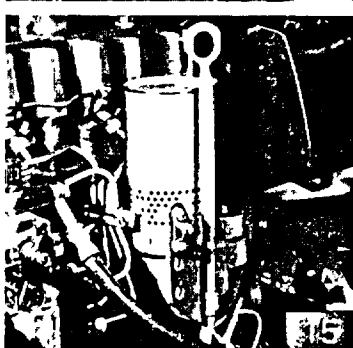
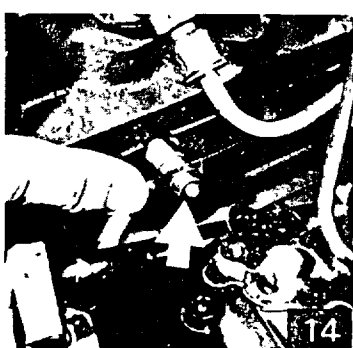
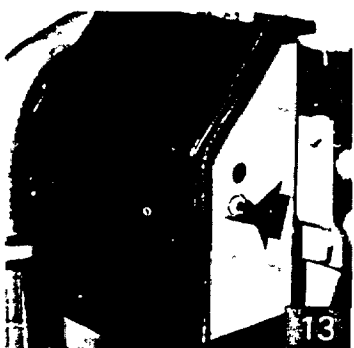
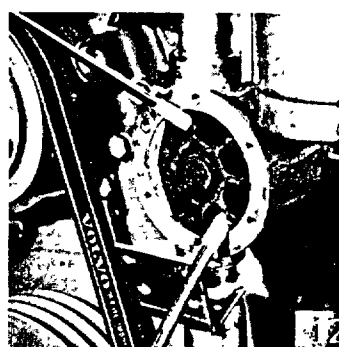
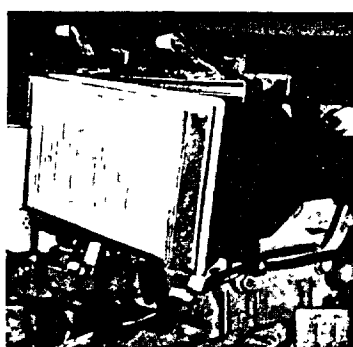
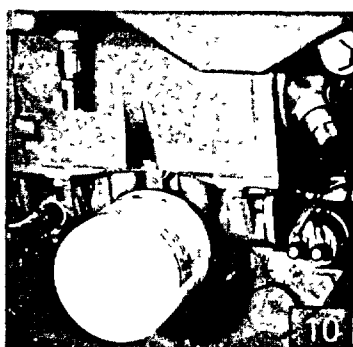
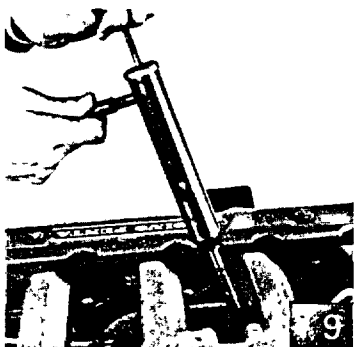
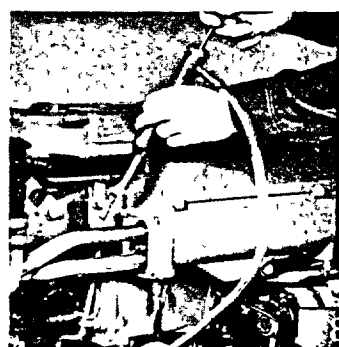
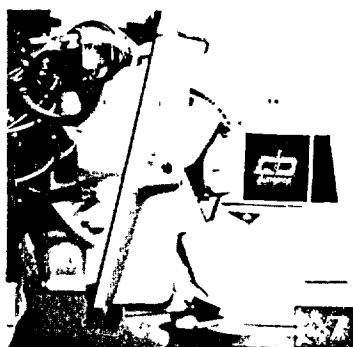
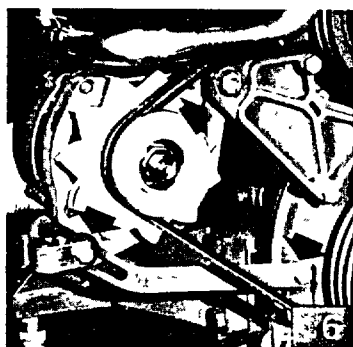
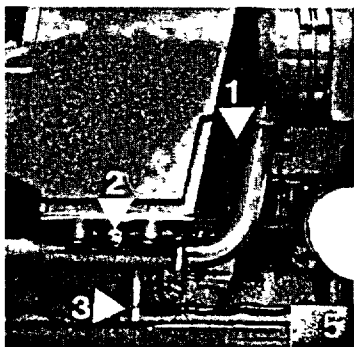
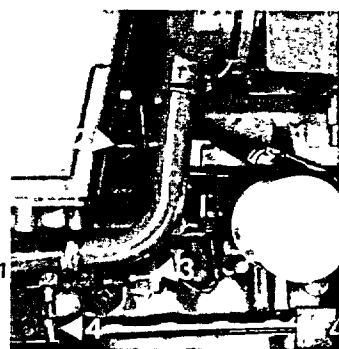
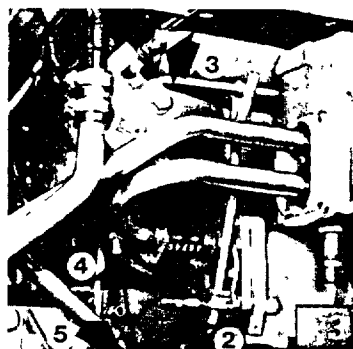
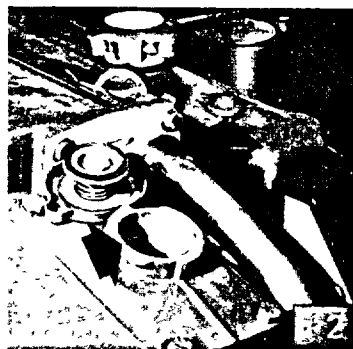


TAMD40/MS3C



AQAD40/DP





**VOLVO  
PENTA**  
Service

**IMPORTANT!**

Check carefully bellows for damage and also check the tightening of all hose clamps. NOTE! The junction bellows and hose clips should be replaced every three years. Have the bellows checked and replaced by an authorized Volvo Penta dealer.

**!** **WARNING:** Never work on the bellows or the drive's hydraulics without first locking the drive in position in such a way that there is no possibility of it falling down. If the drive falls it can cause severe injuries.

**290 DRIVES**

You can use Volvo Penta special tool no. 884863-2 to ensure that the drive cannot fall down while you are working on it. Proceed as follows:

Put your hand into the drive from underneath, aft of the heat shield zinc plate and grip the rear catch (1). Press the rear catch downwards, at the same time lifting the drive manually until it reaches the upper position. Holding the drive in that position, place the special tool no. 884863-2 (2) on the starboard side of the drive as shown in the diagram. NOTE: Do not overload the tool by standing on the drive while it is in the upper position.

**275 DRIVES**

To change the bellows or carry out other work on a 275 drive, raise the drive with the electro mechanical lift far enough to be able to dismantle and reassemble the bellows. NOTE: The drive should be secured in position by blocking it with wooden billets or in some other secure way so that there is no possibility of it falling down.

**WICHTIG!**

Alle Bälge und Schlauchschellen sorgfältig auf Beschädigungen hin prüfen und alle Schlauchschellen nachziehen. ACHTUNG! Der Faltenbalg und die Schlauchschellen sind alle 3 Jahre auszuwechseln. Lassen Sie die Prüfung und den Austausch des Faltenbalges von einer autorisierten Kundendienst-Werkstatt vornehmen.

**!** **WARNUNG!** Arbeiten Sie niemals an den Faltenbälgen und an der Hydraulik des Antriebs, ohne daß der Antrieb hochgeklappt und so gesichert ist, daß er unter keinen Umständen herunterfallen kann. Ein herunterfallender Antrieb kann schwere Korperverletzungen verursachen.

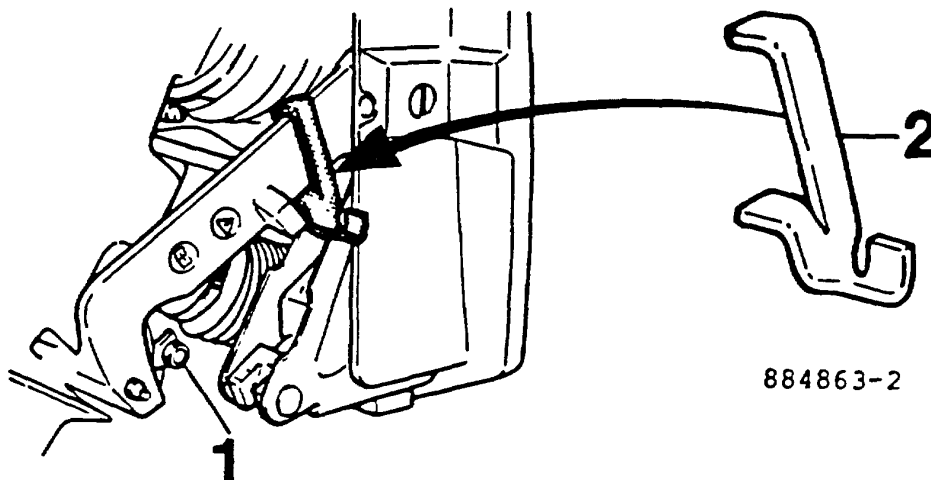
**ANTRIEB 290**

Richtig eingebaut verhindert das Werkzeug (884863-2), daß der Antrieb herunterfallen kann. Das Werkzeug ist als Sicherung für den hochgeklappten Antrieb anzuwenden. Es ist folgendermaßen anzubringen:

Die Hand von unten her gerade hinter der Zinkplatte der Trägerplatte einführen und den Rückwärtshaken (1) in die Hand nehmen. Den Rückwärtshaken nach unten drücken und gleichzeitig den Antrieb von Hand ganz hochklappen. Den Antrieb in dieser Stellung halten und das Werkzeug (2) auf der Steuerbordseite einsetzen; siehe Abbildung. ACHTUNG! Nicht auf dem Antrieb stehen, da das Werkzeug dann überbelastet wird.

**ANTRIEB 275**

Beim Auswechseln von Faltenbälgen oder bei anderen Arbeiten am 275er-Antrieb ist der Antrieb mit dem elektromechanischen Heber so weit hochzuklappen, daß die Bälge aus- und eingebaut werden können. ACHTUNG! Holzklötze unter den Antrieb legen oder diesen auf andere, zuverlässige Weise sichern, damit er nicht herunterfallen kann.



## IMPORTANT!

Contrôler avec soin les soufflets au point de vue dommages et contrôler le serrage des colliers. **ATTENTION !** Remplacer soufflet et colliers tous les trois ans. Confier contrôle et remplacement du soufflet à un garage agréé.



**ATTENTION !** Ne jamais travailler sur le soufflets ou le circuit hydraulique de l'embase sans avoir bloqué celle-ci en position relevée de manière à interdire tout basculement inopine. Une embase qui bascule peut causer des blessures graves.

### EMBASE 290

L'outil (884863-2) correctement mis en place interdit le basculement de l'embase. Cet outil sert à bloquer l'embase déjà relevée. Voici comment procéder:

Introduire la main par-dessous à l'arrière de la plaque en zinc du carter et saisir le crochet de marche arrière (1). Le pousser vers le bas tout en relevant l'embase à la main. Tenir fermement l'embase dans cette position et installer l'outil (2) à tribord selon la figure. **ATTENTION :** Ne pas surcharger l'outil en montant sur l'embase relevée.

### EMBASE 275

Pour le remplacement du soufflet ou autre intervention sur l'embase 275, utiliser le relevage électrique pour amener l'embase dans une position facilitant le travail. **ATTENTION !** Assurer à l'aide de cales en bois ou autre afin d'empêcher l'embase de retomber.

## IMPORTANTE!

Controlar cuidadosamente los fuelles y apretar las abrazaderas. **NOTA:** Los fuelles de acoplamiento y las abrazaderas de manguera deben cambiarse cada 3 años. Confíe a un taller autorizado el control y realización de estos trabajos.



**ADVERTENCIA:** Nunca se ponga a trabajar con los fuelles o hidráulica de la cola sin haber asegurado ésta en posición levantada de forma que quede totalmente excluido el riesgo de que se caiga, lo que podría producir accidentes graves.

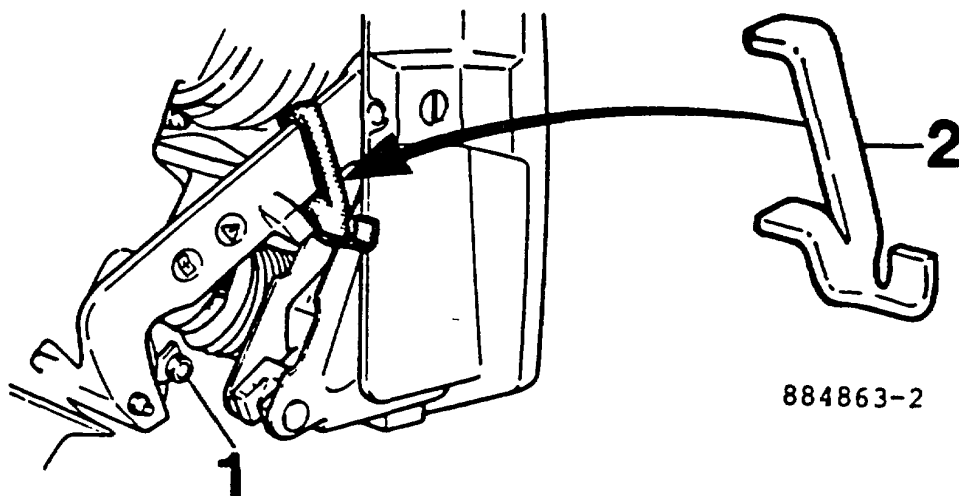
### TRANSMISSION 290

Correctamente montada la herramienta (884863-2) impide que se caiga la cola. Dicha herramienta debe utilizarse siempre que se desea mantener levantada la cola. Montar la herramienta de la manera siguiente:

Introducir la mano por la parte de abajo, por detrás de la placa de zinc del soporte de popa y agarrar el gancho de marcha atrás (1). Presionar éste hacia abajo al mismo tiempo que se levanta la cola con las manos hasta que llega a su posición máxima. Mantener la cola firmemente en esta posición y colocar la herramienta (2) en el lado de estribor, tal como muestra la figura. **NOTA:** No sobrecargar la herramienta apoyándose sobre la cola levantada.

### TRANSMISION 275

Para cambiar los fuelles o al hacer otros trabajos en la cola 275, deberá ésta levantarse con el elevador electromecánico todo lo que sea necesario para permitir el desmontaje y montaje de aquellos. **NOTA:** Asegurar la cola en esta posición poniendo tacos de madera debajo de la misma o de cualquier otra manera que elimine el peligro de que se caiga.



## IMPORTANTE!

Controllare che i soffietti siano integri e stringere le facette. NB! Il soffietto dello snodo e le fascette dei condotti vanno cambiati ogni tre anni. Far eseguire i lavori di controllo e sostituzione del soffietto da un'officina autorizzata.

**⚠ ATTENZIONE!** No lavorare mai con i soffietti o gli idraulismi senza aver prima bloccato il gambale in posizione sollevata, in modo da essere assolutamente sicuri che non ricada. La caduta del gambale può causare gravi danni alla persona.

## GAMBALE 290

L'utensile (884863-2) correttamente montato impedisce al gambale di ricadere. L'utensile deve essere usato quale bloccaggio del gambala, quando questo si trova in posizione sollevata. Piazzare l'utensile nel modo seguente:

Passare la mano da sotto, a poppa della piastra dell'anodo di zinco dello schermo protettivo del gambala e afferrare la tacca posteriore (1). Premere la tacca verso il basso sollevando contemporaneamente il gambale a mano, fino a portarlo in posizione completamente sollevata. Tenere ben fermo il gambale in questa posizione e piazzare l'utensile (2) sul lato di triborde, come indicato in figura. NB! Non sovraccaricare l'utensili, evitando di stare sul gambale sollevato.

## GAMBALE 275

Dovendo effettuare la sostituzione del soffietto o altri lavori al gambale 275, questo va sollevato con l'organo elettromeccanico fino a che sia possibile accedere comodamente ai soffietti. NB! Assicurare il gambale in questa posizione ponendo delle zeppe di legno sotto il gambale o in modo altrettanto sicuro, per evitare la ricaduta del gambale stesso.

## VIKTIGT!

Kontrollera noga bälgar för eventuella skador samt kontrolldrag slangklammor. OBS! Knutbälgen och slangklammorna bör bytas vart 3:e år. Låt en auktoriserad verkstad kontrollera och utföra bytet av bälgen.

**⚠ VARNING!** Arbeta aldrig med drevets bälgar eller hydrauliken utan att ni först låst drevet i uppfällt läge på ett sådant sätt att det absolut inte kan falla ned. Ett nedfallande drev kan orsaka svåra kroppsskador.

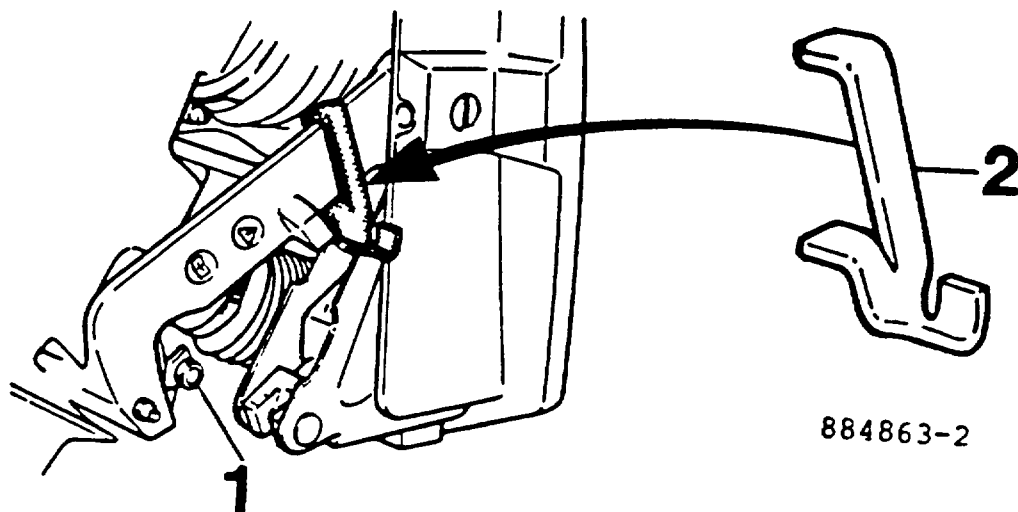
## DREV 290

Verktyget (884863-2) ratt monterat hindrar drevet att falla ned. Verktyget skall användas som låsning för drevet då detta är i uppfällt läge. Sätt dit verktyget enligt följande:

För in handen underifrån akter om sköldens zinkplatta och ta tag i backhaken (1). Pressa backhaken nedåt samtidigt som drevet lyfts upp för hand till helt uppfällt läge. Håll drevet stadigt i detta läge och sätt dit verktyget (2) på styrbordssidan så som figuren visar. OBS! Överbelasta inte verktyget genom att stå på det uppfällda drevet.

## DREV 275

Vid bälgbyte eller annat arbete på 275-drevet skall drevet koras upp med den el-mekaniska drevlyften så långt att bälgarna kan demonteras och monteras. OBS! Säkra drevet i detta läge med träklotsar under drevet eller på annat betryggande sätt så att drevet inte kan falla ned.



1. Reset button, fuse
2. Injector
3. Engine oil filler
4. Flywheel housing ventilation filter
5. Inlet manifold silencer with disposable filter
6. Zinc anodes
7. Generator
8. Fuel filter
9. Feed pump
10. Injector pump
11. Salt water pump
12. Hose, for oil bilge pump
13. Fresh water filler
14. Heat exchanger
15. Salt water drain
16. Generator
17. Zinc anode
18. Oil cooler
19. Oil filter
20. Fresh water drain
21. Salt water drain
22. Fresh water drain
23. Fresh water drain
24. Power-trim oil filler
25. Zinc plate
26. Zinc ring
27. Oil dipstick, drive

1. *Rückstellknopf, Sicherung*
2. *Einspritzer*
3. *Oleinfüllung, Motor*
4. *LüftungsfILTER für Kurbelwellengehäuse*
5. *Ansaugschalldämpfer mit austauschbarem Filter*
6. *Zinkanoden*
7. *Generator*
8. *Kraftstofffilter*
9. *Kraftstoffpumpe*
10. *Einspritzpumpe*
11. *Seewasserpumpe*
12. *Rohr für Öllenzpumpe*
13. *Einfüllung, Frischwasser*
14. *Warme austauscher*
15. *Ablassen, Seewasser*
16. *Generator*
17. *Generator*
18. *Ölkühler*
19. *ÖlfILTER*
20. *Ablassen, Frischwasser*
21. *Ablassen, Seewasser*
22. *Ablassen, Frischwasser*
23. *Ablassen, Frischwasser*
24. *Öleinfüllung, Power-Trim*
25. *Zinkplatte*
26. *Zinkring*
27. *Ölmeßstab, Antrieb*

1. Bouton de remise en fonction, coupe-circuit
2. Injecteur
3. Remplissage d'huile, moteur
4. Filtre de tuyau de reniflard
5. Silencieux d'admission à filtre interchangeable
6. Anodes de zinc
7. Alternateur
8. Filtre à carburant
9. Pompe d'alimentation
10. Pompe d'injection
11. Pompe à eau de mer
12. Tuyau de pompe de drainage d'huile
13. Remplissage d'eau douce
14. Echangeur de chaleur
15. Evacuation d'eau de mer
16. Altrnateur
17. Anode de zinc
18. Radiateur d'huile
19. Filtre à huile
20. Evacuation d'eau douce
21. Evacuation d'eau de mer
22. Evacuation d'eau douce
23. Evacuation d'eau douce
24. Remplissage d'huile, Power-trim
25. Plaque de zinc
26. Bague de zinc
27. Jauge d'huile, transmission

1. *Botón de reposición, fusible*
2. *Inyector*
3. *Boca reposición de aceite, motor*
4. *Filtro ventilación del cánter*
5. *Silenciador de admisión con filtro cambiabile*
6. *Anodos de zinc*
7. *Alternador*
8. *Filtro de combustible*
9. *Bomba de alimentación*
10. *Bomba de inyección*
11. *Bomba de agua marina*
12. *Tubo para bomba de achique de aceite*
13. *Boca de reposición, agua dulce*
14. *Intercambiador de calor*
15. *Vaciado de agua marina*
16. *Alternador*
17. *Anodo de zinc*
18. *Radiator de aceite*
19. *Filtro de aceite*
20. *Vaciado de agua dulce*
21. *Vaciado de agua marina*
22. *Vaciado de agua dulce*
23. *Vaciado de agua dulce*
24. *Boca llenado aceite, power-trim*
25. *Placa de zinc*
26. *Anillo de zinc*
27. *Varilla de aceite, cola*

1. Pulsante di riattivazione, fusibile
2. Iniettore
3. Rifornimento olio motore
4. Filtro sfiatatoio del basamento
5. Silenziatore aspirazione con filtro sostituibile
6. Anodi di zinco
7. Alternatore
8. Filtro del carburante
9. Pompa d'alimentazione
10. Pompa d'iniezione
11. Pompa acqua salata
12. Tubo pompa drenaggio olio
13. Rifornimento acqua potabile
14. Scambiatore di calore
15. Scarico acqua salata
16. Alternatore
17. Anodo di zinco
18. Radiatore olio
19. Filtro olio
20. Scarico acqua potabile
21. Scarico acqua salata
22. Scarico acqua potabile
23. Scarico acqua potabile
24. Rifornimento olio, power-trim
25. Piastra di zinco
26. Anello di zinco
27. Astina olio trasmissione

1. *Återställningsknapp, sakring*
2. *Insprutare*
3. *Oljepåfyllning, motor*
4. *Vevhusventilationsfilter*
5. *Insugningsluddampare med utbytbar filter*
6. *Zinkanoder*
7. *Generator*
8. *Branslefilter*
9. *Matarpump*
10. *Insprutningspump*
11. *Sjovattenpump*
12. *Rör för oljeläns pump*
13. *Påfyllning, färskvatten*
14. *Varmeväxlare*
15. *Avtappning, sjövattnen*
16. *Generator*
17. *Zinkanod*
18. *Oljekylare*
19. *Oljefilter*
20. *Avtappning, färskvatten*
21. *Avtappning, sjövattnen*
22. *Avtappning, färskvatten*
23. *Avtappning, färskvatten*
24. *Oljepåfyllning, power-trim*
25. *Zinkplatta*
26. *Zinkring*
27. *Oljemätsticka, drev*

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**Important  
information**

Figures in blue panels refer to illustrations on pull-out pages of cover

**Wichtige  
Information**

Die Ziffern in blauen Kästchen weisen auf die Fotos auf dem Ausfaltblatt der Mappe hin

**Informations  
importantes**

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**Información  
importante**

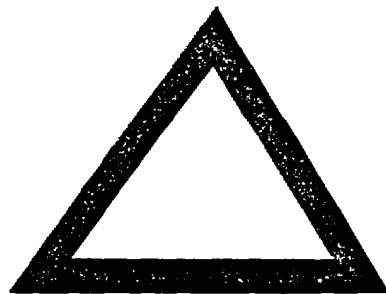
Las cifras en los cuadros azules remiten a los fotos en las hojas desplegadas de la carpeta.

**Informazioni  
importanti**

Le cifre nelle caselle blu fanno riferimento alle fotografie sul pieghevole della copertina.

**Viktig  
information**

Siffrn i blå rutor hänvisar till foton på pärmens utviksblad



=

**Caution!**

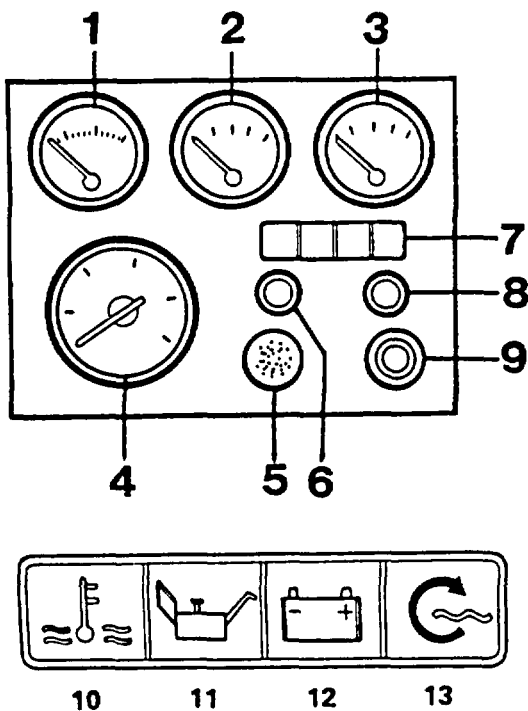
**Achtung!**

**Avertissement!**

**Atención!**

**Attenzione!**

**Varning!**



#### INSTRUMENT PANEL

1. Temperature gauge for cooling water (fresh water)  
Normal cooling water temperature 75–90°C (167–194°F)
2. Oil pressure gauge
3. Voltmeter
4. Rev counter – scale 0–5 000 r/m
5. Alarm, "Low oil pressure", "Temperature too high".
6. Alarm check
7. Alarm panel
8. Switch for instrument lighting
9. Ignition switch
10. Warning lamp, high temperature
11. Warning lamp, low oil pressure
12. Warning lamp, no charging
13. Indicator "glow plugs connected"

#### INSTRUMENTENTAFEL

1. Kühlwasserthermometer (Frischwasser)  
Normale Kühlwassertemperatur: 75–90°C
2. Oldruckmesser
3. Voltmeter
4. Tourenzähler – Einteilung 0–5 000 U/min
5. Alarm – „Oldruck zu niedrig“, „Temperatur zu hoch“
6. Alarmtest
7. Alarmtafel
8. Schalter, Instrumentenbeleuchtung
9. Schlüsselschalter
10. Warnleuchte, hohe Temperatur
11. Warnleuchte, niedriger Oldruck
12. Ladestrom-Kontrolleuchte
13. Kontrolleuchte, Glühkerzen

#### TABLEAU DE BORD

1. Indicateur de température de liquide de refroidissement (eau douce)  
Température normale de 75–90°C
2. Indicateur de pression d'huile
3. Voltmètre
4. Compte-tours – gradué de 0–5 000 tr/min
5. Sonnette d'alarme, "Basse pression d'huile", "Température trop élevée"
6. Test d'alarme
7. Lampes témoin d'avertissement
8. Interrupteur, éclairage d'instruments
- 9.
10. Lampe témoin, haute température
11. Lampe témoin, basse pression d'huile
12. Lampe témoin, pas de charge
13. Lampe témoin, incandescence en cours

#### PANEL DE INSTRUMENTOS

1. Indicador temperatura agua de refrigeración (agua dulce).  
La temperatura normal es de 75–90°C
2. Manómetro de aceite
3. Voltmetro
4. Cuentalrevoluciones, graduado 0–5 000 rpm
5. Alarma "Baja presión de aceite" o "Temperatura demasiado alta del refrigerante"
6. Control de alarma
7. Cuadro de alarmas
8. Interruptor para alumbrado de instrumentos
9. Cerradura de encendido
10. Luz de advertencia, temperatura de refrigerante demasiado alta
11. Luz de advertencia, baja presión de aceite
12. Luz de advertencia, no hay carga
13. Luz testigo, "bujía de incandescencia acoplada"

#### PANELLO STRUMENTI

1. Termometro acqua di raffreddamento (acqua dolce)  
Temperatura normale: 75–90°C
2. Manometro pressione olio
3. Voltmetro
4. Contagiri
5. Allarme, "Insufficiente pressione olio" "Temperatura acqua eccessiva"
6. Prova allarme
7. Quadro spia
8. Interruttore, illuminazione strumenti
9. Interruttore e chiave
10. Lampada spia temperatura eccessiva
11. Lampada spia pressione olio insufficiente
12. Lampada spia carica
13. Lampada spia candele

#### INSTRUMENTPANEL

1. Temperaturmatare for kylvatten (farskvatten)  
Normal kylvatten temperatur 75–90°C
2. Oljetrycksmatare
3. Voltmatare
4. Varvraknare-graderad 0–5 000 r/m
5. Alarm, "Lågt oljetryck", eller "For hog kylvatten-temperatur"
6. Alarm kontroll
7. Larmtavla
8. Strömbrytare for instrumentbelysning
9. Tandningslås
10. Varningslampa, hog kylvattentemperatur
11. Varningslampa, lågt oljetryck
12. Varningslampa, ingen laddning
13. Kontrolllampa, "glödstift inkopplat"



**Before  
starting**

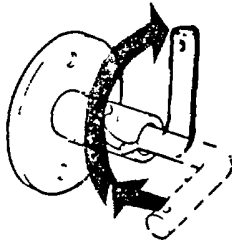
**Vor dem  
Anlassen**

**Avant le  
démarrage**

**Antes del  
arranque**

**Prima  
dell'avviamento**

**Före  
start**



TURN MAIN SWITCH ON.

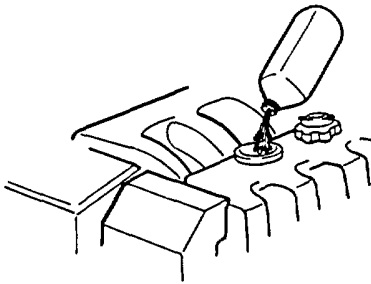
HAUPTSCHALTER EINSCHALTEN.

FERMER LE COUPE-CIRCUIT DE BATTERIE.

ENCENDER EL INTERRUPTOR PRINCIPAL.

INSERIRE L'INTERRUTTORE PRINCIPALE

SLÅ TILL HUVUDSTRÖMBRYTAREN.



Oil level high enough?

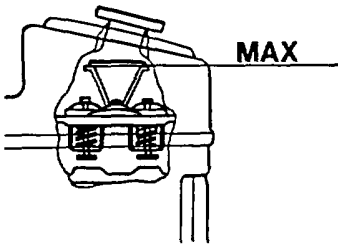
Genügend hoher Ölstand?

Niveau d'huile suffisant?

Nivel suficiente de aceite?

E' sufficiente il livello dell'olio?

Tillräcklig oljenivå?



Coolant level, thermostat housing.

Coolant = 50 % glycol and 50 % water or water with approx. 1 litre anti-corrosive agent (accessory).

Kühlflüssigkeitsstand, Thermostatgehäuse.

Kühlflüssigkeit = 50 % Glykol und 50 % Wasser, oder Wasser mit Zusatz von ca. 1 Liter Korrosionsschutzmittel (Zubehör).

Niveau de liquide de refroidissement, boîtier de thermostat.

Liquide de refroidissement = 50 % de glycol et 50 % d'eau ou de l'eau avec env. 1 litre de produit antirouille (accessoire).

Nivel de refrigerante, caja de termostatos.

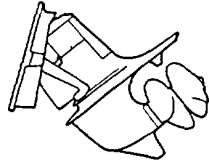
Refrigerante: 50 % de glicol y 50 % de agua, o agua con aproximadamente un litro de agente anticorrosivo (accessorio).

Livello liquido di raffreddamento, scatola del termostato.

Liquido di raffreddamento = 50 % glicole e 50 % acqua, alt. aggiungere ca 1 litro di anticorrosivo (accessorio).

Kylvatskenivå, termostathus.

Kylvatska = 50 % glykol och 50 % vatten alt. vatten tillsatt med ca 1 liter korrosionsskyddsmedel (tillbehör).



**Lower the drive**, if it has been tilted. Make sure there is no obstacle near the propeller.

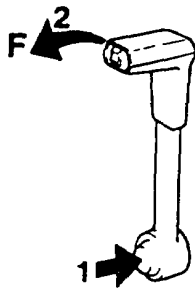
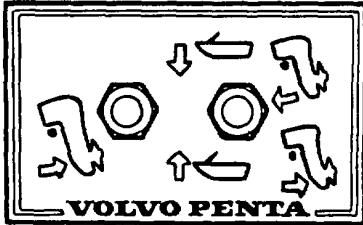
**Den Antrieb absenken**, falls er gekippt war. Darauf achten, dass nichts im Wege ist.

**Descendre la transmission** si celle-ci a été relevée. S'assurer qu'il n'y a pas d'obstacles entravant l'hélice.

**Descender la cola**, si ha estado levantada. Controlar que no hay obstáculos en las cercanías de la hélice.

**Abbassare la trasmissione** Assicurandosi che non ci siano ostacoli in prossimità dell'elica.

**Fäll ner drevet**, om det varit uppfällt. Kontrollera att inget hinder finns i närheten av propellern.



Disengage engine speed control and advance lever to approx. 1/3 throttle. The engine has an automatic cold starting device.

**Gashebel auskuppeln und auf etwa Drittelgas vorführen.** Der Motor hat automatischen Kaltstart.

Débrayer la commande de régime et amener le levier vers l'avant d'environ 1/3 de course. Le moteur a un dispositif de démarrage à froid automatique.

Desacoplar el acelerador y llevar la palanca aproximadamente a 1/3 de su recorrido. El motor tiene arranque en frío automático.

Liberare la leva regolazione giri spostarla in avanti per ca. 1/3. Il motore è provvisto di preriscaldatore automatico d'avviamento.

**Frikoppla varvtalsreglaget och för fram spaken till ca 1/3 pådrag.** Motorn har automatisk koldstart.

**Starting**

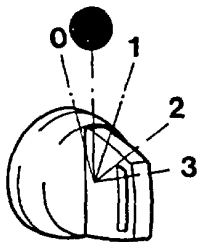
**Arranque**

**Anlaßen**

**Avviamento**

**Démarrage**

**Start**



"0" position. Only position in which the key can be removed.

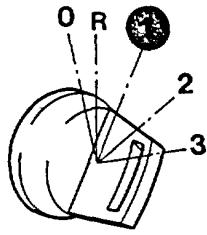
**0-stellung.** Der Schlüssel kann nur in dieser Stellung abgezogen werden.

Position 0. La seule position où la clé peut être enlevée.

**Posición 0.** Unica posición en que se puede sacar la llave.

Posizione "0". La chiave può essere tolta soltanto in questa posizione.

**0-läge.** Enda läge nyckeln kan tas ur.



Temp.-oil pressure-charging lamp on.

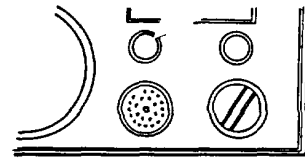
Temp.-Öldruck-Ladestrom-Leuchten brennen.

Lampes témoins pour température-pression d'huile-charge allumées.

Testigo de temp.-presión de aceite-carga se enciende.

Spie temperatura, pressione olio, controllo di carica accese.

Temp-oljetryck-laddkontroll lyser.



Press for alarm-test.

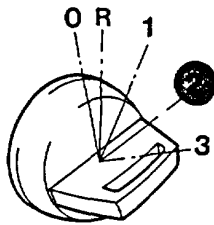
Für Alarmtest eindrücken.

Enfoncer pour le test de d'alarme.

Presionar para prueba de alarma.

Premere per prova di allarme.

Tryck för larmtest.



Keep glow plug connected for about 30 sec.

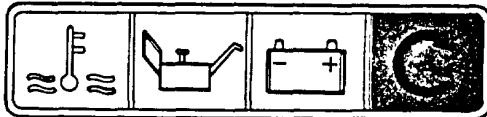
Die Glühkerzen ca. 30 s lang eingeschaltet halten.

Maintenir la bougie de préchauffage connectée pendant environ 30 s.

Mantener conectadas las bujías de incandescencia unos 30 seg.

Mantener inserite le candlette per ca 30 secondi.

Håll glodstift inkopplade ca 30 sek.



Warm engine, no preheating.

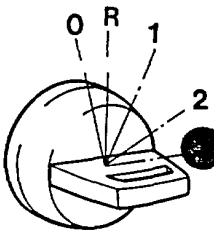
Warmer Motor, keine Vorwärmung.

Moteur chaud, pas de préchauffage.

Motor caliente, ningún precalentamiento.

Motore caldo, nessun preriscaldamento.

Varm motor, ingen förvarmning.



Starting position. Key to "2" after starting.

Anlaßstellung. Nach Anlassen Schlüssel auf „2“.

Position de démarrage. Clé à "2" après le démarrage.

Posición de arranque. Poner la llave en "2" después del arranque.

Posizione d'avviamento. Chiave su "2" dopo l'avviamento.

Startläge. Nyckeln till "2" efter start.

Begin in position "0" when restarting

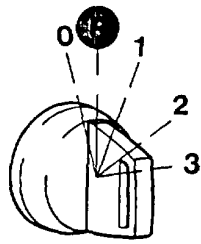
Bei erneutem Anlassen in Stellung „0“ beginnen.

Commencer à la position "0" pour redémarrer.

Al rearrancar empezar en posición "0".

Iniziare nella posizione "0" in caso di riavviamento.

Börja i läge "0" vid omstart.



Stopping position. Hold until engine has stopped. Turn to "0".

*Abstellung. Schlüssel dort halten, bis der Motor stehenbleibt. Auf „0“ drehen.*

Position d'arrêt. Maintenir enfoncé jusqu'à ce que le moteur soit arrêté. Tourner à "0".

*Posición de pare. Mantener esta posición hasta que se ha parado el motor. Girar a "0".*

Posizione d'arresto. Mantenerla fintanto che il motore si sarà fermato. Girare su "0".

*Stoppläge. Håll kvar tills motorn stannat. Vrid till "0".*

**After starting**

**Nach dem Anlassen**

**Après le démarrage**

**Después del arranque**

**Dopo l'avviamento**

**Efter start**

In case of fault indication or alarm. Stop the engine!

*Bei Fehleranzeige und Alarm: Motor abstellen!*

En cas d'indication d'anomalie et alarme. Arrêter le moteur.

*Si hay indicaciones de avería y alarma, parar el motor.*

In caso di indicazione sbagliata o allarme. Fermare il motore.

*Vid felindikering och larm. Stoppa motorn!*

Temp. and ammeter lamp on = charging fault.

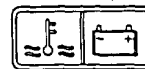
*Wenn Temp. und Amp. leuchten: Aufladungsfehler.*

Témoins de température et d'intensité allumés = défaut de charge.

*Si temp. y amp. se encienden = defecto de carga.*

Spie temperatura e amp. accese = guasto di carica.

*Lyser temp. och amp. = fel på laddning.*



Temp. or oil lamp and acoustic alarm on = temp. too high or oil pressure too low. Find cause of fault.

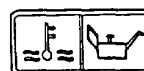
*Wenn Temp. bzw. Oil leuchten und der akustische Alarm ertönt: Zu hohe Temperatur bzw. zu niedriger Öldruck. Die Fehlerursache feststellen!*

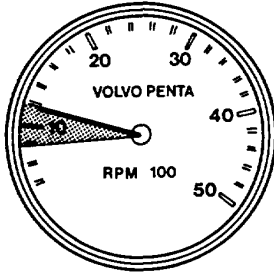
Témoin de température, ou d'huile allumé ainsi qu'alarme = température trop élevée, ou bien pression d'huile trop basse. Rechercher la cause.

*Si temp. y aceite se encienden = temperatura demasiado alta y presión de aceite demasiado baja respectivamente. Investigar causa de avería.*

Spie temperatura, olio e segnale acustico = temperatura troppo alta risp. pressione olio troppo bassa. Ricerare la cause del guasto.

*Lyser temp resp. oil samt akustiskt alarm = for hog temp resp for lågt oljetryck. Undersök felorsak.*





Run engine until warm.

*Motor warmfahren.*

Faire chauffer le moteur à sa température de service.

*Dejar funcionar el motor hasta que se alcance la temperatura de funcionamiento.*

Riscaldare il motore.

Varmkor motorn.

**Running**

**Fahrbetrieb**

**Conduite**

**Marcha**

**Esercizio.**

**Körning**

Cruising speed = 200 r.p.m. below max. r.p.m. attained.

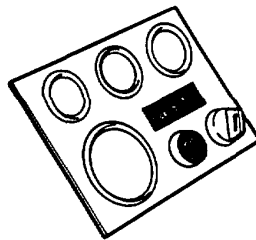
*Marschfahrt = 200 U/min unter der erreichten Höchstdrehzahl.*

Vitesse de croisière = 200 tr/mn au-dessous du régime maxi atteint.

*Velocidad de crucero = 200 rpm por debajo de las rpm máximas obtenidas.*

Velocità di crociera. 200 g/min sotto il regime di giri max. raggiunto.

*Cruising speed = 200 rpm under upp-nått max rpm.*



Stop engine immediately in case of alarm or abnormal readings.

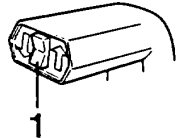
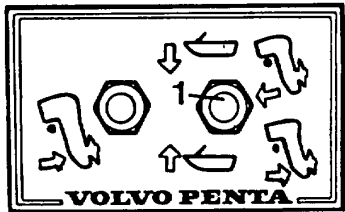
*Bei Alarm und unnormalen Werten sofort den Motor abstellen.*

Arrêter le moteur immédiatement en cas d'alarme ou de valeurs anormales.

*Parar el motor inmediatamente en caso de alarma y valores anormales.*

Fermare immediatamente il motore in caso di allarme o di valori anormali.

*Stanna motorn omedelbart vid larm och onormala värden.*



To drop the bows of the boat press down one of the switches (1) (on the manoeuvring control lever or on the instrument panel) until the level desired is achieved. To raise the bows of the boat the switch (1) in the up position.

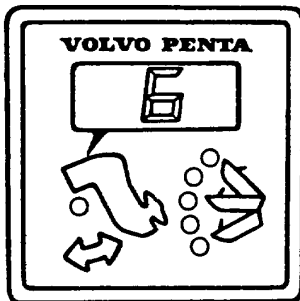
*Will man das Vorschiff absenken, wird einer der Schalter (1) (unter den Bedienungselementen oder auf dem Instrumentenbrett) in der unteren Position gehalten, bis die gewünschte Lage erreicht ist. Soll das Vorschiff gehoben werden, wird der Schalter (1) in der oberen Position gehalten.*

Si l'on désire baisser la proue du bateau, il faudra maintenir en position inférieure l'un des interrupteurs (1) (un sur le levier de commande ou un sur le tableau de bord) jusqu'à ce que la position désirée soit atteinte. Si au contraire on désire relever la proue, l'interrupteur (1) devra être maintenu en position supérieure.

*Si se desea bajar la proa de la embarcación debe mantenerse en la posición inferior uno de los interruptores (1) (en el mando o en el panel de instrumentos) hasta que se ha obtenido la posición deseada. Si lo que se desea es levantar la proa, debe ponerse en su posición superior el interruptor (1).*

Per poter abbassare la prua dell'imbarcazione è necessario tenere abbassato nell'posizione desiderata uno degli interruttori (1) (nel comando di manovra o sul quadro strumenti). Per alzare la prua dell'imbarcazione sarà invece necessarie tenere alzato lo stesso interruttore (1).

*Om man vill sänka båtens för skull en av strombrytarna (1), (i manoverreglaget eller på instrumentpanelen) hållas i nerläge tills önskat läge erhållits. Om man vill hoja båtens för skull strombrytaren (1) hållas i upplage.*



The drive is adjustable within the trimming range in order to obtain the best possible running angle. For the 290 drive the maximum angle of trim is 12, for the Duoprop 6.

*Der Antrieb ist innerhalb des Trimbereiches justierbar, um optimalen Gang zu gewährleisten. Für Antrieb 290 beträgt der maximale Trimmwinkel 12, für Duoprop 6.*

La transmission est réglable dans les limites de la zone de Trim en vue d'obtenir la meilleure position de marche. Pour la transmission 290, l'angle maximal de Trim est de 12 et, pour la transmission Duoprop l'angle est de 6.

*La cola es ajustable, dentro de la gama de ajuste, al objeto de poder conseguir la mejor posición de funcionamiento. En las colas 290 el ángulo máximo de ajuste es de 12 y en la Duoprop de 6.*

Per ottenere una navigazione ottimale regolare l'inclinazione della trasmissione. Per il tipo 290 l'angolo d'inclinazione massimo è di 12 mentre per il tipo Duoprop 6.

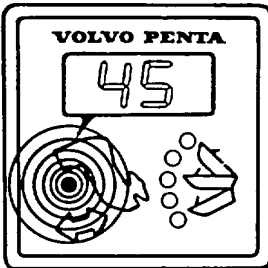
*Drevet är justerbart inom trimområdet för erhållande av bästa gångläge. För drev 290 är max trimvinkel 12, och för Duoprop 6.*

### Operating in shallow water

When uncertain about the depth of water under the boat slow down to idle speed and raise the drive. Press down the button (A) at the same time as the control button (B) is held in the up position. The drive can now be raised to a maximum of 44. At 45 the red indicator light on the instrument will begin to flash. The positions over 45 are only for use when the boat is moored in shallow water or when it is being transported on a trailer.

### Fahren über Untiefen

Sind Sie unsicher über die Wassertiefe, sollte die Geschwindigkeit gesenkt und der Antrieb gehoben werden. Um den Antrieb über den maximalen Trimmwinkel zu heben, muß die Taste (A) in der oberen Position gehalten werden. Der Antrieb kann nun bis maximal 44° gehoben werden. Bei 45° und mehr blinkt die rote Leuchte auf dem Instrument. Der Bereich über 45° darf nur dann benutzt werden, wenn das Boot über einer Untiefe vertäut ist oder auf einem Trailer transportiert wird.



### Navigation en eaux profondes

Si vous n'êtes pas sûrs de la profondeur, il est recommandé de réduire la vitesse et de relever la transmission. Appuyez sur le bouton (A) tout en maintenant l'interrupteur (B) en position supérieure. Il est possible à présent de relever la transmission jusqu'à un angle maximum de 44°. Dès qu'on arrive à 45° ou plus, la petite lampe rouge de l'instrument se met à clignoter. La zone de Trim au-delà de 45° ne doit être utilisée que lorsque le bateau est amarré en eau peu profonde ou lorsqu'il est transporté sur remorque.

### Marcha en aguas poco profundas

Si no se está seguro de la profundidad del agua, recomendamos reducir la velocidad y elevar la cola. Para hacer que esta pase por el ángulo de ajuste máximo apretar el botón (A) al mismo tiempo que se mantiene en posición superior el interruptor (B). La transmisión podrá ahora elevarse a un máx. de 44°. A 45° y más parpadea la luz roja del instrumento. La gama superior a 45° es para cuando la embarcación se ha amarrado en aguas poco profundas o cuando se transporta sobre remolque.

### Navigazione in acque poco profonde

Se vi è incertezza sulla profondità dell'acqua, è consigliabile ridurre la velocità e sollevare la trasmissione. Per oltrepassare il settore d'inclinazione massimo premere il pulsante (A) e tenere allo stesso tempo l'interruttore (B) sulla posizione "Sollevamento". Adesso la trasmissione può essere sollevata fino al valore 44. Oltrepassando questo valore, cioè da 45 in su, la spia rossa sullo strumento inizierà a lampeggiare. Il settore al di sopra del valore 45 è destinato ad essere impiegato quando l'inbarcazione è ormeggiata in acque poco profonde o quando si procede al trasporto dello scafo sul trailer.

### Körning på grunt vatten

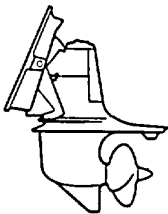
Är ni osaker på vattendjupet rekommenderas att farten sänks och att drevet höjs. För att drevet skall passera den maximala trimvinkeln skall knappen (A) tryckas in samtidigt som manöverstrombrytaren (B) hålls i upp-läge. Drevet får nu höjas till max 44. Vid 45 och mer blinkar den röda punkten på instrumentet. Området ovanför 45 är avsett att användas endast då båten har fertojts på grunt vatten eller då båten transporteras på trailer.

### Reversing

Reversing can be carried out with the drive raised to a maximum of 44. IMPORTANT! Never reverse when the boat is planing.

### Zurücksetzen

Beim Zurücksetzen kann der Antrieb bis maximal 44° gehoben werden. WICHTIG! Nie auf Zurücksetzen schalten, wenn das Boot gleitet.



### Inversion du sens de marche

L'angle maximum auquel l'inversion peut être faite est de 44°. IMPORTANT ! Ne jamais inverser le sens de marche pendant que le bateau déjauge.

### Maniobras de marcha atrás

Estas maniobras pueden realizarse con la transmisión levantada a un máximo 44°. Importante: No cambiar nunca a marcha atrás si la embarcación está planeando

### Retromarcia

La marcia in dietro può essere effettuata con la trasmissione sollevata fino al valore massimo 44. IMPORTANT! Mai innestare la retromarcia con battello planato.

### Backmanöver

Backmanöver kan utföras med drevet uppfällt till max 44. VIKTIGT! Växla aldrig till back då båten planar.

**Shutdown  
procedure**

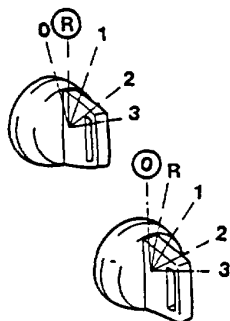
**Fahrt  
beendigt**

**Conduite  
terminée**

**Término  
del viaje.**

**Fine marcia**

**Avslutad  
körning**



Let engine idle for about 1 min. before stopping. Switch off engine.

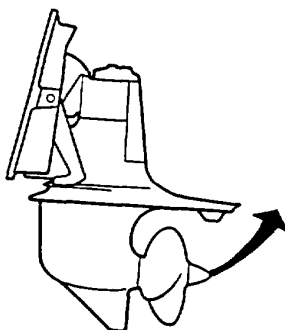
*Vor dem Abstellen den Motor ca. 1 Minute leer laufen lassen. Motor abstellen.*

Laisser tourner le moteur au ralenti pendant env. 1 min avant l'arrêt. Arrêter le moteur.

*Dejar marchar el motor en ralenti approx. 1 min. antes de pararlo. Parar el motor.*

Lasciare girare il motore al minimo per ca. 1 min. prima dell'arresto. Fermare il motore.

*Låt motorn gå på tomgång ca 1 min före stopp. Stanna motorn.*



If there is shallow water at the mooring place and if there is risk that the drive can strike the bottom, it should be fully tilted.

*Wenn die Wassertiefe am Anlegeplatz gering ist und dadurch die Gefahr besteht, daß der Antrieb Grund berührt, ist dieser ganz hochzukippen.*

En cas de mouillage en eaux peu profondes, et si la transmission risque toucher le fond, la relever.

*Si la profundidad del agua es pequeña en el sitio del amarre y existe riesgo de que la cola choque contra el fondo, la cola debe ser completamente levantada.*

Se in prossimità dell'ormeggio l'acqua è bassa e vi è il pericolo che la trasmissione urti il fondo, sollevarla completamente.

*Är vattendjupet litet på tillägsplatsen och risk finns för att drevet kan slå i botten, bör drevet fallas upp helt.*



CAUTION. The main switch must not be turned off while engine is running.

*ACHTUNG! Den Hauptschalter nicht bei laufendem Motor abstellen.*

ATTENTION ! le coupe-batterie ne doit pas être ouvert lorsque le moteur tourne.

*NOTA: El interruptor principal no debe desconectarse mientras el motor está en marcha.*

N.B.: Non disinserire l'interruttore principale con il motore in funzione.

*OBS. Huvudströmbrytaren får inte slås ifrån när motorn går.*







**If risk  
of frost**

**Bei Frost-  
gefahr**

**En cas de  
risque de gel**

**Si hay riesgo  
de heladas**

**In caso  
di gelo**

**Vid frost-  
risk**

Ethylene glycol %  
(antifreeze).

Äthylenglykol %.

Glycol-éthylène en %.

Glicol etilénico %.

Glicole di etilene (%).

Etylenglykol %.

Fill fresh-water system with anti-freeze mixture or drain.

*Frischwasseranlage mit Frostschutzgemisch fullen bzw. ablassen.*

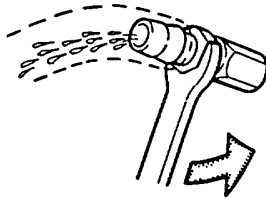
Faire le plein du système d'eau douce avec un mélange antigel ou le vider.

*Llenar el sistema de agua dulce con una mezcla anticongelante o vaciar el agua.*

Rabboccare l'impianto acqua dolce con anticongelante, oppure, scaricare il liquido.

*Fyll färskvattensystemet med frostskyddsblandning alt. tappa av.*

## D 30



**Draining fresh-water system.**

If it is filled with anti-freeze mixture, it need not be drained.

**Frischwasseranlage ablassen.**

*Wenn diese mit Frostschutzgemisch gefüllt ist, braucht nicht abgelassen werden.*

**Vidange du système d'eau douce.**

Si le système est rempli d'un mélange antigel, il n'a pas besoin d'être vidangé.

**Vaciado del sistema de agua dulce.**

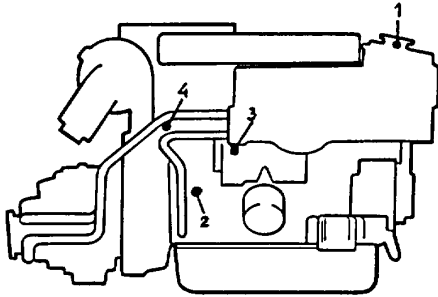
*Si se ha llenado con mezcla anticongelante no será necesario el vaciado.*

**Scarico impianto acqua dolce.**

Se è stato aggiunto anticongelante non occorre scaricare.

**Avtappning färskvattensystem.**

*Är det fyllt med frostskyddsblandning behövs ingen avtappning.*



**1. Remove, expansion tank cover**

*Deckel des Ausgleichbehälters abnehmen.*

*Enlever le couvercle du vase d'expansion.*

*Quitar la tapa del depósito de expansión.*

*Togliere il tappo serbatoio d'espansione.*

*Ta av lock för expansionstank.*

**2. Block**

*Motorblock*

*Bloc-moteur*

*Bloque*

*Blocco motore*

*Block*

**3. Heat exchanger**

*Wärmetauscher*

*Echangeur de chaleur*

*Cambiador de calor.*

*Scambiatore di calore.*

*Värmeväxlare.*

**4. Exhaust pipe**

*Abgasrohr*

*Tuyau d'échappement*

*Tubo de escape.*

*Tubo di scarico*

*Avgasrör*

**Close cocks again**

*Die Hähne wieder schließen.*

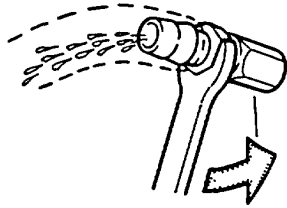
*Refermer les robinets.*

*Cerrar otra vez los grifos.*

*Richiudere i rubinetti.*

*Stäng kranarna igen.*

# D 30



**Draining, sea-water system**

**Ablassen der Seewasseranlage**

**Vidange, système d'eau de mer**

**Vaciado, sistema de agua marina**

**Scarico, impianto acqua di mare**

**Avtapping, sjövattnensystem**

**AQAD30, TAMD30**

1. Intake pipe

*Ansaugrohr*

*Tuyau d'aspiration*

*Tubo de admisión*

Condotto di immissione

*Insugningsror*

**MD30, TMD30, TAMD30, AQAD30**

2. Oil cooler

*Ölkühler*

*Radiateur d'huile*

*Enfriador de aceite*

Radiatore olio

*Oljekylare*

**MD30, TMD30**

3. Coolant pipe

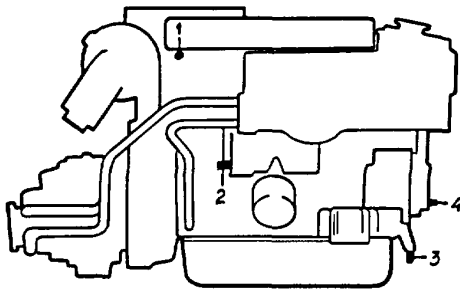
*Kühlwasserrohr*

*Tuyau d'eau de refroidissement*

*Tubo de refrigerante*

Tubo acqua di raffreddamento

*Kylvattenror*



**MD30, TMD30, TAMD30, AQAD30**

4. Remove sea-water pump cover

*Deckel der Seewasserpumpe abnehmen.*

*Enlever le couvercle pour la pompe à eau de mer.*

*Sacar tapa, bomba agua salada.*

*Staccare il coperchio pompa acqua di mare.*

*Lossa lock, sjövattnensystem*

5. Reverse gear MS3C, bottom plug port side. Reverse gear MS2, free both coolant connections.

*Wendegetriebe MS3C: Unterer Stopfen backbordseitig. Wendegetriebe MS2: Beide Kühlwasseranschlüsse lösen.*

*Inverseur MS3C, bouchon inférieur des deux côtés. Inverseur MS2, débrancher les deux raccords pour eau de refroidissement.*

*Inversor MS3C, tapón inferior, babor. Inversor MS, quitar las dos conexiones de agua.*

*Invertitore MS3C, tappo inferiore. Babordo. Invertitore MS2, staccare ambedue i raccordi acqua di raffreddamento.*

*Backslag MS3C, nedre propp BB-sida. Backslag MS2, lossa båda kylvattenanslutningarna.*

**Close cocks again.**

**Die Hähne wieder schließen.**

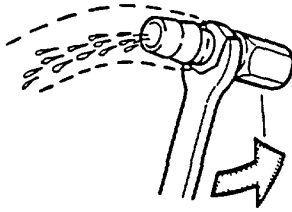
**Refermer les robinets.**

**Cerrar otra vez los grifos.**

**Richiudere i rubinetti.**

**Stäng kranarna igen.**

# AQAD30



**Draining, sea-water system**

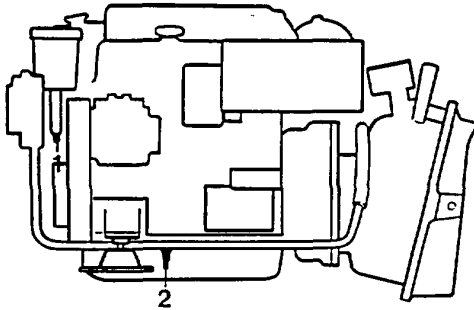
***Ablassen der Seewasseranlage***

***Vidange, système d'eau de mer***

***Vaciado, sistema de agua marina***

***Scarico, impianto acqua di mare***

***Avtappning, sjövattnensystem.***



1. Pipe from water filter.

2. Coolant pipe.

*Rohr vom Wasserfilter.*

*Kühlwasserrohr.*

*Tuyau venant du filtre à eau.*

*Tuyau d'eau de refroidissement.*

*tubo del filtro de agua.*

*tubo de refrigerante.*

*tubo del filtro acqua.*

*tubo acqua di raffreddamento.*

*Rör från vattenfilter.*

*Kylvattenrör.*

## **Important**

After completion of draining, the cocks must be closed if the boat is left in water.

## **Wichtig**

*Nach jedem Ablassen sind die Hähne vor Verlassen des Bootes zu schließen.*

## **Important!**

Après la vidange, refermer les robinets avant de laisser le bateau.

## **Importante**

*Después de haber vaciado deben cerrarse los grifos antes de abandonar la embarcación.*

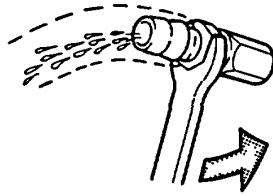
## **Importante**

Prima di lasciare l'imbarcazione e dopo lo scarico chiudere i rubinetti.

## **Viktigt**

*Efter all avtappning skall kranarna stängas innan båten lämnas.*

# D 40



## Draining fresh-water system.

If it is filled with anti-freeze mixture, it need not be drained.

## Frischwasseranlage ablassen.

Wenn diese mit Frostschutzgemisch gefüllt ist, braucht nicht abgelassen werden.

## Vidange du système d'eau douce.

Si le système est rempli d'un mélange antigel, il n'a pas besoin d'être vidangé.

## Vaciado del sistema de agua dulce.

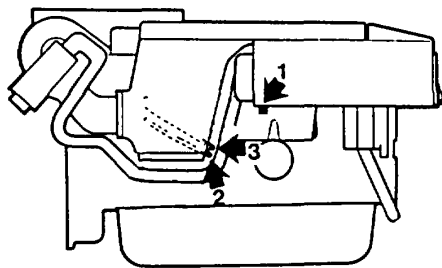
Si se ha llenado con mezcla anticongelante no será necesario el vaciado.

## Scarico impianto acqua dolce.

Se è stato aggiunto anticongelante con occorre scaricare.

## Avtappning färskvattensystem.

Är det fyllt med frostskyddsblandning behövs ingen avtappning.



### AQAD40, TAMD40

1. Heat exchanger.

Wärmetauscher.

Echangeur de chaleur.

Cambiador de calor.

Scambiatore di calore.

Varmeväxlare.

2. Block.

Motorblock.

Bloc-moteur.

Bloque.

Blocco.

Block.

3. Exhaust pipe

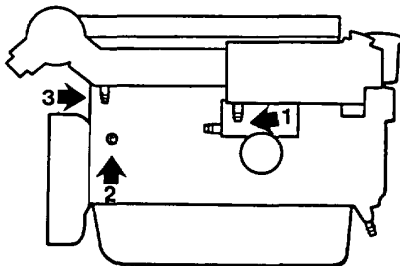
Abgasrohr

Tuyau d'échappement

Tubo de escape.

Tubo di scarico.

Avgasrör.



### AQD40, TMD40

1. Heat exchanger.

Wärmetauscher.

Echangeur de chaleur.

Cambiador de calor.

Scambiatore di calore.

Varmeväxlare.

2. Block.

Block.

Bloc-moteur.

Bloque.

Blocco motore.

Block.

3. Exhaust pipe.

Abgasrohr.

Tuyau d'échappement.

Tubo de escape.

Tubo di scarico.

Avgasrör.

Close cocks again.

Die Hähne wieder anschließen.

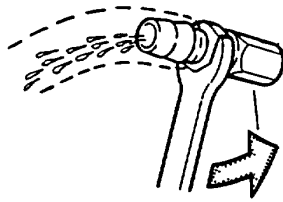
Refermer les robinets.

Cerrar otra vez los grifos.

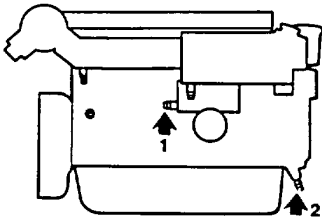
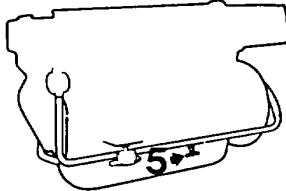
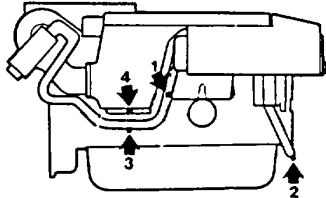
Richiudere i rubinetti.

Stäng kranarna igen.

# D 40



**Draining, sea-water system**  
**Ablassen der Seewasseranlage**  
**Vidange, système d'eau de mer**  
**Vaciado, sistema de agua marina**  
**Scarico, impianto acqua di mare**  
**Avtapping, sjövattnsystem**

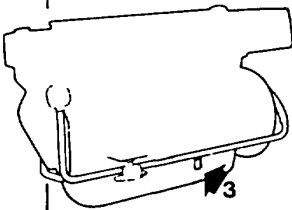


## AQAD40, TAMD40

- |                              |                                      |
|------------------------------|--------------------------------------|
| 1. Oil cooler.               | 2, 3. Coolant pipe.                  |
| <i>Ölkühler.</i>             | <i>Kühlwasserrohr.</i>               |
| Radiateur d'huile.           | Tuyau d'eau de refroidissement       |
| <i>Enfriador de aceite.</i>  | <i>Tube de refrigerante.</i>         |
| Radiatore olio.              | Tube acqua di raffreddamento.        |
| <i>Oljekylare.</i>           | <i>Kylvattenrör.</i>                 |
| 4. Inter cooler.             | 5. Coolant pipe (AQ).                |
| <i>Zwischenkühler.</i>       | <i>Kühlwasserrohr (AQ).</i>          |
| Post-radiateur.              | Tuyau d'eau de refroidissement (AQ). |
| <i>Radiatore intermedio.</i> | <i>Tube de refrigerante (AQ).</i>    |
| Post raffreddatore.          | Tube acqua di raffreddamento (AQ).   |
| <i>Mellankylare.</i>         | <i>Kylvattenrör (AQ).</i>            |

## AQD40, TMD40

- |                             |                                 |                                      |
|-----------------------------|---------------------------------|--------------------------------------|
| 1. Oil cooler.              | 2. Coolant pipe.                | 3. Coolant pipe (AQ).                |
| <i>Ölkühler.</i>            | <i>Kühlwasserrohr.</i>          | <i>Kühlwasserrohr (AQ).</i>          |
| Refroidisseur d'huile.      | Tuyau d'eau de refroidissement. | Tuyau d'eau de refroidissement (AQ). |
| <i>Enfriador de aceite.</i> | <i>Tube de refrigerante.</i>    | <i>Tube de refrigerante (AQ).</i>    |
| Radiatore olio.             | Tube acqua di raffreddamento.   | Tube acqua di raffreddamento (AQ).   |
| <i>Oljekylare.</i>          | <i>Kylvattenrör.</i>            | <i>Kylvattenrör (AQ).</i>            |



**Close cocks again.**

**Die Hähne wieder schließen.**

**Refermer les robinets.**

**Cerrar otra vez los grifos.**

**Richiudere i rubinetti.**

**Stäng kranarna igen.**

**4. Reverse gear MS3C, bottom plug port side.**

**Wendegetriebe MS3C: Unterer Stopfen backbordseitig.**

**Inverseur MS3C, bouchon inférieur côté bâbord.**

**Inversor MS3C, tapón inferior, babor.**

**Invertitore MS3C, tappo inferiore. Babordo.**

**Backslag MS3C, nedre propp BB-sida.**

Service every 14 days

Wartung alle 14 Tage

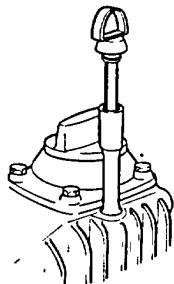
Service tous les 14 jours

*Servicio cada quince días*

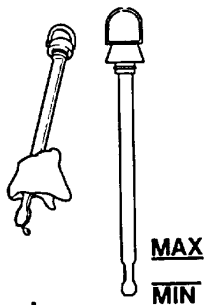
Assistenza ogni 15 giorni

*Service var 14:e dag*

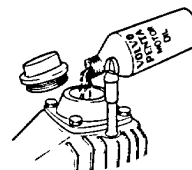
### MS2



a

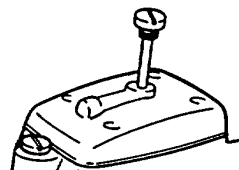


b



c

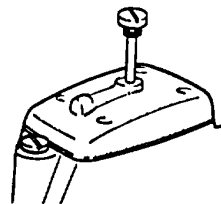
### MS3C



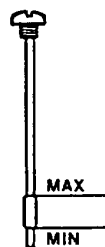
a



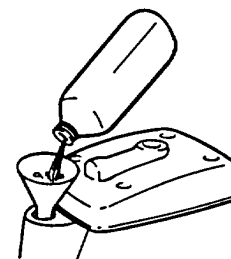
b



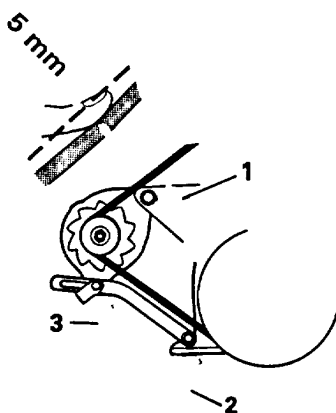
c



d



e



Cracked and worn belts must be changed.

*Gerissene und verschlissene Riemen sind zu wechseln.*

Une courroie fendue ou usée devra être remplacée.

*Cambiar la correa rota o desgastada.*

*Cambiare la cinghia se rotta o logora.*

*Sprucken och slitna rem skall bytas.*

Slacken 1, 2 and 3 to tension belt.

*Zum Spannen des Riemens 1, 2 und 3 lösen.*

Débrancher 1, 2 et 3 pour tendre la courroie.

*Soltar 1, 2 y 3 al tensar la correa.*

Allentare 1, 2 e 3 per tendere le cinghia.

*Lösa 1, 2 och 3 vid remspänning.*

**Every 50 hours**

**Cada 50 horas**

**Alle 50 Stunden**

**Ogni 50 ore**

**Toutes les 50 heures**

**Var 50:e timme**

**AQAD30**



Sea-water filter. Clean insert more frequently if necessary. It's important to check for water leakage.

*Seewasserfilter. Den Einsatz bei Bedarf öfter säubern. Wichtig: Dichtigkeitsprüfung.*

Filtre à eau de mer. Nettoyer plus souvent la cartouche si nécessaire. Contrôle de fuite important.

*Filtro de agua marina. En caso necesario limpiar más a menudo el patrón. Es importante el control de fugas.*

Filtro acqua di mare. Pulire più spesso e'inserto se necessario. E' importante controllare se ci sono perdite.

*Sjovattenfilter. Insatsen rengores oftare vid behov. Läckagekontroll viktig.*

**Steering shaft journals**

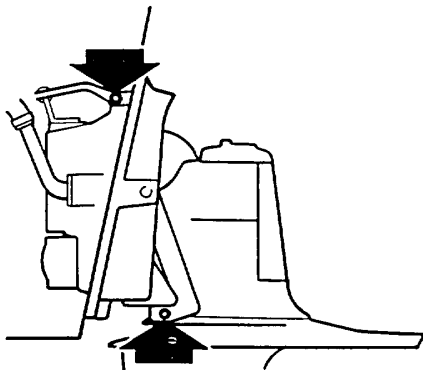
**Cojinetes del eje de dirección**

**Steuerwellenlagerungen**

**Cuscinetti asse comando**

**Paliers d'arbre de commande**

**Styraxellagringar**



Press in water-resistant grease.

*Wasserbeständiges Fett eindrücken.*

Injecter de la graisse résistante à l'eau.

*Introducir a presión grasa hidrófuga.*

Ingrassare a pressione con grasso impermeabile.

*Tryck in vattenbestandigt fett.*



**Every 100 hours**  
**Alle 100 Stunden**  
**Toutes les 100 heures**

**Cada 100 horas**  
**Ogni 100 ore**  
**Var 100:e timma**

### Oil change, engine

To facilitate draining of oil, the engine should be run warm

### Ölwechsel, Motor

Der Motor ist warmzufahren, um das Ablassen des Öles zu erleichtern.

### Vidange d'huile, moteur

Pour faciliter la vidange, chauffer le moteur.

### Cambiar el aceite del motor

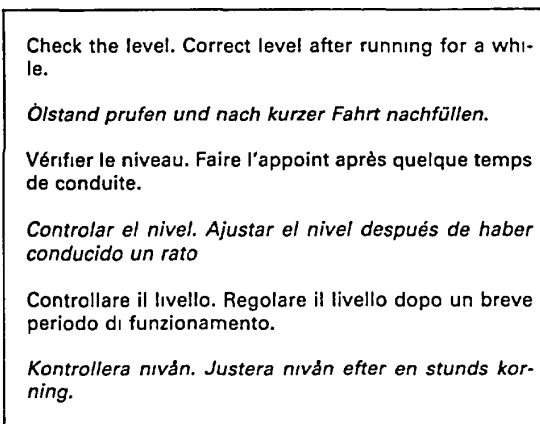
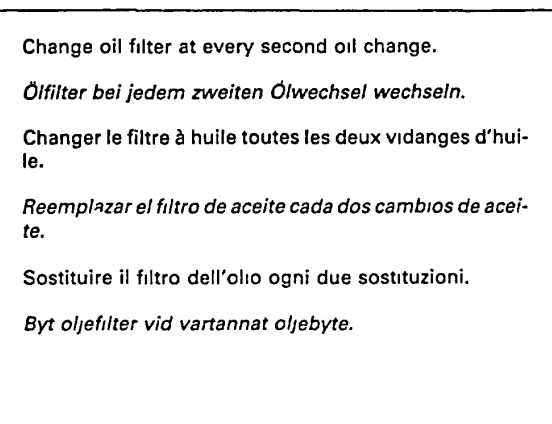
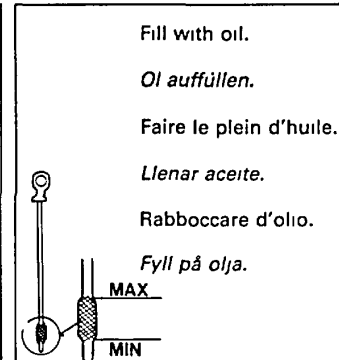
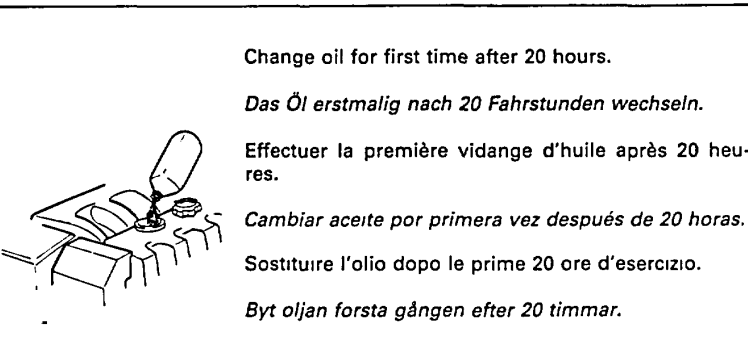
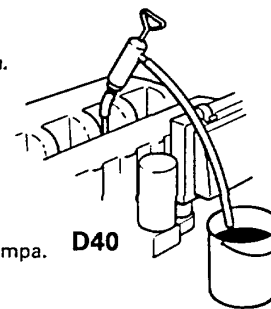
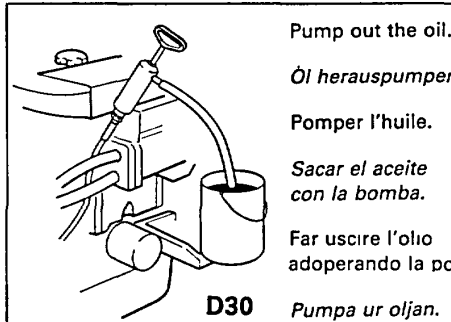
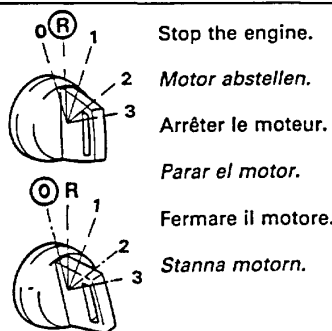
Para facilitar el vaciado de aceite el motor debe estar caliente

### Sostituzione dell'olio motore

Riscaldare il motore per semplificare lo scarico dell'olio

### Oljbyte, motor

För att underlätta oljeavtappningen bör motorn varmkoras



Every 200 hours  
 Alle 200 Stunden  
 Toutes les 200 heures

Cada 200 horas  
 Ogni 200 ore  
 Var 200:e timma

Draining oil, reverse gear, outboard drive.

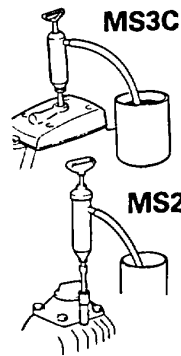
*Ablassen des Öles in Wendegertriebe bzw. Außenbordantrieb.*

Vidange d'huile, inverseur, transmission.

*Vaciar el aceite del inversor y la transmisión.*

Scarico dell'olio, invertitore, trasmissione.

Oljeavtapping, backslag, drev.



Take out dipstick.

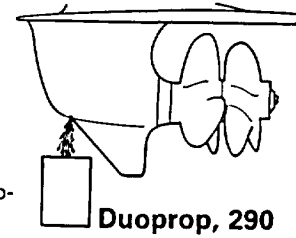
*Meßstab herausnehmen.*

Enlever la jauge d'huile.

*Sacar la varilla medidora.*

Estrarre l'astina di misurazione.

*Ta ur matstickan.*



**Duoprop, 290**

Filling.

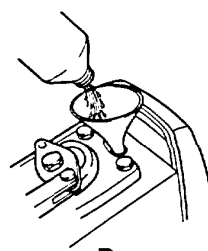
*Öl auffüllen.*

Remplissage.

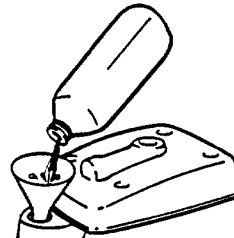
*Reposición.*

Rabbocco.

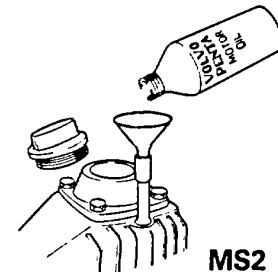
*Páfyllning.*



**Duoprop 290**



**MS3C**



**MS2**

Change of oil filter.

*Ölfilterwechsel.*

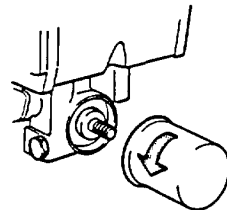
Echange de filtre à huile.

*Cambio del filtro de aceite.*

Sostituzione del filtro dell'olio.

*Byte av oljefilter.*

Oil	<i>Aceite</i>
Öl	Olio
Huile	<i>Olja</i>



Change filter at every second oil change.

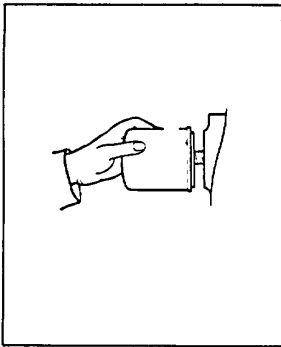
*Filterwechsel bei jedem zweiten Ölwechsel.*

Echange de filtre toutes les deux vidanges d'huile.

*Reemplazao del filtro cada dos cambios de aceite.*

Sostituzione del filtro ogni due sostituzioni dell'olio.

*Filterbyte vid vartannat oljebyte.*



Screw the filter on by hand until it just touches the contact surface. Tighten the filter a further half-turn.

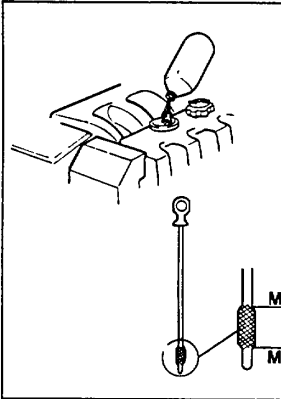
*Enroscar manualmente el filtro hasta tocar justamente la superficie de contacto. Apretar el filtro una media vuelta más*

*Das Filter von hand aufschrauben, bis es die Anliegefläche leicht berührt. Danach das Filter eine weitere halbe Drehung anziehen.*

Avvitare a mano il filtro fintanto che viene a contatto con la sede. Avvitarre il filtro di un altro 1/2 giro.

Visser le filter manuellement jusqu'à ce qu'il vienne en contact avec la surface d'appui. Visser ensuite le filtre d'un demi-tour supplémentaire.

*Skruva på filtret för hand tills det just berör anliggningsytan. Skruva åt filtret ytterligare ett halvt varv.*



Fill with oil.

Start the engine. Check sealing and oil pressure.

*Öl auffüllen.*

*Motor anlassen. Dichtheit und Öldruck prüfen.*

Faire le plein d'huile.

Mettre en marche. Vérifier l'étanchéité et la pression d'huile.

*Llenar aceite.*

*Arrancar. Controlar la estanqueidad y la presión de aceite.*

Rabboccare d'olio.

Avviare. Controllare la tenuta e la pressione dell'olio.

*Fyll på olja*

*Starta motorn. Kontrollera tathet och oljetryck.*



**Checking valve clearance.**

**Kontrolle des Ventilspiels.**

**Contrôle du jeu aux soupapes.**

**Control del juego de válvulas.**

**Controllo del gioco delle valvole.**

**Ventilspelskontroll.**

This should be checked by an authorized service workshop.

*Diese Kontrolle ist von einer autorisierten Werkstatt auszuführen.*

Ce contrôle doit être effectué par un atelier agréé.

*Este control debe hacerse por un taller autorizado*

Questo controllo deve essere fatto da un'officina autorizzata.

*Denna kontroll bor utföras av en auktoriserad verkstad.*

**Changing air filter insert.**

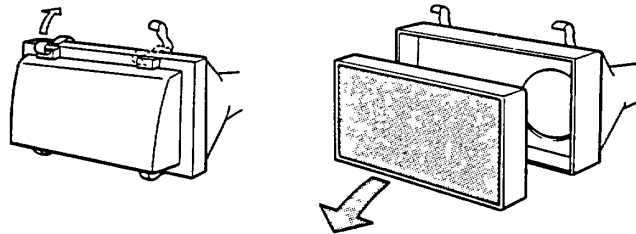
**Auswechseln des Luftfiltereinsatzes.**

**Echange de cartouche de filtre à air.**

**Cambio del elemento del filtro de aire.**

**Sostituzione della cartuccia del filtro dell'aria.**

**Byte av luftfilterinsats.**



**Cooling system**

**Kühlanlage**

**Système de refroidissement**

**Sistema de refrigeración**

**Impianto di raffreddamento**

**Kylsystem**

**Temperature too high: Check.**

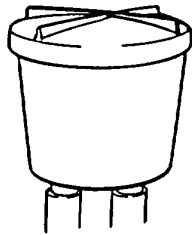
**Zu hohe Temperatur: Kontrollieren.**

**Température trop élevée: Vérifier.**

**Temperatura demasiado alta: Controlar.**

**Temperatura tropp alta: Controllare.**

**För hög temp: Kontrollera.**



**A**

Sea-water filter.

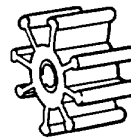
Seewasserfilter.

Filtre à eau de mer.

Filtro de agua marina.

Filtro acqua di mare.

Sjovattenfilter.



**B**

Impeller.

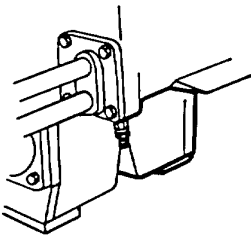
Laufrad.

Roue de pompe.

Rodete de bomba.

Girante della pompa.

Pumphjul.



**C**

Oil cooler.

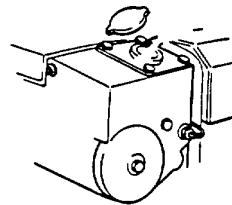
Ólkühler.

Radiateur d'huile.

Enfriador de aceite.

Radiatore dell'olio.

Oljekylare.



**D**

Fresh-water level.

Frischwasserstand.

Niveau d'eau douce.

Nivel de agua dulce.

Livello acqua dolce.

Färskvattennivå.

Belt, circulation pump.

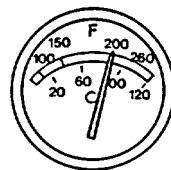
Riemen, Umwälzpumpe.

Courroie, pompe de circulation.

Correa, bomba de circulación.

Cinghia, pompa di circolazione.

Rem, cirkulationspump.



**E**

Instrument fault.

Instrumentenfehler.

Panne d'instrument.

Avería de instrumentos.

Guasto allo strumento.

Instrumentfel.



**F**

Thermostats.

Thermostate.

Thermostats.

Termostatos.

Termostato.

Termostater.

<p>Look up for water entering the boat.</p> <p><i>Darauf achten, daß kein Wasser eindringt.</i></p> <p>Faire attention à la pénétration d'eau.</p>	<p><i>Atención a la penetración de agua.</i></p> <p>Fare attenzione alle infiltrazioni d'acqua.</p> <p><i>Se upp med vattenintrång.</i></p>
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**Changing impeller.**

**Auswechseln des Lauf-  
rades.**

**Echange de roue de pom-  
pe.**

**Cambio del rodete de bom-  
ba.**

**Sostituzione della girante  
della pompa.**

**Byte av pumphjul.**

Close sea valve, MS2,  
MS3C

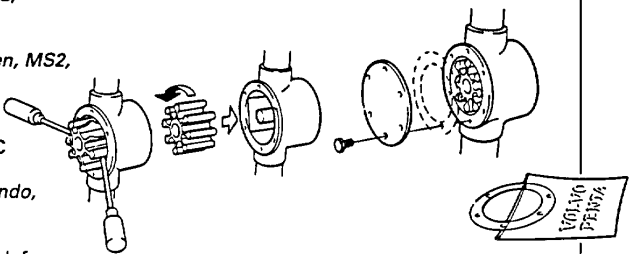
*Bodenhahn schließen, MS2,  
MS3C*

Fermer le robinet  
de fond, MS2, MS3C

*Cerrar el grifo de fondo,  
MS2, MS3C.*

Chiudere la valvola di fon-  
do, MS2, MS3C.

*Stäng bottenkranen, MS2,  
MS3C.*



**Electrical system.**

**Elektrische Anlage.**

**Système électrique.**

**Sistema eléctrico.**

**Impianto elettrico.**

**Elsystem.**

Main switch must not be switched off while engine is running.

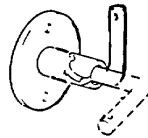
*Der Hauptschalter darf nicht bei laufendem Motor ausge-  
schaltet werden.*

Le coupe-circuit de batterie ne doit pas être ouvert lorsque  
le moteur tourne.

*El interruptor principal no debe desconectarse cuando el  
motor está en marcha.*

Non disinserire l'interruttore principale con il motore in  
funzione.

*Huvudstrombrytaren får ej slås ifrån när motorn går.*



Never alter the battery terminal connections.

*Die Pole dürfen nicht verwechselt werden.*

Ne pas intervertir les bornes.

*No confundir la polaridad.*

Non invertire i poli.

*Polerna får ej förväxlas.*

Never disconnect while engine is running.

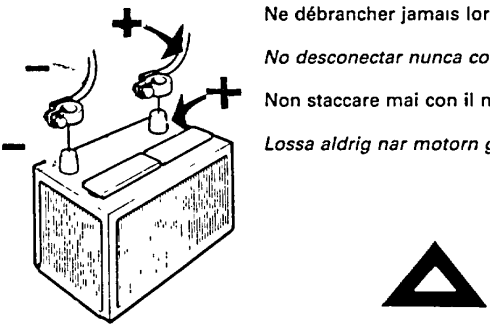
*Niemals bei laufendem Motor lösen.*

Ne débrancher jamais lorsque le moteur tourne.

*No desconectar nunca con el motor en marcha.*

Non staccare mai con il motore in funzione.

*Lossa aldrig när motorn går.*



Remove battery cables before working on alternator.

*Vor Eingriffen in den Generator die Batteriekabel lösen.*

Débrancher les câbles de batterie avant toute intervention sur l'alternateur.

*Desconectar los cables de batería antes de intervenir en el alternador.*

Staccare i cavi della batteria prima di intervenire sull'alternatore.

*Lossa batterikablarna före ingrepp i generatorm.*

Before electrical welding work is done onboard, disconnect all electrical connections from alternator and regulator.

*Bei Elektroschweißen an Bord sind alle elektrischen Anschlüsse von Generator und Reglerschalter zu lösen.*

En cas de soudage à bord, débrancher tous les raccords électriques de l'alternateur et du régulateur.

*Al hacer soldaduras eléctricas a bordo desconectar todas las conexiones eléctricas del alternador y del regulador.*

In caso di lavori di saldatura a bordo, staccare tutti i contatti elettrici dall'alternatore e dal regolatore.

*Vid elsvetsning ombord, lossa alla elanslutningar från generator och regulator.*

Automatic fuse.

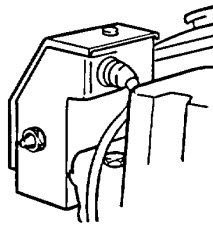
*Automatische Sicherung:*

Fusible automatique (disjoncteur).

*Fusible automático.*

Fusible automatico.

*Automatsäkring.*



Reset button.

*Rückstellschalter.*

Bouton de réarmement.

*Botón de reposición.*

Bottone di ripristino.

*Återställningsknapp.*

Check why the fuse blew. Servicing should be undertaken by authorized workshop.

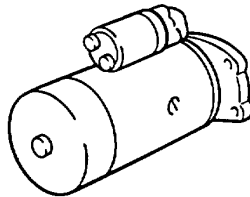
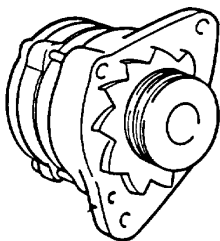
*Prüfen, warum die Sicherung ausgelöst wurde. Reparaturen von einer autorisierten Werkstatt ausführen lassen.*

Vérifier pourquoi le fusible s'est déclenché. Une vérification doit être effectuée par un atelier agréé.

*Controlar la causa de que se haya activado el fusible. El servicio debe hacerse por un taller autorizado.*

Accertare il motivo della fusione del fusibile. L'assistenza deve essere fatta da un'officina autorizzata.

*Kontrollera varför säkringen slöt ut. Service bör utföras av auktoriserad verkstad.*



This should be checked by an authorized service workshop.

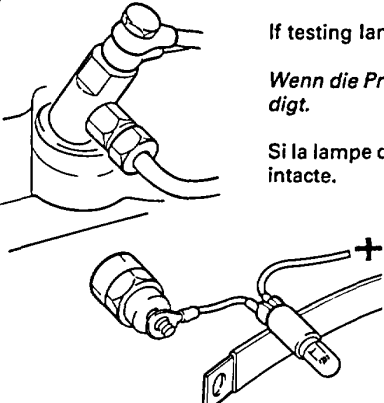
*Diese Kontrolle ist von einer autorisierten Werkstatt auszuführen.*

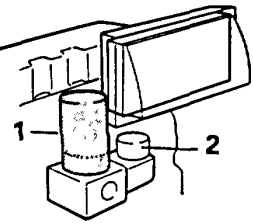
Ce contrôle doit être effectué par un atelier autorisé.

*Este control debe hacerse por un taller autorizado.*


Questo controllo deve essere fatto da un'officina autorizzata.

*Denna kontroll bör utföras av en auktoriserad verkstad.*

<p><b>Inspection of glow plug.</b></p> <p><b>Glühkerzenkontrolle.</b></p> <p><b>Contrôle de bougie de préchauffage.</b></p> <p><b>Control de bujías de incandescencia.</b></p> <p><b>Controllo delle candele.</b></p> <p><b>Glödstiftskontroll.</b></p>	 <p>If testing lamp comes on, glow plug is intact.</p> <p><i>Wenn die Prüflampe leuchtet, ist die Glühkerze unbeschädigt.</i></p> <p>Si la lampe de test s'allume, la bougie de préchauffage est intacte.</p> <p><i>Si la lámpara de prueba se enciende la bujía de incandescencia está entera.</i></p> <p>Spia di prova accesa = candela intatta.</p> <p><i>Lyser testlampan ar glödstiftet helt.</i></p>
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<p><b>Crankcase ventilation.</b></p> <p><b>Kurbelgehäusebelüftung.</b></p> <p><b>Reniflard.</b></p> <p><b>Ventilación del cárter.</b></p> <p><b>Ventilazione del basamento.</b></p> <p><b>Vevhusventilation.</b></p>	 <p>Change the filter (1) every 200 hours or when oil-mixed air is forced out of the valve (2).</p> <p><i>Das Filter (1) alle 200 Stunden wechseln, oder wenn durch das Ventil (2) ölbemengte Luft austritt.</i></p> <p>Changer le filtre (1) toutes les 200 heures ou si de l'air huileux passe par la valve (2).</p> <p><i>Cambiar el filtro (1) cada 200 horas o cuando aire mezclado con aceite sale por la válvula (2).</i></p> <p>Sostituire il filtro (1) ogni 200 ore, oppure, quando dalla valvola (2) fuoriesce olio misto ad aria.</p> <p><i>Byt filtret (1) var 200:e timma eller då oljeblandad luft tränger ut genom ventilen (2).</i></p>
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<p><b>Duoprop-propeller.</b></p> <p><b>Duoprop-Propeller.</b></p> <p><b>Hélices Duoprop.</b></p> <p><b>Hélices. Duoprop.</b></p> <p><b>Elica Duoprop.</b></p> <p><b>Duoprop-propeller.</b></p>	<p>Each pair of propellers is jointly classified and marked with e.g. A3 and a red label. Propellers with dissimilar markings, e.g. A3 and A5, must not be installed.</p> <p><i>Jedes Propellerpaar ist zusammen klassifiziert und mit z.B. A4 und einem roten Aufkleber gekennzeichnet. Propeller mit verschiedenen Kennzeichnungen, wie z.B. A3 und A5 dürfen nicht montiert werden.</i></p> <p>Les hélices sont classées par paires et marquées A3 par exemple, et pourvues d'un autocollant rouge. Les hélices portant des marques d'identification différentes, par exemple A3 et A5, ne doivent pas être montées ensemble.</p> <p><i>Cada par de hélices está homologado conjuntamente y lleva una marca, por ej. A3, y una calcomanía roja. No deben montarse hélices con marcas diferentes, por ej. A3 y A5.</i></p> <p>Ogni coppia di eliche forma un complesso inscindibile contrassegnato con un marchio, per es. A3, e un'etichetta rossa. Eliche con marchi diversi, per es. A3 e A5, non possono essere accoppiate.</p> <p><i>Varje propellerpar är klassade ihop och märkta med t ex A3 och röd dekal. Propellerar med olika markning, t ex A3 och A5 får ej monteras.</i></p>
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<p>Damaged propellers must be changed as soon as possible. Drive carefully. Do not run with only one propeller fitted as this may damage the propeller shafts.</p> <p><i>Beschädigte Propeller schnellstens wechseln. Vorsichtig fahren! Es darf nicht mit nur einem Propeller gefahren werden, da dies die Propellerwellen beschädigen kann.</i></p> <p>Une hélice endommagée doit être remplacée immédiatement. Conduire avec prudence. Ne pas conduire avec une seule hélice montée car les arbres porte-hélices risquent fort d'être endommagés.</p>	<p><i>Cambiar una hélice dañada inmediatamente. manejar con cuidado. No debe hacerse marchar una sola hélice, ya que esto podría dañar los ejes de las hélices.</i></p> <p>Sostituire subito l'elica guasta. Navigare lentamente. Non far funzionare il motore con una sola elica. Gli assi dell'elica potrebbero danneggiarsi.</p> <p><i>Skadad propeller skall bytas snarast. Kör försiktigt. Körning med endast en propeller monterad får ej göras då detta kan skada propelleraxlarna.</i></p> 
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**Changing propeller, Duoprop.**

**Propellerwechsel, duoprop.**

**Echange d'hélice. Duoprop.**

**Cambio de hélices. Duoprop.**

**Sostituzione dell'elica. Duoprop.**

**Byte av propeller. Duoprop.**

**Grease pad.**

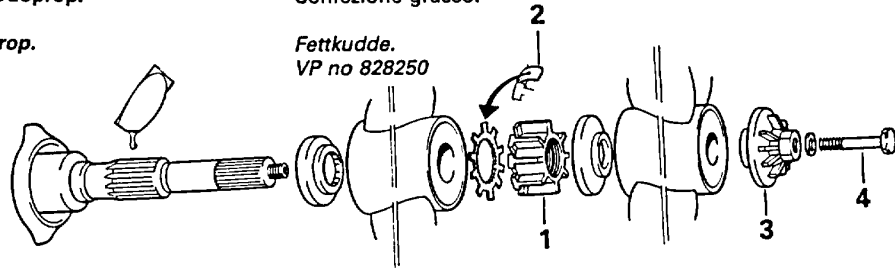
**Fettverpackung.**

**Paquet de graisse.**

**Cojin de grasa.**

**Confezione grasso.**

**Fettkudde.  
VP no 828250**



Lock nut (1) with one of the teeth of the locking washer (2).

Tighten nut (3) 24 mm spanner.

Tighten locking screw (4) 13 mm spanner.

*Die Mutter (1) mit einem Zahn der Sicherungsscheibe (2) sichern.*

*Die Mutter (3) anziehen. Schlüsselweite 24 mm.*

*Die Sicherungsschraube (4) anziehen. Schlüsselweite 13 mm.*

*Bloquer l'écrou (1) avec un des lobes de la plaquette-arrêtoir (2).*

*Serrer l'écrou (3). Clé de = 24 mm.*

*Serrer la vis d'arrêt (4). Clé de = 13 mm.*

*Bloccare il dado (1) con uno dei denti della rosetta.*

*Serrare il dado (3). Apertura chiave 24 mm.*

*Serrare la vite di sicurezza (4). Apertura chiave 13 mm.*

*Asegurar la tuerca (1) con uno de los dientes de la arandela (2).*

*Apretar la tuerca (3). Ancho de llave 24 mm.*

*Apretar el tornillo de seguridad (4). Ancho de llave 13 mm.*

*Lås muttern (1) med en av låsbrickans tander (2).*

*Dra åt muttern (3). Nyckelvidd 24 mm.*

*Dra åt låsskraven (4). Nyckelvidd 13 mm.*

**Propeller marking.**

**Propellerkennzeichnung.**

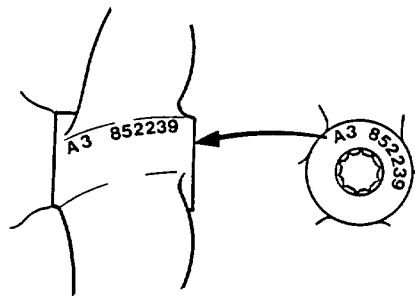
**Repérage d'hélice.**

**Marcas de la hélice.**

**Marcatura dell'elica.**

**Propellermärkning.**

**Duoprop**





**Changing propeller, 290**

**Propellerwechsel, 290**

**Echange d'hélice, 290**

**Cambio de hélices, 290**

**Sostituzione dell'elica, 290**

**Byte av propeller, 290**

**Grease pad.**

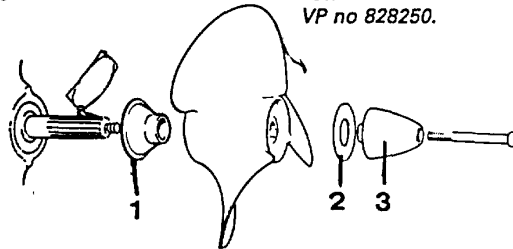
**Fettverpackung.**

**Paquet de graisse.**

**Cojin de grasa.**

**Confezione.**

**Fettkudde.  
VP no 828250.**



Assemble the anti-fouling protector (1)  
Fit the propeller  
Slip on the plastic washer (2)  
Fit and tighten the propeller cone (3)  
Fit and tighten the centre screw.

*Den Angelleinenschutz (1) montieren  
Den Propeller montieren  
Die Kunststoffscheibe (2) auflegen  
Den Propellerkonus (3) montieren und anziehen  
Die Mittenschraube einsetzen und festschrauben.*

Monter la bague déflectrice (1)  
Monter l'hélice  
Engager la rondelle en plastique (2)  
Monter et serrer en place le cône d'hélice (3)  
Introduire et serrer la vis de blocage.

*Montar la protección (1)  
Montar la hélice  
Introducir la arandela plana (2)  
Montar y apretar el cono de la hélice (3)  
Montar y apretar el tornillo central.*

Montare l'anello paralenza (1)  
Montare l'elica  
Infilare la rondella di plastica (2)  
Montare e serrare l'ogiva dell'elica (3)  
Montare e serrare la vite di bloccaggio.

*Montera linskyddet (1)  
Montera propellern  
Tra på plastbrickan (2)  
Montera och dra åt propellerkonen (3)  
Montera och dra åt centrumskruven.*

**Changing corrosion protection.**

**Auswechseln des Korrosionsschutzes.**

**Echange de la protection anticorrosion.**

**Cambio de las protecciones anticorrosivas.**

**Sostituzione della protezione anticorrosiva.**

**Byte av korrosionsskydd.**

Change when it is pitted more than 50 %.

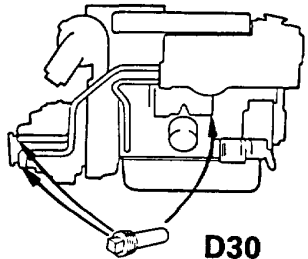
*Auswechseln, wenn dieser mehr als zur Hälfte abgefressen ist.*

Echange lorsqu'elle est corrodée à plus de 50 %.

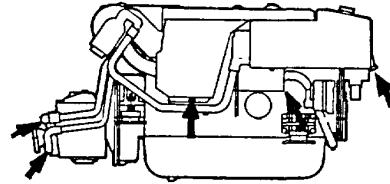
*Cambiarlo cuando se ha corroído más del 50 %.*

Deve essere sostituito quando risulta corrosivo più del 50 %.

*Bytes då den är nerfratt mer än 50 %.*



**D30**



**D40**

**Changing corrosion protection.**

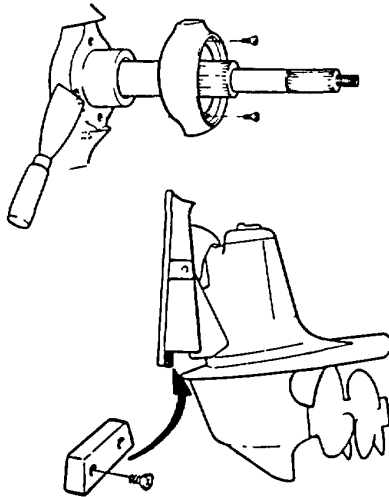
**Auswechseln des Korrosionsschutzes.**

**Echange de la protection anticorrosion.**

**Cambio de las protecciones anticorrosivas.**

**Sostituzione della protezione anticorrosiva.**

**Byte av korrosionsskydd.**



See "Changing propeller".

*Siehe „Auswechseln des Propellers“.*

Voir "Echange d'hélice".

*Ver "Cambio de hélices".*

Vedere "Sostituzione dell'elica".

*Se "Byte av propeller".*

**Fuel system.**

**Kraftstoffanlage.**

**Système d'alimentation.**

**Sistema de combustible.**

**Impianto alimentazione carburante.**

**Bränslesystem.**

Change fuel filter at least once per season.

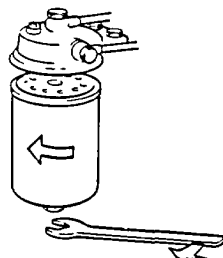
*Das Kraftstofffilter mindestens einmal pro Saison wechseln.*

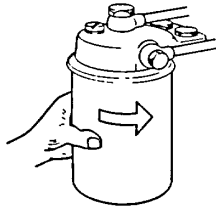
Changer le filtre à carburant au moins une fois par saison.

*Cambiar el filtro de combustible por lo menos una vez por temporada.*

Sostituire il filtro del carburante come minimo una volta per stagione.

*Byt bränslefilter minst en gång per säsong.*





Compress the gasket by tightening about 1/2 a turn.

*Die Dichtung etwa 1/2 Drehung anziehen und dadurch verdichten.*

Comprimer le joint en serrer d'environ un demi tour.

*Comprimir la junta apretando una 1/2 vuelta.*

Comprimere la guarnizione serrando ca. 1/3 giro.

*Komprimera packningen genom att dra åt ca 1/2 varv.*

Vent the system. Check for leaks.

*Anlage entlüften. Die Dichtheit überprüfen.*

Purger le système. Vérifier l'étanchéité.

*Purgar de aire el sistema. Controlar la estanqueidad.*

Spurgare l'impianto. Controllare la tenuta.

*Lufta systemet. Kontrollera tatheten.*

**Extra fuel filter.**

**Zusätzliches Luftfilter.**

**Filtre à carburant supplémentaire.**

**Filtro de combustible extra.**

**Filtro carburante extra.**

**Extra bränslefilter.**

The filter cartridge must be changed at least once per season.

*Die Filterpatrone ist mindestens einmal je Saison zu wechseln.*

La cartouche filtrante devra être changée au moins une fois par saison.

*Se debe reemplazar el elemento filtrante por lo menos una vez por temporada.*

Cambiare la cartuccia del filtro almeno una volta per stagione.

*Filterpatronen skall bytas minst en gång per säsong.*

Drain off any water through the cock.

*Wasser, wenn vorhanden, durch den Hahn ablassen.*

Vider l'eau éventuelle par le robinet.

*Si hay agua vaciar por el grifo.*

Scaricare l'eventuale acqua attraverso il rubinetto.

*Tappa av eventuellt vatten genom kranen.*

**Fuel strainer.**

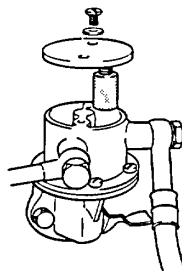
**Kraftstoffsieb.**

**Crépine à carburant.**

**Tamiz de combustible.**

**Filtro carburante a rete.**

**Bränslesil.**



Clean the strainer at least once a year.  
Vent the system. Check for leaks.

*Das Sieb mindestens einmal jährlich saubern. Anlage entlüften. Dichtheit prüfen.*

Nettoyer la crépine au moins une fois par an.  
Purger le système. Vérifier l'étanchéité.

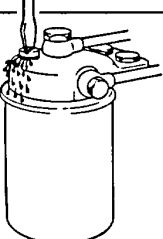
*Limpiar el tamiz por lo menos una vez por año. Purgar de aire el sistema. Controlar la impermeabilidad.*

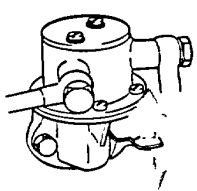
Pulire la rete almeno una volta l'anno.  
Spurgare l'impianto. Controllare la tenuta.

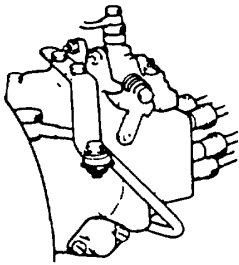
*Rengör silen minst en gång per år. Lufta systemet. Kontrollera tatheten.*

<p><b>Injector.</b></p> <p><b>Düsenhalter.</b></p> <p><b>Injecteur.</b></p> <p><b>Inyectoros.</b></p> <p><b>Iniettori.</b></p> <p><b>Insprutare.</b></p>	<p>Have the work carried out by an authorized workshop every 600 hours.</p> <p><i>Die Arbeit alle 600 Stunden von einer autorisierten Werkstatt ausführen lassen.</i></p> <p>Laisser un atelier agréé affectuer ce travail toutes les 600 heures.</p> <p><i>Confiar el trabajo a un taller autorizado cada 600 horas.</i></p> <p>Lasciare eseguire il lavoro a un'officina autorizzata ogni 600 ore.</p> <p><i>Låt en auktoriserad verkstad utföra arbetet var 600:e timma.</i></p>
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<p><b>Venting.</b></p> <p><b>Entlüften.</b></p> <p><b>Purge.</b></p> <p><b>Purga de aire.</b></p> <p><b>Spurgo dell'aria.</b></p> <p><b>Luftning.</b></p>	<p>Vent after changing filter, cleaning fuel strainer, running fuel tank empty, fitting of fuel pump, leakage. Watch out for spilled fuel.</p> <p><i>Entlüften nach Filterwechsel, Säuberung des Kraftstoffsiebes, Leerfahren, Einbau der Kraftstoffpumpe, Leckage. Auf ausrinnenden Kraftstoff achten.</i></p> <p>Purger dans les cas suivants: échange de filtre, nettoyage de crépine, conduite jusqu'à épuisement de carburant, montage de pompe d'alimentation, fuites. Faire attention aux éclaboussures de carburant.</p> <p><i>Purgar de aire después del cambio de filtro, limpieza del tamiz de combustible, marcha en ralentí, montaje de bomba de combustible, fugas. Atención con derrames de combustible.</i></p> <p>Spurgare dopo la sostituzione del filtro, pulitura del filtro a rete del carburante, funzionamento a vuoto, montaggio della pompa carburante, perdite. Fare attenzione alle perdite di carburante.</p> <p><i>Lufta efter filterbyte, rengöring av branslesil, tomkörning, monterig av branslepump, läckage. Se upp med bransle-spill.</i></p>
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	<p>Open the air screw on the fuel filter 4 turns.</p> <p><i>Die Luftschraube am Kraftstofffilter 4 Drehungen öffnen.</i></p> <p>Ouvrir la vis de purge sur le filtre à carburant d'environ 4 tours.</p> <p><i>Abrir el tornillo de purga en el filtro de combustible 4 vueltas.</i></p> <p>Aprire di 4 giri la vite dell'aria sul filtro del carburante.</p> <p><i>Öppna luftskruven på branslefilteret 4 varv.</i></p>
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	<p>Pump until fuel without air bubbles emerges. Tighten the air screw.</p> <p><i>Pumpen, bis blasenfreier Kraftstoff ausläuft. Anziehen die Luftschraube.</i></p> <p>Pomper jusqu'à ce que le carburant arrive sans bulles d'air. Serrer la vis de purge.</p> <p><i>Bombear hasta que sale combustible sin burbujas de aire. Apretar el tornillo de purga.</i></p> <p>Pompare fintanto che il carburante esce senza bolle d'aria. Serrare la vite dell'aria.</p> <p><i>Pumpa tills bransle utan luftbubblor kommer fram. Dra åt luftskruven.</i></p> <p>If pump action is poor, turn the engine once or twice.</p> <p><i>Bei schlechter Pumpenwirkung den Motor etwas durchdrehen.</i></p> <p>En cas de mauvais pompage, tourner un peu le moteur.</p> <p><i>Si funciona mal la bomba, hacer girar algo el motor.</i></p> <p>Se l'effetto della pompa non è sufficiente far girare un po' il motore.</p> <p><i>Vid dålig pumpverkan, vrid runt motorn något.</i></p>
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The injection pump is automatically vented.

*Die Einspritzpumpe wird automatisch entlüftet.*

La pompe d'injection est purgée automatiquement.

*La bomba de inyección se purga automáticamente.*

La pompa d'iniezione viene spurgata automaticamente.

*Insprutningspumpen urluftas automatiskt.*

Before starting with a new pump, prime for 1/2 min, with the hand pump

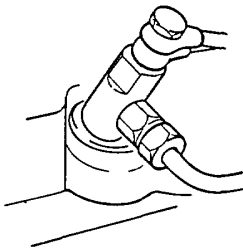
*Vor Anlassen mit neuer Pumpe eine halbe Minute mit der Handpumpe pumpen.*

Avant le démarrage avec une pompe neuve, pomper pendant environ 1/2 min avec la pompe d'amorçage.

*Antes de arrancar con una bomba nueva, bombear 1/2 min. con cebador manual.*

Prima dell'avviamento con una pompa nuova, pompare per 1/2 min con la pompa a mano.

*Före start med ny pump, pumpa 1/2 min med handpumpen.*



Slacken off the delivery pipe nuts, put throttle control to full speed. Run with starter motor until air-free fuel emerges. Tighten. Start.

*Druckrohrmutter lösen, Drehzahlregler auf Vollgas. Mit dem Anlasser durchdrehen, bis blasenfreier Kraftstoff austritt. Anziehen. Anlassen.*

Dévisser les écrous des tuyaux de refoulement, la commande de régime en position maxi. Faire tourner le démarreur jusqu'à ce que du carburant sans bulles d'air arrive. Serrer les écrous et mettre en marche.

*Sacar las tuercas de los tubos de presión con el acelerador a plenos gases. Hacer funcionar el motor de arranque hasta que salga combustible sin aire. Apretar. Arrancar.*

Allentare i dadi del tubo di pressione, comando del regime di giri sul massimo. Far funzionare il motorino d'avviamento fintanto che il carburante esce senza bolle d'aria. Serrare. Avviare.

*Lossa tryckrosmuttrar, varvtalsreglaget i fullvarv. Kor med startmotorn tills luftfritt bransle kommer. Dra åt. Starta.*

**Inhibiting**

**Konservieren**

**Conservation**

**Conservación**

**Conservazione**

**Konservering**

**Boat in the water.**

**Boot im wasser.**

**Bateau à l'eau.**

**La embarcación en el agua.**

**Barca in mare.**

**Båten i sjön.**

Run the engine warm. Pump out the oil.

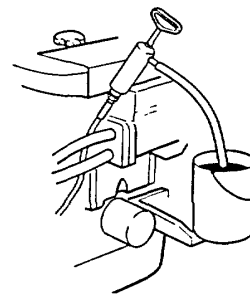
*Motor warmfahren.*

Chauffer le moteur.

*Calentar el motor.*

Riscaldare il motore.

*Varmkor motorn. Sug upp oljan.*



**Change of oil filter.**

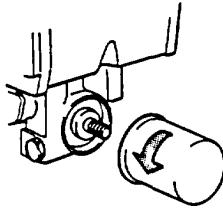
**Ölfilterwechsel.**

**Echange de filtre à huile.**

**Cambio del filtro de aceite.**

**Sostituzione del filtro dell'olio.**

**Byte av oljefilter.**



Oil.

Öl.

Huile.

Acete.

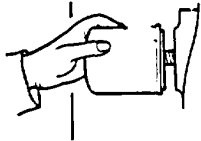
Olio.

Olja.



Screw the filter on by hand until it just touches the contact surface. Tighten the filter a further half-turn.

*Enroscar manualmente el filtro hasta que toque justamente la superficie de contacto. Apretarlo una media vuelta más.*

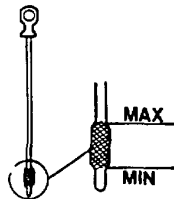
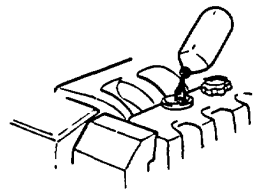


*Das Filter von Hand aufschrauben, bis es die Anliegefläche leicht berührt. Danach das Filter eine weitere halbe Drehung anziehen.*

Avvitare a mano il filtro fintanto che viene a contatto con la sede. Avvitare il filtro di un ulteriore 1/2 giro.

Visser le filter à la main jusqu'à ce qu'il vienne en contact avec la surface d'appui. Le serrer ensuite d'un demi tour supplémentaire.

*Skruva på filtret for hand tills det just berör anliggningsytan. Skruva åt filtret ytterligare ett halvt varv.*



Fill with oil.

Öl auffüllen.

Faire le plein d'huile.

Llenar aceite.

Rabboccare d'olio.

Fyll på olja.

**Change fuel filter.**

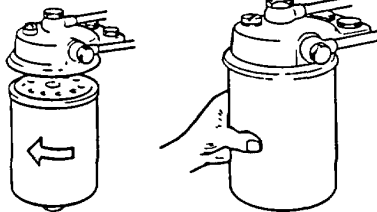
**Kraftstoffilter wechseln.**

**Changer le filtre à carburant.**

**Cambiar el filtro de combustible.**

**Sostituire il filtro del carburante.**

**Byt bränslefilter.**



Compress the gasket by tightening about 1/2 a turn.

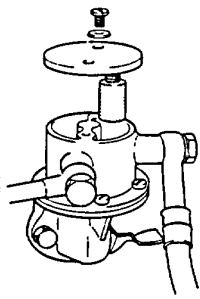
*Die Dichtung etwa 1/2 Drehung anziehen und dadurch verdichten.*

Comprimer le joint en serrant d'environ un demi tour.

*Comprimir la junta apretando una 1/2 vuelta.*

Comprimere la guarnizione serrando ca. 1/2 giro.

*Komprimera packningen genom att dra åt ca 1/2 varv.*



Clean fuel strainer.  
*Kraftstoffsieb säubern.*  
 Nettoyer la crépine à carburant.  
*Limpiar el tamiz de combustible.*  
 Pulire il filtro del carburante.  
*Rengör bränslesil.*

Change insert in extra fuel filter.  
*Den Einsatz im zusätzlichen Kraftstofffilter wechseln.*  
 Changer la cartouche du filtre à carburant supplémentaire.  
*Cambiar el elemento en el filtro de combustible extra.*  
 Sostituire l'inserto nel filtro extra del carburante.  
*Byt insats i extra bränslefilter.*

**Vent the fuel system**

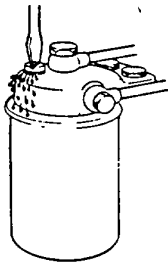
***Die Kraftstoffanlage entlüften***

**Purger le système d'alimentation**

***Purgar de aire el sistema de combustible***

**Spurgare l'impianto alimentazione carburante**

***Lufta bränslesystemet***



Open the air screw on the fuel filter 4 turns.

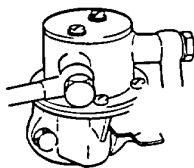
*Die Luftschraube am Kraftstofffilter 4 Drehungen öffnen.*

Ouvrir la vis de purge sur le filtre à carburant d'environ 4 tours.

*Abrir el tornillo de purga en el filtro de combustible 4 vueltas.*

Aprire di 4 giri la vite dell'aria sul filtro del carburante.

*Öppna luftskruven på bränslefilteret 4 varv.*



Pump until fuel without air bubbles emerges. Tighten.

*Pumpen, bis blasenfreier Kraftstoff ausläuft. Anziehen.*

Pomper jusqu'à ce que le carburant arrive sans bulles d'air. Serrer.

*Bombear hasta que sale combustible sin burbujas de aire. Apretar.*

Pompare fintanto che il carburante esce senza bolle d'aria. Serrare.

*Pumpa tills bränsle utan luftbubblor kommer fram. Dra åt.*

If pump action is poor, turn the engine once or twice.

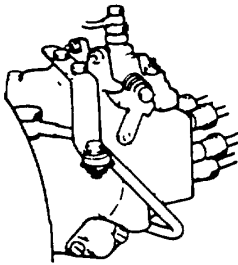
*Bei schlechter Pumpenwirkung den Motor etwas durchdrehen.*

En cas de mauvais pompage, tourner un peu le moteur.

*Si funciona mal la bomba, hacer girar algo el motor.*

Se l'effetto della pompa non è sufficiente far girare un po' il motore.

*Vid dålig pumpverkan, vrid runt motorn något.*



The injection pump is automatically vented.

*Die Einspritzpumpe wird automatisch entlüftet.*

La pompe d'injection est purgée automatiquement.

*La bomba de inyección se purga automáticamente.*

La pompa d'iniezione viene spurgata automaticamente.

*Insprutningspumpen urluftas automatiskt.*

Before starting with a new pump, prime for 1/2 min, with the hand pump.

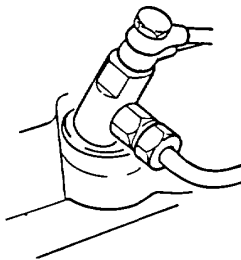
*Vor Anlassen mit neuer Pumpe eine halbe Minute mit der Handpumpe pumpen.*

Avant le démarrage avec une pompe neuve, pomper environ pendant 1/2 mn avec la pompe d'amorçage.

*Antes de arrancar con una bomba nueva, bombear 1/2 min. con cebador manual.*

Prima dell'avviamento con una pompa nuova, pompare per 1/2 min. con la pompa a mano.

*Före start med ny pump, pumpa 1/2min med handpumpen.*



Slacken off the delivery pipe nuts, put throttle control to full speed. Run with starter motor until air-free fuel emerges. Tighten. Start.

*Druckrohrmutter lösen, Drehzahlregler auf Vollgas. Mit dem Anlasser durchdrehen, bis blasenfreier Kraftstoff austritt. Anziehen. Anlassen.*

Dévisser les écrous des tuyaux de refoulement, la commande de régime en position maxi. Faire tourner le démarreur jusqu'à ce que du carburant sans bulles d'air arrive. Serrer les écrous et mettre en marche.

*Sacar las tuercas de los tubos de presión con el acelerador a plenos gases. Hacer funcionar el motor de arranque hasta que salga combustible sin aire. Apretar. Arrancar.*

Allentare i dadi del tubo di pressione, comando del regime di giri sul massimo. Far funzionare il motorino d'avviamento fintanto che il carburante esce senza bolle d'aria. Serrare. Avviare.

*Lossa tryckrörmutterar, varvtalsreglaget i fullvarv. Kor med startmotorn tills luftfritt bransle kommer. Dra åt. Starta.*

**With the boat out of the water**

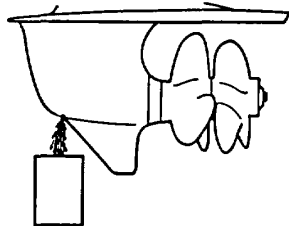
**Das Boot an Land nehmen**

**Mise à sec du bateau**

**Varar la embarcación**

**Tirare la barca a terra**

**Ta upp båten på land**



Remove the plug carefully. Check that the oil is not discoloured. No inhibiting is required.

*Den Stopfen vorsichtig öffnen. Prüfen, daß das Öl nicht verfärbt ist. Konservieren ist nicht erforderlich.*

Enlever le bouchon avec précaution. Vérifier que l'huile n'est pas décolorée. Aucune conservation n'est nécessaire.

*Sacar con cuidado el tapón. Controlar que el aceite no está sucio. No es necesaria la conservación.*

Allentare con cautela il tappo. Controllare che l'olio non si sia alterato. Non è necessaria conservazione.

*Lossa pluggen försiktigt. Kontrollera att oljan ej är missfärgad. Konservering erfordras ej.*



**Inhibiting**

Fresh-water system  
Alternative 1.

**Konservieren**

Frischwasseranlage  
Alternative 1

**Conservation**

Système d'eau douce  
1ère alternative

**Conservación**

Sistema de agua dulce  
Alternativa 1

**Conservazione**

Impianto acqua dolce  
Alternativa 1

**Konservering**

Färskvattensystem  
Alternativ 1

If the system is already filled with anti-corrosive anti-freeze mixture, the freezing point must be checked.

*Wenn die Anlage mit korrosionsschützendem Frostschutzgemisch gefüllt ist, ist der Frostschutz zu prüfen.*

Si le système est rempli d'un mélange antirouille-antigel, vérifier la protection antigél.

*Si el sistema tiene una mezcla anticongelante con aditivos anticorrosivos controlar la capacidad anticongelante.*

Se l'impianto contiene anticongelante anticorrosivo controllare l'anticongelante.

*Är systemet fyllt med korrosionsskyddande frostskyddsblandning skall frostskyddet kontrolleras*

**Alternative 2****Alternative 2****2ème alternative****Alternativa 2****Alternativa 2****Alternativ 2**

If an anti-corrosive mixture is used this should be changed once per season. Add 1 litre of anti-corrosive (Volvo Penta Accessory). **Note! No frost protection.**

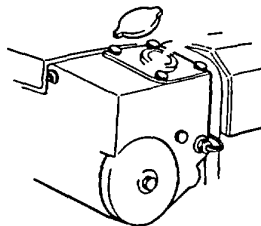
*Wenn ein Korrosionsschutzgemisch eingefüllt ist, soll dieses einmal pro Saison gewechselt werden. 1 Liter Korrosionsschutz zusetzen (Volvo Penta Zubehör). Hinweis: Kein Frostschutzmittel.*

Si un mélange anticorrosif est employé, celui-ci devra être vidangé une fois par saison. Ajouter 1 litre d'antirouille (accessoire Volvo Penta). **N.B. ! Pas d'antigel.**

*Si hay mezcla anticorrosiva, deberá cambiarse una vez por temporada. Añadir 1 litro de agente anticorrosivo (accesorio Volvo Penta). **NOTA: no anticongelante.***

Se si adopera miscela anticorrosiva, questa dovrà essere cambiata una volta per stagione. Aggiungere 1 litro di liquido anticorrosione (accessorio Volvo Penta). **N.B: non antigelo.**

*Är en korrosionsskyddsblandning påfylld bör denna bytas 1 gång per säsong. Tillsatt 1 liter korrosionsskydd (Volvo Penta Tillbehör). **OBS. Inget frysskydd.***



**Inhibiting**  
Sea-water system

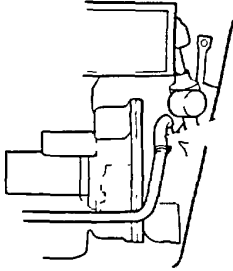
**Konservieren**  
Seewasseranlage

**Conservation**  
Système d'eau de mer

**Conservación**  
Sistema de agua marina

**Conservazione**  
Impianto acqua di mare

**Konservering**  
Sjövattensystem



Remove the suction hose coming from the transom shield (AQ) or the sea-water pump (MS2, MS3).

*Den Saugschlauch, der aus der Befestigungsplatte (AQ) bzw. aus der Seewasserpumpe (MS2, MS3) kommt, lösen.*

Débrancher le flexible d'aspiration venant de la platine (AQ), ou de la pompe à eau de mer. (MS2, MS3).

*Desacoplar la manguera de succión que viene del soporte (AQ) y la bomba de agua marina respectivamente. (MS2, MS3).*

Staccare il flessibile d'aspirazione proveniente dalla staffa (AQ) risp. pompa acqua di mare. (MS2, MS3).

*Lossa sugslangen som kommer från skolden. (AQ) resp sjovattenspumpen. (MS2, MS3).*

Drain the seawater system.

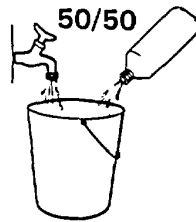
*Die Anlage entleeren.*

Vider le système.

*Vaciar el sistema.*

Scaricare l'impianto.

*Tappa av systemet.*



**a**

Ethylene glycol.

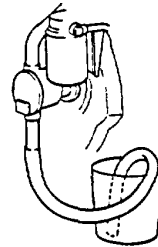
*Äthylenglykol.*

Glycol – éthylène.

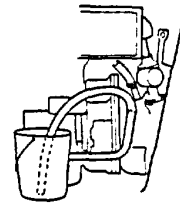
*Glicol etilénico.*

Glicole di etilene.

*Ethylenglykol.*



**b**



**c**

Start the engine.

*Motor anlassen.*

Mettre le moteur en marche.

*Arrancar el motor.*

Avviare il motore.

*Starta motorn.*

The pump impeller must not be allowed to run dry.

*Das Laufrad darf nicht trocken arbeiten.*

La roue de pompe ne supporte pas de tourner à sec.

*El rodete de bomba se estropea si funciona en seco.*

La girante della pompa non deve funzionare a secco.

*Pumphjulet tål ej att gå torrt.*

Stop the engine when the bucket is empty.

*Den Motor abstellen, wenn der Eimer leer ist.*

Arrêter le moteur lorsque le seau est vide.

*Parar el motor cuando el cubo está vacío.*

Fermare il motore quando il vaso è vuoto.

*Stanna motorn när spannen är tom.*

Refit the disconnected hoses.

*Die gelosten Schläuche wieder anschließen.*

Rebrancher les flexibles enlevés précédemment.

*Volver a montar las mangueras.*

Ricollegare i flessibili staccati.

*Återmontera de lossade slangarna.*

The glycol mixture is not drained off.

*Das Glykolgemisch nicht ablassen.*

Le mélange de glycol n'est pas vidangé.

*La mezcla de glicol no se vacía.*

Non scaricare la miscela di glicole.

*Glykolblandningen tappas ej av.*

Any mixture in the fresh-water and sea-water systems which does not have anti-freeze properties must be drained off.

*Wenn das Gemisch in den Frisch- und Seewasseranlage keinen Frostschutz besitzt, muß es abgelassen werden.*

Les mélanges dans les système d'eau douce et d'eau de mer qui n'ont pas de propriétés antigel devront être vidangés.

*Deben vaciarse las mezclas de los sistemas de agua dulce y agua marina que no tienen protección anti-congelante.*

La miscela senza anticongelante nell'impianto acqua dolce e in quello per l'acqua di mare deve essere scaricata.

*Blandning i farskvatten- och sjövattnensystem som ej har frostskydd måste tappas av.*



**Sea-water pump.**

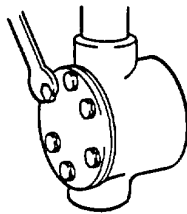
**Seewasserpumpe.**

**Pompe à eau de mer.**

**Bomba de agua marina.**

**Pompa acqua di mare.**

**Sjövattpump.**



Remove the cover. Check that the impeller is intact. NOTE: Do not pull the impeller out if it is undamaged. Fit the cover.

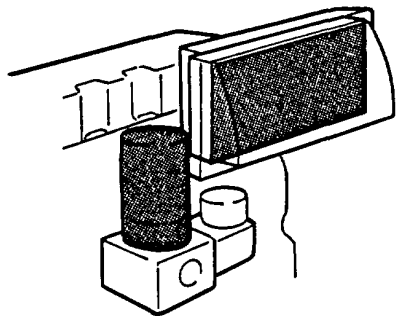
*Deckel ausbauen. Prüfen, daß das Laufrad unbeschädigt ist. ACHTUNG! Das Laufrad nicht herausziehen, wenn es unbeschädigt ist. Deckel einbauen.*

Déposer le couvercle. Vérifier que la roue de pompe est intacte. N.B. ne pas enlever la roue de pompe si elle est intacte. Reposer le couvercle.

*Desmontar la tapa. Controlar que el rodete de bomba está entero. NOTA: No sacar el rodete de bomba si no está dañado. Montar la tapa.*

Smontare il coperchio. Controllare che la girante della pompa sia intatta. N.B: Non estrarre la girante della pompa se è intatta. Montare il coperchio.

*Demontera locket. Kontrollera att pumphjulet är helt. OBS. Dra inte ur pumphjulet om det är oskadat. Montera locket.*



Change air-filter insert and filter for crankcase ventilation.

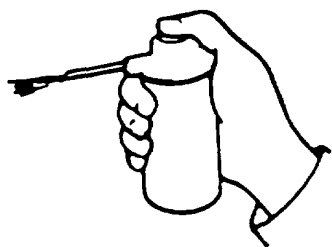
*Luftfiltereinsatz und Filter für die Kurbelgehäusebelüftung wechseln.*

Changer la cartouche du filtre à air et le filtre de reniflard.

*Cambiar al elemento del filtro de aire y el filtro de ventilación del cárter.*

Sostituire l'inserto del filtro dell'aria per la ventilazione del basamento.

*Byt luftfilterinsats och filter för vevhusventilationen.*



Spray electrical components and controls with anti-corrosive spray.

*Elektroteile und Bedienungsteile mit Korrosionsschutzmittel besprühen.*

Protéger les composants électriques et les pièces de commande à l'aide d'une bombe à rinitouille.

*Rociar con spray anticorrosivo los componentes eléctricos y las piezas de mando.*

Spruzzare i componenti elettrici e i dettagli di comando con spray anticorrosivo.

*Spraya elkomponenter och reglagedetaljer med korrosionsskyddande spray.*

Vacuum Valve.

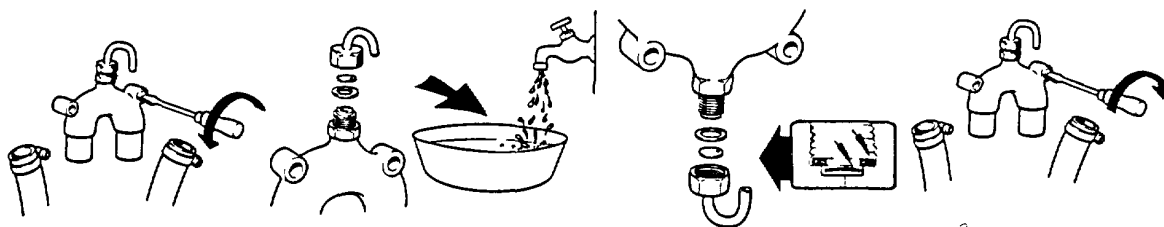
*Válvula de vacío.*

*Vakuumentil.*

Valvola di depressione.

Valve de dépression.

*Vakuumentil.*



**Launching**

**Zuwasserlassen**

**Mise à l'eau**

**Botadura**

**Varo**

**Sjösättning**

Check hose clips and tighten.

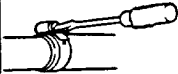
*Schlauchschellen nachziehen.*

Resserrer les colliers de serrage.

*Reapretar las abrazaderas de manguera.*

Serraggio di controllo fascette stringitubo.

*Kontrolldrag slangklammor.*



Close all cocks.

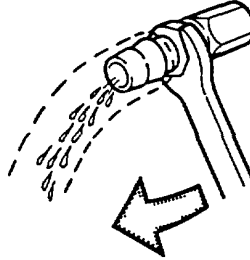
*Alle Hähne schließen.*

Fermer tous les robinets.

*Cerrar todos los grifos.*

Chiudere tutti i rubinetti.

*Stäng alla kranar.*



Fill the fresh-water system to the correct level with glycol or anti-corrosive mixture.

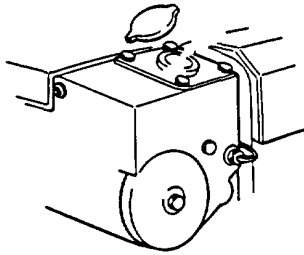
*Die Frischwasseranlage bis zum richtigen Stand mit Glykol- oder Korrosionsschutzgemisch füllen.*

Faire le plein du système d'eau douce jusqu'au niveau correct avec un mélange au glycol ou à l'antigel.

*Llenar el sistema de agua dulce al nivel correcto o con glicol o mezcla anticorrosiva.*

Riempire l'impianto dell'acqua dolce fino al livello giusto con glicole oppure miscela anticorrosiva.

*Fyll farskvattensystemet till rätt nivå med glykol- eller korrosionsskyddsblandning*



Check hose clips on the bellows and tighten.

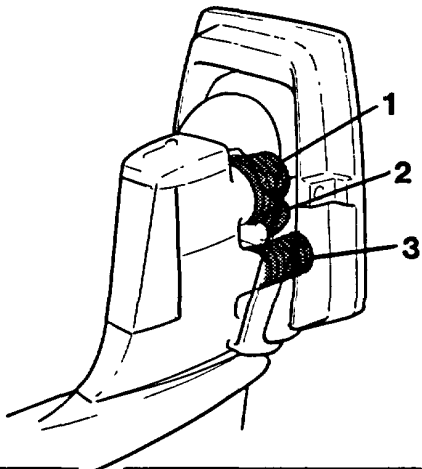
*Schlauchschellen für Bälge nachziehen.*

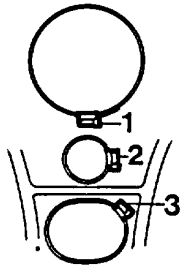
Resserrer les colliers des soufflets.

*Reapretar las abrazaderas de manguera para los fuelles.*

Serraggio di controllo delle fascette stringitubo per i soffi-etti.

*Kontrolldrag slangklammor for balgar.*





Check that the joint bellows (1), coolant hose (2) and exhaust bellows (7) are undamaged. They should be changed every 3 years.

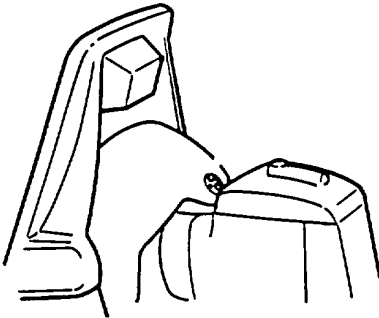
*Prüfen, daß der Gelenkbalg (1), der Kühlwasserschlauch (2) und der Abgasbalg (3) nicht beschädigt sind. Bälge sollen alle 3 Jahre gewechselt werden.*

Vérifier que le soufflet (1), la durit de refroidissement (2) et le soufflet d'échappement (3) ne sont pas endommagés. Ils doivent être changés tous les 3 ans.

*Controlar que el fuelle (1), la manguera de agua (2) y el fuelle de escape están enteros. Deben cambiarse cada 3 años.*

Controllare lo stato del soffietto (1), del tubo di raffreddamento (2) e del soffietto di scarico. Devono essere sostituiti ogni 3 anni.

*Kontrollera att knutbälgen (1), kylvattenslangen (2) och avgasbälgen (3) ej är skadade. Bör bytas var 3:e år.*



Check that torque swittings is 3,5 kpm (35 Nm).

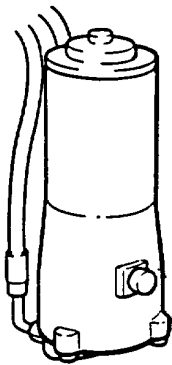
*Mit 3,5 kpm (35 Nm) nachziehen.*

Resserrer au couple de 3,5 Nm (35 m.kg).

*Reapretar a 3,5 kpm (35 Nm).*

Riserrare ad una coppia 3,5 kpm (35 Nm).

*Kontrolldrag med 3,5 kpm (35 Nm).*



Trim the drive as far as in possible. Remove the screws and check that the pump is filled with oil. Top up if needed, the oil should be level with the filler hole.

*Den Antrieb so weit wie möglich einfahren. Die Schrauben lösen und kontrollieren, ob die Pumpe mit Öl gefüllt ist. Öl bei Bedarf nachfüllen, der Ölpegel soll mit der Öleinfüllöffnung gleiche Höhe haben.*

Rentrer la transmission autant que possible. Dévisser la vis et contrôler si la pompe est pleine d'huile. Faire l'appoint s'il le faut, le niveau d'huile devra arriver à ras du trou de remplissage d'huile.

*Bajar la cola lo máximo posible. Quitar el tornillo y controlar que la bomba está llena de aceite. En caso necesario reponer aceite. El nivel debe llegar a la altura del orificio de llenado.*

Abbassare al massimo la trasmissione. Allentare la vite e controllare il livello dell'olio della pompa. Rabboccare se necessario. Il livello deve essere a filo del foro di rifornimento.

*Kör in drevet så mycket som möjligt. Lossa skruven och kontrollera om pumpen är fylld med olja. Fyll på olja vid behov, oljenivån skall vara i nivå med oljepåfyllningshålet.*

Power trim



Paint the bottom of the boat with anti-fouling paint with no copper additives.

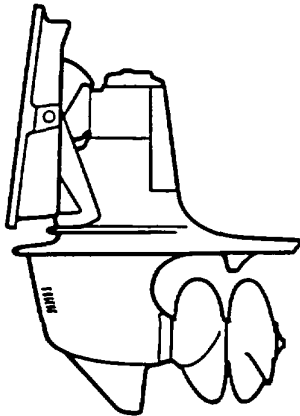
*Den Bootsboden mit bewuchshindernder Farbe ohne Kupferzusätze streichen.*

Peindre le fond du bateau avec de la peinture anti-fouling sans additifs de cuivre.

*Pintar el fondo de la embarcación con pintura anti-incrustante sin aditivo de cobre.*

Pitturare il fondo della barca con pittura antivegetativa senza additivi a base di rame.

*Måla båtbottnen med bevaxningsförhindrande färg utan koppartillsats.*



Paint the drive with Volvo Penta anti-fouling paint.

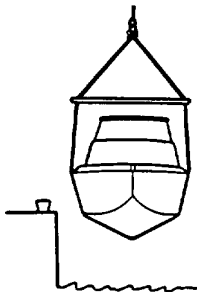
*Den Antrieb mit der bewuchshindernden Farbe von Volvo Penta anstreichen.*

Peindre la transmission avec de la peinture antifouling Volvo Penta.

*Pintar la transmisión con pintura anti-incrustante.*

Pitturare la trasmissione con pittura antivegetativa Volvo Penta.

*Måla drevet med Volvo Penta bevaxningsförhindrande färg.*



Launch the boat. Start the engine. Check that there is no leakage of fuel, oil, water.

*Das Boot zu Wasser lassen. Motor anlassen. Prüfen, daß weder Kraftstoff noch Öl oder Wasser leckt.*

Mettre le bateau à l'eau. Mettre le moteur en marche. Vérifier qu'il n'y a pas de fuites de carburant, d'huile ou d'eau.

*Botar la embarcación. Arrancar el motor. Controlar que no hay fugas de combustible, aceite o agua.*

Varare la barca. Avviare il motore. Controllare che non ci siano perdite di carburante, olio, acqua.

*Sjosätt båten. Starta motorn. Kontrollera att inget lackage finns av bränsle, olja, vatten. Provkör båten.*

If necessary have the service carried out by an authorized workshop.

*Wenn erforderlich den Service von einer autorisierten Werkstatt vornehmen lassen.*

*Si nécessaire, laisser un atelier agréé faire les vérifications.*

*Cuando es necesario confiar el servicio a un taller autorizado.*

*Se necessario rivolgersi ad un'officina autorizzata.*

*Låt vid behov en auktoriserad verkstad utföra service.*

If the boat is equipped with a propeller shaft seal of rubber, the following procedure should be observed after launching:

Vent the tubular sleeve and seal by pressing them together and pressing the seal down against the shaft until water emerges. Then press about 1 cm<sup>3</sup> of waterresistant grease into the seal.



*Wenn das Schiff mit einer Propellerwellendichtung aus Gummi ausgerüstet ist, sind nach dem Zuwasserlassen folgende Maßnahmen zu treffen:*

*Stevenrohr und Dichtung wie folgt entlüften: Die Dichtung zusammendrücken und in Richtung Welle abwärts pressen, bis Wasser ausdringt. Danach etwa cm<sup>3</sup> wasserfestes Fett in die Dichtung drücken.*

Si le bateau est équipé d'une étanchéité d'arbre porte-hélice en caoutchouc, procéder de la façon suivante avant la mise à l'eau :

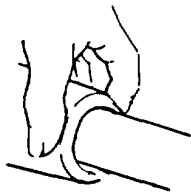
Enlever l'air dans la douille et le joint en comprimant et en repoussant le joint vers l'arbre porte-hélice jusqu'à ce que l'eau s'écoule. Injecter ensuite environ 1 cm<sup>3</sup> de graisse résistante à l'eau dans le joint.

*Si la embarcación tiene el retén del eje de la hélice de goma, proceder de la manera siguiente antes de la botadura:*

*Purgar de aire el manguito y el retén comprimiendo y apretando el retén contra el eje hasta que salga agua. Introducir luego en el retén aproximadamente 1 cm<sup>3</sup> de grasa hidrófuga.*

Se la barca è provvista di premistoppa di gomma per l'asse dell'elica è necessario eseguire quanto segue:

Spurgare l'aria dall'astuccio e del premistoppa comprimendo quest'ultimo verso l'asse fintanto che uscirà l'acqua. Introdurre poi nel premistoppa circa 1 cmc di grasso idrorepellente.

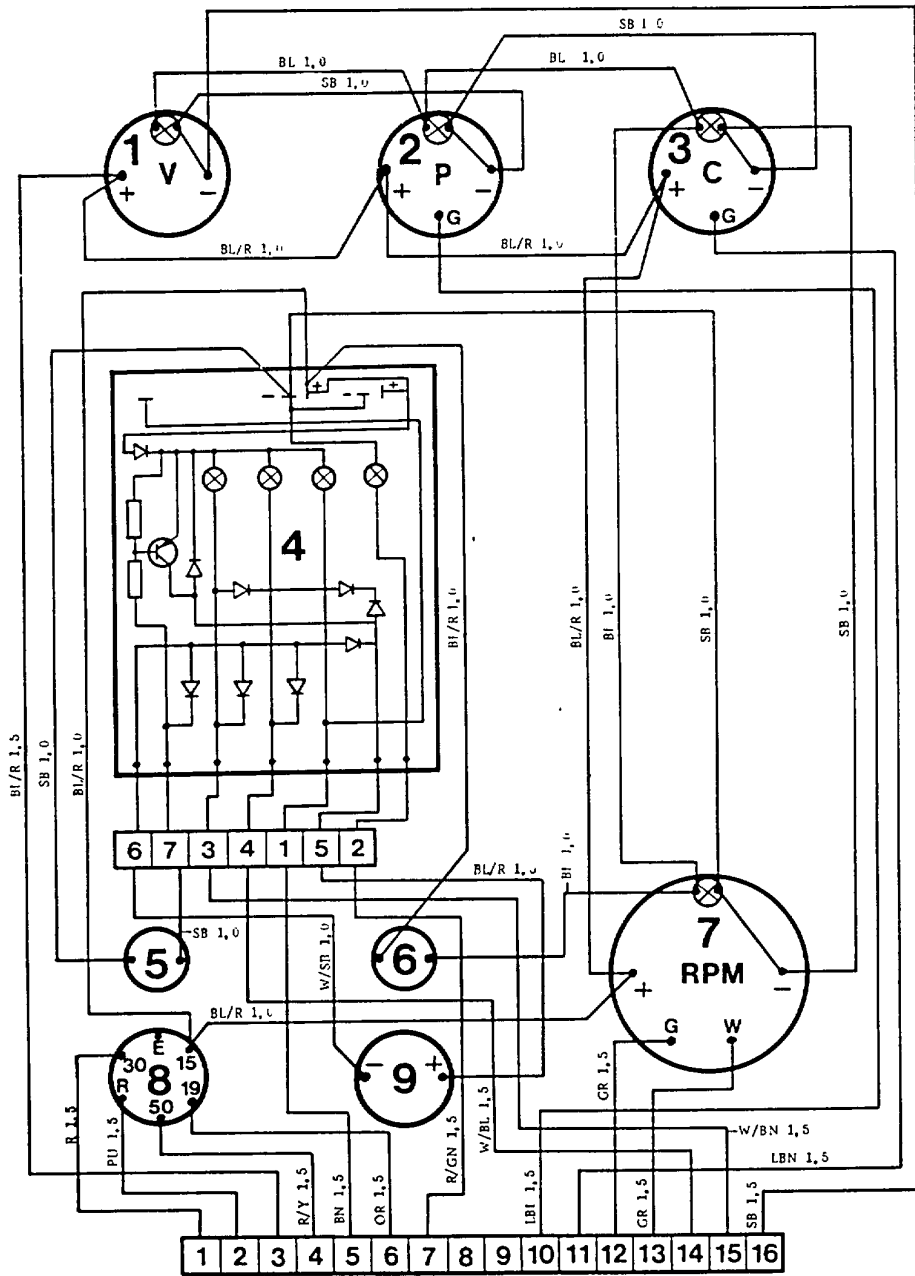


*Är båten utrustad med propelleraxeltätning av gummi skall följande göras efter sjösättningen:*

*Avlufta hylsrör och tätning genom att trycka ihop och pressa ner tätningen mot axeln tills vatten tränger fram. Tryck därefter in ca 1 cm<sup>3</sup> vattenbeständigt fett i tätningen.*



**Wiring diagram**  
**Elkopplingsschema**



**INSTRUMENTPANEL**

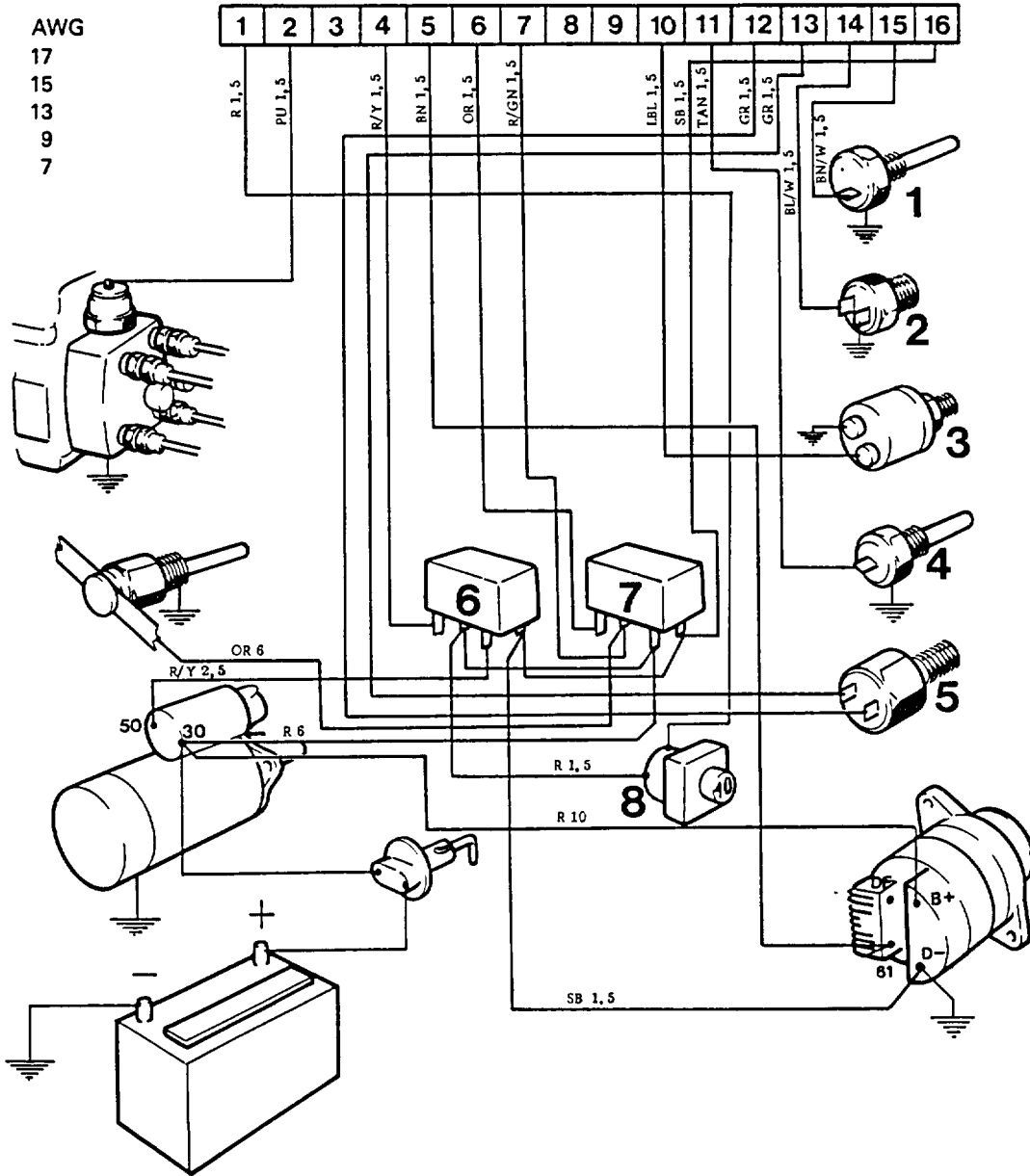
1. Voltmeter
2. Oljetrycksmatare
3. Temperturmatare for kylvatten
4. Instrumentkort
5. Tryckknapp
6. Strombrytare for instrumentbelysning
7. Varvraknare
8. Nyckelstrombrytare
9. Alarm

**INSTRUMENT PANEL**

1. Voltmeter
2. Oil pressure gauge
3. Coolant temperature gauge
4. Printed circuit card
5. Push button
6. Switch for instrument lighting
7. Rev. counter
8. Key switch
9. Alarm

**WIRE AREAS**

mm <sup>2</sup>	AWG
1.0	17
1.5	15
2.5	13
6	9
10	7



**MOTOR**

1. Kylvattentemperaturvakt
2. Oljetrycksvakt
3. Oljetrycksgivare
4. Kylvattentemperaturgivare
5. Varvtalsgivare
6. Startrelä
7. Glödströmsrelä
8. Säkring

**Kabelfärg**

- GR = Grå
- SB = Svart
- BN = Brun
- LBN = Ljusbrun
- R = Rod
- PU = Purpur
- GN = Grön
- Y = Gul
- W = Vit
- BL = Blå
- LBL = Ljusblå

**ENGINE**

1. Temp.
2. Oil pressure-guard
3. Oil pressure sender
4. Temp. sender
5. Sender rev. counter
6. Start-relay
7. Relay, glow-current
8. Fuse

**Wire colour**

- GR = Grey
- SB = Black
- BN = Brown
- LBN = Light brown
- R = Red
- PU = Purple
- GN = Green
- Y = Yellow
- W = White
- BL = Blue
- LBL = Light blue

Kabelareor i mm<sup>2</sup>

Tracing faults      Störungssuche      Dépannage      Búsqueda de defectos.      Ricerca guasti.      Felsökning

								<p>Engine will not start <i>Der Motor springt nicht an</i> Le moteur ne démarre pas <i>El motor no arranca</i> Il motore non parte <i>Motorn startar ej</i></p>
								<p>Engine stops <i>Der Motor stirbt ab</i> Le moteur cale <i>El motor se para</i> Il motore si ferma <i>Motorn stannar</i></p>
								<p>Engine does not reach correct speed previously attained <i>Der Motor erreicht nicht vorher erreichte Drehzahlen</i> Le moteur n'atteint pas le régime atteint auparavant <i>El motor no alcanza las revoluciones anteriores</i> Il motore non raggiunge il regime di giri precedente <i>Motorn når ej tidigare uppnått varv</i></p>
								<p>Engine runs unevenly <i>Der Motor läuft ungleichmäßig</i> Le moteur tourne irrégulièrement <i>El motor marcha con irregularidad</i> Il motore funziona in modo irregolare <i>Motorn går ojämnt</i></p>
								<p>Engine overheats <i>Der Motor wird unnormal warm</i> Le moteur chauffe anormalement <i>El motor se caliente anormalmente</i> Il motore diventa più caldo del normale <i>Motorn bli onormalt varm</i></p>
<p>Coolant intake, water filter, fresh-water level, impeller, thermostat, air in system <i>Kühlwassereinlaß, Wasserfilter, Frischwasserstand, Laufrad, Thermostat, Luft in der Anlage</i> Prise d'eau de refroidissement, filtre à eau, niveau de liquide de refroidissement, roue de pompe, thermostat, air dans le système <i>Toma de agua refrigerante filtro de agua nivel de agua dulce rodete de bomba, termostatos, aire en el sistema</i> raffreddamento, filtro acqua, livello acqua dolce, girante turbina, thermostat, aria nell'impianto <i>Kylvattenintag, vattenfilter, farskvattennivå, pumphjul, termostat, luft i system</i></p>	<p>Propeller damage <i>Propellerschaden</i> Hélice endommagée <i>Daños de hélices</i> Guasto all'elica <i>Propellerskada</i></p>	<p>Clogged air filter, turbocompressor <i>Verstopftes Luftfilter, Abgasturbolader</i> Filtre à air colmaté, turbocompresseur <i>Filtro de aire obturado, turbocompresor</i> Filtro aria intasato, turbocompressore <i>Igensatt luftfilter, turbokompressor</i></p>	<p>Boat incorrectly loaded, marine growth <i>Falsche Belastung des Bootes, Bewuchs</i> Bateau mal chargé, végétation <i>La embarcación está mal cargada, incrustaciones</i> La barca è caricata in modo sbagliato Formazione di alghe ecc sulla carena <i>Båten felbelastad, bevåxning</i></p>	<p>Injectors <i>Düsenhalter</i> Injecteurs <i>Inyectores</i> Iniettori <i>Insprutare</i></p>	<p>Water, air or dirt in fuel <i>Wasser, Luft, unreiner Kraftstoff</i> Eau, air, carburant pollué <i>Agua, aire, combustible sucio</i> Acqua, aria, carburante inquinato <i>Vatten, luft, orent brånsle</i></p>	<p>Tank, cock, fuel filter <i>Tank, Hahn, Kraftstoffbehälter</i> Réservoir, robinet, filtre à carburant <i>Deposito, grifo, filtro de combustible</i> Serbatoio, rubinetto, filtro carburante <i>Tank, kran, bransiefilter</i></p>	<p>Main switch, battery, cables, main fuse glow plugs <i>Hauptschalter, Batterie, Elektrokabel, Hauptsicherung, Glühkerzen</i> Coupe-batterie, batterie, câbles électriques, fusible principal, bougie de préchauffage <i>Interruptor principal, batería, cables eléctricos, fusible principal, bujía de incandescencia</i> Interruttore principale, batteria, fili elettrici, fusibile principale, candela <i>Huvudstrombrytare, batteri, elkablar, huvudsäkring, glödstick</i></p>	<p>Cause of fault <i>Störungsursache</i> Cause de panne <i>Causas de averia</i> Motivo del guasto <i>Felorsak</i></p>

**Technical data**

Type designation

Max. operating speed r/s (r/m)  
 Idling speed, high r/s (r/m)  
 Idling speed, low r/s (r/m)  
 Bore/Stroke, mm (inch)  
 Displacement, (lit)  
 Firing order  
 Direction rot. (viewed from front)

Max. forwards incl  
 Max. rearwards incl. underway  
 Max. sideways incl. underway

Clearance, cold engine inlet mm (in)  
 outlet mm (in)  
 Outboard drive, Duoprop, ratio

**LUBRICATION SYSTEM**

Engine, oil capacity, (lit) excl. filter  
 (lit) incl. filter  
 At 15° rearwards incl. (lit) excl. filter  
 (lit) incl. filter

Oil quality (API)  
 Oil viscosity above +10°C (50°F)  
 below +10°F (50°F)  
 Oil pressure-engine hot  
 Idling kp/cm<sup>2</sup> (lbs/in<sup>2</sup>)  
 max. revs kp/cm<sup>2</sup> (lbs/in<sup>2</sup>)

Drive, Duoprop  
 Oil capacity dm<sup>3</sup> (l)  
 Oil quality, viscosity  
 Oil volume between max and min.

Oil volume Power Trim (lit)  
 Reverse Gear MS2  
 Oil volume (lit)  
 Oil quality  
 Reverse Gear MS3C  
 Oil volume (lit)  
 Oil quality

**COOLING SYSTEM**

Thermostats open/fully open at

Fresh water system capacity, lit

Normal temperature

**ELECTRICAL SYSTEM**

System voltage, V  
 Battery capacity, starter motor max. Ah  
 Battery electrolyte spec. grav.  
 Charging to be carried out at g/cm<sup>3</sup>  
 Fully charged battery, g/cm<sup>3</sup>  
 Alternator rating max  
 Starter motor rating, hp (kW)

**TIGHTENING TORQUES**

Steering Helmet Allen bolt (AQAD30)

Cylinder head bolts 1st tightening  
 2nd tightening  
 3rd tightening

<sup>1)</sup> Volvo Penta CD oil Double Grade  
<sup>2)</sup> Volvo Penta CD Oil Single Grade  
<sup>3)</sup> MS2 B/V-drive 1 8  
<sup>4)</sup> Commercial duty API-GL-5  
 (SAE 90 or 80W/90)

**Technische Daten**

Motorbezeichnung

Große Betriebsdrz r/s (U/min)  
 Leerlaufdrehzahl hoch r/s (U/min)  
 niedrig r/s (U/min)  
 Bohrung/Hub mm  
 Hubraum, dm<sup>3</sup>  
 Zündfolge  
 Drehrichtung (von vorn gesehen)

Neigung vorwärts max  
 Neigung rückwärts max bei Betrieb  
 Neigung seitlich max bei Betrieb

Ventilspiel, kalter Motor Einlaß mm  
 Auslaß mm  
 Außenbordantrieb, Duoprop, Untersetz-  
 zung

**SCHMIERANLAGE**

Motor, Ölfüllmenge, dm<sup>3</sup> ausschl. Filter  
 einschl. Filter  
 Neigung rückwärts 15° ausschl. Filter  
 einschl. Filter

Ölqualität (API)  
 Ölviskosität über 10°C  
 unter 10°C

Oldruck,  
 Warmer Motor, Leerlauf kp/cm<sup>2</sup>  
 Warmer Motor bei Betriebsdrehzahl  
 kp/cm<sup>2</sup>

Antrieb, Duoprop  
 Ölfüllmenge dm<sup>3</sup>  
 Ölqualität, Viskosität  
 Ölfüllmenge zwischen MAX und MIN  
 ca. dm<sup>3</sup>  
 Ölfüllmenge Power Trim, dm<sup>3</sup>

Wendegetriebe MS2B,  
 Ölfüllmenge dm<sup>3</sup>  
 Ölqualität, Viskosität  
 Wendegetriebe MS3C,  
 Ölfüllmenge ca. dm<sup>3</sup>  
 Ölqualität, Viskosität

**KÜHLANLAGE**

Thermostate öffnen/voll geöffnet bei

Fullmenge der Frischwasseranlage, dm<sup>3</sup>

Normale Temperatur

**ELEKTRISCHE ANLAGE**

Anlagespannung, V  
 Batteriekapazität max Ah  
 Spez. Gewicht der Batteriesäure  
 Ladung erforderlich bei g/cm<sup>3</sup>  
 Aufgeladene Batterie g/cm<sup>3</sup>  
 Generatorleistung, Drehstrom, max  
 Anlasserleistung, PS (kW)

**ANZUGSMOMENTE**

Steuerhelmschraube (AQAD30)

Zylinderkopfschrauben 1 Anziehen  
 2 Anziehen  
 3 Anziehen

<sup>1)</sup> Volvo Penta CD Öl Double Grade  
<sup>2)</sup> Volvo Penta CD Öl Single Grade  
<sup>3)</sup> MS2 B/V-drive 1 8  
<sup>4)</sup> Kommerzieller Betrieb API-GL-5  
 (SAE 90 oder 80W/90)

**Caractéristiques techniques**

Désignation du moteur

Régime maxi de marche r/s (tr/mn)  
 Régime d'emballement r/s (tr/mn)  
 Régime de ralenti r/s (tr/mn)  
 Alesage/course, mm  
 Cylindrée, dm<sup>3</sup>  
 Ordre d'injection  
 Sens de rotation (vu du côté  
 accouplement)

Inclinaison maxi vers l'avant  
 Inclinaison maxi en navigation  
 Inclinaison latérale maxi en navigation  
 Jeu aux soupapes, moteur froid,  
 admission, mm  
 échappement, mm  
 Transmission hors-bord, Duoprop, démul-  
 tiplication

**SYSTEME DE GRAISSAGE**

Moteur, contenance d'huile,  
 dm<sup>3</sup> sans filtre  
 avec filtre  
 Incliné de 15° à l'arrière sans filtre  
 filtre incl

Qualité d'huile (API)  
 Viscosité d'huile, au-dessus de +10°C  
 au-dessous de +10°C  
 Pression d'huile, moteur chaud  
 au ralenti bars kp/cm<sup>2</sup>

en plein régime bars  
 Transmission, Duoprop, dm<sup>3</sup>  
 qualité d'huile, viscosité  
 contenance d'huile entre maxi et mini,  
 dm<sup>3</sup>  
 contenance d'huile, Power Trim, dm<sup>3</sup>

Inverseur MS2B, contenance d'huile dm<sup>3</sup>  
 qualité d'huile, viscosité

Inverseur MS3C, contenance d'huile dm<sup>3</sup>  
 qualité d'huile, viscosité

**SYSTEME DE REFROIDISSEMENT**Thermostats, début d'ouverture/  
ouverture complète

Contenance du système d'eau douce,  
 dm<sup>3</sup>  
 Température normale

**SYSTEME ELECTRIQUE**

Tension du système, volts  
 Capacité de batterie standard maxi Ah  
 Densité d'électrolyte  
 Batterie à charger à g/cm<sup>3</sup>  
 Batterie entièrement chargée à, g/m<sup>3</sup>  
 Alternateur puissance maxi.  
 Démarreur, kW

**COUPLES DE SERRAGE**

Vis de capot de direction (AQAD30)

Vis de culasse 1er serrage  
 2ème serrage  
 3ème serrage

<sup>1)</sup> Volvo Penta CD huile Double Grade  
<sup>2)</sup> Volvo Penta CD huile Single Grade  
<sup>3)</sup> MS2 B/V-drive 1 8  
<sup>4)</sup> Marche commerciale API-GL-5  
 (SAE 90 ou 80W/90)

**Datos técnicos**

Designación de motor

Régimen de servicio máx rps (rpm)  
 Ralenti acelerado, rps (rpm)  
 Ralenti lento, rps (rpm)  
 Diámetro de cilindrada/carrera mm  
 Cilindros, dm<sup>3</sup>  
 Orden de inyección  
 Sentido rotación (visto desde delante)

Incl. máx. adelante  
 Incl. máx. atrás en navegación  
 Inclinac. lateral máx. en navegación

Juego válv., adm. mm motor caliente  
 Juego válv., esc. mm motor caliente  
 Cola fuera borda, Duoprop, relación

**SISTEMA DE LUBRICACION**

Motor, cap. aceite dm<sup>3</sup> sin filtro  
 Motor, cap. aceite dm<sup>3</sup> con filtro  
 Incl. 15° atrás dm<sup>3</sup> sin filtro  
 con filtro

Calidad de aceite (API)  
 Viscosidad del aceite sobre +10°C  
 bajo +10°C

Presión de aceite, motor caliente en ralen-  
 ti  
 Presión de aceite a plena aceleración  
 kp/cm<sup>2</sup>

Cola fuera borda, Duoprop, capacidad de  
 aceite dm<sup>3</sup>  
 Calidad de aceite/viscosidades  
 Volumen de aceite entre máx. y min., dm<sup>3</sup>  
 aprox.  
 Volumen de aceite Power Trim, dm<sup>3</sup>

Inversor MS2B, volumen de aceite  
 Calidad de aceite, viscosidades

Inversor MS3C, volumen de aceite  
 Calidad de aceite/viscosidades

**SISTEMA DE REFRIGERACION**

Termostatos abren/totalmente abiertos

Volumen del sistema de agua dulce, dm<sup>3</sup>

Temperatura normal

**SISTEMA ELECTRICO**

Tensión del sistema  
 Capacidad de la batería, máx. Ah  
 Peso específico electrolito batería  
 Debe ser recargada a g/cm<sup>3</sup>  
 Batería completamente cargada, g/cm<sup>3</sup>  
 Potencia del alternador, máx.  
 Potencia motor de arranque, kW

**PARES DE APRIETE**Tornillo del casquete de dirección  
(AQAD30)

Tornillos de culata 1er apriete  
 2º apriete  
 3º apriete

<sup>1)</sup> Aceite Volvo Penta CD, double grade  
<sup>2)</sup> Aceite Volvo Penta CD, single grade  
<sup>3)</sup> MS2 B/V-drive 1 8  
<sup>4)</sup> Marche commerciale API-GL-5  
 (SAE 90 ou 80W/90)

**Dati tecnici****Tekniska data**

Sigla motore	Motorbeteckning	AQAD30A MD30A TMD30A TAMD30A	AQAD40B TMD40B TAMD40B
Regime di esercizio	Max driftsvarvtal r/m	3800	3600
Regime di minimo, alto	Tomgångsvarvtal, hogt r/m	4300-4400	3980-4080
Regime di minimo, basso	Tomgångsvarvtal, lågt r/m	650-750	600-700
Alesaggio/corsa, mm	Cylinderdiameter/Slaglängd, mm	92,0/90,0 (3,6/3,54)	92,0/90,0 (3,6/3,54)
Cilindrata, dm <sup>3</sup>	Slagvolym, dm <sup>3</sup>	2,39 (146)	3,59 (220)
Sequenza di accensione	Insprutningsföljd	1-3-4-2	1-5-3-6-2-4
Senso di rot (visto da lato distribuzione)	Rotationsriktning (sett framifrån)	Clockwise	Clockwise
Max inclinazione anteriore	Max framåtlutning	4°	3°
Max inclin del motore in navigazione	Max bakåtlutning undergång	15°	15°
Max inclin laterale in navigazione	Max sidolutning under gång	20°	20°
Gioco valvole e motore freddo, aspir. mm	Ventilspegl, kall motor, inlopp, mm (in)	0,40 (0,016)	0,40 (0,016)
scar. mm	utlopp, mm (in)	0,40 (0,016)	0,40 (0,016)
Trasmissione fuori bordi, Duoprop, rapporto di riduzione	Utombordsdrev, DP, utvaxl	2,3 1	2,3 1
<b>IMPIANTO DI LUBRIFICAZIONE</b>	<b>SMÖRJSYSTEM</b>		
Capienza olio motore escl il filtro compr il filtro	Motor, oljerymd, dm <sup>3</sup> , exkl filter inkl filter	8,5 9,0	10,5 11,0
a 15° di incl , dm <sup>3</sup> escl. filtro incl il filtro	Vid 15° bakåtlutning dm <sup>3</sup> , exkl filter inkl filter	9,0 9,5	11,0 11,5
Qualità olio (API)	Oljekvalitet (API)	CD (For Service DS)	CD (For Service DS)
Viscosità olio con temp sopra i 10°C sotto i 10°C	Oljeviskositet över +10°C under +10°C	SAE 20/30 <sup>1)</sup> SAE 10W <sup>2)</sup>	SAE 20/30 <sup>1)</sup> SAE 10W <sup>2)</sup>
Pressione olio, motore caldo, al minimo kg/cm <sup>2</sup> al massimo kg/cm <sup>2</sup>	Oljetryck, varm motor, tomgång kp/cm <sup>2</sup> vid fullvarv vid kp/cm <sup>2</sup>	2,2-3,0 (31,3-42) 4,2-5,0 (59-71)	2,2-3,0 (31,3-42) 4,2-5,0 (59-71)
Trasmissione Duoprop, capienza olio dm <sup>3</sup>	Drev, Duoprop, Oljerymd, dm <sup>3</sup>	2,7	2,7
Qualità olio/viscosità	Oljekvalitet, viskositet	Same as engine <sup>4)</sup>	Same as engine <sup>4)</sup>
Capienza olio tra max e min, dm <sup>3</sup>	Oljerymd mellan max - och min, dm <sup>3</sup> ca	0,15	0,15
Capienza olio, Power Trim, dm <sup>3</sup>	Oljerymd, Power Trim, dm <sup>3</sup>	0,52	0,52
Invertitore MS2B, capienza olio dm <sup>3</sup>	Backslag typ MS2B, oljerymd dm <sup>3</sup> (lit)	0,8 <sup>3)</sup>	0,8 <sup>3)</sup>
Qualità olio/viscosità	oljekvalitet, viskositet	Same as engine	Same as engine
Invertitore MS3C, capienza olio cam dm <sup>3</sup>	Backslag typ MS3C, oljerymd ca liter	1,6	1,6
Qualità olio/viscosità	oljekvalitet, viskositet	Same as engine	Same as engine
<b>IMPIANTO DI RAFFREDDAMENTO</b>	<b>KYLSYSTEM</b>		
I termostati, aprono/compl aperti	Termostaterna öppnar/helt öppna	76°C/90°C (169°F/194°F)	76°C/90°C (169°F/194°F)
Volume impianto di raffreddamento	Farskvattensystemets rymd, dm <sup>3</sup> (lit)	15	21 (AQAD40, TAMD40, 23)
Temperatura normale	Normal kylvattentemperatur	75-90°C (167-194°F)	75-90°C (167-194°F)
<b>IMPIANTO ELETTRICO</b>	<b>ELEKTRISKA SYSTEMET</b>		
Tensione impianto, Volt	Systemspanning, volt	12	12
Amperaggio massimo batteria Ah	Startmotorbatteri, kapacitet Ah	140	140
Peso specifico dell'elettrolita batteria Ricaricare la batteria a g/cm <sup>3</sup>	Batterielektrolytens spec vikt Laddning utföres vid g/cm <sup>3</sup>	1,230	1,230
Batteria compl carica a g/cm <sup>3</sup>	Fulladdat g/cm <sup>3</sup>	1,275-1,285	1,275-1,285
Alternatore potenza massima	Generator, vaxelstrom, effekt max	14V 50A	14V-50A
Motorino di avviamento CV (kW)	Startmotor, effekt hk (kW)	2,5 (3,4)	2,5 (3,4)
<b>COPPIE DI SERRAGGIO</b>	<b>ÅTRAGNINGSMOMENT</b>		
Vite elmo di rotazione (AQAD30)	Styrhjalmskruven (AQAD30)	3,5 kpm (35 Nm) 25 ft lbs	3,5 kpm (35 Nm) 25 ft lbs
Bulloni testata primo serraggio	Cylinderlocksskruvar 1 a dragningen	3 kpm (30 Nm) 22 ft lbs	3 kpm (30 Nm) 22 ft lbs
secondo serraggio	2 a dragningen	9 kpm (90 Nm) 65 ft lbs	9 kpm (90 Nm) 65 ft lbs
terzo serraggio	3 e dragningen	13 kpm (130 Nm) 84 ft lbs	13 kpm (130 Nm) 84 ft lbs

<sup>1)</sup> Volvo Penta CD oil Double Grade<sup>2)</sup> Volvo Penta CD oil Single Grade<sup>3)</sup> MS2 B/V-drive 1 8<sup>4)</sup> Impiego commerciale API-GL-5  
(SAE 90 o 80W/90)<sup>1)</sup> Volvo Penta CD olja Double Grade<sup>2)</sup> Volvo Penta CD olja Single Grade<sup>3)</sup> MS2 B/V-drive 1 8<sup>4)</sup> Kommersiell drift API-GL-5  
(SAE 90 eller 80W/90)

## IMPORTANT INFORMATION

Stop the engine before opening the hatch to the engine compartment. An engine which is running has rotating and moving parts which are dangerous to touch.  
Bear in mind the risk of a fire. All engine fuel is inflammable.

The cooling system is filled with liquid and it should be drained when there is risk of frost. The fresh water part of the system can be filled with an anti-freeze mixture or drained. Note that in certain cases a suction action may occur when the sea-water system is being drained. Close all drainage points when the boat is not under constant supervision. Incorrectly performed drainage may cause the boat to become filled with water and sink.

## WICHTIGE INFORMATION

*Stellen Sie den Motor ab, bevor die Motorraumluke geöffnet wird! Ein laufender Motor hat rotierende und bewegliche Teile, deren Berühren gefährlich ist.*

*Denken Sie an die Feuergefahr. Der Motorkraftstoff ist feuergefährlich.*

*Die Kühlanlage ist flüssigkeitsgefüllt. Die Anlage ist bei Frostgefahr zu entleeren. Der Frischwasserteil der Anlage kann mit Frostschutzgemisch gefüllt oder entleert werden. Beachten, daß beim Ablassen der Seewasseranlage in gewissen Fällen ein Hebereffekt entstehen kann. Verschließen Sie alle Ablassstellen sorgfältig, wenn das Boot nicht ständig überwacht wird. Falsch ausgeführte Ablassstellen können dazu führen, daß das Boot mit Wasser gefüllt wird und sinkt.*

## INFORMATION IMPORTANTE

Arrêtez le moteur avant d'ouvrir le compartiment moteur. Un moteur en marche possède des pièces tournant rapidement et pouvant être dangereuses. Pensez au risque d'incendie. Tout carburant est facilement inflammable.

Le système de refroidissement est plein de liquide. Videz celui-ci en cas de risque de gel. La partie eau douce du système peut être remplie avec un mélange antigel ou vidée. Notez que dans certains cas, un phénomène de succion peut se produire lors de la vidange du système d'eau de mer. Fermez tous les robinets de vidange lorsque le bateau n'est pas sous surveillance constante. Une vidange mal effectuée peut entraîner le remplissage d'eau du bateau qui peut couler.

## INFORMACION IMPORTANTE

Arrêtez le moteur avant d'ouvrir le compartiment moteur. Un moteur en marche possède des pièces tournant rapidement et pouvant être dangereuses. Pensez au risque d'incendie. Tout carburant est facilement inflammable.

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## INFORMAZIONE IMPORTANTE

Arrestare il motore prima di aprire lo sportello d'ispezione. I ruotismi e le parti mobili di un motore in marcia possono cuasare seri danni alle persone.

Prevenire ogni pericolo di incendio: il combustibile è altamente infiammabile.

Il circuito di raffreddamento è rifornito di liquido. Scaricare l'impianto quando si prevedono temperature rigide. La parte del sistema con acqua dolce può essere rifornita con una miscela anticongelante, oppure va scaricata. Tener presente che, in alcuni casi, nello scaricare il sistema dell'acqua salata potrebbe verificarsi l'effetto "a sifone". Se l'imbarcazione non è sorvegliata, chiudere tutti i punti di scarico. Un procedimento errato dello scarico può provocare intromissione di acqua nello scafo, con conseguente affondamento.

## VIKTIG INFORMATION

*Stanna motorn innan motorrumsluckan öppnas! En motor som är igång har roterande och rörliga delar som är farliga att vidröra.*

*Tänk på brandfaran. Allt motorbränsle är brandfarligt.*

*Kylsystemet är vatskefyllt. Tappa av systemet vid frostfara. Färskvattendelen av systemet kan fyllas med frostskyddsblandning eller avtappas. Observera att havertverkan i vissa fall kan uppstå vid avtappning av sjövattnsystemet. Stäng alla avtappningsställen då båten ej har stadig tillsyn. Felaktigt utford avtappning kan leda till att baten vattenfylls och sjunker.*

# Reservdelskatalog

## Parts Catalogue

MD 40

TMD 40



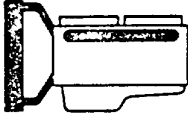
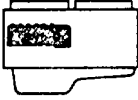
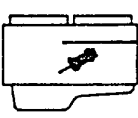

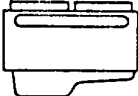



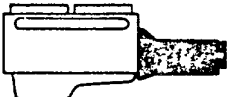



AQD 40

TAMD 40

AQAD 40



**VOLVO**  
**PENTA**

Förord och anvisningar Foreword and catalogue instructions Avant-propos et instructions concernant le catalogue Vorwort und Kataloganweisungen Introducción e instrucciones concernientes al catálogo	A01 1-A03		1
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**Slututgáva**

**Final Edition**

**Edition Finale**

**Endausgabe**

**Edición Final**

**1987-04**



Datum Date	FÖRORD	FOREWORD	Grupp Group	Sida Page
1987-04			1	1

Denna katalog upptar reservdelar till våra marina produkter enligt nedanstående specifikation.

This catalogue lists parts for our marine products as specified below.

Produktbeteckning Product designation	Produktnummer Product No.	Produktbeteckning transmission. Product designation transmission.	Utväxling Ratio	Anmärkning Notes
MD40A	867437	Borg Warner	1,9	1)
MD40A	867438	Borg Warner	2,1	1)
MD40A	867439	Borg Warner	2,9	1)
MD40A	867440	Borg Warner	1,9	1)
MD40A	867441	Borg Warner	2,1	1)
MD40A	867442	Borg Warner	2,9	1)
MD40A	867443	MS3A	1,9	1)
MD40A	867449	—	—	1) 2)
MD40A	867450	—	—	1) 2)
MD40A	867567	MS3B	1,9	1)
MD40A	867725	MS3C	2,7	1)
MD40A	867726	—	—	1) 2)
		Borg Warner	1,9	
		Borg Warner	2,1	
		Borg Warner	2,9	
TMD40A	867274	Borg Warner	1,9	1)
TMD40A	867375	Borg Warner	2,1	1)
TMD40A	867376	Borg Warner	2,9	1)
TMD40A	867377	Borg Warner	1,9	1)
TMD40A	867378	Borg Warner	2,1	1)
TMD40A	867379	Borg Warner	2,9	1)
TMD40A	867391	MS3A	1,9	1)
TMD40A	867393	—	—	1) 2)
TMD40A	867394	—	—	1) 2)
TMD40A	867478	MS3A	1,9	1)
TMD40A	867569	MS3B	1,9	1)
TMD40A	867727	—	—	1) 2)
TMD40A	867728	MS3B	1,9	1)
TMD40B	867758	MS3B	1,9	1)
TMD40B	867759	—	—	1) 2)
TMD40C	867729	MS3C	1,9	1)
TMD40C	867982	—	—	1) 2)
		MS3C	2,7	
		Borg Warner	1,9	
		Borg Warner	2,1	
		Borg Warner	2,9	
AQD40A	867275	—	—	1) 2)
		280	1,61	
AQD40A	867424	—	—	1) 2)
		280	1,61	
AQD40A	867425	—	—	1) 2)
		280	1,61	
AQD40A	867444	280	1,61	1)
AQD40A	867445	280	1,61	1)
AQD40A	867479	280	1,61	1)

- 1) Slutbyggd — Out of production.
- 2) Bob Tail.
- 3) Power Trim
- 4) 24V
- 5) Jackshaft

Sida Page	Grupp Group	FÖRORD	FOREWORD	Datum Date
2	1			1987-04
Produktbeteckning Product designation	Produktnummer Product No.	Produktbeteckning transmission. Product designation transmission.	Utväxling Ratio	Anmärkning Notes
AQD40A	867486	280	1,61	1)
AQD40A	867487	280	1,61	1)
AQD40A	867566	—	—	1) 3)
		280	1,61	
		280	1,61	3)
AQD40A	867731	—	—	1) 2)
		280	1,61	
		280	1,61	3)
TAMD40A	867563	—	—	1) 2)
TAMD40A	867564	—	—	1) 2)
TAMD40A	867565	MS3B	1,9	1) 2)
TAMD40A	867734	—	—	1) 2)
		MS3B	1,5	
TAMD40A	867736	MS3B	1,9	1)
TAMD40B	867737	MS3C	1,9	1)
TAMD40B	867739	MS3C	2,7	1)
TAMD40B	867766	MS3C	1,9	1)
TAMD40B	867767	MS3C	2,7	1)
TAMD40B	867768	—	—	1) 2)
		MS3C	1,7	
		Borg Warner	1,9	
		Borg Warner	2,1	
		Borg Warner	2,9	
TAMD40B	867937	MS3C	1,9	1)
TAMD40B	867938	MS3C	2,7	1)
AD40B	867829	—	—	1) 2)
		280	1,61	
		280	1,61	
		MS3C	1,9	
		MS3C	2,7	
AD40B	867890	—	—	1) 2)
		290	1,61	
		290	1,61	5)
		DP290	1,95	5)
		DP290	1,95	
		MS3C	1,9	
		MS3C	2,7	
AD40B	867936	—	—	1) 2)
		290	1,61	
		DP290	1,95	
		MS3C	1,9	
		MS3C	2,7	
AD40B	867948	—	—	1) 2) 4)
		MS3C	1,9	
		MS3C	2,7	
AD40B	867984	—	—	1) 2) 4)
		MS3C	1,9	
		MS3C	2,7	
AQAD40A	867560	280	1,61	1)
AQAD40A	867561	280	1,61	1)

- 1) Slutbyggd. — Out of production.  
2) Bob Tail.  
3) Power Trim.  
4) 24V  
5) Jackshaft



Datum Date	FÖRORD		FOREWORD		Grupp Group	Sida Page
1987-04					1	3
Produktbeteckning Product designation	Produktnummer Product No.	Produktbeteckning transmission. Product designation transmission.	Utväxling Ratio	Anmärkning Notes		
AQAD40A	867562	- 280 280	- 1,61 1,61	1) 2) 3)		
AQAD40A	867732	- 280 280	- 1,61 1,61	1) 2) 3)		
AQAD40A	867733	- 280	- 1,61	1) 2)		
AQAD40B	867756	- 280 280	- 1,61 1,61	1) 2) 3)		
AQAD40B	867769	- 280 280 DP280 DP280	- 1,61 1,61 1,95 1,95	1) 2) 3)		
AQAD40B	867860	- 290 290 DP290	- 1,61 1,61 1,95	1) 2) 3)		

- 1) Slutbyggd. – Out of production.
- 2) Bob Tail.
- 3) Power Trim
- 4) 24V
- 5) Jackshaft

Sida Page	Grupp Group		Datum Date
4	1	<b>FÖRKORTNINGAR</b>	1987-04
		<p>A = ampere            ALT = alternativ            AMBAC = American Bosch            AQ = Aquamatic            AQ-DREV = Aquamatic-drev            B = bredd            BB = babord            BENVIT = benvit            BLÅ = blå            BN-xxxxx = till och med serienummer på backslag            BN xxxxx- = från och med serienummer på backslag            BRUN = brun            CC = komplett klassning            D = diameter, yttre            DET SE SIDA = ingående detaljer se sida            DI = diameter, inre            DP = Duoprop            DREV = drev            ERF = erforderligt antal, erforderlig längd etc.            ERS AV = ersattes av            ETC = etcetera            EXCL = exklusive            FAT = fat            GEM = gemensam            GRÅ = grå            GRÅBLÅ = gråblå            GRÖN = grön            GUL = gul            H = höger            HÖG = hög            INCL = inklusive            KLASSAD = för klassad motor            KMPL = komplett            KMMM = kvadratmillimeter            L = liter, längd            LJUSGRÅ = ljus grå            LÅG = låg            MAX = maximum            MM = millimeter            MO-xxxxx = till och med motornummer            MO-xxxxx/xxxxx = till och med motornummer            MO xxxxx- = från och med motornummer            MO xxxxx/xxxxx- = från och med motornummer            MÖRKBLÅ = mörkblå            NR = nummer            PZ-xxxxx = till och med serienummer på drev            PZ xxxxx- = från och med serienummer på drev            ROT = oktantal (metod Research)            RSV = RSV – insprutningsutrustning            RQV = RQV – insprutningsutrustning            RÖD = röd            SB = styrbord            SE GRUPP = se grupp            SE SIDA = se sida            SEN UTF = senare utforande            SPEC = specifikation            SPEC UTF = specialutförande            SPÅR = spår            ST = styck            STD = standard            STD D = standard dimension            SVART = svart            TID UTF = tidigare utforande            TJ = tjocklek            TUB = tub            UTV = utväxlingsförhållande            UD = underdimension            V = volt, vänster            VIT = vit            W = watt            ÖD = överdimension</p>	



Datum Date	ABBREVIATIONS	Grupp Group	Sida Page
1987-04		1	5
	<p>A = ampere            ALT = alternative            AMBAC = American Bosch            AQ = Aquamatic            AQ-DREV = AQ-drive unit            B = width            BB = port side            BENVIT = ivory white            BLÅ = blue            BN-xxxxx = up to serial number on reverse gear unit            BN xxxxxx- = from serial number on reverse gear unit            BRUN = brown            CC = complete classified            D = diameter, outer            DET SE SIDA = component parts listed on page            DI = diameter, inner            DP = Duoprop            DREV = drive unit            ERF = order as required, state required length etc            ERS AV = replaced by            ETC = et cetera            EXCL = excluding            FAT = barrel            GEM = common            GRÅ = grey            GRÅBLÅ = grey blue            GRÖN = green            GUL = yellow            H = right            HÖG = high            INCL = including            KLASSAD = for classed engine            KMPL = complete            KVMM = squaremillimetre            L = litre, length            LJUSGRÅ = light grey            LÅG = low            MAX = maximum            MM = millimetre            MO-xxxxx = up to engine serial number            MO-xxxxx/xxxxx = up to engine serial number            MO xxxxxx- = from engine serial number            MO xxxxxx/xxxxx- = from engine serial number            MÖRKBLÅ = dark blue            NR = number            PZ-xxxxx = up to serial number on drive gear unit            PZ xxxxxx- = from serial number on drive gear unit            ROT = research octane number            RSV = RSV – fuel injection equipment            RQV = RQV – fuel injection equipment            RÖD = red            SB = starboard            SE GRUPP = see group            SE SIDA = see page            SEN UTF = late production            SPEC = specification            SPEC UTF = special model            SPÅR = groove            ST = piece            STD = standard            STD D = standard dimension            SVART = black            TID UTF = early production            TJ = thickness            TUB = tube            UTV = ratio            UD = undersize            V = voltage, left            VIT = white            W = watt            ÖD = oversize</p>		

Sida Page	Grupp Group	ABREVIATIONS	Datum Date																																																																																																																																														
6	1		1987-04																																																																																																																																														
<table> <tbody> <tr><td>A</td><td>= ampère</td></tr> <tr><td>ALT</td><td>= alternative</td></tr> <tr><td>AMBAC</td><td>= American Bosch</td></tr> <tr><td>AQ</td><td>= Aquamatic</td></tr> <tr><td>AQ-DREV</td><td>= transmission Aquamatic</td></tr> <tr><td>B</td><td>= largeur</td></tr> <tr><td>BB</td><td>= babord</td></tr> <tr><td>BENVIT</td><td>= blanc ivoire</td></tr> <tr><td>BLÅ</td><td>= bleu</td></tr> <tr><td>BN-xxxxx</td><td>= jusqu'au numéro d'inverseur de réducteur</td></tr> <tr><td>BN xxxxx-</td><td>= à partir du numero d'inverseur de reducteur</td></tr> <tr><td>BRUN</td><td>= brun</td></tr> <tr><td>CC</td><td>= classification complète</td></tr> <tr><td>D</td><td>= diamètre, extérieur</td></tr> <tr><td>DET SE SIDA</td><td>= composant, voir page</td></tr> <tr><td>DI</td><td>= diamètre, intérieur</td></tr> <tr><td>DP</td><td>= Duoprop</td></tr> <tr><td>DREV</td><td>= transmission</td></tr> <tr><td>ERF</td><td>= nombre requis, longueur requis etc.</td></tr> <tr><td>ERS AV</td><td>= remplacé par</td></tr> <tr><td>ETC</td><td>= etcétera</td></tr> <tr><td>EXCL</td><td>= non compris</td></tr> <tr><td>FAT</td><td>= fût</td></tr> <tr><td>GEM</td><td>= commun</td></tr> <tr><td>GRÅ</td><td>= gris</td></tr> <tr><td>GRÅBLÅ</td><td>= gris bleu</td></tr> <tr><td>GRÖN</td><td>= vert</td></tr> <tr><td>GUL</td><td>= jaune</td></tr> <tr><td>H</td><td>= droite</td></tr> <tr><td>HÖG</td><td>= pile</td></tr> <tr><td>INCL</td><td>= compris</td></tr> <tr><td>KLASSAD</td><td>= pour moteur classe</td></tr> <tr><td>KMPL</td><td>= complet</td></tr> <tr><td>KVMM</td><td>= quadrat millimètre</td></tr> <tr><td>L</td><td>= litre, longueur</td></tr> <tr><td>LJUSGRÅ</td><td>= gris clair</td></tr> <tr><td>LÅG</td><td>= bas</td></tr> <tr><td>MAX</td><td>= maximum</td></tr> <tr><td>MM</td><td>= millimètre</td></tr> <tr><td>MO-xxxxx</td><td>= jusqu'au numéro de moteur</td></tr> <tr><td>Mo-xxxxx/xxxxx</td><td>= jusqu'au numéro de moteur</td></tr> <tr><td>MO xxxxx-</td><td>= à partir du numéro de moteur</td></tr> <tr><td>MO xxxxx/xxxxx-</td><td>= à partir du numéro de moteur</td></tr> <tr><td>MÖRKBLÅ</td><td>= blue foncé</td></tr> <tr><td>NR</td><td>= numéro</td></tr> <tr><td>PZ-xxxxx</td><td>= jusqu'au numéro de serie sur transmission</td></tr> <tr><td>PZ xxxxx-</td><td>= à partir du numero de serie sur transmission</td></tr> <tr><td>ROT</td><td>= indice d'octane (Research)</td></tr> <tr><td>RSV</td><td>= RSV – équipement d'injection</td></tr> <tr><td>RQV</td><td>= RQV – équipement d'injection</td></tr> <tr><td>RÖD</td><td>= rouge</td></tr> <tr><td>SB</td><td>= triboard</td></tr> <tr><td>SE GRUPP</td><td>= voir groupe</td></tr> <tr><td>SE SIDA</td><td>= voir page</td></tr> <tr><td>SEN UTF</td><td>= production postérieure</td></tr> <tr><td>SPEC</td><td>= spécification</td></tr> <tr><td>SPEC UTF</td><td>= version speciale</td></tr> <tr><td>SPÅR</td><td>= gorge</td></tr> <tr><td>ST</td><td>= pièce</td></tr> <tr><td>STD</td><td>= standard</td></tr> <tr><td>STD D</td><td>= dimension standard</td></tr> <tr><td>SVART</td><td>= noir</td></tr> <tr><td>TID UTF</td><td>= ancienne version</td></tr> <tr><td>TJ</td><td>= épaisseur</td></tr> <tr><td>TUB</td><td>= tube</td></tr> <tr><td>UTV</td><td>= rapport de démultiplication</td></tr> <tr><td>UD</td><td>= sous-dimension</td></tr> <tr><td>V</td><td>= volt, gauge</td></tr> <tr><td>VIT</td><td>= blanc</td></tr> <tr><td>W</td><td>= watt</td></tr> <tr><td>ÖD</td><td>= sur-dimension</td></tr> </tbody> </table>				A	= ampère	ALT	= alternative	AMBAC	= American Bosch	AQ	= Aquamatic	AQ-DREV	= transmission Aquamatic	B	= largeur	BB	= babord	BENVIT	= blanc ivoire	BLÅ	= bleu	BN-xxxxx	= jusqu'au numéro d'inverseur de réducteur	BN xxxxx-	= à partir du numero d'inverseur de reducteur	BRUN	= brun	CC	= classification complète	D	= diamètre, extérieur	DET SE SIDA	= composant, voir page	DI	= diamètre, intérieur	DP	= Duoprop	DREV	= transmission	ERF	= nombre requis, longueur requis etc.	ERS AV	= remplacé par	ETC	= etcétera	EXCL	= non compris	FAT	= fût	GEM	= commun	GRÅ	= gris	GRÅBLÅ	= gris bleu	GRÖN	= vert	GUL	= jaune	H	= droite	HÖG	= pile	INCL	= compris	KLASSAD	= pour moteur classe	KMPL	= complet	KVMM	= quadrat millimètre	L	= litre, longueur	LJUSGRÅ	= gris clair	LÅG	= bas	MAX	= maximum	MM	= millimètre	MO-xxxxx	= jusqu'au numéro de moteur	Mo-xxxxx/xxxxx	= jusqu'au numéro de moteur	MO xxxxx-	= à partir du numéro de moteur	MO xxxxx/xxxxx-	= à partir du numéro de moteur	MÖRKBLÅ	= blue foncé	NR	= numéro	PZ-xxxxx	= jusqu'au numéro de serie sur transmission	PZ xxxxx-	= à partir du numero de serie sur transmission	ROT	= indice d'octane (Research)	RSV	= RSV – équipement d'injection	RQV	= RQV – équipement d'injection	RÖD	= rouge	SB	= triboard	SE GRUPP	= voir groupe	SE SIDA	= voir page	SEN UTF	= production postérieure	SPEC	= spécification	SPEC UTF	= version speciale	SPÅR	= gorge	ST	= pièce	STD	= standard	STD D	= dimension standard	SVART	= noir	TID UTF	= ancienne version	TJ	= épaisseur	TUB	= tube	UTV	= rapport de 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Datum Date  1987-04	<b>ABKURZUNGEN</b>	Grupp Group  1	Sida Page  7
	A	=	Ampere
	ALT	=	Alternativ
	AMBAC	=	Amerikanische Bosch
	AQ	=	Aquamatik
	AQ-DREV	=	Aquamatik Antrieb
	B	=	Breite
	BB	=	backbord
	BENVIT	=	knockenweiß
	BLÅ	=	blau
	BN-xxxxx	=	bis zu Wendegetriebeummer
	BN xxxxx-	=	ab Wendegetriebeummer
	BRUN	=	braun
	CC	=	klassifizierung komplett
	D	=	äusserer Durchmesser
	DET SE SIDA	=	Einzelteile s Seite
	DI	=	innerer Durchmesser
	DP	=	Duoprop
	DREV	=	Antrieb
	ERF	=	erforderliche Anzahl, erforderliche Menge usw.
	ERS AV	=	ersetzen aus
	ETC	=	usw
	EXCL	=	ausserließlich
	FAT	=	Faß
	GEM	=	gemeinsam
	GRÅ	=	grau
	GRÅBLÅ	=	graublau
	GRÖN	=	grün
	GUL	=	gelb
	H	=	rechts
	HÖG	=	hoch
	INCL	=	einschließlich
	KLASSAD	=	für klassifizierten Motor
	KMPL	=	komplett
	KVMM	=	Quadratmillimeter
	L	=	Liter, Länge
	LJUSGRÅ	=	hellgrau
	LÅG	=	niedrig
	MAX	=	maximum
	MM	=	Millimeter
	MO-xxxxx	=	bis zu Motornummer
	Mo-xxxxx/xxxxx	=	bis zu Motornummer
	MO xxxxx-	=	ab Motornummer
	MO xxxxx/xxxxx-	=	ab Motornummer
	MÖRKBLÅ	=	dunkelblau
	NR	=	Nummer
	PZ-xxxxx	=	bis zu Seriennummer des Antriebs
	PZ xxxxx-	=	ab Seriennummer des Antriebs
	ROT	=	Oktangehalt (methode Research)
	RSV	=	RSV - Einspritzausrüstung
	RQV	=	RQV - Einspritzausrüstung
	RÖD	=	rot
	SB	=	steuerbord
	SE GRUPP	=	siehe Gruppe
	SE SIDA	=	siehe Seite
	SEN UTF	=	neuere Ausführung
	SPEC	=	Spezifikation
	SPEC UTF	=	Spezialausführung
	SPÅR	=	Nut
	ST	=	Stück
	STD	=	Standard
	STD D	=	Standardmass
	SVART	=	schwarz
	TID UTF	=	ältere Ausführung
	TJ	=	Dicke
	TUB	=	Tube
	UTV	=	Untersetzungsverhältnis
	UD	=	Untermass
	V	=	Volt, links
	VIT	=	weiß
	W	=	Watt
	ÖD	=	übermass



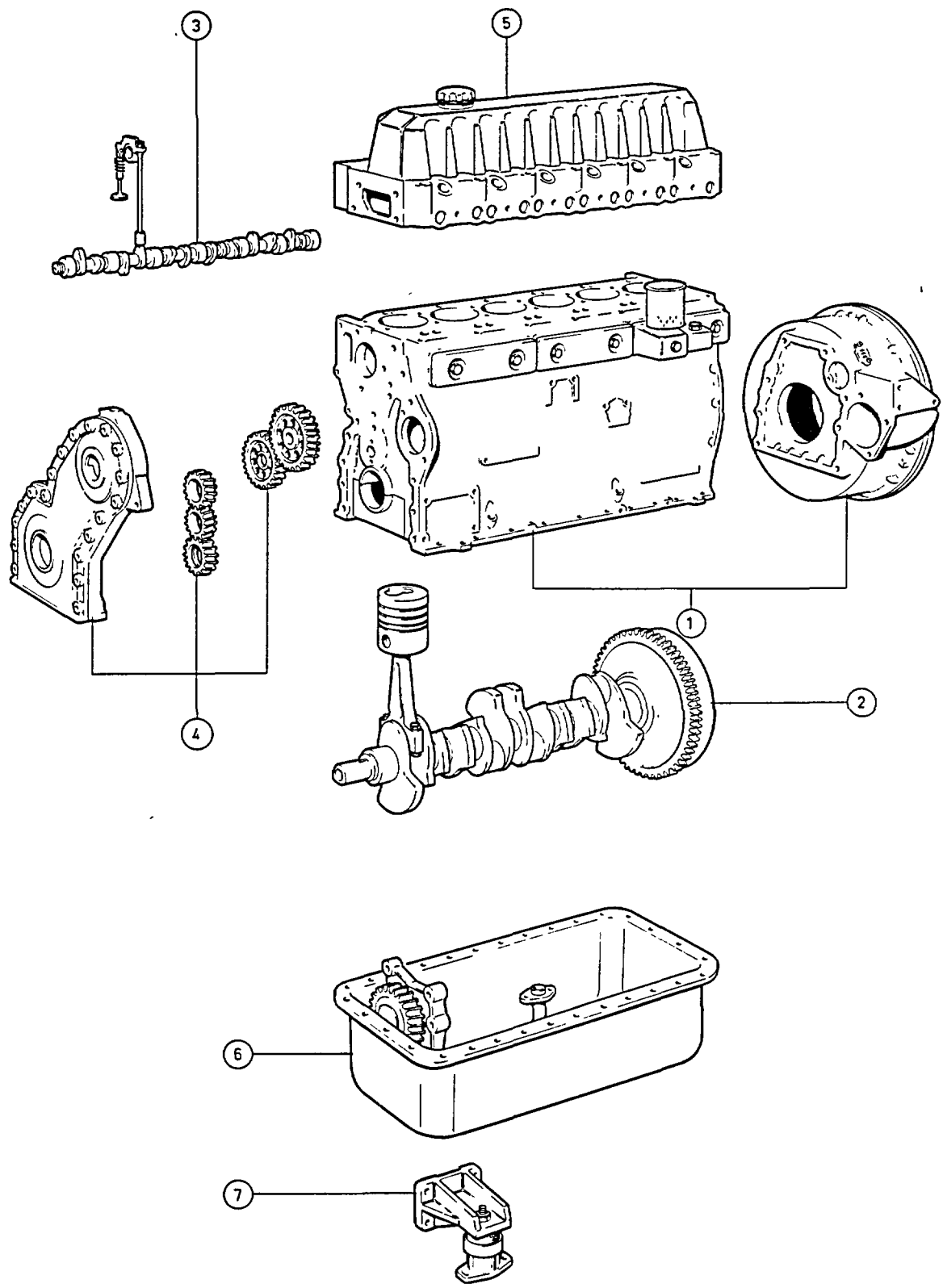
Sida Page	Grupp Group		Datum Date
8	1	<b>ABREVIACIONES</b>	1987-04
		<p>A = amperio            ALT = alternativa            AMBAC = American Bosch            AQ = Aquamatic            AQ-DREV = Transmission fuera de borda Aquamatic            B = ancho            BB = babord            BENVIT = blanco marfil            BLÅ = Azul            BN-xxxxx = hasta el número de serie del inversor            BN xxxxx- = desde el número de serie del inversor            BRUN = Marron            CC = completamente homologado            D = diámetro, exterior            DET SE SIDA = componentes, vease pagina            DI = diámetro, interior            DP = Duoprop            DREV = transmision            ERF = cantidad necesaria longitud necesaria etc            ERS AV = reemplazado por            ETC = etcetera            EXCL = excluida            FAT = bidon            GEM = comun            GRÅ = gris            GRÅBLÅ = gris azulado            GRÖN = verde            GUL = amarillo            H = derecha            HÖG = alto            INCL = incluida            KLASSAD = para motor homologado            KMPL = completo            KVMM = milimetro cuadrado            L = litro, longitud            LJUSGRÅ = gris claro            LÅG = bajo            MAX = máximo            MM = milimetro            MO-xxxxx = hasta el número de motor            Mo-xxxxx/xxxxx = hasta el número de motor            MO xxxxx- = desde el número de motor            MO xxxxx/xxxxx- = desde el número de motor            MÖRKBLÅ = azul oscuro            NR = número            PZ-xxxxx = hasta el número de serie de transmision            PZ xxxxx- = desde del número de serie de transmision            ROT = número de octano (Research)            RSV = RSV – Equipo de inyección            RQV = RQV – Equipo de inyección            RÖD = rojo            SB = estribor            SE GRUPP = véase grupo            SE SIDA = véase página            SEN UTF = produccion posterior            SPEC = especificacion            SPEC UTF = ejecución especial            SPÅR = ranura            ST = unidad            STD = standard            STD D = dimension standard            SVART = negro            TID UTF = produccion anterior            TJ = espesor            TUB = tubo            UTV = relación de desmultiplicación            UD = subdimensión            V = voltio, izquierda            VIT = blanco            W = watio            ÖD = sobredimension</p>	

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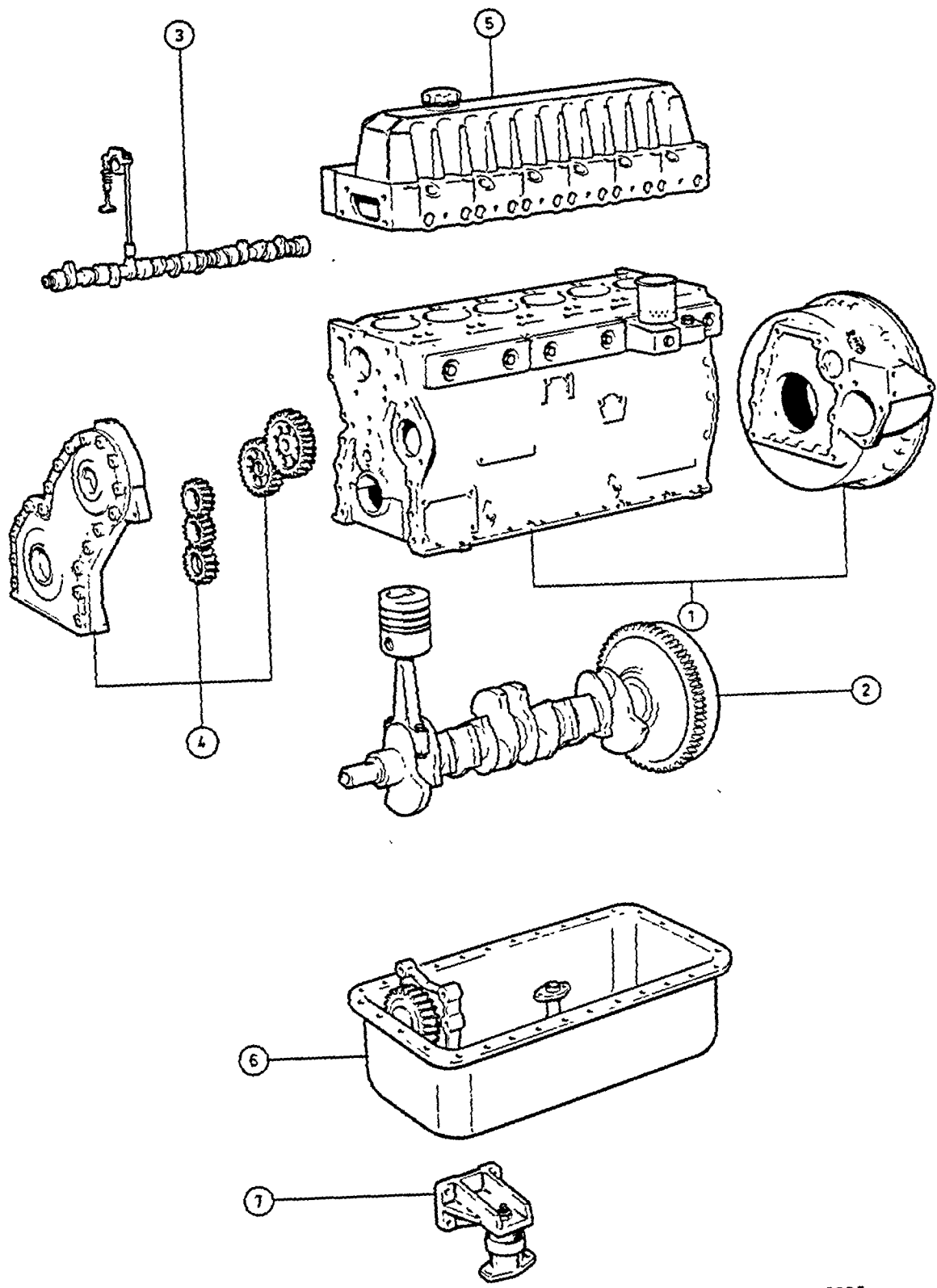


1987-04	Innehållsfor-teckning	Index	Grupp Group	Sida Page
			2a	1
	Motor		Sida	Koord
	Motor med monteringsdetaljer .....	MD40A,AQD40A.....	2	1-B03
	Motor med monteringsdetaljer... ..	TMD40A,TMD40B,TMD40C .....	4	1-B05
	Motor med monteringsdetaljer... ..	AQAD40A, AQAD40B, TAMD40A, ... TAMD40B	6	1-B07
	Engine		Page	Grid
	Engine with installation components ..	MD40A,AQD40A .....	2	1-B03
	Engine with installation components ...	TMD40A,TMD40B,TMD40C .....	4	1-B05
	Engine with installation components... ..	AQAD40A, AQAD40B, TAMD40A, ... TAMD40B	6	1-B07

Sida Page	Grupp Group	Motor med monteringsdetaljer Engine with installation components		Illustration 5225 1987-04	007						
2	2a	MD40A,AQD40A									
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-		Cylinderblock och svänghjulskåpa	Cylinder block and flywheel casing			SE SIDA 8, 1-B09	00
2	1	-	-	-		Vevrörelse.....	Crankshaft and related parts			SE SIDA 18, 1-B19	01
3	1	-	-	-		Kamaxel och ventilmekanism	Camshaft and valve mechanism			SE SIDA 22, 1-B23	02
4	1	-	-	-		Transmissionskåpa och transmissionsdrev	Timing gear casing and gears			SE SIDA 26, 1-C03	03
5	1	-	-	-		Cylinderlock.....	Cylinder head.....			SE SIDA 30, 1-C07	03
6	1	-	-	-		Smörjsystem .....	Lubricating system .....			SE SIDA 34, 1-C11	04
7	1	-	-	-		Motorupphängning .....	Engine suspension .....			SE SIDA 42, 1-C19	05

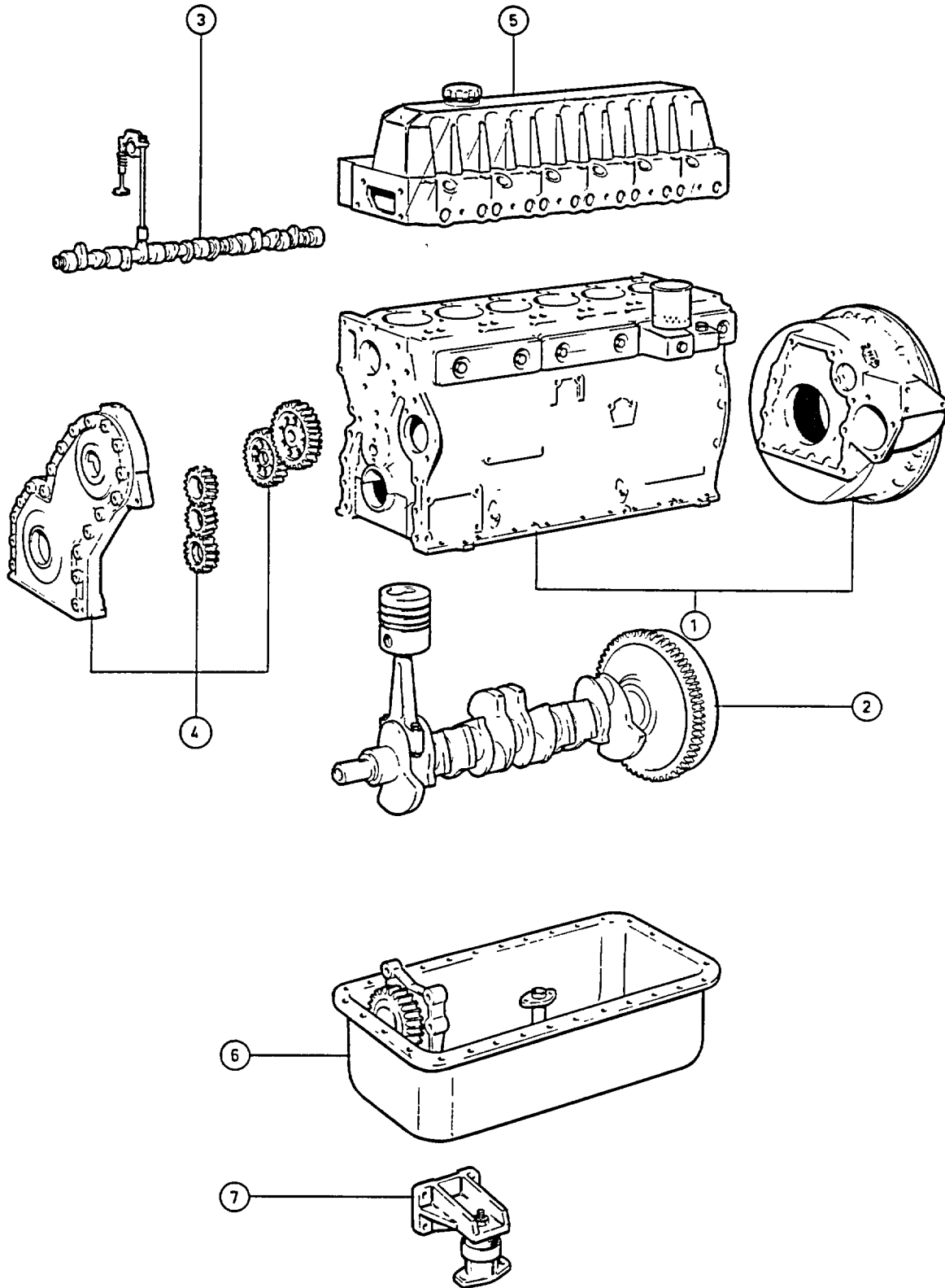


Sida Page	Grupp Group	Motor med monteringsdetaljer		Engine with installation components		Illustration	00			
4	2a	TMD40A,TMD40B,TMD40C				5225 1987-04				
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	TMD 40A	TMD 40B	TMD 40C							
1	1	-	-	-	Cylinderblock och svanghjulskåpa	Cylinder block and flywheel casing			SE SIDA 8, 1-B09	C
	-	1	1	-	Cylinderblock och svanghjulskåpa	Cylinder block and flywheel casing			SE SIDA 12, 1-B13	00
2	1	-	-	-	Vevrorelse	Crankshaft and related parts			SE SIDA 18, 1-B19	00
	-	1	1	-	Vevrorelse	Crankshaft and related parts			SE SIDA 20, 1-B21	00
3	1	-	-	-	Kamaxel och ventilmekanism	Camshaft and valve mechanism			SE SIDA 22, 1-B23	00
	-	1	1	-	Kamaxel och ventilmekanism	Camshaft and valve mechanism			SE SIDA 24, 1-C01	0
4	1	-	-	-	Transmissionskåpa och transmissionsdrev	Timing gear casing and gears			SE SIDA 26, 1-C03	0
	-	1	1	-	Transmissionskåpa och transmissionsdrev	Timing gear casing and gears			SE SIDA 28, 1-C05	00
5	1	-	-	-	Cylinder lock	Cylinder head			SE SIDA 30, 1-C07	0
	-	1	1	-	Cylinderblock	Cylinder head			SE SIDA 32, 1-C09	0
6	1	1	1	-	Smorjsystem	Lubricating system			SE SIDA 34, 1-C11	U
7	1	1	1	-	Motorupphängning	Engine suspension			SE SIDA 44, 1-C21	0



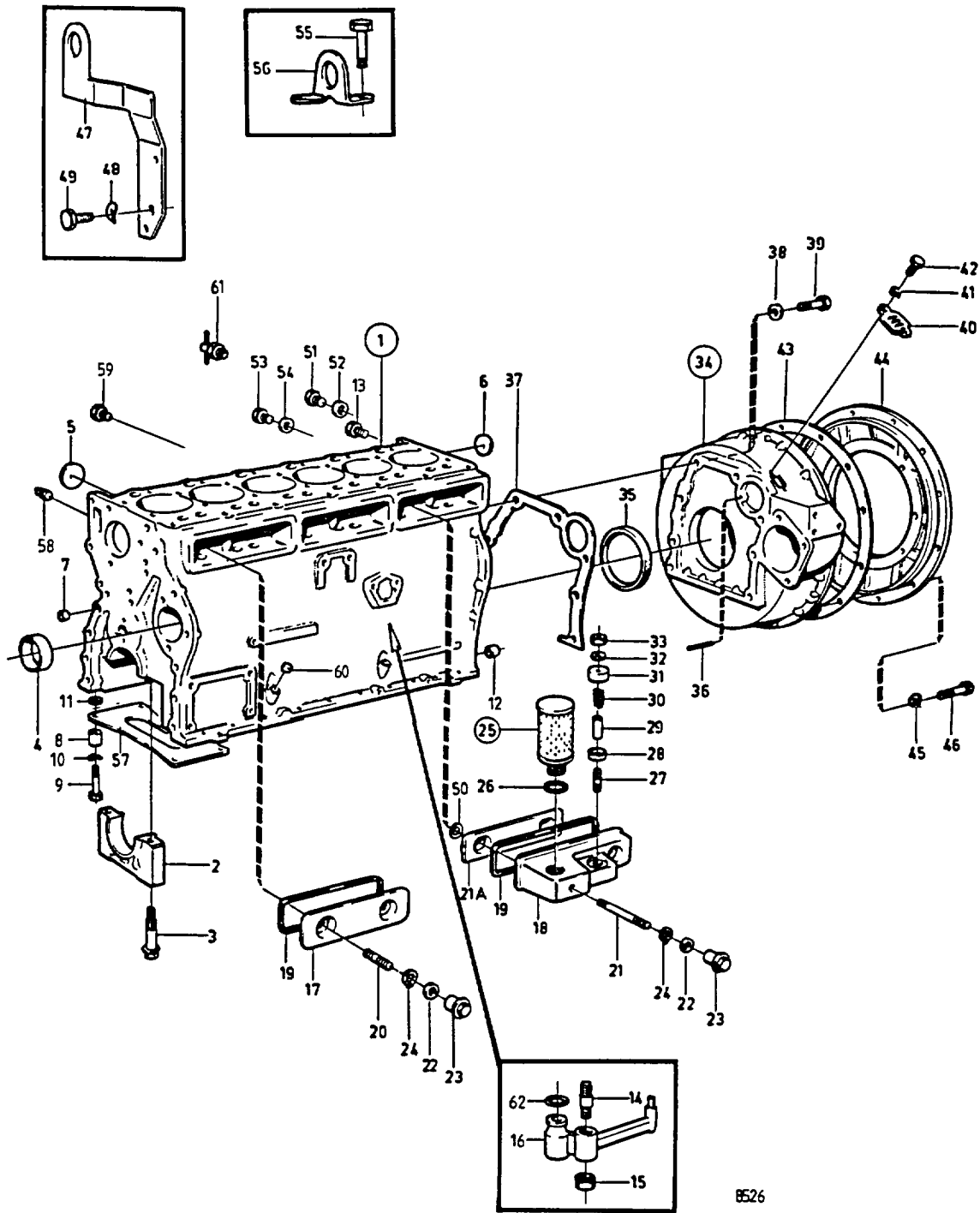
Sida Page	Grupp Group	Motor med monteringsdetaljer Engine with installation components	Illustration					
6	2a	AQAD40A, AQAD40B, TAMD40A, TAMD40B	5225 1987-04					
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	Anmärkning Notes
1	1	-	-	-	Cylinderblock och svänghjulskåpa	Cylinder block and flywheel casing	B	SE SIDA 16, 1-B17
2	1	-	-	-	Vevrorelse	Crankshaft and related parts	P	SE SIDA 18, 1-B19
3	1	-	-	-	Kamaxel och ventilmekanism	Camshaft and valve mechanism	S	SE SIDA 22, 1-B23
4	1	-	-	-	Transmissionskåpa och transmissionsdrev	Timing gear casing and gears	R	SE SIDA 26, 1-C03
5	1	-	-	-	Cylinderlock	Cylinder head		SE SIDA 30, 1-C07
6	1	-	-	-	Smorjssystem	Lubricating system		SE SIDA 34, 1-C11
7	1	-	-	-	Motorupphängning	Engine suspension		SE SIDA 46, 1-C23

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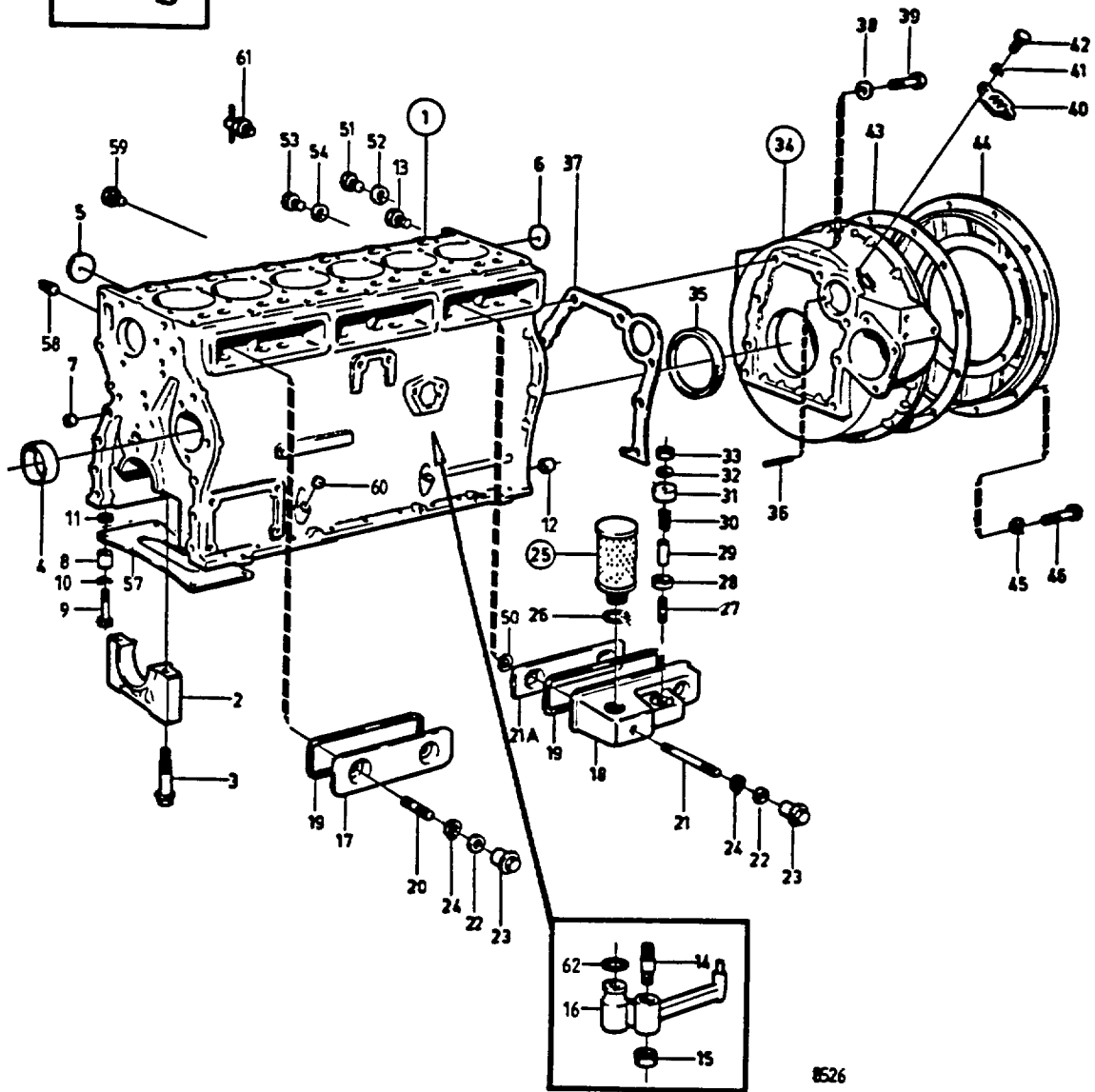
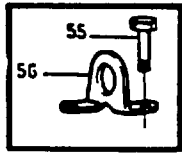
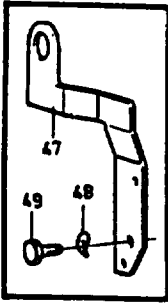


Sida Page		Grupp Group		Cylinderblock och svänghjulsåpa		Cylinder block and flywheel casing		Illustration	
8		2a		AQD40A,TMD40A,MD40A				8526 1987-04	
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	AQD 40A	TMD 40A	MD 40A						
1	1	1	1	1545051-3	Cylinderblock	Cylinder block	6	ERS AV838981	
	1	1	1	838981-9	Cylinderblock	Cylinder block	6		
2	7	7	7		Lageröverfall	Bearing cap	8		
3	14	14	14	1542416-1	Skruv	Screw	3	(1542202)	
4	7	7	7	1542067-2	Bussning	Bushing	4		
5	5	5	5	463905-0	Plugg	Plug	4		
6	1	1	1	1542263-7	Expansionsplugg	Plugg	4		
7	4	4	4	955083-1	Plugg	Plug	4		
8	4	1	1	1545160-2	Distanshylsa	Spacer sleeve	4	TIDUTF	
9	4	5	5	955324-9	Skruv	Screw	0		
10	4	2	2	941908-6	Bricka	Washer	0		
11	4	1	1	1545204-8	Distanshylsa	Spacer sleeve	3		
12	3	6	6	415311-0	Styrhylsa	Sleeve	3		
13	3	6	6	955082-3	Hattplugg	Plug	0		
14	6	6	6	1542380-9	Pinnskruv	Stud bolt	3		
15	6	6	6	946035-3	Mutter	Nut	0		
16	6	2	2	1542320-5	Munstycke	Jet	4		
17	2	2	2	1542050-8	Inspektionslucka	Inspection cover	5		
18	1	1	1	842995-3	Hus	Housing	5		
19	3	3	3	1542052-4	Packning	Gasket	S 2		
20	5	5	5	924075-5	Pinnskruv	Stud	0		
21	1	1	1	17378-1	Pinnskruv	Stud bolt	0		
21a	1	1	1	843882-2	Stankplåt	Splash shield	5		
22	6	6	6	469846-0	Tätningarring	Sealring	S 2	(424342)	
23	6	6	6	1542286-8	Mutter	Nut	3		
24	6	6	6	914449-4	Låsring	Lock ring	0		
25	1	1	1	875850-0	Filtersats	Filter kit	1	ERS AV876069	
	1	1	1	876069-6	Filtersats	Filter kit	1		
26	1	1	1	843449-0	Packning	Gasket	S 2		
27	1	1	1	924058-1	Pinnskruv	Stud bolt	0		
28	1	1	1	842972-2	Ventiltallrik	Valve dish	3		
29	1	1	1	842974-8	Distanshylsa	Spacer sleeve	4		
30	1	1	1	843905-1	Fjäder	Spring	3		
31	1	1	1	842975-5	Kåpa	Casing	3		
32	1	1	1	421158-7	Tätningring	Ring	S 2		
33	1	1	1	963105-2	Låsmutter	Lock nut	0		
34	1	1	1	829467-0	Svänghjulsåpa	Flywheel casing	7		
35	1	1	1	1542204-1	Tätningarring	Seal ring	S 2		
36	1	1	1	404069-7	Installationsvisare	Indicator	5		
37	1	1	1	829487-8	Packning	Gasket	S 2		
38	8	8	8	941908-6	Fjäderbricka	Washer	0		
39	6	6	6	955320-7	Skruv	Screw	0	L=40MM	
	2	2	2	955321-5	Skruv	Screw	0	L=45MM	
40	1	1	1	407092-6	Lock	Cover	5		
41	2	2	2	941906-0	Fjäderbricka	Washer	0		
42	2	2	2	955269-6	Skruv	Screw	0		
43	1	1	1	829488-6	Packning	Gasket	S 8	SE GRUPP 4A	
44	1	1	1	829489-4	Mellandel	Intermediate piece	7	6)	
45	11	11	11	941908-6	Fjäderbricka	Washer	0		
46	11	11	11	955319-9	Skruv	Bolt	0		
47	1	1	1		Lyftjarn	Lifting arm	8	TID UTF, SE GRUPP 2B	
48	2	2	2	941908-6	Fjäderbricka	Washer	0	TID UTF	
49	2	1	1	955319-9	Skruv	Bolt	0	TID UTF	
50	1	1	1	844051-3	Fjädrande bricka	Spring washer	2		
51	1	1	-	960630-2	Propp	Plug	0		
52	1	1	-	947621-9	Packning	Gasket	0	MO-26461	
	1	1	-	18671-8	Packning	Gasket	0	MO26462-	
53	1	1	-	960634-4	Propp	Plug	0		
54	1	1	-	947627-6	Packning	Gasket	0		
55	2	2	2	955303-3	Skruv	Screw	0	TID UTF SE GRUPP 2B	



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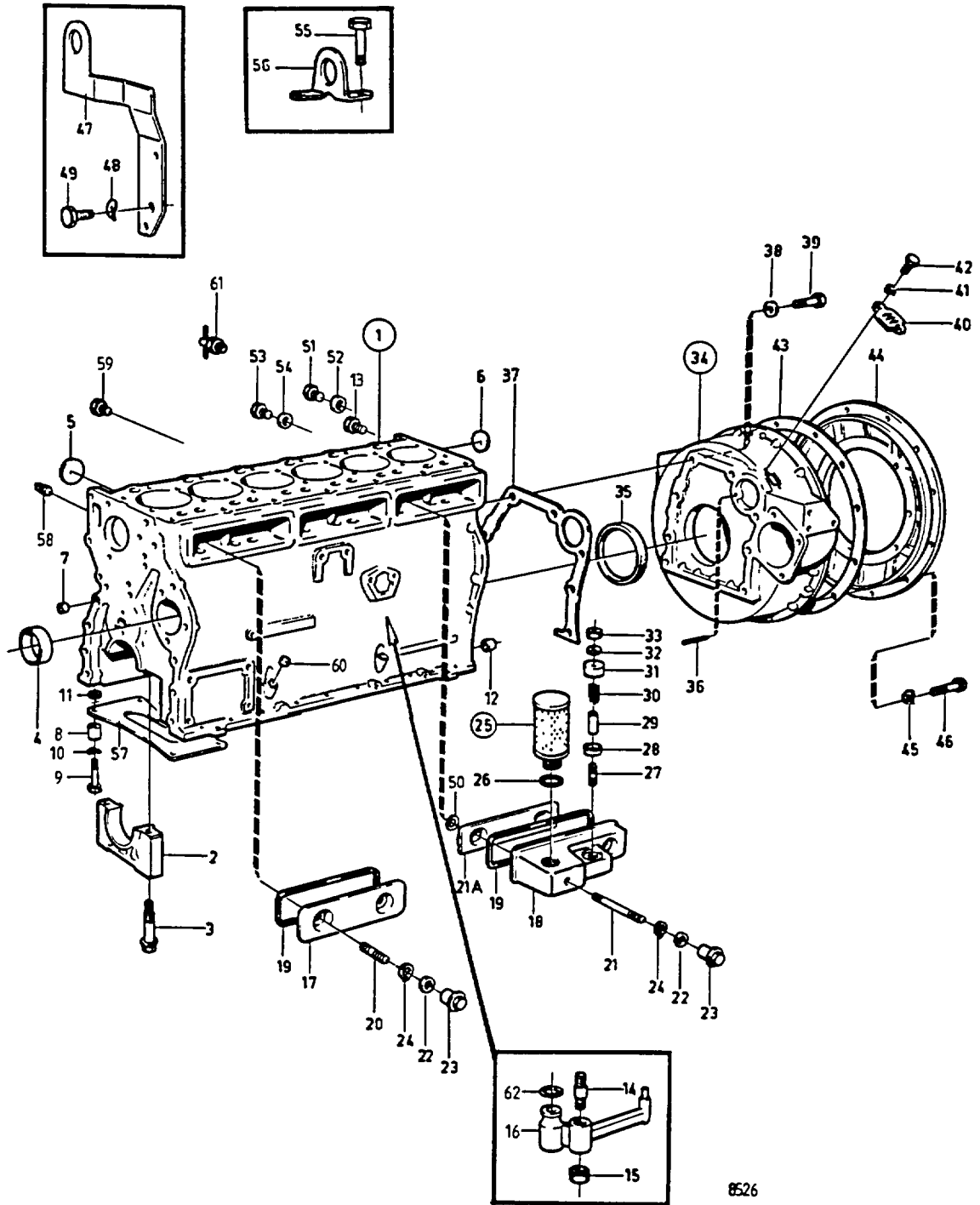
Sida Page	Grupp Group	Cylinderblock och svänghjulsåpa		Cylinder block and flywheel casing		Illustration	03				
10	2a	AQU40A,TMD40A,MD40A				8526 1987-04					
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	AQD 40A	TMD 40A	MD 40A								
56	1	1	1	-		Lyftjärn .....	Lifting arm .....	8			11
57	1	1	1	-	1545159-4	Konsol .....	Bracket .....	5			12
58	1	4	-	-	952077-6	Propp .....	Plug .....	0		TID UTF	12
	2	-	-	-	952077-6	Propp .....	Plug .....	0		SEN UTF	12
59	5	4	-	-	191026-4	Propp .....	Plug .....	0			12
60	2	4	-	-	955082-3	Propp .....	Plug .....	0			12
61	1	4	-	-	947893-4	Kran .....	Cock .....	0			13
62	6	-	-	-	955981-6	O-ring .....	O-ring .....	0			13



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Sida Page	Grupp Group	Cylinderblock och svanghjulskåpa	Cylinder block and flywheel casing	Illustration	030						
12	2a	TMD40B,TMD40C		8526							
				1987-04							
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	1545051-3	Cylinderblock	Cylinder block		6	ERS AV 838981	00
	1	-	-	-	838981-9	Cylinderblock	Cylinder block		6		002
2	7	-	-	-		.Lageröverfall..	.Bearing cap ..		8		004
3	14	-	-	-	1542416-1	.Skruv ..	.Screw ..		3	(1542202)	006
4	7	-	-	-	1542067-2	.Bussning ..	.Bushing ..		4		008
5	5	-	-	-	463905-0	.Plugg ..	.Plug ..		4		010
6	1	-	-	-	1542263-7	.Expansionsplugg..	.Plug ..		4		012
7	4	-	-	-	955083-1	.Plugg ..	.Plug ..		0		014
8	4	-	-	-	1545160-2	.Distanshylsa...	.Spacer sleeve ..		4	TIDUTF	016
9	4	-	-	-	955324-9	.Skruv ..	.Screw ..		0		02C
10	4	-	-	-	941908-6	.Bricka ..	.Washer ..		0		
11	4	-	-	-	1545204-8	.Distanshylsa	.Spacer sleeve ..		3		
12	3	-	-	-	415311-0	.Styrhylsa ..	.Sleeve ..		3		02E
13	3	-	-	-	955082-3	.Hattplugg ..	.Plug ..		0		02E
14	6	-	-	-	1542380-9	Pinnskruv ..	Stud bolt ..		3		03C
15	6	-	-	-	946035-3	Mutter ..	Nut ..		0		03C
16	6	-	-	-	1542320-5	Munstycke ..	Jet ..		4		
17	2	-	-	-	1542050-8	Inspektionslucka ..	Inspection cover ..		5		
18	1	-	-	-	842995-3	Hus ..	Housing ..		5		03E
19	3	-	-	-	1542052-4	Packning ..	Gasket ..	S	2		04C
20	5	-	-	-	924075-5	Pinnskruv ..	Stud ..		0		04C
21	1	-	-	-	17378-1	Pinnskruv ..	Stud bolt ..		0		04C
21a	1	-	-	-	843882-2	Stankplåt ..	Splash shield ..		5		04C
22	6	-	-	-	469846-0	Tätningarring ..	Sealing ..	S	2	(424342)	04E
23	6	-	-	-	1542286-8	Mutter ..	Nut ..		3		05C
24	6	-	-	-	914449-4	Låsring ..	Lock ring ..		0		05C
25	1	-	-	-	875850-0	Filtersats ..	Filter kit ..		1	ERS AV 876069	0
	1	-	-	-	876069-6	Filtersats ..	Filter kit ..		1		0
26	1	-	-	-	843449-0	.Packning ..	.Gasket ..	S	2		05C
27	1	-	-	-	924058-1	Pinnskruv ..	Stud bolt ..		0		05C
28	1	-	-	-	842972-2	Ventiltallrik ..	Valve dish ..		3		06C
29	1	-	-	-	842974-8	Distanshylsa ..	Spacer sleeve ..		4		06C
30	1	-	-	-	843905-1	Fjäder ..	Spring ..		3		06C
31	1	-	-	-	842975-5	Kåpa ..	Casing ..		3		06C
32	1	-	-	-	421158-7	Tätningarring ..	Seal ring ..	S	2		06C
33	1	-	-	-	963105-2	Låsmutter ..	Lock nut ..		0		07C
34	1	-	-	-	829467-0	Svanghjulskåpa ..	Flywheel casing ..		7		07C
35	1	-	-	-	1542204-1	.Tätningarring ..	.Seal ring ..	S	2		
36	1	-	-	-	404069-7	.Installationsvisare ..	.Indicator ..		5		
37	1	-	-	-	829487-8	Packning ..	Gasket ..	S	2		07C
38	8	-	-	-	941908-6	Fjäderbricka ..	Washer ..		0		08C
39	6	-	-	-	955320-7	Skruv ..	Screw ..		0	L=40MM	08C
	2	-	-	-	955321-5	Skruv ..	Screw ..		0	L=45MM	08C
40	1	-	-	-	407092-6	Lock ..	Cover ..		5		
41	2	-	-	-	941906-0	Fjäderbricka ..	Washer ..		0		
42	2	-	-	-	955269-6	Skruv ..	Screw ..		0		
43	1	-	-	-	829488-6	Packning ..	Gasket ..	S	8	SE GRUPP 4A	09C
44	1	-	-	-	829489-4	Mellandel ..	Intermediate piece ..		7	6)	09C
45	11	-	-	-	941908-6	Fjäderbricka ..	Washer ..		0		09C
46	11	-	-	-	955319-9	Skruv ..	Bolt ..		0		09C
47	1	-	-	-		Lyftjärn ..	Lifting arm ..		8	TID UTF, SE GRUPP 2B	1C
48	2	-	-	-	941908-6	Fjäderbricka ..	Washer ..		0	TID UTF	1C
49	1	-	-	-	955319-9	Skruv ..	Bolt ..		0	TID UTF	1C
50	1	-	-	-	844051-3	Fjäderbricka ..	Spring washer ..		2		1C
51	1	-	-	-	960630-2	Propp ..	Plug ..		0		1C
52	1	-	-	-	18671-8	Packning ..	Gasket ..		0	MO 26462-	1C
53	1	-	-	-	960634-4	Propp ..	Plug ..		0		11C
54	1	-	-	-	947627-6	Packning ..	Gasket ..		0		11C
55	2	-	-	-	955303-3	Skruv ..	Screw ..		0	TID UTF SE GRUPP 2B	11C
56	1	-	-	-		Lyftjärn ..	Lifting arm ..		8		1C

6. Endast då backslag är monterat. Only when reverse gear is mounted.



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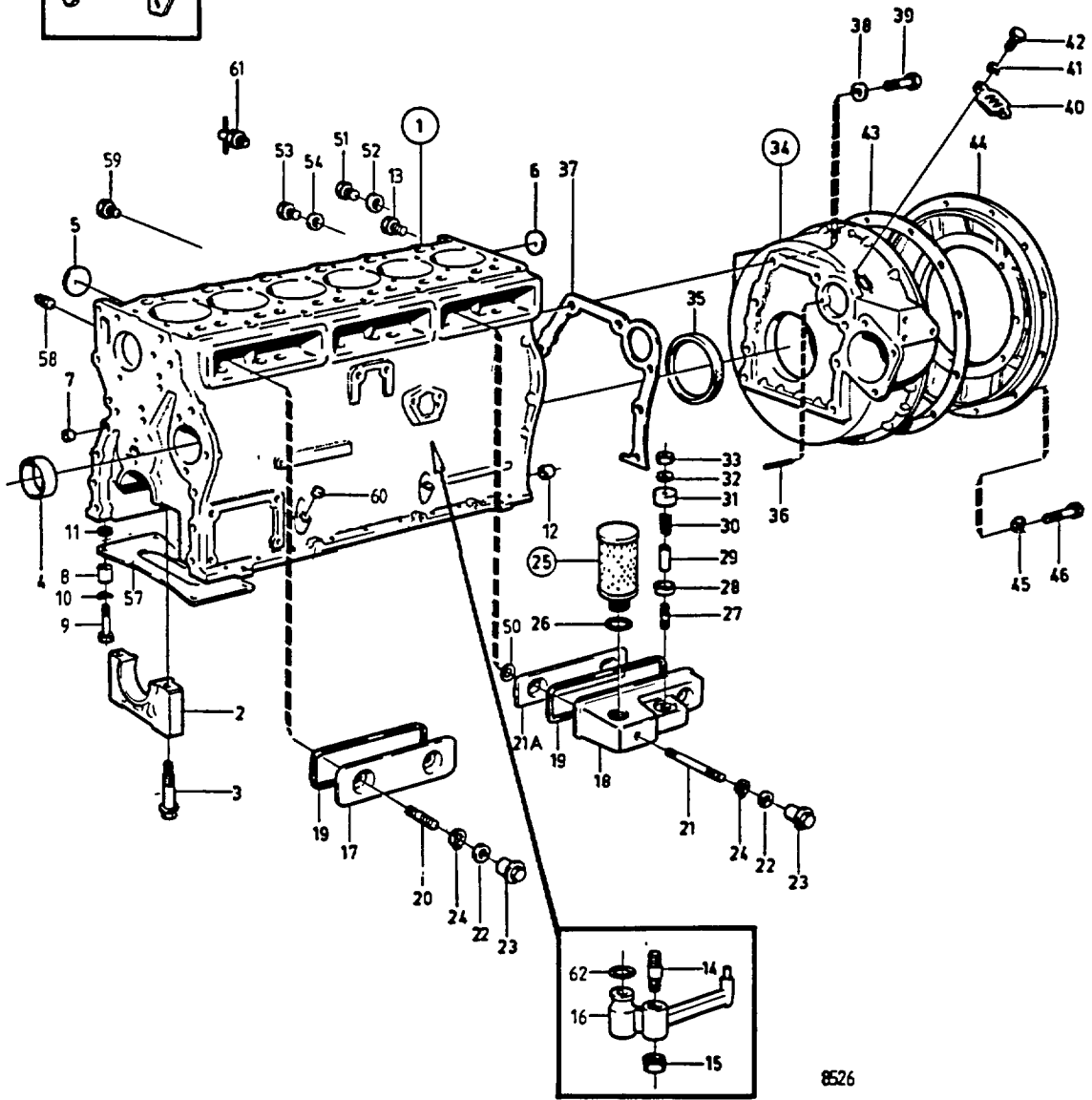
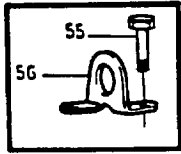
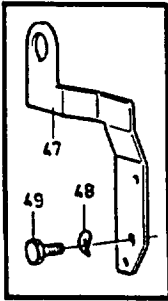
Publ. 4406

Reservdelskatalog  
Parts Catalogue

1-B15

**VOLVO**  
**PENTA**

Sida Page	Grupp Group	Cylinderblock och svänghjulsåpa		Cylinder block and flywheel casing		Illustration	030					
14	2a	TMD40B,TMD40C				8526 1987-04						
Pos Fig.	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes		
57	1	-	-	-	1545159-4	Konsol .....	Bracket .....		5			1
58	1	-	-	-	952077-6	Propp .....	Plug .....		0	TID UTF		12
	2	-	-	-	952077-6	Propp .....	Plug .....		0	SEN UTF		12
59	5	-	-	-	191026-4	Propp .....	Plug .....		0			12
60	2	-	-	-	955082-3	Propp .....	Plug .....		0			12
61	1	-	-	-	947893-4	Kran .....	Cock .....		0			12
62	6	-	-	-	955981-6	O-ring .....	O-ring .....		0			13



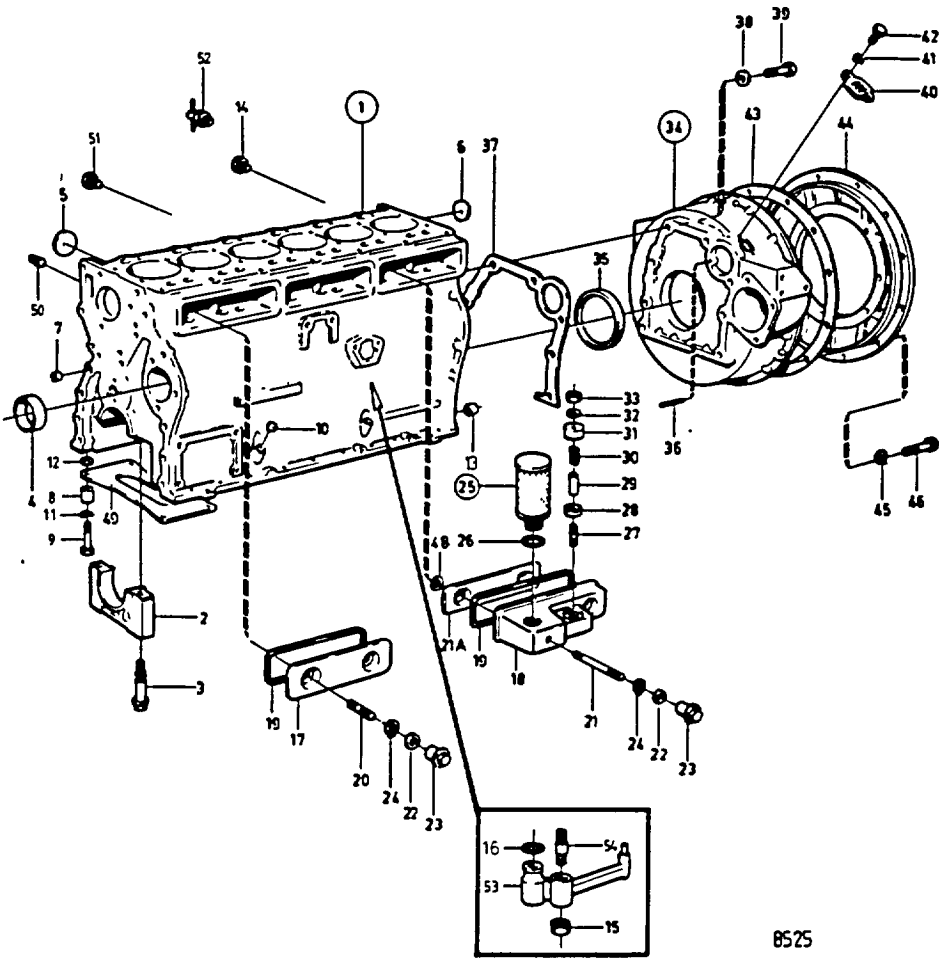
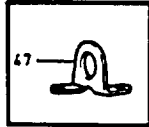
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Sida Page	Grupp Group	Cylinderblock och svanghjulskåpa	Cylinder block and flywheel casing	Illustration	031
16	2a	AQAD40A, AQAD40B, TAMD40A, TAMD40B		8525	
				1987-04	

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	1542463-3	Cylinderblock	Cylinder block	8		ERS AV 1545051	0C
	1	-	-	-	1545051-3	Cylinderblock	Cylinder block	6		ERS AV 838981	002
	1	-	-	-	838981-9	Cylinderblock	Cylinder block	6			002
2	7	-	-	-		.Lageröverfall	.Bearing cap	8			004
3	14	-	-	-	1542416-1	.Skruv	.Screw	3			006
4	7	-	-	-	1542067-2	.Bussning	.Bushing	4			006
5	5	-	-	-	463905-0	.Expansionsplugg	.Expansion plug	4			010
6	1	-	-	-	1542263-7	.Expansionsplugg	.Expansion plug	4			012
7	4	-	-	-	955083-1	.Hattplugg	.Plug	0			014
8	4	-	-	-	1545160-2	.Distanshylsa	.Spacer sleeve	4			016
9	4	-	-	-	955324-9	.Skruv	.Screw	0			
10	3	-	-	-	955082-3	.Hattplugg	.Plug	0			
11	4	-	-	-	941908-6	.Bricka	.Washer	0			022
12	4	-	-	-	1545204-8	.Distanshylsa	.Spacer sleeve	3			022
13	2	-	-	-	415311-0	.Hylsa	.Sleeve	3			021
14	3	-	-	-	955082-3	.Hattplugg	.Plug	3			021
15	6	-	-	-	946035-3	Låsmutter	Lock nut	0			
16	6	-	-	-	955981-6	O-ring	O-ring	0			
17	2	-	-	-	1542050-8	Inspektionslucka	Inspection cover	5			032
18	1	-	-	-	842995-3	Hus	Housing	5			031
19	3	-	-	-	1542052-4	Gummitätning	Rubber seal	S 2			031
20	5	-	-	-	924075-5	Pinnskruv	Stud bolt	0			042
21	1	-	-	-	17378-1	Pinnskruv	Stud bolt	0			04
21a	1	-	-	-	843882-2	Stankplåt	Splash shield	5			04
22	6	-	-	-	469846-0	Tätningarring	Seal ring	S 2	(424342)		04
23	6	-	-	-	1542286-8	Hattmutter	Nut	3			04
24	6	-	-	-	914449-4	Låsring	Circlip	0			(
25	1	-	-	-	875850-0	Filtersats	Filter kit	1		ERS AV 876069	0.
	1	-	-	-	876069-6	Filtersats	Filter kit	1			05
26	1	-	-	-	843449-0	.Packning	.Gasket	S 2			05
27	1	-	-	-	924058-1	Pinnskruv	Stud bolt	0			05
28	1	-	-	-	842972-2	Ventiltallrik	Valve disc	3			05
29	1	-	-	-	842974-8	Distanshylsa	Spacer sleeve	4			06
30	1	-	-	-	843905-1	Fjäder	Spring	3			06
31	1	-	-	-	842975-5	Kåpa	Casing	3			06
32	1	-	-	-	421158-7	Tätningarring	Seal ring	S 2			06
33	1	-	-	-	963105-2	Mutter	Nut	0			06
34	1	-	-	-	829467-0	Svanghjulskåpa	Flywheel casing	7			
35	1	-	-	-	1542204-1	.Tätningarring	.Seal ring	S 2			
36	1	-	-	-	404069-7	.Installningsvisare	.Indicator	5			07
37	1	-	-	-	829487-8	Packning	Gasket	S 2			07
38	8	-	-	-	941908-6	Fjädrande bricka	Resilient washer	0			07
39	6	-	-	-	955320-7	Skruv	Screw	0	L=40MM		08
	2	-	-	-	955321-5	Skruv	Screw	0	L=45MM		
40	1	-	-	-	407092-6	Lock	Cover	5			
41	2	-	-	-	941906-0	Fjädrande bricka	Resilient washer	0			08
42	2	-	-	-	955269-6	Skruv	Screw	0			08
43	1	-	-	-	829488-6	Packning	Gasket	S 8	SE GRUPP 4A		08
44	1	-	-	-	829489-4	Mellandel	Interm piece	7 6)			08
45	11	-	-	-	941908-6	Fjädrande bricka	Resilient washer	0			08
46	11	-	-	-	955319-9	Skruv	Screw	0			08
47	1	-	-	-		Lyftjärn	Lift eye	8			08
48	1	-	-	-	844051-3	Fjädrande bricka	Resilient washer	2			10
49	1	-	-	-	1545159-4	Konsol	Bracket	6			1
50	2	-	-	-	952077-6	Propp	Plug	0			1
51	5	-	-	-	191026-4	Propp	Plug	0			11
52	1	-	-	-	947893-4	Kran	Cock	0			11
53	6	-	-	-	1542320-5	Oljemunstycke	Oil jet	4			12
54	6	-	-	-	1542380-9	Pinnskruv	Stud bolt	3			12

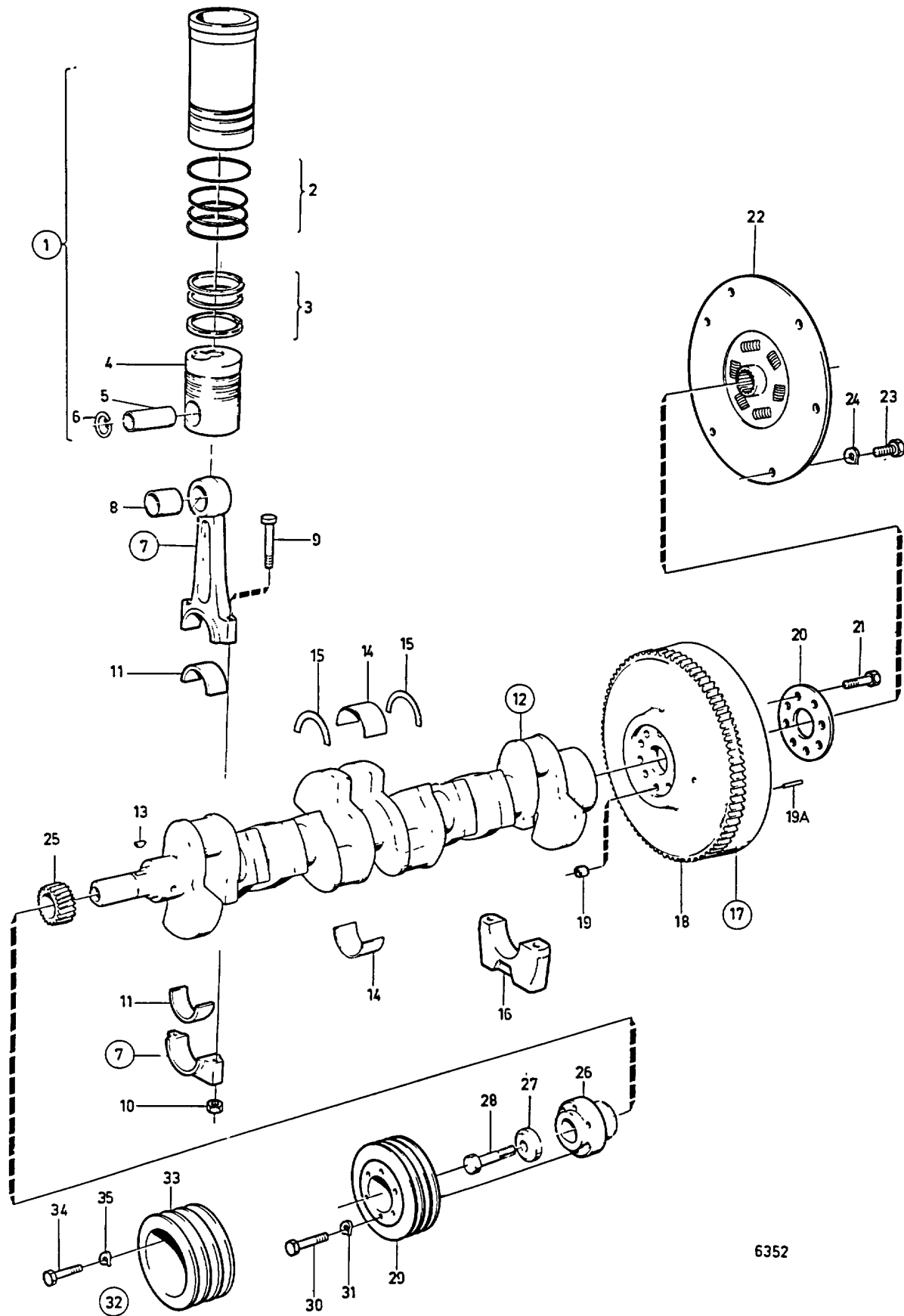
6. Endast då backslag är monterat. Only when reverse gear is mounted.



8525

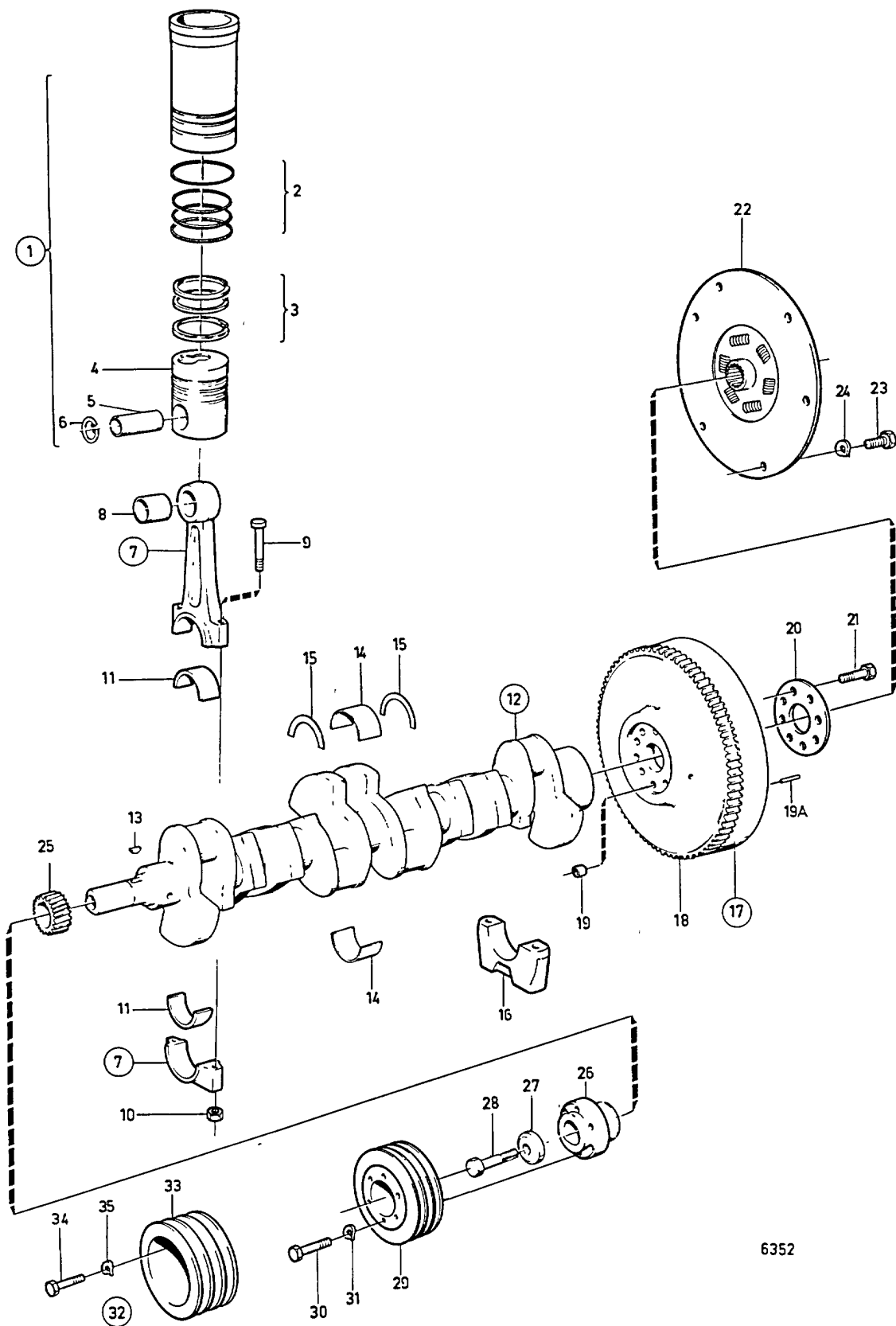
Sida Page	Grupp Group	Vevrörelse			Crankshaft and related parts			Illustration	05'	
18	2a	MD40A,AQD40A,TMD40A,AQAD40A, AQAD40B,TAMD40A,TAMD40B						6352 1987-04		
Pos Fig	Antal/Quantity			Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	6	-	-	875722-1	Cylinderfodersats	Cylinder liner kit	4		(875707)	
2	6	-	-	875651-2	Tätningssats	Seal ring kit	3		(275595)	00
3	6	-	-	275350-7	Kolvringssats	Piston ring kit	3		(275326)	00
4	6	-	-		Kolv	Piston	8			00
5	6	-	-	1542160-5	Kolvbult	Gudgeon pin	4			01
6	12	-	-	914519-4	Låsring	Lock ring	0			01
7	6	-	-	1542072-2	Vevstake	Connecting rod	5			01
8	6	-	-	1542076-3	Bussning	Bushing	5			01
9	12	-	-	1542077-1	Skruv	Screw	2			01
10	12	-	-	1542078-9	Mutter	Nut	2			02
11	6	-	-	270111-8	Vevlagersats	Big-end bearing kit	2		STD D	
	6	-	-	270112-6	Vevlagersats	Big-end bearing kit	4		UD 0,25MM	
	6	-	-	270113-4	Vevlagersats	Big-end bearing kit	4		UD 0,50MM	Q2
	6	-	-	270114-2	Vevlagersats	Big-end bearing kit	4		UD 0,75MM	Q2
12	1	-	-	1542304-9	Vevaxel	Crankshaft	8		573)	Q3
	1	-	-	1545231-1	vevaxel	crankshaft	6			Q3
13	1	-	-	910118-9	Kil	Key	0			--
14	7	-	-	270460-9	Ramlagersats	Main bearing kit	8		85) STDD	
	7	-	-	270467-4	Ramlagersats	Main bearing kit	4		86) STDD	U3
	7	-	-	270468-2	Ramlagersats	Main bearing kit	8		85)(270461) UD 0,25 MM	Q3
	7	-	-	270468-2	Ramlagersats	Main bearing kit	5		86) UD 0,25 MM	Q3
	7	-	-	270462-5	Ramlagersats	Main bearing kit	8		85) UD 0,50 MM	Q3
	7	-	-	270469-0	Ramlagersats	Main bearing kit	8		86) UD 0,50 MM	Q3
	7	-	-	270470-8	Ramlagersats	Main bearing kit	8		85)(270463) UD 0,75 MM	Q4
	7	-	-	270470-8	Ramlagersats	Main bearing kit	4		86) UD 0,75 MM	r
15	1	-	-	270464-1	Tryckbricksats	Thrust washer kit	2		STD D	
	1	-	-	270465-8	Tryckbricksats	Thrust washer kit	2		OD 0,1MM	Q4
	1	-	-	270466-6	Tryckbricksats	Thrust washer kit	4		OD 0,2MM	Q4
16	-	-	-		Ramlageroverfall	Bearing cap	4		SE SIDA 8, 1-809	Q4
17	1	-	-	829460-5	Svanghjul	Flywheel	7			Q5
18	1	-	-	829462-1	Kuggkrans	Ring gear	6			Q5
19	3	-	-	415311-0	Styrhylsa	Sleeve	0			Q5
19a	3	-	-	191873-9	Styrpinne	Guide pin	0			Q5
20	1	-	-	1542093-8	Fläns	Flange	4			Q5
21	8	-	-	1542471-6	Skruv	Screw	8		ERS AV 1544147	Q5
22	1	-	-	841895-6	Dämpare	Damper	8		MO-35022	
	1	-	-	855389-3	Dämpare	Damper	5		(841895)MO35023-	
	1	-	-	841893-1	Svangningsdämpare	Vibration damper	5		ALT (824991)	Q5
23	6	-	-	955295-1	Skruv	Screw	0			Q5
24	6	-	-	941907-8	Bricka	Washer	0			Q5
25	1	-	-	1542305-6	Drev	Gear	4		SE SIDA 26, 1-C03	Q5
26	1	-	-	1542196-9	Nav	Hub	4		(1542228)	
27	1	-	-	420124-0	Bricka	Washer	3			
28	1	-	-	1542149-8	Skruv	Bolt	3			Q7
29	1	-	-	1542315-5	Svangningsdämpare	Vibration damper	5			Q7
30	6	-	-	955299-3	Skruv	Screw	0			Q7
31	6	-	-	941907-8	Bricka	Washer	0			Q5
32	1	-	-	843314-6	Remskiva	Pulley	6			Q5
33	1	-	-	842710-6	Remskiva	Pulley	5			Q5
34	6	-	-	955301-7	Skruv	Screw	0			Q5
35	6	-	-	941907-8	Bricka	Washer	0			Q5

85. MO-28308. MO-28308.  
86. MO 28309- MO 28309-.  
573. Ersatt av VEVAXEL-1545231 och 7st RAMLAGERSATS-270467. Replaced by CRANKSHAFT-1545231 and 7pcs main bearing kit -270467.



Sida Page		Grupp Group		Vevrorelse		Crankshaft and related parts			Illustration	
20		2a		TMD40B,TMD40C					6352 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	Anmärkning Notes	
1	6	-	-	-	875722-1	Cylinderfodersats	Cylinder liner kit	4	(875707)	C
2	6	-	-	-	875651-2	.Tatningsringsats	.Seal ring kit	3	(275595)	OC
3	6	-	-	-	275350-7	.Kolvringsats	.Piston ring kit	3	(275326)	OC
4	6	-	-	-		.Kolv	.Piston	8		OC
5	6	-	-	-	1542160-5	.Kolvbult	.Gudgeon pin	4		OC
6	12	-	-	-	914519-4	.Låsring	.Lock ring	0		01
7	6	-	-	-	1542072-2	Vevstake	Connecting rod	5		01
8	6	-	-	-	1542076-3	.Bussning	.Bushing	5		01
9	12	-	-	-	1542077-1	.Skruv	.Screw	2		01
10	12	-	-	-	1542078-9	.Mutter	.Nut	2		02
11	6	-	-	-	270111-8	Vevlagersats	Big-end bearing kit	2	STDD	
	6	-	-	-	270112-6	Vevlagersats	Big-end bearing kit	4	UD 0,25MM	
	6	-	-	-	270113-4	Vevlagersats	Big-end bearing kit	4	UD 0,50MM	02
	6	-	-	-	270114-2	Vevlagersats	Big-end bearing kit	4	UD 0,75MM	02
12	1	-	-	-	1542304-9	Vevaxel	Crankshaft	8	573)	02
	1	-	-	-	1545231-1	Vevaxel	Crankshaft	6		02
13	1	-	-	-	910118-9	.Kil	.Key	0		02
14	7	-	-	-	270460-9	Ramlagersats	Main bearing kit	8	85) STDD	
	7	-	-	-	270467-4	Ramlagersats	Main bearing kit	4	86) STDD	0
	7	-	-	-	270468-2	Ramlagersats	Main bearing kit	8	85)(270461) UD 0,25 MM	0
	7	-	-	-	270468-2	Ramlagersats	Main bearing kit	5	86) UD 0,25 MM	0
	7	-	-	-	270462-5	Ramlagersats	Main bearing kit	8	85) UD 0,50 MM	0
	7	-	-	-	270469-0	Ramlagersats	Main bearing kit	4	86) UD 0,50 MM	0
	7	-	-	-	270470-8	Ramlagersats	Main bearing kit	8	85)(270463) UD 0,75 MM	0
	7	-	-	-	270470-8	Ramlagersats	Main bearing kit	4	86) UD 0,75 MM	0
15	1	-	-	-	270464-1	Tryckbricksats	Thrust washer kit	2	STDD	0
	1	-	-	-	270465-8	Tryckbricksats	Thrust washer kit	2	OD 0,1MM	0
	1	-	-	-	270466-6	Tryckbrickssats	Thrust washer kit	4	OD 0,2MM	0
16	-	-	-	-		Ramlageroverfall	Bearing cap		SE SIDA 12, 1-B13	0
17	1	-	-	-	829460-5	Svanghjul	Flywheel	7		0
18	1	-	-	-	829462-1	.Kuggkrans	.Ring gear	6		0
19	3	-	-	-	415311-0	.Styrhylsa	.Sleeve	0		0
19a	3	-	-	-	191873-9	.Styrpinne	.Guide pin	0		0
20	1	-	-	-	1542093-8	Flans	Flange	4		0
21	8	-	-	-	1542471-6	Skruv	Screw	8	ERS AV 1544147	0
22	1	-	-	-	841895-6	Dampare	Damper	8	MO-35022	
	1	-	-	-	855389-3	Dampare	Damper	5	(841895)MO35023-	
	1	-	-	-	841893-1	Svangningsdampare	Vibration damper	5	ALT (824991)	C
23	6	-	-	-	955295-1	Skruv	Screw	0		C
24	6	-	-	-	941907-8	Bricka	Washer	0		C
25	1	-	-	-	1542305-6	Drev	Gear	4	SE SIDA 28, 1-C05	C
26	1	-	-	-	1542196-9	Nav	Hub	4	(1542228)	
27	1	-	-	-	420124-0	Bricka	Washer	3		
28	1	-	-	-	1542149-8	Skruv	Bolt	3		C
29	1	-	-	-	1542315-5	Svangningsdampare	Vibration damper	5		C
30	6	-	-	-	955299-3	Skruv	Screw	0		C
31	6	-	-	-	941907-8	Bricka	Washer	0		C
32	1	-	-	-	843314-6	Remskiva	Pulley	6		C
33	1	-	-	-	842710-6	.Remskiva	.Pulley	5		C
34	6	-	-	-	955301-7	.Skruv	.Screw	0		C
35	6	-	-	-	941907-8	.Bricka	.Washer	0		C

85. MO-28308. MO-28308.  
 86. MO 28309- MO 28309-  
 573. Ersatt av VEAXEL-1545231 och 7st RAMLAGERSATS-270467. Replaced by CRANKSHAFT-1545231 and 7pcs main bearing kit -270467.

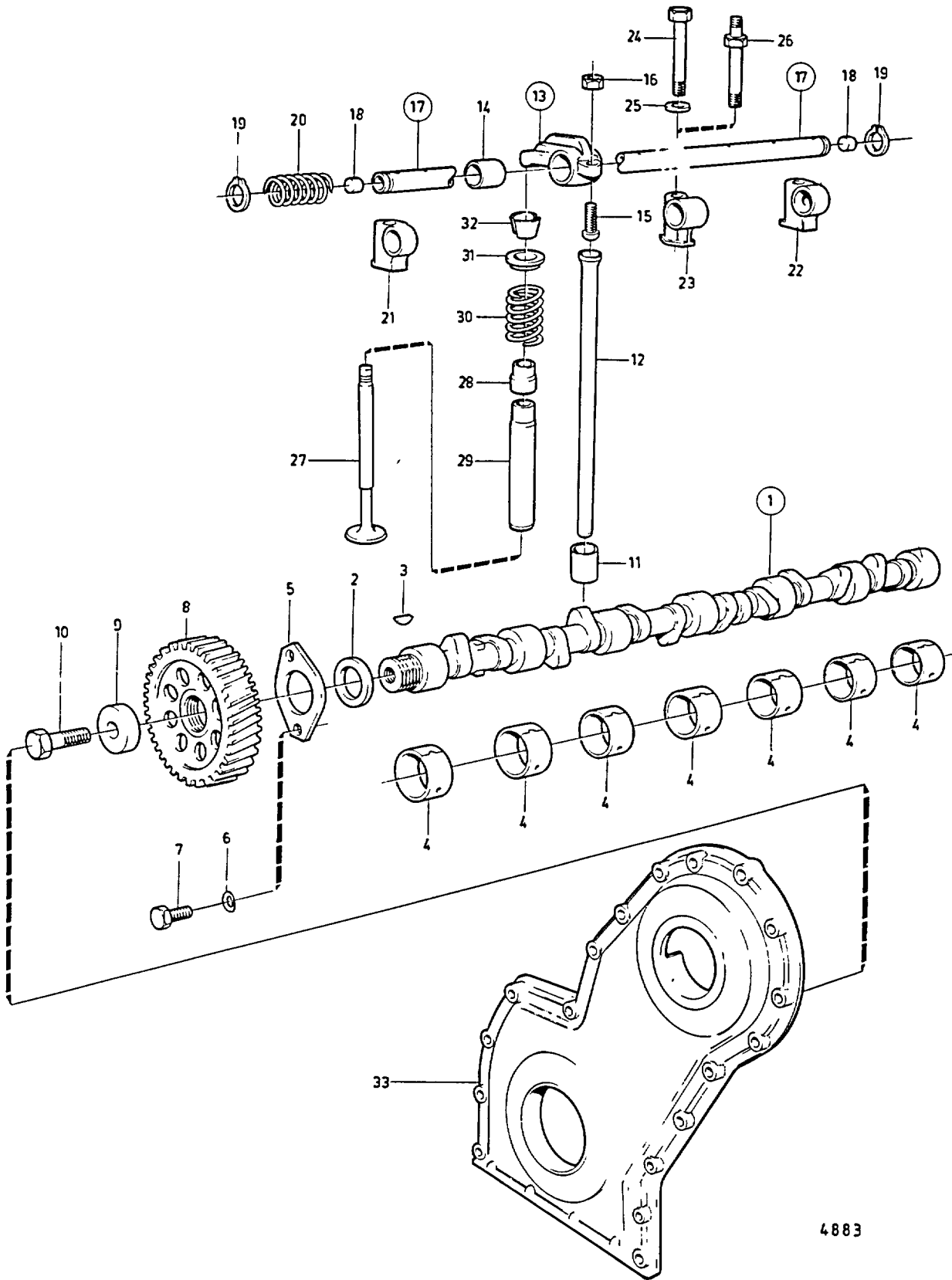


6352

Sida Page	Grupp Group	Kamaxel och ventilmekanism	Camshaft and valve mechanism	Illustration 4883	08C
22	2a	MD40A,AQD40A,TMD40A,AQAD40A, AQAD40B,TAMD40A,TAMD40B		1987-04	

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	1542418-7	Kamaxel .....	Camshaft.....	5		(1542377)(1542029)	(
2	1	-	-	-	1542221-5	.Distansbricka .....	.Spacer washer .....	3			0.
3	1	-	-	-	910116-3	.Kil .....	.Key .....	0			00.
4	7	-	-	-	1542067-2	Bussning .....	Bushing .....	4		SE SIDA 8, 1-B09	00.
5	1	-	-	-	838992-6	Flans .....	Flange .....	5		(1542222)	01.
6	2	-	-	-	941907-8	Bricka .....	Washer .....	0			01
7	2	-	-	-	955295-1	Skruv .....	Screw .....	0			01.
8	1	-	-	-	1542034-2	Kuggjul .....	Gear .....	4		SE SIDA 26, 1-C03	01.
9	1	-	-	-	1542223-1	Bricka .....	Washer .....	3		SE SIDA 26, 1-C03	01.
10	1	-	-	-	955347-0	Skruv .....	Screw .....	0		MO-4406 L=65MM	02
	1	-	-	-	955344-7	Skruv .....	Screw .....	0		MO4407-L=50MM	02
11	12	-	-	-		Ventillyftare .....	Valve lifter .....			66)	
	12	-	-	-	1542208-2	Ventillyftare .....	Valve lifter .....	3			02
12	12	-	-	-		Tryckstång .....	Push rod .....			66)	02
	12	-	-	-	1542207-4	Tryckstång .....	Push rod .....	8		91) MO-26848	02
	12	-	-	-	1545239-4	Tryckstång .....	Push rod .....	4		MO 26849-	02
13	6	-	-	-	418301-8	Vipparm .....	Rocker arm .....	5		NR 1-3-5-7-9-11	02
	6	-	-	-	418298-6	Vipparm .....	Rocker arm .....	5		NR 2-4-6-8-10-12	02
14	12	-	-	-	418297-8	.Bussning .....	.Bushing .....	4			03
15	12	-	-	-	418286-1	.Kulbult .....	.Ball stud .....	4			03
16	12	-	-	-	921781-1	.Mutter .....	.Nut .....	3			03
17	1	-	-	-	1542039-1	Axel .....	Shaft .....	6			03
18	2	-	-	-	955083-1	.Plugg .....	.Plug .....	0			04
19	2	-	-	-	914456-9	Låsring .....	Lock ring .....	0			04
20	5	-	-	-	411139-9	Ventilfjäder .....	Valve spring .....	5			04
21	1	-	-	-	1542041-7	Lagerbock .....	Bearing .....	7			04
22	1	-	-	-	1542042-5	Lagerbock .....	Bearing bracket .....	7			04
23	6	-	-	-	1542043-3	Lagerbock .....	Bearing bracket .....	7			04
24	4	-	-	-	955304-1	Skruv .....	Screw .....	0			04
25	4	-	-	-	955894-1	Bricka .....	Washer .....	0			04
26	4	-	-	-	1542283-5	Pinnskruv .....	Stud bolt .....	3		SE SIDA 30, 1-C07	04
27	6	-	-	-	1542472-4	Insugningsventil .....	Inlet valve .....	3		(1542037)	04
	6	-	-	-	1542389-0	Avgasventil .....	Exhaust valve .....	3			04
28	6	-	-	-	419702-6	Ventiltätning .....	Valve seal .....	3		ERS AV 1306630	04
	6	-	-	-	1306630-3	Ventiltätning .....	Valve seal .....	3			04
29	12	-	-	-	419653-1	Ventilstyrning .....	Valve guide .....	4		SE SIDA 30, 1-C07	04
30	12	-	-	-	1545198-2	Ventilfjäder .....	Valve spring .....	4			04
31	12	-	-	-	460181-1	Bricka .....	Washer .....	4			04
32	24	-	-	-	419643-2	Ventillås .....	Valve lock .....	2			04
33	-	-	-	-		Transmissionskåpa och transmissionsdrev	Timing gear casing and gears			SE SIDA 26, 1-C03	0

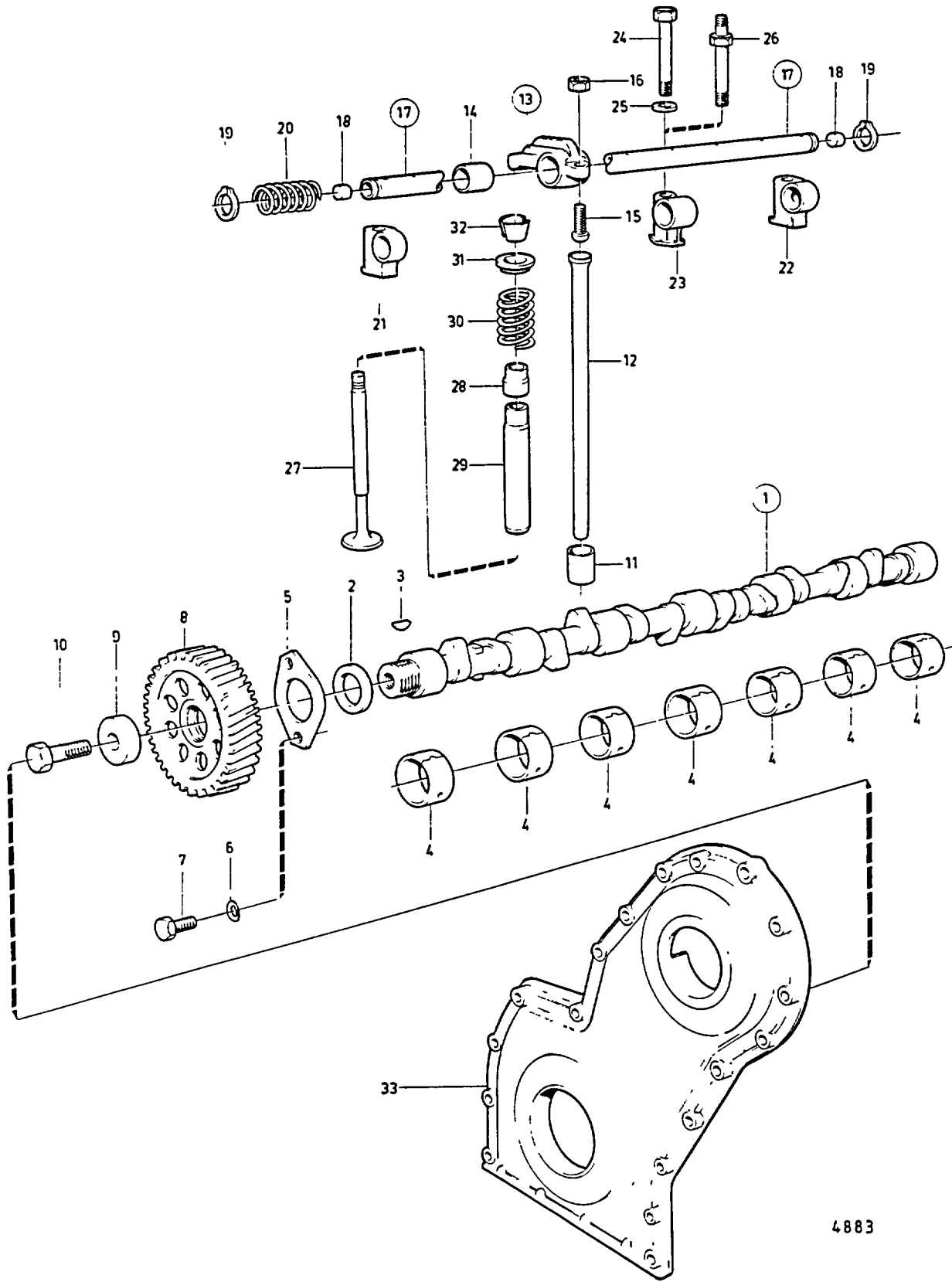
66 . Ersatt av ventillyftare 1542208 och tryckstång 1542207. Replaced by valve lifter 1542208 and push rod 1542207.  
91 . ERS AV 1545239. Replaced by 1545239.



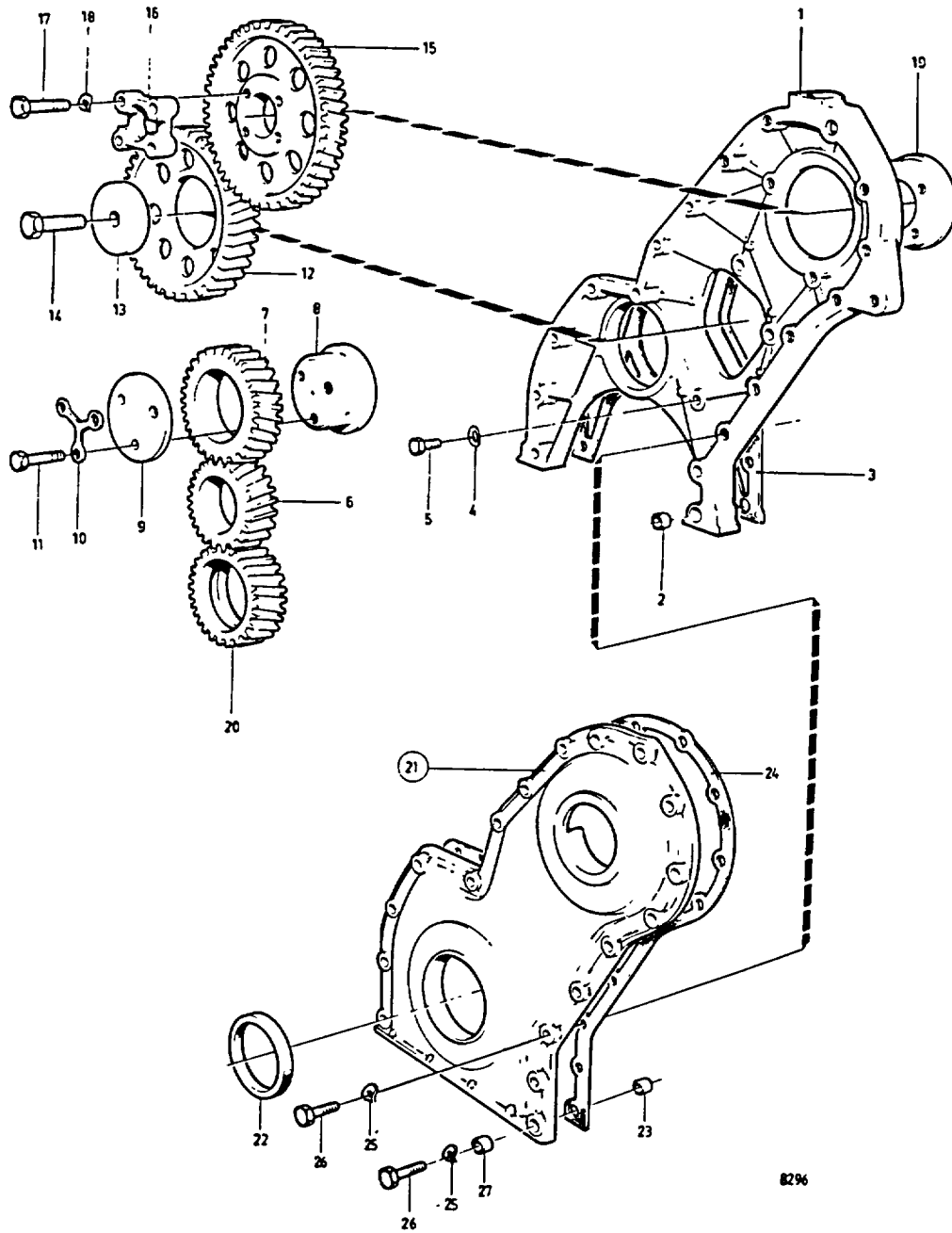


Sida Page		Grupp Group		Kamaxel och ventilmekanism		Camshaft and valve mechanism		Illustration		
24		2a		TMD40B,TMD40C				4883 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
1	1	-	-	-	1542418-7	Kamaxel	Camshaft	5		(1542377) (1542029)
2	1	-	-	-	1542221-5	.Distansbricka	.Spacer washer	3		
3	1	-	-	-	910116-3	.Kil	.Key	0		
4	7	-	-	-	1542067-2	Bussning	Bushing	4		SE SIDA 12, 1-B13
5	1	-	-	-	838992-6	Flans	Flange	5		(1542222)
6	2	-	-	-	941907-8	Bricka	Washer	0		
7	2	-	-	-	955295-1	Skruv	Screw	0		
8	1	-	-	-	1542034-2	Kugghjul	Gear	4		SE SIDA 28, 1-C05
9	1	-	-	-	1542223-1	Bricka	Washer	3		SE SIDA 28, 1-C05
10	1	-	-	-	955347-0	Skruv	Screw	0		MO-4406 L=65MM
	1	-	-	-	955344-7	Skruv	Screw	0		MO4407-L=50MM
11	12	-	-	-		Ventillyftare	Valve lifter			66)
	12	-	-	-	1542208-2	Ventillyftare	Valve lifter	3		
12	12	-	-	-		Tryckstång	Push rod			66)
	12	-	-	-	1542207-4	Tryckstång	Push rod	8		91) MO-26848
	12	-	-	-	1545239-4	Tryckstång	Push rod	4		MO 26849-
13	6	-	-	-	418301-8	Vipparm	Rocker arm	5		NR 1-3-5-7-9-11
	6	-	-	-	418298-6	Vipparm	Rocker arm	5		NR 2-4-6-8-10-12
14	12	-	-	-	418297-8	.Bussning	.Bushing	4		
15	12	-	-	-	418286-1	.Kulbult	.Ball stud	4		
16	12	-	-	-	921781-1	.Mutter	.Nut	3		
17	1	-	-	-	1542039-1	Axel	Shaft	6		
18	2	-	-	-	955083-1	.Plugg	.Plug	0		
19	2	-	-	-	914456-9	Låsring	Lock ring	0		
20	5	-	-	-	411139-9	Ventilfjäder	Valve spring	5		
21	1	-	-	-	1542041-7	Lagerbock	Bearing	7		
22	1	-	-	-	1542042-5	Lagerbock	Bearing bracket	7		
23	6	-	-	-	1542043-3	Lagerbock	Bearing bracket	7		
24	4	-	-	-	955304-1	Skruv	Screw	0		
25	4	-	-	-	955894-1	Bricka	Washer	0		
26	4	-	-	-	1542283-5	Pinnskruv	Stud bolt	3		SE SIDA 32, 1-C09
27	6	-	-	-	1542472-4	Insugningsventil	Inlet valve	3		(1542037)
	6	-	-	-	1542389-0	Avgasventil	Exhaust valve	3		
28	6	-	-	-	419702-6	Ventiltätning	Valve seal	3		ERS AV 1306630
	6	-	-	-	1306630-3	Ventiltätning	Valve seal	3		
29	12	-	-	-	419653-1	Ventilstyrning	Valve guide	4		SE SIDA 32, 1-C09
30	12	-	-	-	1545198-2	Ventilfjäder	Valve spring	4		
31	12	-	-	-	460181-1	Bricka	Washer	4		
32	24	-	-	-	419643-2	Ventillås	Valve lock	2		
33	-	-	-	-		Transmissionskåpa och transmissionsdrev	Timing gear casing and gears			SE SIDA 28, 1-C05

66 . Ersatt av ventillyftare 1542208 och tryckstång 1542207. Replaced by valve lifter 1542208 and push rod 1542207.  
91 . ERS AV 1545239. Replaced by 1545239.



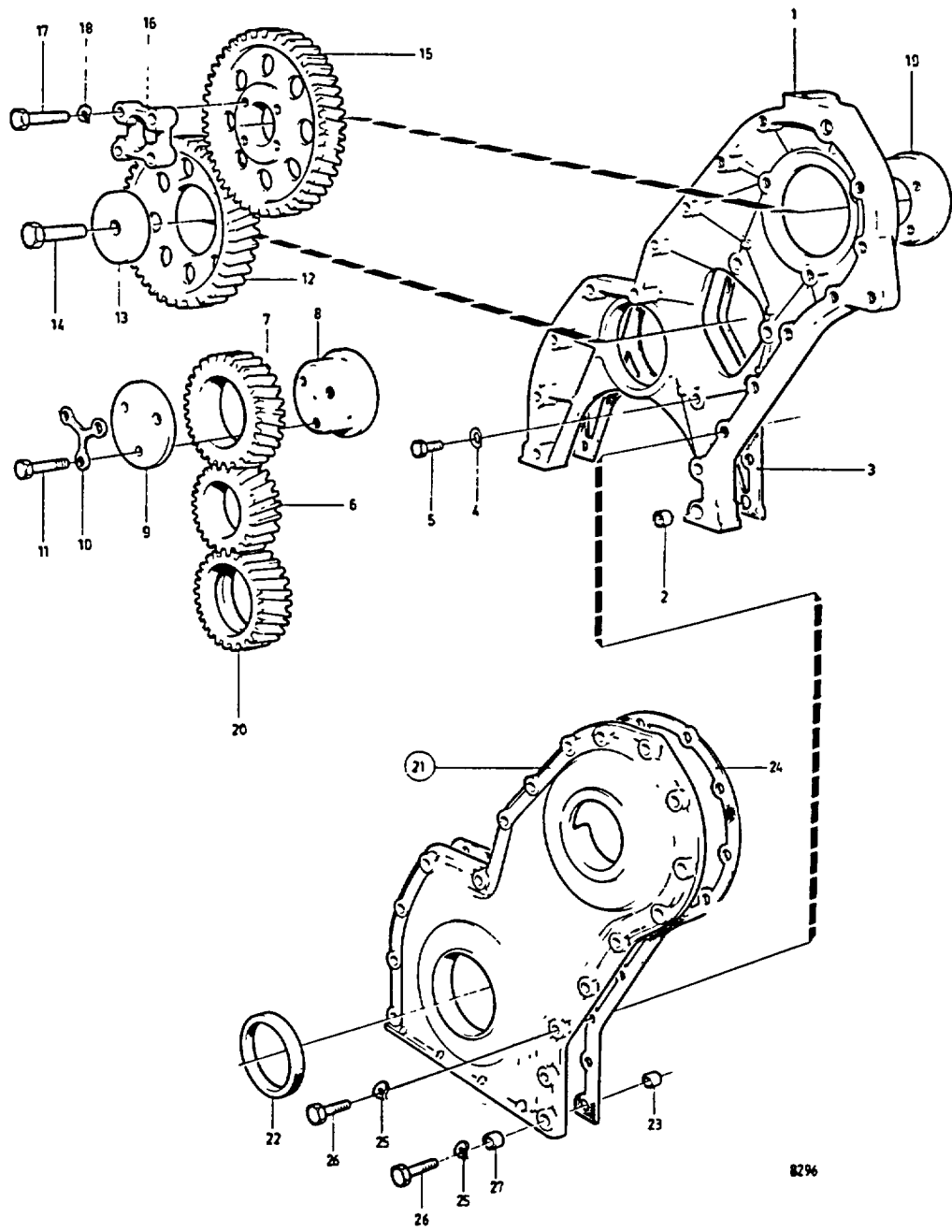
Sida Page	Grupp Group	Transmissionskåpa och transmissionsdrev			Timing gear casing and gears	Illustration	08!			
26	2a	MD40A,AQD40A,TMD40A,AQAD40A, AQAD40B,TAMD40A,TAMD40B				8296 1987-04				
Pos Fig	Antal/Quantity			Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	842988-8	Transmissionskåpa ..	Timing gear casing .....	7		0C
2	1	-	-	-	415311-0	Styrhylsa .....	Sleeve .....	3		00
3	1	-	-	-	1542219-9	Packning .....	Gasket .....	S 1		00
4	4	-	-	-	941907-8	Bricka .....	Washer .....	0		00
5	3	-	-	-	955295-1	Skruv .....	Screw .....	0	L=20MM	01
	1	-	-	-	940142-3	Bult .....	Bolt .....	0	L=30MM	01
6	1	-	-	-	1542305-6	Drev .....	Gear .....	0	SE SIDA 18, 1-B19	01
7	1	-	-	-	1542061-5	Mellandrev .....	Idler gear .....	4		01
8	1	-	-	-	838997-5	Axeltapp .....	Stub .....	5	(1542064)	01
9	1	-	-	-	1542065-6	Tryckbricka .....	Thrust washer .....	5		02
10	1	-	-	-	421076-1	Låsbricka .....	Washer .....	2	TID UTF	00
11	3	-	-	-	955302-5	Skruv .....	Screw .....	0	TID UTF	00
	3	-	-	-	965180-3	Skruv .....	Screw .....	0	SE UTF	02
12	1	-	-	-	1542034-2	Kugghjul .....	Gear .....	0	SE SIDA 22, 1-B23	02
13	1	-	-	-	1542223-1	Bricka .....	Washer .....	0	SE SIDA 22, 1-B23	03
14	1	-	-	-		Skruv .....	Bolt .....	0	SE SIDA 22, 1-B23	03
15	1	-	-	-	1544149-6	Kugghjul .....	Gear wheel .....	4		00
16	1	-	-	-	829523-0	Medbringare .....	Carrier .....	5		00
	1	-	-	-	845194-0	Medbringare .....	Carrier .....	5	(64)	00
17	4	-	-	-	955298-5	Skruv .....	Screw .....	0		00
18	4	-	-	-	941907-8	Bricka .....	Washer .....	0		04
19	1	-	-	-	1542171-2	Nav .....	Hub .....	0	SE GRUPP 2C	04
20	1	-	-	-	1542215-7	Kugghjul .....	Gear .....	4		04
21	1	-	-	-	843086-0	Lock .....	Cover .....	7		04
22	1	-	-	-	1542318-9	•Tatningsring .....	•Seal ring .....	S 1		04
23	2	-	-	-	415311-0	•Styrhylsa .....	•Sleeve .....	3		00
24	1	-	-	-	859038-2	Packning .....	Gasket .....	S 2		00
25	13	-	-	-	941907-8	Fjädrande bricka .....	Resilient washer .....	0		00
26	1	-	-	-	955300-9	Skruv .....	Screw .....	0	L=50MM	00
	5	-	-	-	955304-1	Skruv .....	Screw .....	0	L=70 MM	00
	2	-	-	-	955306-6	Skruv .....	Screw .....	0	L=80 MM, SE GRUPP 3	00
	5	-	-	-	940132-4	Skruv .....	Screw .....	0	L=35MM	00
	2	-	-	-	955307-4	Skruv .....	Screw .....	0	L=100MM, SE GRUPP 3	00
	1	-	-	-	955299-3	Skruv .....	Screw .....	0	L=45MM	00
	1	-	-	-	955268-8	Skruv .....	Screw .....	0		00
27	1	-	-	-	842350-1	Distanshylsa .....	Spacer sleeve .....	0	SE GRUPP 2B	00



Sida Page		Grupp Group		Transmissionskåpa och transmissionsdrev		Timing gear casing and gears		Illustration		
28		2a		TMD40B,TMD40C				8296 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
1	1	-	-	-	842988-8	Transmissionskåpa..	Timing gear casing..	7		
2	1	-	-	-	415311-0	Styrhylsa	Sleeve.	3		
3	1	-	-	-	1542219-9	Packning	Gasket..	S 1		
4	4	-	-	-	941907-8	Bricka	Washer	0		
5	3	-	-	-	955295-1	Skruv	Screw.	0	L=20MM	
	1	-	-	-	940142-3	Bult	Bolt.	0	L=30MM	
6	1	-	-	-	1542305-6	Drev	Gear.		SE SIDA 20, 1-B21	
7	1	-	-	-	1542061-5	Mellandrev	Idler gear	4		
8	1	-	-	-	838997-5	Axeltapp	Stub	5	(1542064)	
9	1	-	-	-	1542065-6	Tryckbricka	Thrust washer.	5		
10	1	-	-	-	421076-1	Låsbricka	Washer	2	TID UTF	
11	3	-	-	-	955302-5	Skruv	Screw.	0	TID UTF	
	3	-	-	-	965180-3	Skruv	Screw	0	SEN UTF	
12	1	-	-	-	1542034-2	Kuggjul	Gear		SE SIDA 24, 1-C01	
13	1	-	-	-	1542223-1	Bricka	Washer		SE SIDA 24, 1-C01	
14	1	-	-	-		Skruv	Bolt	0	SE SIDA 24, 1-C01	
15	1	-	-	-	1544149-6	Kuggjul	Gear wheel	4	M033182-	
16	1	-	-	-	829523-0	Medbringare	Carrier	5		
17	4	-	-	-	955298-5	Skruv	Screw	0		
18	4	-	-	-	941907-8	Bricka	Washer	0		
19	1	-	-	-	1542171-2	Nav	Hub		SE GRUPP 2C	
20	1	-	-	-	1542215-7	Kuggjul	Gear	4		
21	1	-	-	-	843086-0	Lock	Cover	7		
22	1	-	-	-	1542318-9	Tätningring	Seal ring	S 1		
23	2	-	-	-	415311-0	Styrhylsa	Sleeve	3		
24	1	-	-	-	859038-2	Packning	Gasket	S 2		
25	13	-	-	-	941907-8	Fjädrande bricka	Resilient washer	0		
26	1	-	-	-	955300-9	Skruv	Screw	0	L=50MM	
	5	-	-	-	955304-1	Skruv	Screw	0	L=70 MM	
	2	-	-	-	955306-6	Skruv	Screw	0	L=80 MM, SE GRUPP 3	
	5	-	-	-	940132-4	Skruv	Screw	0	L=35MM	
	2	-	-	-	955307-4	Skruv	Screw	0	L=100MM, SE GRUPP 3	
	1	-	-	-	955299-3	Skruv	Screw	0	L=45MM	
	1	-	-	-	955268-8	Skruv	Screw	0		
27	1	-	-	-	842350-1	Distanshylsa	Spacer sleeve		SE GRUPP 2B	

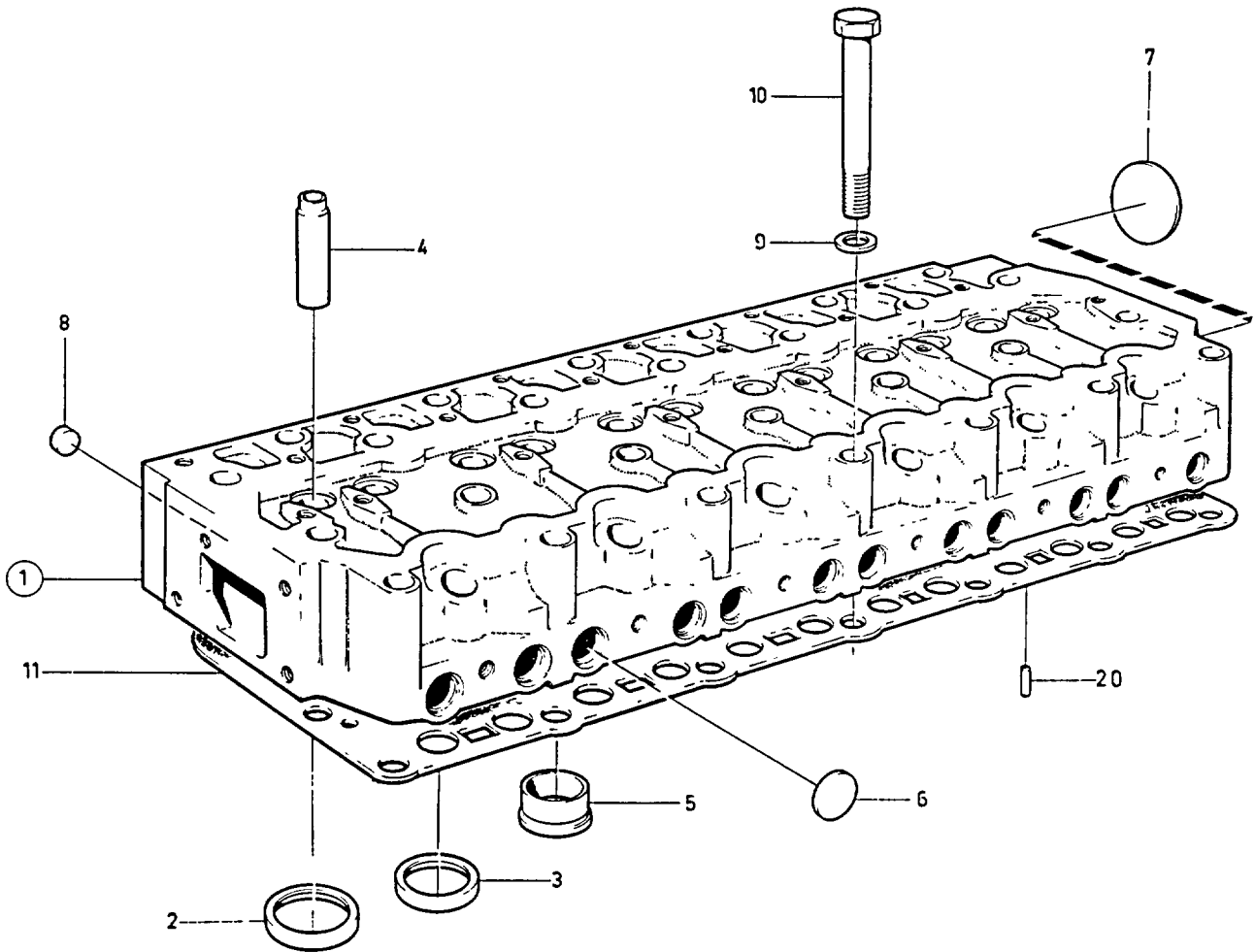
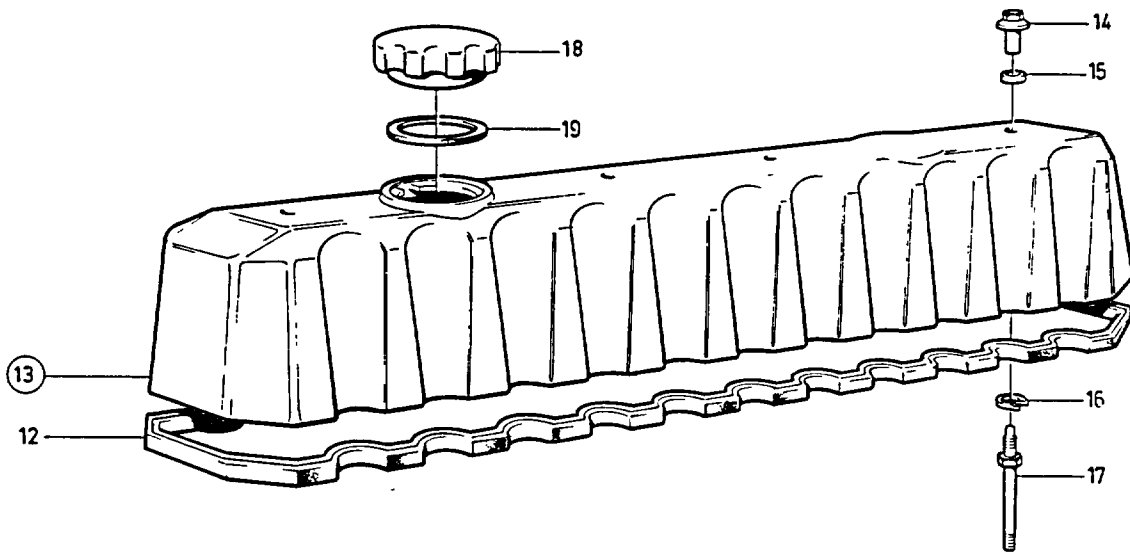
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Sida Page	Grupp Group	Cylinderlock			Cylinder head			Illustration	11E		
30	2a	MD40A,AQD40A,TMD40A,AQAD40A, AQAD40B,TAMD40A,TAMD40B						5962 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	1545287-3	Cylinderlock.....	Cylinder head.....	5		(1542180) MO 31975-ERS. AV 858996	01 00.
	-	-	-	-	858996-2	Cylinderlock....	Cylinder head.....	5			00.
2	1	-	-	-	1545174-3	.Ventilsäte, insug....	.Valve seat, intake .....	4		STD D (1542409)	00.
	6	-	-	-	1542403-9	.Ventilsäte, insug... ..	.Valve seat, intake.. ..	4		ÖD 0,20MM ERS AV 1545175	00.
	6	-	-	-	1545175-0	.Ventilsäte,insug . . . .	.Valve seat,intake.. ..	4		ÖD 0,20MM	00.
3	6	-	-	-	1545177-6	.Ventilsäte, avgas. ....	.Valve seat, exhaust .....	4		(1542410) STD D	00.
	6	-	-	-	1545178-4	.Ventilsäte, avgas.. . . .	.Valve seat, exhaust .....	4		ÖD 0,20MM (1542404)	01.
4	12	-	-	-	419653-1	.Ventilstyrning .. . . .	.Valveguide .. . . .	4			01.
5	6	-	-	-		.Blandningskammare.. . .	.Emulsion block .. . . .	4			
6	18	-	-	-	192426-5	.Propp.. . . . .	.Plug .. . . .	3			
7	1	-	-	-	1542264-5	.Expansionsplugg.....	.Plugg .. . . .	3			01.
8	6	-	-	-	967853-3	.Hattplugg.....	.Plug .. . . .	0		(955081)	02.
9	27	-	-	-	1542316-3	.Bricka .. . . .	.Washer.....	3		568)	02
10	27	-	-	-	1542019-3	.Skruv .. . . .	.Cap screw .. . . .	8		MO-32069	02.
	27	-	-	-	1542144-9	.Skruv .. . . .	.Screw .. . . .	3		568)MO32070-	
	27	-	-	-	838775-5	.Skruv .. . . .	.Screw .. . . .	2			
11	1	-	-	-	859155-4	.Packning .. . . .	.Gasket .. . . .	S 1		(858503)	02
12	1	-	-	-	1542287-6	.Packning .. . . .	.Gasket.....	S 2			03
13	1	-	-	-	1542285-0	.Ventilkåpa.....	.Valve cover.. . . .	5		(1542284)	03
14	4	-	-	-	1542286-8	.Mutter.....	.Nut.....	3			03
15	4	-	-	-	469846-0	.Tätningring .. . . .	.Seal ring.....	S 2		(424342)	03
16	4	-	-	-	914449-4	.Låsring .. . . .	.Lock ring .. . . .	0			03
17	4	-	-	-	1542283-5	.Pinnskruv .. . . .	.Stud bolt .. . . .	0		SE SIDA 22, 1-823	04
18	1	-	-	-	420292-5	.Lock .. . . .	.Cover.. . . .	3			0.
19	1	-	-	-	940096-1	.Packning .. . . .	.Gasket .. . . .	1			1
20	2	-	-	-	946402-5	.Pinne .. . . .	.Pin .. . . .	0			1

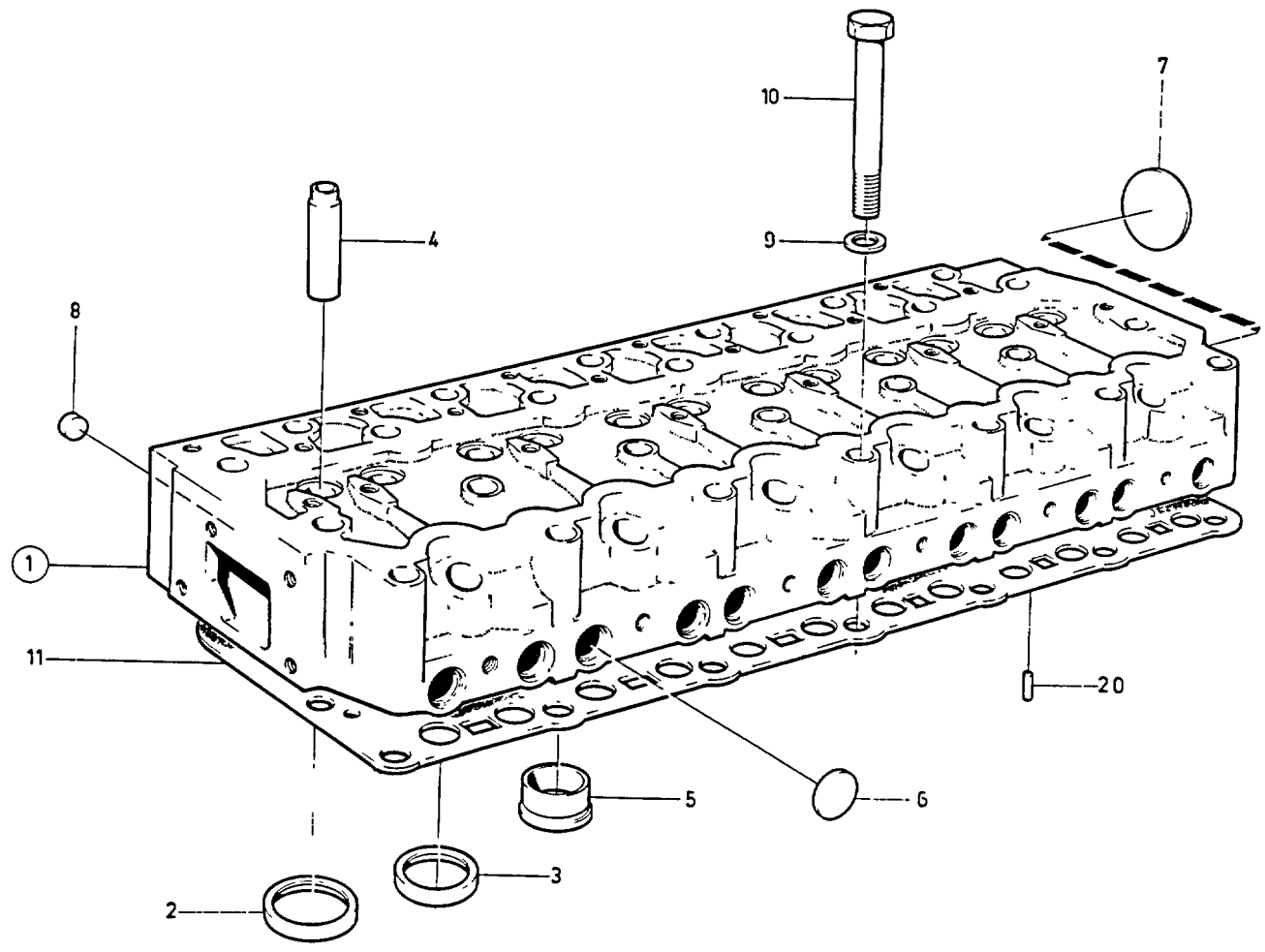
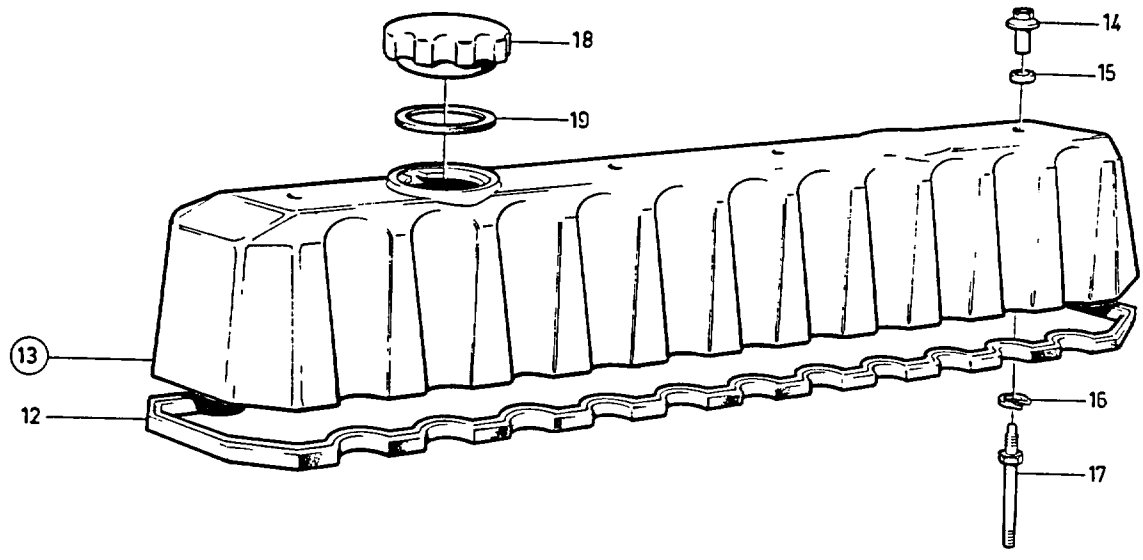
568 . Skruv-1542144 och BRICKA-1542316 är ersatta av flänsskruv-838775. Screw-1542144 and WASHER-1542316 are replaced by flange- SCREW-838775.





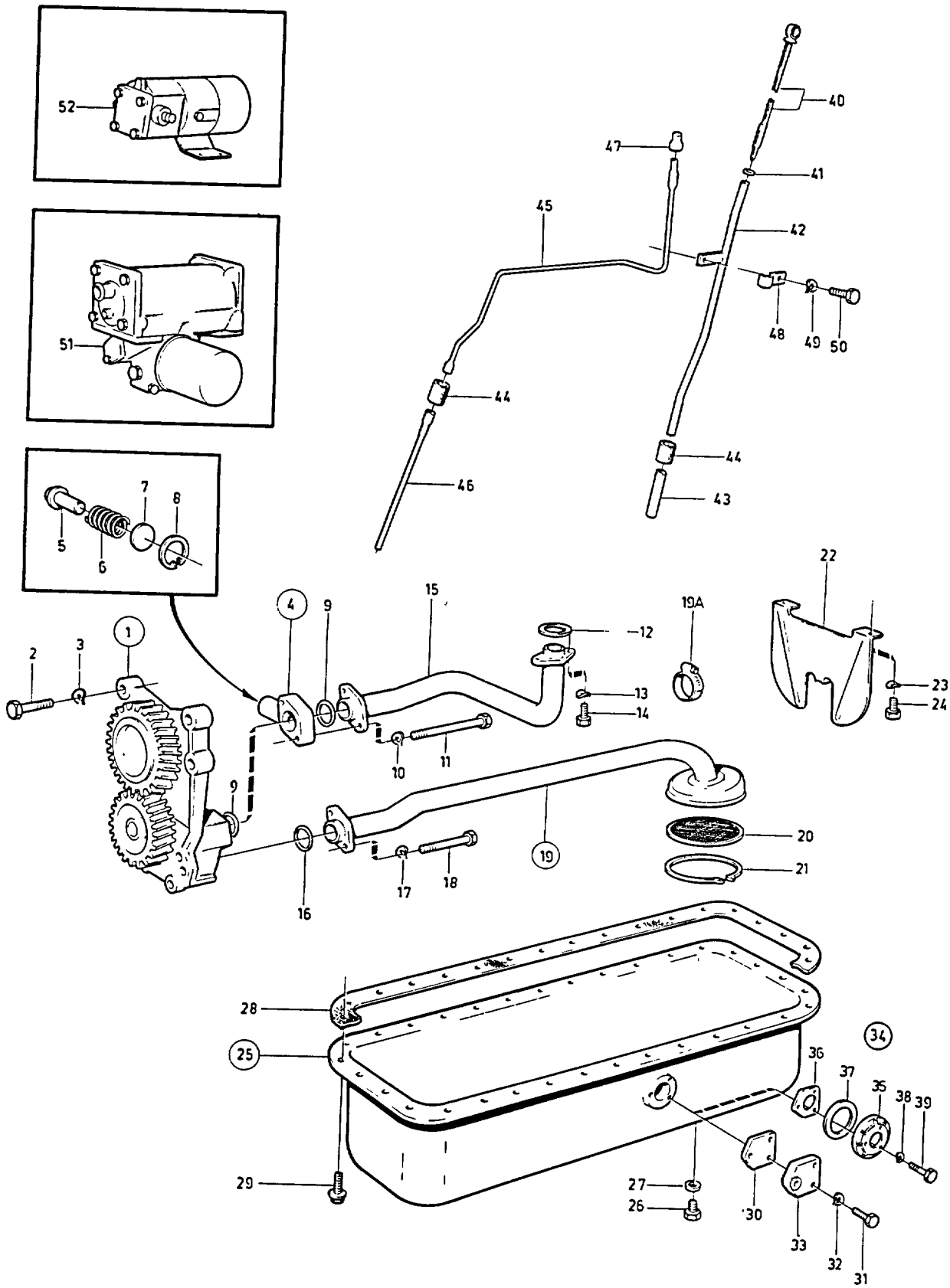
Sida Page		Grupp Group		Cylinderlock		Cylinder head		Illustration			
32		2a		TMD40B,TMD40C				5962 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	1545287-3	Cylinderlock.....	Cylinder head.....	5		(1542180) MO 31975- ERS AV 858996	00
	-	1	-	-	858996-2	Cylinderlock....	Cylinder head.....	5			00
2	6	-	-	-	1545174-3	.Ventilsäte, insug.....	.Valve seat, intake.....	4		STDD (1542409)	00
	6	-	-	-	1542403-9	.Ventilsäte, insug.....	.Valve seat, intake.....	4		ÖD 0,20MM ERS AV 1545175	00
	-	6	-	-	1545175-0	.Ventilsäte,insug.....	.Valve seat,intake.....	4		ÖD 0,20MM	00
3	6	-	-	-	1545177-6	.Ventilsäte, avgas.....	.Valve seat, exhaust.....	4		(1542410) STDD	00
	6	-	-	-	1545178-4	.Ventilsäte, avgas.....	.Valve seat, exhaust.....	4		OD 0,20MM (1542404)	01
4	12	-	-	-	419653-1	.Ventilstyrning.....	.Valveguide.....	4			01
5	6	-	-	-		.Blandningskammare.....	.Emulsion block.....	8			
6	18	-	-	-	192426-5	.Propp.....	.Plug.....	3			
7	1	-	-	-	1542264-5	.Expansionsplugg.....	.Plug.....	3			01
8	6	-	-	-	967853-3	.Hattplugg.....	.Plug.....	0		(955081)	02
9	27	-	-	-	1542316-3	.Bricka.....	.Washer.....	3		568)	02
10	27	-	-	-	1542019-3	.Skruv.....	.Screw.....	8		MO-32069	02
	27	-	-	-	1542144-9	.Skruv.....	.Screw.....	3		568)MO32070- ERS AV 838775	
	-	27	-	-	838775-5	.Skruv.....	.Screw.....	2			02
11	1	-	-	-	859155-4	.Packning.....	.Gasket.....	S 1		(858503)	02
12	1	-	-	-	1542287-6	.Packning.....	.Gasket.....	S 2			00
13	1	-	-	-	1542285-0	.Ventilkåpa.....	.Valve cover.....	5		(1542284)	00
14	4	-	-	-	1542286-8	.Mutter.....	.Nut.....	3			00
15	4	-	-	-	469846-0	.Tätningring.....	.Seal ring.....	S 2		(424342)	00
16	4	-	-	-	914449-4	.Låsring.....	.Lock ring.....	0			00
17	4	-	-	-	1542283-5	.Pinnskruv.....	.Stud bolt.....	0		SE SIDA 24, 1-C01	00
18	1	-	-	-	420292-5	.Lock.....	.Cover.....	3			0
19	1	-	-	-	940096-1	.Packning.....	.Gasket.....	1			00
20	2	-	-	-	946402-5	.Pinne.....	.Pin.....	0			00

568. Skruv-1542144 och BRICKA-1542316 ar ersatta av flansskruv-838775. Screw-1542144 and WASHER-1542316 are replaced by flange-SCREW-838775.

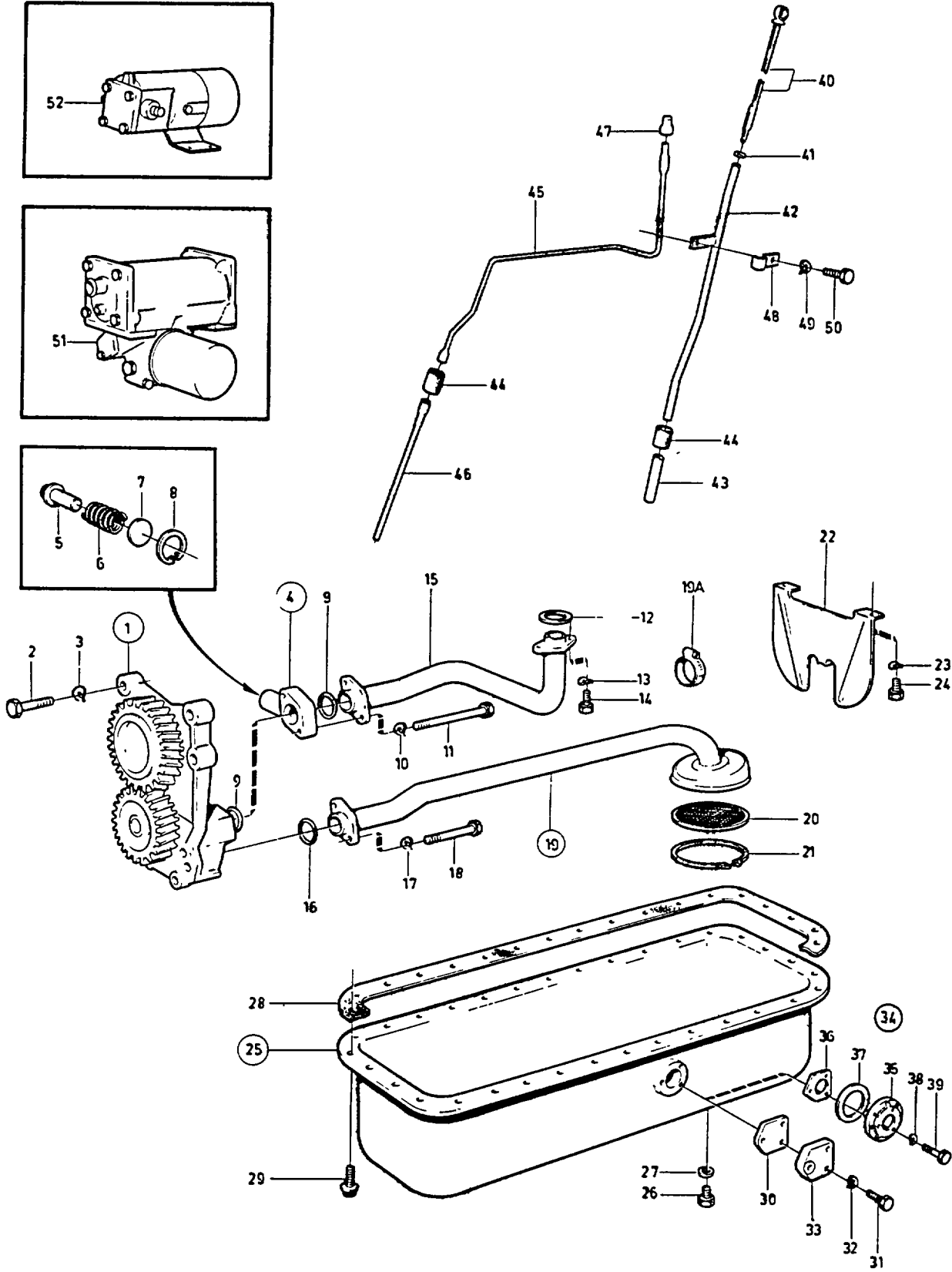
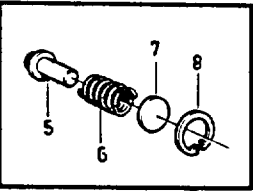
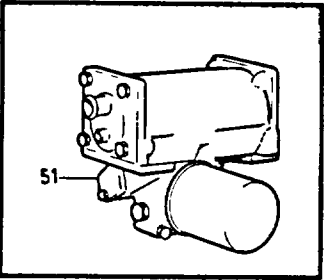
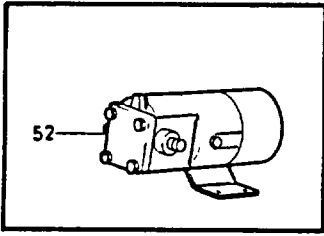


Sida Page	Grupp Group	Smorjssystem	Lubricating system	Illustration					
34	2a	MD40A,AQD40A,TMD40A,TMD40B,TMD40C,AQAD40A,AQAD40B,TAMD40A,TAMD40B		5354 1987-04					
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	Anmärkning Notes
1	1	-	-	-	1542210-8	Oljepump .....	Oil pump .....	5	
2	4	-	-	-	955299-3	.Det se sida 38, 1-C15	.Comp page 38, 1-C15	0	
3	4	-	-	-	941907-8	Skruv .....	Screw .....	0	
4	1	-	-	-	1542255-3	Bricka.....	Washer .....	0	
5	1	-	-	-	471115-6	Ventil.....	Valve.....	4	
6	1	-	-	-	1542257-9	.Reducerventil .....	.Relief valve .....	3	
7	1	-	-	-	948343-9	.Fjäder.....	.Spring .....	2	
8	1	-	-	-	914506-1	.Bricka.....	.Washer .....	3	
9	2	-	-	-	469482-4	.Låsring .....	.Circlip .....	0	
10	2	-	-	-	941907-8	Packningsring .....	Ring .....	S 2	(424346)
11	2	-	-	-	940129-0	Bricka.....	Washer.....	0	
12	2	-	-	-	1542385-8	Skruv.....	Screw.....	0	
13	2	-	-	-	941907-8	Tätningring .....	Ring .....	S 1	
14	2	-	-	-	955295-1	Bricka.....	Washer.....	0	
15	1	-	-	-	1542383-3	Skruv.....	Screw.....	0	
16	1	-	-	-	925060-6	Rör.....	Pipe.....	4	
17	2	-	-	-	941907-8	O-ring.....	O-ring.....	S 0	
18	2	-	-	-	955303-3	Bricka.....	Washer.....	0	
19	1	-	-	-	829491-0	Skruv.....	Screw.....	0	
19a	1	-	-	-	943473-9	Rör.....	Pipe.....	4	
20	1	-	-	-	403483-1	.Slangklamma.....	.Hose clamp .....	0	
21	1	-	-	-	118123-9	Silduk.....	Strainer.....	3	
22	1	-	-	-	829492-8	Låsring .....	Lock ring.....	2	
23	2	-	-	-	942385-6	Skvalplåt .....	Battle.....	6	
24	2	-	-	-	955293-6	Fjäder .....	Spring .....	0	
25	1	-	-	-	844909-2	Skruv.....	Screw.....	0	
26	1	-	-	-	948187-0	Oljesump .....	Oil pan .....	6	(829465)
27	1	-	-	-	18818-5	.Propp.....	.Plug .....	0	
28	1	-	-	-	859032-5	.Packning.....	.Gasket .....	S 1	
29	32	-	-	-	946440-5	Packning .....	Gasket .....	S 1	(1542247)
30	1	-	-	-	842928-4	Skruv.....	Screw.....	0	
31	3	-	-	-	955294-4	Packning .....	Gasket .....	S 1	55)
32	3	-	-	-	941907-8	Skruv.....	Screw.....	0	55)
33	1	-	-	-		Bricka.....	Resilient washer .....	0	55)
34	1	-	-	-	845256-7	Fläns .....	Flange.....	4	ERSAV 845256
35	1	-	-	-	845103-1	Fläns .....	Cover flange.....	4	65)
36	2	-	-	-	842928-4	.Flans .....	.Flange .....	3	
37	1	-	-	-	845104-9	.Packning .....	.Gasket .....	1	
38	3	-	-	-	941907-8	.Tätningring .....	.Seal ring.....	1	
39	3	-	-	-	955297-7	.Fjädrande bricka .....	.Resilient washer .....	0	
40	1	-	-	-	829577-6	Skruv.....	Screw.....	0	
41	1	-	-	-	949187-9	Oljematsicka .....	Oil dipstick .....	5	
42	1	-	-	-	829580-0	.O-ring .....	.O-ring .....	S 0	(955972)
	1	-	-	-	847038-7	Rör .....	Pipe.....	8	65,102)ERSAV 847038
	1	-	-	-	845347-4	Rör .....	Pipe.....	4	103)
	1	-	-	-	843692-5	Rör .....	Pipe.....	4	64)
43	1	-	-	-	843533-1	Slang .....	Hose.....	2	
44	2	-	-	-	829572-7	Oljelansror .....	Oil pipe.....	4	
45	1	-	-	-	829579-2	Rör .....	Pipe.....	4	
46	1	-	-	-	943835-9	Propp .....	Plug.....	0	
47	2	-	-	-	121565-6	Klamma .....	Clamp.....	4	
48	2	-	-	-	941906-0	Fjädrande bricka .....	Washer.....	0	
49	1	-	-	-	955269-6	Skruv .....	Screw.....	0	L=12MM
50	1	-	-	-	955268-8	Skruv .....	Screw.....	0	L=10 MM (940102)

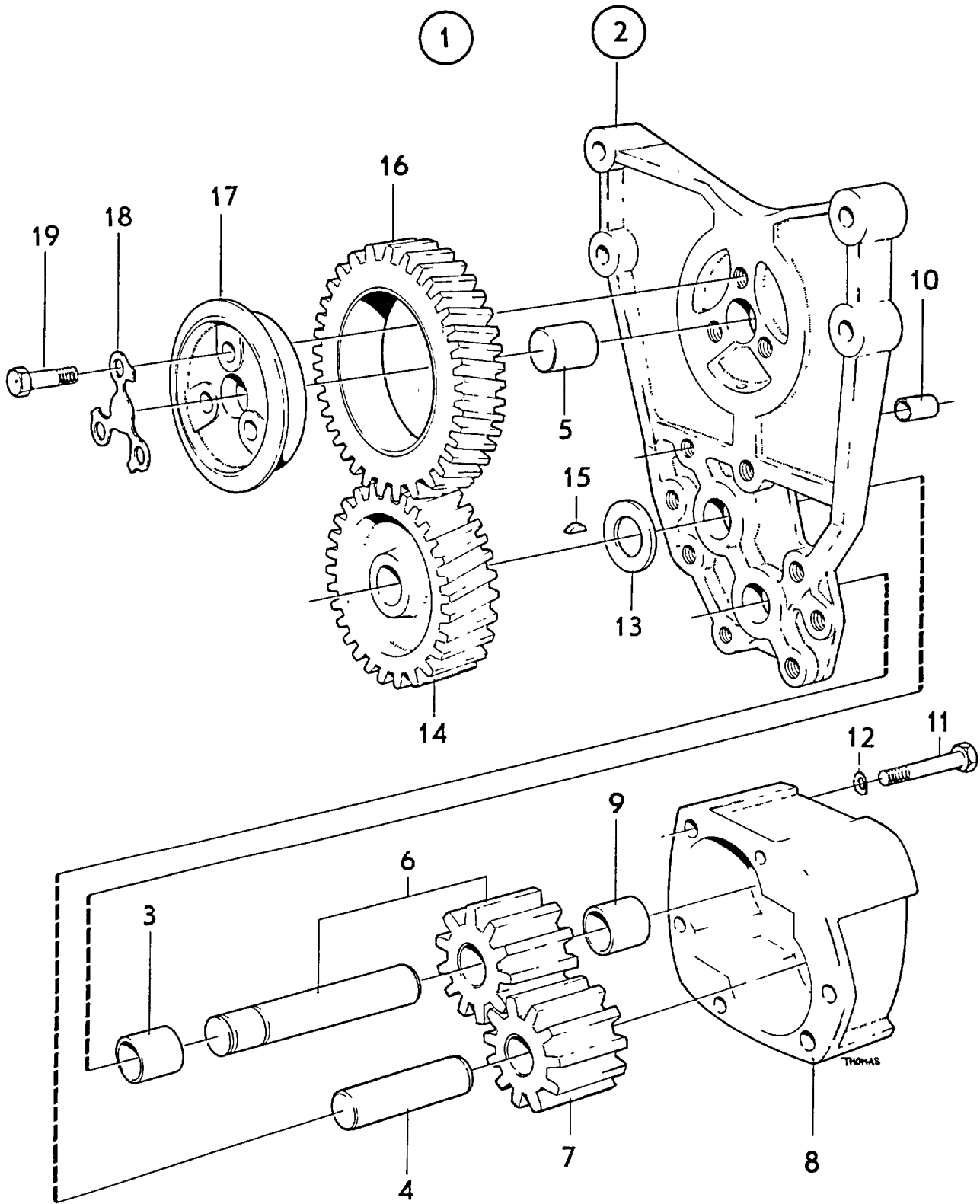
55. MO-6246. MO6276-. MO-7826. MO-6246. MO6276-. MO-7826.  
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 102. MO-29495 MO-29495  
 103. MO 29496- MO 29496-.



Sida Page	Grupp Group	Smorjsystem Lubricating system	Illustration 5354 1987-04	14						
36	2a	MD40A,AQD40A,TMD40A,TMD40B,TMD40C,AQAD40A,AQAD40B,TAMD40A,TAMD40B								
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit P S R	Anmärkning Notes	
51	-	-	-	-		Oljefilter med ... .. monteringsdetaljer	Oil filter and inst- ... .. allation components		SE SIDA 40, 1-C17	09
52	-	-	-	-		El. oljelänsypump. ....	El. oil sump pump.. ..		SE GRUPP 9	10



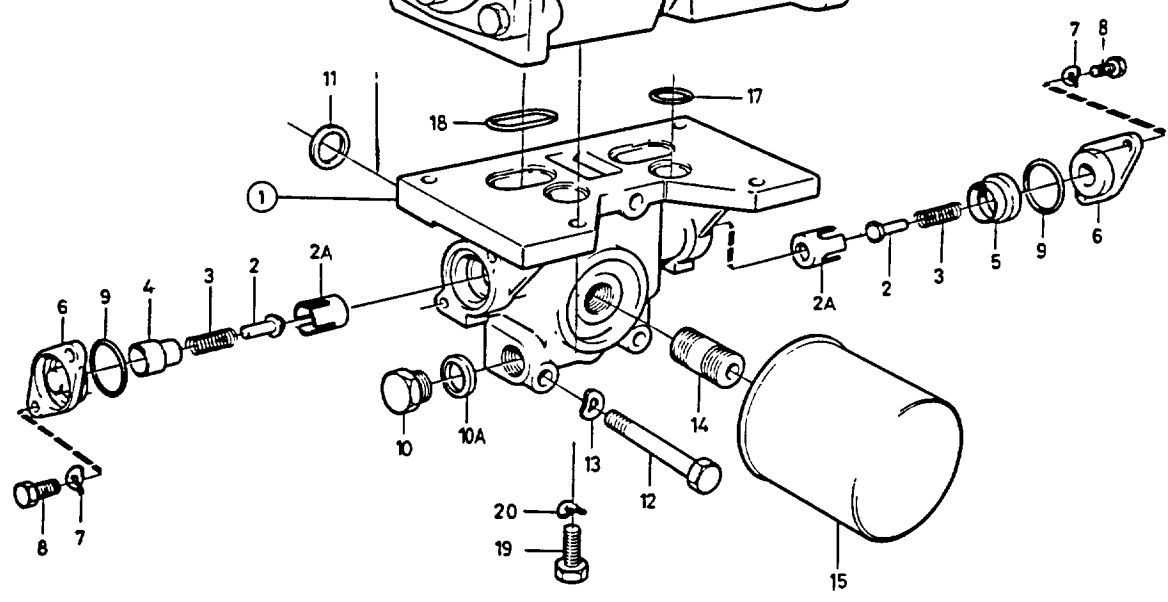
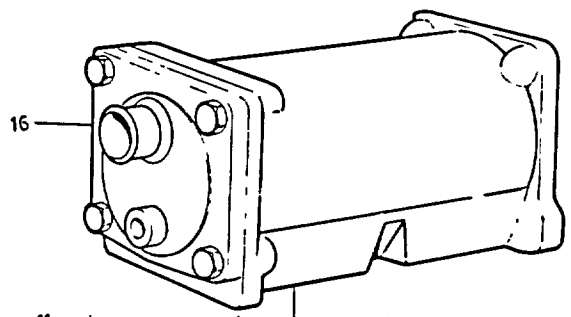
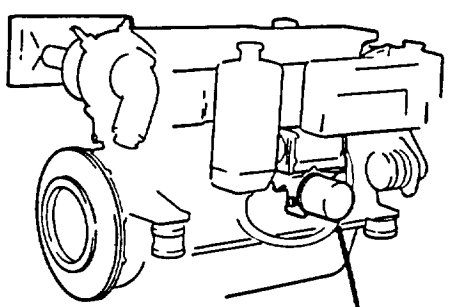
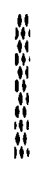
Sida Page		Grupp Group		Oljepump Oil pump				Illustration 4561 1987-04		14E	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	154 2210										
1	1	-	-	-	1542210-8	Oljepump .....	Oil pump... ..				
2	1	-	-	-	1542211-6	.Konsol .....	.Bracket .....				
3	1	-	-	-	470234-6	.Bussning .....	.Bushing... ..	S 0		MO 32828-	00
4	1	-	-	-	420043-2	.Tapp .....	.Pin .....	4			00
5	1	-	-	-	950614-8	.Pinne .....	.Pin .....	2			01
6	1	-	-	-		.Axel med kugghjul .....	.Shaft with gear... ..	S 8			01
7	1	-	-	-		.Kugghjul .....	.Gear .....	S 8			01
8	1	-	-	-		.Hus .....	.Housing... ..	8			01
9	1	-	-	-	470234-6	.Bussning .....	.Bushing .....	S 2		MO 32828-	01
10	2	-	-	-	401146-6	.Styrhylsa .....	.Sleeve .....	2			02
11	2	-	-	-	955300-9	.Skruv .....	.Screw .....	0		TID UTF	02
	2	-	-	-	965179-5	.Skruv .....	.Screw .....	0		SEN UTF	
12	2	-	-	-	941907-8	.Bricka .....	.Washer .....	0		TID UTF	
13	1	-	-	-	424133-7	.Axialbricka .....	.Washer .....	S 2			02
14	1	-	-	-	1542214-0	.Kugghjul .....	.Gear .....	4			02
15	1	-	-	-	910115-5	.Kil .....	.Key .....	S 2			02
16	1	-	-	-	1542215-7	.Kugghjul .....	.Gear .....	4			02
17	1	-	-	-	1542218-1	.Lagerhylsa .....	.Sleeve .....				
18	1	-	-	-	1542199-3	.Låsbricka .....	.Washer .....	2		TID UTF	
19	3	-	-	-	940132-4	.Skruv .....	.Screw .....	0		TID UTF	02
	3	-	-	-	946470-2	.Skruv .....	.Screw .....	0		SEN UTF	02
-	-	-	-	-	275569-2	Reservdelssats .....	Spare parts kit .....	1			02



4561

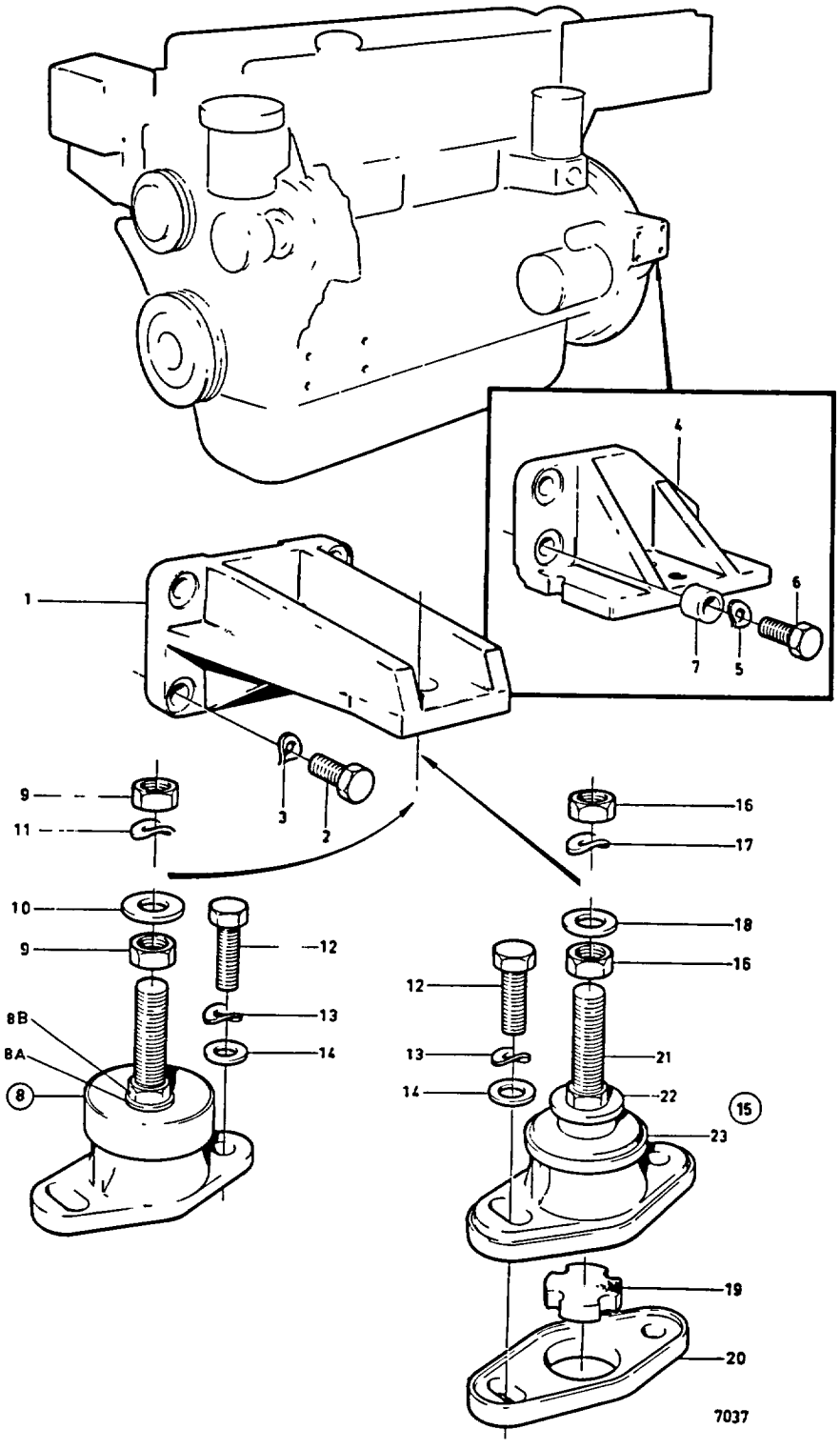


Sida Page	Grupp Group	Oljefilter med monteringsdetaljer				Oil filter and installation components				Illustration	
40	2a	MD40A,AQD40A,TMD40A,TMD40B,TMD40C,AQAD40A,AQAD40B,TAMD40A,TAMD40B								8289 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	842 584	858 245									
1	1	-	-	-	842584-5	Hus.....	Housing .....	6		MO-20710	0
	-	1	-	-	858245-4	Hus.....	Housing .....	6		(842584)MO20711-	00
2	2	2	-	-	471085-1	.Ventil.....	.Valve.....	3			00
2a	2	2	-	-	1542265-2	.Säte.....	.Seat.....	2			00
3	2	2	-	-	468087-2	.Fjäder.....	.Spring.....	2			01
4	1	1	-	-	1542268-6	.Hylsa.....	.Sleeve.....	2			01
5	1	1	-	-	1542266-0	.Hylsa.....	.Sleeve.....	2			01
6	2	2	-	-	1542267-8	.Lock.....	.Cover.....	2			01
7	4	-	-	-	941906-0	.Fjädrande bricka.....	.Resilient washer.....	0			01
8	4	-	-	-	955271-2	.Skruv.....	.Screw.....	0			02
	-	4	-	-	946544-4	.Skruv.....	.Screw.....	0			
9	2	2	-	-	925065-5	.Tätning.....	.Seal.....	0			
10	1	-	-	-	960634-4	.Plugg.....	.Plug.....	0			02
	-	1	-	-	952077-6	.Propp.....	.Plug.....	0			02
10a	1	-	-	-	947627-6	.Packning.....	.Gasket.....	0			03
11	4	4	-	-	469483-2	Tätningssring.....	Seal ring.....	1		(422581)	03
12	3	3	-	-	955306-6	Skruv.....	Screw.....	0			
13	3	3	-	-	941907-8	Fjädrande bricka.....	Resilient washer.....	0			
14	1	1	-	-	423067-8	Nippel.....	Nipple.....	4			04
15	1	1	-	-	471034-9	Oljefilter.....	Oil filter.....	1			04
16	1	1	-	-	842589-4	Oljekylare.....	Oil cooler.....			MO-41831	04
	1	1	-	-	838968-6	Oljekylare.....	Oil cooler.....			(842589)MO41832-	04
	-	-	-	-						SE GRUPP 2B	04
	1	1	-	-	845349-0	Oljekylare.....	Oil cooler.....			(64)MO-39857	04
	1	1	-	-	838969-4	Oljekylare.....	Oil cooler.....			(845349)MO39858-	04
	-	-	-	-						SE GRUPP 2B	04
17	2	2	-	-	469483-2	Tätningssring.....	Seal ring.....	1		(422581)	04
18	2	2	-	-	842586-0	Tätningssring.....	Seal ring.....	1			04
19	3	3	-	-	940142-3	Skruv.....	Screw.....	0			04
20	3	3	-	-	941907-8	Fjädrande bricka.....	Resilient washer.....	0			04



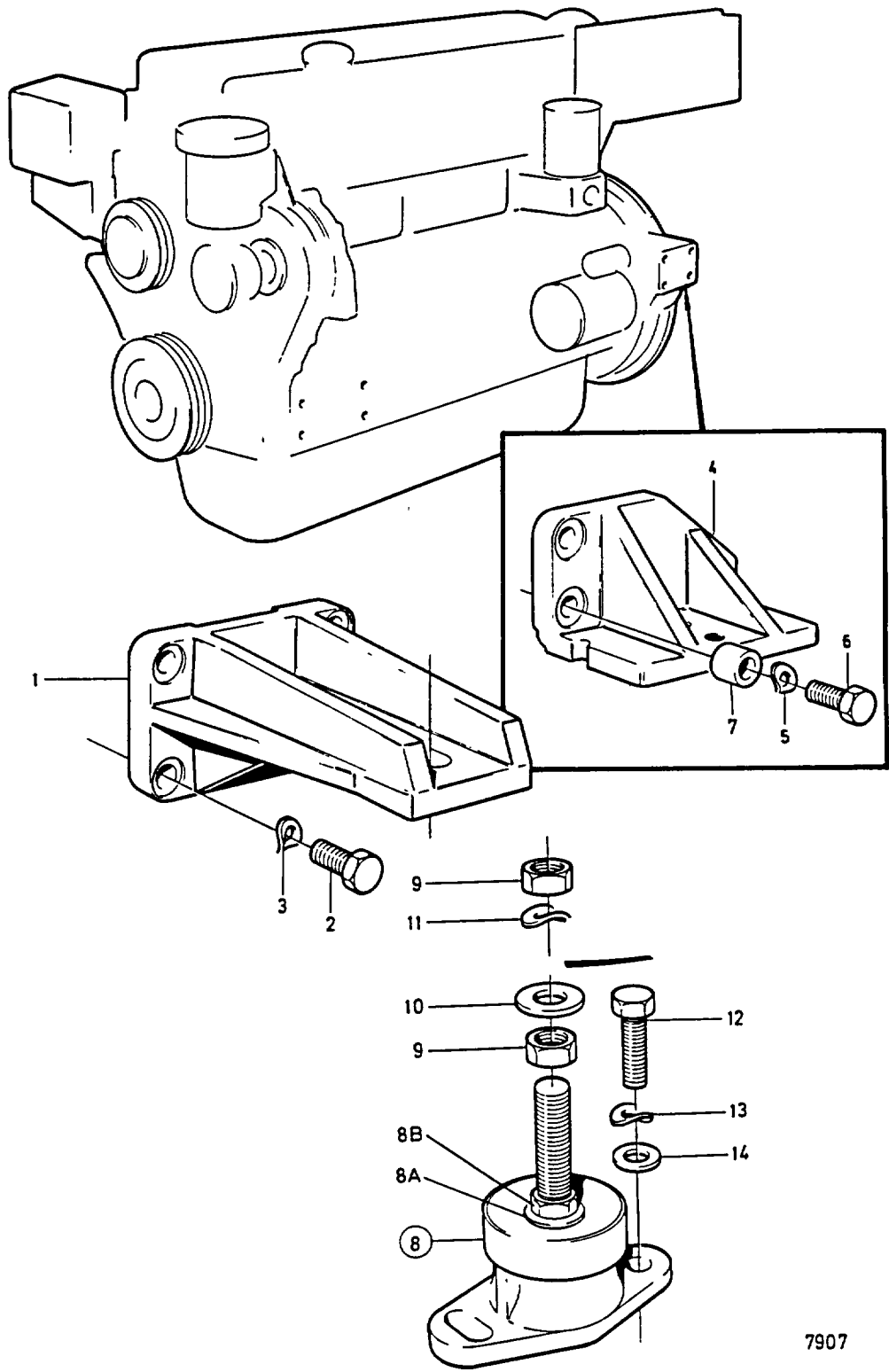
8289

Sida Page		Grupp Group		Motorupphängning		Engine suspension		Illustration		
42		2a		AQD40A,MD40A				7037 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	AQD 40A	MD 40A								
1	2	2	-	-	829517-2	Konsol.....	Bracket.....	5		
2	8	8	-	-	955342-1	Skruv.....	Screw.....	0		
3	8	8	-	-	940280-1	Bricka.....	Washer.....	0		
4	-	1	-	-	829515-6	Konsol.....	Bracket.....	5	BB	
	-	1	-	-	829516-4	Konsol.....	Bracket.....	5	SB	
5	-	6	-	-	940143-1	Låsbricka..	Washer.....	0		
6	-	5	-	-	955341-3	Skruv.....	Screw.....	0	L=35MM	
	-	1	-	-	955342-1	Skruv.....	Screw.....	0	L=40MM,ALT	
	-	1	-	-	955341-3	Skruv.....	Screw.....	0	L=35MM,ALT	
7	-	1	-	-	843122-3	Distanshylsa ..	Spacer sleeve.....	3	SB	
8	-	4	-	-	829976-0	Gummielement ..	Rubber element.....	3		
8a	-	4	-	-	955900-6	.Bricka .....	.Washer.....	0		
8b	-	4	-	-	829567-7	.Bult.....	.Bolt.....	3		
9	-	8	-	-	955805-7	Mutter.....	Nut.....	0		
10	-	8	-	-	191940-6	Bricka.....	Washer.....	0	TID UTF	
	-	6	-	-	191940-6	Bricka.....	Washer.....	0	SEN UTF	
	-	2	-	-	955900-6	Bricka.....	Washer.....	0	SEN UTF	
11	-	16	-	-	829892-9	Låsbricka.....	Washer.....	1	TID UTF	
12	4	8	-	-	955321-5	Skruv.....	Screw.....	0		
13	4	8	-	-	941908-6	Fjädrande bricka.....	Resilient washer..	0		
14	4	8	-	-	960148-5	Bricka.....	Washer.....	0		
15	2	-	-	-	843297-3	Gummielement ..	Rubber element.....	5	MO33151-..	
16	4	-	-	-	955805-7	.Mutter.....	.Nut.....	0		
17	2	-	-	-	941912-8	.Fjädrande bricka.....	.Washer.....	0		
18	2	-	-	-	191940-6	.Bricka.....	.Washer.....	0		
19	2	-	-	-	843299-9	.Gummiskiva.....	.Rubber disc.....	3		
20	2	-	-	-	843286-6	.Underlägg.....	.Pad.....	4		
21	2	-	-	-	829567-7	.Bult.....	.Bolt.....	5		
22	2	-	-	-	843298-1	.Bricka.....	.Washer.....	5		
23	2	-	-	-	843323-7	.Gummielement ..	.Rubber element.....	4		



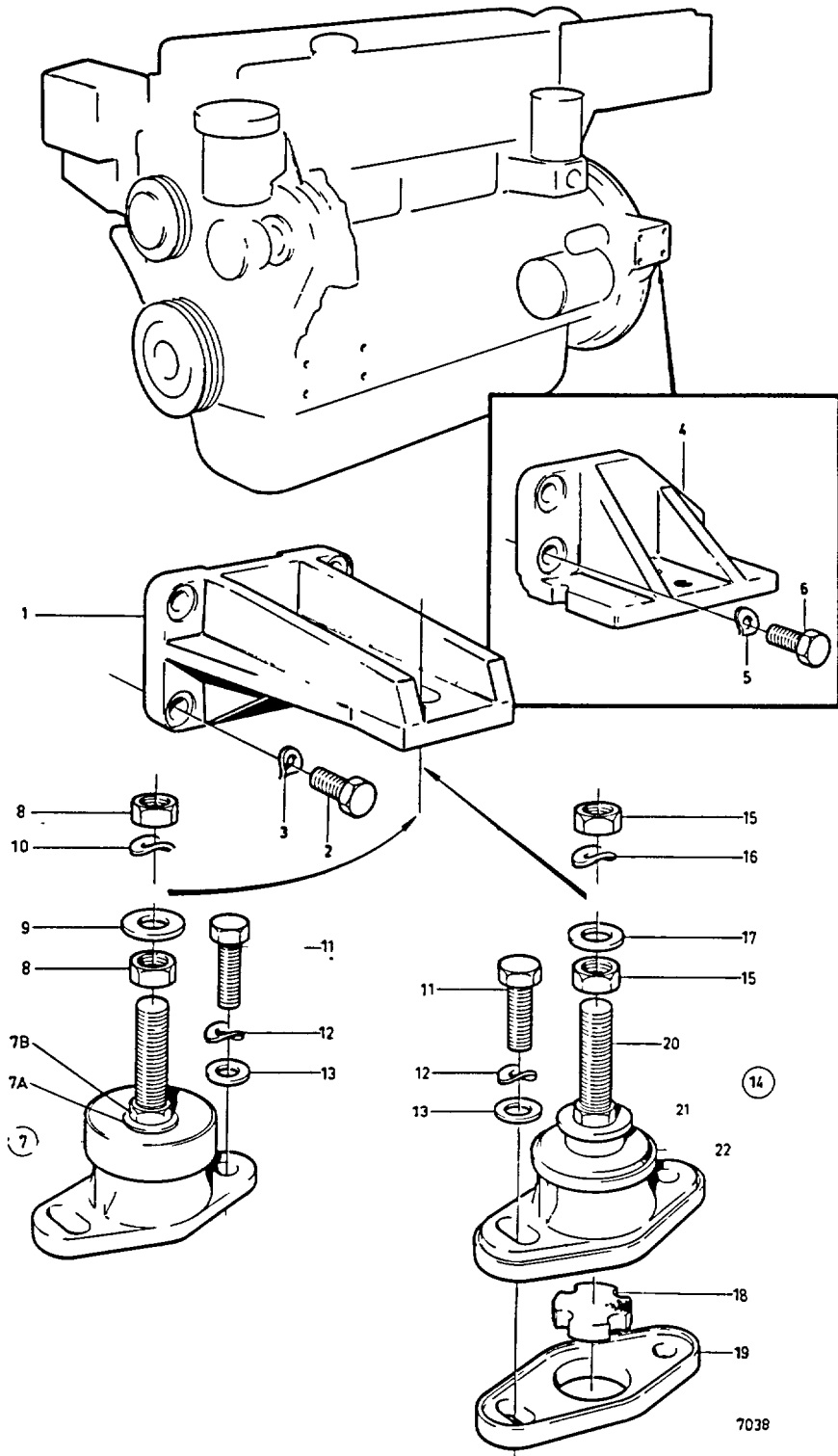
7037

Sida Page		Grupp Group		Motorupphängning			Engine suspension			Illustration	
44		2a		TMD40A,TMD40B,TMD40C						7907 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	2	-	-	-	829517-2	Konsol.....	Bracket.....	5			01
2	8	-	-	-	955342-1	Skruv.....	Screw.....	0			00
3	8	-	-	-	940280-1	Fjädrande bricka.....	Resilient washer.....	0			00
4	1	-	-	-	829515-6	Konsol.....	Bracket.....	5	BB		00
	1	-	-	-	829516-4	Konsol.....	Bracket.....	5	SB		01
5	6	-	-	-	940143-1	Låsbricka.....	Washer.....	0			01
6	5	-	-	-	955341-3	Skruv.....	Screw.....	0	L=35MM		01
	1	-	-	-	955342-1	Skruv.....	Screw.....	0	L=40MM,ALT		01
	1	-	-	-	955341-3	Skruv.....	Screw.....	0	L=35MM,ALT		01
7	1	-	-	-	843122-3	Distanshylsa.....	Spacer sleeve.....	3	SB		02
8	4	-	-	-	829976-0	Gummielement.....	Rubber element.....	3			
8a	4	-	-	-	955900-6	Bricka.....	Washer.....	0			
8b	4	-	-	-	829567-7	Bult.....	Bolt.....	3			02
9	8	-	-	-	955805-7	Mutter.....	Nut.....	0			02
10	8	-	-	-	191940-6	Bricka.....	Washer.....	0	TIDUTF		03
	6	-	-	-	191940-6	Bricka.....	Washer.....	0	SEN UTF		03
	2	-	-	-	955900-6	Bricka.....	Washer.....	0	SEN UTF		
11	16	-	-	-	829892-9	Låsbricka.....	Washer.....	1	TIDUTF		
12	8	-	-	-	959242-9	Skruv.....	Screw.....	0	TIDUTF		03
13	8	-	-	-	941908-6	Fjädrande bricka.....	Resilient washer.....	0			03
14	8	-	-	-	960148-5	Bricka.....	Washer.....	0			03



7907

Sida Page		Grupp Group		Motorupphängning Engine suspension				Illustration 7038 1987-04		18	
46		2a		AQAD40A, AQAD40B, TAMD40A, TAMD40B							
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	AQAD 40A	TAMD 40A	AQAD 40B	TAMD 40B							
1	2	2	2	2	829517-2	Konsol. ....	Bracket.....	5			00
2	8	8	8	8	955342-1	Skruv .....	Screw.....	0			00
3	8	8	8	8	940280-1	Fjädrande bricka.....	Resilient washer.....	0			00
4	-	1	-	1	829515-6	Konsol .....	Bracket.....	5	BB		00
	-	1	-	1	829516-4	Konsol .....	Bracket.....	5	SB		01
5	-	6	-	6	940143-1	Låsbricka .....	Washer.....	0			01
6	-	6	-	6	955341-3	Skruv .....	Screw.....	0	L=35MM		01
7	-	4	-	4	829976-0	Gummielement .....	Rubber element.....	3			01
7a	-	4	-	4	955900-6	.Bricka .....	.Washer.....	0			01
7b	-	4	-	4	829567-7	.Bult .....	.Bolt.....	3			01
8	-	8	-	8	955805-7	Mutter .....	Nut.....	0			
9	-	-	-	8	191940-6	Bricka .....	Washer.....	0			
	-	8	-	-	191940-6	Bricka.....	Washer.....	0	TIDUTF		02
	-	6	-	-	191940-6	Bricka.....	Washer.....	0	SENUTF		02
	-	2	-	-	955900-6	Bricka.....	Washer.....	0	SENUTF		02
10	-	-	-	16	829892-9	Låsbricka.....	Washer.....	0			02
	-	16	-	-	829892-9	Låsbricka.....	Washer.....	0	TIDUTF		02
11	4	-	4	8	955321-5	Skruv .....	Screw.....	0			
	-	8	-	-	959242-9	Skruv.....	Screw.....	0			02
12	4	8	4	8	941908-6	Fjädrande bricka .....	Resilient washer.....	0			02
13	4	8	4	8	960148-5	Bricka.....	Washer.....	0			03
14	2	-	2	-	843297-3	Gummielement.....	Rubber element.....	5	MO33151-		02
15	4	-	4	-	955805-7	.Mutter .....	.Nut.....	0			02
16	2	-	2	-	941912-8	.Fjädrande bricka.....	.Resilient washer.....	0			02
17	2	-	2	-	191940-6	.Bricka .....	.Washer.....	0			02
18	2	-	2	-	843299-9	.Gummiskiva .....	.Rubber disc.....	3			04
19	2	-	2	-	843286-6	.Underlagg .....	.Shims.....	4			C
20	2	-	2	-	829567-7	.Bult .....	.Bolt.....	5			C
21	2	-	2	-	843298-1	.Bricka .....	.Washer.....	5			04
22	2	-	2	-	843323-7	.Gummielement .....	.Rubber element.....	4			04



7038



# **VOLVO PENTA**

Originaldelar · Genuine Parts  
Originalteile · Pièces d'origine

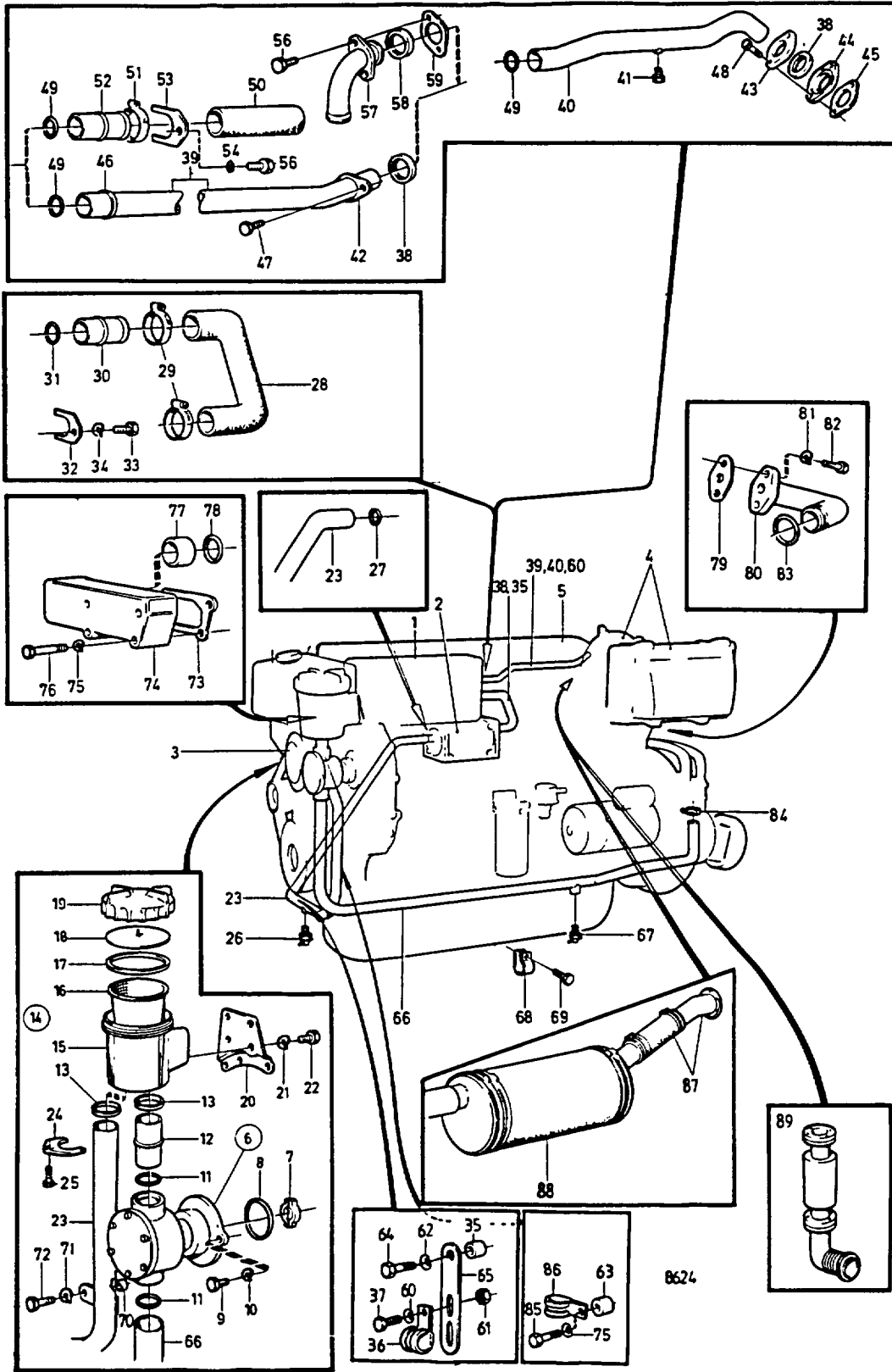
01	Innehållsfor-teckning	Index	Grupp Group	Sida Page
	1987-04		2b	1
40	Kylsystem, Insugnings- och Avgasror		Sida	Koord
60	Kylsystem, insugnings- och avgasror . . . . .	AQD40A, TMD40A, MD40A . . . . .	2	1-D03
80	Kylsystem, insug.- och avgasror . . . . .	TMD40B, TMD40C . . . . .	6	1-D07
	Kylsystem, insugnings- och avgasror . . . . .	TAMD40A, TAMD40B . . . . .	10	1-D11
60	Kylsystem, insugnings- och avgasror . . . . .	AQAD40A, AQAD40B . . . . .	14	1-D15
00	Cooling system, Induction and Exhaust manifold		Page	Grid
20	Cooling system, induction- and exhaust manifold . . . . .	AQD40A, TMD40A, MD40A . . . . .	2	1-D03
40	Cooling system, induction- and exhaust manifold . . . . .	TMD40B, TMD40C . . . . .	6	1-D07
60	Cooling system induction- and exhaust manifold . . . . .	TAMD40A, TAMD40B . . . . .	10	1-D11
80	Cooling system induction- and exhaust manifold . . . . .	AQAD40A, AQAD40B . . . . .	14	1-D15



Sida Page	Grupp Group	Kylsystem,insugnings-och avgasror	Cooling system,induction-and exhaust manifold	Illustration 8624 1987-04	06C
2	2b	AQD40A,TMD40A,MD40A			

Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	AQD 40A	TMD 40A	MD 40A							
1	1	1	1	-	Varmeväxlare och .. termostat med .. monteringsdetaljer	Heat exchanger and... thermostat with installation comps			SE SIDA 18, 1-D19	0C 00 00
2	1	1	1	-	838968-6 Oljekylare .. .Det se sida 34, 1-E11	Oil cooler .. .Comp page 34, 1-E11		5	(842589)	01 01
3	1	1	1	-	Cirkulationspump med monteringsdetaljer	Circulation pump with installation comps			SE SIDA 28, 1-E05	01 01
4	1	1	-	-	Turbokompressor .. och luftfilter med monteringsdetaljer	Turbo compressor .... and air filter with installation comps			SE SIDA 38, 1-E15	01 01 02
	-	-	1	-	Luftfilter med .. monteringsdetaljer	Air filter with .. installation comps			SE SIDA 36, 1-E13	
5	1	1	-	-	Insugnings-och .. avgasror med monteringsdetaljer	Induction-and exhaust ... manifold with installation comps			SE SIDA 56, 1-F09	02 02 03
	-	-	1	-	Insugnings-och .. avgasror med monteringsdetaljer	Induction-and exhaust. manifold with installation comps			SE SIDA 54, 1-F07	03 03
6	1	1	1	-	842843-5 Vattenpump .. Det se sida 32, 1-E09	Water pump .. Comp page 32, 1-E09		5		03 04
7	1	1	1	-	829433-2 Medbringare ..	Carrier ..		3		04
8	1	1	1	-	947314-1 O-ring ..	O-ring ..		S 1		04
9	2	2	2	-	955295-1 Skruv ..	Screw ..		0		04
10	2	2	2	-	941907-8 Fjädrande bricka ..	Resilient washer ..		0		04
11	2	2	2	-	949658-9 O-ring ..	O-ring ..		1	(925061)	0E
12	1	1	1	-	842743-7 Rör ..	Pipe ..		3		0F
13	2	2	2	-	858986-3 Tätningssring ..	Seal ring ..		S 1	(842744)	0
14	1	1	1	-	842924-3 Vattensil ..	Strainer ..		3		0
15	1	1	1	-	.Hus ..	.Housing ..		8		0E
16	1	1	1	-	842723-9 .Sil ..	.Strainer ..		2		0E
17	1	1	1	-	842724-7 .Tätning ..	.Seal ..		1		0E
18	1	1	1	-	842982-1 .Tryckplatta ..	.Pressure plate ..		3		0E
19	1	1	1	-	842722-1 .Lock ..	.Cover ..		3		0E
20	1	1	1	-	842742-9 Konsol ..	Bracket ..		5		0E
21	4	4	4	-	941907-8 Fjädrande bricka ..	Resilient washer ..		0		0E
22	4	4	4	-	955293-6 Skruv ..	Screw ..		0		0E
23	1	1	1	-	842906-0 Kylvattenror ..	Cooling water pipe ..		4		0E
24	1	1	1	-	842911-0 Bygel ..	Brace ..		4	MO26359-	
25	1	1	1	-	955269-6 Skruv ..	Screw ..		0	MO26359-,L=12MM	
26	1	1	1	-	82745-1 Kran ..	Cock ..		3		0E
27	1	1	1	-	949658-9 O-ring ..	O-ring ..		S 1	(925061)	0E
28	1	1	1	-	842907-8 Slang ..	Hose ..		2		0E
29	2	2	2	-	943475-4 Slangklamma ..	Hose clamp ..		0		0E
30	1	1	1	-	843062-1 Röranslutning ..	Pipe connection ..		2		
31	1	1	1	-	949658-9 O-ring ..	O-ring ..		S 1	(925061)	
32	1	1	1	-	842911-0 Bygel ..	Brace ..		3		0E
33	1	1	1	-	955270-4 Skruv ..	Screw ..		0		0E
34	1	1	1	-	941906-0 Fjädrande bricka ..	Resilient washer ..		0		0E
35	1	1	1	-	843075-3 Hylsa ..	Sleeve ..		5	MO24790-	0E
36	1	1	1	-	952635-1 Klamma ..	Clamp ..		0	MO24790-	0
37	1	1	1	-	955271-2 Skruv ..	Screw ..		0	MO24790-	0
38	1	1	-	-	842913-6 Tätningssring ..	Seal ring ..		S 1	234)	0
39	1	1	-	-	842908-6 Kylvattenror ..	Cooling water pipe ..		4	234) MO-20552	1
40	1	1	-	-	845819-2 Rör ..	Pipe ..		4	266) MO20553-	1
41	1	1	-	-	192134-5 Propp ..	Plug ..		0	MO20553-	
42	1	1	-	-	842912-8 Flans ..	Flange ..		4	234) MO-20552	1
43	1	1	-	-	845820-0 Flans ..	Flange ..		4	266) MO20553-	1
44	1	1	-	-	845821-8 Flans ..	Flange ..		4	266) MO20553-	1
45	1	1	-	-	845527-1 Packning ..	Gasket ..		1	266) MO20553-	1

234 TMD40A spec 867393, 867394. TMD40A SPEC 867393, 867394.  
266 TMD40A spec 867393, 867486, 867566, 867569 TMD40A SPEC 867393, 867486, 867566, 867569.



Sida Page	Grupp Group	Kylsystem,insugnings-och avgasrör	Cooling system,induction-and exhaust manifold	Illustration 8624 1987-04
4	2b	AQD40A,TMD40A,MD40A		

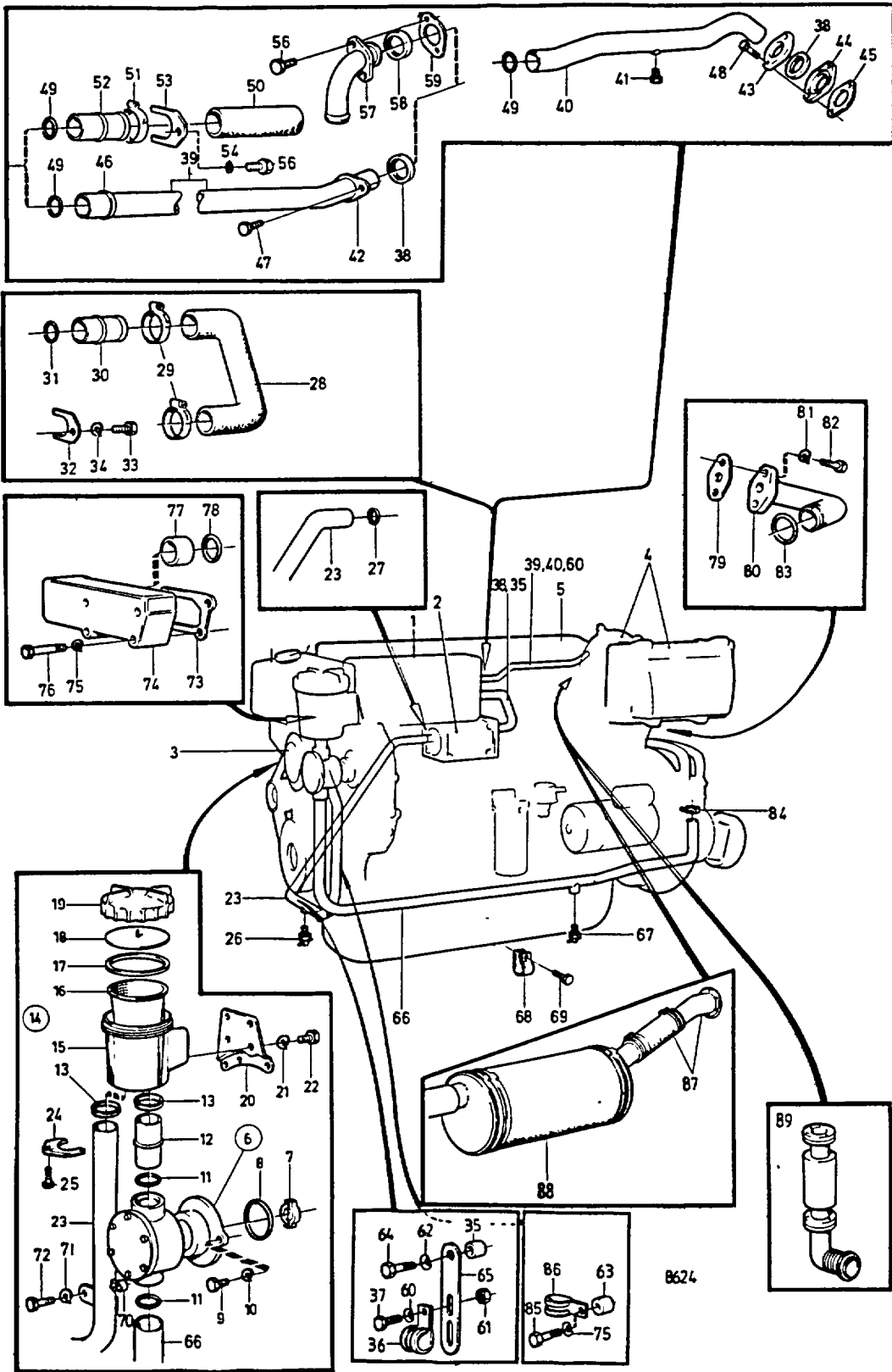
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit P S R	Anmärkning Notes	
	AQD 40A	TMD 40A	MD 40A						
46	1	1	-	803068-6	Tatning	Seal	S 1	234) MO-20552	1
47	2	2	-	955271-2	Skruv	Screw	0	234) MO-20552	11
48	2	2	-	946730-9	Skruv	Screw	0	266) MO20553-	11
49	1	1	-	949658-9	O-ring	O-ring	S 1	SE SIDA 20, 1-D21 (925061)	12
		1	1	949658-9	O-ring	O-ring	S 1	235,236) SE GRUPP 4A (925061)	12
50		ERF	ERF	944386-2	Slang	Hose	0	235,236)	12
51		2	2	943475-4	Slangklamma	Hose clamp	0	235,236)	13
52		1	1	843062-1	Röranslutning	Pipe connection	2	235,236)	13
53		1	1	842911-0	Bygel	Brace	3	235,236)	-
54		1	1	941906-0	Fjädrande bricka	Resilient washer	0	235,236)	-
55		1	1	955270-4	Skruv	Screw	0	235,236)	13
56		2	-	955271-2	Skruv	Screw	0	235) MO-20552	14
		2	-	959219-7	Skruv	Screw	0	MO 20553-	14
57		1	-	843333-6	Kylvattenrör	Cooling water pipe	5	235) MO-20552	14
		1	-	845791-3	Kylvattenanslutning	Connection	5	MO 20553-	**
58		1	-	842913-6	Tätningring	Seal ring	1	235) MO-20552	-
59		1	-	845527-1	Packning	Gasket	1	MO 20553-	10
60	1	1	1	955892-5	Bricka	Washer	0	MO24790-	15
61	1	1	1	955781-0	Mutter	Nut	0	MO24790-	15
62	1	1	1	941907-8	Fjädrande bricka	Resilient washer	0	SE GRUPP 2A	15
63	1	1	1	846339-0	Distanshylsa	Spacer sleeve	5	MO24790-	15
64	1	1	1	955306-6	Skruv	Screw	0	SE GRUPP 2A	15
65	1	1	1	965534-1	Konsol	Bracket	0	MO24790-	15
66		1	1	842905-2	Kylvattenrör	Cooling water pipe	4	MO-1507	1
		1	1	843877-2	Rör	Pipe	4	MO 1508-	-
		1	1	843267-6	Kylvattenrör	Cooling water pipe	4	-	-
67	1	-	-	82745-1	Kran	Cock	3	MO-20552	15
68	2	-	-	943717-9	Klammer	Clamp	0	-	15
69	2	-	-	955295-1	Skruv	Screw	0	-	15
70	1	1	1	842350-1	Distanshylsa	Spacer sleeve	4	-	15
71	1	1	1	941907-8	Fjädrande bricka	Resilient washer	0	-	15
72	1	1	1	955300-9	Skruv	Screw	0	SE GRUPP 2A	15
73	1	1	1	1542187-8	Packning	Gasket	0	-	15
74	1	1	1	842697-5	Rörkrök	Pipe bend	4	-	17
75	4	4	4	941907-8	Fjädrande bricka	Resilient washer	0	SE GRUPP 3	17
76	4	4	4	955305-8	Skruv	Screw	0	SE GRUPP 3	-
77	1	1	1	842965-6	Rortatning	Adapter sealing	3	SE SIDA 56, 1-F09	-
78	2	2	2	925067-1	O-ring	O-ring	S 1	SE SIDA 56, 1-F09	18
79	1	1	1	843042-3	Packning	Gasket	S 1	SE SIDA 56, 1-F09	18
80	1	1	-	842614-0	Rör	Pipe	4	-	18
81	2	2	-	941906-0	Fjädrande bricka	Resilient washer	0	-	18
82	2	2	-	955276-1	Skruv	Screw	0	-	-
83	1	1	-	925065-5	Tatning	Seal	S 1	-	-
84	2	-	-	961670-7	Slangklamma	Hose clamp	0	SE GRUPP 4A	19
85	1	1	1	955302-5	Skruv	Screw	0	SE GRUPP 2A	19
86	1	1	1	947827-2	Klamma	Clamp	0	MO 24790-	19
87	ERF	ERF	ERF		Vattenkyld avgasledning	Water cooled exhaustline		SE GRUPP 9	2
88	ERF	ERF	ERF		Vattenkyld avgasjuddampare	Water cooled exhaust silencer		SE GRUPP 9	2
89	ERF	ERF	ERF		Torr avgasledning	Dry exhaust line		SE GRUPP 9	2

234 . TMD40A spec 867393, 867394. TMD40A SPEC 867393, 867394.

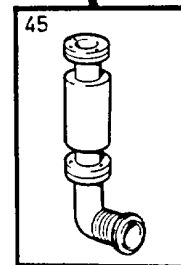
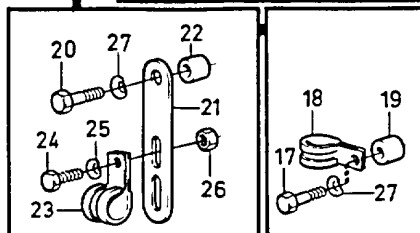
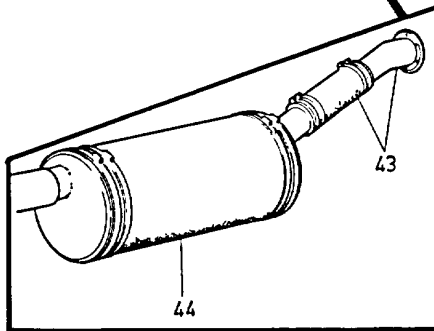
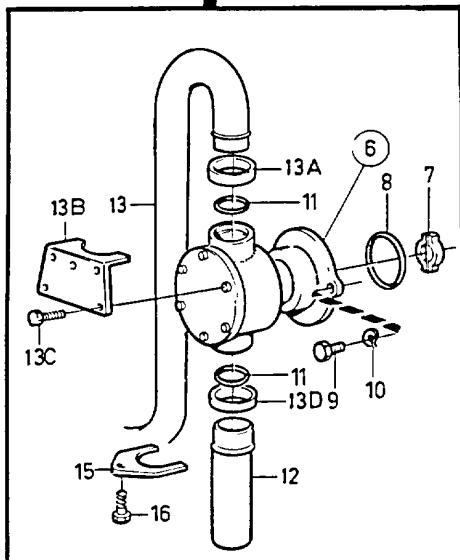
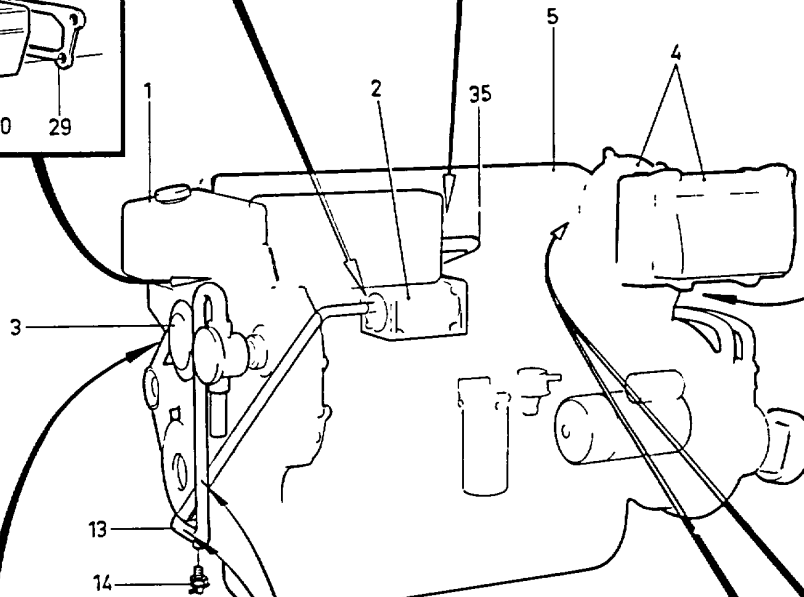
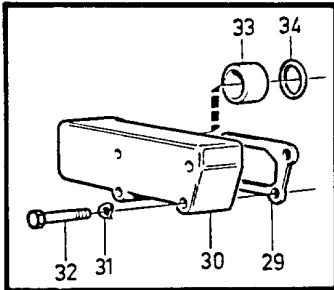
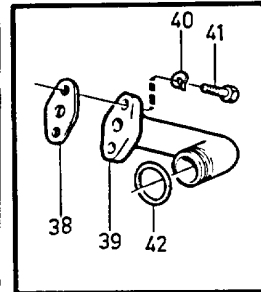
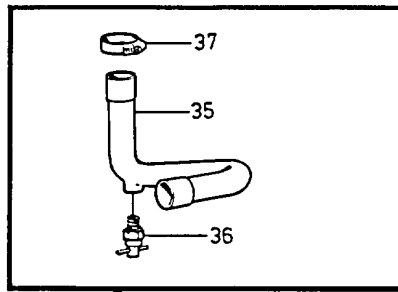
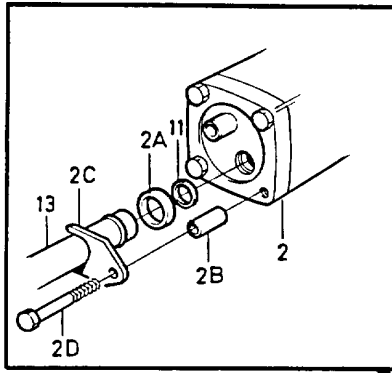
235 . Kan alternativt användas på TMD40A spec 867393, 867394. For alternative use on TMD40A spec 867393, 867394.

236 . Kan alternativt användas på MD40A spec 867449, 867450. For alternative use on MD40A spec 867449, 867450.

266 . TMD40A spec 867393, 867486, 867566, 867569. TMD40A SPEC 867393, 867486, 867566, 867569.



Sida Page		Grupp Group		Kylsystem,insug.- och avgasror		Cooling system,induction- and exhaust manifold		Illustration			
6		2b		TMD40B,TMD40C				7586 1987-04			
Pos Fig	Antal/Quantity				Artikel Nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	TMD 40B	TMD 40C									
1	1	1	-	-		Varmevaxlare och termostat med monteringsdetaljer	Heat exchanger and thermostat with installation comps			SE SIDA 22, 1-D23	00-001
2	1	1	-	-	838968-6	Oljekylare .Det se sida 34, 1-E11	Oil cooler .Comp page 34, 1-E11	5		(842589)MO 41832-	001-011
2a	1	1	-	-	847108-8	Rorhållare	Pipe retainer	4		MO 41832-	011
2b	1	1	-	-	807182-1	Distanshylsa	Spacer sleeve	4		MO 41832-	011
2c	1	1	-	-	838970-2	Bygel	Brace	4		MO 41832-	011
2d	1	1	-	-	955299-3	Skruv	Screw	0		MO 41832-	011
3	1	1	-	-		Cirkulationspump med monteringsdetaljer	Circulation pump with installation comps			SE SIDA 30, 1-E07	021
4	1	1	-	-		Turbokompressor och luftfilter med monteringsdetaljer	Turbo compressor and air filter with installation comps			SE SIDA 42, 1-E19	021
5	1	1	-	-		Insugnings- och avgasror med monteringsdetaljer	Induction and exhaust manifold with installation comps			SE SIDA 58, 1-F11	031
6	1	1	-	-	842843-5	Vattenpump .Det se sida 32, 1-E09	Water pump .Comp page 32, 1-E09	5			031
7	1	1	-	-	829433-2	Medbringare	Carrier	3			041
8	1	1	-	-	947314-1	O-ring	O-ring	S 1			041
9	2	2	-	-	955295-1	Skruv	Screw	0			041
10	2	2	-	-	941907-8	Fjädrande bricka	Resilient washer	0			041
11	2	2	-	-	949658-9	O-ring	O-ring	1		(925061)	041
12	1	-	-	-	843062-1	Roranslutning	Pipe connection	2			051
	-	1	-	-	847105-4	Ror	Pipe	2			051
13	1	1	-	-	838971-0	Ror	Pipe	5		(846944)MO 41832-	051
13a	1	1	-	-	847108-8	Rorhållare	Pipe retainer	4		MO 41832-	051
13b	1	2	-	-	847107-0	Låsbygel	Lock brace	4		MO 41832-	051
13c	2	4	-	-	963545-9	Skruv	Screw	0		MO 41832-	051
13d	-	1	-	-	847108-8	Rorhållare	Pipe retainer	4			051
14	1	1	-	-	82745-1	Kran	Cock	2			051
15	1	1	-	-	842911-0	Bygel	Brace	4			051
16	1	1	-	-	955269-6	Skruv	Screw	0			051
17	1	1	-	-	955302-5	Skruv	Screw	0		SE GRUPP 2A	051
18	1	1	-	-	947827-2	Klamma	Clamp	0			051
19	1	1	-	-	846339-0	Distanshylsa	Spacer sleeve	5			051
20	1	1	-	-	955306-6	Skruv	Screw	0		SE GRUPP 2A	051
21	1	1	-	-	965534-1	Konsol	Bracket	0			051
22	1	1	-	-	843075-3	Hylsa	Sleeve	5			051
23	1	1	-	-	952635-1	Klamma	Clamp	0			051
24	1	1	-	-	955271-2	Skruv	Screw	0			051
25	1	1	-	-	955892-5	Bricka	Washer	0			051
26	1	1	-	-	955781-0	Mutter	Nut	0			051
27	2	2	-	-	941907-8	Fjädrande bricka	Resilient washer	0		SE GRUPP 2A	051
28	1	1	-	-	949658-9	O-ring	O-ring	S 1		(925061)	051
29	1	1	-	-	1542187-8	Packning	Gasket	0			051
30	1	1	-	-	842697-5	Rörkrok	Pipe bend	4			051
31	4	4	-	-	941907-8	Fjädrande bricka	Resilient washer	0		SE GRUPP 3	051
32	4	4	-	-	955305-8	Skruv	Screw	0		SE GRUPP 3	051
33	1	1	-	-	842965-6	Rortatning	Adapter sealing	3		SE SIDA 58, 1-F11	1
34	1	1	-	-	925067-1	O-ring	O-ring	S 1		SE SIDA 58, 1-F11	1
35	1	1	-	-	846868-8	Rörkrok	Pipe bend	5		SE SIDA 22, 1-D23	1
36	1	1	-	-	82745-1	Kran	Cock	2		SE SIDA 22, 1-D23	1
37	1	1	-	-	961670-7	Slangklamma	Hose clamp	0		SE SIDA 22, 1-D23	1
38	1	1	-	-	843042-3	Packning	Gasket	S 1		SE SIDA 58, 1-F11	1
39	1	1	-	-	842614-0	Ror	Pipe	4			1
40	2	2	-	-	941906-0	Fjädrande bricka	Resilient washer	0			1
41	2	2	-	-	955276-1	Skruv	Screw	0			1
42	1	1	-	-	925065-5	Tätning	Seal	S 1			1
43	ERF	ERF	-	-		Vattenkyld avgasledning	Water cooled exhaust line			SE GRUPP 9	1



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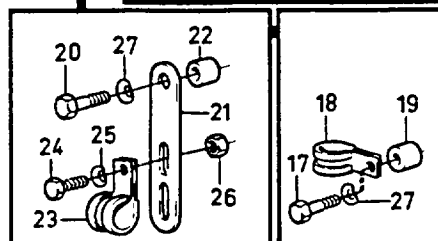
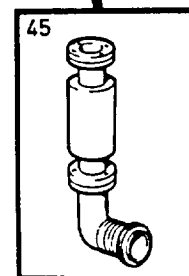
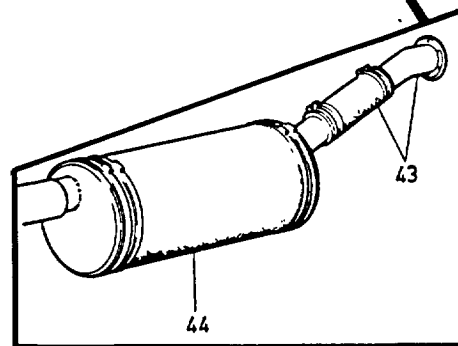
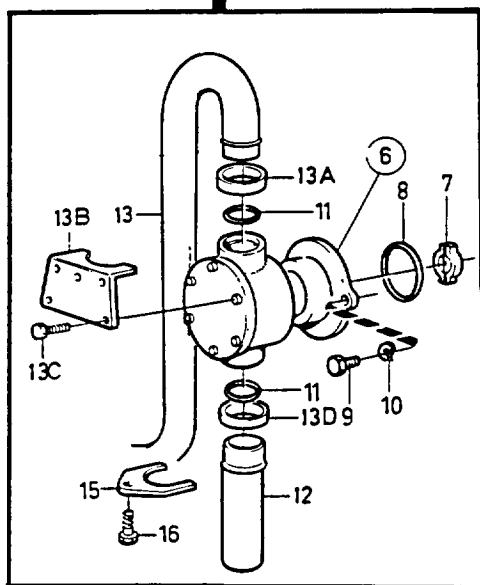
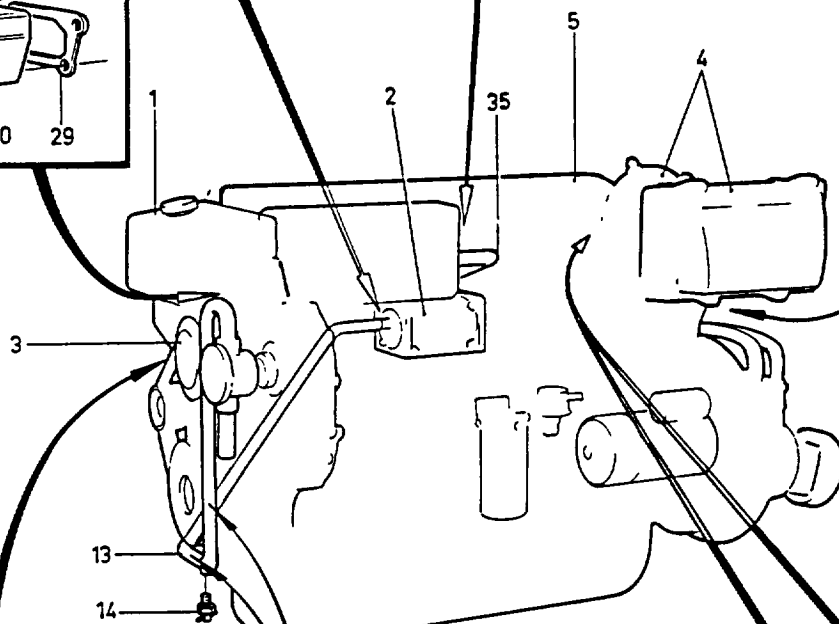
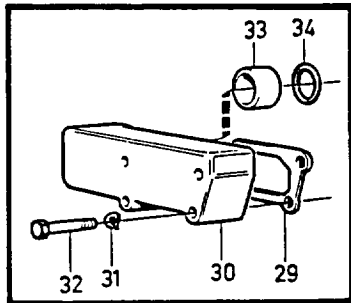
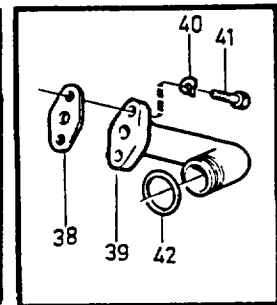
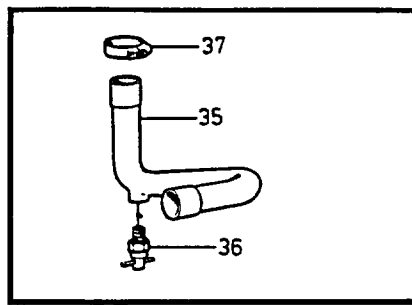
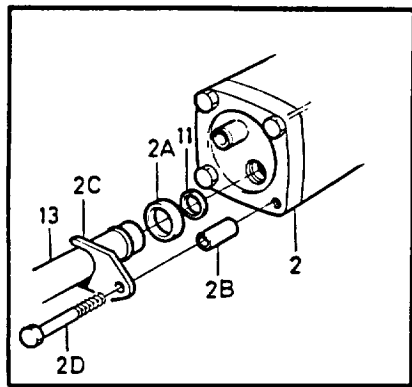
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Parts Catalogue

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**VOLVO  
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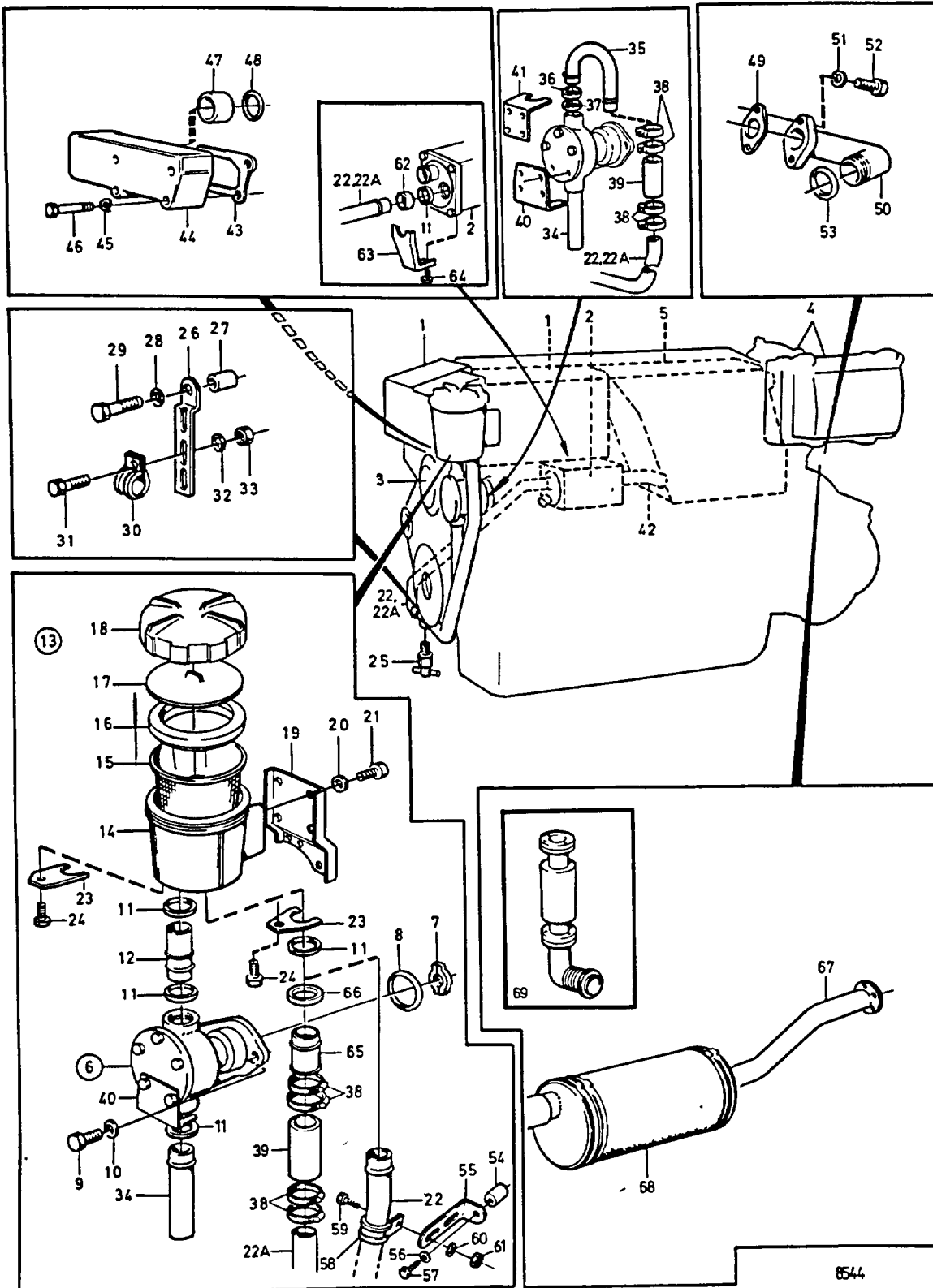
Sida Page		Grupp Group		Kylsystem,insug.- och avgasrör Cooling system,induction- and exhaust manifold		Illustration 7586 1987-04		061			
8		2b		TMD40B,TMD40C							
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	TMD 40B	TMD 40C									
44	ERF	ERF	-	-		Vattenkyld .....	Water cooled.....			SEGRUPP9	12
						avgasljuddämpare	exhaust silencer				12t
45	ERF	ERF	-	-		Torr avgasledning .....	Dry exhaust line....			SEGRUPP9	130



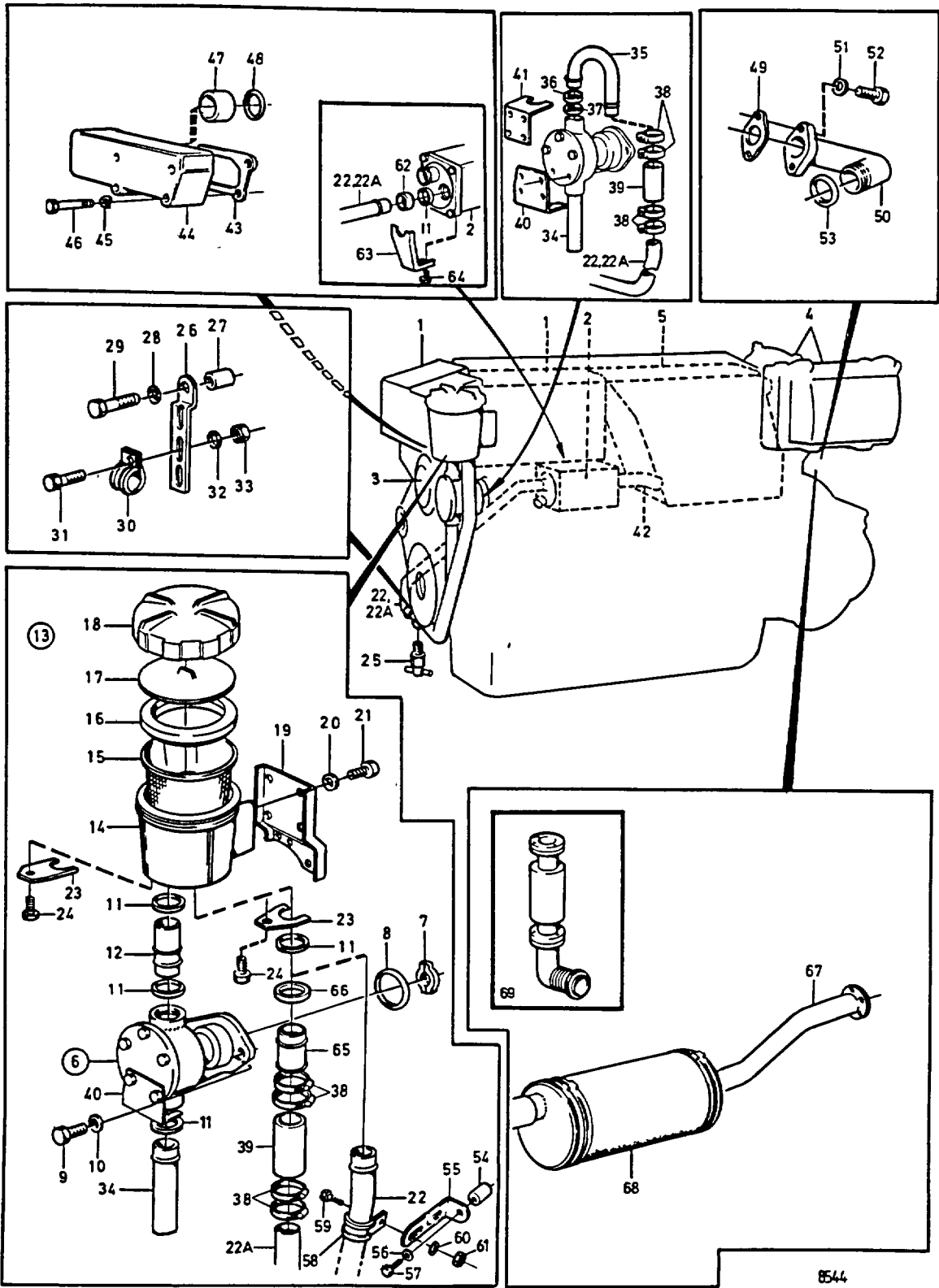
7586

Sida Page	Grupp Group	Kylsystem,insugnings-och avgasror		Cooling system induction-and exhaust manifold		Illustration	06				
10	2b	TAMD40A,TAMD40B				8544					
		1987-04									
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	TAMD 40A	TAMD 40B									
1	1	1	-	-		Varmeväxlare,mellan- ... kylare och termostat med monteringsdetaljer	Heat exchanger,after- ... cooler and thermostat with installation comp			SE SIDA 24, 1-E01	0 0L 00
2	1	1	-	-	838969-4	Oljekylare ... .Det se sida 34, 1-E11	Oil cooler ... .Comp page 34, 1-E11	5		(845349)MO 39858-	00 01
3	1	1	-	-		Cirkulationspump med . monteringsdetaljer	Circulation pump with... installation comps			SE SIDA 28, 1-E05	01 01
4	-	-	-	-		Turbokompressor . och luftfilter med monteringsdetaljer	Turbo compressor. .... and air filter with installation comps			SE SIDA 46, 1-E23	01 01 02
5	1	1	-	-		Insugnings och . avgasror och kyl- vattendränering med monteringsdetaljer	Induction and exhaust manifold and cool. water overspill with installation comps			SE SIDA 60, 1-F13	02 02
6	1	1	-	-	844971-2	Sjovattenpump ... .Det se sida 32, 1-E09	Sea water pump ... .Comp page 32, 1-E09	8		MO-33190	02 03 03
	1	1	-	-	838522-1	Sjovattenpump ... .Det se sida 32, 1-E09	Sea water pump . .Comp page 32, 1-E09	5		MO33191-	03 05
7	1	1	-	-	845195-7	Korsstycke	Cross piece	3			02 02
8	1	1	-	-	947314-1	O-ring	O-ring	0			02 02
9	2	2	-	-	955295-1	Skruv	Screw	0			02 02
10	2	2	-	-	941907-8	Fjädrande bricka	Resilient washer	0			02 02
11	5	5	-	-	845354-0	Tätningarring	Seal ring	1			02 02
12	1	1	-	-	845355-7	Tryckledning	Pipe	3			02 02
13	1	1	-	-	845337-5	Sil	Strainer	6		MO-29495	02 02
14	1	1	-	-	845338-3	Silhus	Housing	3			02 02
15	1	1	-	-	858081-3	Sil	Strainer	4			02 02
16	1	1	-	-	838977-7	Gummitätning	Rubber seal	2		(845329)	02 02
17	1	1	-	-	845328-4	Tryckplatta	Pressure plate	3			02 02
18	1	1	-	-	845317-7	Lock	Cover	5			02 02
19	1	1	-	-	845299-7	Konsol	Bracket	6		MO-29495	02 02
20	4	4	-	-	941907-8	Fjädrande bricka	Resilient washer	0		MO-29495	02 02
21	4	4	-	-	955293-6	Skruv	Screw	0		MO-29495	02 02
22	1	1	-	-	845356-5	Rör	Pipe	8		MO-35689	02 02
22a	1	1	-	-	838558-5	Rör	Pipe	4		(845356)MO35690-	02 02
23	2	2	-	-	847018-9	Bygel	Brace	4		(84600)	02 02
24	2	2	-	-	940199-3	Skruv	Screw	0			02 02
25	1	-	-	-	947893-4	Kran	Cock	0			02 02
26	1	-	-	-	845999-2	Konsol	Bracket	4			02 02
27	1	-	-	-	843075-3	Hylsa	Sleeve	5			02 02
28	1	-	-	-	941907-8	Fjädrande bricka	Resilient washer	0			02 02
29	1	-	-	-	955300-9	Skruv	Screw	0			02 02
30	1	-	-	-	952641-9	Klammer	Clamp	0			02 02
31	1	-	-	-	955271-2	Skruv	Screw	0			02 02
32	1	-	-	-	955892-5	Bricka	Washer	0			02 02
33	1	-	-	-	955781-0	Mutter	Nut	0			02 02
34	1	1	-	-	845357-3	Kylvattenrör	Cooling water pipe	4			02 02
35	1	1	-	-	846484-4	Kylvattenrör	Cooling water pipe	4		297)MO-35689	02 02
	1	1	-	-	838560-1	Rör	Pipe	4		298)MO-35690-	02 02
36	1	1	-	-	838554-4	Rörhållare	Pipe retainer	2		299)	02 02
37	1	1	-	-	845354-0	Tätningarring	Seal ring	2			02 02
38	4	4	-	-	943477-0	Slangklamma	Hose clamp	0			02 02
39	ERF	ERF	-	-	952974-4	Kylarslang	Radiator hose	0		L=100MM	02 02
40	1	1	-	-	845961-2	Låsbygel	Lock brace	5		MO27606-	02 02
41	1	1	-	-	845961-2	Låsbygel	Lock brace	5		299)	02 02
42	1	1	-	-	952974-4	Kylarslang	Radiator hose	0		SE SIDA 26, 1-E03	02 02
43	1	1	-	-	1542187-8	Packning	Gasket	1			02 02
44	1	1	-	-	842697-5	Rörkrök	Pipe bend	4			02 02

297 . For rör 845356 For pipe 845356  
298 . För rör 838558 For pipe 838558  
299 . For rör 838560 For pipe 838560

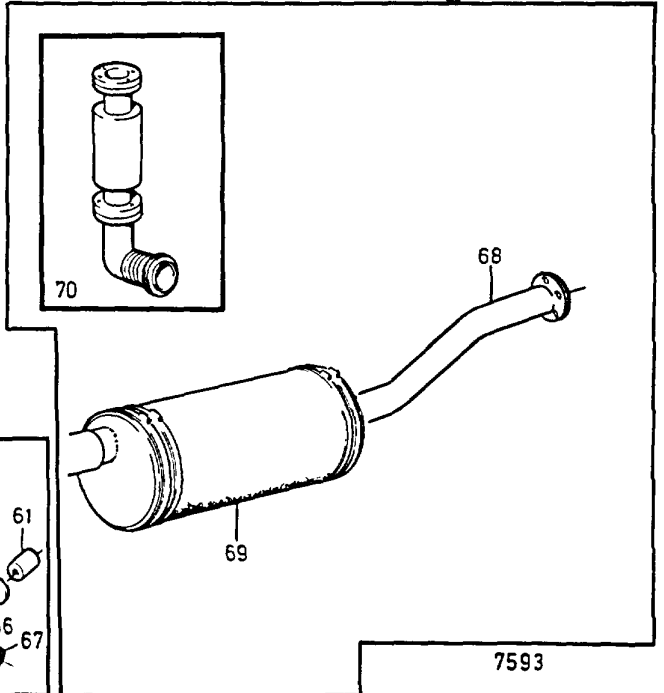
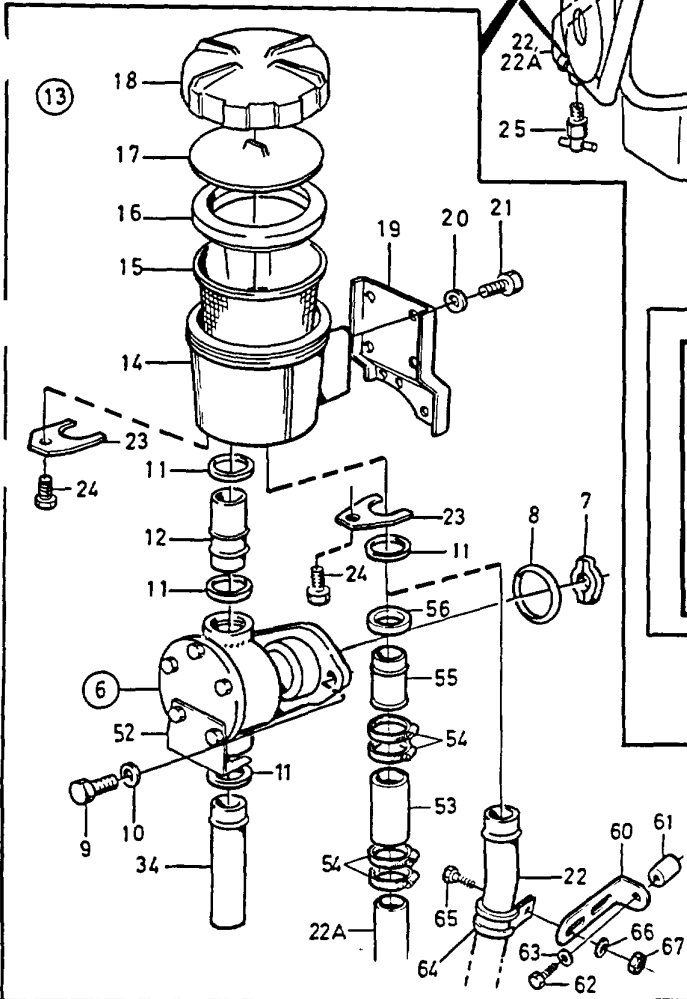
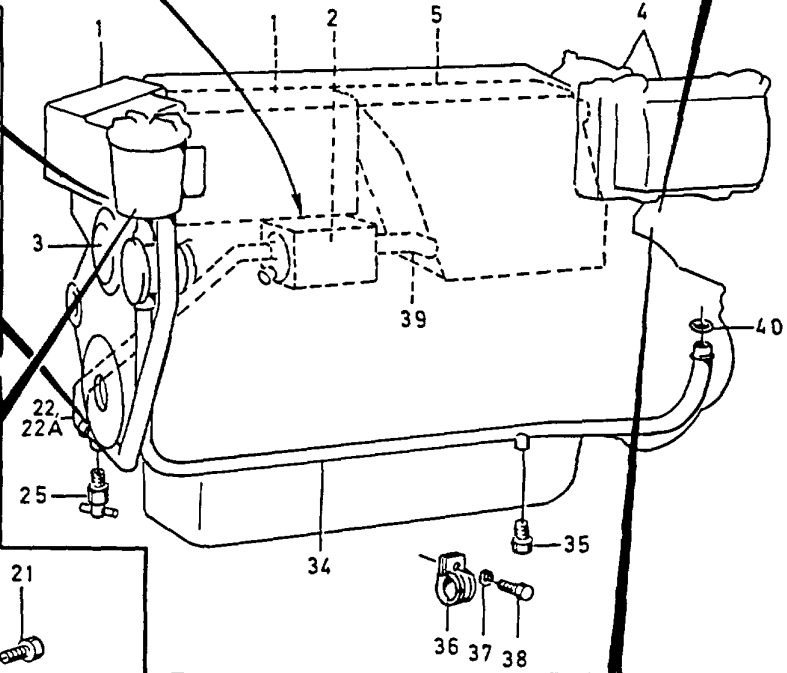
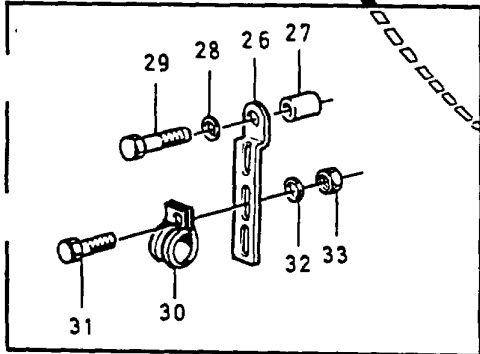
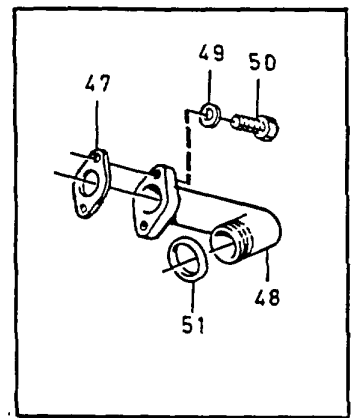
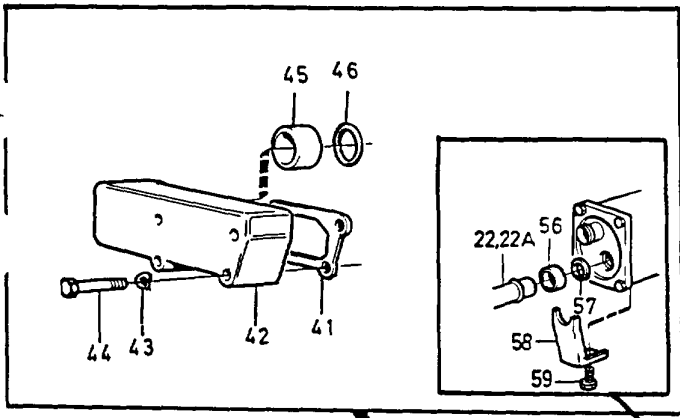


Sida Page		Grupp Group		Kylsystem,insugnings-och avgasrör		Cooling system induction-and exhaust manifold		Illustration		
12		2b		TAMD40A,TAMD40B				8544 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	TAMD 40A	TAMD 40B								
45	4	4	-	-	941907-8	Fjädrande bricka .....	Resilient washer.....	0		11
46	4	4	-	-	955305-8	Skruv .....	Screw.....	0		12
47	1	1	-	-	842965-6	Rörtätning .....	Adapter sealing .....	3	SE SIDA 60,1-F13	12
48	2	2	-	-	925067-1	O-ring .....	O-ring .....	0	SE SIDA 60,1-F13	12
49	1	1	-	-	843042-3	Packning .....	Gasket .....	1	SE SIDA 60,1-F13	12
50	1	1	-	-	842614-0	Rör .....	Pipe.....	4		12
51	2	2	-	-	941906-0	Fjädrande bricka .....	Resilient washer.....	0		13
52	2	2	-	-	955275-3	Skruv .....	Screw .....	0		13
53	1	1	-	-	925065-5	Tätning .....	Seal.....	0		13
54	1	1	-	-	842350-1	Distanshylsa .....	Spacer sleeve .....	5	297)	13
55	1	1	-	-	965561-4	Konsol .....	Bracket .....	0	297)	
56	1	1	-	-	941907-8	Fjädrande bricka .....	Resilient washer.....	0	297)	
57	1	1	-	-	955300-9	Skruv .....	Screw.....	0	297)	14
58	1	1	-	-	952641-9	Klammer .....	Clamp .....	0	297)	14
59	1	1	-	-	955271-2	Skruv .....	Screw.....	0	297)	14
60	1	1	-	-	955892-5	Bricka .....	Washer.....	0	297)	14
61	1	1	-	-	955781-0	Mutter .....	Nut .....	0	297)	
62	1	1	-	-	847017-1	Rörhållare .....	Pipe retainer .....	4	298)	
63	1	1	-	-	838557-7	Konsol .....	Bracket .....	4	298)	15
64	1	1	-	-	940132-4	Skruv .....	Screw .....	0	298)	15
65	1	1	-	-	838559-3	Slanganslutning .....	Hose connection.....	4	298)	15
66	1	1	-	-	847017-1	Rörhållare .....	Pipe retainer .....	4	298)	16
67	ERF	ERF	-	-		Vattenkyld... avgasledning	Water cooled .....		SE GRUPP 9	16
68	ERF	ERF	-	-		Vattenkyld .....	Water cooled.. .....		SE GRUPP 9	16
69	ERF	ERF	-	-		Avgasjuddampare .....	Exhaust silencer .....		SE GRUPP 9	16
			-	-		Torr avgasledning .....	Dry exhaust line .....		SE GRUPP 9	



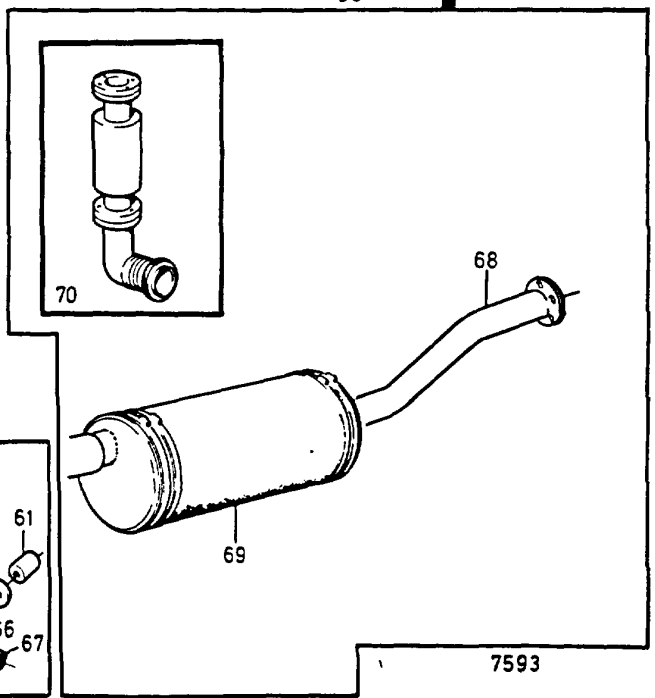
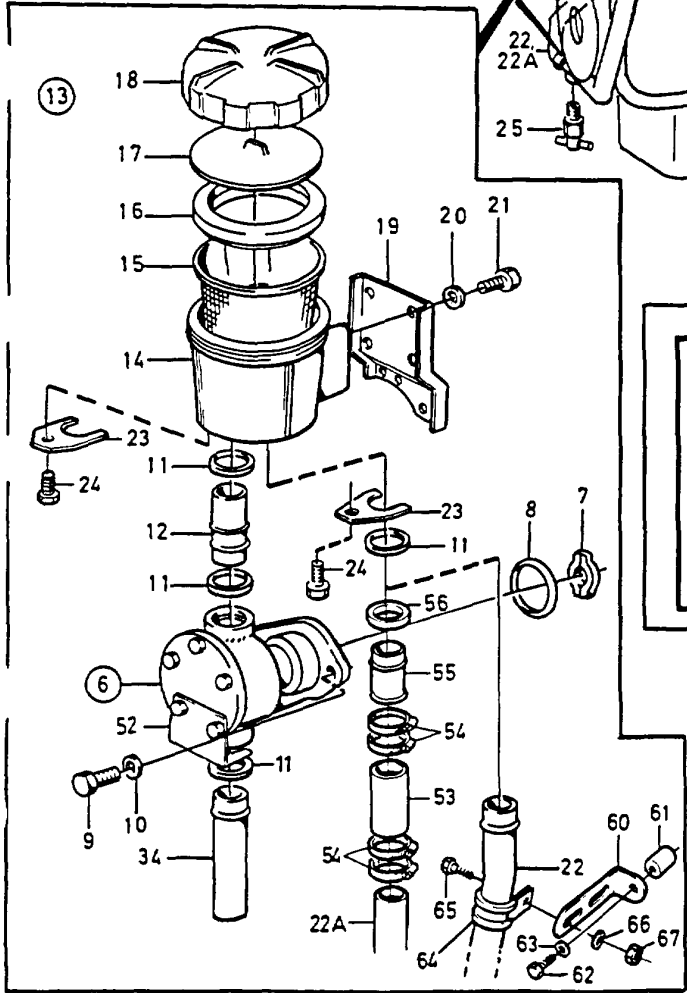
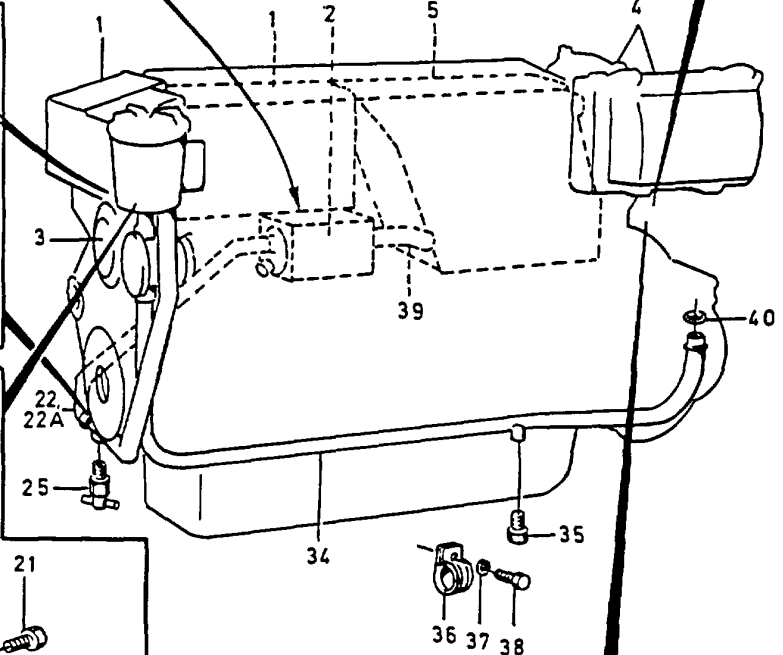
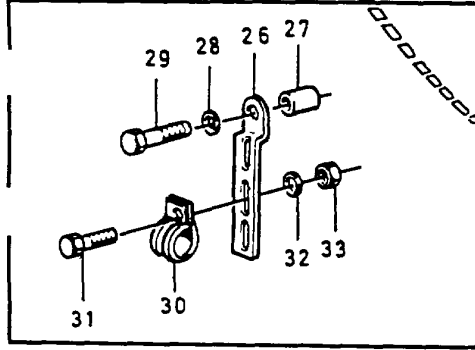
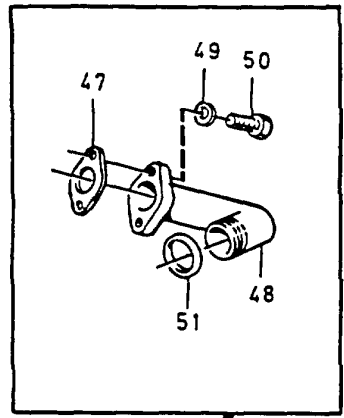
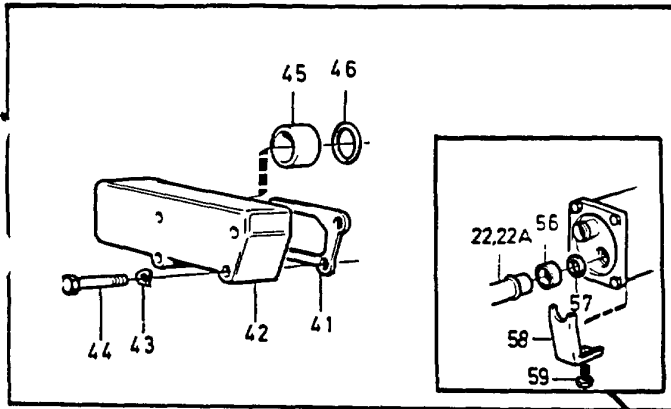
Sida Page	Grupp Group	Kylsystem,insugnings-och avgasrör	Cooling system induction-and exhaust manifold	Illustration 7593 1987-04	064
14	2b	AQAD40A,AQAD40B			

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	AQAD 40A	AQAD 40B									
1	1	1	-	-		Värmeväxlare,mellan- kylare och termostat med monteringsdetaljer	Heat exchanger,after- cooler and thermostat with installation comp			SE SIDA 24, 1-E01	00
2	1	1	-	-	838969-4	Oljekylare .Det se sida 34, 1-E11	Oil cooler .Comp page 34, 1-E11	5		(845349)MO 39858-	00 00 01
3	1	1	-	-		Cirkulationspump med monteringsdetaljer	Cirkulation pump with installation comps			SE SIDA 28, 1-E05	01 01
4	1	1	-	-		Turbokompressor och luftfilter med monteringsdetaljer	Turbo compressor and air filter with installation comps			SE SIDA 46, 1-E23	01 01 02
5	1	1	-	-		Insugnings-och avgasrör och kyl- vattendränning med monteringsdetaljer	Induction and exhaust manifold and cool. water overflow with installation comps			SE SIDA 60, 1-F13	02 02 03
6	1	1	-	-	844971-2	Sjovattenpump .Det se sida 32, 1-E09	Sea water pump .Comp page 32, 1-E09	8		MO-33190	03
	1	1	-	-	838522-1	Sjovattenpump .Det se sida 32, 1-E09	Sea water pump .Comp page 32, 1-E09	5		MO 33191-	03
7	1	1	-	-	845195-7	Korsstycke	Cross piece	3			03
8	1	1	-	-	947314-1	O-ring	O-ring	0			04
9	2	2	-	-	955295-1	Skruv	Screw	0			04
10	2	2	-	-	941907-8	Fjädrande bricka	Resilient washer	0			04
11	4	4	-	-	845354-0	Tättningsring	Seal ring	1			04
12	1	1	-	-	845355-7	Tryckledning	Pipe	3			04
13	1	1	-	-	845337-5	Sil	Strainer	3			05
14	1	1	-	-	845338-3	Silhus	Housing	6			05
15	1	1	-	-	858081-3	Sil	Strainer	4		(845327)	05
16	1	1	-	-	838977-7	Gummitätning	Rubber seal	2		(845329)	05
17	1	1	-	-	845328-4	Tryckplatta	Pressure plate	3			06
18	1	1	-	-	845317-7	Lock	Cover	5			06
19	1	1	-	-	845299-7	Konsol	Bracket	6			06
20	4	4	-	-	941907-8	Fjädrande bricka	Resilient washer	0			06
21	4	4	-	-	955293-6	Skruv	Screw	0			06
22	1	1	-	-	845356-5	Rör	Pipe	8		295)	06
22a	1	1	-	-	838558-5	Rör	Pipe	4		296)(845356)	07
23a	2	2	-	-	847018-9	Bygel	Brace	2			07
24	2	2	-	-	940199-3	Skruv	Screw	0			07
25	1	1	-	-	947893-4	Kran	Cock	0			07
26	1	1	-	-	845999-2	Konsol	Bracket	4			08
27	1	1	-	-	843075-3	Hylsa	Sleeve	5			08
28	1	1	-	-	941907-8	Fjädrande bricka	Resilient washer	0			08
29	1	1	-	-	955300-9	Skruv	Screw	0			08
30	1	1	-	-	952641-9	Klammer	Clamp	0			08
31	1	1	-	-	955271-2	Skruv	Screw	0			08
32	1	1	-	-	955892-5	Bricka	Washer	0			08
33	1	1	-	-	955781-0	Mutter	Nut	0			08
34	1	1	-	-	845443-1	Kylvattenrör	Cooling water pipe	4		EXCL AQAD40B/290,290DP	08
	1	1	-	-	838481-0	Rör	Pipe	5		AQAD40B/290,290DP	08
35	1	1	-	-	192134-5	Propp	Plug	0			10
36	2	2	-	-	949850-2	Klammer	Clamp	0			10
37	6	6	-	-	955894-1	Bricka	Washer	0			10
38	2	2	-	-	955295-1	Skruv	Screw	0			10
39	1	1	-	-	952974-4	Kylarslang	Radiator hose	0		SE SIDA 24, 1-E01	10
40	2	2	-	-	961670-7	Slangklamma	Hose clamp	0		SE GRUPP 4A	1
41	1	1	-	-	1542187-8	Packning	Gasket	1			1
42	1	1	-	-	842697-5	Rörkrok	Pipe bend	4			1
43	4	4	-	-	941907-8	Fjädrande bricka	Resilient washer	0			1
44	4	4	-	-	955305-8	Skruv	Screw	0			1
45	1	1	-	-	842965-6	Rörtätning	Adapter sealing	3		SE SIDA 60, 1-F13	1



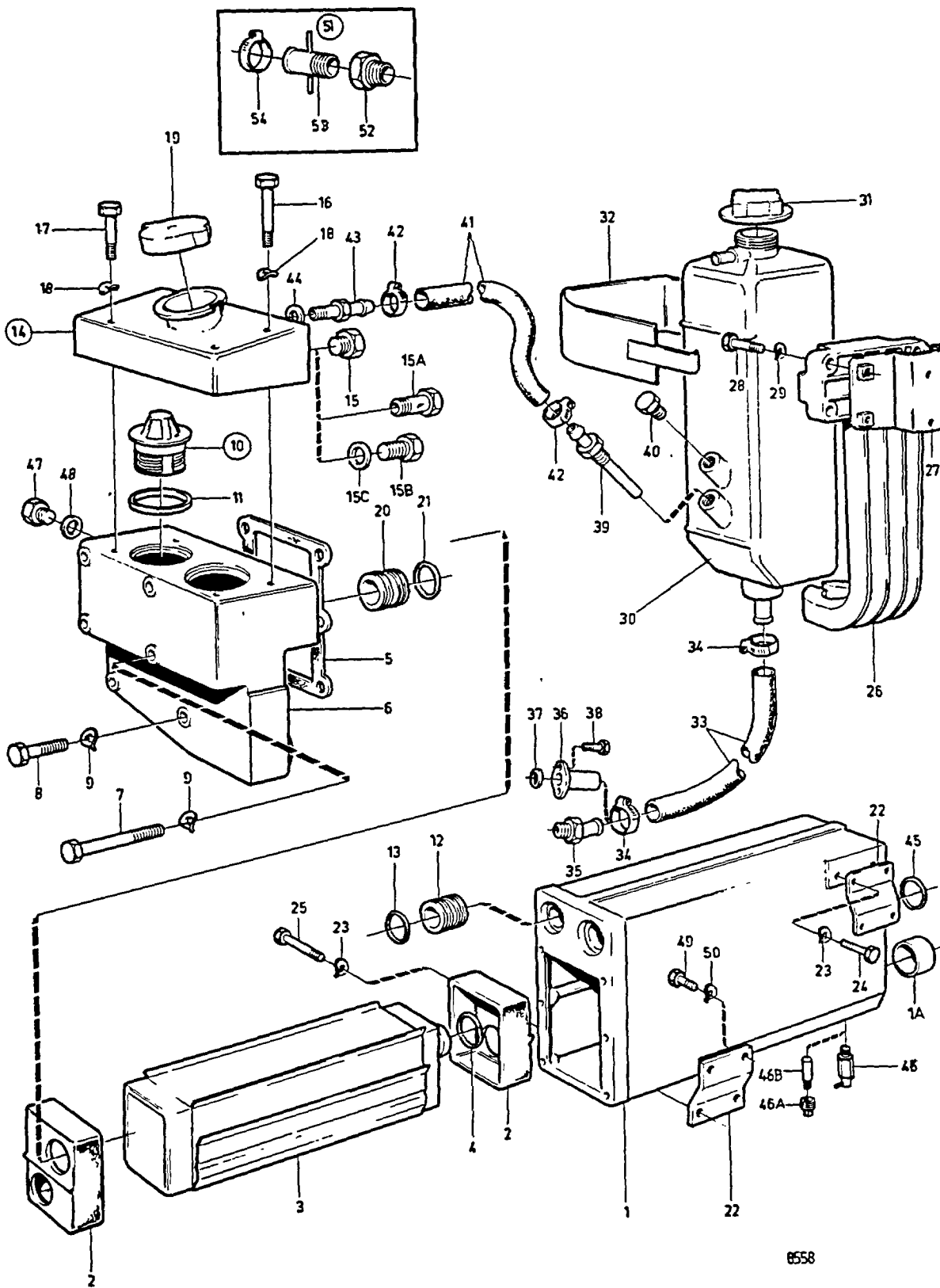


Sida Page	Grupp Group	Kylsystem,insugnings-och avgasrör		Cooling system induction-and exhaust manifold		Illustration	06			
16	2b	AQAD40A,AQAD40B				7593 1987-04				
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	AQAD 40A	AQAD 40B								
46	2	2	-	925067-1	O-ring	O-ring	0		SE SIDA 60, 1-F13	1
47	1	1	-	843042-3	Packning	Gasket	1		SE SIDA 60, 1-F13	12
48	1	1	-	842614-0	Rör	Pipe	4			12
49	2	2	-	941906-0	Fjädrande bricka	Resilient washer	0			12
50	2	2	-	955275-3	Skruv	Screw	0			13
51	1	1	-	925065-5	Tätning	Seal	0			13
52	1	1	-	845961-2	Låsbygel	Lock brace	3			13
53	1	1	-	952974-4	Kylarslang	Radiator hose	0		FÖR/FOR 838558,L=100MM	13
54	4	4	-	943477-0	Slangklamma	Hose clamp	0		FOR/FOR 838558	13
55	1	1	-	838559-3	Slanganslutning	Hose connection	4		FÖR/FOR 838558	14
56	2	2	-	847017-1	Rörhållare	Pipe retainer	4		FOR/FOR 838558	
57	1	1	-	845354-0	Tätningring	Seal ring	1			
58	-	1	-	838557-7	Konsol	Bracket	4	296)		14
59	-	1	-	940132-4	Skruv	Screw	0	296)		14
60	1	1	-	965561-4	Konsol	Bracket	4	295)		15
61	1	1	-	842350-1	Distanshylsa	Spacer sleeve	4	295)		15
62	1	1	-	955300-9	Skruv	Screw	0		SE GRUPP 2A	--
63	1	1	-	941907-8	Fjädrande bricka	Resilient washer	0			
64	1	1	-	952641-9	Klammer	Clamp	0	295)		15
65	1	1	-	955271-2	Skruv	Screw	0	295)		1E
66	1	1	-	955892-5	Bricka	Washer	0	295)		1E
67	1	1	-	955781-0	Mutter	Nut	0	295)		1E
68	ERF	ERF	-		Vattenkyld avgasledning	Water cooled exhaust line			SE GRUPP 9	1E
69	ERF	ERF	-		Vattenkyld avgasjuddampare	Water cooled exhaust silencer			SE GRUPP 9	17
70	ERF	ERF	-		Torr avgasledning	Dry exhaust line			SE GRUPP 9	17

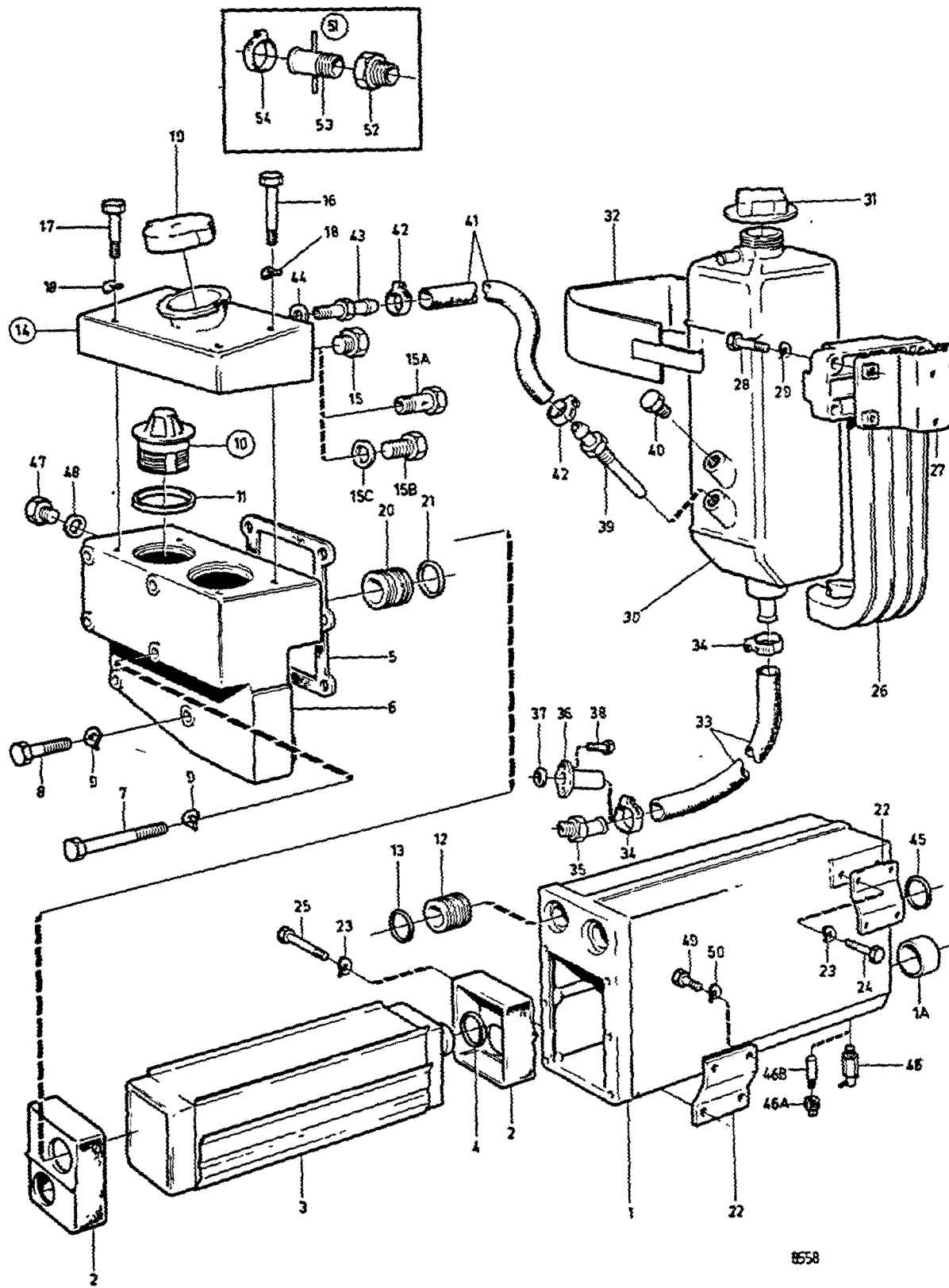


Sida Page		Grupp Group		Varmevaxlare och termostat med monteringsdetaljer		Heat exchanger and thermostat with installation components		Illustration	
18		2b		AQD40A, TMD40A, MD40A				8558 1987-04	
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	AQD 40A	TMD 40A	MD 40A						
1	1	1	1	842667-8	Varmevaxlare..	Heat exchanger	8		239) TID UTF
	1	1	1	844271-7	Varmevaxlare ..	Heat exchanger .	8		ERS AV 846573
									MO-25799
	1	1	1	846573-4	Värmvaxlare ..	Heat exchanger.	6		MO 25800-
1a	2	2	2	846584-1	Bussning .....	Bushing .....	3		MO 25800-
2	2	2	2	842695-9	Gummidamask .	Rubber hose .	S 1		
3	1	1	1	842693-4	Insats .....	Element .....	4		
4	2	2	2	925062-2	O-ring .....	O-ring .....	S 1		
5	1	1	1	842669-4	Packning .....	Gasket .....	S 1		
6	1	1	1	842683-5	Termostathus ..	Housing .....	5		
7	4	4	4	955309-0	Skruv .....	Screw .....	0		
8	2	2	2	955306-6	Skruv .....	Screw .....	0		
9	6	6	6	941907-8	Bricka .....	Washer .....	0		
10	1	1	1	875788-2	Termostat .....	Thermostat ..	1		70C
	1	1	1	875787-4	Termostat .....	Thermostat ..	1		76C
11	2	2	2	416033-9	Tatningsring ..	Seal ring .....	S 1		(418361)
12	2	2	2	842966-4	Rortatning .....	Adapter sealing...	2		
13	4	4	4	925063-0	Gummiring .....	Ring .....	S 1		
14	1	1	1	842687-6	Overdel .....	Upper part .....	5		
15	1	1	1	192154-3	Propp .....	Plug .....	1		TID UTF
15a	1	1	-	942806-1	Hålskruv .....	Hollow bolt .....	0		SEN UTF
15b	-	-	1	940148-0	Skruv .....	Bolt .....	0		SEN UTF
15c	-	-	1	957173-8	Packning .....	Packing .....	0		SEN UTF
16	2	2	2	955304-1	Skruv .....	Screw .....	0		
17	2	2	2	955302-5	Skruv .....	Screw .....	0		
18	4	4	4	941907-8	Bricka .....	Washer .....	0		
19	1	1	1	845587-5	Lock .....	Cover .....	3		(843390)
20	2	2	2	842965-6	Rortatning .....	Adapter sealing	2		
21	4	4	4	925067-1	Gummiring .....	Ring .....	S 1		
22	2	2	2	842608-2	Konsol .....	Bracket .....	5		TID UTF
	1	1	1	842608-2	Konsol .....	Bracket .....	5		SEN UTF
	1	1	1	844132-1	Konsol .....	Bracket .....	5		SEN UTF
23	4	4	4	941908-6	Fjäderbricka ..	Washer .....	0		
24	4	4	4	955317-3	Skruv .....	Screw .....	0		TID UTF, L=25MM
	2	2	2	955317-3	Skruv .....	Screw .....	0		SEN UTF, L=25MM
25	2	2	2	955324-9	Skruv .....	Bolt .....	0		MO-6918 L=60MM
	2	2	2	955326-4	Skruv .....	Bolt .....	0		MO6919-L=70MM
26	1	1	1	843260-1	Konsol .....	Bracket .....	6		
27	1	1	1	844122-2	Konsol .....	Bracket .....	6		240)
28	4	4	4	955318-1	Skruv .....	Screw .....	0		240)
29	4	4	4	941908-6	Fjäderbricka ..	Washer .....	0		240)
30	1	1	1		Expansionstank ..	Expansion tank .....	5		241) MO-4256
	1	1	1	843759-2	Expansionstank ..	Expansion tank .....	5		MO4257-
31	1	1	1	829205-4	Lock .....	Cover .....	3		MO-4256
	1	1	1	844624-7	Trycklock .....	Cover .....	3		MO4257-
32	1	1	1	843266-8	Klammer .....	Clamp .....	4		
33	ERF	ERF	ERF	952969-4	Gummislang .....	Rubber hose .....	0		(943368)
34	2	2	2	943472-1	Klammer .....	Clamp .....	0		
35	1	1	1	941534-0	Vinkelnippel..	Angle nipple..	3		TID UTF
36	1	1	1	844416-8	Rör .....	Pipe .....	3		SE SIDA 28, 1-E05
37	1	1	1	418445-3	Packning .....	Gasket .....	S 1		SEN UTF
									SEN UTF
									SE SIDA 28, 1-E05
38	2	2	2	955271-2	Skruv .....	Screw .....	0		SEN UTF
39	1	1	1	843247-8	Rör .....	Pipe .....	3		MO-4256
40	2	2	2	836268-3	Propp .....	Plug .....	3		
41	ERF	ERF	ERF	943366-5	Slang .....	Hose .....	0		
42	2	2	2	945652-6	Slangklamma ..	Clamp .....	0		

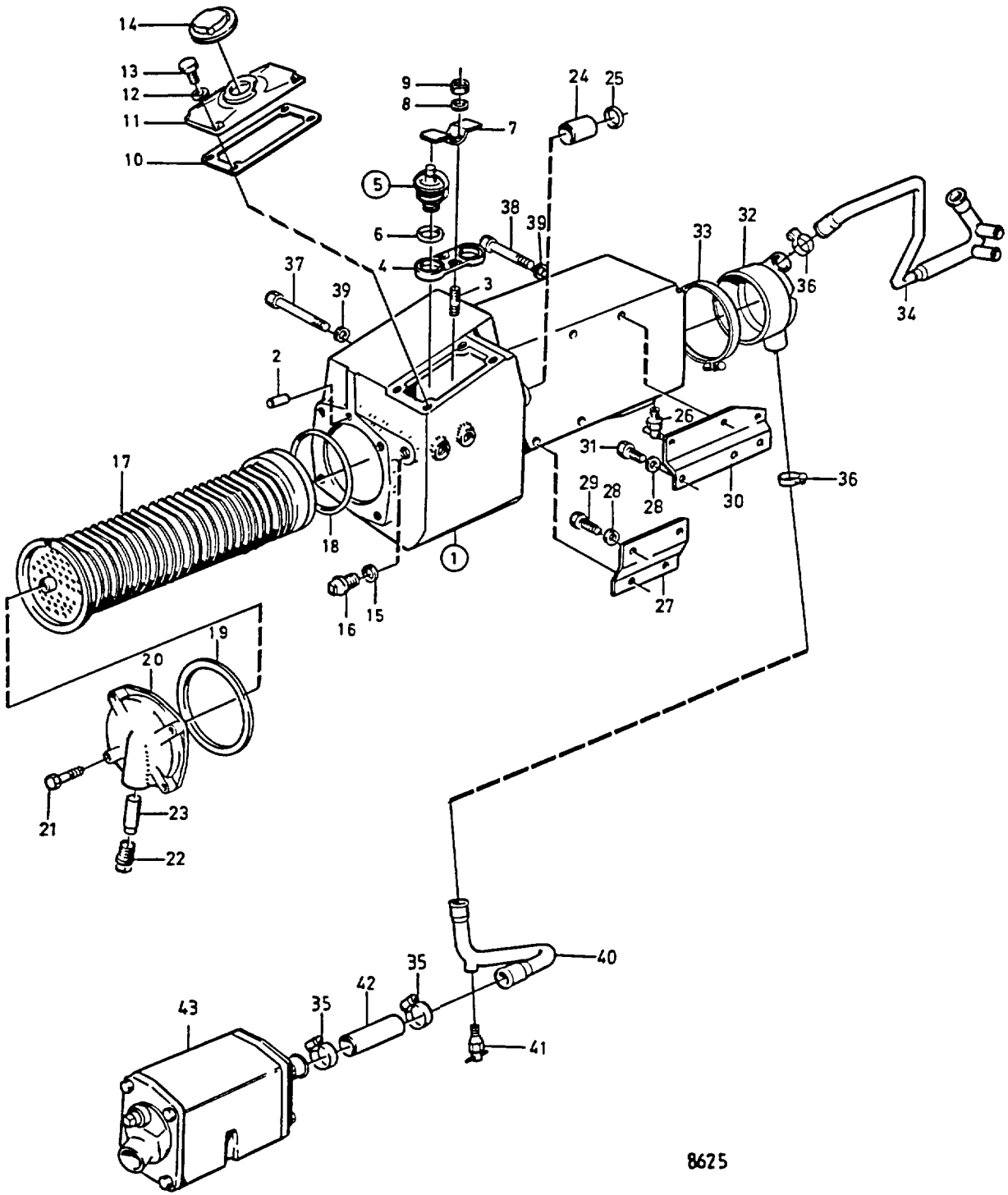
239. ERS AV 1st 844271, 1st 844132, 1st 955324, 1st 955333. Replaced by 1pc 844271, 1pc 844132, 1pc 955324, 1pc 955333.  
 240. Användes då expansionstank är monterad på termostathus. Used when expansion tank is mounted on thermostat housing  
 241. ERS AV 1st 843759, 1st 844624. Replaced by 1pc 843759, 1pc 844624.



Sida Page		Grupp Group		Värmeväxlare och termostat med monteringsdetaljer AOD40A, TMD40A, MD40A			Heat exchanger and thermostat with installation components			Illustration 8558 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
	AOD 40A	TMD 40A	MD 40A								
43	1	1	-	-	843273-4	Slangkoppling	Hose connection		3	TID UTF	10
	-	-	-	-						SE SIDA 38, 1-E15	10
	1	1	-	-	844419-2	Slanganslutning	Hose connection		3	SEN UTF	10
	-	-	1	-	844419-2	Slanganslutning	Hose connection		3		10
44	1	1	1	-	957173-8	Packning	Gasket		0		10
45	2	2	2	-	949658-9	O-ring	O-ring		S 1	(925061)	11
46	1	1	1	-	82745-1	Kran	Cock		3	MO-13005	11
46a	1	1	1	-	800475-6	Propp	Plug		2	367)MO13006-	11
	1	1	1	-	838928-0	Propp	Plug		0		11
46b	1	1	1	-	838929-8	Elektrod	Electrode		0		11
47	1	1	1	-	944507-3	Propp	Plug		0	MO7054-	**
48	1	1	1	-	957184-5	Packning	Gasket		0	MO7054-	
49	2	2	2	-	955317-3	Skruv	Screw		0		12
	1	1	1	-	955322-3	Skruv	Screw		0	L=120MM	12
	1	1	-	-	955332-2	Skruv	Screw		0	L=120MM, TID UTF	12
	-	-	1	-	955332-2	Skruv	Screw		0	L=120MM, SE SIDA 56, 1-F09	12
	-	-	-	-					0	L=120MM	12
	1	1	-	-	955333-0	Skruv	Screw		0	SE SIDA 54, 1-F07	13
	-	-	1	-	955333-0	Skruv	Screw		0	L=130MM, SEN UTF	13
	-	-	-	-					0	SE SIDA 56, 1-F09	13
	-	-	-	-					0	L=130MM	13
	-	-	-	-					0	SE SIDA 54, 1-F07	13
50	4	4	4	-	941908-6	Fjäderbricka	Washer		0		13
51	1	1	1	-	845277-3	Varmvattenuttag	Hot water supply		6	SE SIDA 28, 1-E05	13
52	2	2	2	-	16291-7	Forskruvning	Screw union		0		13
53	2	2	2	-	365287-2	Kran	Cock		2		14
54	2	2	2	-	961666-5	Slangklamma	Hose clamp		0		*



Sida Page		Grupp Group		Värmeväxlare och termostat med monteringsdetaljer TMD40B,TMD40C			Heat exchanger and thermostat with installation components			Illustration 8625 1987-04		08'
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes		
	TMD 40B	TMD 40C										
1	1	-	-	-	844936-5	Värmeväxlarhus	Heat ex housing	8		277)MO-37124		
	1	1	-	-	838429-9	Värmeväxlarhus	Heat ex housing	6				
2	1	1	-	-	951940-6	Spännstift	Tension pin	0			00	
3	1	1	-	-	924060-7	Pinnskruv	Stud bolt	0			00	
4	1	1	-	-	845285-6	Termostatållare	Thermostat holder	4			01	
5	1	1	-	-	875788-2	Termostat	Thermostat	1		70C	01	
	1	1	-	-	875787-4	Termostat	Thermostat	1		76C	01	
6	2	2	-	-	416033-9	Tätningring	Seal ring	S	1		01	
7	1	1	-	-	845852-3	Skärmplåt	Baffle cover	5			01	
8	2	2	-	-	941670-2	Bricka	Washer	0			02	
9	2	2	-	-	946330-8	Mutter	Nut	0			02	
10	1	-	-	-	845291-4	Packning	Gasket	2		TID UTF		
	2	-	-	-	845291-4	Packning	Gasket	2		SEN UTF		
	-	2	-	-	845291-4	Packning	Gasket	2			02	
11	1	1	-	-	845284-9	Lock	Cover	5			03	
12	4	4	-	-	941907-8	Fjädrande bricka	Resilient washer	0			03	
13	4	4	-	-	955295-1	Skruv	Screw	0			03	
14	1	1	-	-	845879-6	Lock	Cover	2				
15	2	2	-	-	957184-5	Bricka	Washer	0			04	
16	2	2	-	-	944507-3	Propp	Plug	0			04	
17	1	1	-	-	845198-1	Insats	Element	3		ERS AV 838590	04	
	1	1	-	-	838590-8	Insats	Element	3		ERS AV 858833	04	
	1	1	-	-	858833-7	Insats	Element	3			04	
18	1	1	-	-	925096-0	O-ring	O-ring	S	0		04	
19	1	1	-	-	845301-1	Packning	Gasket	S	1		04	
20	1	1	-	-	846240-0	Gavellock	End cover	5			04	
21	4	4	-	-	940132-4	Skruv	Screw	0			04	
22	1	1	-	-	838928-0	Propp	Plug	2		(800475)		
23	1	1	-	-	838929-8	Zinkelektrod	Zinc electrode	1		(804107)		
24	2	2	-	-	842965-6	Rortätning	Adapter sealing	2			00	
25	4	4	-	-	925067-1	O-ring	O-ring	S	0		00	
26	1	1	-	-	947893-4	Kran	Cock	0			00	
27	1	1	-	-	845137-9	Konsol	Bracket	5			00	
28	5	5	-	-	941908-6	Fjädrande bricka	Resilient washer	0			00	
29	2	2	-	-	955317-3	Skruv	Screw	0			00	
30	1	1	-	-	845138-7	Konsol	Bracket	0			00	
31	5	5	-	-	955334-8	Skruv	Screw	0			00	
32	1	1	-	-	845373-0	Gavel	Cover	5				
33	2	2	-	-	961678-0	Slangklamma	Hose clamp	0				
34	1	1	-	-	838304-4	Rör	Pipe	5		SE GRUPP 4A	00	
35	2	2	-	-	943475-4	Slangklamma	Hose clamp	0			00	
36	2	2	-	-	961670-7	Slangklamma	Hose clamp	0			00	
37	5	5	-	-	955334-8	Skruv	Screw	0			00	
38	3	3	-	-	955333-0	Skruv	Screw	0			00	
39	5	5	-	-	941908-6	Fjädrande bricka	Resilient washer	0			00	
40	1	1	-	-	846868-8	Rörkrök	Pipe bend			SE SIDA 6, 1-D07	00	
41	1	1	-	-	82745-1	Kran	Cock			SE SIDA 6, 1-D07	00	
42	1	1	-	-	944386-2	Slang	Hose	0		L=50MM	00	
43	1	1	-	-	838968-6	Oljekylare	Oil cooler			(842589)	00	
										SE SIDA 34, 1-E11	00	



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Sida Page	Grupp Group	Varmeväxlare, mellankylare och termostat med monteringsdetaljer	Heat exchanger, after cooler and thermostat with installation comps	Illustration 8545 1987-04	082
24	2b	AQAD40A, TAMD40A, AQAD40B, TAMD40B			

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	AQAD 40A	TAMD 40A	AQAD 40B	TAMD 40B							
1	1	1	1	1	844936-5	Varmevaxlarhus ...	Heat ex housing ...	8		277) MO-37124	00
	1	1	1	1	838429-9	Varmevaxlarhus ....	Heat ex housing .....	6			004
2	1	1	1	1	951940-6	Spannstift .....	Tension pin .....	0			00E
3	2	2	2	2	924060-7	Pinnskruv .....	Stud bolt .....	0			00E
4	1	1	1	1	845285-6	Termostathållare .....	Thermostat holder .....	4			01C
5	1	1	1	1	875788-2	Termostat .....	Thermostat .....	1		70C	01Z
	1	1	1	1	875787-4	Termostat .....	Thermostat .....	1		267) 76C	014
6	2	2	2	2	416033-9	Tätningsskiva .....	Seal ring .....	S	1		01E
7	1	1	1	1	845852-3	Skarmplåt .....	Baffle cover .....	5			01E
8	2	2	2	2	941670-2	Bricka .....	Washer .....	0			02C
9	2	2	2	2	946330-8	Mutter .....	Nut .....	0			02C
10	2	2	2	2	845291-4	Packning .....	Gasket .....	2		SEN UTF	02C
11	1	1	1	1	845284-9	Lock .....	Cover .....	5			02E
12	4	4	4	4	941907-8	Fjädrande bricka .....	Resilient washer .....	0			02E
13	4	4	4	4	955295-1	Skruv .....	Screw .....	0			03C
14	1	1	1	1	845879-6	Lock .....	Cover .....	2			03Z
15	2	2	2	2	957184-5	Kopparbricka .....	Copper washer .....	0			03Z
16	2	2	2	2	944507-3	Propp .....	Plug .....	0			03Z
17	1	1	1	1	845198-1	Insats .....	Element .....	3		ERS AV 838590	03Z
	1	1	1	1	838590-8	Insats .....	Element .....	3		ERS AV 858833	03Z
	1	1	1	1	858833-7	Insats .....	Element .....	3			03Z
18	1	1	1	1	925096-0	O-ring .....	O-ring .....	S	0		04Z
19	1	1	1	1	845301-1	Packning .....	Gasket .....	S	1		04
20	1	1	1	1	845286-4	Gavellock .....	End cover .....	8		366) MO-29567	04
21	1	1	1	1	845300-3	Klamkopplingsflans...	Coupling flange .....	8		366) MO-29567	04
21a	1	1	1	1	846240-0	Gavellock .....	End cover .....	5		MO29568-	04
21b	4	4	4	4	940132-4	Skruv .....	Screw .....	0			0
22	4	4	4	4	941907-8	Fjädrande bricka .....	Resilient washer .....	0		MO-29567	0
23	4	4	4	4	955297-7	Skruv .....	Screw .....	0		MO-29567	05
	4	4	4	4	940132-4	Skruv .....	Screw .....	0		MO 29568-, L=35MM	05
24	1	1	1	1	838928-0	Propp .....	Plug .....	2		(800475)	05
25	1	1	1	1	838929-8	Zinkelektrod .....	Zinc electrode .....	1		(804107)	05
26	2	2	2	2	842965-6	Rortätning .....	Adapter sealing .....	2		SE SIDA 60, 1-F13 SE SIDA 28, 1-E05	06
27	4	4	4	4	925067-1	O-ring .....	O-ring .....	S	0		06
28	1	1	1	1	947893-4	Kran .....	Cock .....	2			06
29	1	1	1	1	845137-9	Konsol .....	Bracket .....	5			06
30	5	5	5	5	941908-6	Fjädrande bricka .....	Resilient washer .....	0			07
31	2	2	2	2	955317-3	Skruv .....	Screw .....	0			07
32	1	1	1	1	845138-7	Konsol .....	Bracket .....	5			07
33	3	3	3	3	955333-0	Skruv .....	Screw .....	0		TID UTF	07
34	5	5	5	5	955334-8	Skruv .....	Screw .....	0			07
35	1	1	1	1	845373-0	Gavel .....	Cover .....	2			0E
36	2	2	2	2	961678-0	Slangklamma .....	Hose clamp .....	0			0E
37	1	-	-	-	858038-3	Rör .....	Pipe .....	5		EXCL AQAD40B/290,290DP	0E
	-	-	1	-	858037-5	Rör .....	Pipe .....	5		AQAD40B/290,290DP	0E
	-	1	-	-	858038-3	Rör .....	Pipe .....	5		270)	0E
	-	1	-	-	858039-1	Rör .....	Pipe .....	5		271) SE GRUPP 4A	0E
38	1	1	1	1	947893-4	Kran .....	Cock .....	0			0E
39	2	-	-	-	961670-7	Slangklamma .....	Hose clamp .....	0			0E
40	2	2	2	2	952641-9	Klammer .....	Clamp .....	0			0E
41	2	2	2	2	955268-8	Skruv .....	Screw .....	0			0E
42	ERF	ERF	ERF	ERF	858471-6	Gummislang .....	Rubber hose .....	0		(952976) L=70MM	0E
43	1	1	1	1	845374-8	Rör .....	Pipe .....	3			1E
44	1	1	1	1	961669-9	Slangklamma .....	Hose clamp .....	0			1

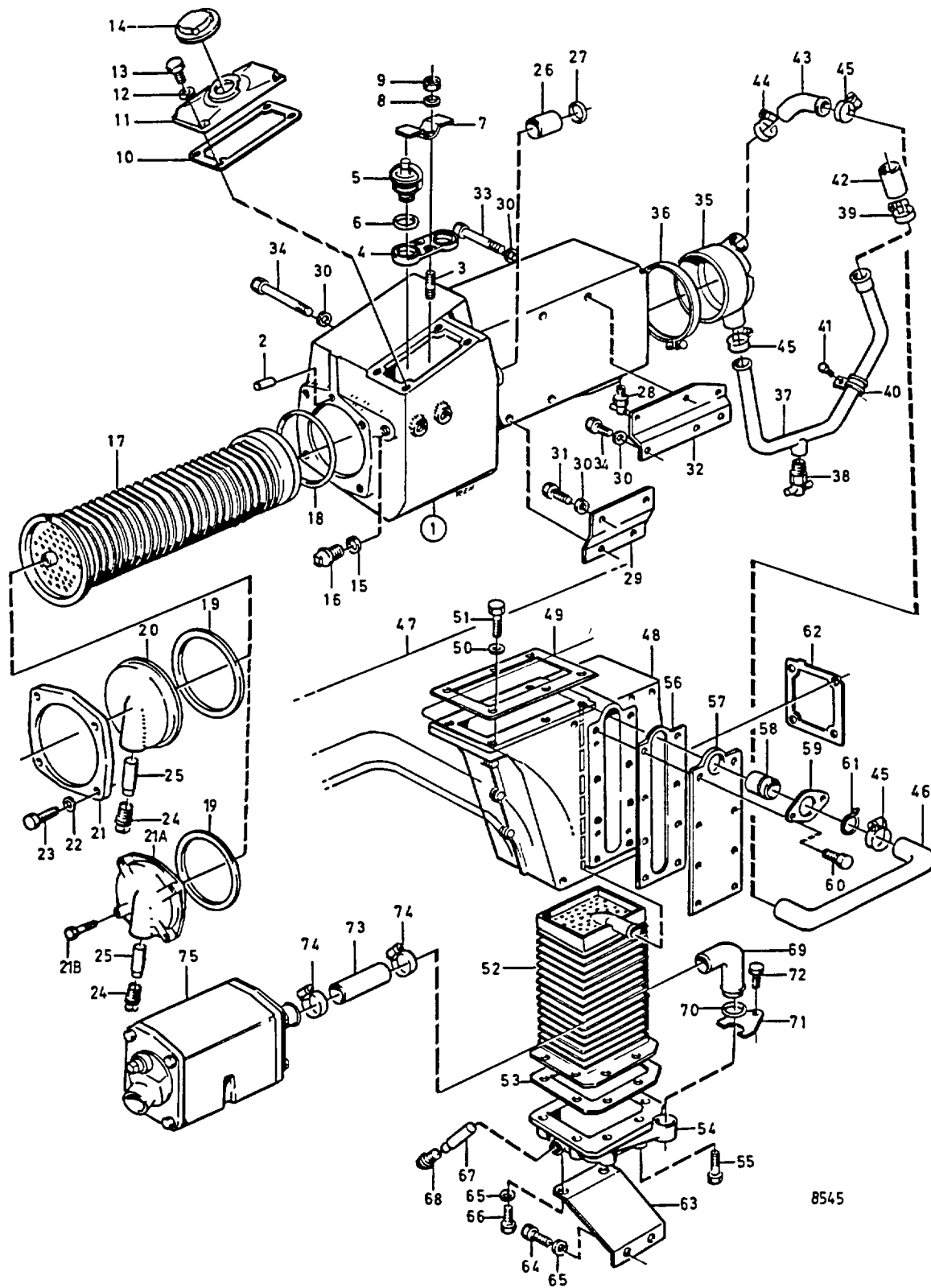
267. AQAD40A SPEC 867562 MO 21734-. AQAD40A SPEC 867562 MO 21734-.

270. TAMD40A SPEC 867563, 867564. TAMD40A SPEC 867563, 867564.

271. TAMD40A EXCL SPEC 867565. TAMD40A EXCL SPEC 867565.

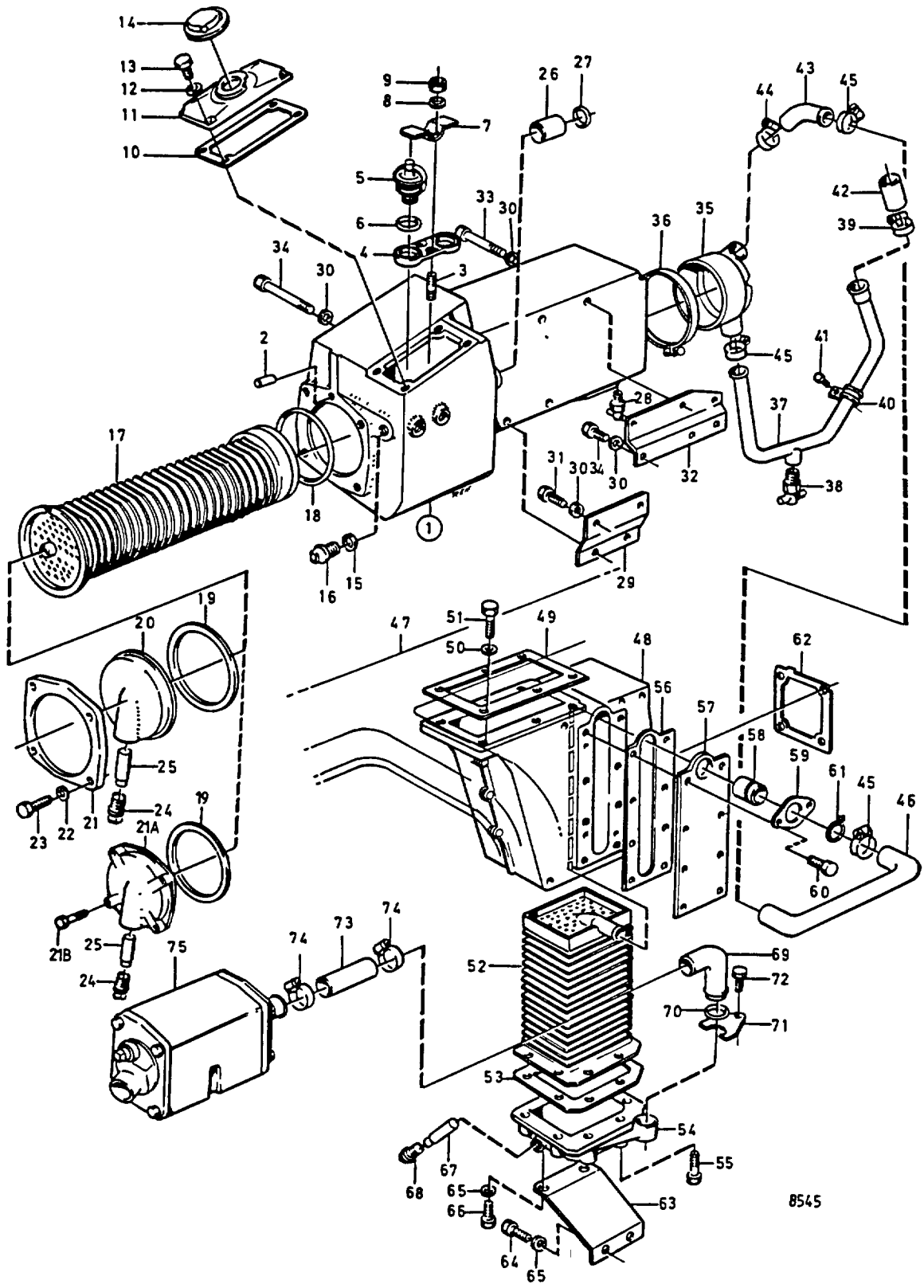
277. Ersatt av varmeväxlarhus 838429+zinkelektrod 838929. Replaced by housing 838429+zinc electrode 838929. 804107.

366. Gavellock-845286 och FLÅNS-845300 ar ersatta av GAVELLOCK-846240. End COVER-845286 and FLANGE-845300 are replaced by ENDCOVER-846420.



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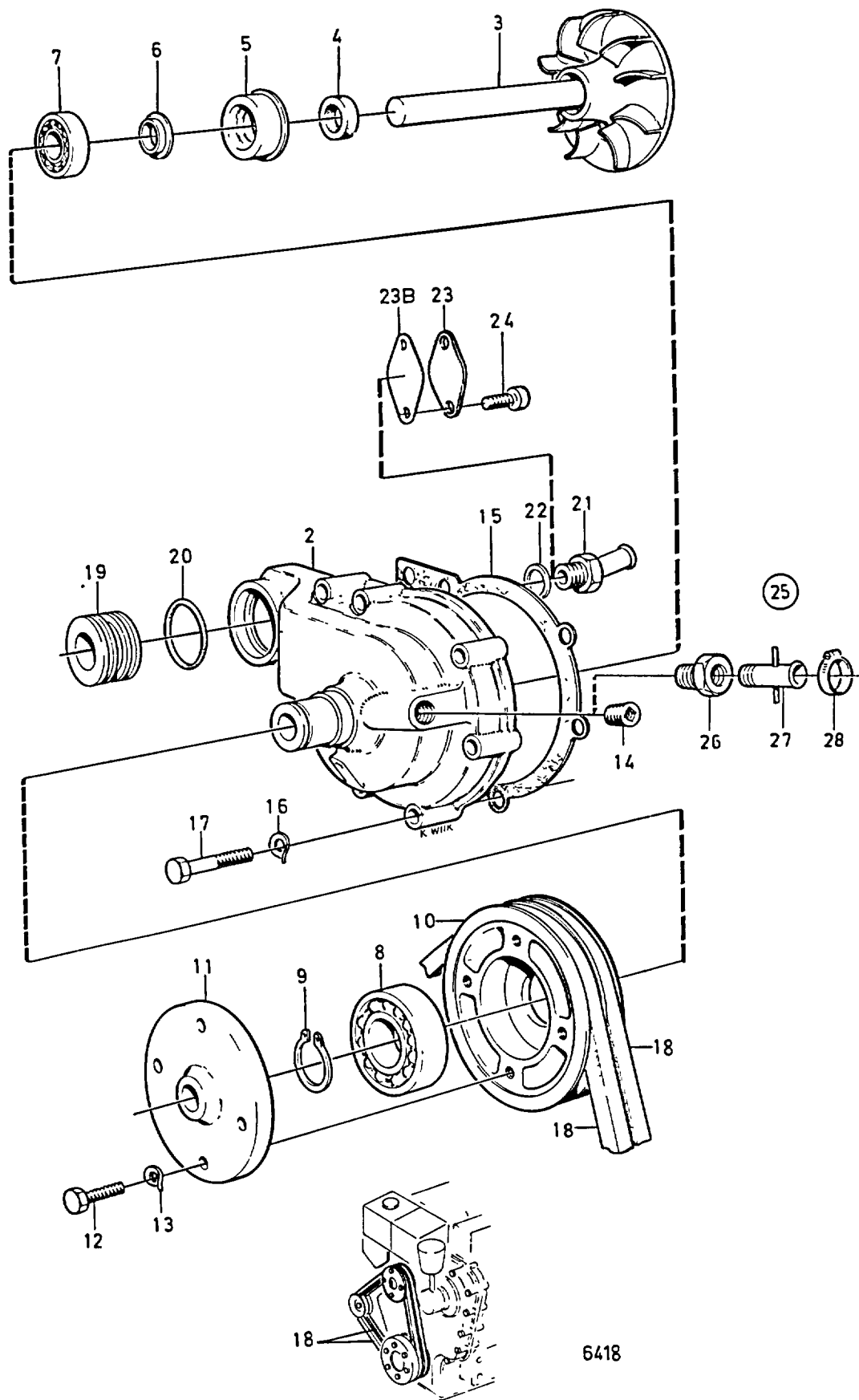
Sida Page	Grupp Group	Värmeväxlare, mellankylare och termostat med monteringsdetaljer				Heat exchanger, after cooler and thermostat with installation comp				Illustration 8545 1987-04	08'
26	2b	AQAD40A, TAMD40A, AQAD40B, TAMD40B									
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	AQAD 40A	TAMD 40A	AQAD 40B	TAMD 40B							
45	2	2	2	2	2	961670-7	Slangklamma	Hose clamp	0		1
46	1	1	1	1	1	845359-9	Kylvattenslang	Cooling water hose	2		10
47	1	1	1	1	1		Insugningsror	Inlet manifold		SE SIDA 60, 1-F13	10
48	1	1	1	1	1	845582-6	Hus	Housing	6		11
49	1	1	1	1	1	844084-4	Packning	Gasket	S	SE SIDA 60, 1-F13	11
50	6	6	6	6	6	941907-8	Fjädrande bricka	Resilient washer	0		11
51	4	4	4	4	4	955304-1	Skruv	Screw	0	L=70MM	11
	2	2	2	2	2	955303-3	Skruv	Screw	0	L=65MM	11
52	1	1	1	1	1	844888-8	Mellankylarinsats	Interm cooler element	8	MO-38214	12
	-	-	-	-	-					ERS AV 838547	12
	1	1	1	1	1	838547-8	Insats	Insert	3	MO38215-	12
53	2	2	2	2	2	845334-2	Packning	Seal	8	MO-38214	12
	2	2	2	2	2	838979-3	Packning	Gasket	S	MO38215-	12
54	1	1	1	1	1	845297-1	Lock	Cover	5		13
55	2	2	2	2	2	940142-3	Skruv	Screw	0	L=30MM	13
	2	2	2	2	2	955300-9	Skruv	Screw	0	L=50MM	13
	3	3	3	3	3	955301-7	Skruv	Screw	0	L=55MM	13
56	1	1	1	1	1	859047-3	Packning	Gasket	S	(845585)	13
57	1	1	1	1	1	845583-4	Täckplåt	Cover plate	5		13
58	1	1	1	1	1	845336-7	Tätning	Seal	3		14
59	1	1	1	1	1	845584-2	Flans	Flange	3		14
60	8	8	8	8	8	955271-2	Skruv	Screw	0		14
61	1	1	1	1	1	845385-4	Klamma	Clamp	2		14
62	1	1	1	1	1	845353-2	Packning	Gasket	1	SE SIDA 60, 1-F13	15
63	1	1	1	1	1	845323-5	Konsol	Bracket	6		15
64	2	2	2	2	2	955295-1	Skruv	Screw	0		15
65	4	4	4	4	4	941907-8	Fjädrande bricka	Resilient washer	0		15
66	1	1	1	1	1	955294-4	Skruv	Screw	0	L=16MM	15
	1	1	1	1	1	955301-7	Skruv	Screw	0	L=55MM	15
67	1	1	1	1	1	838928-0	Zinkelektrod	Zinc electrode	1	(800476)	16
68	1	1	1	1	1	838929-8	Propp	Plug	2	(800475)	16
69	1	1	1	1	1	845358-1	Kylvattenrör	Cooling water pipe	3		16
70	1	1	1	1	1	845354-0	Tätningsring	Seal ring	1		16
71	1	1	1	1	1	845704-6	Bygel	Brace	3		17
72	1	1	1	1	1	963554-1	Skruv	Screw	0		17
73	ERF	ERF	ERF	ERF	ERF	952974-4	Kylarslang	Radiator hose	0	L=60MM	17
74	2	2	2	2	2	961670-7	Slangklamma	Hose clamp	0		17
75	1	1	1	1	1	838969-4	Oljekylare	Oil cooler		SE SIDA 34, 1-E11	17



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Sida Page	Grupp Group	Cirkulationspump monteringsdetaljer				Circulation pump with installation components				Illustration 6418	090
28	2b	MD40A,AQD40A,TMD40A,AQAD40A, AQAD40B,TAMD40A,TAMD40B								1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	844422-6	Cirkulationspump.....	Circulation pump.....	5		242)(829472)TID UTF SEN UTF	00 004 006 006 010 012 014 016 018 020
2	1	-	-	-		.Hus.....	.Housing .....	8			
3	1	-	-	-		.Axel med skovelhjul.....	.Shaft with impeller.....	S 8			
4	1	-	-	-	421306-2	.Slitring.....	.Wear ring.....	S 1			
5	1	-	-	-	1545283-2	.Tätningssring.....	.Seal ring.....	S 1		(1542833) MO 31380-	
6	1	-	-	-	70913-9	.Avkastare.....	.Slinger.....	S 1			
7	1	-	-	-	1660609-7	.Kullager.....	.Ball bearing.....	S 1		(181670)	
8	1	-	-	-	181538-0	.Kullager.....	.Ball bearing.....	S 1			
9	1	-	-	-	914462-7	.Låsring.....	.Lock ring.....	S 1			
10	1	-	-	-	1542235-5	.Remskiva.....	.Pulley.....	5			
11	1	-	-	-	1542236-3	.Nav.....	.Hub.....	4			
12	4	-	-	-	955295-1	.Skruv.....	.Screw.....	0			026
13	4	-	-	-	941907-8	.Bricka.....	.Washer.....	S 1			028
14	1	-	-	-	952077-6	.Propp.....	.Plug.....	0			030
15	1	-	-	-	1542229-8	Packning.....	Gasket.....	S 1			032
16	7	-	-	-	941907-8	Bricka.....	Washer.....	0			
17	6	-	-	-	955298-5	Skruv.....	Screw.....	0			
18	1	-	-	-	955307-4	Skruv.....	Screw.....	0		L=100MM, SE GRUPP 3	038
					958359-2	Kilrem.....	Drive belt.....	1		L=2X1100MM SE GRUPP 3	040 042
19	1	-	-	-	842965-6	Rörtätning.....	Adapter sealing.....	3		SE SIDA 18, 1-D19 SE SIDA 24, 1-E01	044 046
20	2	-	-	-	925067-1	Gummiring.....	Ring.....	S 1		SE SIDA 18, 1-D19 SE SIDA 24, 1-E01	048 050
21	1	-	-	-	941534-0	Vinkelnippel.....	Angle nipple.....	3		261) TID UTF SE SIDA 18, 1-D19 SE SIDA 24, 1-E01	052 054 056
22	1	-	-	-	418445-3	Packning.....	Seal ring.....	1		261) SEN UTF	058
	1	-	-	-	418771-2	Packning.....	Gasket.....	1		SE SIDA 24, 1-E01 SE SIDA 18, 1-D19	059 061
23	1	-	-	-	418213-5	Flans.....	Flange.....	4		260)	062
23b	1	-	-	-	418771-2	Packning.....	Gasket.....	1		(418214)	063
24	2	-	-	-	955271-2	Skruv.....	Screw.....	0		260)	064
25	1	-	-	-	845277-3	Varmvattenuttag.....	Hot water supply.....	6		SE SIDA 20, 1-D21 SE SIDA 24, 1-E01	065 067
26	2	-	-	-	16291-7	.Förskruvning .....	.Screw union.....	0			068
27	2	-	-	-	365287-2	.Kran.....	.Cock.....	2			
28	2	-	-	-	961666-5	.Slangklamma.....	.Hose clamp.....	0			
	1	-	-	-	875626-4	Reparationssats.....	Repair kit.....			SE GRUPP 10A	069

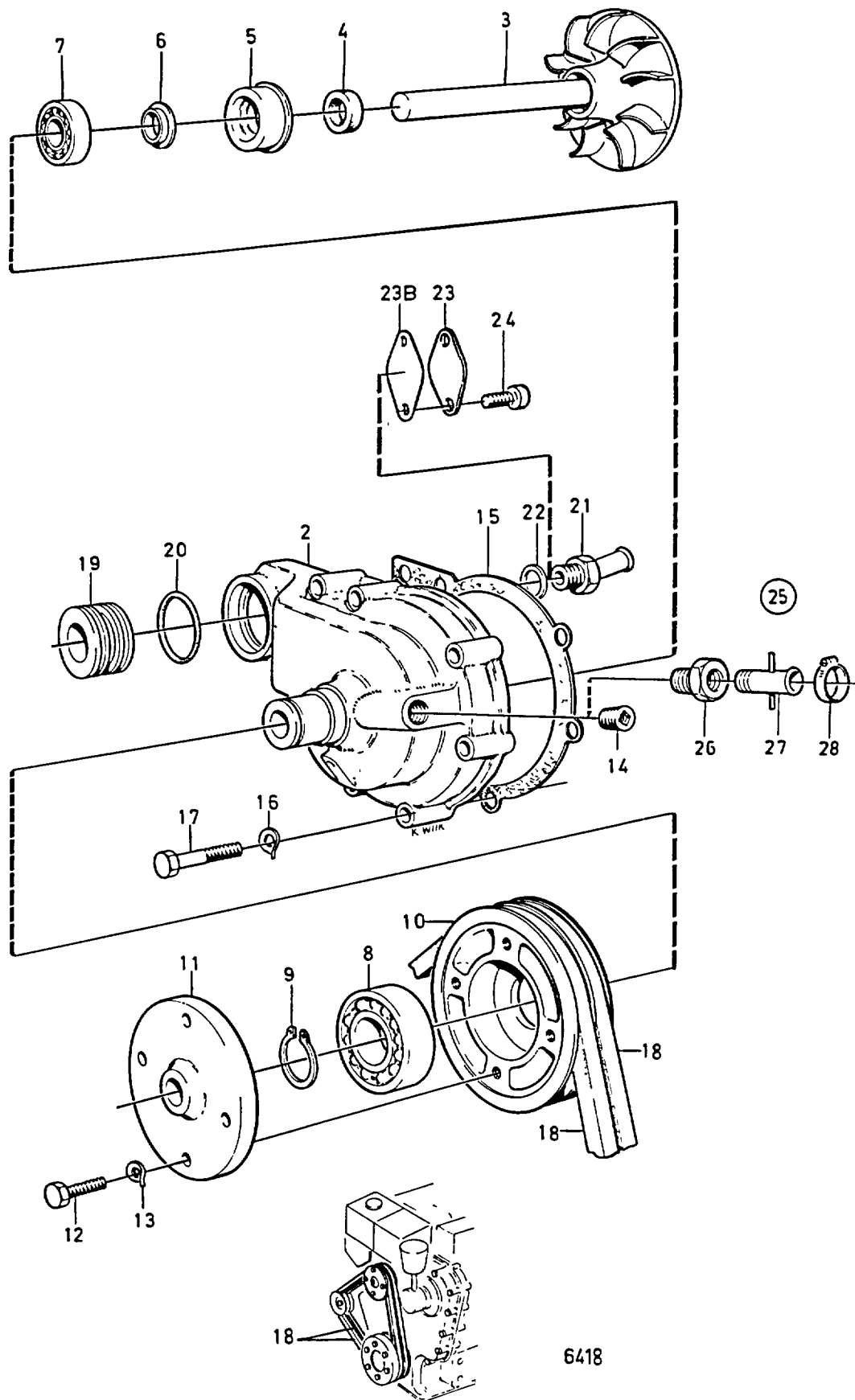
242 . ERS AV 1st 844422, 1st 844416, 1st 418445, 2st 955271. Replaced by 1pc 844422, 1pc 844416, 1pc 418445, 2pcs 955271.  
 260 . För spec. 867560 867561 867562 867563 867564 867565. For spec. 867560 867561 867562 867563 867564 867565.  
 261 . Excl spec. 867560 867561 867562 867563 867564 867565. Excl spec. 867560 867561 867562 867563 867564 867565.



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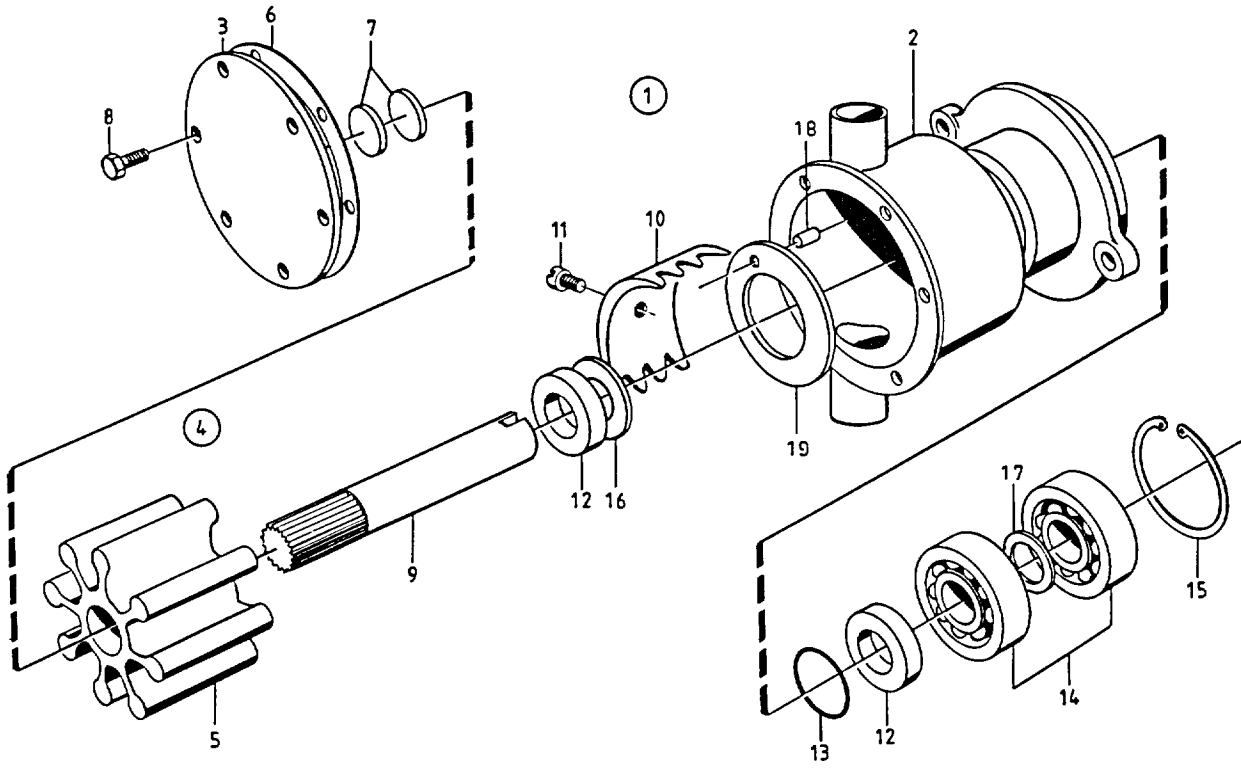
Sida Page	Grupp Group	Cirkulationspump monteringsdetaljer			Circulation pump with installation components			Illustration 6418 1987-04	091	
30	2b	TMD40B,TMD40C								
Pos Fig	Antal/Quantity			Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-		Cirkulationspump...			242(829472) TID UTF	0C
	1	-	-	-	844422-6	Cirkulationspump...			5 SEN UTF	004
2	1	-	-	-		.Hus .....			8	00E
3	1	-	-	-		.Axel med skovelhjul .....			8	00E
4	1	-	-	-	421306-2	.Slitring .....	S		1	01C
5	1	-	-	-	1545283-2	.Tatningsring .....	S		1 (1542833) MO 31380-	012
6	1	-	-	-	70913-9	.Avkastare .....	S		1	014
7	1	-	-	-	1660609-7	.Kullager .....	S		1 (181670)	01E
8	1	-	-	-	181538-0	.Kullager .....	S		1	01E
9	1	-	-	-	914462-7	.Låsring .....	S		1	02C
10	1	-	-	-	1542235-5	.Remskiva .....			5	
11	1	-	-	-	1542236-3	.Nav .....			4	
12	4	-	-	-	955295-1	.Skruv .....			0	02E
13	4	-	-	-	941907-8	.Bricka .....	S		1	02E
14	1	-	-	-	952077-6	.Propp .....			0	03C
15	1	-	-	-	1542229-8	Packning .....	S		1	03C
16	7	-	-	-	941907-8	Bricka .....			0	
17	6	-	-	-	955298-5	Skruv .....			0	
	1	-	-	-	955307-4	Skruv .....			0	
18	1	-	-	-	958359-2	Kilrem .....			1 L=100MM, SE GRUPP 3 L=2X1100MM	03E 04C
19	1	-	-	-	842965-6	Rörtätning .....			3 SE GRUPP 3	04C
20	2	-	-	-	925067-1	Gummiring .....	S		1 SE SIDA 22, 1-D23	04C
21	1	-	-	-	941534-0	Vinkelnippel .....			3 261) TID UTF	04E
22	1	-	-	-	418445-3	Packning .....			1 261) SEN UTF	05C
23	1	-	-	-	418213-5	fläns .....			4 260)	0F
23b	1	-	-	-	418771-2	Packning .....			1 (418214)	C
24	2	-	-	-	955271-2	Skruv .....			0 260)	0.
25	1	-	-	-	845277-3	Varmvattenuttag .....			6	05C
26	2	-	-	-	16291-7	.Förskruvning .....			0	06C
27	2	-	-	-	365287-2	.Kran .....			2	06
28	2	-	-	-	961666-5	.Slangklamma .....			0	06C
	1	-	-	-	875626-4	Reparationssats .....			SE GRUPP 10A	06C

242 . ERS AV 1st 844422, 1st 844416, 1st 418445, 2st 955271. Replaced by 1pc 844422, 1pc 844416, 1pc 418445, 2pcs 955271.  
 260 . For spec. 867560 867561 867562 867563 867564 867565. For spec. 867560 867561 867562 867563 867564 867565.  
 261 . Excl spec. 867560 867561 867562 867563 867564 867565. Excl spec. 867560 867561 867562 867563 867564 867565.





Sida Page		Grupp Group		Sjovattenpump		Sea water pump		Illustration		
32		2b						5817 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes
	842 843	844 971	838 522							
1	1	-	-	-	842843-5	Sjovattenpump...	Sea water pump .	5		0.
	-	1	-	-	844971-2	Sjövattenpump	Sea water pump .	8	ERS AV 838522	00
	-	-	1	-	838522-1	Sjövattenpump...	Sea water pump ...	8		00
2	1	1	1	-		.Hus	.Housing	8		00
3	1	-	-	-		.Lock	.Cover	8		01
	-	1	1	-	825727-1	.Lock	.Cover	4		01
4	1	-	-	-	875593-6	.Impellersats	.Impeller kit..	1		01
	-	1	1	-	875660-3	.Impellersats	.Impeller kit	1		01
5	1	1	1	-		..Impeller	..Impeller	8		01
6	1	-	-	-	808275-2	..Packning	..Gasket	1		02
	-	1	1	-	846111-3	..Packning	..Gasket	1		02
7	2	-	-	-		..Tätning	..Seal.	8		
	-	1	1	-	848154-1	..Tätning	..Seal.	1	TID UTF	02
	-	-	1	-	826234-7	.Avkastare	.Slinger	3		02
8	6	-	-	-	841693-5	.Skruv	.Screw	3		00
	-	5	5	-	963554-1	.Skruv	.Screw	0		00
9	1	-	-	-		.Axel	.Shaft.	8		
	-	1	1	-	846112-1	.Axel	.Shaft	8		
10	1	-	-	-		.Kam	.Cam	8		00
	-	1	1	-	846114-7	.Kam	.Cam.	3		00
11	1	-	-	-	808285-1	.Skruv	.Screw	1		00
	-	1	1	-	825730-5	.Skruv	.Screw	1		00
12	2	-	-	-	827247-8	.Tätningsring.	.Seal ring	1		00
	-	1	-	-	846115-4	.Tätningsring	.Seal ring	8	303)	00
	-	1	-	-	838523-9	.Tätning	.Seal	2		00
	-	1	-	-	838524-7	.Bricka	.Washer	2		00
	-	1	-	-	838525-4	.Bricka	.Washer	2		00
	-	-	1	-	838523-9	.Tätning	.Seal.	1		00
13	1	-	-	-	960166-7	.O-ring	.O-ring	0		00
14	2	-	-	-	11010-6	.Kullager	.Ball bearing	2		00
	-	2	2	-	1526189-4	.Kullager	.Ball bearing	2	(181648)	00
15	1	-	-	-	914523-6	.Låsring	.Lock ring	1		00
	-	1	1	-	914533-5	.Låsring	.Lock ring	1		00
16	1	-	-	-		.Bricka	.Washer	8		00
	-	1	-	-	846113-9	.Bricka	.Washer	8	303)	00
	-	1	-	-	838525-4	.Bricka	.Washer	2		00
	-	1	-	-	838523-9	.Tätning	.Seal	2		00
	-	1	-	-	838524-7	.Bricka	.Washer	2		00
	-	-	1	-	838524-7	.Bricka	.Washer	3		00
	-	-	1	-	838525-4	.Bricka	.Washer	3		00
17	-	1	1	-	846110-5	.Distansbricka	.Spacer washer	3		00
18	-	1	1	-	826229-7	.Pinne	.Pin	2		00
19	-	1	1	-	826230-5	.Slitbricka	.Wear washer.	2		00
	1	-	-	-	875759-3	Reparationssats	Repair kit	1	SE GRUPP 10A	
	-	1	-	-	875712-2	Reparationssats	Repair kit	8	SE GRUPP 10A	
	-	1	1	-	875769-2	Reparationssats	Repair kit	1	SE GRUPP 10A	0



5817

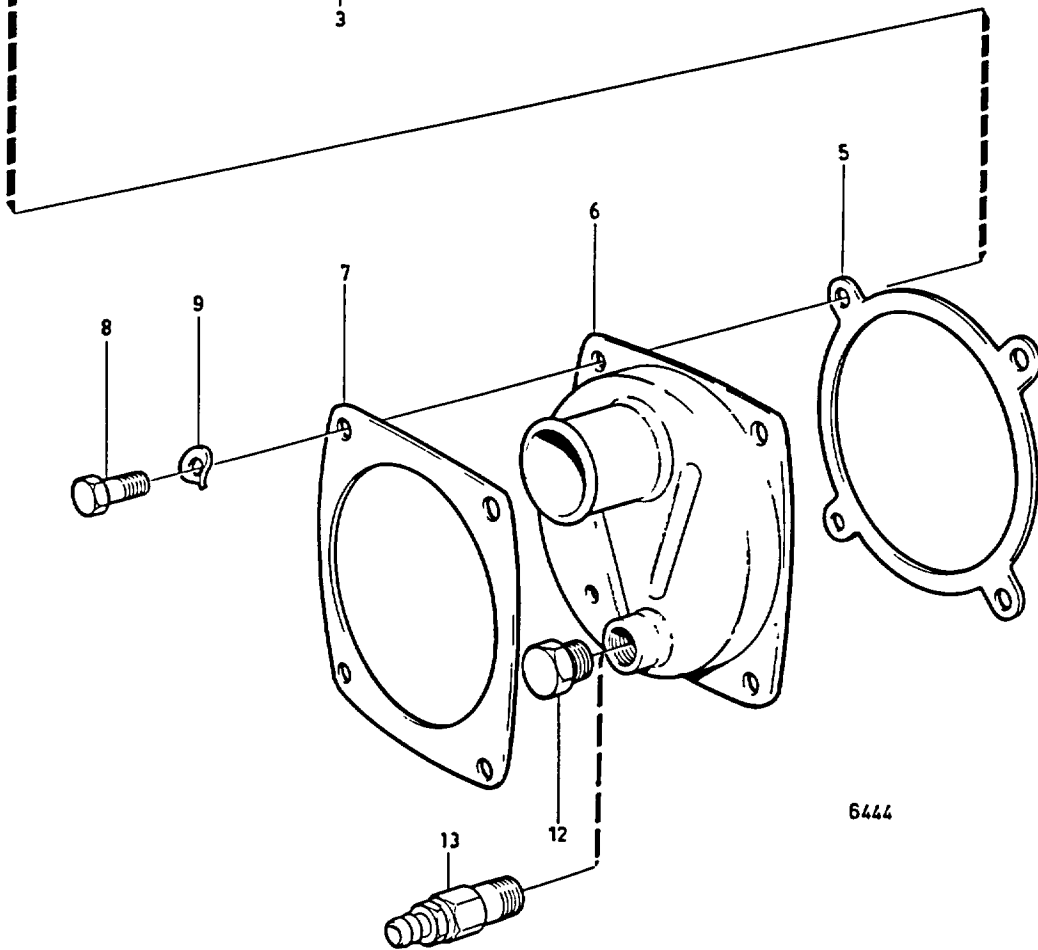
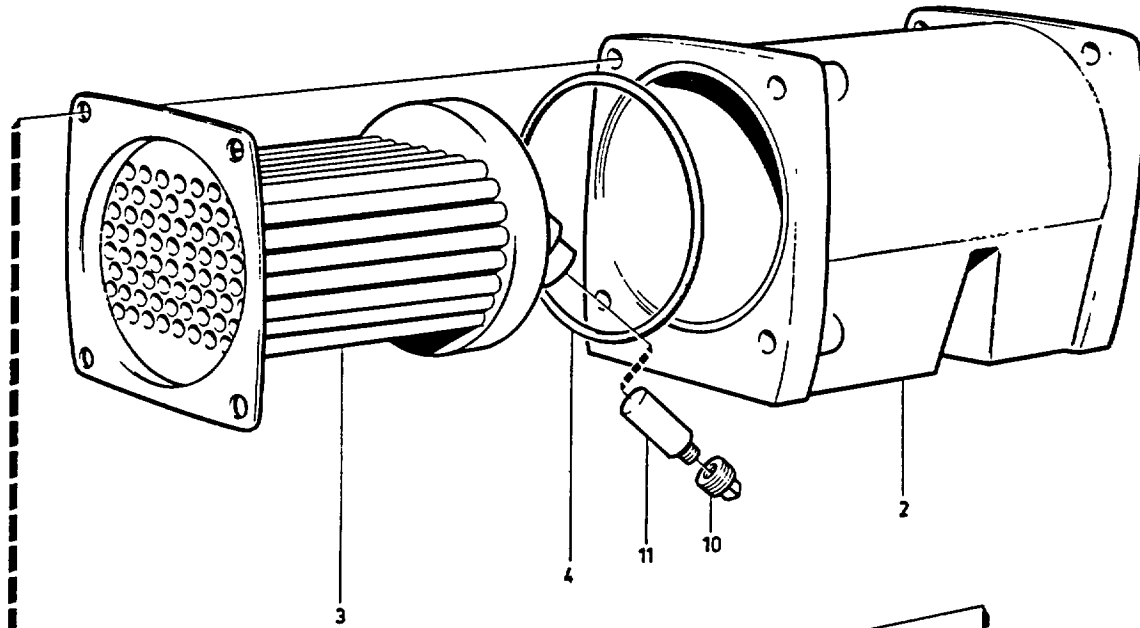
Sida Page	Grupp Group	Oljekylare	Oil cooler	Illustration 6444 1987-04
34	2b			

14C

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	838 968	838 969								
1	1	-	-	-	838968-6	Oljekylare .. . . . . .	Oil cooler.... . . . . .	5		(842589)MO 41832-
	-	1	-	-	838969-4	Oljekylare .. . . . . .	Oil cooler.... . . . . .	5		(845349)MO 39858-
2	1	1	-	-		.Hus .. . . . . .	.Housing.... . . . . .	8		
3	1	-	-	-	842590-2	.Insats.. . . . . .	.Insert.... . . . . .	4		
	-	1	-	-	845350-8	.Insats..... . . . . .	.Insert .. . . . . .	4		
4	2	2	-	-	948981-6	.O-ring. .... . . . . .	.O-ring..... . . . . .	S 1		
5	1	1	-	-	842597-7	.Packning .. . . . . .	.Gasket.... . . . . .	S 1		
6	1	-	-	-	842602-5	.Lock..... . . . . .	.Cover..... . . . . .	4		
	-	1	-	-	845352-4	.Gavellock .. . . . . .	.End cover .. . . . . .	4		
7	1	1	-	-	842596-9	.Fläns..... . . . . .	.Flange .. . . . . .	4		
8	4	4	-	-	955297-7	.Skruv .. . . . . .	.Screw .. . . . . .	0		
9	4	4	-	-	941907-8	.Fjädrande bricka .. . . . . .	.Resilient washer .. . . . . .	0		
10	1	1	-	-	838928-0	.Propp .. . . . . .	.Plug .. . . . . .	1		(800475)
11	1	-	-	-	838929-8	.Elektrod .. . . . . .	.Electrode .. . . . . .	1		(800476)
12	1	1	-	-	192134-5	.Propp..... . . . . .	.Plug .. . . . . .	1		
13	1	1	-	-	949918-7	Kran .. . . . . .	Cock..... . . . . .	0		272)

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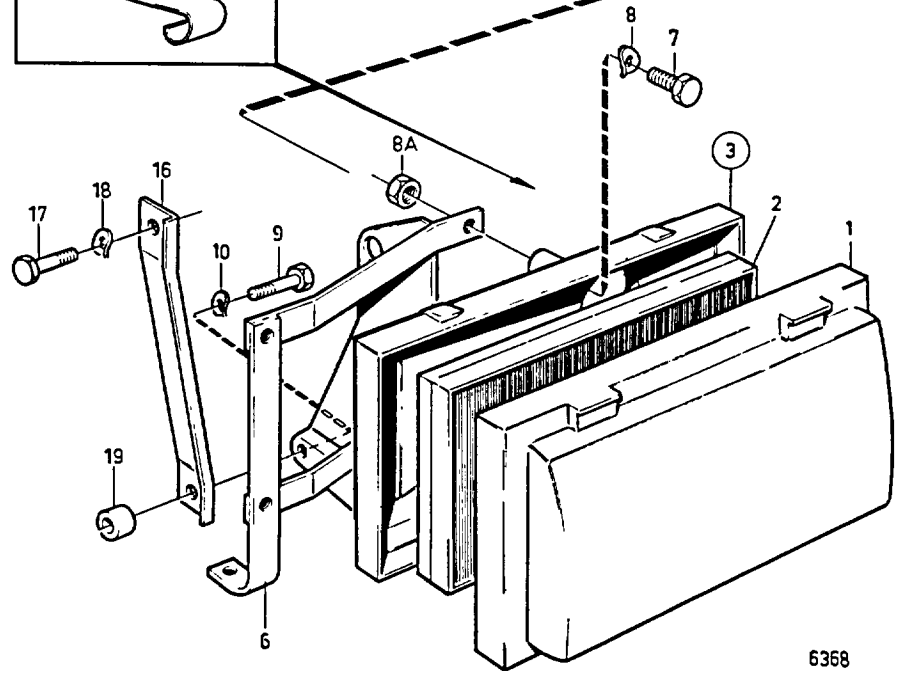
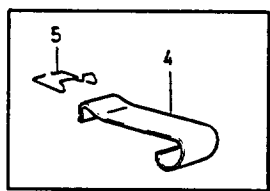
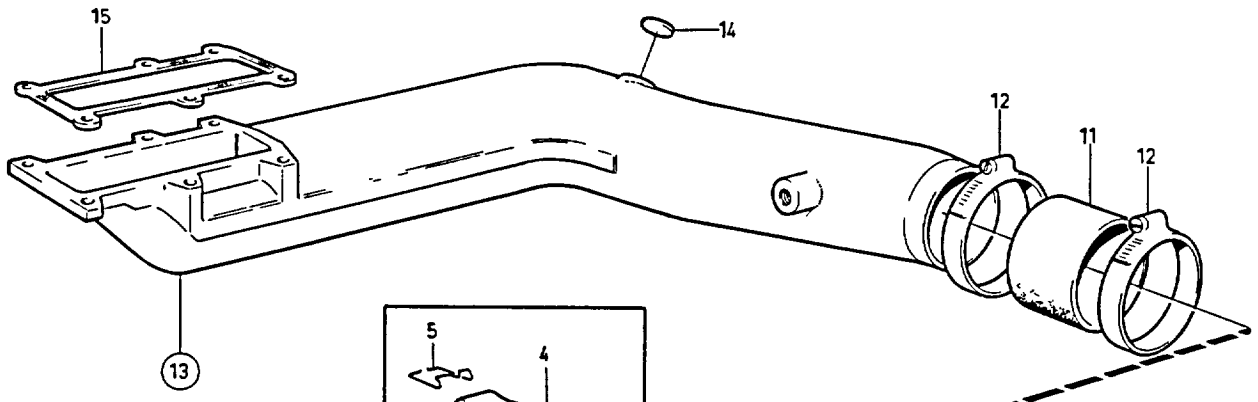
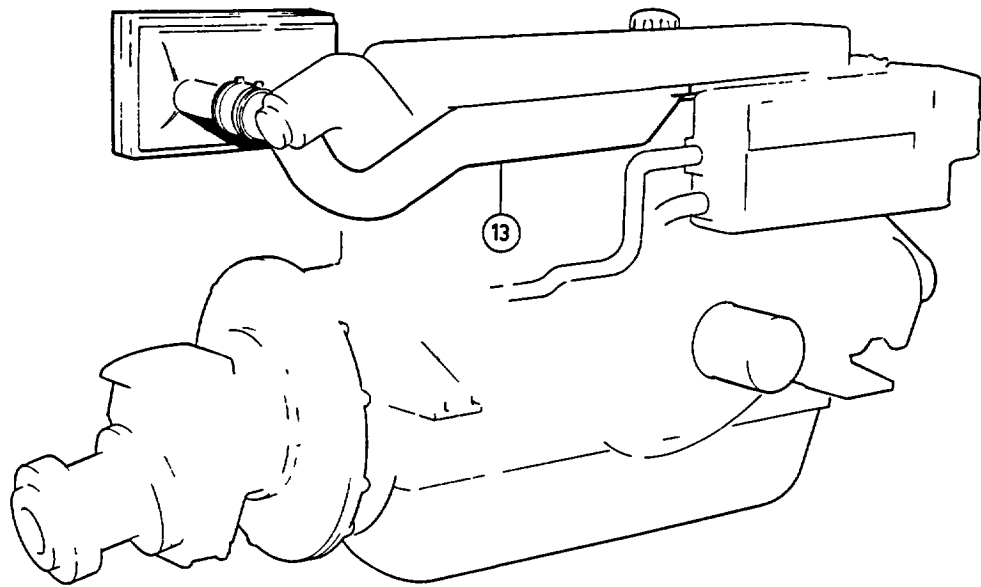
6444



Sida Page	Grupp Group	Luftfilter med monteringsdetaljer MD40A	Air filter with installation components	Illustration 6368 1987-04	19
36	2b				

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	842615-7	Lock . . . . .	Cover . . . . .	5			0
2	1	-	-	-	463505-8	Insats . . . . .	Element . . . . .	1			00
3	1	-	-	-	842680-1	Hus . . . . .	Housing . . . . .	5			00
4	4	-	-	-	463908-4	.Klamma . . . . .	.Clamp . . . . .	3			00
5	4	-	-	-	673792-8	.Lås . . . . .	.Lock . . . . .	3			01
6	1	-	-	-		Konsol . . . . .	Bracket . . . . .			248) TID UTF	01
	1	-	-	-	844593-4	Lyftöglekonsol . . . . .	Lifting bracket . . . . .	6		SEN UTF	0*
7	2	-	-	-	959224-7	Skruv . . . . .	Screw . . . . .	0		L=35MM	0*
	2	-	-	-	959227-0	Skruv . . . . .	Screw . . . . .	0		L=50MM	0*
8	4	-	-	-	941907-8	Bricka . . . . .	Washer . . . . .	0			0*
8a	4	-	-	-	946036-1	Låsmutter . . . . .	Lock nut . . . . .	0			0*
9	2	-	-	-	955321-5	Skruv . . . . .	Screw . . . . .	0		L=45MM, TID UTF	
	1	-	-	-	955317-3	Skruv . . . . .	Screw . . . . .	0		L=25MM, SEN UTF	u.
	1	-	-	-	955321-5	Skruv . . . . .	Screw . . . . .	0		L=45MM, SEN UTF	0*
10	2	-	-	-	941908-6	Fjäderbricka . . . . .	Washer . . . . .	0			0*
11	ERF	-	-	-	952983-5	Gummislang . . . . .	Rubber hose . . . . .	0		L=80 MM	0*
12	2	-	-	-	943480-4	Klammer . . . . .	Clamp . . . . .	0			0*
13	1	-	-	-	844249-3	Rör . . . . .	Pipe . . . . .	6		SE SIDA 54, 1-F07	
14	2	-	-	-	955095-5	.Bricka . . . . .	.Washer . . . . .	0			u
15	1	-	-	-	844084-4	Packning . . . . .	Gasket . . . . .	1		SE SIDA 54, 1-F07	0
16	1	-	-	-	844377-2	Konsol . . . . .	Bracket . . . . .	5			0
17	1	-	-	-	955294-4	Skruv . . . . .	Screw . . . . .	0			0
18	1	-	-	-	941907-8	Fjädrande bricka . . . . .	Resilient washer . . . . .	0			0
19	1	-	-	-	843028-2	Distanshylsa . . . . .	Spacer sleeve . . . . .	4			0

248. Tidigare utförande bestående av separat monterad lyftögla och luftfilterkonsol är ersatt av 1st konsol 844593, 1st skruv 955317, 1st skruv 955321. Early production containing separate mounted lift eye and air filter bracket are replaced by 1pc bracket 844593, 1pc bolt 955317, 1pc bolt 955321.



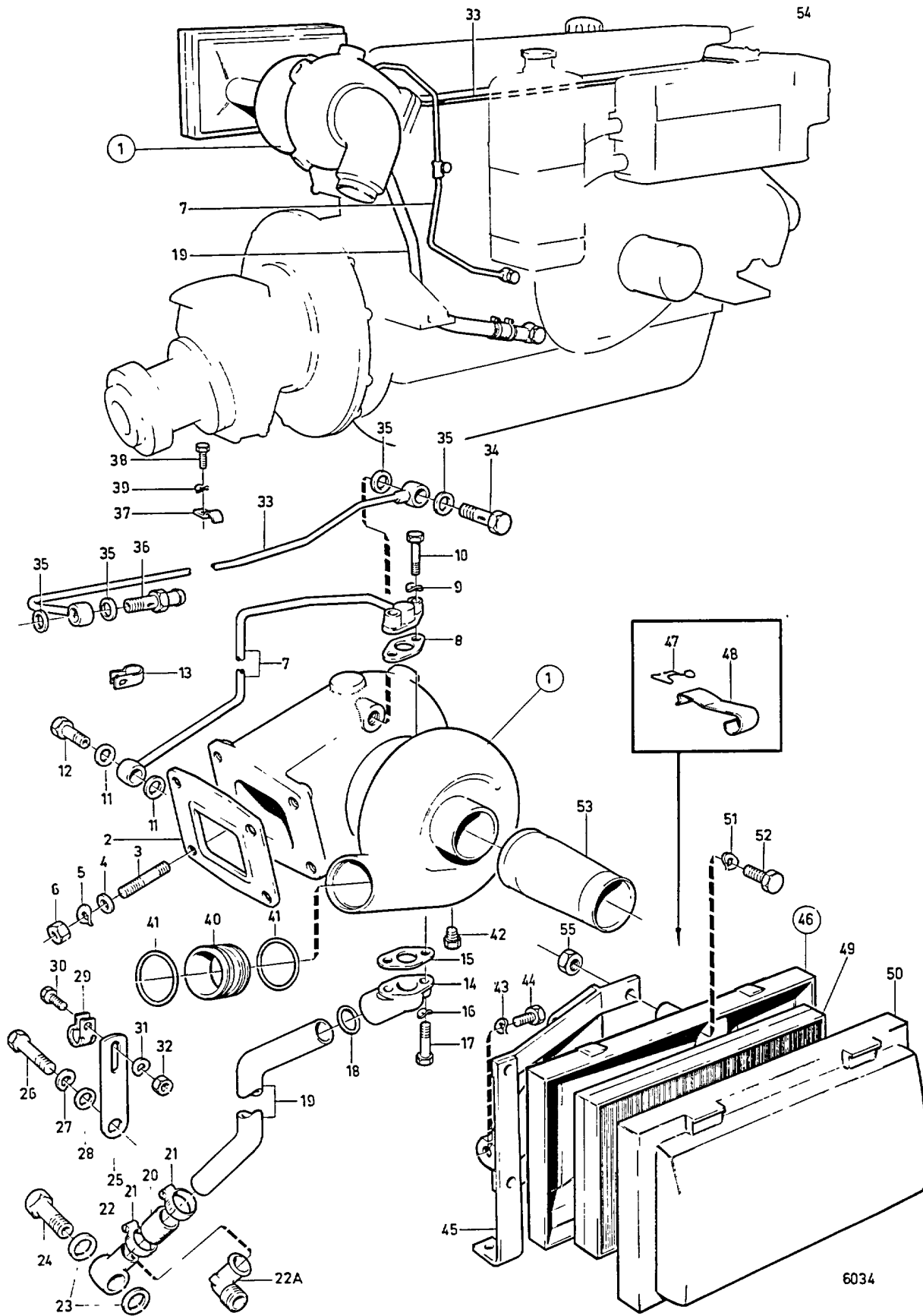
Sida Page	Grupp Group	Turbokompressor och luftfilter med monteringsdetaljer		Turbo compressor and air filter with installation components		Illustration			
38	2b	AOD40A,TMD40A				6034 1987-04			
Pos Fig	Antal/Quantity			Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes
1	1	-	-	829368-0	Turbokompressor... Det se sida 50, 1-F03	Turbo compressor... Comp page 50, 1-F03		6	
2	1	-	-	843009-2	Packning ...	Gasket...	S	1	
3	4	-	-	953063-5	Pinnskruv ...	Stud bolt ...		0 4)	
4	4	-	-	955895-8	Bricka ...	Washer ...		0	
5	4	-	-	941908-6	Fjaderbricka ...	Washer ...		0	
6	4	-	-	940183-7	Mutter ...	Nut ...		0	
7	1	-	-	842938-3	Tryckoljledning...	Pressure line...		5	
8	1	-	-	842943-3	Packning ...	Gasket ...	S	1	
9	2	-	-	941907-8	Bricka ...	Washer ...		0	
10	2	-	-	940142-3	Bult ...	Bolt ...		0	
11	2	-	-	18671-8	Bricka ...	Washer ...	S	1	
12	2	-	-	25167-8	Skruv ...	Screw ...		1	
13	1	-	-	191992-7	Klamma ...	Clamp ...		2	
14	1	-	-	842942-5	Flans ...	Flange ...	S	3	FÖR/FOR 844036
15	1	-	-	842986-2	Packning ...	Gasket...	S	1	
16	2	-	-	941907-8	Bricka ...	Washer ...		0	
17	2	-	-	955299-3	Skruv ...	Screw ...		0	FÖR/FOR 844036
18	2	-	-	955297-7	Skruv ...	Screw ...		0	FÖR/FOR 838535
19	1	-	-	947061-8	Packning ...	Gasket ...	S	1	FÖR/FOR 844036
20	1	-	-	844036-4	Returöljerör ...	Return pipe ...		5	249) TID UTF
21	2	-	-	466328-2	Slang ...	Hose ...		1	SEN UTF
22	2	-	-	192358-0	Gummislang...	Rubber hose ...		1	TID UTF, L=60MM
23	2	-	-	943474-7	Slangklammer ...	Hose clamp ...		0	SEN UTF, L=90MM
24	1	-	-		Rör ...	Pipe ...		0	
25	1	-	-	843879-8	Vinkelnippel ...	Elbow nipple ...		3	250) TID UTF
26	2	-	-	18677-5	Packning ...	Gasket ...		1	SEN UTF
27	1	-	-	191157-7	Hålskruv ...	Hollow screw ...		1	TID UTF
28	1	-	-	843711-3	Konsol ...	Bracket ...		4	
29	1	-	-	955361-1	Skruv ...	Screw ...		0	
30	1	-	-	941912-8	Fjaderbricka ...	Washer ...		0	
31	1	-	-	955900-6	Bricka ...	Washer ...		0	
32	1	-	-	952632-8	Klamma ...	Clamp ...		0	
33	1	-	-	955269-6	Skruv ...	Screw ...		0	
34	1	-	-	941906-0	Fjaderbricka ...	Washer ...		0	
35	4	-	-	946035-3	Mutter ...	Nut ...		0	
36	1	-	-	842699-1	Rör ...	Pipe ...		8	TID UTF, MO-13270, MO 13485-13752
37	1	-	-	845033-0	Rör ...	Pipe ...		8	268) MO-24591
38	1	-	-	846214-5	Rör ...	Pipe ...		5	MO 24592-
39	1	-	-	942806-1	Hålskruv ...	Hollow screw ...		1	
40	4	-	-	957173-8	Packning ...	Gasket...	S	1	
41	1	-	-	843273-4	Slangkoppling ...	Hose connection ...		3	TID UTF
42	1	-	-	942806-1	Hålskruv ...	Hollow screw ...		0	SE SIDA 20, 1-D21
43	2	-	-	191487-8	Klammer ...	Clamp ...		4	SEN UTF
44	2	-	-	955269-6	Skruv ...	Screw ...		0	
45	2	-	-	941906-0	Fjaderbricka...	Washer ...		0	
46	1	-	-	842965-6	Rörtätning...	Adapter sealing ...		3	SE SIDA 56, 1-F09
47	2	-	-	948610-1	O-ring ...	O-ring ...	S	1	SE SIDA 56, 1-F09
48	1	-	-	192134-5	Propp...	Plug ...		0	
49	2	-	-	941908-6	Fjädrande bricka ...	Resilient washer ...		0	
50	2	-	-	955321-5	Skruv ...	Screw ...		0	TID UTF, L=45 MM
51	2	-	-	955317-3	Skruv ...	Screw ...		0	SEN UTF, L=25 MM

4. Ingår i turbokompressor. Included in turbo compressor.

249. ERS AV 1st 844036, 1st 843879. Replaced by 1pc 844036, 1pc 843879.

250. ERS AV 1st 843879, 1st 192358. Replaced by 1pc 843879, 1pc 192358.

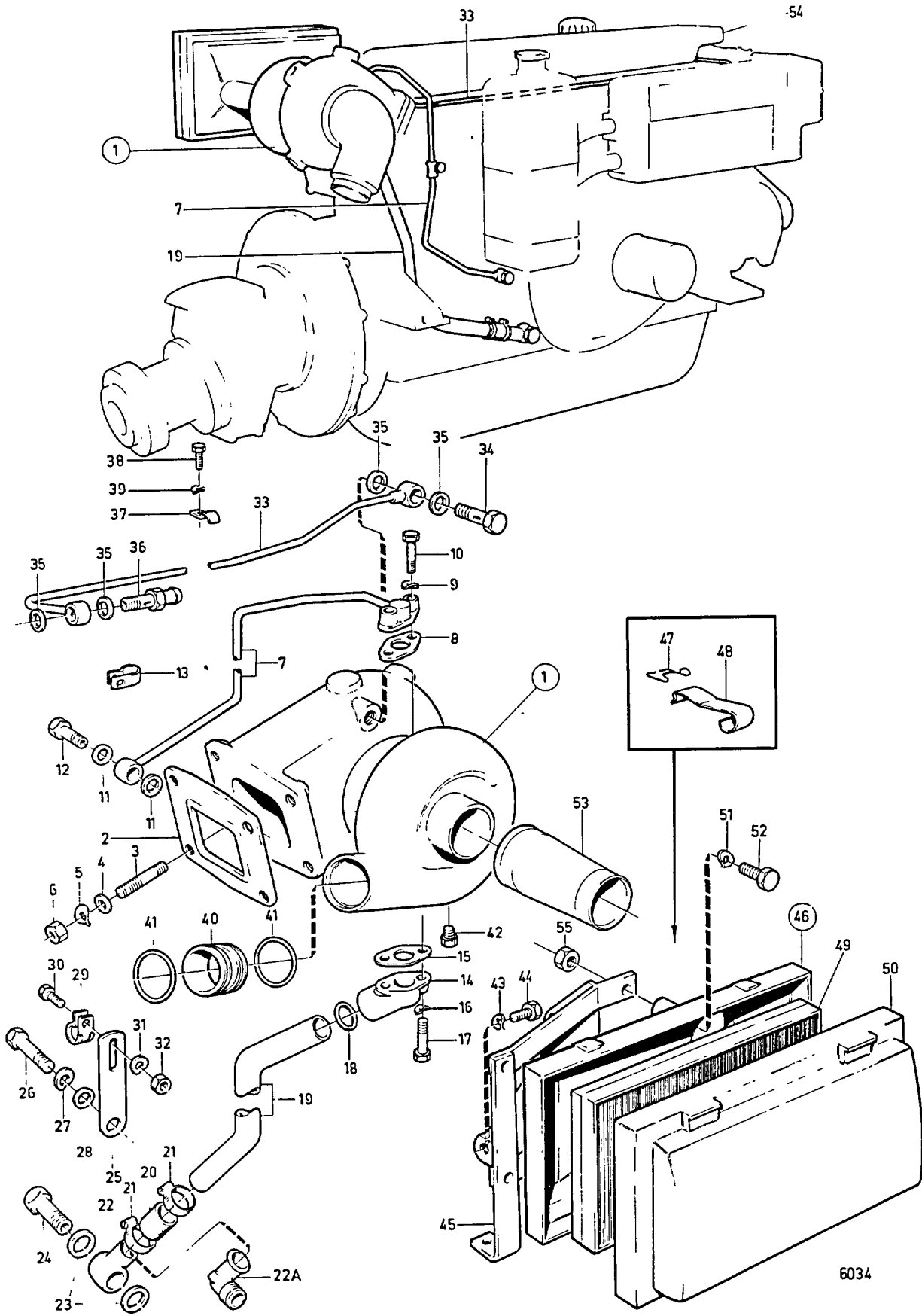
268. ERS AV 1st 846214 rör, 2st 846216 hålskruv, 2st 957174 packning, 2st 957175 packning, 2st 18344 klammer. Replaced by 1pc 846214 pipe, 2pcs 846216 hollow bolt, 2pcs 957174 packing, 2pcs 957175 packing, 2pcs 18344 clamp.





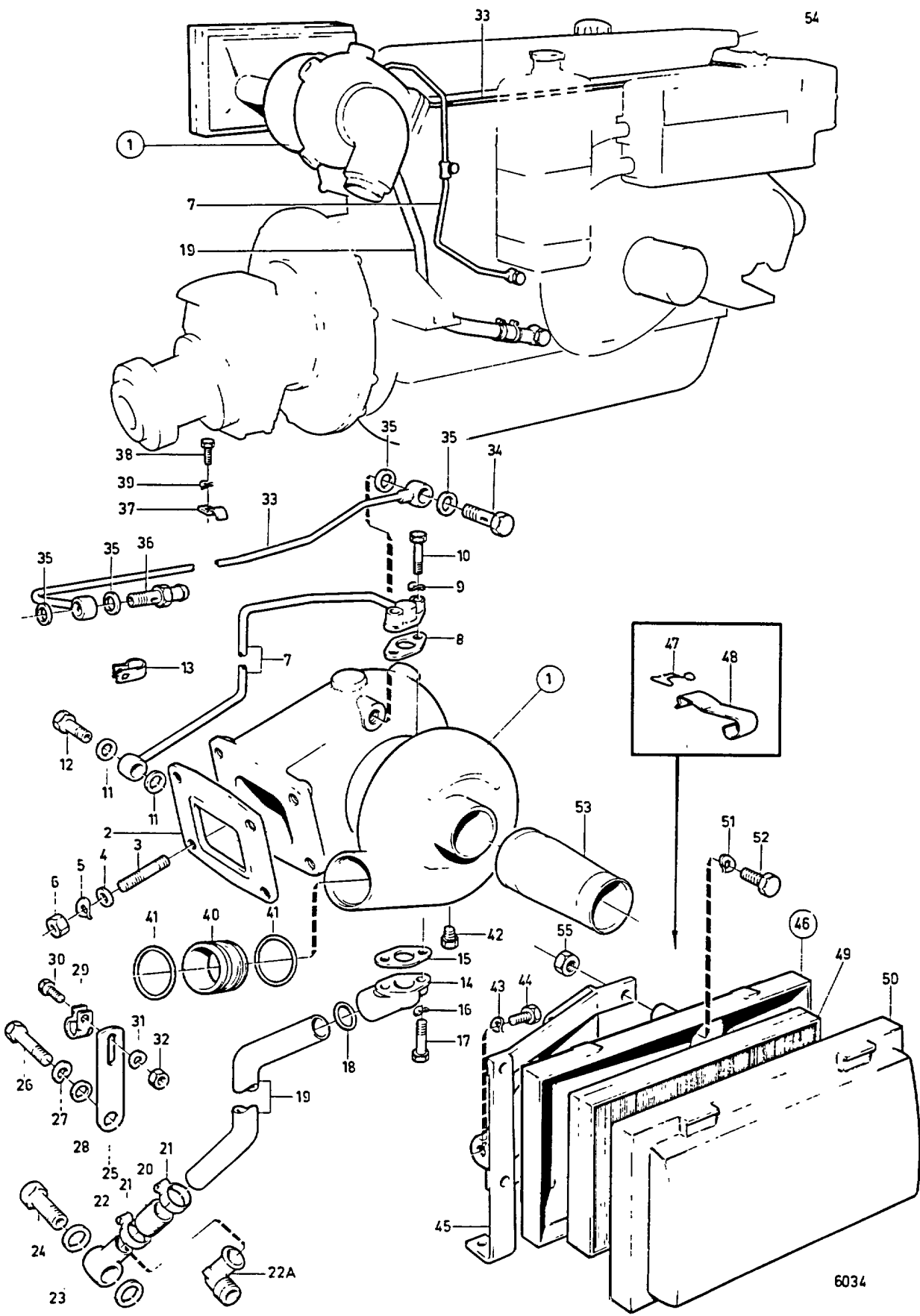
Sida Page	Grupp Group	Turbokompressor och luftfilter med monteringsdetaljer AQD40A,TMD40A		Turbo compressor and air filter with installation components		Illustration 6034 1987-04	200			
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
45	1	-	-	-		Konsol .....	Bracket .....		251) TID UTF	11
	1	-	-	-	844593-4	Lyftöglekonsol .....	Lifting bracket .....	6	SEN UTF	10
46	1	-	-	-	842680-1	Hus .....	Housing .....	5		10
47	4	-	-	-	673792-8	.Lås .....	.Lock .....	3		10
48	4	-	-	-	463908-4	.Klamma .....	.Clamp .....	3		11
49	1	-	-	-	463505-8	Insats .....	Element .....	1		11
50	1	-	-	-	842615-7	Lock .....	Cover .....	5		11
51	4	-	-	-	941907-8	Fjädrande bricka .....	Resilient washer .....	0		11
52	2	-	-	-	959224-7	Skruv .....	Screw .....	0	L=35MM	11
	2	-	-	-	959227-0	Skruv .....	Screw .....	0	L=50MM	12
53	1	-	-	-	842639-7	Slang .....	Hose .....	3		11
54	ERF	-	-	-		Insugnings- och avgasror	Induction- and exhaust manifold		SE SIDA 56, 1-F09	12
55	4	-	-	-	946036-1	Mutter .....	Nut .....	0		12

251. Tidigare utförande bestående av separat monterad lyftögla och luftfilterkonsol är ersatt av 1st konsol 844593, 2st skruv 955317. Early production containing separate mounted lift eye and air filter bracket are replaced by 1pc bracket 844593, 2pc bolt 955317.



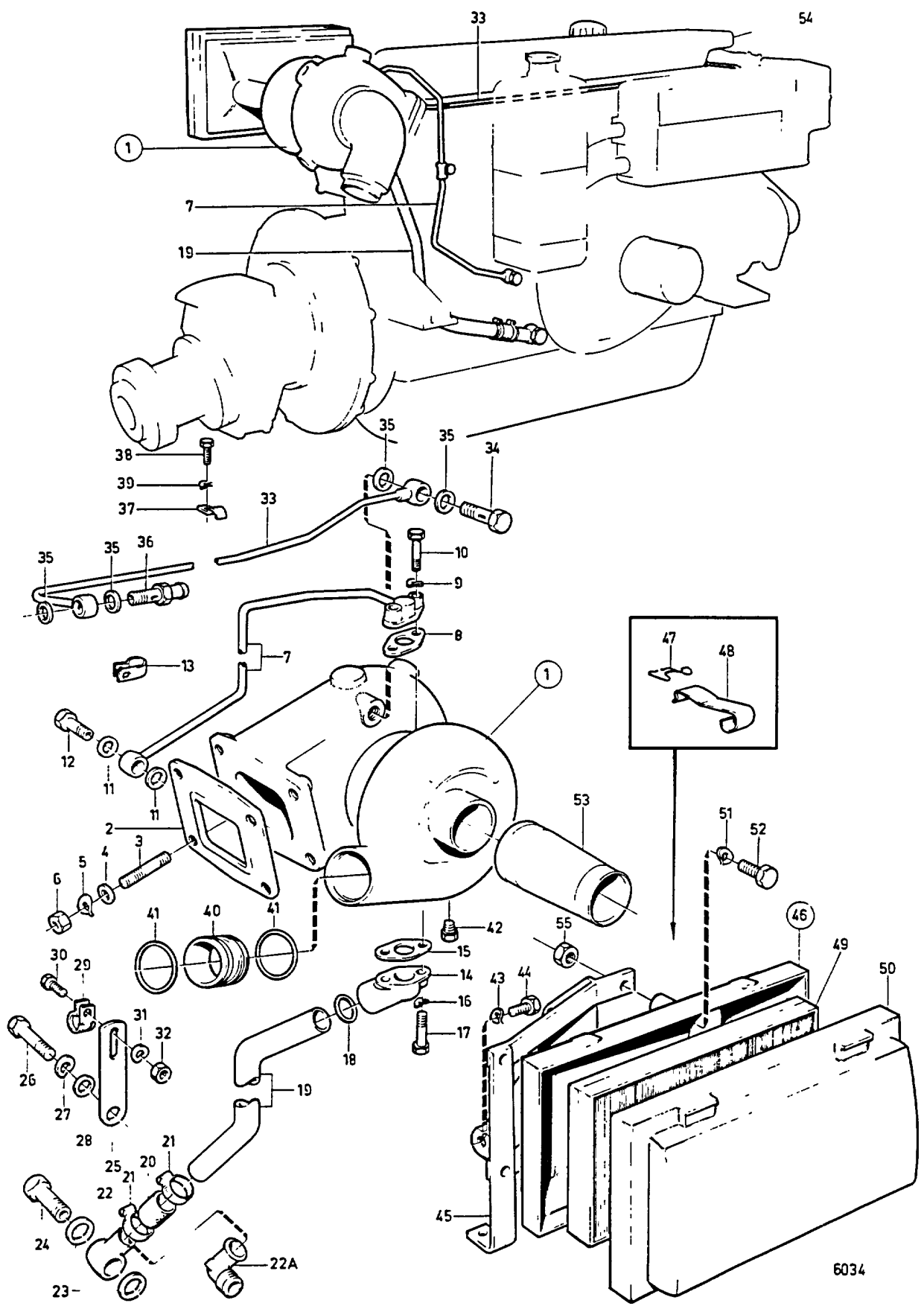
Sida Page		Grupp Group		Turbokompressor och luftfilter		Turbo compressor and air filter		Illustration	
42		2b		TMD40B,TMD40C				6034 1987-04	
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	TMD 40B	TMD 40C							
1	1	1	-	829368-0	Turbokompressor . . . . . Det se sida 50, 1-F03	Turbo compressor. . . . . Comp page 50, 1-F03	6		
2	1	1	-	843009-2	Packning . . . . .	Gasket . . . . .	S 1		
3	4	4	-	953063-5	Pinnskruv . . . . .	Stud bolt . . . . .	0 4)		
4	4	4	-	955895-8	Bricka . . . . .	Washer . . . . .	0		
5	4	4	-	941908-6	Fjäderbricka . . . . .	Washer . . . . .	0		
6	4	4	-	940183-7	Mutter . . . . .	Nut . . . . .	0		
7	1	1	-	842938-3	Tryckoljeledning . . . . .	Pressure line . . . . .	5		
8	1	1	-	842943-3	Packning . . . . .	Gasket . . . . .	S 1		
9	2	2	-	941907-8	Bricka . . . . .	Washer . . . . .	0		
10	2	2	-	940142-3	Bult . . . . .	Bolt . . . . .	0		
11	2	2	-	18671-8	Bricka . . . . .	Washer . . . . .	S 1		
12	2	2	-	25167-8	Skruv . . . . .	Screw . . . . .	1		
13	1	1	-	191992-7	Klamma . . . . .	Clamp . . . . .	2		
14	1	-	-	842942-5	Fläns . . . . .	Flange . . . . .	3	FOR/FOR 844036	
15	1	1	-	842986-2	Packning . . . . .	Gasket . . . . .	S 1		
16	2	2	-	941907-8	Bricka . . . . .	Washer . . . . .	0		
17	2	-	-	955299-3	Skruv . . . . .	Screw . . . . .	0	FÖR/FOR 844036	
	2	2	-	955297-7	Skruv . . . . .	Screw . . . . .	0	FÖR/FOR 838535	
18	1	-	-	947061-8	Packning . . . . .	Gasket . . . . .	S 1	FÖR/FOR 844036	
19	1	-	-		Returoljerör . . . . .	Return pipe . . . . .	5	249) TID UTF	
	1	-	-	844036-4	Returoljerör . . . . .	Return pipe . . . . .	5	MO-42614	
	1	1	-	838535-3	Rör . . . . .	Pipe . . . . .	5	TMD40B MO42615-	
20	1	-	-	466328-2	Slang . . . . .	Hose . . . . .	1	TID UTF, L=60MM	
	ERF	ERF	-	192358-0	Gummislang . . . . .	Rubber hose . . . . .	1	SEN UTF, L=90MM	
	2	2	-	943474-7	Slangklammer . . . . .	Hose clamp . . . . .	0		
22	1	-	-		Rör . . . . .	Pipe . . . . .	3	250) TID UTF	
22a	1	1	-	843879-8	Vinkelnippel . . . . .	Elbow nipple . . . . .	3	SEN UTF	
23	2	-	-	18677-5	Packning . . . . .	Gasket . . . . .	1	TID UTF	
24	1	-	-	191157-7	Hålskruv . . . . .	Hollow screw . . . . .	1	TID UTF	
25	1	1	-	843711-3	Konsol . . . . .	Bracket . . . . .	4		
26	1	1	-	955361-1	Skruv . . . . .	Screw . . . . .	0		
27	1	1	-	941912-8	Fjäderbricka . . . . .	Washer . . . . .	0		
28	1	1	-	955900-6	Bricka . . . . .	Washer . . . . .	0		
29	1	1	-	952632-8	Klamma . . . . .	Clamp . . . . .	0		
30	1	1	-	955269-6	Skruv . . . . .	Screw . . . . .	0		
31	1	1	-	941906-0	Fjäderbricka . . . . .	Washer . . . . .	0		
32	1	1	-	946035-3	Mutter . . . . .	Nut . . . . .	0		
33	1	-	-	842699-1	Rör . . . . .	Pipe . . . . .	8	TID UTF, MO-13270, MO 13485-13752	
	1	-	-	845033-0	Rör . . . . .	Pipe . . . . .	8	268) MO-24591	
	1	1	-	846214-5	Rör . . . . .	Pipe . . . . .	5	MO 24592-	
34	1	1	-	942806-1	Hålskruv . . . . .	Hollow screw . . . . .	S 1		
35	4	4	-	957173-8	Packning . . . . .	Gasket . . . . .	1		
36	1	-	-	843273-4	Slangkoppling . . . . .	Hose connection . . . . .	3	TID UTF	
	1	1	-	942806-1	Hålskruv . . . . .	Hollow screw . . . . .	0	SEN UTF	
37	2	2	-	191487-8	Klammer . . . . .	Clamp . . . . .	4		
38	2	2	-	955269-6	Skruv . . . . .	Screw . . . . .	0		
39	2	2	-	941906-0	Fjäderbricka . . . . .	Washer . . . . .	3		
40	1	1	-	842965-6	Rörtatning . . . . .	Adapter sealing . . . . .	S 1	SE SIDA 58, 1-F11	
41	2	2	-	948610-1	O-ring . . . . .	O-ring . . . . .	S 1	SE SIDA 58, 1-F11	
42	1	1	-	192134-5	Propp . . . . .	Plug . . . . .	0		
43	2	2	-	941908-6	Fjädrande bricka . . . . .	Resilient washer . . . . .	0		
44	2	-	-	955321-5	Skruv . . . . .	Screw . . . . .	0	TID UTF, L=45 MM	
	2	2	-	955317-3	Skruv . . . . .	Screw . . . . .	0	SEN UTF, L=25 MM	

4. Ingår i turbokompressor. Included in turbo compressor.  
 249. ERS AV 1st 844036, 1st 843879. Replaced by 1pc 844036, 1pc 843879.  
 250. ERS AV 1st 843879, 1st 192358. Replaced by 1pc 843879, 1pc 192358.  
 268. ERS AV 1st 846214 rör, 2st 846216 hålskruv, 2st 957174 packning, 2st 957175 packning, 2st 18344 klammer. Replaced by 1pc 846214 pipe, 2pcs 846216 hollow bolt, 2pcs 957174 packing, 2pcs 957175 packing, 2pcs 18344 clamp.



Sida Page		Grupp Group		Turbokompressor och luftfilter		Turbo compressor and air filter		Illustration		
44		2b		TMD40B,TMD40C				6034 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	Anmärkning Notes	
	TMD 40B	TMD 40C								
45	1	-	-	-		Konsol. ....	Bracket.....		251) TID UTF	1.
	1	1	-	-	844593-4	Lyftöglkonsol ...	Lifting bracket.....	6	SEN UTF	13.
46	1	1	-	-	842680-1	Hus.....	Housing.....	5		14.
47	4	4	-	-	673792-8	.Lås.....	.Lock.....	3		14.
48	4	4	-	-	463908-4	.Klamma.....	.Clamp.....	3		14.
49	1	1	-	-	463505-8	Insats.....	Element.....	1		14.
50	1	1	-	-	842615-7	Lock.....	Cover.....	5		14.
51	4	4	-	-	941907-8	Fjädrande bricka.....	Resilient washer.....	0		15.
52	2	2	-	-	959224-7	Skruv.....	Screw.....	0	L=35MM	15.
	2	2	-	-	959227-0	Skruv.....	Screw.....	0	L=50MM	15.
53	1	1	-	-	842639-7	Slang.....	Hose.....	3		
54	ERF	ERF	-	-		Insugnings- och	Induction- and.		SE SIDA 58, 1-F11	
	-	-	-	-		Avgasrör .....	Exhaust manifold.....			
55	4	4	-	-	946036-1	Mutter.. ..	Nut .....	0		16

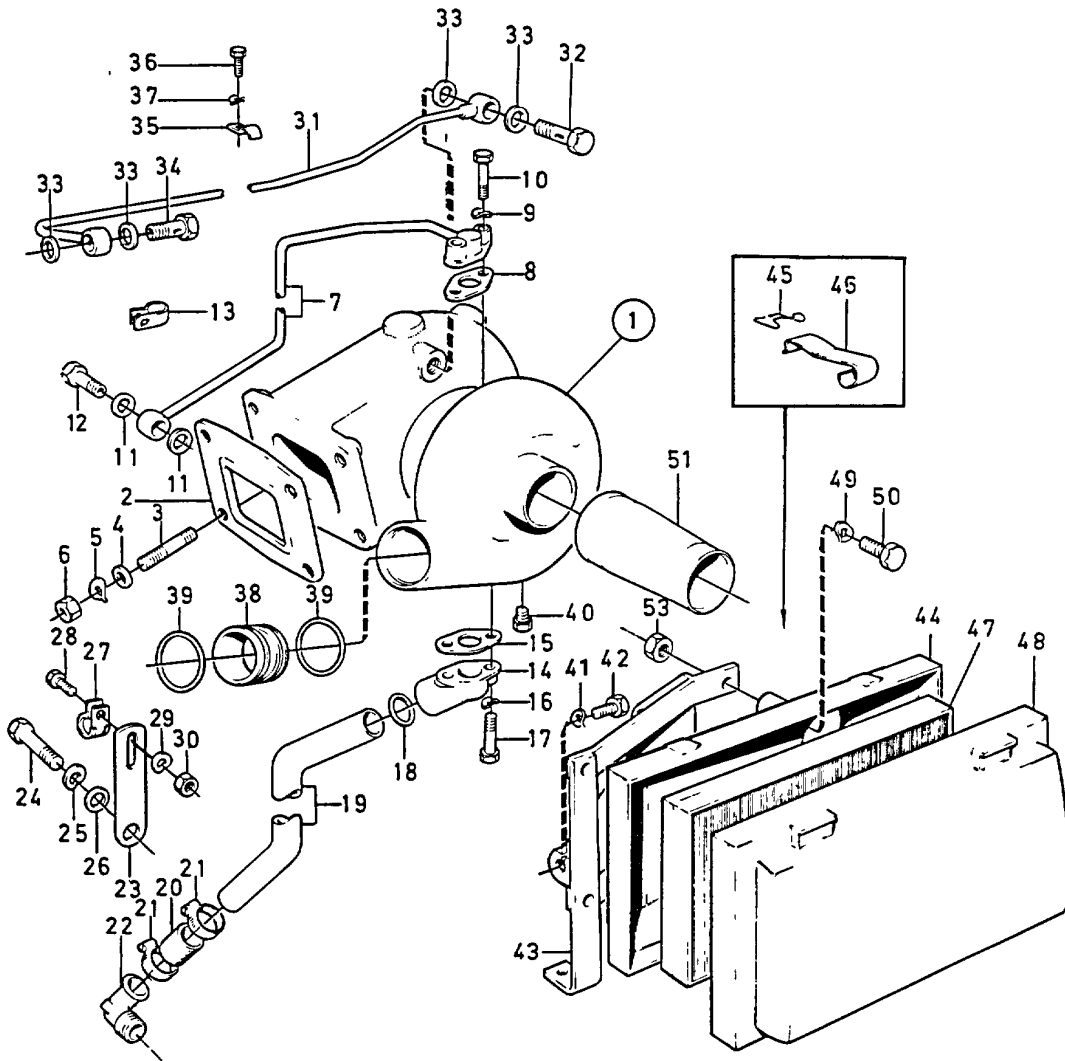
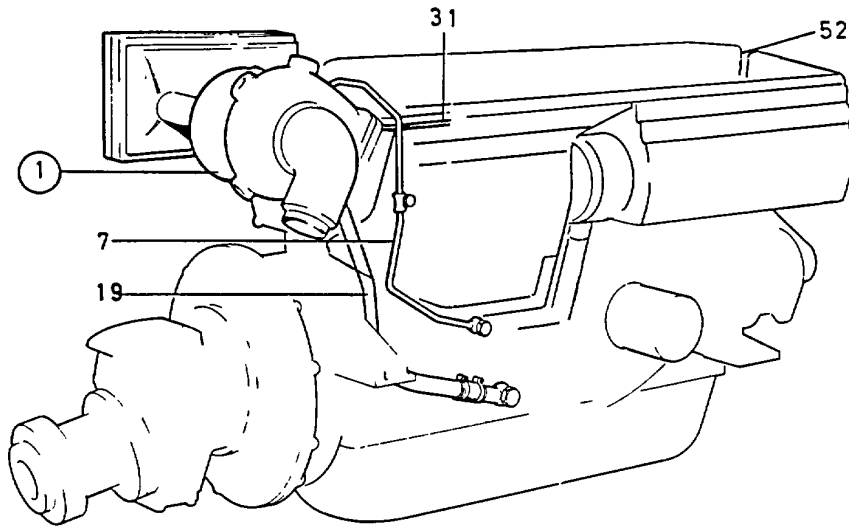
251 . Tidigare utförande bestående av separat monterad lyftögla och luftfilterkonsol är ersatt av 1st konsol 844593, 2st skruv 955317. Early production containing separate mounted lift eye and air filter bracket are replaced by 1pc bracket 844593, 2pc bolt 955317.



Sida Page	Grupp Group	Turbokompressor och luftfilter med monteringsdetaljer	Turbo compressor and air filter with installation components	Illustration 5923 1987-04	202
46	2b	AQAD40A, AQAD40B, TAMD40A, TAMD40B			

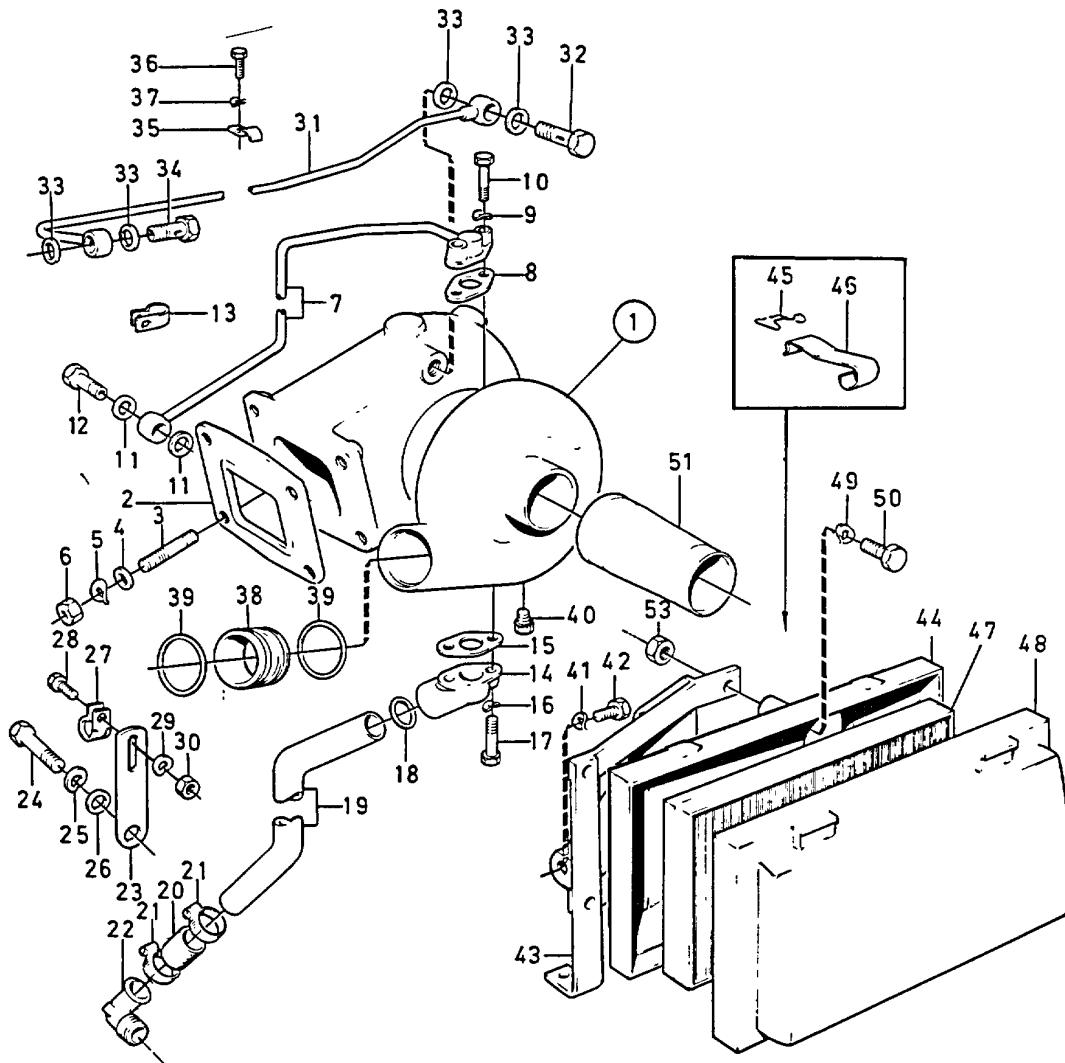
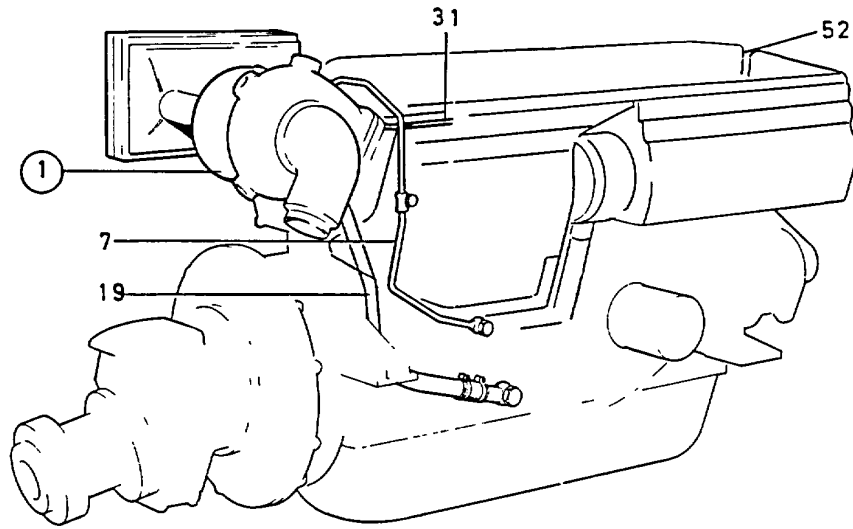
Pos Fig'	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	845294-8	Turbokompressor . . . . .	Turbo compressor. . . . .		6		01
	-	-	-	-		.Det se sida 52, 1-F05 . . . . .	.Comp page 52, 1-F05 . . . . .				00-
2	1	-	-	-	843009-2	Packning . . . . .	Gasket . . . . .	S	1		006
3	4	-	-	-	953063-5	Pinnskruv . . . . .	Stud bolt. . . . .		0	4)	008
4	4	-	-	-	955895-8	Bricka . . . . .	Washer . . . . .		0		010
5	4	-	-	-	941908-6	Fjädrande bricka . . . . .	Resilient washer. . . . .		0		012
6	4	-	-	-	940183-7	Mutter . . . . .	Nut . . . . .		0		014
7	1	-	-	-	842938-3	Tryckoljeror. . . . .	Oil pressure pipe. . . . .		5		016
8	1	-	-	-	842943-3	Packning . . . . .	Gasket . . . . .	S	1		018
9	2	-	-	-	941907-8	Fjädrande bricka . . . . .	Resilient washer. . . . .		0		02C
10	2	-	-	-	940142-3	Skruv. . . . .	Screw. . . . .		0		
11	2	-	-	-	18671-8	Packning . . . . .	Gasket . . . . .	S	1		
12	1	-	-	-	25167-8	Hålskruv . . . . .	Hollow screw . . . . .		1		02E
13	1	-	-	-	191992-7	Klamma . . . . .	Clamp . . . . .		2		02E
14	1	-	-	-	842942-5	Fläns. . . . .	Flange . . . . .		3	FÖR/FOR 844036	03C
15	1	-	-	-	842986-2	Packning . . . . .	Gasket. . . . .	S	1		03Z
16	2	-	-	-	941907-8	Fjädrande bricka . . . . .	Resilient washer . . . . .		0		
17	2	-	-	-	955299-3	Skruv . . . . .	Screw. . . . .		0	FÖR/FOR 844036	
	2	-	-	-	955297-7	Skruv. . . . .	Screw . . . . .		0	FÖR/FOR 838535	03t
18	1	-	-	-	947061-8	Packning . . . . .	Gasket . . . . .	S	1	290DP	04C
19	1	-	-	-	844036-4	Returoljerör. . . . .	Return pipe. . . . .		5	FOR/FOR 844036	04Z
	-	-	-	-						EXCL AQAD40B/290,290DP	04c
	1	-	-	-	838535-3	Rör . . . . .	Pipe . . . . .		5	TAMD40B MO-42614	04f
	-	-	-	-						AQAD40B/290,290DP	04f
	-	-	-	-						TAMD40B MO42615-	05C
20	1	-	-	-	466328-2	Gummislang . . . . .	Rubber hose . . . . .		1	L=60MM	0F
21	2	-	-	-	943474-7	Slangklamma . . . . .	Hose clamp. . . . .		0		
22	1	-	-	-	843879-8	Vinkelnippel . . . . .	Angle nipple . . . . .		3		
23	1	-	-	-	843711-3	Konsol . . . . .	Bracket . . . . .		4		05x
24	1	-	-	-	955361-1	Skruv. . . . .	Screw . . . . .		0		06C
25	1	-	-	-	941912-8	Fjädrande bricka . . . . .	Resilient washer. . . . .		0		06:
26	1	-	-	-	955900-6	Bricka . . . . .	Washer . . . . .		0		06-
27	1	-	-	-	952632-8	Klammer . . . . .	Clamp . . . . .		0		06f
28	1	-	-	-	955269-6	Skruv . . . . .	Screw . . . . .		0		06f
29	1	-	-	-	941906-0	Fjädrande bricka . . . . .	Resilient washer . . . . .		0		07f
30	1	-	-	-	946035-3	Låsmutter. . . . .	Lock nut. . . . .		0		07:
31	1	-	-	-	845413-4	Rör . . . . .	Pipe . . . . .		8	269) MO-24591	07-
	1	-	-	-	846215-2	Rör . . . . .	Pipe . . . . .		5	MO 24592-	
32	1	-	-	-	942806-1	Hålskruv . . . . .	Hollow screw . . . . .		1		
33	4	-	-	-	957173-8	Packning . . . . .	Gasket. . . . .	S	1		08-
34	1	-	-	-	942806-1	Hålskruv. . . . .	Hollow screw . . . . .		0		08
35	2	-	-	-	191487-8	Klammer . . . . .	Clamp . . . . .		4		08
36	2	-	-	-	955269-6	Skruv. . . . .	Screw . . . . .		0		08
37	2	-	-	-	941906-0	Fjädrande bricka . . . . .	Resilient washer. . . . .		0		
38	1	-	-	-	842965-6	Rörtätning . . . . .	Adapter sealing . . . . .		3	SE SIDA 60, 1-F13	
39	2	-	-	-	948610-1	O-ring . . . . .	O-ring . . . . .	S	0	SE SIDA 60, 1-F13	09
40	1	-	-	-	192134-5	Propp . . . . .	Plug . . . . .		0		09
41	2	-	-	-	941908-6	Fjädrande bricka . . . . .	Resilient washer . . . . .		0		09
42	2	-	-	-	955317-3	Skruv . . . . .	Screw. . . . .		0	L=25MM	09
	1	-	-	-	955317-3	Skruv . . . . .	Screw . . . . .		0	306)	10
	1	-	-	-	955318-1	Skruv. . . . .	Screw . . . . .		0	306) SE GRUPP 3	10
43	1	-	-	-	844593-4	Lyftöglekonsol . . . . .	Lifting bracket . . . . .		6		10
44	1	-	-	-	842680-1	hus . . . . .	Housing. . . . .		5		10
45	4	-	-	-	673792-8	Lås . . . . .	Lock. . . . .		3		1
46	4	-	-	-	463908-4	Klamma . . . . .	Clamp. . . . .		3		
47	1	-	-	-	463505-8	Insats . . . . .	Insert. . . . .		1		1.
48	1	-	-	-	842615-7	Lock. . . . .	Cover . . . . .		5		11

4. Ingår i turbokompressor. Included in turbo compressor.  
 269. ERS AV 1st 846215 rör, 2st 846216 hålskruv, 2st 957174 packning, 2st 957175 packning, 2st 18344 klammer. Replaced by 1pc 846215 pipe, 2pcs 846216 hollow bolt, 2pcs 957174 packing, 2pcs 957175 packing, 2pcs 18344 clamp.  
 306. Spec 867948 Spec 867948





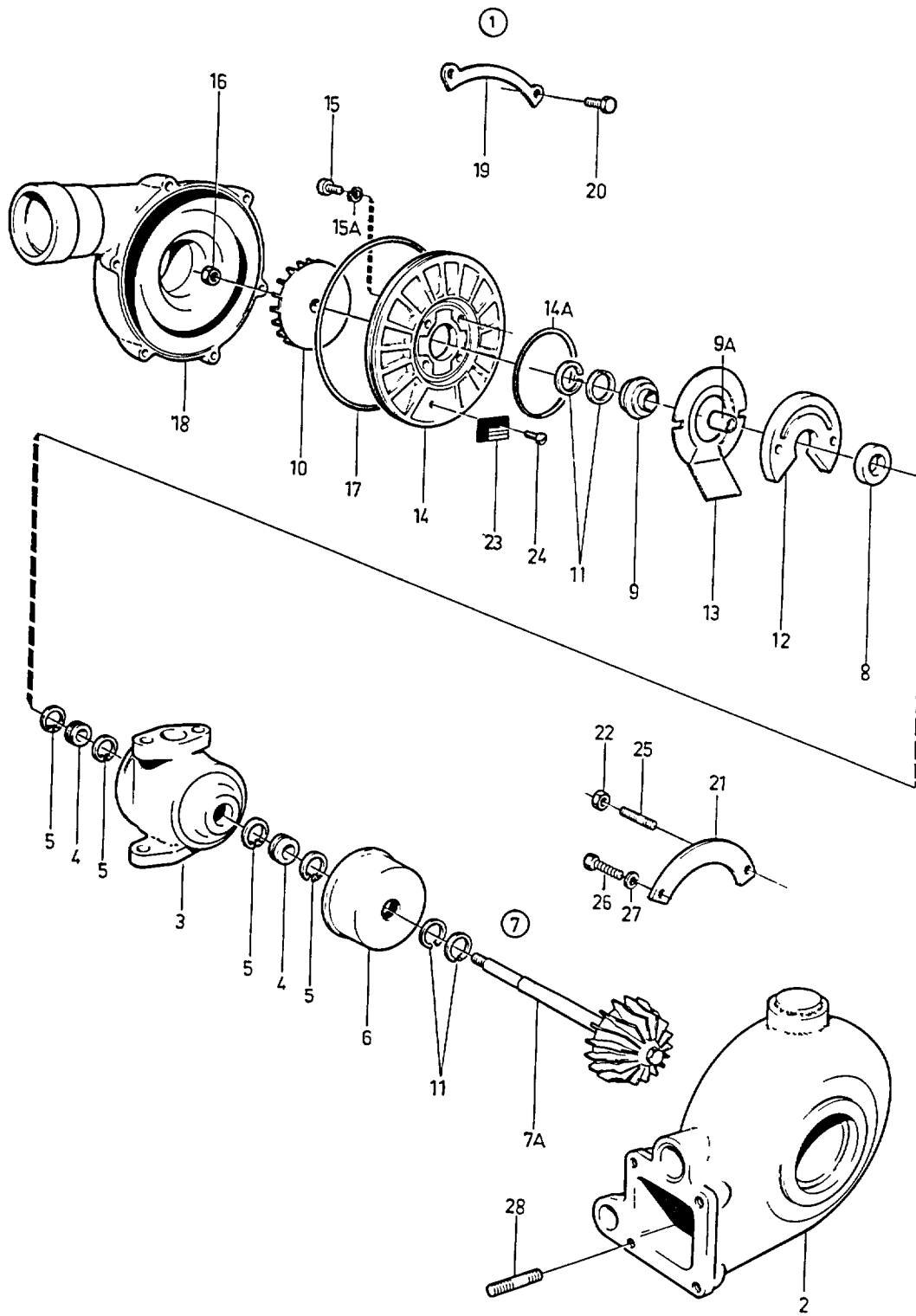
Sida Page	Grupp Group	Turbokompressor och luftfilter med monteringsdetaljer		Turbo compressor and air filter with installation components		Illustration	20				
48	2b	AQAD40A, AQAD40B, TAMD40A, TAMD40B				5923 1987-04					
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
49	5	-	-	-	941907-8	Fjädrande bricka .....	Resilient washer .....		0		1
50	2	-	-	-	959224-7	Skruv .....	Screw .....		0	L=45MM	11
	2	-	-	-	959227-0	Skruv .....	Screw .....		0	L=50MM	12
51	1	-	-	-	842639-7	Slang .....	Hose .....		3		12
52	-	-	-	-		Insugnings- och .....	Induction- and .....			SE SIDA 60, 1-F13	12
	-	-	-	-		Avgasrör .....	Exhaust manifold .....				12
53	4	-	-	-	963106-0	Mutter. ....	Nut .....		0		12



Sida Page	Grupp Group	Turbokompressor	Turbo compressor	Illustration 7987 1987-04
50	2b			

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
1	1	-	-	-	829368-0	Turbokompressor.....	Turbo compressor .....	6		
2	1	-	-	-		.Turbinhus .....	.Turbine housing .....	8		
3	1	-	-	-		.Lagerhus .....	.Bearing housing .....	8		
4	2	-	-	-	838562-7	.Bussning .....	.Bushing .....	S 6		
5	4	-	-	-	845042-1	.Låsring .....	.Lock ring .....	S 6		
6	1	-	-	-	843997-8	.Varmesköld .....	.Heat shield .....	6		
7	1	-	-	-	843998-6	.Rotor .....	.Rotor .....	6		
7a	1	-	-	-	845831-7	..Rotor .....	..Rotor .....	6		
8	1	-	-	-	844000-0	..Tryckring .....	..Thrust ring .....	6		
9	1	-	-	-	845049-6	..Packning .....	..Gasket .....	6		
9a	1	-	-	-	845050-4	..Hylsa .....	..Seal sleeve .....	6		
10	1	-	-	-	844010-9	..Kompressorhjul ..	..Compressor wheel ..	6		
11	4	-	-	-	845045-4	.Kolvring .....	.Piston ring .....	S 6		
12	1	-	-	-	838565-0	.Axiallager .....	.Bearing .....	S 6		
13	1	-	-	-	845047-0	.Stänkplåt .....	.Oil deflector .....	S 6		
14	1	-	-	-		.Sköld .....	.Shield .....	8		
14a	1	-	-	-	838426-5	.O-ring .....	.O-ring .....	S 2		
15	4	-	-	-	845829-1	.Skruv .....	.Screw .....	S 2	(844002)	
15a	4	-	-	-	838568-4	.Bricka .....	.Washer .....	S 2		
16	1	-	-	-	848711-8	.Mutter .....	.Nut .....	S 2		
17	1	-	-	-	845824-2	.O-ring .....	.O-ring .....	S 3		
18	1	-	-	-		.Kompressorhus ..	.Compressor housing...	8		
19	3	-	-	-	845825-9	.Spännsegment ..	.Clip plate .....	8		
20	6	-	-	-	838570-0	.Skruv .....	.Screw .....	1		
21	3	-	-	-	845826-7	.Spännsegment ..	.Clip plate .....	8		
22	6	-	-	-	844006-7	.Mutter .....	.Nut .....	S 1		
23	1	-	-	-		.Skylt .....	.Plate .....	8		
24	1	-	-	-		.Nit .....	.Rivet .....	8		
25	6	-	-	-		.Skruv .....	.Screw .....	8		
26	6	-	-	-	844007-5	.Skruv .....	.Screw .....	S 1		
27	6	-	-	-	844008-3	Fjädrande bricka ..	Resilient washer .....	S 1		
28	4	-	-	-	953063-5	Pinnskruv .....	Stud bolt .....	8		
	1	-	-	-	875632-2	Reparationssats ..	Repair kit .....	1		

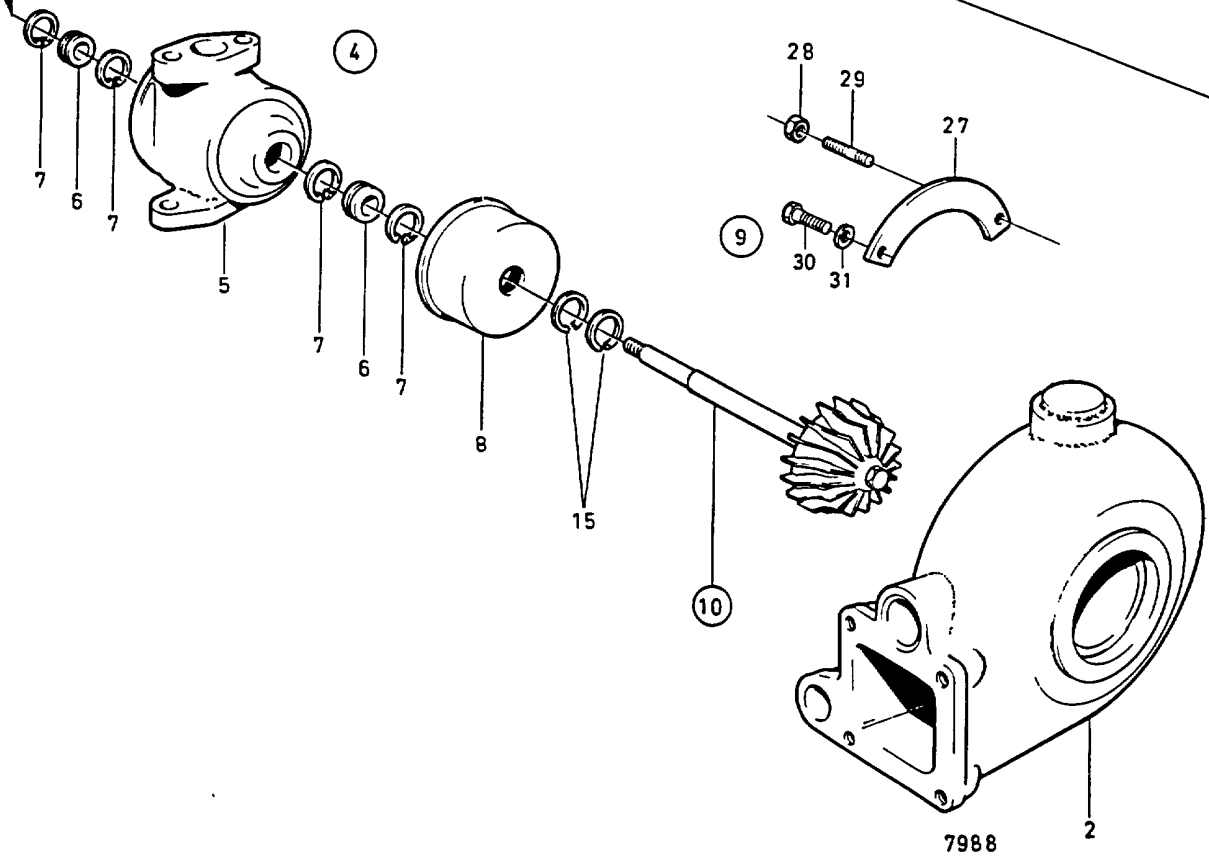
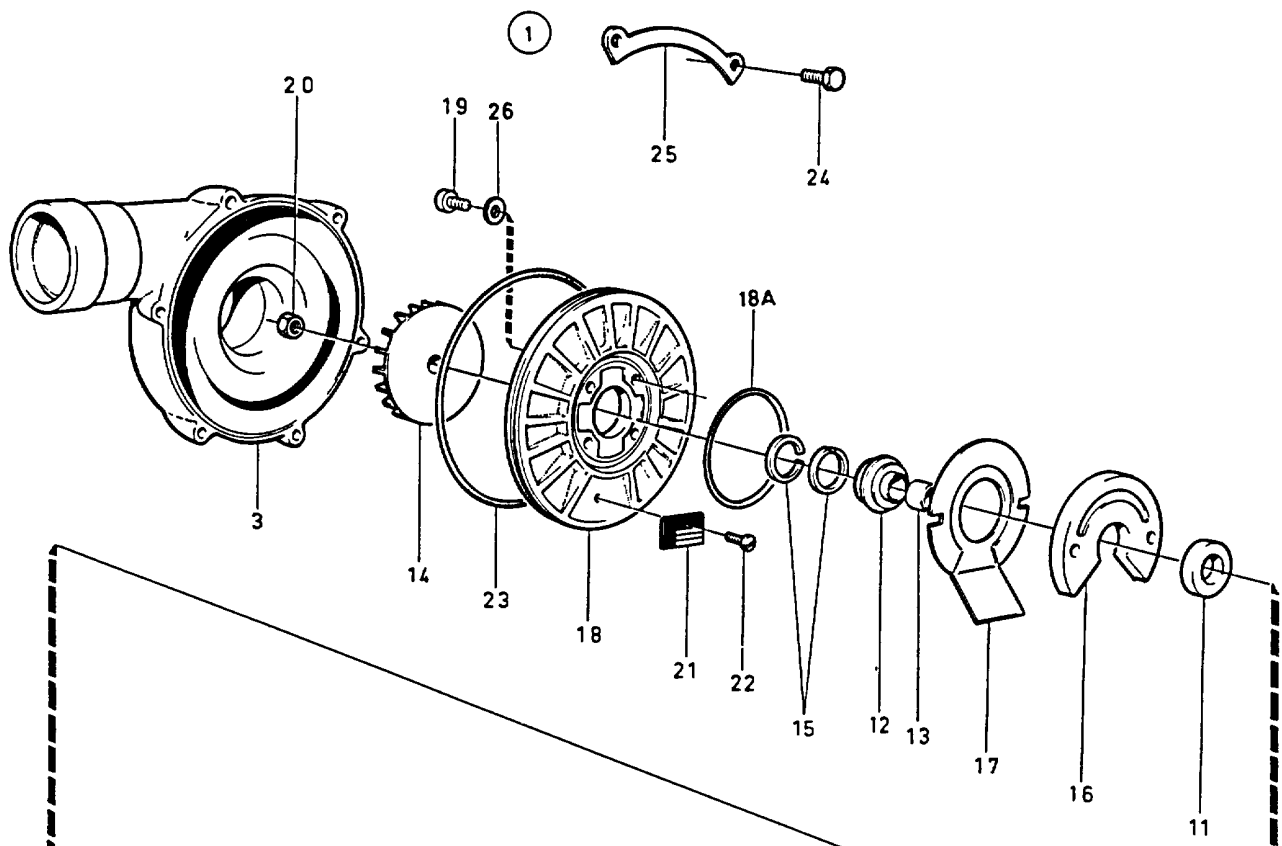
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7987



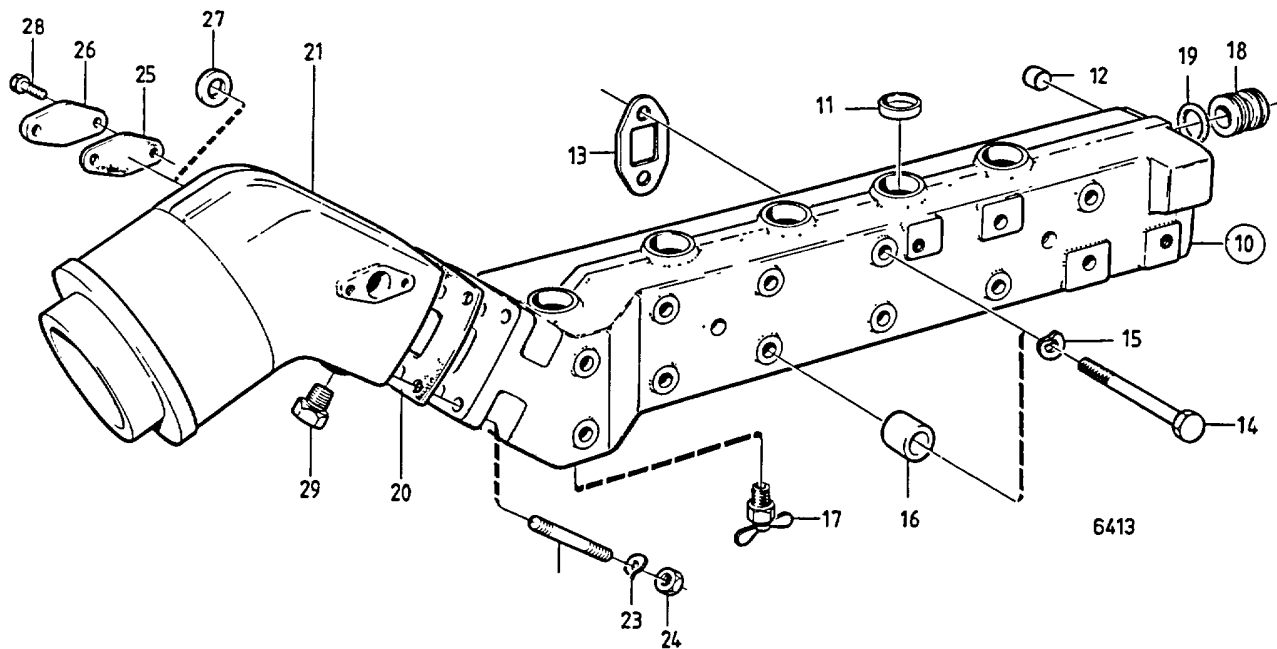
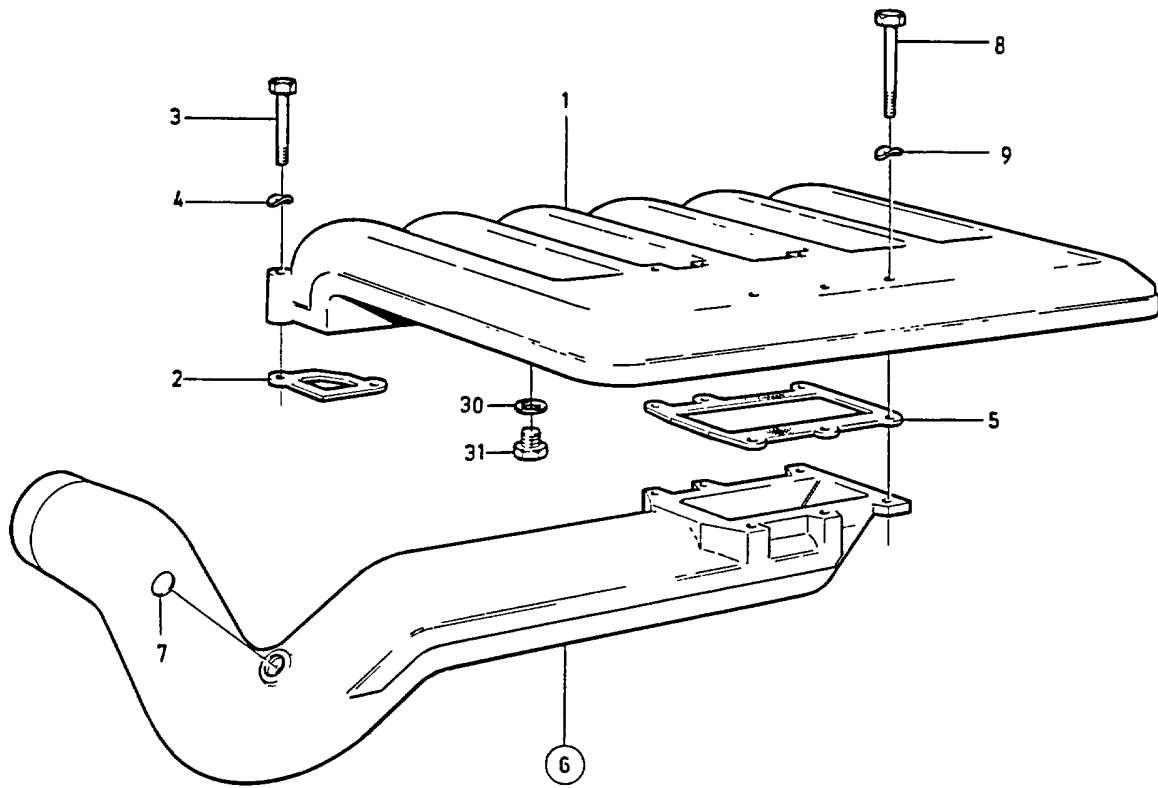
Sida Page		Grupp Group		Turbokompressor		Turbo compressor		Illustration		
52		2b						7988 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
1	1	-	-	-	845294-8	Turbokompressor.....	Turbo compressor.....	6		00
2	1	-	-	-		.Turbinhus .....	.Turbine housing,....	8		00
3	1	-	-	-		.Kompressorhus. ....	.Compressor housing. ....	8		00
4	1	-	-	-	845823-4	.Rotorenhet .....	.Rotor unit .....	6		00
5	1	-	-	-		..Lagerhus .....	..Bearing housing .....	8		01
6	2	-	-	-	838562-7	..Bussning .....	..Bushing .....	S 6		01
7	4	-	-	-	845042-1	..Låsring .....	..Lock ring .....	S 6		01
8	1	-	-	-	843997-8	..Varmesköld .....	..Heat shield .....	6		01
9	1	-	-	-	845827-5	..Rotorsats.....	..Rotor kit .....	6		01
10	1	-	-	-	845831-7	...Rotor.....	...Rotor .....	6		02
11	1	-	-	-	844000-0	...Tryckring ...	...Thrust ring .....	6		--
12	1	-	-	-	845049-6	...Packning .....	...Gasket.....	6		
13	1	-	-	-	845050-4	...Hylsa .....	...Sleeve .....	6		U2
14	1	-	-	-	845832-5	...Kompressorhjul .....	...Compressor wheel.....	6		02
15	4	-	-	-	845045-4	..Kolring .....	..Piston ring.....	S 6		03
16	1	-	-	-	838565-0	..Axiällager.....	..Bearing .....	S 6		03
17	1	-	-	-	845047-0	..Oljeavkastare.....	..Oil slinger .....	S 6		--
18	1	-	-	-	845828-3	..Tryckplatta ..	..Pressure plate .....	6		
18a	-	-	-	-	838426-5	..O-ring..	..O-ring .....	S 2		U2
19	4	-	-	-	845829-1	..Skruv .....	..Screw.....	S 3		03
20	1	-	-	-	848711-8	..Mutter.....	..Nut .....	S 3		04
21	1	-	-	-		..Skylt.....	..Plate .....	8		04
22	1	-	-	-		..Skruv .....	..Bolt .....	8		04
23	1	-	-	-	845824-2	..O-ring .....	..O-ring .....	S 3		04
24	6	-	-	-	838570-0	..Skruv.....	..Screw .....	S 3		04
25	3	-	-	-	845825-9	..Spännsegment .....	..Tension key .....	S 5		05
26	4	-	-	-	838568-4	..Fjädrande bricka.....	..Resilient washer .....	S 3		0
27	3	-	-	-	845826-7	..Spannsegment..	..Tension key ..	S 5		0
28	6	-	-	-	844006-7	..Mutter .....	..Nut .....	S 3		05
29	6	-	-	-		..Skruv.....	..Screw .....	8		05
30	6	-	-	-	844007-5	..Skruv.....	..Screw .....	S 4		05
31	6	-	-	-	838568-4	..Bricka .....	..Washer .....	S 4		05
	1	-	-	-	875632-2	Reparationssats ...	Repair kit.....	1		06



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Sida Page	Grupp Group	Insugnings- och avgasrör med monteringsdetaljer MD40A	Induction- and exhaust manifold with installation components	Illustration 6413 1987-04	211
54	2b				

Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning .	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	843513-3	Insugningsrör .....	Induction manifold .....		6		
2	6	-	-	-	1542289-2	Packning .....	Gasket.....	S	1		
3	12	-	-	-	955302-5	Skruv .....	Screw.....		0	TID UTF	00
	10	-	-	-	955302-5	Skruv.....	Screw.....		0	SEN UTF	00
	2	-	-	-	955303-3	Skruv.....	Screw.....		0	SEN UTF, SE GRUPP 2A	01
4	12	-	-	-	941907-8	Bricka .....	Washer.....		0		01
5	1	-	-	-	844084-4	Packning .....	Gasket.....		1	SE SIDA 36, 1-E13	01
6	1	-	-	-	844249-3	Rör .....	Pipe.....		6	SE SIDA 36, 1-E13	01
7	2	-	-	-	955095-5	Bricka .....	Washer.....		0		01
8	6	-	-	-	955303-3	Skruv.....	Screw.....		0		02
9	6	-	-	-	941907-8	Bricka .....	Washer.....		0		02
10	1	-	-	-	842569-6	Avgasrör .....	Exhaust manifold.....		5		
11	11	-	-	-	946780-4	Hattplugg .....	Plug.....		0		02
12	1	-	-	-	955074-0	Propp .....	Plug.....		0		02
13	6	-	-	-	1542123-3	Packning .....	Gasket.....	S	1	(1542177)	03
14	7	-	-	-	955332-2	Skruv .....	Screw.....		0	L=120MM, SEN UTF	00
	8	-	-	-	955532-7	Skruv .....	Screw.....		0	L=95MM, TID UTF	00
	2	-	-	-	955336-3	Skruv.....	Screw.....		0	L=160MM	00
	1	-	-	-	955334-8	Skruv.....	Screw.....		0	L=140MM	00
	1	-	-	-	955333-0	Skruv .....	Screw.....		0	L=130MM, SEN UTF	00
15	12	-	-	-	941908-6	Fjäderbricka .....	Washer.....		0		02
16	1	-	-	-	824205-9	Distanshylsa .....	Spacer sleeve .....		3		02
17	1	-	-	-	82745-1	Kran .....	Cock.....		3		02
18	2	-	-	-	842965-6	Rörtätning .....	Adapter sealing.....		3	SE SIDA 18, 1-D19	02
										SE SIDA 28, 1-E05	02
19	4	-	-	-	925067-1	Gummiring .....	Ring .....	S	1	SE SIDA 18, 1-D19	02
										SE SIDA 28, 1-E05	02
20	1	-	-	-	843009-2	Packning .....	Gasket .....	S	1		02
21	1	-	-	-	844091-9	Avgaskrok .....	Exhaust bend .....		5		02
22	4	-	-	-	924079-7	Pinnskruv .....	Stud .....		0		02
23	4	-	-	-	955895-8	Bricka .....	Washer.....		0		02
24	4	-	-	-	940183-7	Mutter .....	Nut .....		0		02
25	1	-	-	-	843042-3	Packning .....	Gasket .....		1		02
26	1	-	-	-	844093-5	Lock .....	Cover .....		4		02
27	1	-	-	-	842913-6	Tätningarring .....	Seal ring .....	S	1	SE GRUPP 4A	02
28	2	-	-	-	955271-2	Skruv .....	Screw.....		0		02
29	1	-	-	-	192134-5	Propp .....	Plug.....		0		02
30	1	-	-	-	957173-8	Packning .....	Packing.....		0		02
31	1	-	-	-	960628-6	Propp .....	Plug.....		2		02



6413



Sida Page	Grupp Group	Insugnings- och avgasror med monteringsdetaljer			Induction- and exhaust manifold with installation components			Illustration		
56	2b	AQD40A,TMD40A						5731 1987-04		
Pos Fig	Antal/Quantity			Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	842643-9	Insugningsrör	Induction manifold	6		ERS AV 844786	0
	1	-	-	844786-4	Insugningsrör	Induction manifold	6			00
2	6	-	-	1542289-2	Packning	Gasket	S 1			00
3	12	-	-	955301-7	Skruv	Screw	0		253) L=55MM	00
	12	-	-	955302-5	Skruv	Screw	0		254) L=60MM	01
	10	-	-	955302-5	Skruv	Screw	0		252) L=60MM, SEN UTF	01
	2	-	-	955303-3	Skruv	Screw	0		252) L=65MM, SEN UTF	01
	10	-	-	955301-7	Skruv	Screw	0		MO6101-6275	01
	2	-	-	955302-5	Skruv	Screw	0		MO6101-6275	01
4	12	-	-	941907-8	Bricka	Washer	0			02
5	1	-	-	960628-6	Propp	Plug	0			
6	1	-	-	947281-2	Packning	Gasket	S 0			
7	1	-	-	842645-4	Packning	Gasket	S 1			02
8	1	-	-	842653-8	Rör	Pipe	4			02
9	2	-	-	955306-6	Skruv	Screw	0		L=80MM	00
	1	-	-	940132-4	Skruv	Screw	0		L=35MM	00
10	3	-	-	941907-8	Bricka	Washer	0			--
11	1	-	-	842965-6	Rörtätning	Adapter sealing	3		SE SIDA 38, 1-E15	
12	2	-	-	948610-1	O-ring	O-ring	S 1		SE SIDA 38, 1-E15	0
13	1	-	-	842569-6	Avgasror	Exhaust manifold	5			00
14	11	-	-	946780-4	Propp	Plug	0			00
15	1	-	-	955074-0	Propp	Plug	0			00
16	6	-	-	1542123-3	Packning	Gasket	S 1		(1542177)	00
17	2	-	-	955336-3	Skruv	Screw	0		L=160MM	00
	4	-	-	955334-8	Skruv	Screw	0		L=140MM, ALT	00
	1	-	-	955334-8	Skruv	Screw	0		255) L=140MM, ALT	01
	3	-	-	955332-2	Skruv	Screw	0		255) L=120MM, ALT	
	5	-	-	955332-2	Skruv	Screw	0		L=120MM	00
	1	-	-	955332-2	Skruv	Screw	0		L=120MM, TID UTF	00
	1	-	-	955333-0	Skruv	Screw	0		L=130MM, SEN UTF	00
18	12	-	-	941908-6	Fjäderbricka	Washer	0			00
19	1	-	-	829368-0	Turbokompressor	Turbo compressor	S 1		SE SIDA 50, 1-F03	00
20	1	-	-	843217-1	Avgaskrok	Exhaust bend	8		262) MO-20784	0
	1	-	-	845261-7	Avgaskrok	Exhaust bend	0		MO 20785-	0
21	2	-	-	192426-5	Propp	Plug	0		263)	0
21b	1	-	-	845408-4	Packning	Gasket	1		264)	0
22	1	-	-	842993-8	Klamma	Clamp	3			0
23	2	-	-	842965-6	Rörtätning	Adapter sealing	3		SE SIDA 28, 1-E05	
									SE SIDA 18, 1-D19	
24	4	-	-	925067-1	Gummiring	Ring	S 1		SE SIDA 28, 1-E05	0
									SE SIDA 18, 1-D19	0
25	1	-	-	843042-3	Packning	Gasket	S 1		SE SIDA 2, 1-D03	0
26	1	-	-	82745-1	Kran	Cock	3			0
27	1	-	-	843228-8	Avgasslang	Exhaust hose	1		SE GRUPP 4A	
28	2	-	-	943483-8	Slangklamma	Hose clamp	0		SE GRUPP 4A	
29	1	-	-	824205-9	Distanshylsa	Spacer sleeve	3		255)	0

252 . Excl MO 6101-6275. Excl MO6101-6275.

253 . MO-6241, MO6276-7327. MO-6241, MO6276-7327.

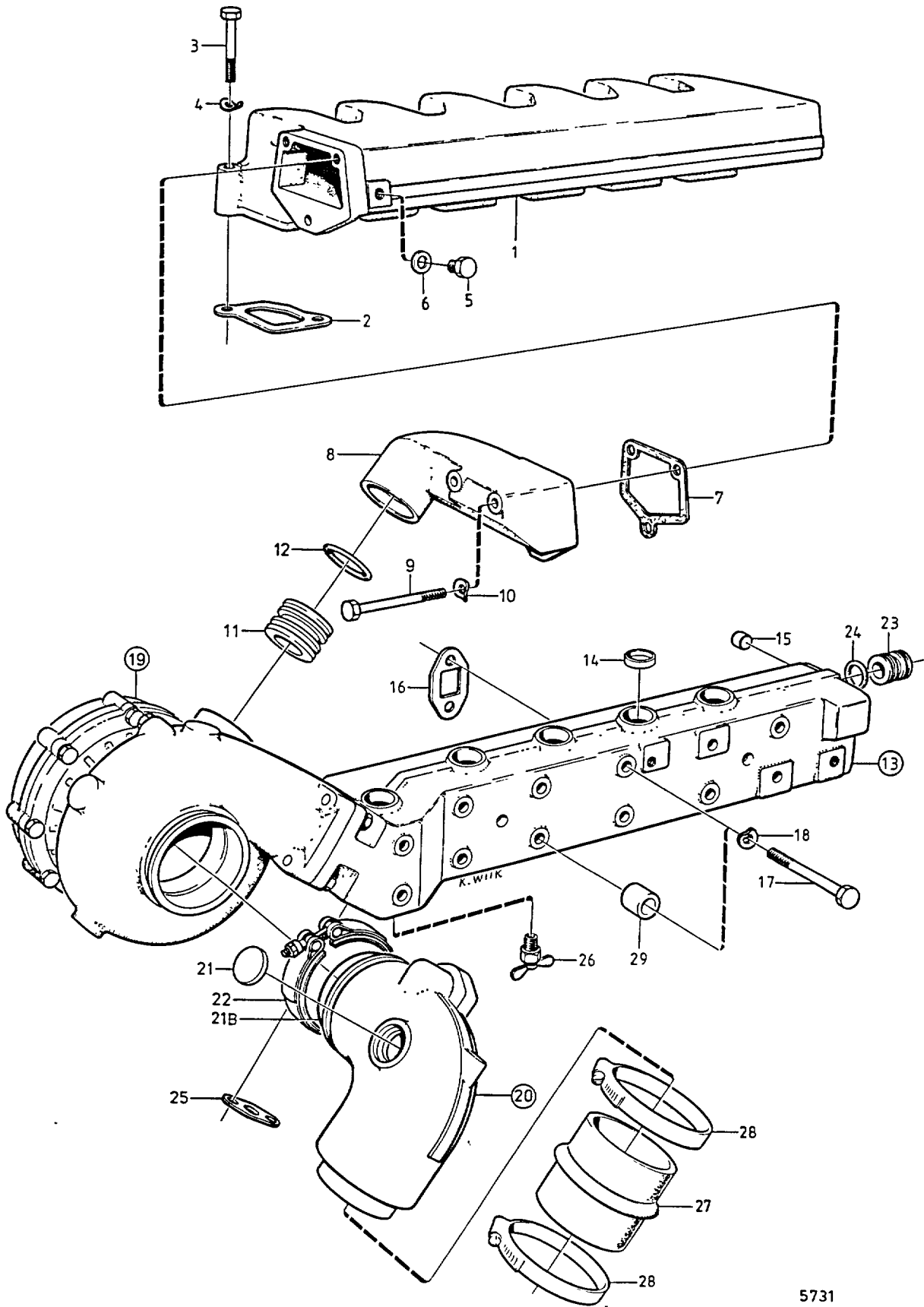
254 . MO6242-6275, MO7328-. MO6242-6275, MO7328-.

255 . Då expansionstank ej är monterad på avgasrör. When expansion tank is not mounted on exhaust manifold.

262 . For TMD40A: 843217 ersatt av 1st 845261 1st 845791 2st 959219 1st 845527. For TMD40A: 843217 replaced by 1pc 845261 1pc 845791 2pcs 959219 1pc 845527. For AQD40A: 843217 ersatt av 1st 845261 1st 845819 1st 845820 1st 845821 1st 845527 2st 946730. For AQD40A: 843217 replaced by 1pc 845261 1pc 845819 1pc 845820 1pc 845821 1pc 845527 2pcs 946730. Replaced by 1pc 845261 1pc 845791 1pc 845527 2pcs 959219.

263 . Ingår i 843217. Included in 843217.

264 . Ingår i 845261. Included in 845261.



Sida Page	Grupp Group	Insugnings- och avgasrör med monteringsdetaljer			Induction- and exhaust manifold with installation components			Illustration	21		
58	2b	TMD40B,TMD40C						5731 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	842643-9	Insugningsrör .....	Induction manifold . . .	6		ERS AV 844786	0
	1	-	-	-	844786-4	Insugningsrör .....	Induction manifold .....	6			0
2	6	-	-	-	1542289-2	Packning .....	Gasket .....	S	1		0C
3	12	-	-	-	955302-5	Skruv .....	Screw .....	0		254) L=60MM	01
	10	-	-	-	955302-5	Skruv .....	Screw .....	0		252) L=60MM, SEN UTF	01
	2	-	-	-	955303-3	Skruv .....	Screw .....	0		252) L=65MM, SEN UTF	01
4	12	-	-	-	941907-8	Bricka .....	Washer .....	0			02
5	1	-	-	-	960628-6	Propp .....	Plug .....	0			02
6	1	-	-	-	947281-2	Packning .....	Gasket .....	S	0		02
7	1	-	-	-	842645-4	Packning .....	Gasket .....	S	1		02
8	1	-	-	-	842653-8	Rör .....	Pipe .....	4			--
9	2	-	-	-	955306-6	Skruv .....	Screw .....	0		L=80MM	
	1	-	-	-	940132-4	Skruv .....	Screw .....	0		L=35MM	
10	3	-	-	-	941907-8	Bricka .....	Washer .....	0			0C
11	1	-	-	-	842965-6	Rortätning .....	Adapter sealing .....	3		SE SIDA 42, 1-E19	0C
12	2	-	-	-	948610-1	O-ring .....	O-ring .....	S	1	SE SIDA 42, 1-E19	0C
13	1	-	-	-	842569-6	Avgasrör .....	Exhaust manifold .....	5			^
14	11	-	-	-	946780-4	•Hattplugg .....	•Plug .....	0			
15	1	-	-	-	955074-0	•Propp .....	•Plug .....	0			u
16	6	-	-	-	1542123-3	Packning .....	Gasket .....	S	1	(1542177)	0:
17	2	-	-	-	955336-3	Skruv .....	Screw .....	0		L=160MM	0:
	4	-	-	-	955334-8	Skruv .....	Screw .....	0		L=140MM, ALT	0:
	1	-	-	-	955334-8	Skruv .....	Screw .....	0		255) L=140MM, ALT	0:
	3	-	-	-	955332-2	Skruv .....	Screw .....	0		255) L=120MM, ALT	0:
	5	-	-	-	955332-2	Skruv .....	Screw .....	0		L=120MM	0
	1	-	-	-	955332-2	Skruv .....	Screw .....	0		L=120MM, TID UTF	0
	1	-	-	-	955333-0	Skruv .....	Screw .....	0		L=130MM, SEN UTF	^
18	12	-	-	-	941908-6	Fjäderbricka .....	Washer .....	0			
19	1	-	-	-	829368-0	Turbokompressor .....	Turbo compressor .....	S	1	SE SIDA 50, 1-F03	u
20	1	-	-	-	843217-1	Avgaskrök .....	Exhaust bend .....	8		262) MO-20784	0
	1	-	-	-	845261-7	Avgaskrök .....	Exhaust bend .....	1		MO 20785-	0
21	2	-	-	-	192426-5	•Propp .....	•Plug .....	0		263)	0
21b	1	-	-	-	845408-4	•Packning .....	•Gasket .....	1		264)	0
22	1	-	-	-	842993-8	Klamma .....	Clamp .....	3			0
23	2	-	-	-	842965-6	Rortätning .....	Adapter sealing .....	3		SE SIDA 30, 1-E07	0
24	4	-	-	-	925067-1	gummiring .....	ring .....	S	1	SE SIDA 30, 1-E07	0
25	1	-	-	-	843042-3	Packning .....	Gasket .....	S	1		0
26	1	-	-	-	82745-1	Kran .....	Cock .....	3			
27	1	-	-	-	843228-8	Avgasslang .....	Exhaust hose .....	1		SE GRUPP 4A	C
28	2	-	-	-	943483-8	Slangklamma .....	Hose clamp .....	0		SE GRUPP 4A	C
29	1	-	-	-	824205-9	Distanshylsa .....	Spacer sleeve .....	3		255)	C

252. Excl MO 6101-6275. Excl MO 6101-6275.

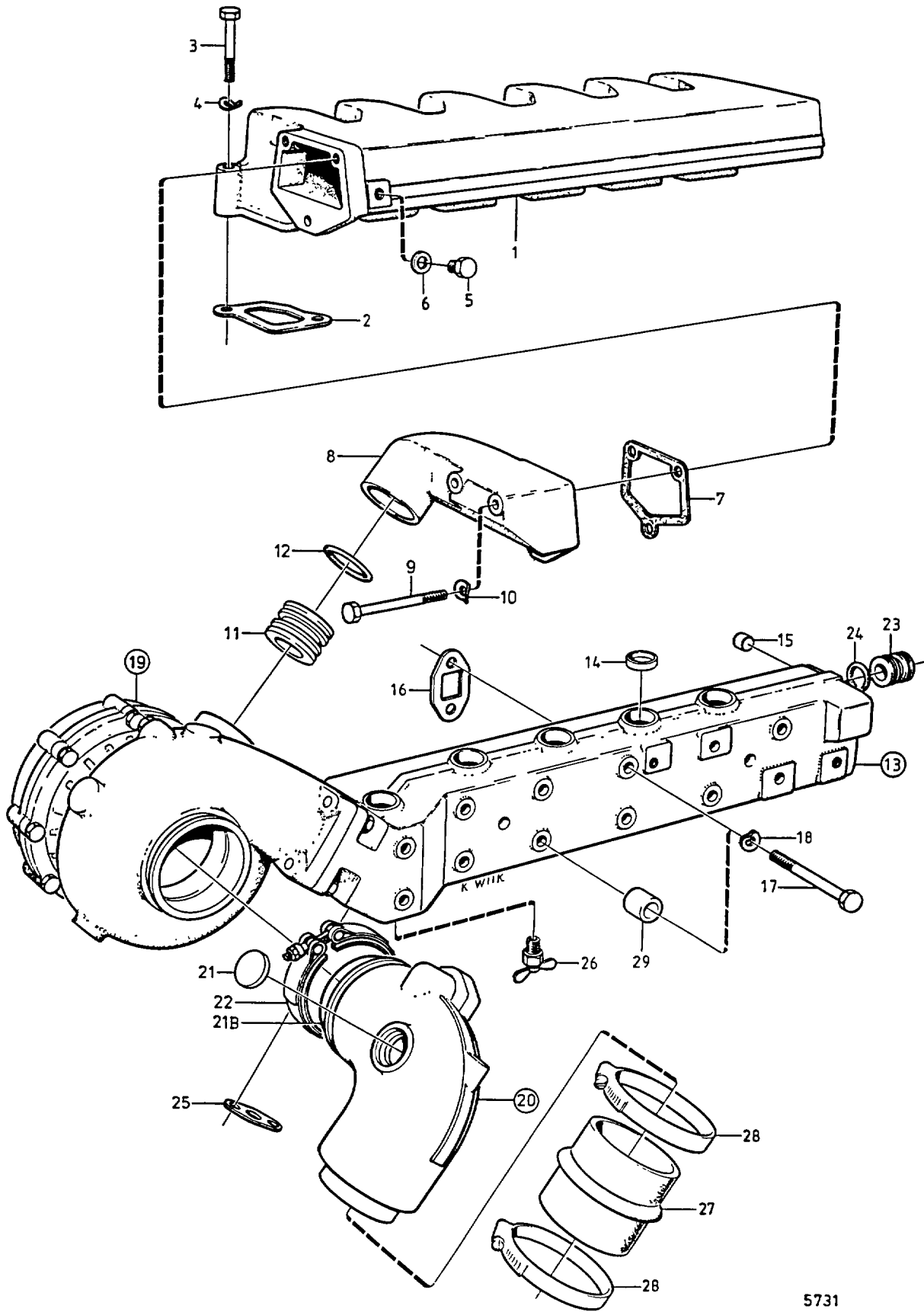
254. MO6242-6275, MO7328-. MO6242-6275, MO7328-.

255. Då expansionstank ej är monterad på avgasrör. When expansion tank is not mounted on exhaust manifold.

262. For TMD40A: 843217 ersatt av 1st 845261 1st 845791 2st 959219 1st 845527. For TMD40A: 843217 replaced by 1pc 845261 1pc 845791 2pcs 959219 1pc 845527. För AQD40A: 843217 ersatt av 1st 845261 1st 845819 1st 845820 1st 845821 1st 845527 2st 946730. For AQD40A: 843217 replaced by 1pc 845261 1pc 845819 1pc 845820 1pc 845821 1pc 845527 2pcs 946730. Replaced by 1pc 845261 1pc 845791 1pc 845527 2pcs 959219.

263. Ingår i 843217. Included in 843217.

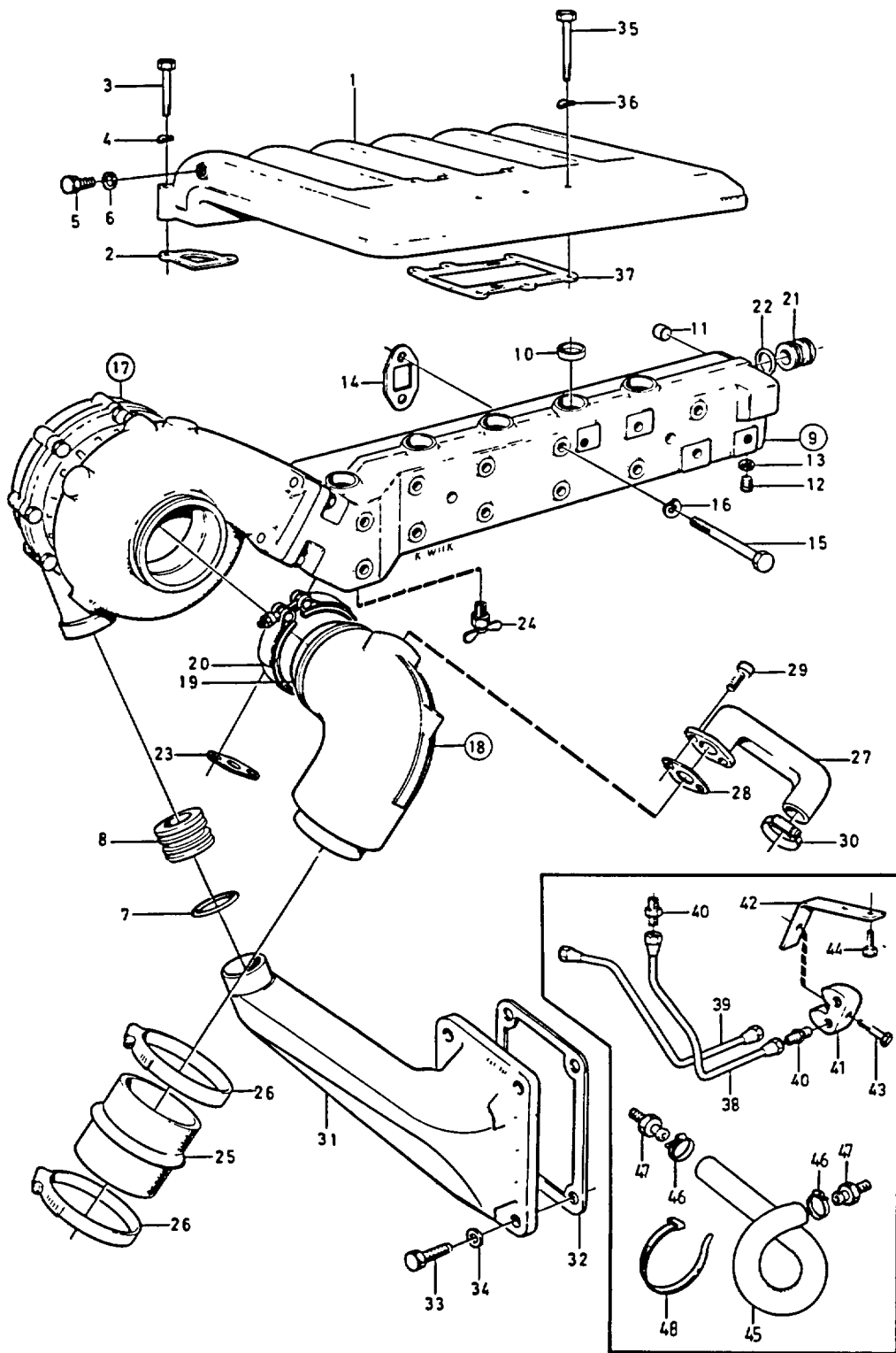
264. Ingår i 845261. Included in 845261.



Sida Page	Grupp Group	Insugnings- och avgasrör och kylvattendranering	Induction- and exhaust manifold and cooling water overspill	Illustration 8279 1987-04
60	2b	AQAD40A, AQAD40B, TAMD40A, TAMD40B		

Pos Fig	Antal/Quantity			Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	843513-3	Insugningsrör	Inlet manifold		6		0C
2	6	-	-	1542289-2	Packning	Gasket	S	1		00-
3	10	-	-	955302-5	Skruv	Screw		0	L=60MM	00f
	2	-	-	955303-3	Skruv	Screw		0	L=65MM	00f
4	10	-	-	941907-8	Fjädrande bricka	Resilient washer		0		01f
5	1	-	-	960628-6	Propp	Plug		0		01f
6	1	-	-	947281-2	Packning	Gasket	S	0		01f
7	1	-	-	842965-6	Rörtätning	Adapter sealing		3	SE SIDA 46, 1-E23	01f
8	2	-	-	948610-1	O-ring	O-ring	S	0	SE SIDA 46, 1-E23	01f
9	1	-	-	842569-6	Avgasrör	Exhaust manifold		5		02f
10	11	-	-	946780-4	Hattplugg	Plug		0		
11	1	-	-	955074-0	Propp	Plug		0		
12	2	-	-	960632-8	Propp	Plug		0		02f
13	2	-	-	957181-1	Packning	Gasket		0		02f
14	6	-	-	1542123-3	Packning	Gasket	S	1	(1542177)	03-
15	2	-	-	955336-3	Skruv	Screw		0	L=160MM	03
	7	-	-	955332-2	Skruv	Screw		0	L=120MM	
	3	-	-	955333-0	Skruv	Screw		0	L=130MM	
16	8	-	-	941908-6	Fjädrande bricka	Resilient washer		0		03
17	1	-	-	845294-8	Turbokompressor	Turbo compressor		5	SE SIDA 52, 1-F05	04
18	1	-	-	845261-7	Avgaskrök	Exhaust bend		5		04
19	1	-	-	845408-4	Packning	Gasket	S	1		04
20	1	-	-	842993-8	Klamma	Clamp		3		04
21	2	-	-	842965-6	Rörtätning	Adapter sealing		3	SE SIDA 28, 1-E05	04
									SE SIDA 24, 1-E01	05
22	4	-	-	925067-1	O-ring	O-ring	S	0	SE SIDA 28, 1-E05	05
									SE SIDA 24, 1-E01	0
23	1	-	-	843042-3	Packning	Gasket	S	1		0
24	1	-	-	947893-4	Kran	Cock		3		05
25	1	-	-	843228-8	Avgasslang	Exhaust hose		1	SE GRUPP 4A	06
26	2	-	-	853012-3	Klamma	Clamp		0	(961676)	06
27	1	-	-	845528-9	Kylvattenanslutning	Connection		5		06
28	1	-	-	845527-1	Packning	Gasket	S	1		06
29	2	-	-	959219-7	Skruv	Screw		0		06
30	2	-	-	961670-7	Slangklamma	Hose clamp		0	SE SIDA 24, 1-E01	07
31	1	-	-	845453-0	Anslutningsrör	Connecting pipe		5	EXCL AQAD40B/290,290DP	07
									TAMD40B MO-43384	07
									AQAD40B/290,290DP	
									TAMD40B MO43385-	
32	1	-	-	845353-2	Packning	Gasket	S	1	SE SIDA 26, 1-E03	0E
33	4	-	-	955297-7	Skruv	Screw		0	FOR/FOR 845453	0E
	2	-	-	955297-7	Skruv	Screw		0	FOR/FOR 838456	0E
	2	-	-	940129-0	Skruv	Screw		0	FOR/FOR 838456	0E
34	4	-	-	941907-8	fjädrande bricka	resilient washer		0		
35	4	-	-	955304-1	Skruv	Screw		0	L=70MM	
	2	-	-	955303-3	Skruv	Screw		0	L=65MM	0E
36	6	-	-	941907-8	Fjädrande bricka	Resilient washer		0		0E
37	1	-	-	844084-4	Packning	Gasket	S	1		0E
38	1	-	-	845857-2	Rör	Pipe		5	349)	0E
39	1	-	-	845858-0	Rör	Pipe		5	349)	1C
40	4	-	-	954337-2	Rak nippel	Nipple		0		1C
41	1	-	-	829146-0	Roranslutning	Pipe connection		5		1C
42	1	-	-	845859-8	Konsol	Bracket		5		1C
43	1	-	-	955275-3	Skruv	Screw		0		1f
44	1	-	-	955300-9	Skruv	Screw		0	SE SIDA 26, 1-E03	1
45	2	-	-	943366-5	Slang	Hose		0	L=3800MM	1
46	4	-	-	943469-7	Klammer	Clamp		0		1f
47	4	-	-	1136965-9	Slangnippel	Hose nipple		2		1f
48	ERF	-	-	948210-0	Bandklamma	Strip clamp		0		1f

349. Ersatt av 1st SLANG-943366, 2st SLANGKLAMMOR-943469 samt 2st NIPPLAR-1136965. Replaced by 1pc HOSE-943366, 2pcs CLAMP-943469 and 2pcs NIPPLE-1136965.



# **VOLVO PENTA**

Originaldelar · Genuine Parts  
Originalteile · Pièces d'origine

0001	Innehållsförteckning	Index	Grupp Group	Sida Page
	1987-04		2c	1
0060	Branslesystem		Sida	Koord
0080	Bränslesystem .....	AQD40A, TMD40A, MD40A .....	2	1-F17
0100	Bränslesystem .....	AQAD40A, TAMD40A .....	6	1-F21
0120	Bränslesystem .....	TMD40B, TMD40C .....	10	1-G01
0140	Bränslesystem .....	AQAD40B, TAMD40B .....	14	1-G05
2000				
2020				
2040				
2060	Fuel system		Page	Grid
2080	Fuel system .....	AQD40A, TMD40A, MD40A .....	2	1-F17
2100	Fuel system .....	AQAD40A, TAMD40A .....	6	1-F21
2120	Fuel system .....	TMD40B, TMD40C .....	10	1-G01
2140	Fuel system .....	AQAD40B, TAMD40B .....	14	1-G05
21				



Sida Page		Grupp Group		Branslesystem		Fuel system		Illustration	
2		2c		AQD40A, TMD40A, MD40A				0650 5740 1987-04	
Pos Fig	Antal/Quantity			Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes
	AQD 40A	TMD 40A	MD 40A						
1	1	1	-	829583-4	Insprutningspump ..	Fuel injection pump. ....	7	120)	007
	-	-	-		Det se sida 22, 1-G13 .....	Comp page 22, 1-G13 .....			003.
	1	1	-	842994-6	Insprutningspump ..	Fuel injection pump. ....	7	121)	0040
	-	-	-		Det se sida 22, 1-G13 .....	Comp page 22, 1-G13 .....			0050
	-	-	1	844245-1	Insprutningspump...	Fuel injection pump. ....	8	122,159)	0060
	-	-	-		Det se sida 22, 1-G13 .....	Comp page 22, 1-G13 .....			0070
	-	-	1	846471-1	Insprutningspump ..	Fuel injection pump. ....	7		0071
	-	-	-		Det se sida 34, 1-H01 .....	Comp page 34, 1-H01 .....			0072
	-	-	1	844246-9	Insprutningspump ..	Fuel injection pump .....	7	123)	0080
	-	-	-		Det se sida 22, 1-G13 .....	Comp page 22, 1-G13 .....			0100
	-	1	-	844785-6	Insprutningspump ..	Injection pump .....	7	124) MO6101-6275	0120
	-	-	-		Det se sida 46, 1-H13 .....	Comp page 46, 1-H13 .....			0160
2	1	1	1	1542171-2	Nav .....	Hub .....	5		0180
3	1	1	1	947314-1	O-ring .....	O-ring .....	S 1		0200
4	3	3	3	953046-0	Pinnskruv .....	Stud .....	0		0220
5	3	3	3	955894-1	Bricka .....	Washer .....	0		0240
6	3	3	3	955782-8	Mutter .....	Nut .....	0		0260
7	1	1	1	1542170-4	Matarpump .....	Pump .....	5		0280
	1	1	1	273663-5	Reparationssats .....	Repair kit .....	1		0300
8	1	1	1	463392-1	Packning .....	Gasket .....	S 1		0320
9	2	2	2	941907-8	Bricka .....	Washer .....	0		0340
10	2	2	2	955295-1	Skruv .....	Screw .....	0		0360
11	1	1	1	1542209-0	Branslefilter .....	Fuel filter .....	8	ERS AV 838472	0380
	-	-	-		Det se sida 20, 1-G11 .....	Comp page 20, 1-G11 .....			0390
	1	1	1	838472-9	Branslefilter .....	Fuel filter .....	3		0391
	-	-	-		Det se sida 18, 1-G09 .....	Comp page 18, 1-G09 .....			0400
12	2	2	2	960148-5	Bricka .....	Washer .....	0	SE GRUPP 2D	0420
13	2	2	2	955318-1	Skruv .....	Screw .....	0	SE GRUPP 2D	0440
14	2	2	2	18839-1	Packning .....	Gasket .....	S 1	FOR/FOR 1542209	0460
15	2	2	2	960629-4	Propp .....	Plug .....	0	FOR/FOR 1542209	0480
16	1	1	1	1542277-7	Bransleror .....	Fuel pipe .....	4		0500
17	1	1	1	1542278-5	Bransleror .....	Fuel pipe .....	4		0520
18	8	8	8	11994-1	Bricka .....	Washer .....	S 1		0540
19	4	4	4	74040-7	Hålskruv .....	Banjo bolt .....	3		0560
20	6	6	6	1542155-5	Insprutare .....	Fuel injector .....	5		0580
	-	-	-		Det se sida 54, 1-H21 .....	Comp page 54, 1-H21 .....			0600
21	6	6	6	1542156-3	Ok .....	Bracket .....	5		0620
22	6	6	6	924068-0	Skruv .....	Screw .....	0		0640
23	6	6	6	1542197-7	Bricka .....	Washer .....	2		0660
24	6	6	6	955782-8	Mutter .....	Nut .....	0		0680
25	6	6	6	1542159-7	Bricka .....	Washer .....	3		0700
26	6	6	6	1542158-9	Bricka .....	Washer .....	3		0720
27	6	6	6	1542154-8	Varmeskold .....	Heat shield .....	3		0740
28	6	6	6	1542157-1	Bricka .....	Washer .....	3		0760
29	1	1	1	1542167-0	Läckoljeledning .....	Leak off pipe .....	4		0780
30	5	5	5	74033-2	Hålskruv .....	Banjo bolt .....	3		0800
31	1	1	1	74034-0	Hålskruv .....	Banjo bolt .....	3		0820
32	13	13	13	957171-2	Packning .....	Gasket .....	S 1		0840
33	1	1	1	843668-5	Läckoljeledning .....	Leak-off pipe .....	4	TID UTF	0850
	1	1	1	845647-7	Rör .....	Pipe .....	4	SE UTF	0860
	-	1	-	844787-2	Läckoljeledning .....	Leak-off oil pipe .....	124) MO6101-6275		0880
34	1	1	1	74040-7	Hålskruv .....	Hollow screw .....	3	TID UTF	0890
	2	2	2	74040-7	Hålskruv .....	Hollow screw .....	3	SE UTF	

120. För spec 867274,867275,867375,867376,867391,867393,867425, 867444,867731. for spec 867274,867275,867375,867376,867391,867393,867425, 867444,867731

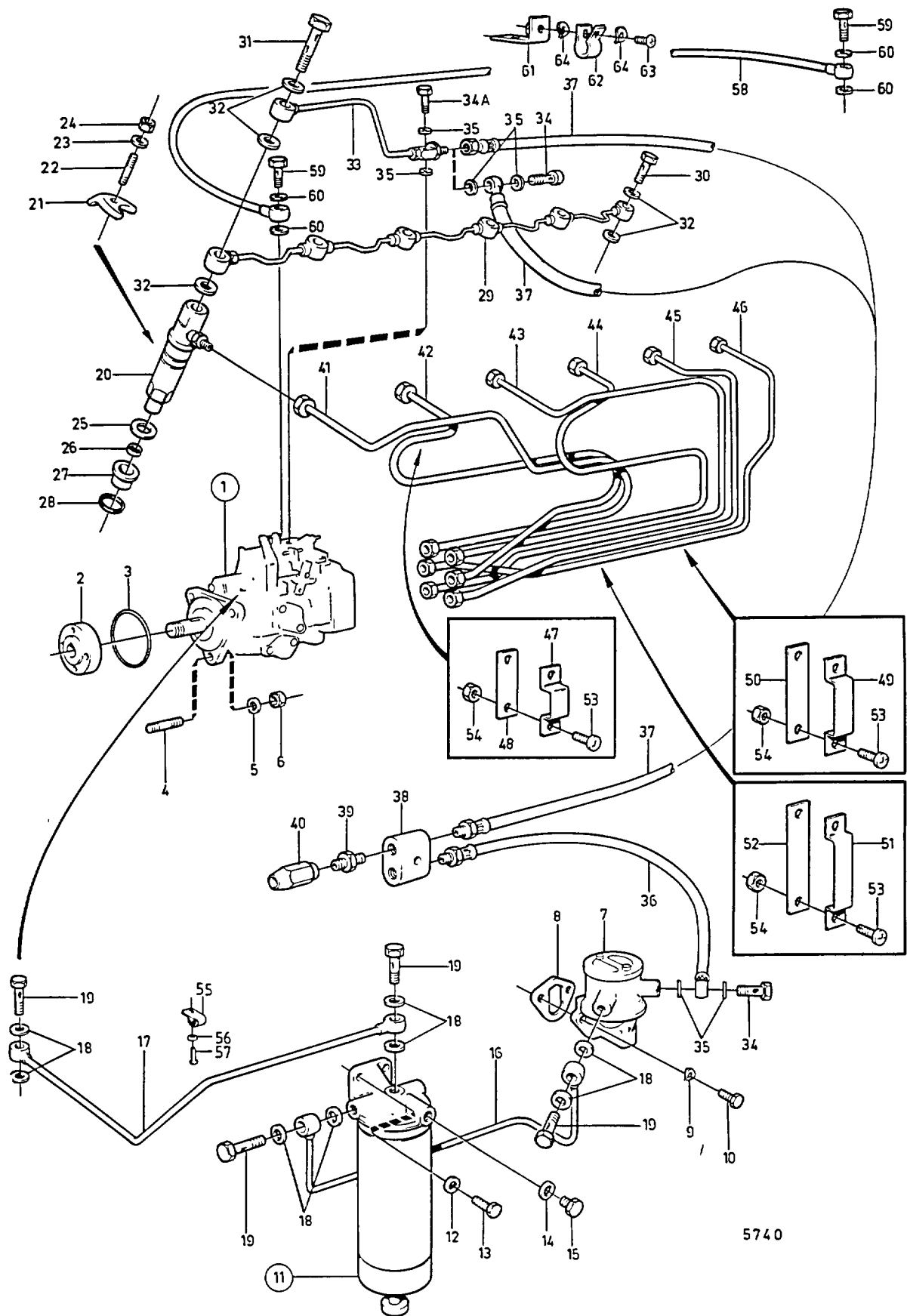
121. For spec 867377, 867378, 867379, 867394, 867424, 867445. For spec 867377, 867378, 867379, 867394, 867424, 867445.

122. For spec 867437, 867438, 867439, 867443, 867449. For spec 867437, 867438, 867439, 867443, 867449.

123. För spec 867440, 867441, 867442, 867450. For spec 867440, 867441, 867442, 867450.

124. För spec 867391. For spec 867391.

159. ERS AV 846471. Replaced by 846471.

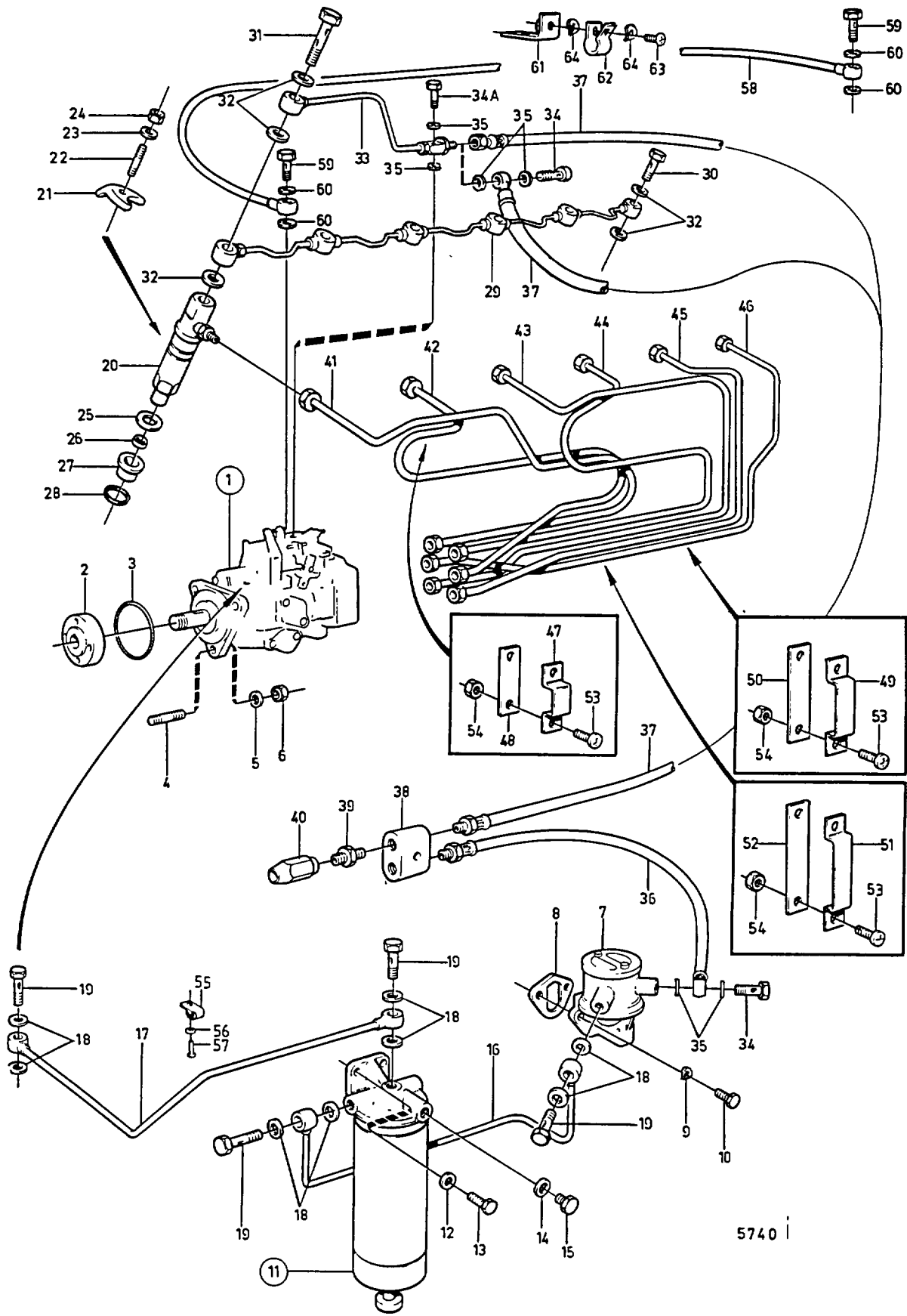


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Sida Page		Grupp Group		Bränslesystem		Fuel system		Illustration	
4		2c		AQD40A, TMD40A, MD40A				5740 1987-04	
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	AQD 40A	TMD 40A	MD 40A						
34a	1	1	1	844237-8	Hålskruv .. . . . . .	Hollow screw .. . . . . .		5	1)
35	4	4	4	48588-8	Bricka .. . . . . .	Washer .. . . . . .	S	1	TID UTF
	6	6	6	48588-8	Bricka .. . . . . .	Washer .. . . . . .	S	1	SEN UTF
36	1	1	1	845646-9	Bränsleslang .. . . . . .	Fuel hose .. . . . . .		3	(819054)
37	1	1	1	843296-5	Slang .. . . . . .	Hose .. . . . . .		3	TID UTF
	1	1	1	845646-9	Bränsleslang .. . . . . .	Fuel hose .. . . . . .		3	SEN UTF
38	1	1	1	829146-0	Röranslutning .. . . . . .	Pipe connection .. . . . . .		5	
39	2	2	2	954337-2	Nippel .. . . . . .	Nipple .. . . . . .		0	
40	2	2	2	954323-2	Rörkoppling .. . . . . .	Nut .. . . . . .		0	
41	1	1	1	1542111-8	Tryckrör .. . . . . .	Delivery pipe .. . . . . .		4	CYL NR 1 (1542161)
42	1	1	1	1542112-6	Tryckrör .. . . . . .	Delivery pipe .. . . . . .		4	CYL NR 2 (1542162)
43	1	1	1	1542113-4	Tryckrör .. . . . . .	Delivery pipe .. . . . . .		4	CYL NR 3 (1542163)
44	1	1	1	1542114-2	Tryckrör .. . . . . .	Delivery pipe .. . . . . .		4	CYL NR 4 (1542164)
45	1	1	1	1542115-9	Tryckrör .. . . . . .	Delivery pipe .. . . . . .		4	CYL NR 5 (1542165)
46	1	1	1	1542116-7	Tryckrör .. . . . . .	Delivery pipe .. . . . . .		4	CYL NR 6 (1542166)
47	3	3	3	1542109-2	Klammer .. . . . . .	Clamp .. . . . . .		4	(1542367)
48	3	3	3	466761-4	Klammer .. . . . . .	Clamp .. . . . . .		4	(1542368)
49	1	1	1	1542369-2	Klamma .. . . . . .	Clamp .. . . . . .		4	
50	1	1	1	1542370-0	Klamma .. . . . . .	Clamp .. . . . . .		4	
51	1	1	1	1542371-8	Klamma .. . . . . .	Clamp .. . . . . .		4	
52	1	1	1	1542372-6	Klamma .. . . . . .	Clamp .. . . . . .		4	
53	5	5	5	956092-1	Skruv .. . . . . .	Screw .. . . . . .		0	
54	5	5	5	955781-0	Mutter .. . . . . .	Nut .. . . . . .		0	
55	1	1	1	942400-3	Klamma .. . . . . .	Clamp .. . . . . .		0	
56	1	1	1	941908-6	Fjäderbricka .. . . . . .	Washer .. . . . . .		0	
57	1	1	1	955314-0	Skruv .. . . . . .	Screw .. . . . . .		0	
58	1	1	1	844788-0	Returledning .. . . . . .	Return pipe .. . . . . .		4	MO6101-6275
59	2	2	2	74033-2	Hålskruv .. . . . . .	Banjo bolt .. . . . . .		3	MO6101-6275
60	4	4	4	957171-2	Packning .. . . . . .	Gasket .. . . . . .		0	MO6101-6275
61	1	1	1	424288-9	Konsol .. . . . . .	Bracket .. . . . . .		4	MO6101-6275
62	1	1	1	121563-1	Klamma .. . . . . .	Clamp .. . . . . .		0	MO6101-6275
63	1	1	1	950020-8	Skruv .. . . . . .	Screw .. . . . . .		0	MO6101-6275
64	2	2	2	941905-2	Bricka .. . . . . .	Washer .. . . . . .		0	MO6101-6275

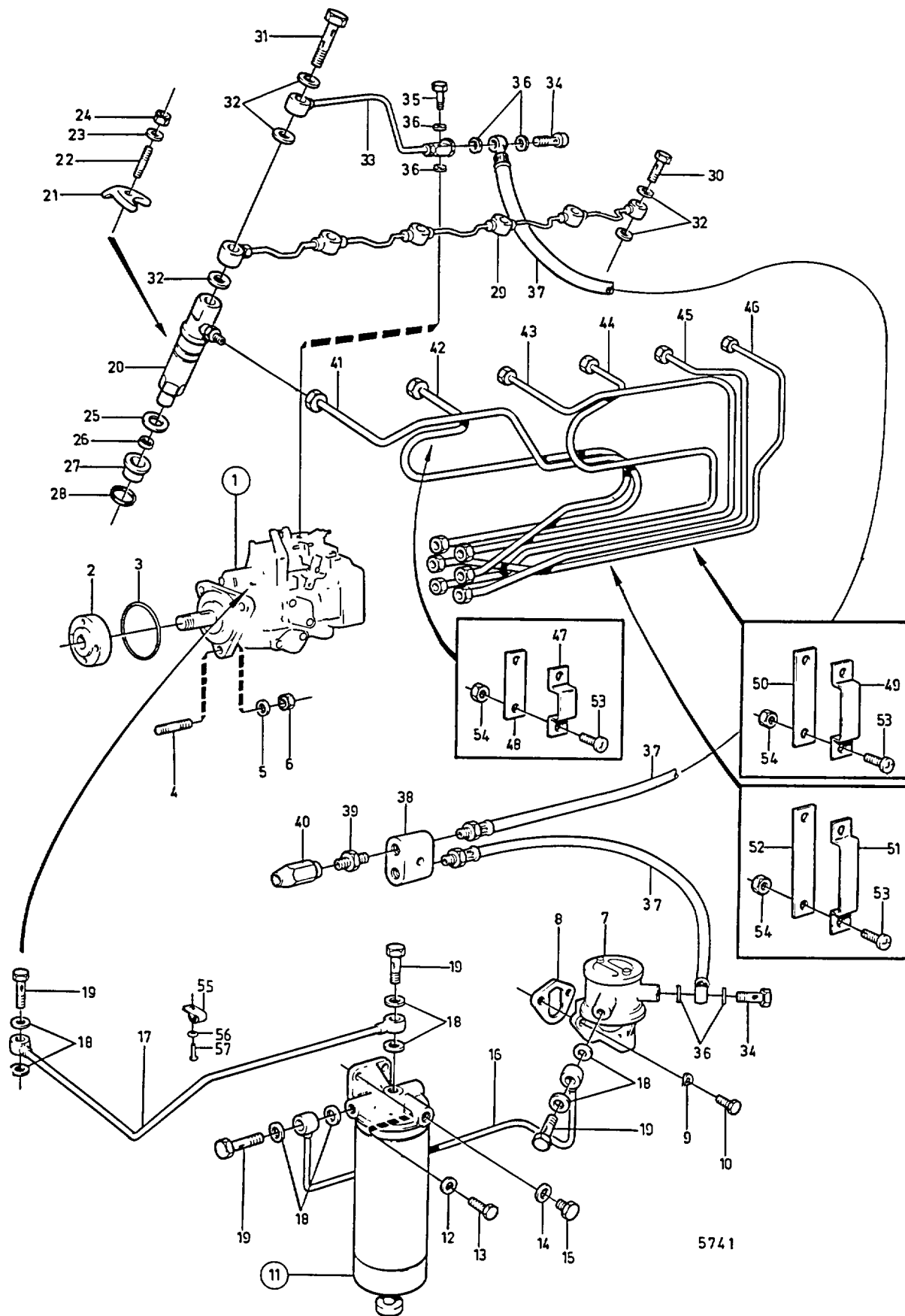
0650  
09C  
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1500

1. Ingår i komplett insprutningspump. Included in fuel injection pump.



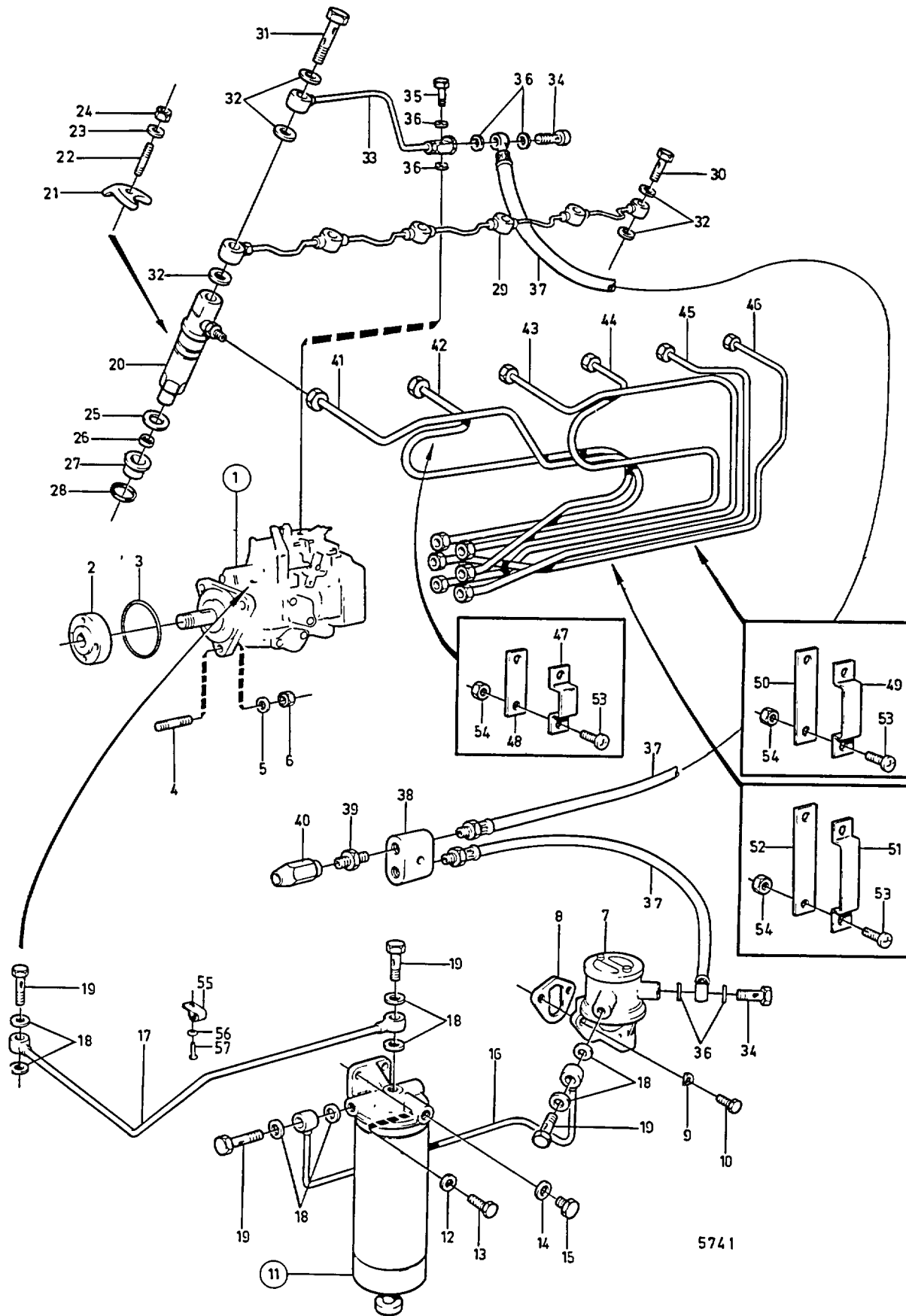
Sida Page	Grupp Group	Branslesystem				Fuel system				Illustration	
6	2c	AQAD40A, TAMD40A								5741 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	845280-7	Insprutningspump . . . . .	Fuel injection pump . . . . .	7	155)		00
	-	-	-	-		.Det se sida 28, 1-G19 . . . . .	.Comp page 28, 1-G19 . . . . .				00
	1	-	-	-	845281-5	Insprutningspump . . . . .	Fuel injection pump . . . . .	7	156)		004
	-	-	-	-		.Det se sida 28, 1-G19 . . . . .	.Comp page 28, 1-G19 . . . . .				0060
2	1	-	-	-	1542171-2	Nav . . . . .	Hub . . . . .	5			0080
3	1	-	-	-	947314-1	O-ring . . . . .	O-ring . . . . .	S	1		0100
4	3	-	-	-	953046-0	Pinnskruv . . . . .	Stud bolt . . . . .	0			0120
5	3	-	-	-	955894-1	Bricka . . . . .	Washer . . . . .	0			0140
6	3	-	-	-	955782-8	Mutter . . . . .	Nut . . . . .	0			0160
7	1	-	-	-	1542170-4	Branslepump . . . . .	Fuel pump . . . . .	5			0180
	1	-	-	-	273663-5	.Reparationssats . . . . .	.Repair kit . . . . .	1			020
8	1	-	-	-	463392-1	Packning . . . . .	Gasket . . . . .	S	1		020
9	2	-	-	-	941907-8	Fjadrande bricka . . . . .	Resilient washer . . . . .	0			0240
10	2	-	-	-	955295-1	Skruv . . . . .	Screw . . . . .	0			0260
11	1	-	-	-	1542209-0	Branslefilter . . . . .	Fuel filter . . . . .	8	ERSAV 838472 ,		0280
	-	-	-	-		.Det se sida 20, 1-G11 . . . . .	.Comp page 20, 1-G11 . . . . .				0300
	1	-	-	-	838472-9	Branslefilter . . . . .	Fuel filter . . . . .	3			0310
	-	-	-	-		.Det se sida 18, 1-G09 . . . . .	.Comp page 18, 1-G09 . . . . .				1
12	2	-	-	-	960148-5	Bricka . . . . .	Washer . . . . .	0	SE GRUPP 2D		0320
13	2	-	-	-	955318-1	Skruv . . . . .	Screw . . . . .	0	SE GRUPP 2D		0340
14	2	-	-	-	18839-1	Packning . . . . .	Gasket . . . . .	S	FÖR/FOR 1542209		0360
15	2	-	-	-	960629-4	Propp . . . . .	Plug . . . . .	0	FOR/FOR 1542209		0380
16	1	-	-	-	1542277-7	Branslerör . . . . .	Fuel pipe . . . . .	4			0400
17	1	-	-	-	1542278-5	Branslerör . . . . .	Fuel pipe . . . . .	4			0420
18	8	-	-	-	11994-1	Packning . . . . .	Gasket . . . . .	S	1		0440
19	4	-	-	-	74040-7	Hålskruv . . . . .	Hollow screw . . . . .	3			0460
20	6	-	-	-	1542155-5	Insprutare . . . . .	Fuel injector . . . . .	5			04
	-	-	-	-		.Det se sida 54, 1-H21 . . . . .	.Comp page 54, 1-H21 . . . . .				04
21	6	-	-	-	1542156-3	Konsol . . . . .	Yoke . . . . .	5			04
22	6	-	-	-	924068-0	Pinnskruv . . . . .	Stud bolt . . . . .	0			0540
23	6	-	-	-	1542197-7	Bricka . . . . .	Washer . . . . .	2			0560
24	6	-	-	-	955782-8	Mutter . . . . .	Nut . . . . .	0			0580
25	6	-	-	-	1542159-7	Bricka . . . . .	Washer . . . . .	3			0600
26	6	-	-	-	1542158-9	Bricka . . . . .	Washer . . . . .	3			0620
27	6	-	-	-	1542154-8	Varmeskold . . . . .	Heat shield . . . . .	3			0640
28	6	-	-	-	1542157-1	Bricka . . . . .	Washer . . . . .	3			0660
29	1	-	-	-	1542167-0	Lackoljerör . . . . .	Leak-off pipe . . . . .	4			0680
30	5	-	-	-	74033-2	Hålskruv . . . . .	Hollow screw . . . . .	3			070
31	1	-	-	-	74034-0	Hålskruv . . . . .	Hollow screw . . . . .	3			070
32	13	-	-	-	957171-2	Packning . . . . .	Gasket . . . . .	S	1		0740
33	1	-	-	-	845647-7	Rör . . . . .	Pipe . . . . .	4			0760
34	2	-	-	-	74040-7	Hålskruv . . . . .	Hollow screw . . . . .	3			0780
35	1	-	-	-	844237-8	Hålskruv . . . . .	Hollow screw . . . . .	5	1)		0800
36	6	-	-	-	48588-8	Bricka . . . . .	Washer . . . . .	S	1		0820
37	2	-	-	-	845646-9	Bransleslang . . . . .	Fuel hose . . . . .	3			0840
38	1	-	-	-	829146-0	Röranslutning . . . . .	Pipe connection . . . . .	5			0860
39	2	-	-	-	954337-2	Rak nippel . . . . .	Nipple . . . . .	0			0880
40	2	-	-	-	954323-2	Overfallsmutter . . . . .	Cap nut . . . . .	0			0900
41	1	-	-	-	1542111-8	Tryckrör . . . . .	Delivery pipe . . . . .	4	CYL NR 1		0920
42	1	-	-	-	1542112-6	Tryckrör . . . . .	Delivery pipe . . . . .	4	CYL NR 2		0940
43	1	-	-	-	1542113-4	Tryckrör . . . . .	Delivery pipe . . . . .	4	CYL NR 3		0960
44	1	-	-	-	1542114-2	Tryckrör . . . . .	Delivery pipe . . . . .	4	CYL NR 4		0980
45	1	-	-	-	1542115-9	Tryckrör . . . . .	Delivery pipe . . . . .	4	CYL NR 5		1000
46	1	-	-	-	1542116-7	Tryckrör . . . . .	Delivery pipe . . . . .	4	CYL NR 6		1020
47	3	-	-	-	1542109-2	Klammer . . . . .	Clamp . . . . .	4			1040
48	3	-	-	-	466761-4	Klammer . . . . .	Clamp . . . . .	4			1060
49	1	-	-	-	1542369-2	Klammer . . . . .	Clamp . . . . .	4			1080
50	1	-	-	-	1542370-0	Klammer . . . . .	Clamp . . . . .	4			1100

1. Ingår i komplett insprutningspump. Included in fuel injection pump.  
 155. För spec 867560, 867562, 867563, 867565. For spec 867560, 867562, 867563, 867565.  
 156. För spec 867561, 867564. For spec 867561, 867564.



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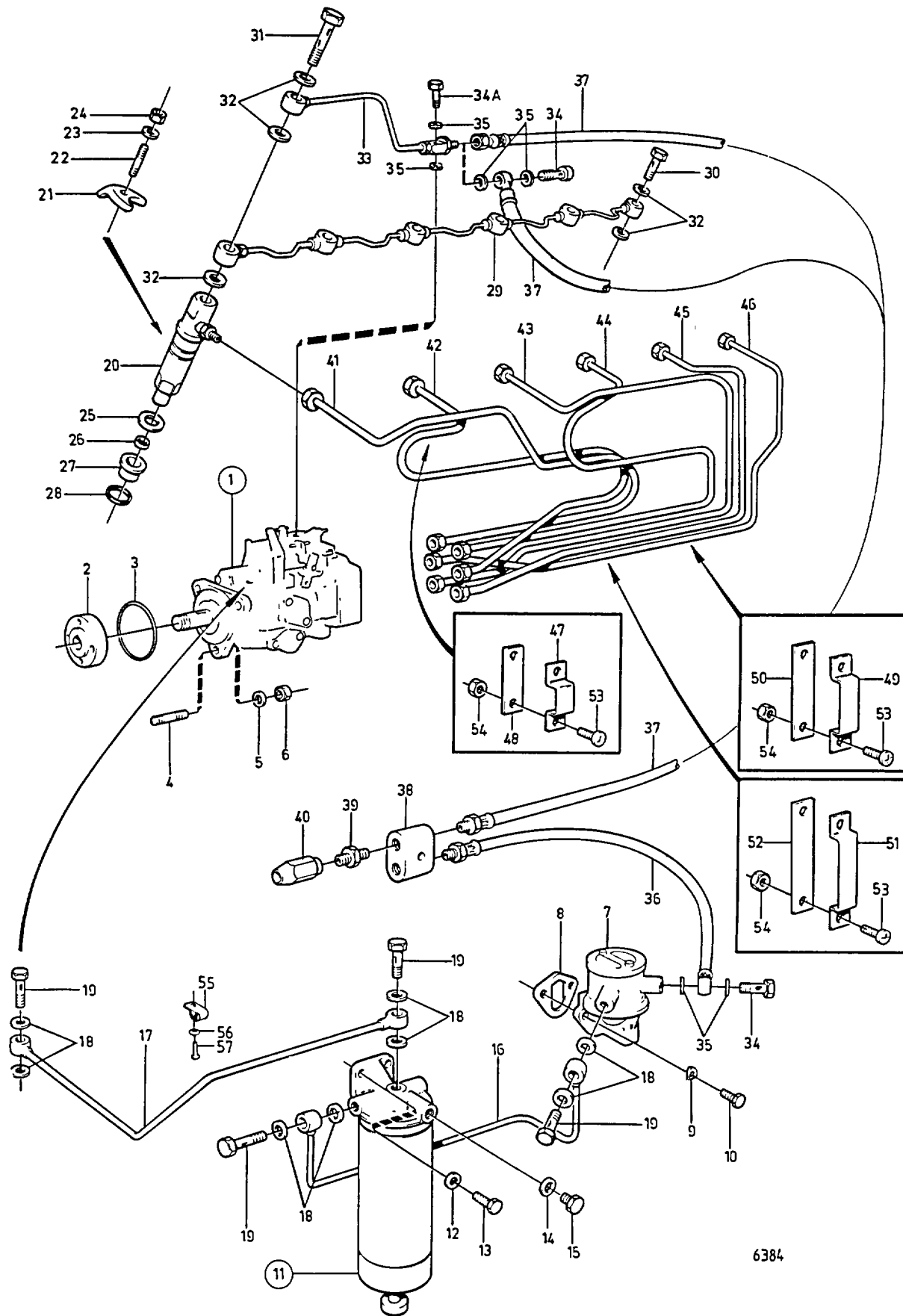
Sida Page		Grupp Group		Branslesystem			Fuel system			Illustration	
8		2c		AQAD40A, TAMD40A						5741 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
51	1	-	-	-	1542371-8	Klammer.. .. .	Clamp .. . . . . .		4		11
52	1	-	-	-	1542372-6	Klammer.... .. .	Clamp .. . . . . .		4		114
53	6	-	-	-	956092-1	Skruv .. . . . . .	Screw .. . . . . .		0		1160
54	6	-	-	-	955781-0	Mutter.. .. . . .	Nut. . . . . . . . .		0		1180
55	1	-	-	-	942400-3	Klamma .. . . . . .	Clamp .. . . . . .		0		1200
56	1	-	-	-	941908-6	Fjädrande bricka .. . . . . .	Resilient washer.. . . . . .		0		1220
57	1	-	-	-	955314-0	Skruv. . . . . . .	Screw..... . . . . . .		0		1240





Sida Page	Grupp Group	Bränslesystem			Fuel system			Illustration	0700
10	2c	TMD40B,TMD40C						6384	
								1987-04	
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
1	1	-	-	-	846855-5	Insprutningspump . . . . .	Fuel injection pump. . . . .	7	
	-	-	-	-		.Det se sida 34, 1-H01..	.Comp page 34, 1-H01.....		
2	1	-	-	-	1542171-2	Nav . . . . .	Hub.....	5	
3	1	-	-	-	947314-1	O-ring . . . . .	O-ring . . . . .	S 1	
4	3	-	-	-	953046-0	Pinnskruv . . . . .	Stud bolt. . . . .	0	
5	3	-	-	-	955894-1	Bricka . . . . .	Washer . . . . .	0	
6	3	-	-	-	955782-8	Mutter . . . . .	Nut . . . . .	0	
7	1	-	-	-	1542170-4	Bränslepump. . . . .	Fuel pump. . . . .	5	
	1	-	-	-	273663-5	.Reparationssats . . . . .	.Repair kit. . . . .	1	
8	1	-	-	-	463392-1	Packning . . . . .	Gasket . . . . .	S 1	
9	2	-	-	-	941907-8	Fjädrande bricka . . . . .	Resilient washer . . . . .	0	
10	2	-	-	-	955295-1	Skruv . . . . .	Screw . . . . .	0	
11	1	-	-	-	1542209-0	Bränslefilter . . . . .	Fuel filter . . . . .	8	MO-36413
	-	-	-	-		.Det se sida 20, 1-G11 . . . . .	.Comp page 20, 1-G11 . . . . .		
	1	-	-	-	838472-9	Bränslefilter . . . . .	Fuel filter . . . . .	3	(1542209)MO36414-
	-	-	-	-		.Det se sida 18, 1-G09 . . . . .	.Comp page 18, 1-G09 . . . . .		
12	2	-	-	-	960148-5	Bricka.. . . . .	Washer.. . . . .	0	SE GRUPP 2D
13	2	-	-	-	955318-1	Skruv . . . . .	Screw . . . . .	0	SE GRUPP 2D
14	2	-	-	-	18839-1	Packning . . . . .	Gasket... . . . .	S 1	FÖR/FOR 1542209
15	2	-	-	-	960629-4	Propp. . . . .	Plug..... . . . .	0	FÖR/FOR 1542209
16	1	-	-	-	1542277-7	Branslerör. . . . .	Fuel pipe. . . . .	4	
17	1	-	-	-	1542278-5	Branslerör . . . . .	Fuel pipe . . . . .	4	
18	8	-	-	-	11994-1	Packning . . . . .	Gasket . . . . .	S 1	
19	4	-	-	-	74040-7	Hålskruv . . . . .	Hollow screw . . . . .	3	
20	6	-	-	-	1542155-5	Insprutare . . . . .	Fuel injector... . . . .	5	
	-	-	-	-		.Det se sida 54, 1-H21 . . . . .	.Comp page 54, 1-H21 . . . . .		
21	6	-	-	-	1542156-3	Ok . . . . .	Yoke . . . . .	5	
22	6	-	-	-	924068-0	Pinnskruv . . . . .	Stud bolt . . . . .	0	
23	6	-	-	-	1542197-7	Bricka . . . . .	Washer . . . . .	2	
24	6	-	-	-	955782-8	Mutter. . . . .	Nut . . . . .	0	
25	6	-	-	-	1542159-7	Bricka . . . . .	Washer . . . . .	3	
26	6	-	-	-	1542158-9	Bricka . . . . .	Washer . . . . .	3	
27	6	-	-	-	1542154-8	Varmesköld. . . . .	Heat shield . . . . .	3	
28	6	-	-	-	1542157-1	Bricka . . . . .	Washer . . . . .	3	
29	1	-	-	-	1542167-0	Lackoljerör . . . . .	Leak-off pipe . . . . .	4	
30	5	-	-	-	74033-2	Hålskruv . . . . .	Hollow screw . . . . .	3	
31	1	-	-	-	74034-0	Hålskruv . . . . .	Hollow screw . . . . .	3	
32	13	-	-	-	957171-2	Packning . . . . .	Gasket . . . . .	S 1	
33	1	-	-	-	845647-7	Rör . . . . .	Pipe . . . . .	4	
34	2	-	-	-	74040-7	Hålskruv . . . . .	Hollow screw . . . . .	3	
34a	1	-	-	-	844237-8	Hålskruv . . . . .	Hollow screw . . . . .	5	1)
35	6	-	-	-	48588-8	Bricka . . . . .	Washer . . . . .	S 1	
36	1	-	-	-	845646-9	Bransleslang. . . . .	Fuel hose . . . . .	3	
37	1	-	-	-	845646-9	Bransleslang . . . . .	Fuel hose... . . . .	3	
38	1	-	-	-	829146-0	Roranslutning. . . . .	Pipe connection.. . . .	5	
39	2	-	-	-	954337-2	Rak nippel . . . . .	Nipple . . . . .	0	
40	2	-	-	-	954323-2	Overfallsnutt . . . . .	Cap nut... . . . .	0	
41	1	-	-	-	1542111-8	Tryckrör . . . . .	Delivery pipe . . . . .	4	CYLRN1
42	1	-	-	-	1542112-6	Tryckrör . . . . .	Delivery pipe . . . . .	4	CYLRN2
43	1	-	-	-	1542113-4	Tryckrör. . . . .	Delivery pipe . . . . .	4	CYLRN3
44	1	-	-	-	1542114-2	Tryckrör . . . . .	Delivery pipe . . . . .	4	CYLRN4
45	1	-	-	-	1542115-9	Tryckrör . . . . .	Delivery pipe . . . . .	4	CYLRN5
46	1	-	-	-	1542116-7	Tryckrör . . . . .	Delivery pipe . . . . .	4	CYLRN6
47	3	-	-	-	1542109-2	Klamma . . . . .	Clamp . . . . .	4	
48	3	-	-	-	466761-4	Klammer. . . . .	Clamp . . . . .	4	
49	1	-	-	-	1542369-2	Klammer . . . . .	Clamp . . . . .	4	
50	1	-	-	-	1542370-0	Klammer . . . . .	Clamp . . . . .	4	
51	1	-	-	-	1542371-8	Klammer... . . . .	Clamp . . . . .	4	
52	1	-	-	-	1542372-6	Klammer . . . . .	Clamp . . . . .	4	
53	5	-	-	-	956092-1	Skruv . . . . .	Screw . . . . .	0	

1. Ingår i komplett insprutningspump. Included in fuel injection pump.



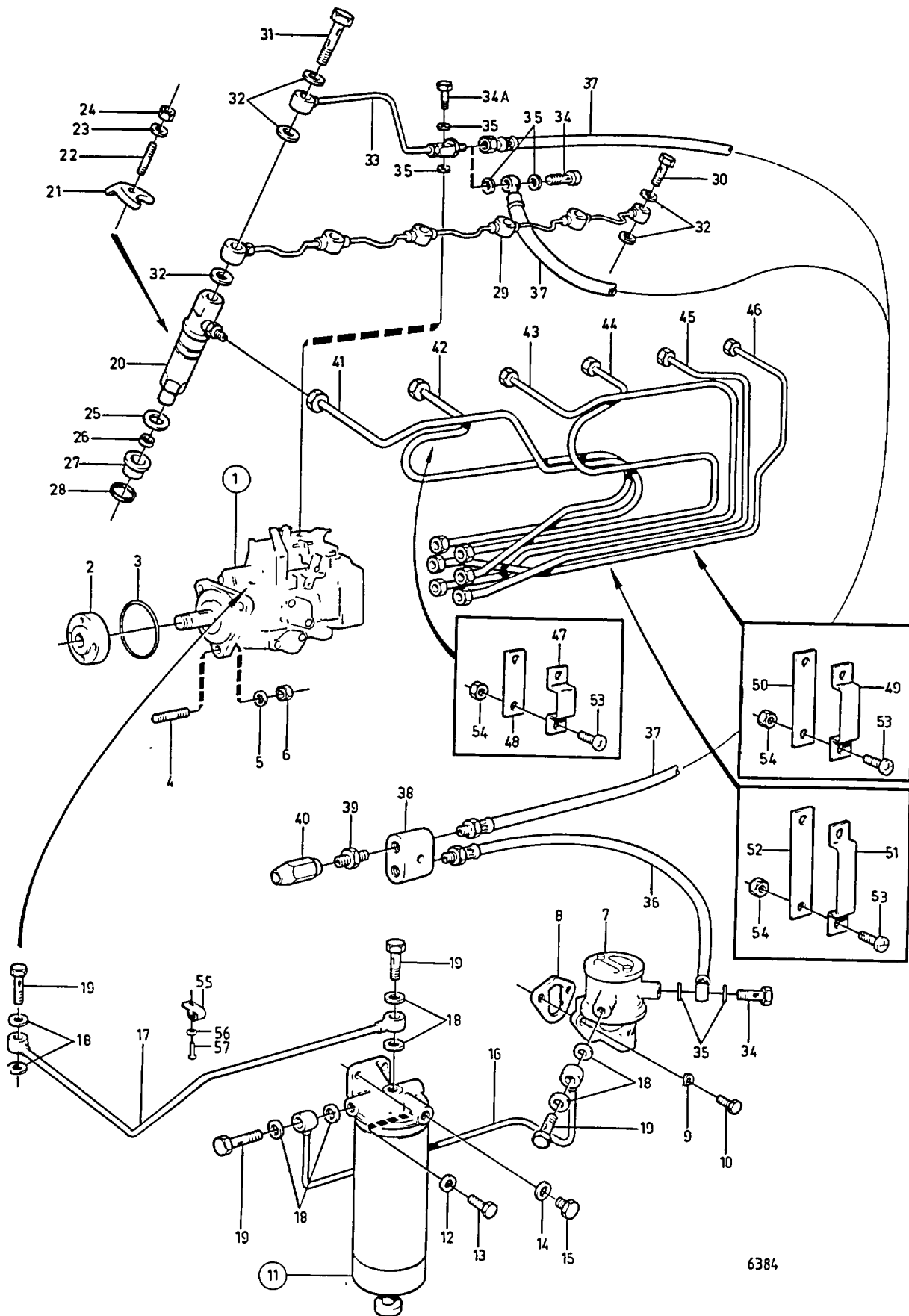
Publ. 4406

Reservdelskatalog  
Parts Catalogue

1-G03

**VOLVO  
PENTA**

Sida Page	Grupp Group	Bränslesystem Fuel system			Illustration			0700			
12	2c	TMD40B,TMD40C			6384 1987-04						
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
54	5	-	-	-	955781-0	Mutter. ....	Nut ....				11/
55	1	-	-	-	942400-3	Klamma.....	Clamp .....				12/
56	1	-	-	-	941908-6	Fjädrande bricka .....	Resilient washer.....				1220
57	1	-	-	-	955314-0	Skruv.....	Screw.....				1240

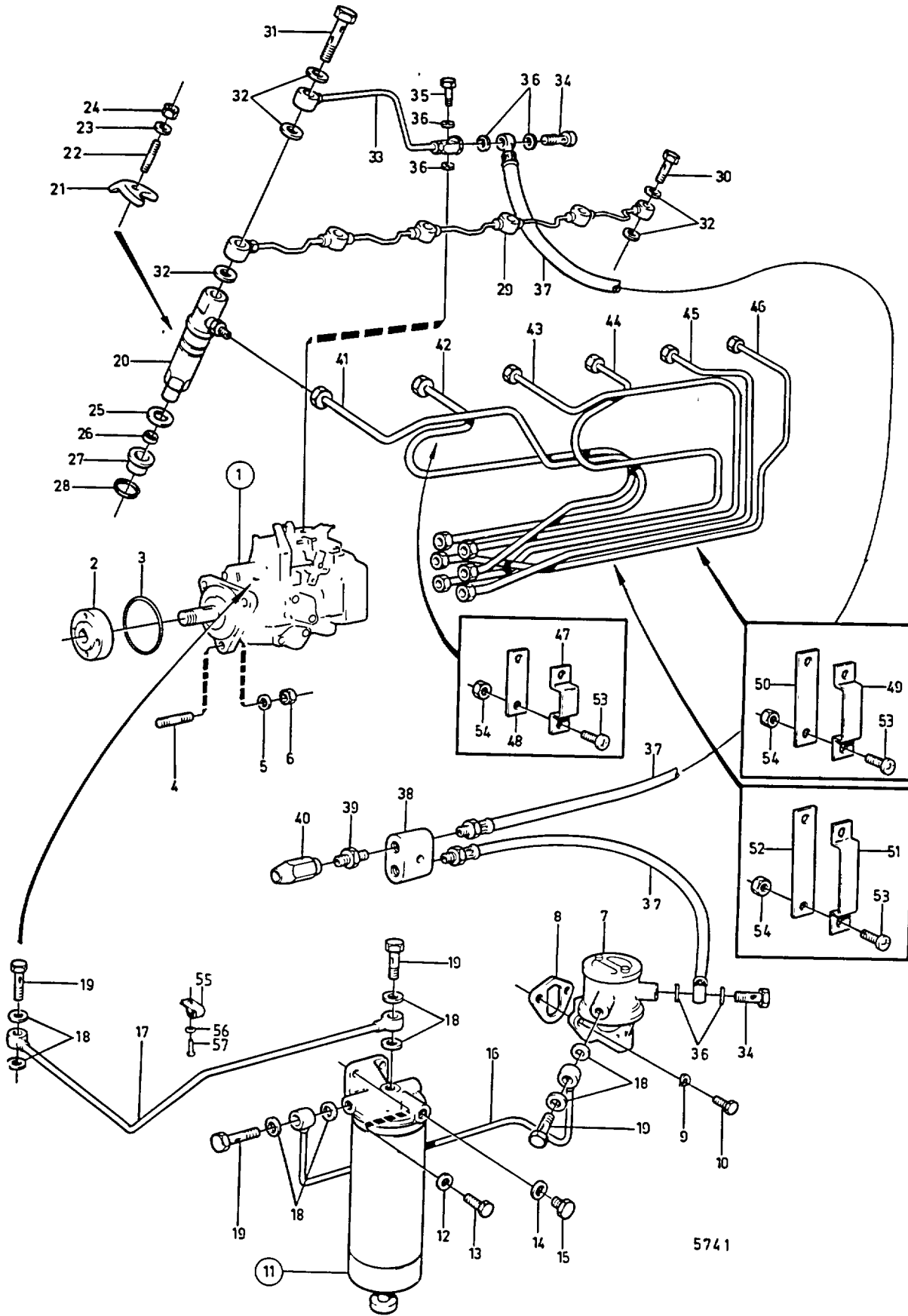


Sida Page	Grupp Group	Bränslesystem	Fuel system	Illustration
14	2c	AQAD40B,TAMD40B		5741
				1987-04

0750

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	846815-9	Insprutningspump. . . . .	Fuel injection pump. . . . .	7	356)		002
	-	-	-	-		.Det se sida 40, 1-H07. . . . .	.Comp page 40, 1-H07. . . . .				0040
	1	-	-	-	838497-6	Insprutningspump. . . . .	Fuel injection pump. . . . .	7	355)		0050
	-	-	-	-		.Det se sida 34, 1-H01. . . . .	.Comp page 34, 1-H01. . . . .				0051
	1	-	-	-	858092-0	Insprutningspump. . . . .	Fuel injection pump. . . . .	7	357)		0054
	-	-	-	-		.Det. ej spec. . . . .	.Det. not spec. . . . .				0055
	1	-	-	-	858212-4	Insprutningspump. . . . .	Fuel injection pump. . . . .	7	358)		0056
	-	-	-	-		.Det. ej spec. . . . .	.Det. not spec. . . . .				0057
2	1	-	-	-	1542171-2	Nav . . . . .	Hub . . . . .	5			0060
3	1	-	-	-	947314-1	O-ring . . . . .	O-ring . . . . .	S 1			0080
4	3	-	-	-	953046-0	Pinnskruv . . . . .	Stud bolt . . . . .	0			0
5	3	-	-	-	955894-1	Bricka . . . . .	Washer . . . . .	0			0
6	3	-	-	-	955782-8	Mutter . . . . .	Nut . . . . .	0			0140
7	1	-	-	-	1542170-4	Bränslepump . . . . .	Fuel pump . . . . .	5			0160
	1	-	-	-	273663-5	.Reparationssats . . . . .	.Repair kit . . . . .	1			0180
8	1	-	-	-	463392-1	Packning . . . . .	Gasket . . . . .	S 1			0200
9	2	-	-	-	941907-8	Fjädrande bricka . . . . .	Resilient washer . . . . .	0			0
10	2	-	-	-	955295-1	Skruv . . . . .	Screw . . . . .	0			0
11	1	-	-	-	1542209-0	Bränslefilter . . . . .	Fuel filter . . . . .	8	ERS AV 838472 MO-36413		0260
	-	-	-	-		.Det se sida 20, 1-G11 . . . . .	.Comp page 20, 1-G11 . . . . .				0280
	1	-	-	-	838472-9	Bränslefilter . . . . .	Fuel filter . . . . .	3	MO36414-		0290
	-	-	-	-		.Det se sida 18, 1-G09 . . . . .	.Comp page 18, 1-G09 . . . . .				0291
12	2	-	-	-	960148-5	Bricka . . . . .	Washer . . . . .	0	SE GRUPP 2D		0300
13	2	-	-	-	955318-1	Skruv . . . . .	Screw . . . . .	0	SE GRUPP 2D		0320
14	2	-	-	-	18839-1	Packning . . . . .	Gasket . . . . .	S 1	FÖR/FOR 1542209		0340
15	2	-	-	-	960629-4	Propp . . . . .	Plug . . . . .	0	FÖR/FOR 1542209		037
16	1	-	-	-	1542277-7	Bränslerör . . . . .	Fuel pipe . . . . .	4			0
17	1	-	-	-	1542278-5	Bränslerör . . . . .	Fuel pipe . . . . .	4			04
18	8	-	-	-	11994-1	Packning . . . . .	Gasket . . . . .	S 1			0420
19	4	-	-	-	74040-7	Hålskruv . . . . .	Hollow screw . . . . .	3			0440
20	6	-	-	-	1542155-5	Insprutare . . . . .	Fuel injector . . . . .	5			0460
	-	-	-	-		.Det se sida 54, 1-H21. . . . .	.Comp page 54, 1-H21. . . . .				0480
21	6	-	-	-	1542156-3	Ok . . . . .	Yoke . . . . .	5			0500
22	6	-	-	-	924068-0	Pinnskruv . . . . .	Stud bolt . . . . .	0			0520
23	6	-	-	-	1542197-7	Bricka . . . . .	Washer . . . . .	2			0540
24	6	-	-	-	955782-8	Mutter . . . . .	Nut . . . . .	0			0560
25	6	-	-	-	1542159-7	Bricka . . . . .	Washer . . . . .	3			0580
26	6	-	-	-	1542158-9	Bricka . . . . .	Washer . . . . .	3			0
27	6	-	-	-	1542154-8	Varmeskold . . . . .	Heat shield . . . . .	3			0
28	6	-	-	-	1542157-1	Bricka . . . . .	Washer . . . . .	3			0640
29	1	-	-	-	1542167-0	Lackoljerör . . . . .	Leak-off pipe . . . . .	4			0660
30	5	-	-	-	74033-2	Hålskruv . . . . .	Hollow screw . . . . .	3			0680
31	1	-	-	-	74034-0	Hålskruv . . . . .	Hollow screw . . . . .	3			0700
32	13	-	-	-	957171-2	Packning . . . . .	Gasket . . . . .	S 1			0
33	1	-	-	-	845647-7	Rör . . . . .	Pipe . . . . .	4			0
34	2	-	-	-	74040-7	Hålskruv . . . . .	Hollow screw . . . . .	3			0760
35	1	-	-	-	844237-8	Hålskruv . . . . .	Hollow screw . . . . .	5 1)			0780
36	6	-	-	-	48588-8	Bricka . . . . .	Washer . . . . .	S 1			0800
37	2	-	-	-	845646-9	Bränsleslang . . . . .	Fuel hose . . . . .	3			0820
38	1	-	-	-	829146-0	Roranslutning . . . . .	Pipe connection . . . . .	5			0840
39	2	-	-	-	954337-2	Rak nippel . . . . .	Nipple . . . . .	0			0860
40	2	-	-	-	954323-2	Overfallsmutter . . . . .	Cap nut . . . . .	0			0880
41	1	-	-	-	1542111-8	Tryckrör . . . . .	Delivery pipe . . . . .	4	CYL NR 1		0900
42	1	-	-	-	1542112-6	Tryckrör . . . . .	Delivery pipe . . . . .	4	CYL NR 2		09
43	1	-	-	-	1542113-4	Tryckrör . . . . .	Delivery pipe . . . . .	4	CYL NR 3		09

- 1. Ingår i komplett insprutningspump. Included in fuel injection pump.
- 355. Spec.867829,867890. Spec.867829,867890.
- 356. Spec.867739,867756,867766,867767,867768,867769,867860, 867936,867937,867938.  
Spec.867739,867756,867766,867767,867768,867769,867860, 867936,867937,867938.
- 357. Spec.867948. Spec.867948.
- 358. Spec.867984. Spec.867984.



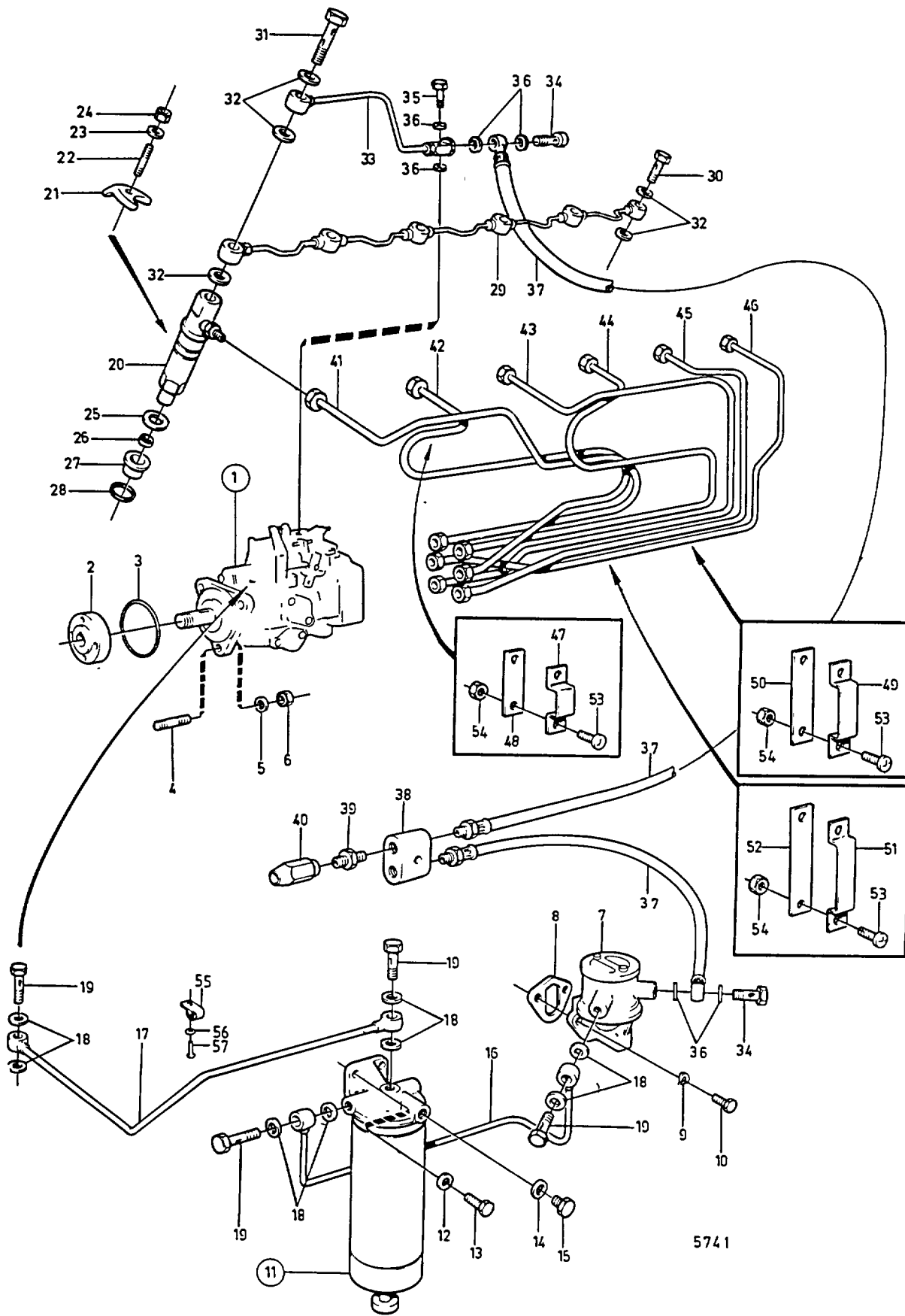
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Reservdelskatalog  
Parts Catalogue

1-G07

**VOLVO**  
**PENTA**

Sida Page		Grupp Group		Bränslesystem Fuel system			Illustration 5741 1987-04		0750		
16		2c		AQAD40B,TAMD40B							
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
44	1	-	-	-	1542114-2	Tryckrör .....	Delivery pipe.. .....	4		CYLNR4	096
45	1	-	-	-	1542115-9	Tryckrör.....	Delivery pipe .....	4		CYLNR5	098
46	1	-	-	-	1542116-7	Tryckror. ....	Delivery pipe .....	4		CYLNR6	1000
47	3	-	-	-	1542109-2	Klamma.....	Clamp.....	4			1020
48	3	-	-	-	466761-4	Klammer .....	Clamp.....	4			1040
49	1	-	-	-	1542369-2	Klammer .....	Clamp .....	4			1060
50	1	-	-	-	1542370-0	Klammer .....	Clamp .....	4			1080
51	1	-	-	-	1542371-8	Klammer .....	Clamp.....	4			1100
52	1	-	-	-	1542372-6	Klammer .....	Clamp.....	4			1120
53	6	-	-	-	956092-1	Skruv .....	Screw.....	0			1140
54	6	-	-	-	955781-0	Mutter.....	Nut.....	0			?
55	1	-	-	-	942400-3	Klamma .....	Clamp .....	0			?
56	1	-	-	-	941908-6	Fjädrande bricka .....	Resilient washer. ....	0			1200
57	1	-	-	-	955314-0	Skruv .....	Screw.....	0			1220



5741





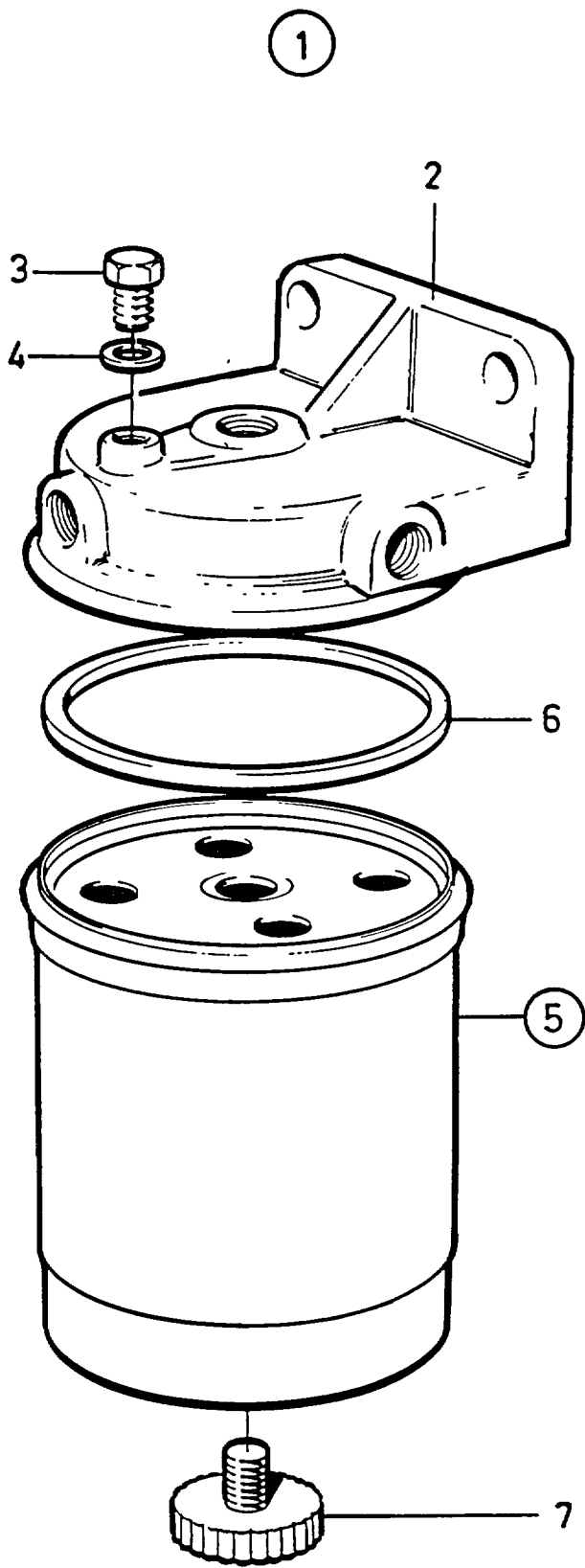
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Reservdelskatalog  
Parts Catalogue

1-G09

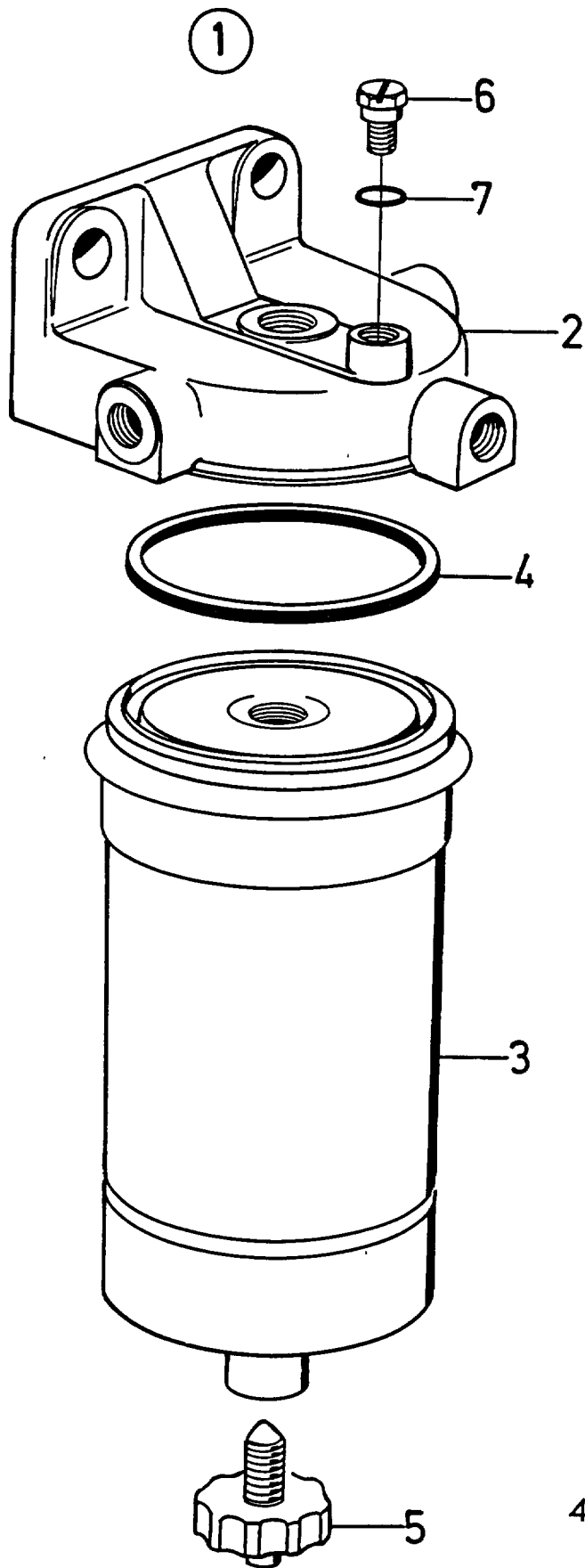
**VOLVO  
PENTA**

Sida Page		Grupp Group		Bränslefilter			Fuel filter			Illustration	
18		2c								7060 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	838472-9	Bränslefilter.....	Fuel filter.....				00
2	1	-	-	-		•Lock.....	•Cover.....	8			004
3	1	-	-	-	843956-4	•Luftningsskruv.....	•Air venting screw.....	5			0060
4	1	-	-	-	25534-9	•Packning.....	•Packing.....	5			0080
5	1	-	-	-	838593-2	•Filterinsats.....	•Filter element.....	1			0100
6	1	-	-	-	6638088-2	••Packning.....	••Gasket.....	2			0120
7	1	-	-	-	838594-0	••Skruv.....	••Screw.....	4			0140



7060

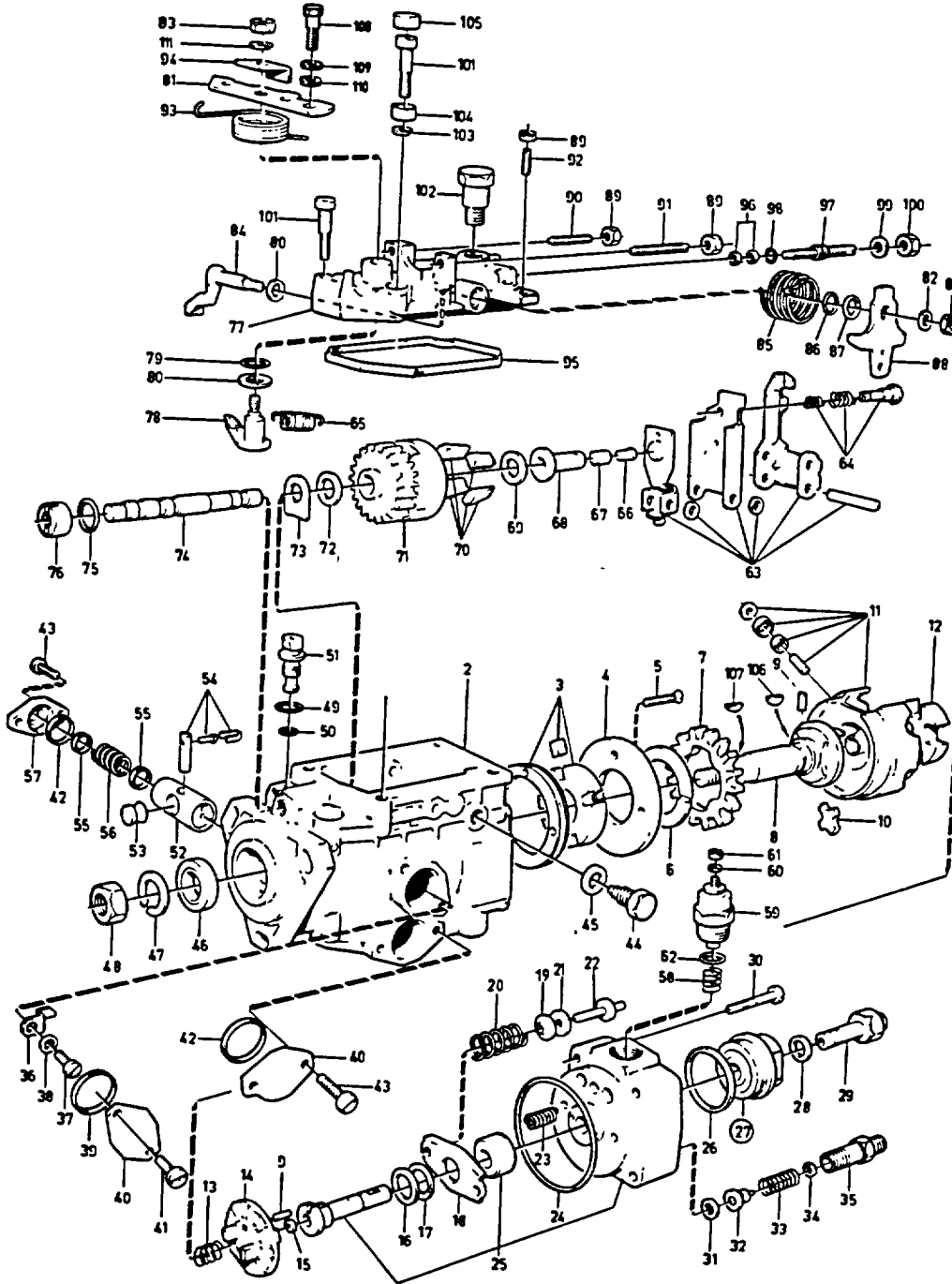
Sida Page		Grupp Group		Bränslefilter			Fuel filter			Illustration	
20		2c								4635	1300
										1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	1542209-0	Bränslefilter.....	Fuel filter.....	8			002
2	1	-	-	-		•Hus.....	•Housing.....	8			0040
3	1	-	-	-	838593-2	•Filterinsats.....	•Filter element.....	1	(243464)		0060
4	1	-	-	-	6638088-2	••Packning.....	••Gasket.....	1			0080
5	1	-	-	-	243463-7	•Nippel.....	•Nipple.....	3			0100
6	1	-	-	-	843956-4	•Propp.....	•Plug.....	3			0120
7	1	-	-	-	25534-9	•Packning.....	•Gasket.....	2			0140



4635

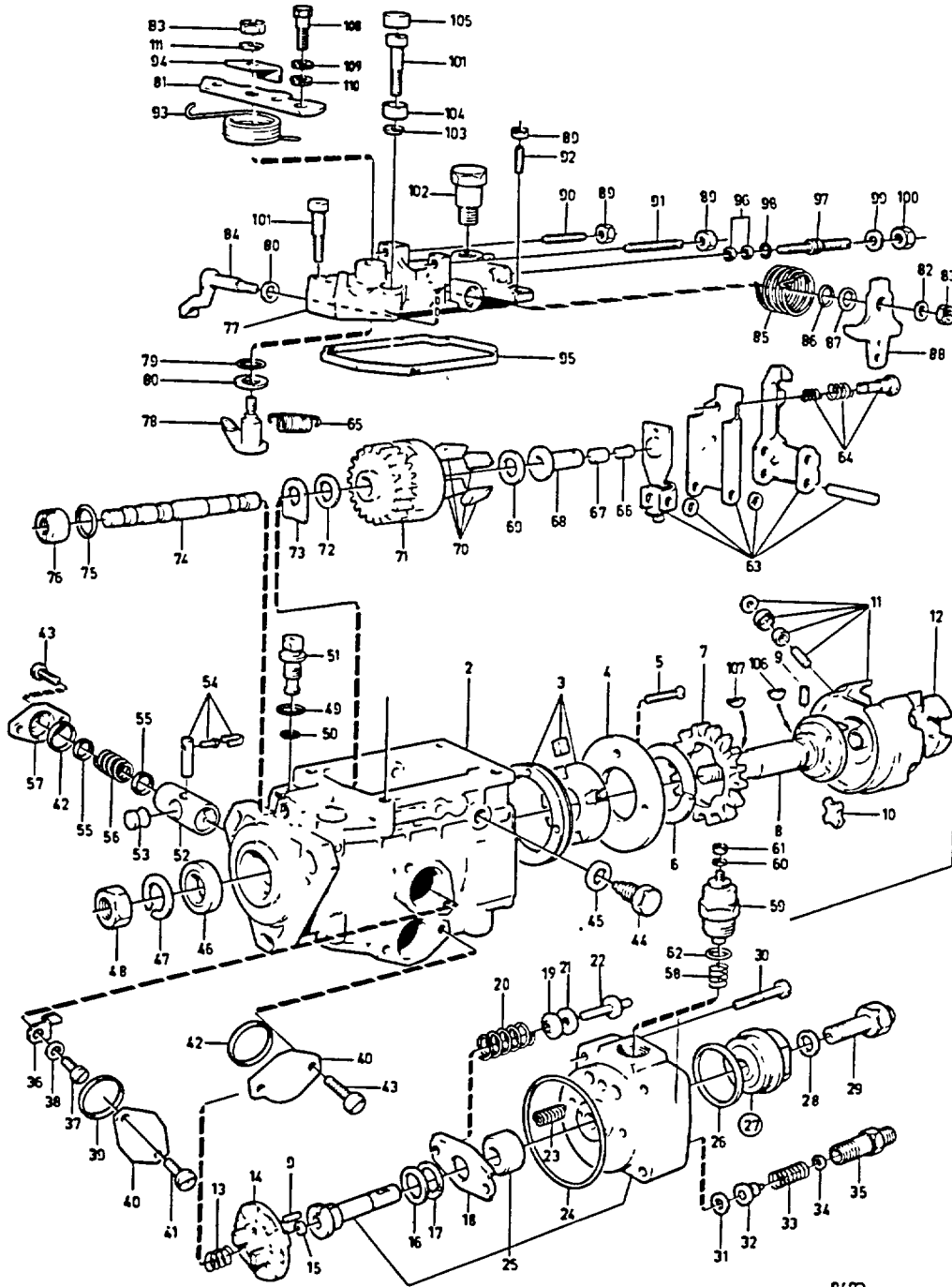
Sida Page		Grupp Group		Insprutningspump		Fuel injection pump		Illustration		
22		2c						1350		
								8493		
								1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	829 583	842 994	844 245	844 246						
1	1	-	-	-	829583-4	Insprutningspump...	Fuel injection pump ..	7		0C
	-	1	-	-	842994-6	Insprutningspump ..	Fuel injection pump...	7		004
	-	-	1	-	844245-1	Insprutningspump ..	Fuel injection pump ..	8		0060
	-	-	-	1	844246-9	Insprutningspump ..	Fuel injection pump ..	7		0080
2	1	1	1	1		.Hus ..	.Housing ..	8		0100
3	1	1	1	1	844144-6	.Rotorsats...	.Rotor kit ..	6		0120
4	1	1	1	1	844145-3	.Ring ..	.Ring ..	6		0140
5	2	2	2	2	956169-7	.Skruv ..	.Screw ..	0		0160
6	1	1	1	1	844146-1	.Bricka ..	.Washer ..	6		0180
7	1	1	1	1	844147-9	.Kugghjul ..	.Gear wheel ..	6		0200
8	1	1	1	1	844148-7	.Axel ..	.Shaft ..	6		0220
9	1	1	1	1	844651-0	.Spannstift ..	.Pin ..	6	(844149)	0
10	-	2	2	2	844150-3	.Dampare ..	.Damper ..	6		0260
		2	-	-	838453-9	.Dampare ..	.Damper ..	6		0261
11	1	1	1	1	844151-1	.Rullager ..	.Roller bearing ..	5		0280
12	1	1	1	1	844152-9	.Korsstycke ..	.Cross piece ..	5		0300
13	1	1	1	1	244691-2	.Fjäder ..	.Spring ..	5	(844153)	0320
14	1	1	1	1	844154-5	.Medbringare ..	.Carrier ..	6		0
15	ERF	ERF	ERF	ERF	243531-1	.Justerbricka ..	.Shim ..	5	TJ=1,80MM	0345
	ERF	ERF	ERF	ERF	243534-5	.Justerbricka ..	.Shim ..	5	TJ=1,95MM	0346
	ERF	ERF	ERF	ERF	845726-9	.Justerbricka ..	.Shim ..	5	TJ=2,00MM	0360
	ERF	ERF	ERF	ERF	844155-2	.Justerbricka ..	.Shim ..	5	TJ=2,12MM	0380
	ERF	ERF	ERF	ERF	844156-0	.Justerbricka ..	.Shim ..	5	TJ=2,20MM	0400
	ERF	ERF	ERF	ERF	845729-3	.Justerbricka ..	.Shim ..	8	TJ=2,32MM	0420
	ERF	ERF	ERF	ERF	845730-1	.Justerbricka ..	.Shim ..	5	TJ=2,40MM (243543)	0440
	ERF	ERF	ERF	ERF	243545-1	.Justerbricka ..	.Shim ..	5	TJ=2,50MM	0450
	ERF	ERF	ERF	ERF	844158-6	.Justerbricka ..	.Shim ..	5	TJ=2,52MM	0
	ERF	ERF	ERF	ERF	844159-4	.Justerbricka ..	.Shim ..	5	TJ=2,60MM	0
	ERF	ERF	ERF	ERF	844160-2	.Justerbricka ..	.Shim ..	5	TJ=2,72MM	0500
	ERF	ERF	ERF	ERF	844161-0	.Justerbricka ..	.Shim ..	5	TJ=2,80MM	0520
16	1	1	1	1	243527-9	.Justerbricka ..	.Shim ..	5		0540
17	1	1	1	1	243530-3	.Bricka ..	.Washer ..	5		0560
18	1	1	1	1	844162-8	.Axel ..	.Shaft ..	5		0580
19	1	1	1	1	844163-6	.Bricka ..	.Washer ..	5		0600
20	1	1	1	1	844164-4	.Fjäder ..	.Spring ..	5		0620
21	2	2	2	2	844165-1	.Bricka ..	.Washer ..	5		0640
22	2	2	2	2	844166-9	.Pinne ..	.Pin ..	5		0660
23	1	1	1	1	844167-7	.Fjäder ..	.Spring ..	5		0680
24	1	1	1	1	243555-0	.Ring ..	.Ring ..	S 4	(844168)	0
25	1	1	1	1	838414-1	.Hus ..	.Housing ..	6	(844169)	0720
26	1	1	1	1	838402-6	.Tatningsring ..	.Seal ring ..	S 2	(844170)	0740
27	1	1	1	1	844171-9	.Forskruvning ..	.Connection ..	5		0760
28	1	1	1	1	947620-1	.Packning ..	.Gasket ..	S 2	(233321)	0780
29	1	1	1	1	845737-6	.Luftskruv ..	.Air screw ..	4	ERS AV 844171	0800
30	4	4	4	4	244931-2	.Skruv ..	.Screw ..	5	(844173)	0
31	6	6	6	6	845738-4	.Bricka ..	.Washer ..	S 2	(243562)	0040
32	6	-	-	-	838442-2	.Tryckventil ..	.Pressure valve ..	4		0860
	-	6	6	6	858098-7	.Tryckventil ..	.Pressure valve ..	4	(243561)	0861
33	6	6	6	6	243559-2	.Fjäder ..	.Spring ..	5		0880
34	6	6	6	6	243560-0	.Bricka ..	.Washer ..	4		0900
35	6	6	6	6	244688-8	.Röranslutning ..	.Pipe connection ..	4	(243558)	0920
36	1	1	1	1	243506-3	.Visare ..	.Indicator ..	6		0940
37	1	1	1	1	956057-4	.Skruv ..	.Screw ..	0		0960
38	1	1	1	1	941904-5	.Bricka ..	.Washer ..	0		0
39	1	1	1	1	844176-8	.Tatningsring ..	.Sealring ..	2		1
40	2	2	2	2	844175-0	.Lock ..	.Cover ..	6		1
41	2	-	-	-	956092-1	.Skruv ..	.Screw ..	0		1039
	-	2	2	2	838335-8	.Skruv ..	.Screw ..	0		1040
42	2	2	2	2	844176-8	.O-ring ..	.O-ring ..	S 2		1060
43	4	4	4	4	6638096-5	.Skruv ..	.Screw ..	5		10
44	2	2	2	2	838345-7	.Skruv ..	.Screw ..	2		11
45	2	-	-	-	947620-1	.Packning ..	.Gasket ..	0		1110
	-	2	2	2	957171-2	.Packning ..	.Gasket ..	S 2	(6601761)	1120

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Sida Page		Grupp Group		Insprutningspump				Fuel injection pump				Illustration	
24		2c										8493 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes			
	829 583	842 994	844 245	844 246									
46	1	1	1	1	844178-4	.Tatningsring	.Seal ring		4		11		
47	1	1	1	1	940280-1	.Bricka	.Washer		0		11		
48	1	1	1	1	955784-4	.Mutter	.Nut		0		1180		
49	1	1	1	1	243520-4	.Tatningsring	.Seal ring	S	2		1200		
50	1	1	1	1	243521-2	.Tatningsring	.Seal ring	S	2		1220		
51	1	1	1	1	844179-2	.Ventil	.Valve		4		1240		
52	1	1	1	1	844180-0	.Kolv	.Piston		5		1260		
53	1	1	1	1	844181-8	.Rulle	.Roller		5		1280		
54	1	1	1	1	844182-6	.Kolvbult	.Gudgeon pin		5		1300		
55	2	2	2	2	244425-5	.Bricka	.Washer		2		1320		
56	1	1	1	1	844184-2	.Fjäder	.Spring		5		1340		
57	1	1	1	1	844185-9	.Fläns	.Flange		6		0		
58	1	1	1	1	844186-7	.Fjäder	.Spring		5		1380		
59	1	1	1	1	844187-5	.Magnet	.Magnet		6		1400		
60	1	-	-	-	25261-9	.Bricka	.Washer		2		1419		
	-	1	1	1	940090-4	.Bricka	.Washer		0		1420		
61	1	-	-	-	838406-7	.Mutter	.Nut		2		1439		
	-	1	1	1	963104-5	.Mutter	.Nut		0		0		
62	1	-	-	-	243572-5	.O-ring	.O-ring		2		1459		
	-	1	1	1	844368-1	.O-ring	.Seal ring	S	2	(844363)	1460		
63	1	1	1	1	844188-3	.Havarm	.Lever		6		1480		
64	1	1	1	1	844189-1	.Fjädersats	.Spring set		5		1500		
65	1	1	1	1	844190-9	.Fjäder	.Spring		5		1520		
66	1	1	1	1	844191-7	.Pinne	.Pin		8	L=7,2MM ALT	1540		
	1	1	1	1	844192-5	.Pinne	.Pin		5	L=7,4MM ALT	1560		
	1	1	1	1	844193-3	.Pinne	.Pin		5	L=7,6MM ALT	1580		
	1	1	1	1	844194-1	.Pinne	.Pin		5	L=7,8MM ALT	16		
	1	1	1	1	844195-8	.Pinne	.Pin		8	L=8,0MM ALT	1		
	1	1	1	1	844196-6	.Pinne	.Pin		5	L=8,2MM ALT	16		
	1	1	1	1	844197-4	.Pinne	.Pin		5	L=8,4MM ALT	1660		
	1	1	1	1	844198-2	.Pinne	.Pin		5	L=8,6MM ALT	1680		
	1	1	1	1	844199-0	.Pinne	.Pin		5	L=8,8MM ALT	1700		
	1	1	1	1	844200-6	.Pinne	.Pin		5	L=9,0MM ALT	1720		
	1	1	1	1	844201-4	.Pinne	.Pin		5	L=9,2MM ALT	1740		
	1	1	1	1	844202-2	.Pinne	.Pin		5	L=9,4MM ALT	1760		
	1	1	1	1	844203-0	.Pinne	.Pin		5	L=9,6MM ALT	1780		
	1	1	1	1	844204-8	.Pinne	.Pin		5	L=9,8MM ALT	1800		
	1	1	1	1	844205-5	.Pinne	.Pin		5	L=10,0MM ALT	1820		
	1	1	1	1	844206-3	.Pinne	.Pin		5	L=10,2MM ALT	1840		
	1	1	1	1	844207-1	.Pinne	.Pin		5	L=10,4MM ALT	1860		
	1	1	1	1	844208-9	.Pinne	.Pin		5	L=10,6MM ALT	1880		
67	1	1	1	1	844209-7	.Pinne	.Pin		5		1900		
68	1	1	1	1	844210-5	.Hylsa	.Sleeve		6		1920		
69	1	1	1	1	844211-3	.Bricka	.Washer		8		1940		
70	1	1	1	1	844212-1	.Regulatorvikt	.Governor weight		6		1960		
71	1	1	1	1	844213-9	.Reglerhjul	.Control gear		8		1980		
72	1	1	1	1	844214-7	.Bricka	.Washer		5		2000		
	ERF	-	-	-	845750-9	.Bricka	.Washer		5	TJ=1,30MM	2001		
	ERF	-	-	-	845751-7	.Bricka	.Washer		5	TJ=1,35MM	2002		
73	1	-	-	-	838451-3	.Bricka	.Washer		5		2019		
	-	1	1	1	844215-4	.Bricka	.Washer		5		2020		
74	1	1	1	1	844216-2	.Axel	.Shaft		6		2040		
75	1	-	-	-	844235-2	.O-ring	.O-ring		2		2059		
	-	1	1	1	243786-1	.O-ring	.O-ring	S	2		2060		
76	1	1	1	1	844217-0	.Mutter	.Nut		5		2		
77	1	-	-	-	838454-7	.Lock	.Cover		5		2		
	-	1	1	1	844218-8	.Lock	.Cover		8		2100		
78	1	-	-	-	838341-6	.Axel	.Shaft		5		2119		
	-	1	1	1	844219-6	.Axel	.Shaft		8		2120		
79	1	1	1	1	243567-5	.Tatningsring	.Seal ring		5		21		
80	2	2	2	2	844220-4	.Bricka	.Washer		5		21		
81	1	-	-	-	838342-4	.Havarm	.Lever		5		21		
	-	1	1	1	844221-2	.Havarm	.Lever		8		2180		

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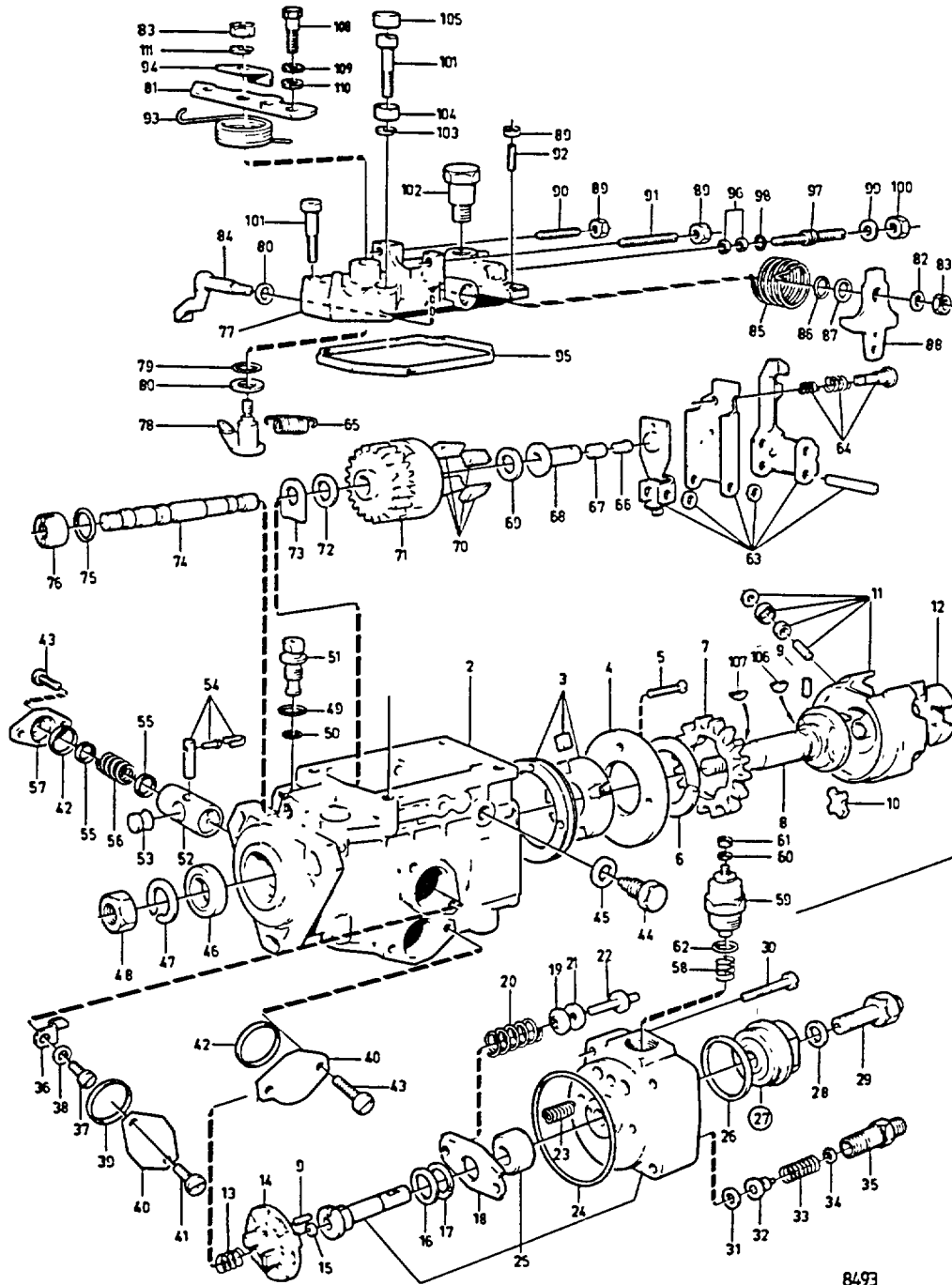
8493



Sida Page	Grupp Group	Insprutningspump	Fuel injection pump	Illustration 8493 1987-04	1350
26	2c				

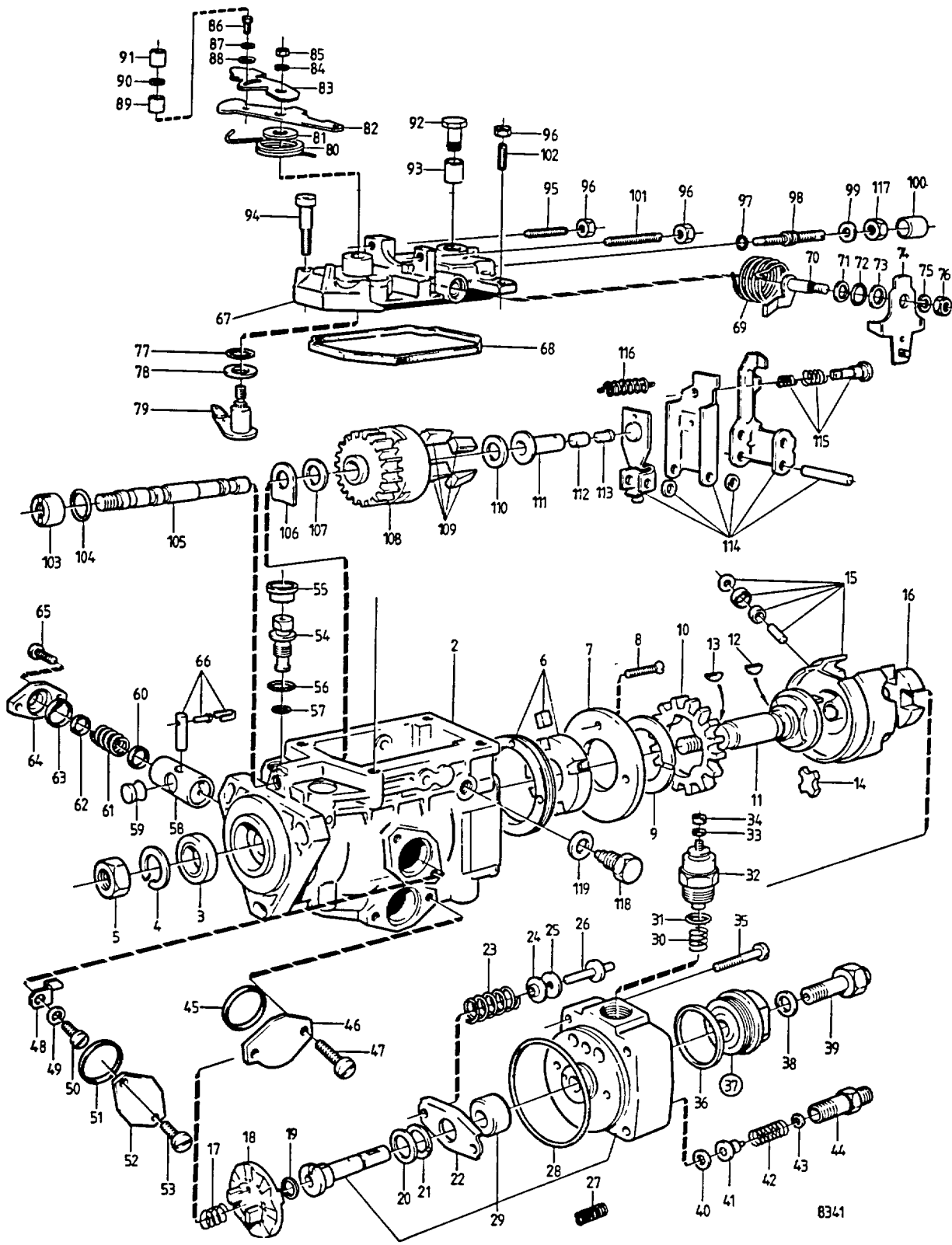
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	829 583	842 994	844 245	844 246							
82	2	2	2	2	941906-0	.Fjaderbricka...	.Washer		0		22
83	1	1	1	1	955781-0	.Mutter	.Nut		0		222
84	1	1	1	1	844222-0	.Axel	.Shaft		6		2240
85	1	1	1	1	844223-8	.Fjäder	.Spring		5		2260
86	1	1	1	1	844224-6	.O-ring	.O-ring	S	2		2280
87	1	1	1	1	844225-3	.Bricka	.Washer		5		2300
88	1	1	1	1	844226-1	.Havarm	.Lever		6		2320
89	4	4	4	4	955781-0	.Mutter	.Nut		0		2340
90	1	-	-	-	1277235-6	.Pinnskruv	.Stud bolt				2359
	-	1	1	1	844227-9	.Pinnskruv	.Stud bolt		5		2360
91	1	1	1	1	844228-7	.Pinnskruv	.Stud bolt		5		2390
92	1	1	1	1	844229-5	.Pinnskruv	.Stud bolt		5		0
93	1	1	1	1	844230-3	.Fjäder	.Spring		5		2420
94	1	-	-	-	838407-5	.Hävarm	.Lever		5		2430
	-	1	1	1	844231-1	.Hävarm	.Lever		8		2440
95	1	1	1	1	845785-5	.Packning	.Gasket	S	2	(844232)	2460
96	1	1	1	1	844233-7	.Bricka	.Washer		8		2480
97	1	1	1	1	1257677-3	.Pinnskruv	.Stud bolt		0	L=26MM	0
		1	1	1	1257679-9	.Pinnskruv	.Stud bolt		0	L=28MM	2310
98	1	1	1	1	844235-2	.Ring	.Ring	S	2		2520
99	1	1	1	1	25703-0	.Bricka	.Washer		5		2540
100	1	-	-	-	845784-8	.Mutter	.Nut		2		2559
	-	1	1	1	955800-8	.Mutter	.Nut		0		2560
101	4	-	-	-	243851-3	.Skruv	.Screw		2		2579
	-	4	4	4	955224-1	.Skruv	.Screw		0		2580
102	1	1	1	1	844237-8	.Hålskruv	.Hollow screw		6		260
103	1	1	1	1	843166-0	.Låsring	.Lock ring		5		260
104	1	1	1	1	844238-6	.Hylsa	.Sleeve		8		2
105	1	1	1	1	844239-4	.Propp	.Plug		8		260
106	1	1	1	1	844293-1	.Kil	.Key		5		2680
107	1	1	1	1	25464-9	.Kil	.Key		5		2700
108	1	-	-	-	838408-3	.Skruv	.Screw		5		2705
109	1	-	-	-	941906-0	.Fjadrande bricka	.Resilient washer		0		2706
110	1	-	-	-	955892-5	.Bricka	.Washer		0		2707
111	1	-	-	-	941906-0	.Fjadrande bricka	.Resilient washer		0		2708
	1	1	1	1	844240-2	Packningsatts	Gasket kit		2		2720

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Sida Page		Grupp Group		Insprutningspump		Fuel injection pump		Illustration	
28		2c						8341 1987-04	
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	845 280	845 281							
1	1	-	-	845280-7	Insprutningspump	Fuel injection pump		7	00:
2	1	1	-	845281-5	Insprutningspump	Fuel injection pump		7	004
3	1	1	-		.Hus	.Housing		8	0060
4	1	1	-	844178-4	.Tatningsring	.Seal ring		4	0080
5	1	1	-	838452-1	.Låsring	.Circlip		5	0100
6	1	1	-	955784-4	.Mutter	.Nut		0	0120
7	1	1	-	844144-6	.Rotorsats	.Rotor kit		5	0140
8	2	2	-	844145-3	.Ring	.Ring		5	0160
9	1	1	-	956169-7	.Skruv	.Screw		4	0180
10	1	1	-	844146-1	.Bricka	.Washer	(845722)	5	0200
11	1	1	-	844147-9	.Kuggjul	.Gear		5	0220
12	1	1	-	844148-7	.Axel	.Shaft		5	0240
13	1	1	-	844293-1	.Kil	.Key		4	0260
14	2	2	-	25464-9	.Kil	.Key		5	0280
15	1	1	-		.Dampare	.Damper	S	8	0300
16	1	1	-	844151-1	.Rullager	.Roller bearing		6	0320
17	1	1	-	844152-9	.Korsstycke	.Cross piece		6	0340
18	1	1	-	244691-2	.Tryckfjäder	.Spring		6	0360
19	1	1	-	844154-5	.Medbringare	.Carrier		5	0380
	1	1	-	243531-1	.Justerbricka	.Shim		5	0400
	1	1	-	243534-5	.Justerbricka	.Shim	TJ=1,80MM	5	0420
	1	1	-	845726-9	.Justerbricka	.Shim	TJ=1,94MM	5	0440
	1	1	-	844155-2	.Justerbricka	.Shim	TJ=2,00MM	5	0460
	1	1	-	844156-0	.Justerbricka	.Shim	TJ=2,12MM	5	0480
	1	1	-	845729-3	.Justerbricka	.Shim	TJ=2,20MM	5	0500
	1	1	-	845730-1	.Justerbricka	.Shim	TJ=2,32MM	5	0520
	1	1	-	243545-1	.Justerbricka	.Shim	TJ=2,40MM	5	0540
	1	1	-	844158-6	.Justerbricka	.Shim	TJ=2,50MM	5	0560
	1	1	-	844160-2	.Justerbricka	.Shim	TJ=2,52MM	5	0580
	1	1	-	844162-8	.Justerbricka	.Shim	TJ=2,72MM	5	0600
20	1	1	-	844161-0	.Justerbricka	.Shim	TJ=2,80MM	5	0620
21	1	1	-	243527-9	.Bricka	.Washer	TJ=1,40MM	5	0640
22	1	1	-	243530-3	.Bricka	.Washer		5	0660
23	1	1	-	844162-8	.Bricka	.Washer		5	0680
24	2	2	-	844164-4	.Fjäder	.Spring		5	0700
25	1	1	-	844163-6	.Bricka	.Washer		4	0720
26	2	2	-	844165-1	.Justerbricka	.Shim		5	0740
27	2	2	-	844166-9	.Pinne	.Pin		4	0760
28	1	1	-	844167-7	.Fjäder	.Spring		5	0780
29	1	1	-	243555-0	.O-ring	.O-ring	S	2	0800
30	1	1	-		.Hus	.Housing	(844168)	8	0820
31	1	1	-	844186-7	.Fjäder	.Spring		4	0840
32	1	1	-	844368-1	.O-ring	.O-ring	S	2	0860
33	1	1	-	844187-5	.Magnetventil	.Magnet valve		6	0880
34	1	1	-	25261-9	.Bricka	.Washer	(838412)	2	0900
35	4	4	-	838406-7	.Mutter	.Nut	(838405)	4	0920
36	1	1	-	244931-2	.Skruv	.Screw		5	0940
37	1	1	-	838402-6	.O-ring	.O-ring	S	2	0960
38	2	2	-	844171-9	.Förskrivning	.Screw union	(844170)	5	0980
39	1	1	-	947620-1	.Packning	.Gasket		0	1000
40	6	6	-	845737-6	.Luftskruv	.Air venting screw	ERS. AV844171	5	1020
41	6	6	-	845738-4	.Bricka	.Washer		2	1040
42	6	1	-	838442-2	.Tryckventil	.Pressure valve	(838337)	4	1060
43	6	6	-	243559-2	.Fjäder	.Spring		4	1080
44	6	6	-	243560-0	.Bricka	.Washer		2	1100
45	1	1	-	244688-8	.Nippel	.Nipple		5	1120
46	1	1	-		.O-ring	.O-ring	S	8	1140
47	2	2	-	844175-0	.Lock	.Cover		5	1160
48	1	1	-	6638096-5	.Skruv	.Screw		4	1180
49	1	1	-	243506-3	.Hake	.Hook		2	1200
50	1	1	-	941904-5	.Bricka	.Washer		0	1220
51	1	1	-	956057-4	.Skruv	.Screw		0	1240
52	1	1	-	844175-0	.Packning	.Gasket	S	8	1260
					.Lock	.Cover		5	

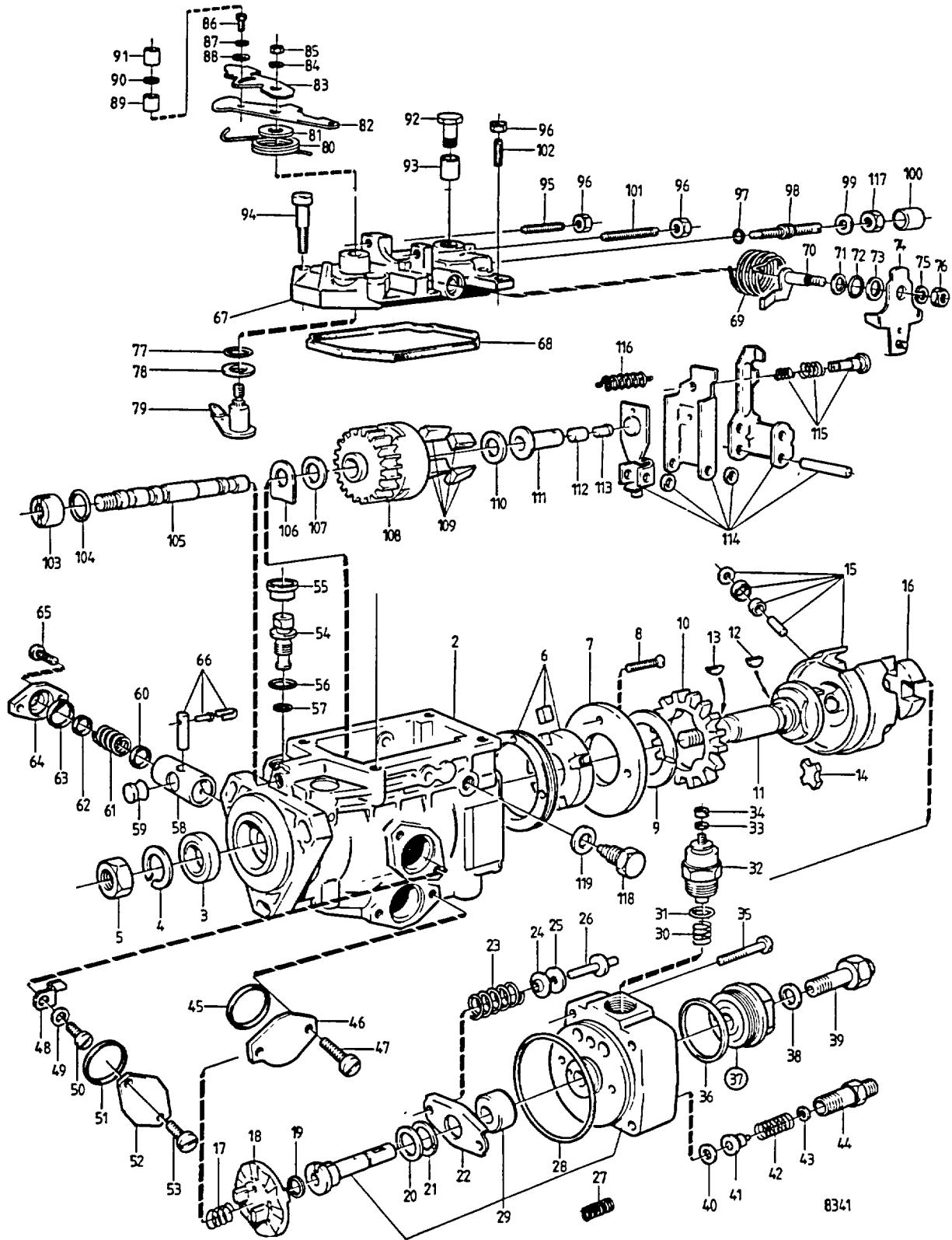
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8341

Sida Page		Grupp Group		Insprutningspump		Fuel injection pump		Illustration			
30		2c						8341 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	845 280	845 281									
53	2	2	-	-	956092-1	.Skruv..	.Screw		0		128
54	1	1	-	-	844179-2	.Ventil	.Valve		5		1300
55	-	1	-	-	845746-7	.Propp	.Plug		8		1320
56	1	1	-	-	243520-4	.Tätningring	.Seal ring	S	2		1340
57	1	1	-	-	243521-2	.Tätningring	.Seal ring	S	2		1360
58	1	1	-	-	838415-8	.Kolv	.Piston		6		1380
59	1	1	-	-	844181-8	.Rulle	.Roller		4		1400
60	1	1	-	-	844183-4	.Bricka	.Washer		8		1420
61	1	-	-	-	844184-2	.Fjäder	.Spring		4		1440
	1	1	-	-	838449-7	.Fjäder	.Spring		4	L=35,30MM	1460
	1	-	-	-	244449-5	.Fjäder	.Spring		4		1460
62	1	1	-	-	244425-5	.Justerbricka	.Shim		2		J
63	3	2	-	-		.O-ring	.O-ring	S	8		1580
64	1	1	-	-	844185-9	.Flans	.Flange		5		1600
65	2	2	-	-	6638096-5	.Skruv	.Screw		4		1620
66	1	1	-	-	844182-6	.Bultsats	.Piston pin		5		1640
67	1	1	-	-	838339-0	.Lock	.Cover		6		1660
68	1	1	-	-	845785-5	.Packning	.Gasket	S	4		J
69	1	1	-	-	844223-8	.Fjäder	.Spring		4		1700
70	1	1	-	-	844222-0	.Axel	.Shaft		5		1720
71	2	2	-	-	238951-8	.Bricka	.Washer		2		1740
72	1	1	-	-	844224-6	.O-ring	.O-ring		2		1760
73	1	1	-	-	844225-3	.Bricka	.Washer		2		1780
74	1	1	-	-	844226-1	.Hävarm	.Lever		4		1800
75	1	2	-	-	941906-0	.Bricka	.Washer		0	(955919)	1820
76	1	1	-	-	955781-0	.Mutter	.Nut		0		1840
77	1	1	-	-	243567-5	.Tätningring	.Seal ring	S	2		1860
78	3	3	-	-	844220-4	.Bricka	.Washer		4		1880
79	1	1	-	-	838341-6	.Reglerarm	.Arm		5		1900
80	1	1	-	-	844230-3	.Fjäder	.Spring		4		1920
81	1	1	-	-	845777-2	.Bricka	.Washer		4		1940
82	1	-	-	-	838342-4	.Hävarm	.Lever		5		1960
	-	1	-	-	838342-4	.Hävarm	.Lever		5		1980
83	1	1	-	-	838407-5	.Hävarm	.Lever		5		2000
84	1	1	-	-	941906-0	.Bricka	.Washer		0	(955919)	2020
85	1	1	-	-	940197-7	.Mutter	.Nut		0		2040
86	1	1	-	-	838443-0	.Skruv	.Screw		4		2060
87	1	1	-	-	941906-0	.Fjädrande bricka	.Resilient washer		0		J
88	1	1	-	-	955892-5	.Bricka	.Washer		0		J
89	1	1	-	-	844238-6	.Hylsa	.Sleeve		8		2120
90	1	1	-	-	843166-0	.Låsring	.Circlip		2		2140
91	1	1	-	-		.Propp	.Plug		8		2160
92	1	1	-	-	844237-8	.Hålskruv	.Hollow screw		5		2180
93	1	-	-	-		.Distanshylsa	.Sleeve		8		J
94	4	4	-	-	243851-3	.Skruv	.Screw		4		J
95	1	1	-	-		.Pinnskruv	.Stud bolt		8		2240
96	3	3	-	-	955781-0	.Mutter	.Nut		0		2260
97	1	1	-	-	844235-2	.O-ring	.O-ring	S	2		2280
98	1	1	-	-	1257677-3	.Skruv	.Screw		4	L=26MM	2300
	1	1	-	-	1257679-9	.Skruv	.Screw		4	L=28MM	2340
99	1	1	-	-	25703-0	.Bricka	.Washer		4		2360
100	1	1	-	-	838450-5	.Distanshylsa	.Spacer sleeve		8		2380
101	1	1	-	-	844228-7	.Pinnskruv	.Stud bolt		4		2400
102	1	1	-	-	844229-5	.Pinnskruv	.Stud bolt		4		2420
103	1	-	-	-	844217-0	.Mutter	.Nut		4		2440
	-	1	-	-	845753-3	.Mutter	.Nut		8		2460
104	1	1	-	-	243786-1	.O-ring	.O-ring	S	2		2480
105	1	1	-	-		.Axel	.Shaft		8		2500
106	1	1	-	-	844215-4	.Justerbricka	.Shim		5		2520
107	1	1	-	-	844214-7	.Bricka	.Washer		5	TJ=1,40MM	2540
	1	1	-	-	845750-9	.Bricka	.Washer		5	TJ=1,30MM	2560
	1	1	-	-	845751-7	.Bricka	.Washer		5	TJ=1,35MM	2580
108	1	1	-	-	844213-9	.Reglerhjul	.Control gear		6		2600

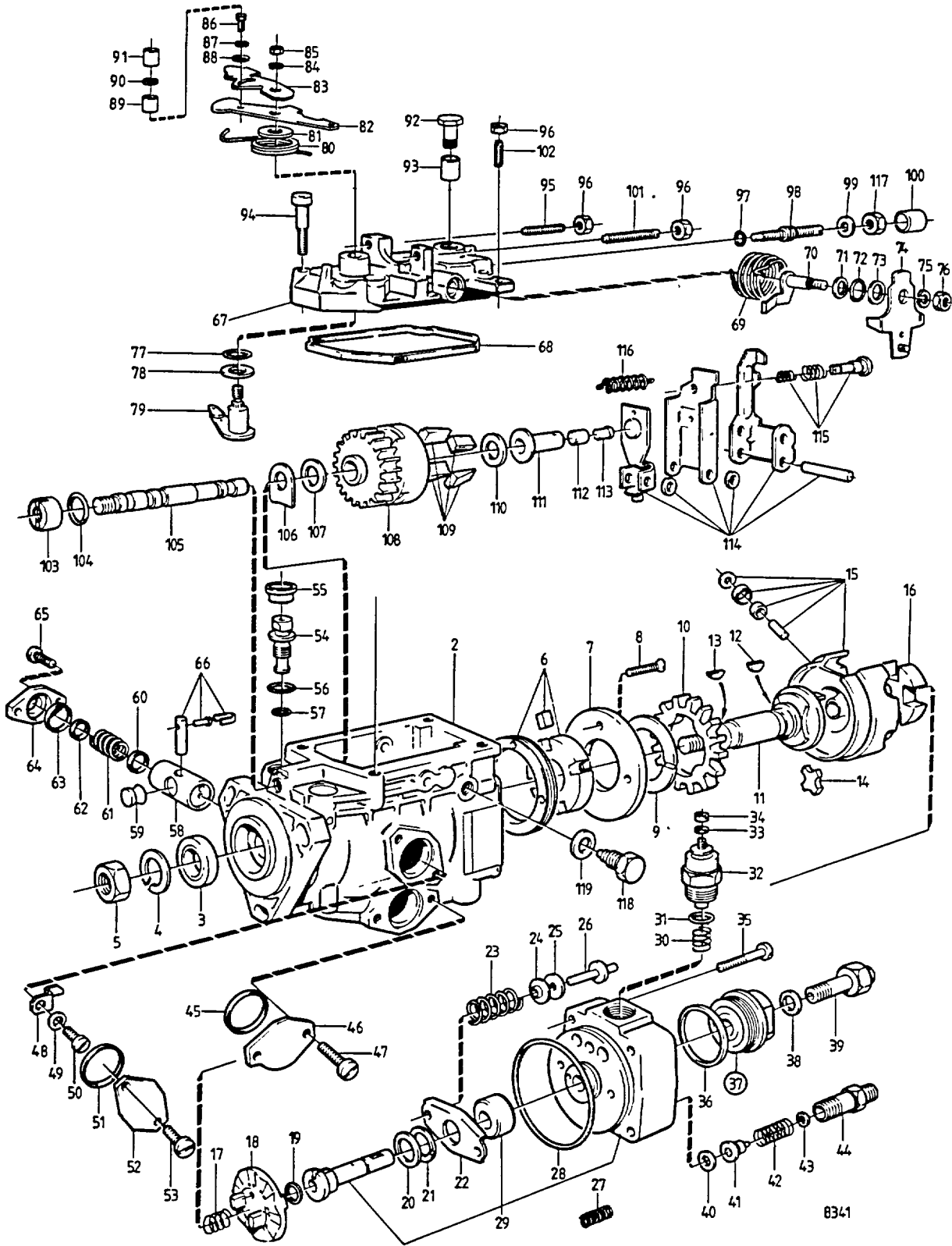
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8341

Sida Page		Grupp Group		Insprutningspump				Fuel injection pump				Illustration	
32		2c										8341 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes			
	845 280	845 281											
109	1	1	-	-	844212-1	.Regulatorvikt ... ..	.Governor weight .....	5			26		
110	1	1	-	-	838451-3	.Bricka .. ..	.Washer .. ..	4			264		
111	1	1	-	-	844210-5	.Hylsa ... ..	.Sleeve ... ..	5			2660		
112	1	1	-	-	844209-7	.Pinne .....	.Pin .....	4			2680		
113	1	1	-	-	844191-7	.Pinne .. ..	.Pin .....	8	L=7,20MM		2700		
	1	1	-	-	844192-5	.Pinne .. ..	.Pin .....	5	L=7,40MM		2720		
	1	1	-	-	844193-3	.Pinne .. ..	.Pin .....	5	L=7,60MM		2740		
	1	1	-	-	844194-1	.Pinne .. ..	.Pin .....	5	L=7,80MM		2760		
	1	1	-	-	844195-8	.Pinne .. ..	.Pin .....	8	L=8,00MM		2780		
	1	1	-	-	844196-6	.Pinne .. ..	.Pin .....	5	L=8,20MM		2800		
	1	1	-	-	844197-4	.Pinne .. ..	.Pin .....	5	L=8,40MM		0		
	1	1	-	-	844198-2	.Pinne .. ..	.Pin .....	5	L=8,60MM		0		
	1	1	-	-	844199-0	.Pinne .. ..	.Pin .....	5	L=8,80MM		2860		
	1	1	-	-	844200-6	.Propp .. ..	.Plug .....	5	L=9,00MM		2880		
	1	1	-	-	844201-4	.Pinne .. ..	.Pin .....	5	L=9,20MM		2900		
	1	1	-	-	844202-2	.Pinne .. ..	.Pin .....	5	L=9,40MM		2920		
	1	1	-	-	844203-0	.Pinne .. ..	.Pin .....	5	L=9,60MM		0		
1	1	-	-	844204-8	.Pinne .. ..	.Pin .....	8	L=9,80MM		0			
1	1	-	-	844205-5	.Propp .. ..	.Plug .....	5	L=10,00MM		2980			
1	1	-	-	844206-3	.Pinne .. ..	.Pin .....	5	L=10,20MM		3000			
1	1	-	-	844207-1	.Pinne .. ..	.Pin .....	5	L=10,40MM		3020			
114	1	1	-	-	844188-3	.Havarm .. ..	.Lever .....	6			3040		
115	1	1	-	-	844189-1	.Skruv .. ..	.Screw .....	5			3060		
116	1	1	-	-	844190-9	.Fjader .. ..	.Spring .....	5			3080		
117	1	1	-	-	845784-8	.Mutter .. ..	.Nut .....	4			3100		
118	2	2	-	-	838345-7	.Skruv .. ..	.Screw .....	5			3100		
119	2	2	-	-		.O-ring .. ..	.O-ring .....	S 8			3		
	1	1	-	-	844240-2	Packningssats .....	Gasket kit .....	1			3		

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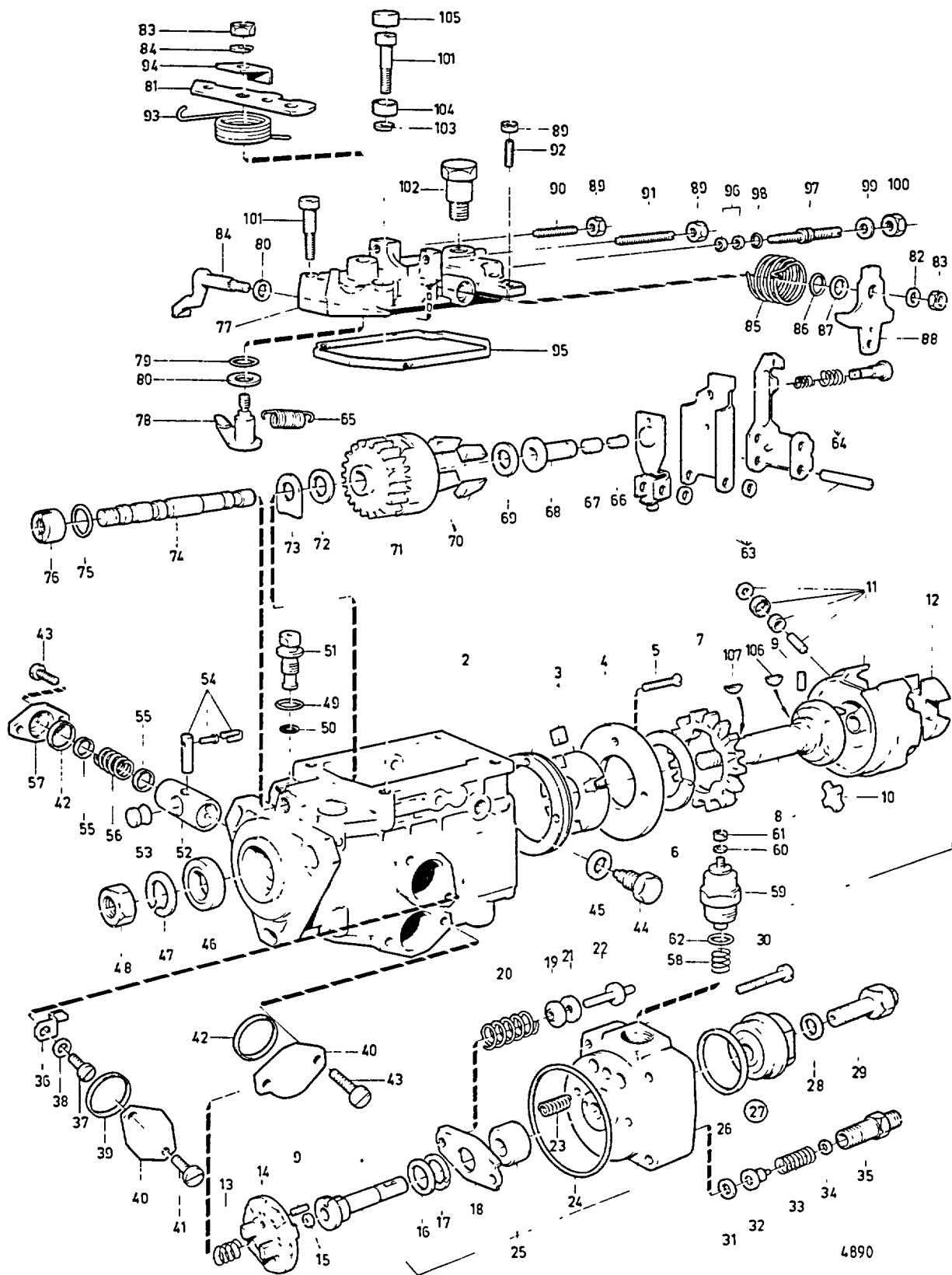
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Sida Page	Grupp Group	Insprutningspump	Fuel injection pump	Illustration 4890 1987-04	1380
34	2c				

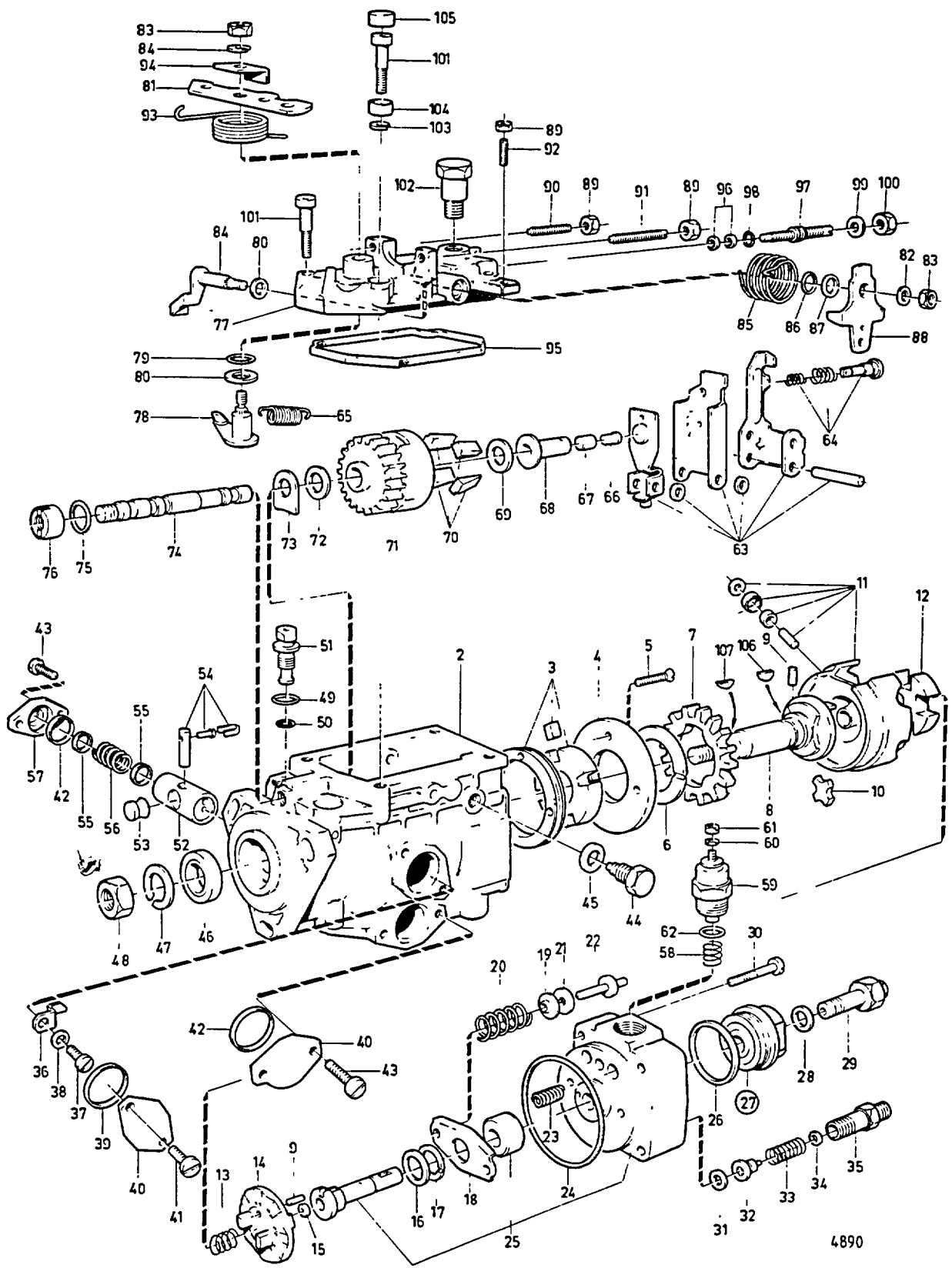
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	838 497	846 855	846 471							
1	1	-	-	838497-6	Insprutningspump	Fuel injection pump		7		00
	-	1	-	846855-5	Insprutningspump	Fuel injection pump		7		004
	-	-	1	846471-1	Insprutningspump	Fuel injection pump		7		0060
2	1	1	1		.Hus	.Housing		8		0080
3	1	1	1	844144-6	.Rotorsats	.Rotor kit		6		0100
4	1	1	1	844145-3	.Ring	.Ring		6		0120
5	2	2	2	838334-1	.Skruv	.Screw		4		0140
6	1	1	1	844146-1	.Bricka	.Washer		6		0160
7	1	1	1	844147-9	.Kugghjul	.Gear		6		0180
8	1	1	1	844148-7	.Axel	.Shaft		6		0200
9	1	1	1	844293-1	.Kil	.Key		6		020
10	2	2	2	844150-3	.Dämpare	.Damper		6		020
11	1	1	1	844151-1	.Rullager	.Roller bearing		5		0260
12	1	1	1	844152-9	.Korsstycke	.Cross piece		5		0280
13	1	-	-	244691-2	.Tryckfjäder	.Spring		5		0300
	-	1	1	244691-2	.Fjäder	.Spring		5		0320
14	1	1	-	844154-5	.Medbringare	.Carrier		6		0340
	-	-	1	838465-3	.Bricka	.Washer		6		0
15	ERF	ERF	ERF	243531-1	.Justerbricka	.Shim		5	TJ=1,80MM	0380
	ERF	ERF	ERF	243534-5	.Justerbricka	.Shim		5	TJ=1,95MM	0400
	ERF	ERF	ERF	845726-9	.Justerbricka	.Shim		5	TJ=2,00MM	0420
	ERF	ERF	ERF	844155-2	.Justerbricka	.Shim		5	TJ=2,12MM	0440
	ERF	ERF	ERF	844156-0	.Justerbricka	.Shim		5	TJ=2,20MM	0460
	ERF	ERF	ERF	845729-3	.Justerbricka	.Shim		5	TJ=2,32MM	0480
	ERF	ERF	ERF	845730-1	.Justerbricka	.Shim		5	TJ=2,40MM	0500
	ERF	ERF	ERF	243545-1	.Justerbricka	.Shim		5	TJ=2,50MM	05
	ERF	ERF	ERF	844158-6	.Justerbricka	.Shim		5	TJ=2,52MM	0
	ERF	ERF	ERF	844159-4	.Justerbricka	.Shim		5	TJ=2,60MM	0
	ERF	ERF	ERF	844160-2	.Justerbricka	.Shim		5	TJ=2,72MM	0580
	ERF	ERF	ERF	844161-0	.Justerbricka	.Shim		5	TJ=2,80MM	0600
16	1	1	1	243527-9	.Bricka	.Washer		5		0620
17	1	1	1	243530-3	.Bricka	.Washer		5		0640
18	1	1	1	844162-8	.Bricka	.Washer		5		0660
19	2	2	2	844163-6	.Bricka	.Washer		5		0680
20	1	1	1	844164-4	.Fjäder	.Spring		5		0700
21	2	2	2	844165-1	.Justerbricka	.Shim		5		0720
22	2	2	2	844166-9	.Pinne	.Pin		5		0740
23	2	2	2	844167-7	.Fjäder	.Spring		5		070
24	1	1	1	243555-0	.Tätningring	.Seal ring		S 4		0
25	1	1	-	838414-1	.Hus	.Housing		6		0800
	-	-	1	838459-6	.Hus	.Housing		6		0820
26	1	1	1	838402-6	.O-ring	.O-ring		S 2		0840
27	1	1	1	844171-9	.Forskruvning	.Screw union		5		0860
28	1	1	1	947620-1	.Packning	.Gasket		S 2		080
29	1	1	1	845737-6	.Luftskruv	.Venting screw		5	ERS AV 844171	0
30	4	4	4	838338-2	.Skruv	.Screw		5		0920
31	6	6	6	845738-4	.Bricka	.Washer		S 2		0940
32	6	6	-	838442-2	.Tryckventil	.Pressure valve		4	(838337)	0960
	-	-	6	838460-4	.Tryckventil	.Pressure valve		4		1000
33	6	6	6	243559-2	.Fjäder	.Spring		5		1020
34	6	6	6	243560-0	.Bricka	.Washer		4		1040
35	6	6	6	244688-8	.Nippel	.Nipple		4		1060
36	1	1	1	243506-3	.Visare	.Indicator		8		1080
37	1	1	1	956057-4	.Skruv	.Screw		0		1
38	1	1	1	941904-5	.Bricka	.Washer		0		1
39	1	-	-	844174-3	.Packning	.Gasket		2		11-
	-	1	1	844176-8	.O-ring	.O-ring		2		1160
40	2	2	2	844175-0	.Lock	.Cover		6		1180
41	2	2	2	838335-8	.Skruv	.Screw		0		120
42	2	2	2	844176-8	.O-ring	.O-ring		S 2		12 +
43	4	4	4	956092-1	.Skruv	.Screw		5		12-
44	2	2	2	838345-7	.Skruv	.Screw		5		1260
45	2	2	-	838346-5	.Bricka	.Washer		4		1280

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Sida Page		Grupp Group		Insprutningspump		Fuel injection pump		Illustration	
36		2c						4890 1987-04	
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	838 497	846 855	846 471						
46	1	1	2	947620-1	.Packning . . . . .	.Gasket . . . . .		0	1.
47	1	1	1	844178-4	.Tättningsring . . . . .	.Seal ring . . . . .		4	13.
48	1	1	1	940280-1	.Fjädrande bricka . . . . .	.Resilient washer . . . . .		0	1340
49	1	1	1	955784-4	.Mutter . . . . .	.Nut . . . . .		0	1360
50	1	1	1	243520-4	.Tättningsring . . . . .	.Seal ring . . . . .	S	2	1380
51	1	1	1	243521-2	.Tättningsring . . . . .	.Seal ring . . . . .	S	2	1400
52	1	1	1	844179-2	.Ventil . . . . .	.Valve . . . . .		4	1420
53	1	1	1	844180-0	.Kolv . . . . .	.Piston . . . . .		5	1440
54	1	1	1	858907-9	.Rulle . . . . .	.Roller . . . . .		5	1460
55	1	1	1	844182-6	.Kolvbult . . . . .	.Piston pin . . . . .		5	1480
56	1	1	1	244425-5	.Justerbricka . . . . .	.Shim . . . . .		5	70
57	1	1	1	844184-2	.Fjäder . . . . .	.Spring . . . . .		5	0
58	1	1	1	844185-9	.Flans . . . . .	.Flange . . . . .		6	1540
59	1	1	1	844186-7	.Fjäder . . . . .	.Spring . . . . .		5	1560
60	1	1	1	844187-5	.Magnetventil . . . . .	.Magnet valve . . . . .		5	1580
61	1	1	1	25261-9	.Bricka . . . . .	.Washer . . . . .		5	1600
62	1	1	1	838406-7	.Mutter . . . . .	.Nut . . . . .		5	70
63	1	1	1	844368-1	.O-ring . . . . .	.O-ring . . . . .	S	2	0
64	1	1	1	243572-5	.O-ring . . . . .	.O-ring . . . . .		2	1641
65	1	1	1	844188-3	.Havarm . . . . .	.Lever . . . . .		6	1660
66	1	1	1	838461-2	.Havarm . . . . .	.Lever . . . . .		6	1680
67	1	1	1	844189-1	.Fjädersats . . . . .	.Spring set . . . . .		6	1700
68	1	1	1	838464-6	.Fjädersats . . . . .	.Spring set . . . . .		6	1720
69	1	1	1	838349-9	.Fjäder . . . . .	.Spring . . . . .		5	1740
70	1	1	1	838463-8	.Fjäder . . . . .	.Spring . . . . .		5	1760
71	1	1	1	844191-7	.Pinne . . . . .	.Pin . . . . .		8	L=7,2MM ALT
72	1	1	1	844192-5	.Pinne . . . . .	.Pin . . . . .		5	L=7,4MM ALT
73	1	1	1	844193-3	.Pinne . . . . .	.Pin . . . . .		5	L=7,6MM ALT
74	1	1	1	845757-4	.Pinne . . . . .	.Pin . . . . .		5	L=7,6MM ALT
75	1	1	1	844194-1	.Pinne . . . . .	.Pin . . . . .		5	L=7,8MM ALT
76	1	1	1	845758-2	.Pinne . . . . .	.Pin . . . . .		5	L=7,8MM ALT
77	1	1	1	844195-8	.Pinne . . . . .	.Pin . . . . .		8	L=8,0MM ALT
78	1	1	1	845759-0	.Pinne . . . . .	.Pin . . . . .		5	L=8,0MM ALT
79	1	1	1	844196-6	.Pinne . . . . .	.Pin . . . . .		5	L=8,2MM ALT
80	1	1	1	845760-8	.Pinne . . . . .	.Pin . . . . .		5	L=8,2MM ALT
81	1	1	1	844197-4	.Pinne . . . . .	.Pin . . . . .		5	L=8,4MM ALT
82	1	1	1	845761-6	.Pinne . . . . .	.Pin . . . . .		5	L=8,4MM ALT
83	1	1	1	844198-2	.Pinne . . . . .	.Pin . . . . .		5	L=8,6MM ALT
84	1	1	1	845762-4	.Pinne . . . . .	.Pin . . . . .		5	L=8,6MM ALT
85	1	1	1	844199-0	.Pinne . . . . .	.Pin . . . . .		5	L=8,8MM ALT
86	1	1	1	845763-2	.Pinne . . . . .	.Pin . . . . .		5	L=8,8MM ALT
87	1	1	1	844200-6	.Pinne . . . . .	.Pin . . . . .		5	L=9,0MM ALT
88	1	1	1	845764-0	.Pinne . . . . .	.Pin . . . . .		5	L=9,0MM ALT
89	1	1	1	844201-4	.Pinne . . . . .	.Pin . . . . .		5	L=9,2MM ALT
90	1	1	1	845765-7	.Pinne . . . . .	.Pin . . . . .		5	L=9,2MM ALT
91	1	1	1	844202-2	.Pinne . . . . .	.Pin . . . . .		5	L=9,4MM ALT
92	1	1	1	845766-5	.Pinne . . . . .	.Pin . . . . .		5	L=9,4MM ALT
93	1	1	1	844203-0	.Pinne . . . . .	.Pin . . . . .		5	L=9,6MM ALT
94	1	1	1	845767-3	.Pinne . . . . .	.Pin . . . . .		5	L=9,6MM ALT
95	1	1	1	844204-8	.Pinne . . . . .	.Pin . . . . .		5	L=9,8MM ALT
96	1	1	1	845768-1	.Pinne . . . . .	.Pin . . . . .		5	L=9,8MM ALT
97	1	1	1	844205-5	.Pinne . . . . .	.Pin . . . . .		5	L=10,0MM ALT
98	1	1	1	845769-9	.Pinne . . . . .	.Pin . . . . .		5	L=10,0MM ALT
99	1	1	1	844206-3	.Pinne . . . . .	.Pin . . . . .		5	L=10,2MM ALT
100	1	1	1	845770-7	.Pinne . . . . .	.Pin . . . . .		5	L=10,2MM ALT
101	1	1	1	844207-1	.Pinne . . . . .	.Pin . . . . .		5	L=10,4MM ALT
102	1	1	1	845771-5	.Pinne . . . . .	.Pin . . . . .		5	L=10,4MM ALT
103	1	1	1	844208-9	.Pinne . . . . .	.Pin . . . . .		5	L=10,6MM ALT
104	1	1	1	845755-8	.Tättningskåpa . . . . .	.Sealing cover . . . . .		6	24
105	1	1	1	845754-1	.Reglerhylsa . . . . .	.Control sleeve . . . . .		5	2
106	1	1	1	844210-5	.Reglerhylsa . . . . .	.Control sleeve . . . . .		5	24
107	1	1	1	838348-1	.Distansbricka . . . . .	.Washer . . . . .		5	2500
108	1	1	1	844212-1	.Regulatorvikt . . . . .	.Governor weight . . . . .		6	2520

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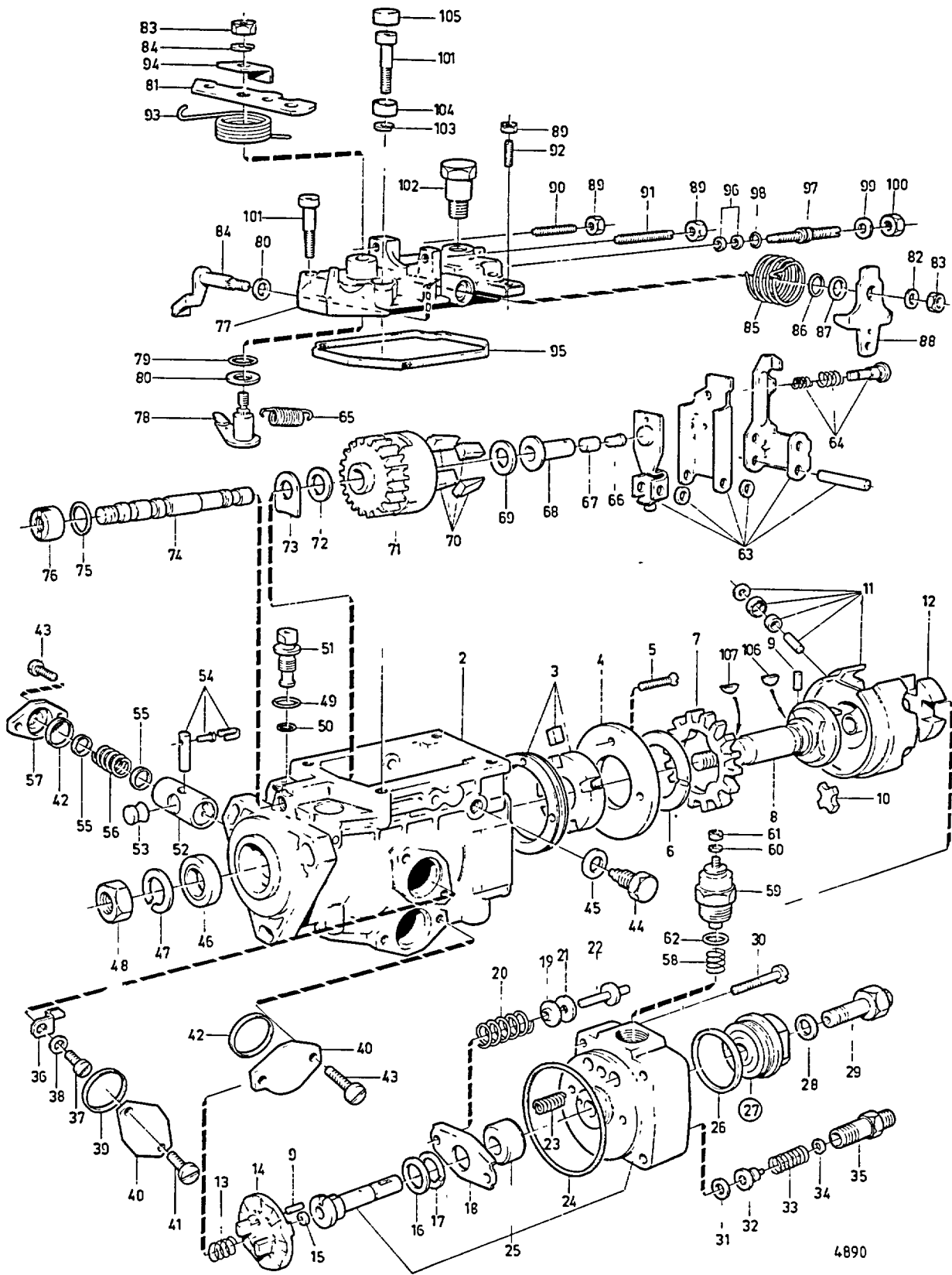


4890

Sida Page	Grupp Group	Insprutningspump	Fuel injection pump	Illustration 4890 1987-04	1380
38	2c				

Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	838 497	846 855	846 471							
71	1	1	1	-	844213-9	.Reglerhjul.....		6		25
72	ERF	ERF	ERF	-	844214-7	.Bricka.....		5		256
	ERF	ERF	ERF	-	845750-9	.Bricka.....		6	TJ=1,30MM ALT	2580
	ERF	ERF	ERF	-	845751-7	.Bricka.....		6	TJ=1,35MM	2600
73	1	1	1	-	844215-4	.Justerbricka.....		5		2620
74	1	1	1	-	838347-3	.Regleraxel.....		5		2640
75	1	1	1	-	844235-2	.O-ring.....	S	2		2660
76	1	1	1	-	844217-0	.Mutter.....		5		2680
77	1	1	1	-	838339-0	.Lock.....		5		2700
78	1	1	1	-	838341-6	.Reglerarm.....		5		2720
79	1	1	1	-	243567-5	.Tatningsring.....		5		2740
80	2	2	2	-	844220-4	.Bricka.....		5		2760
81	1	1	1	-	838342-4	.Havarm.....		5		2780
82	2	2	2	-	838340-8	.Fjädersring.....		5		2800
83	1	1	1	-	955781-0	.Mutter.....		0		2820
84	1	1	1	-	844222-0	.Axel.....		6		2840
85	1	1	1	-	844223-8	.Fjäder.....		5		2860
86	1	1	1	-	844224-6	.O-ring.....	S	2		2880
87	1	1	1	-	844225-3	.Bricka.....		5		2900
88	1	1	1	-	844226-1	.Havarm.....		6		2920
89	4	4	4	-	955781-0	.Mutter.....		0		2940
90	1	1	1	-	1277235-6	.Pinnskruv.....		5		2960
	-	-	1	-	844227-9	.Pinnskruv.....		5		2980
91	1	1	1	-	844228-7	.Pinnskruv.....		5		3000
92	1	1	1	-	844229-5	.Pinnskruv.....		5		3020
93	1	1	1	-	844230-3	.Fjäder.....		5		3040
94	1	1	1	-	838407-5	.Havarm.....		5		3060
95	1	1	-	-	845785-5	.Packning.....	S	2		3080
96	1	-	-	-	844233-7	.Bricka.....		8		3100
97	1	1	1	-	1257677-3	.Skruv.....		6	L=26MM ALT	3120
	1	1	1	-	1257679-9	.Skruv.....		6	L=28MM ALT	3160
98	1	1	1	-	844235-2	.O-ring.....	S	2		3180
99	1	1	-	-	25703-0	.Bricka.....		5		3200
	-	-	1	-	25703-0	.Bricka.....		5	(6212642)	3220
100	1	1	-	-	838343-2	.Mutter.....		5		3240
	-	-	1	-	845784-8	.Mutter.....		5		3260
101	4	4	4	-	838350-7	.Skruv.....		5		3280
102	1	1	1	-	844237-8	.Hålskruv.....		6		3300
103	1	1	1	-	838404-2	.Låsring.....		5		3320
104	1	-	-	-	844238-6	.Hylsa.....		8		3340
105	1	-	-	-	844239-4	.Propp.....		8		3360
106	1	1	1	-	844293-1	.Kil.....		5		3380
107	1	1	1	-	25464-9	.Kil.....		5		3400
	1	1	1	-	844240-2	.Packningssats.....		2		3420

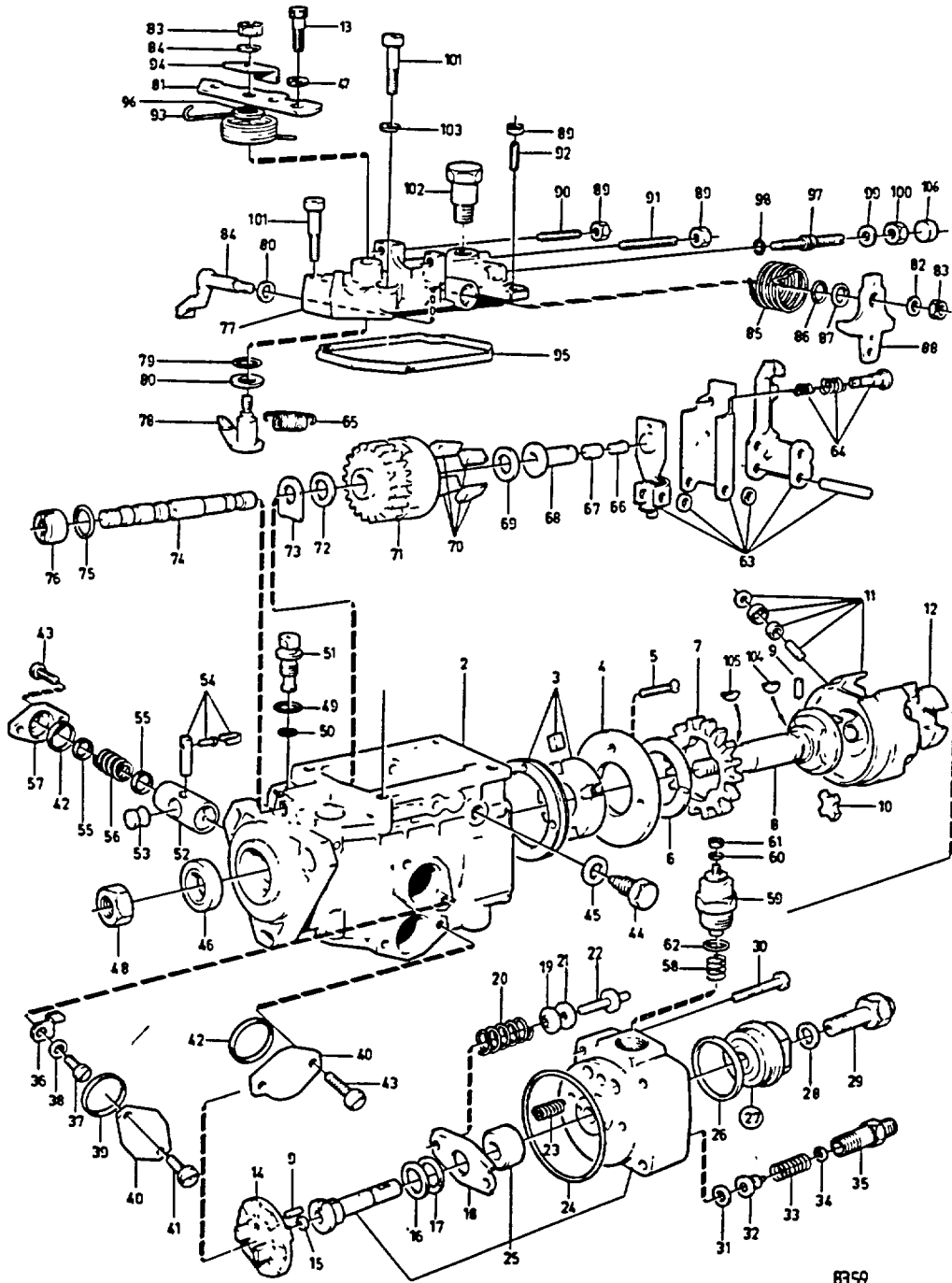
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Sida Page	Grupp Group	Insprutningspump	Fuel injection pump	Illustration	1385
40	2c			8359	
				1987-04	

Pos Fig	Antal/Quantity				Artikel Nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	846815-9	Insprutningspump	Fuel injection pump		7		0
2	1	-	-	-		.Hus	.Housing		8		0L
3	1	-	-	-	844144-6	.Rotorsats	.Rotor kit		6		0060
4	1	-	-	-	844145-3	.Ring	.Ring		6		0080
5	2	-	-	-	838334-1	.Skruv	.Screw		4		0100
6	1	-	-	-	844146-1	.Bricka	.Washer		6		0120
7	1	-	-	-	844147-9	.Kugghjul	.Gear		6		0140
8	1	-	-	-	844148-7	.Axel	.Shaft		6		0160
9	1	-	-	-	844293-1	.Kil	.Key		6		0180
10	2	-	-	-	844150-3	.Dampare	.Damper		6		0200
11	1	-	-	-	838444-8	.Lagersats	.Bearing shell kit		5	(844151)	020
12	1	-	-	-	844152-9	.Korsstycke	.Cross piece		5		0
13	1	-	-	-	838443-0	.Skruv	.Screw		6		0260
14	1	-	-	-	844154-5	.Medbringare	.Carrier		5		0280
15	ERF	-	-	-	243531-1	.Justerbricka	.Shim		5	TJ=1,80MM	0300
	ERF	-	-	-	243534-5	.Justerbricka	.Shim		5	TJ=1,95MM	0320
	ERF	-	-	-	845726-9	.Justerbricka	.Shim		5	TJ=2,00MM	0340
	ERF	-	-	-	844155-2	.Justerbricka	.Shim		5	TJ=2,12MM	0
	ERF	-	-	-	844156-0	.Justerbricka	.Shim		5	TJ=2,20MM	0380
	ERF	-	-	-	845729-3	.Justerbricka	.Shim		5	TJ=2,32MM	0400
	ERF	-	-	-	845730-1	.Justerbricka	.Shim		5	TJ=2,40MM	0420
	ERF	-	-	-	243545-1	.Justerbricka	.Shim		5	TJ=2,50MM	0440
	ERF	-	-	-	844158-6	.Justerbricka	.Shim		5	TJ=2,52MM	0460
	ERF	-	-	-	844160-2	.Justerbricka	.Shim		5	TJ=2,72MM	0480
	ERF	-	-	-	844161-0	.Justerbricka	.Shim		5	TJ=2,80MM	0500
16	1	-	-	-	243527-9	.Bricka	.Washer		5		0500
17	1	-	-	-	243530-3	.Bricka	.Washer		5		0500
18	1	-	-	-	844162-8	.Bricka	.Washer		5		0500
19	2	-	-	-	844163-6	.Bricka	.Washer		5		0500
20	1	-	-	-	844164-4	.Fjader	.Spring		5		0600
21	1	-	-	-	844165-1	.Justerbricka	.Shim		5		0620
22	2	-	-	-	844166-9	.Pinne	.Pin		5		0640
23	2	-	-	-	844167-7	.Fjader	.Spring		5		0660
24	1	-	-	-	243555-0	.Tatningsring	.Seal ring		S 4		0680
25	1	-	-	-	838414-1	.Hus	.Housing		6		0700
26	1	-	-	-	838402-6	.O-ring	.O-ring		S 2		0720
27	1	-	-	-	844171-9	.Forskruvning	.Screw union		5		0740
28	1	-	-	-	947620-1	.Packning	.Gasket		S 2		0750
29	1	-	-	-	845737-6	.Luftskruv	.Air screw		5	ERS AV 844171	0800
30	4	-	-	-	838338-2	.Skruv	.Screw		5		0800
31	6	-	-	-	845738-4	.Bricka	.Washer		S 2		0820
32	6	-	-	-	838442-2	.Tryckventil	.Pressure valve		4		0840
33	6	-	-	-	243559-2	.Fjader	.Spring		5		0860
34	6	-	-	-	243560-0	.Bricka	.Washer		4		0880
35	6	-	-	-	244688-8	.Nippel	.Nipple		4		0900
36	1	-	-	-	243506-3	.Hake	.Hook		8		0920
37	1	-	-	-	956057-4	.Skruv	.Screw		0		0940
38	1	-	-	-	941904-5	.Bricka	.Washer		0		0960
39	1	-	-	-	844176-8	.O-ring	.O-ring		2		0980
40	2	-	-	-	844175-0	.Lock	.Cover		6		1000
41	2	-	-	-	956092-1	.Skruv	.Screw		0		1020
42	2	-	-	-	844176-8	.O-ring	.O-ring		S 2		1040
43	4	-	-	-	838335-8	.Skruv	.Screw		5		1060
44	2	-	-	-	838345-7	.Skruv	.Screw		5		1060
45	2	-	-	-	838346-5	.Bricka	.Washer		4		1060
46	1	-	-	-	844178-4	.Tatningsring	.Seal ring		4		1060
47	1	-	-	-	955892-5	.Bricka	.Washer		0		1140
48	1	-	-	-	955784-4	.Mutter	.Nut		0		1160
49	1	-	-	-	243520-4	.Tatningsring	.Seal ring		S 2		1180
50	1	-	-	-	243521-2	.Tatningsring	.Seal ring		S 2		1180
51	1	-	-	-	844179-2	.Ventil	.Valve		4		1
52	1	-	-	-	844180-0	.Kolv	.Piston		5		1240
53	1	-	-	-	858907-9	.Glidstycke	.Link		5	(844181)	1260

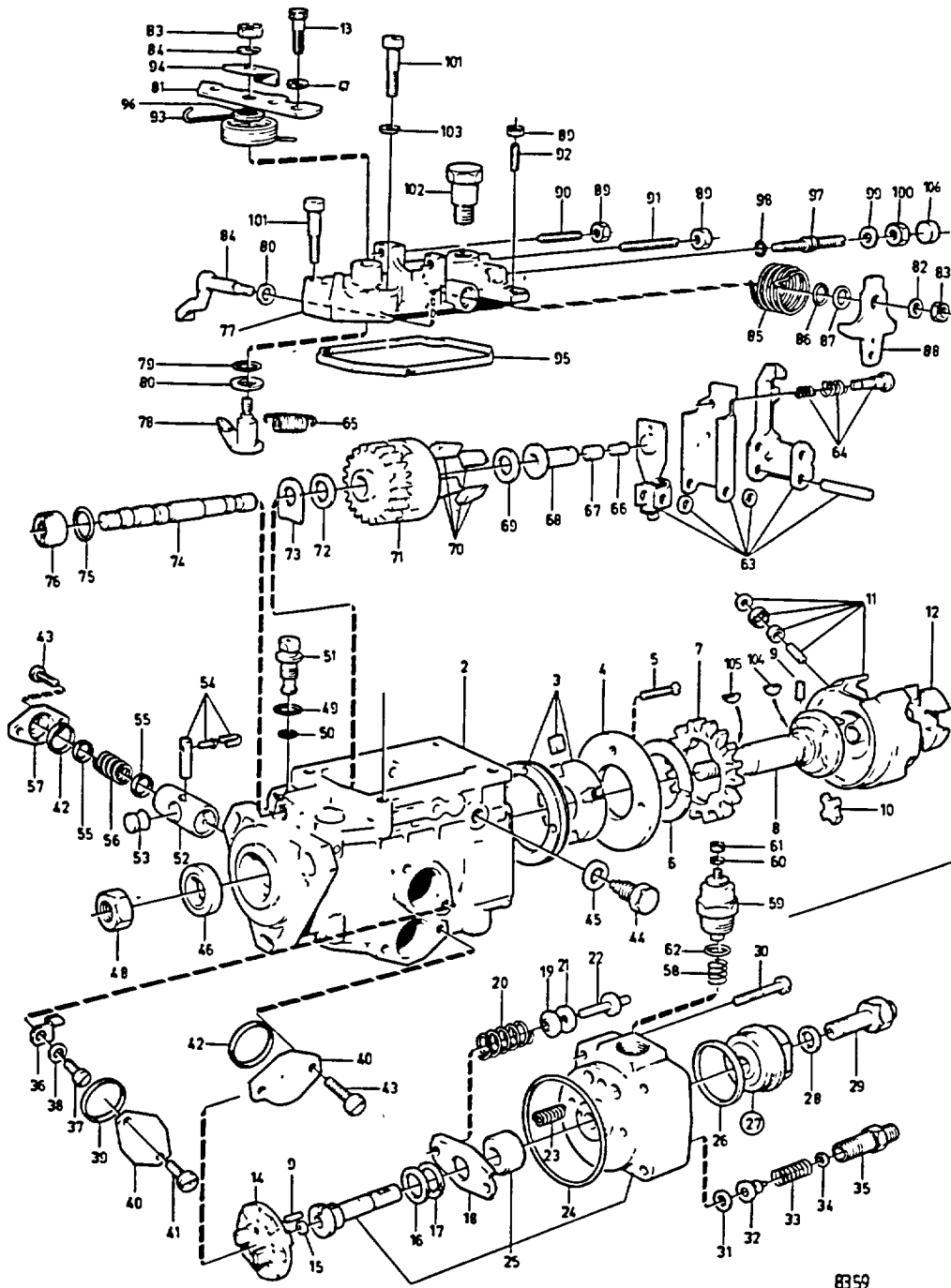
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Sida Page	Grupp Group	Insprutningspump			Fuel injection pump			Illustration	1385	
42	2c							8359		
								1987-04		
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
54	1	-	-	844182-6	.Bultsats	.Piston pin		5		12f
55	1	-	-	244425-5	.Justerbricka	.Shim		5		13c
56	1	-	-	844184-2	.Fjäder	.Spring		5		1320
57	1	-	-	844185-9	.Flans	.Flange		6		1340
58	1	-	-	844186-7	.Fjäder	.Spring		5		1360
59	1	-	-	844187-5	.Magnet	.Solenoid		5	(838412)	1380
60	1	-	-	25261-9	.Bricka	.Washer		5	(838405)	1400
61	1	-	-	838406-7	.Mutter	.Nut		5		1420
62	1	-	-	243572-5	.O-ring	.O-ring		S 2	(844368)	1440
63	1	-	-	844188-3	.Havarm	.Lever		6		1460
64	1	-	-	844189-1	.Skruv	.Screw		6		1490
65	1	-	-	838349-9	.Fjäder	.Spring		5		0
66	1	-	-	844191-7	.Pinne	.Pin		8	L=7,2MM	1520
	1	-	-	844192-5	.Pinne	.Pin		5	L=7,4MM	1540
	1	-	-	844193-3	.Pinne	.Pin		5	L=7,6MM	1560
	1	-	-	844194-1	.Pinne	.Pin		5	L=7,8MM	1580
	1	-	-	844195-8	.Pinne	.Pin		8	L=8,0MM	1600
	1	-	-	844196-6	.Pinne	.Pin		5	L=8,2MM	0
	1	-	-	844197-4	.Pinne	.Pin		5	L=8,4MM	1640
	1	-	-	844198-2	.Pinne	.Pin		5	L=8,6MM	1660
	1	-	-	844199-0	.Pinne	.Pin		5	L=8,8MM	1680
	1	-	-	844200-6	.Pinne	.Pin		5	L=9,0MM	1700
	1	-	-	844201-4	.Pinne	.Pin		5	L=9,2MM	1720
	1	-	-	844202-2	.Pinne	.Pin		5	L=9,4MM	1740
	1	-	-	844203-0	.Pinne	.Pin		5	L=9,6MM	1760
	1	-	-	844204-8	.Pinne	.Pin		5	L=9,8MM	1780
	1	-	-	844205-5	.Pinne	.Pin		5	L=10,0MM	18
	1	-	-	844206-3	.Pinne	.Pin		5	L=10,2MM	1f
	1	-	-	844207-1	.Pinne	.Pin		5	L=10,4MM	18
67	1	-	-	845755-8	.Tätningsskåpa	.Sealing cover		6		1860
68	1	-	-	845754-1	.Reglerhylsa	.Control sleeve		5		1880
69	1	-	-	838348-1	.Distansbricka	.Spacer washer		5		1900
70	1	-	-	844212-1	.Regulatorvikt	.Governor weight		6		1920
71	1	-	-	844213-9	.Reglerhjul	.Control gear		6		1940
72	ERF	-	-	844214-7	.Bricka	.Washer		5		1960
	ERF	-	-	845750-9	.Bricka	.Washer		6	TJ=1,30MM	1980
	ERF	-	-	845751-7	.Bricka	.Washer		6	TJ=1,35MM	2000
73	1	-	-	844215-4	.Justerbricka	.Shim		5		20
74	1	-	-	838347-3	.Regleraxel	.Control shaft		5		20
75	1	-	-	844235-2	.O-ring	.O-ring		S 2		2060
76	1	-	-	844217-0	.Mutter	.Nut		5		2080
77	1	-	-	838339-0	.Lock	.Cover		5		2100
78	1	-	-	838341-6	.Reglerarm	.Arm		5		2120
79	1	-	-	243567-5	.Tätningsring	.Seal ring		5		2140
80	2	-	-	844220-4	.Bricka	.Washer		5		2160
81	1	-	-	838342-4	.Havarm	.Lever		5		2180
82	1	-	-	838340-8	.Fjädderring	.Spring ring		5		2200
83	1	-	-	955781-0	.Mutter	.Nut		0		2220
84	1	-	-	838340-8	.Bricka	.Washer		6		2240
85	1	-	-	844223-8	.Fjäder	.Spring		5		2260
86	1	-	-	844224-6	.O-ring	.O-ring		S 2		2280
87	1	-	-	844225-3	.Bricka	.Washer		5		2300
88	1	-	-	844226-1	.Hävarm	.Lever		6		2320
89	3	-	-	955781-0	.Mutter	.Nut		0		2340
90	1	-	-	1277235-6	.Pinnskruv	.Stud bolt		5		2360
91	1	-	-	844228-7	.Pinnskruv	.Stud bolt		5		2380
92	1	-	-	844229-5	.Pinnskruv	.Stud bolt		5		2400
93	1	-	-	844230-3	.Fjäder	.Spring		5		2420
94	1	-	-	838407-5	.Havarm	.Lever		5		2440
95	1	-	-	845785-5	.Packning	.Gasket		S 2		2460
96	1	-	-	845777-2	.Bricka	.Washer		5		2480
97	1	-	-	1257677-3	.Skruv	.Screw		6	L=26MM ALT	2500
	1	-	-	1257679-9	.Skruv	.Screw		6	L=28MM ALT	2540

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Publ. 4406

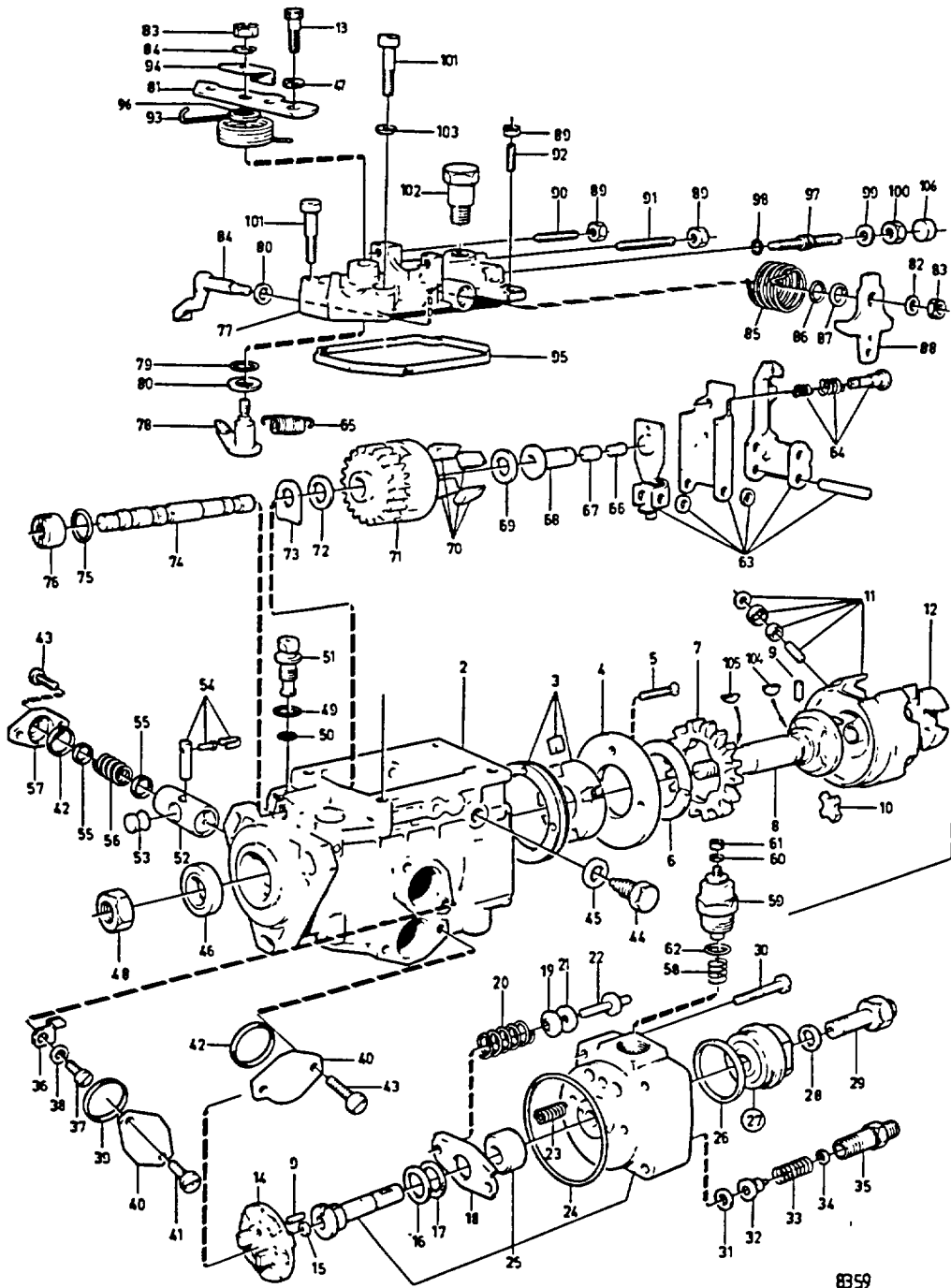
Reservdelskatalog  
Parts Catalogue

1-H11

**VOLVO**  
**PENTA**

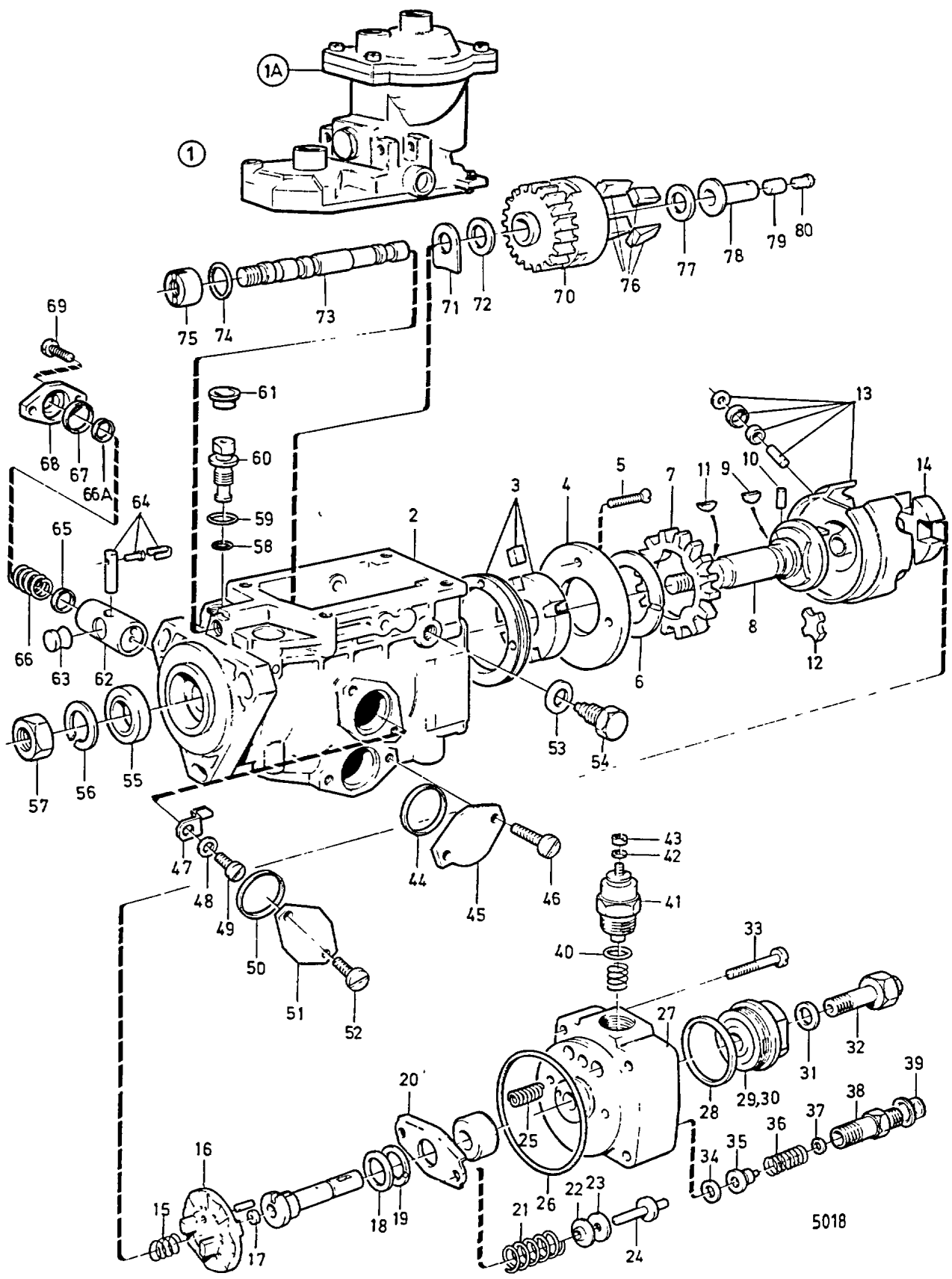
Sida Page		Grupp Group		Insprutningspump				Fuel injection pump				Illustration	
44		2c										8359 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes			
98	1	-	-	-	844235-2	.O-ring. ....	.O-ring.....	S	2		25'		
99	1	-	-	-	25703-0	.Bricka . . . . .	.Washer . . . . .		5		25.		
100	1	-	-	-	838343-2	.Mutter . . . . .	.Nut . . . . .		5		2600		
101	4	-	-	-	838350-7	.Skruv . . . . .	.Screw . . . . .		5		2620		
102	1	-	-	-	844237-8	.Hålskruv . . . . .	.Hollow screw . . . . .		6		2640		
103	1	-	-	-	838404-2	.Fjädderring . . . . .	.Spring ring . . . . .		5		2660		
104	1	-	-	-	844293-1	.Kil . . . . .	.Key . . . . .		5		2680		
105	1	-	-	-	25464-9	.Kil . . . . .	.Key . . . . .		5		2700		
106	1	-	-	-	844652-8	.Distanshylsa . . . . .	.Spacer sleeve . . . . .		5		2720		
	1	-	-	-	844240-2	Packningssats . . . . .	Gasket kit . . . . .		2		2740		

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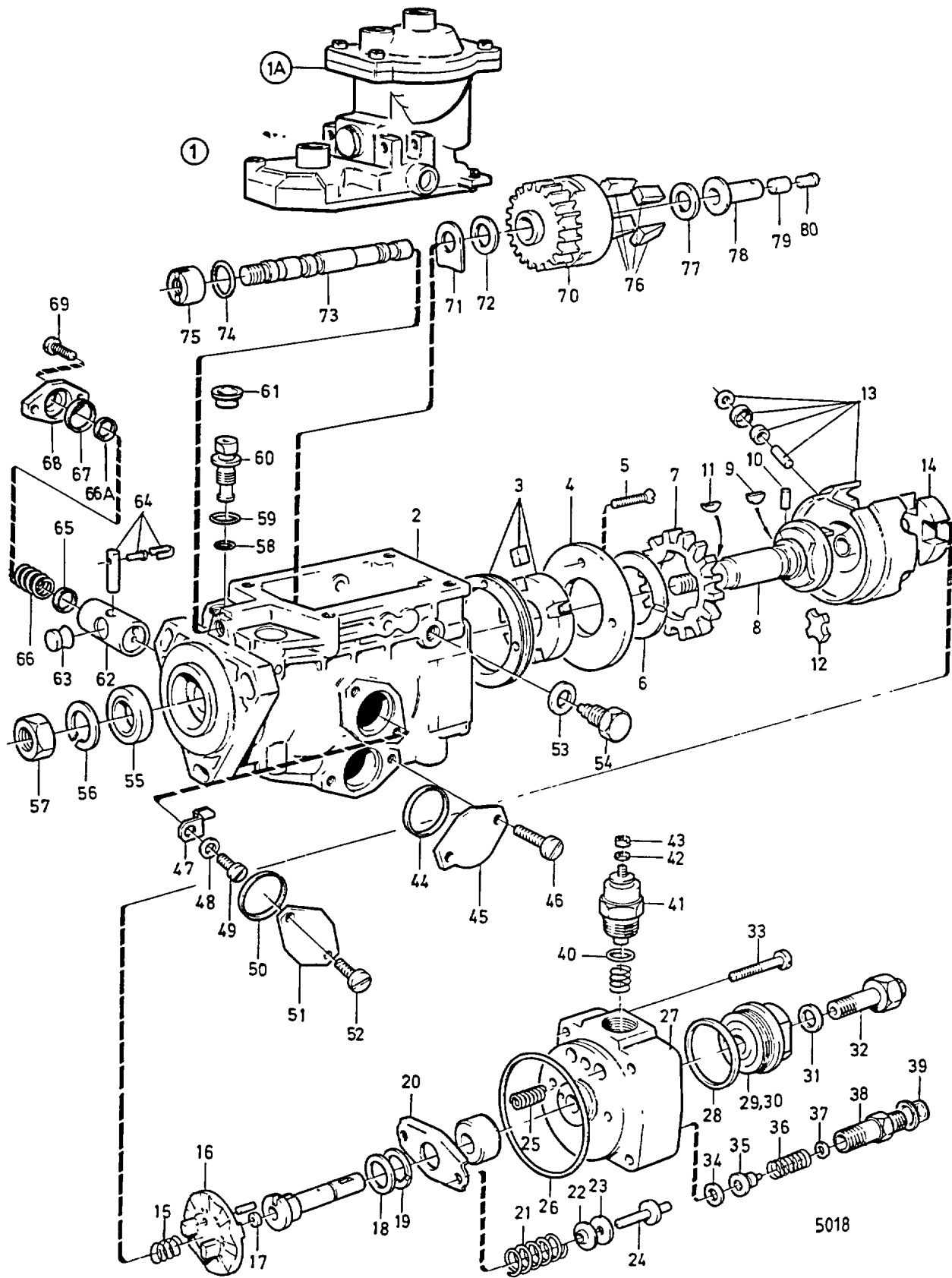
8359

Sida Page		Grupp Group		Insprutningspump		Fuel injection pump		Illustration		
46		2c						1400 5018 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
1	1	-	-	-	844785-6	Insprutningspump ..	Injection pump.....	7		00.
1a	1	-	-	-		.Rokbegränsare.....	.Smoke eliminator .....	8		004U
	-	-	-	-		..Det se sida 50, 1-H17 ..	..Comp page 50, 1-H17 ..			0060
2	1	-	-	-		.Hus .....	.Housing .....	8		0080
3	1	-	-	-		.Rotor .....	.Rotor .....	8		0100
4	1	-	-	-		.Ring .....	.Ring .....	8		0120
5	2	-	-	-		.Skruv .....	.Bolt .....	8		0140
6	1	-	-	-		.Bricka .....	.Washer .....	8		0160
7	1	-	-	-		.Kuggghjul ..	.Gear .....	8		0180
8	1	-	-	-		.Axel .....	.Shaft .....	8		0200
9	1	-	-	-		.Kil .....	.Key .....	8		?
10	1	-	-	-		.Pinne .....	.Pin .....	8		J
11	1	-	-	-		.Kil .....	.Key .....	8		0260
12	1	-	-	-	844150-3	.Dampare.....	.Damper.....	6		0280
13	1	-	-	-		.Lager ..	.Bearing ..	8		0300
14	1	-	-	-		.Bricka .....	.Washer .....	8		0320
15	1	-	-	-	244691-2	.Fjäder ..	.Spring ..	5	(844153)	?
16	1	-	-	-		.Medbringare ..	.Carrier ..	8		J
17	ERF	-	-	-	243535-2	.Justerbricka ..	.Shim.....	8	TJ=2,00MM	0380
	ERF	-	-	-	844156-0	.Justerbricka ..	.Shim ..	5	TJ=2,20MM	0400
	ERF	-	-	-	245730-7	.Justerbricka ..	.Shim ..	5	TJ=2,40MM (243543)	0420
	ERF	-	-	-	844159-4	.Justerbricka ..	.Shim.....	5	TJ=2,60MM	0440
	ERF	-	-	-	844161-0	.Justerbricka ..	.Shim.....	5	TJ=2,80MM	0460
18	1	-	-	-	243527-9	.Justerbricka ..	.Shim.....	5		0480
19	1	-	-	-	243530-3	.Bricka .....	.Washer .....	5		0500
20	1	-	-	-		.Fjädertallrik ..	.Spring plate ..	8		05
21	1	-	-	-	844164-4	.Fjäder ..	.Spring ..	5		0
22	1	-	-	-		.Fjädertallrik ..	.Spring plate ..	8		05.
23	2	-	-	-	844165-1	.Bricka .....	.Washer .....	5		0580
24	2	-	-	-		.Pinne ..	.Pin ..	8		0600
25	2	-	-	-	844167-7	.Motorskylt ..	.Engine plate ..	5		0620
26	1	-	-	-		.O-ring ..	.O-ring .....	S		0640
27	1	-	-	-	244415-6	.Hus ..	.Housing.....	6		0660
28	1	-	-	-	838402-6	.Tatningsring ..	.Seal ring .....	5	(844170)	0680
29	1	-	-	-	844171-9	.Forskruvning ..	.Connection...	5		0700
30	1	-	-	-		.Propp ..	.Plug ..	8		0720
31	1	-	-	-	947620-1	.Packning ..	.Gasket .....	5	(233321)	0740
32	1	-	-	-		.Luftskruv ..	.Air screw.....	8		?
33	4	-	-	-		.Skruv ..	.Screw .....	8		J
34	6	-	-	-	845738-4	.Bricka .....	.Washer .....	S	(243562)	0800
35	6	-	-	-	858098-7	.Tryckventil ..	.Pressure valve....	5	(243561)	0820
36	6	-	-	-	243559-2	.Fjäder ..	.Spring ..	5		0840
37	6	-	-	-	243560-0	.Bricka .....	.Washer .....	5		0860
38	6	-	-	-	244688-8	.Röranslutning ..	.Pipe connection ..	5	(243558)	?
39	6	-	-	-		.Kåpa ..	.Casing ..	S		J
40	1	-	-	-		.O-ring ..	.O-ring .....	S		0920
41	1	-	-	-	1257676-5	.Magnetventil ..	.Magnet valve ..	5	(244424)	0940
42	1	-	-	-	240090-1	.Bricka ..	.Washer ..	8		0960
43	1	-	-	-		.Mutter ..	.Nut ..	S		0980
44	1	-	-	-		.O-ring ..	.O-ring .....	S		1000
45	1	-	-	-		.Lock ..	.Cover ..	8		1020
46	2	-	-	-		.Skruv ..	.Bolt ..	8		1040
47	1	-	-	-		.Visare ..	.Indicator ..	8		1060
48	1	-	-	-	941904-5	.Bricka ..	.Washer ..	0		11
49	1	-	-	-		.Skruv ..	.Bolt ..	8		1
50	1	-	-	-	844174-3	.Tatningsring ..	.Seal ring ..	5		1120
51	1	-	-	-		.Lock ..	.Cover ..	8		1140
52	2	-	-	-	955092-2	.Bricka ..	.Washer ..	0		1160
53	2	-	-	-	947620-1	.Packning ..	.Gasket ..	S	(233321)	118
54	2	-	-	-		.Skruv ..	.Bolt ..	8		12
55	1	-	-	-	844179-2	.Ventil ..	.Valve ..	5		1220
56	1	-	-	-	940280-1	.Bricka ..	.Washer ..	0	(955923)	1240
57	1	-	-	-	955784-4	.Mutter ..	.Nut ..	0		1260



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Sida Page	Grupp Group	Insprutningspump			Fuel injection pump			Illustration	1400		
48	2c							5018 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
58	1	-	-	-		.O-ring .....	.O-ring .....	S	8		128
59	1	-	-	-		.O-ring.. .....	.O-ring .....	S	8		1306
60	1	-	-	-		.Ventil.....	.Valve.....		8		1320
61	1	-	-	-		.Propp .....	.Plug .....		8		1340
62	1	-	-	-		.Kolv .....	.Piston .....		8		1360
63	1	-	-	-		.Tapp.....	.Pin .....		8		1380
64	1	-	-	-		.Bult .....	.Pin .....		8		1400
65	1	-	-	-		.Bricka .....	.Washer .....		8		1420
66	1	-	-	-	244449-5	.Fjäder .....	.Spring .....		5		1440
66a	1	-	-	-	244425-5	.Justerbricka .....	.Shim .....		5		1460
67	1	-	-	-		.O-ring .....	.O-ring .....	S	8		J
68	1	-	-	-		.Lock .....	.Cover .....		8		J
69	2	-	-	-		.Skruv .....	.Bolt .....		8		1520
70	1	-	-	-		.Regleranordning ..	.Control unit .....		8		1540
71	1	-	-	-	844214-7	.Bricka .....	.Washer .....		5		1560
72	1	-	-	-	844215-4	.Bricka .....	.Washer .....		5		1580
73	1	-	-	-		.Axel .....	.Shaft .....		8		J
74	1	-	-	-	243786-1	.O-ring .....	.O-ring .....	S	2		J
75	1	-	-	-		.Mutter .....	.Nut .....		8		1640
76	1	-	-	-		.Regularvikt .....	.Governor weight .....		8		1660
77	1	-	-	-		.Bricka .....	.Washer .....		8		1680
78	1	-	-	-		.Reglerhylsa .....	.Control spacer .....		8		1700
79	1	-	-	-		.Lås .....	.Lock .....		8		1720
80	ERF	-	-	-	844195-8	.Pinne .....	.Pin .....		8	L=8,0MM	1740
	ERF	-	-	-	844200-6	.Pinne .....	.Pin .....		5	L=9,0MM	1760
	ERF	-	-	-	844205-5	.Pinne .....	.Pin .....		5	L=10,0MM	1780
	1	-	-	-	844240-2	.Packningssats .....	.Gasket kit .....		2		18'

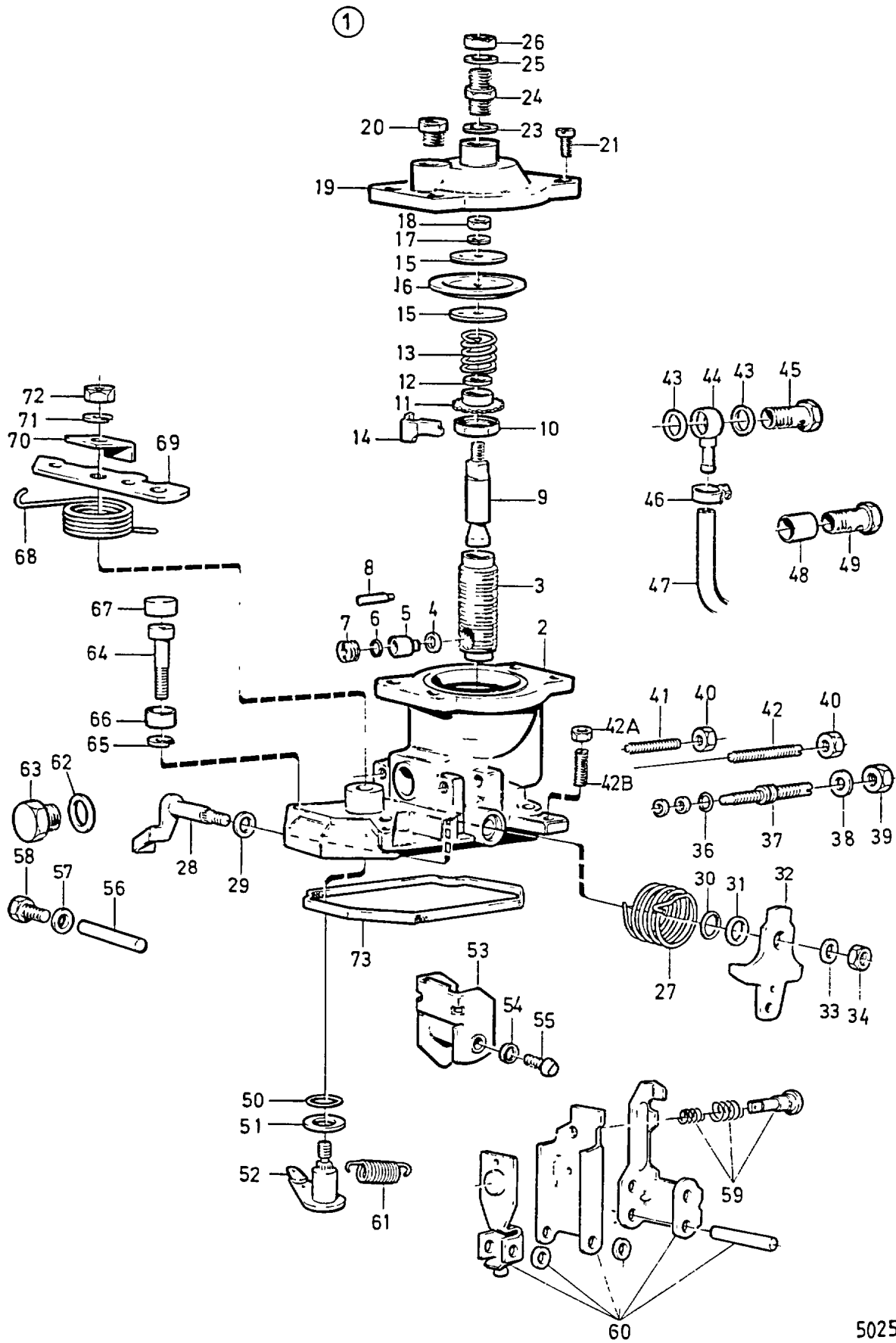


5018

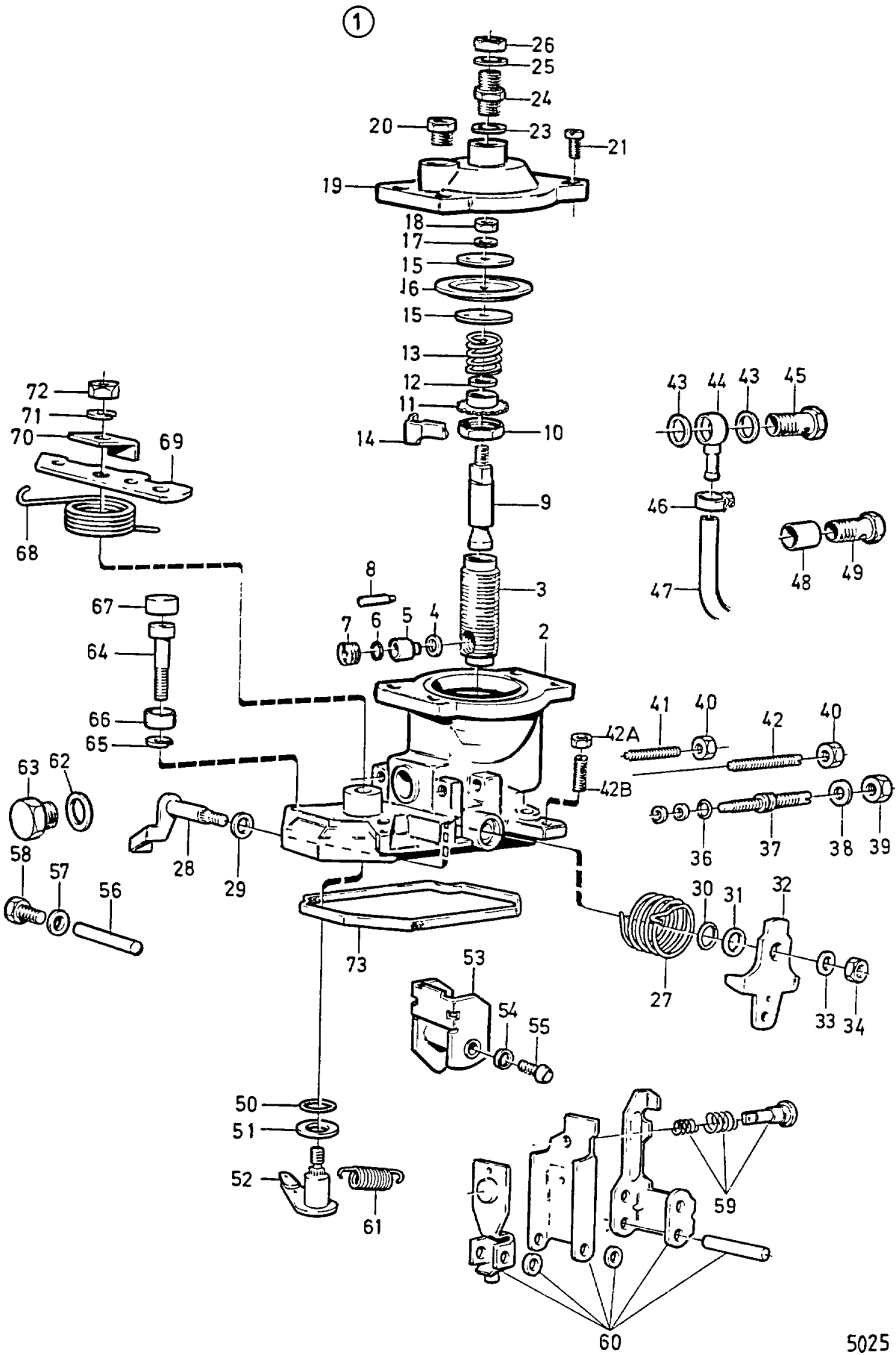




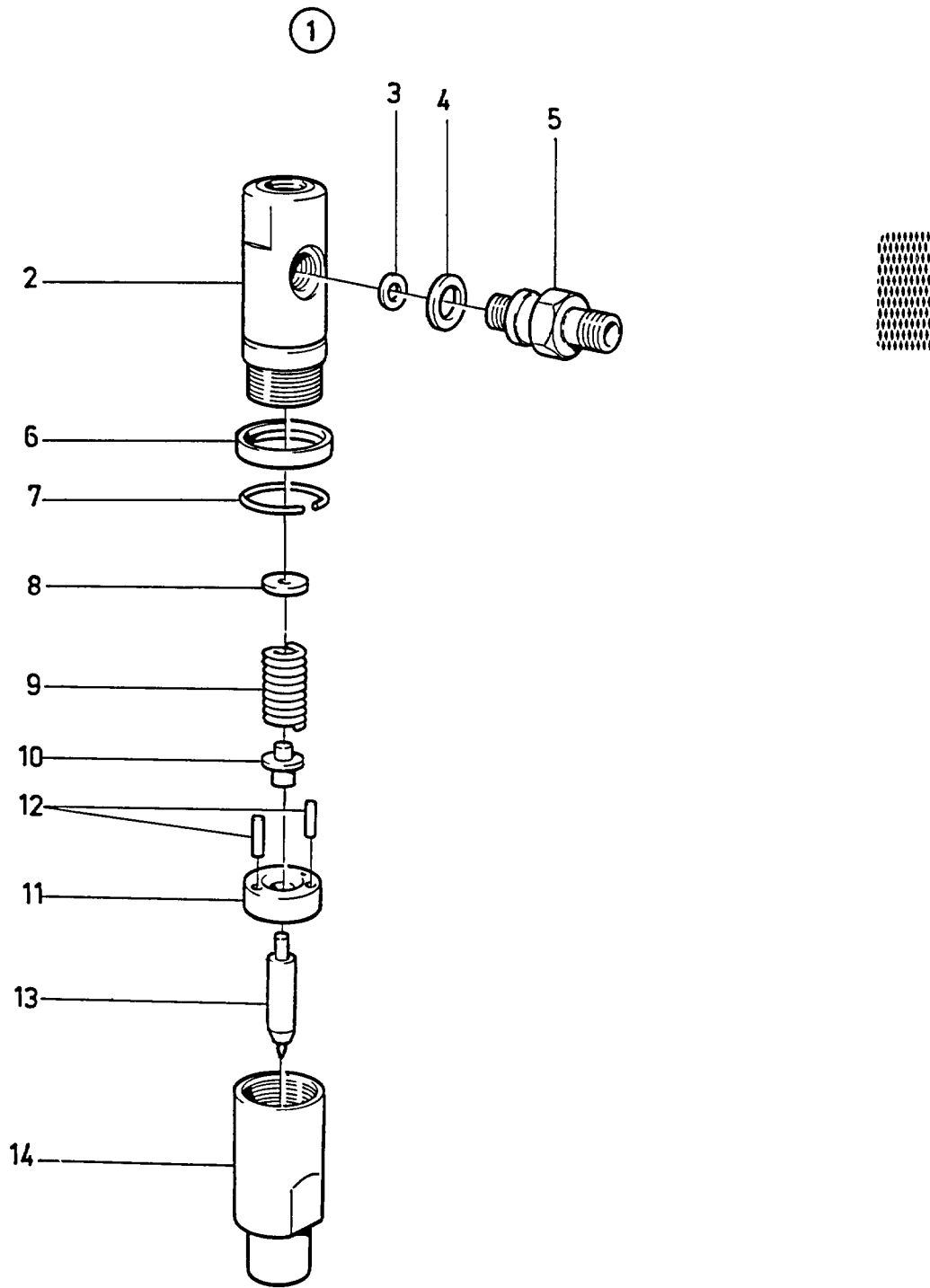
Sida Page	Grupp Group	Rökbegränsare			Smoke eliminator			Illustration	1450		
50	2c							5025 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-		Rökbegränsare..	Smoke eliminator	8			00
2	1	-	-	-	244416-4	.Rökbegränsare..	.Smoke eliminator..	6			004
3	1	-	-	-		.Bussning..	.Bushing	8			0060
4	1	-	-	-	244418-0	.Packning	.Gasket	5			0080
5	1	-	-	-		.Bussning..	.Bushing	8			0100
6	1	-	-	-	244417-2	.O-ring..	.O-ring	S 2			0120
7	1	-	-	-		.Mutter..	.Nut	8			0140
8	1	-	-	-		.Pinne..	.Pin	8			0160
9	1	-	-	-		.Skruv..	.Bolt	8			0180
10	1	-	-	-		.Mutter..	.Nut	8			0200
11	1	-	-	-		.Mutter..	.Nut	8			0
12	ERF	-	-	-	244421-4	.Bussning	.Bushing	5		TJ=2,7MM	0
	ERF	-	-	-	244422-2	.Bussning	.Bushing	5		TJ=3,5MM	0260
	ERF	-	-	-	244423-0	.Bussning	.Bushing	5		TJ=4,3MM	0280
13	1	-	-	-	244420-6	.Fjäder	.Spring	5			0300
14	1	-	-	-		.Fjäder	.Spring	8			0320
15	2	-	-	-		.Bricka	.Washer	8			0
16	1	-	-	-	244419-8	.Membran	.Diaphragm	5			0
17	1	-	-	-	941906-0	.Fjäderbricka	.Washer	0			0380
18	1	-	-	-	955781-0	.Mutter	.Nut	5	(244116)		0400
19	1	-	-	-		.Lock	.Cover	8			0420
20	1	-	-	-		.Bussning	.Bushing	8			0440
21	2	-	-	-		.Skruv	.Screw	8			0460
22	2	-	-	-	956092-1	.Skruv	.Screw	0			0480
23	1	-	-	-	844235-2	.Ring	.Ring	5			0500
24	1	-	-	-		.Pinnskruv	.Stud bolt	8			0500
25	1	-	-	-	955892-5	.Bricka	.Washer	0			0
26	1	-	-	-	955781-0	.Mutter	.Nut	5	(238426)		0
27	1	-	-	-	844223-8	.Fjäder	.Spring	5			0500
28	1	-	-	-		.Axel	.Shaft	8			0600
29	1	-	-	-		.Bricka	.Washer	8			0620
30	1	-	-	-		.O-ring	.O-ring	S 8			0640
31	1	-	-	-		.Bricka	.Washer	8			0660
32	1	-	-	-		.Havarm	.Lever	8			0680
33	1	-	-	-	941906-0	.Fjäderbricka	.Washer	0	(955919)		0700
34	1	-	-	-	955781-0	.Mutter	.Nut	0			0720
36	1	-	-	-		.O-ring	.O-ring	S 8			0740
37	1	-	-	-		.Pinnskruv	.Stud bolt	8			0
38	1	-	-	-	25703-0	.Bricka	.Washer	5			0
39	1	-	-	-		.Mutter	.Nut	8			0800
40	2	-	-	-	955781-0	.Mutter	.Nut	0			0820
41	1	-	-	-		.Pinnskruv	.Stud	8			0840
42	1	-	-	-		.Pinnskruv	.Stud	8			0860
42a	1	-	-	-	955781-0	.Mutter	.Nut	0			0
42b	1	-	-	-		.Pinnskruv	.Stud	8			0
43	2	-	-	-	18839-1	.Packning	.Gasket	5			0920
44	1	-	-	-		.Nippel	.Nipple	8			0940
45	1	-	-	-		.Luftskruv	.Air screw	8			0960
46	1	-	-	-		.Klammer	.Clamp	8			0980
47	ERF	-	-	-		.Slang	.Hose	8			1000
48	1	-	-	-		.Hylsa	.Spacer	8			1020
49	1	-	-	-	844237-8	.Hålskruv	.Hollow screw	5			1040
50	1	-	-	-		.O-ring	.O-ring	S 8			1060
51	1	-	-	-		.Bricka	.Washer	8			10
52	1	-	-	-		.Axel	.Shaft	8			1
53	1	-	-	-		.Havarm	.Lever	8			11
54	1	-	-	-	190990-2	.Bricka	.Washer	5			1140
55	1	-	-	-		.Skruv	.Screw	8			1160
56	1	-	-	-		.Pinne	.Pin	8			1180
57	1	-	-	-	190990-2	.Bricka	.Washer	5			12
58	1	-	-	-		.Skruv	.Screw	8			12
59	1	-	-	-	844189-1	.Fjadersats	.Spring set	5			1240
60	1	-	-	-		.Havarm	.Lever	8			1260



Sida Page		Grupp Group		Rokbegränsare			Smoke eliminator			Illustration		1450
52		2c								5025		
										1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes		
61	1	-	-	-	844190-9	•Fjäder .....	•Spring .....	5			12f	
62	1	-	-	-	18836-7	•Packning...	•Gasket..	5			130	
63	1	-	-	-	837735-0	•Propp. ..	•Plug ..	5			1320	
64	4	-	-	-		•Skruv .....	•Bolt. ....	8			1340	
65	1	-	-	-	941906-0	•Fjäderbricka .....	•Washer .....	0	(955919)		1360	
66	1	-	-	-		•Kåpa... ..	•Casing. ....	8			1380	
67	1	-	-	-		•Kåpa.. ....	•Casing. ....	8			1400	
68	1	-	-	-	844230-3	•Fjäder .....	•Spring .....	5			1420	
69	1	-	-	-		•Hävarm .....	•Lever .....	8	ALT		1440	
	1	-	-	-		•Hävarm .....	•Lever.....	8	ALT		1460	
70	1	-	-	-		•Vinkeljärn .....	•Angel iron.....	8			0	
71	1	-	-	-	941906-0	•Fjäderbricka...	•Washer .....	0	(955919)		0	
72	1	-	-	-	955781-0	•Mutter ..	•Nut .....	0			1520	
73	1	-	-	-		•Packning .....	•Packing.....	S 8			1540	
	1	-	-	-	844240-2	•Packningssats.....	Gasket kit .....	2			1560	

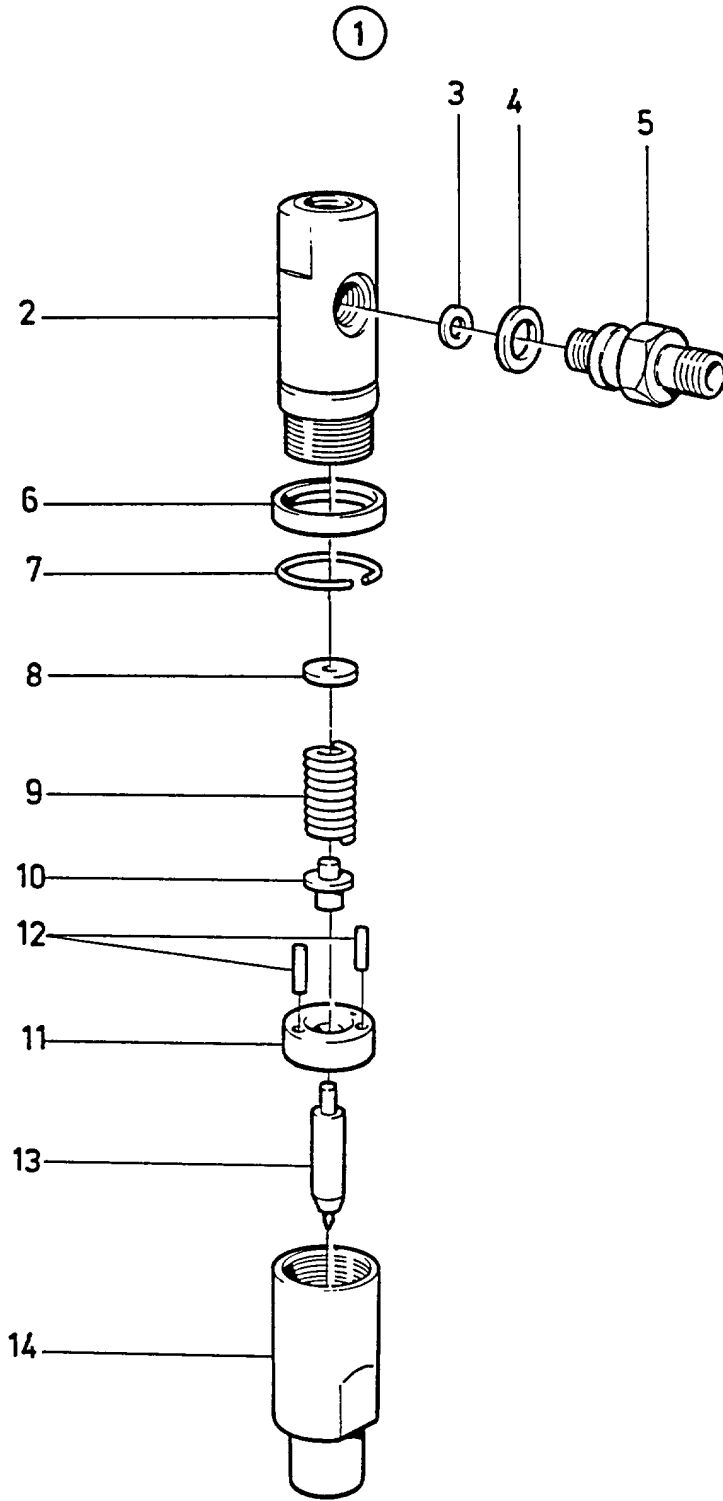


Sida Page		Grupp Group		Insprutare		Fuel injector		Illustration		
54		2c						4680 1987-04		
Pos Fig	Antal/Quantity				Artikel Nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
1	1	-	-	-	1542155-5	Insprutare	Fuel injector	5		
2	1	-	-	-		•Spridarhållarkropp..	•Nozzle holder body.....	8		
3	1	-	-	-	844294-9	•Bricka	•Washer	4		0060
4	1	-	-	-	844295-6	•Tätningring..	•Seal ring.....	4		0080
5	1	-	-	-	844296-4	•Forskruvning	•Connection.....	4		0100
6	1	-	-	-	844297-2	•Tryckring	•Thrust ring.....	4		0120
7	1	-	-	-	844298-0	•Låsring	•Lock ring.....	4		0140
8	1	-	-	-	244797-7	•Justerbricka	•Shim	5	(844299)	0160
	1	-	-	-	846960-3	•Justerbricka	•Shim.....	5	TJ=1,000MM ALT (844300)	0161
	1	-	-	-	846945-4	•Justerbricka...	•Shim.....	5	TJ=1,025MM ALT (844301)	0180
	1	-	-	-	846961-1	•Justerbricka	•Shim.....	5	TJ=1,050MM ALT (844302)	0220
	1	-	-	-	844303-8	•Justerbricka	•Shim.....	5	TJ=1,075MM ALT	0221
	1	-	-	-	244804-1	•Justerbricka	•Shim.....	5	TJ=1,100MM ALT (6212418)	0240
	1	-	-	-	846947-0	•Justerbricka	•Shim.....	5	TJ=1,125MM ALT (844342)	0280
	1	-	-	-	846963-7	•Justerbricka	•Shim.....	5	TJ=1,150MM ALT (844343)	0281
	1	-	-	-	244799-3	•Justerbricka	•Shim.....	5	TJ=1,175MM ALT (844304)	0300
	1	-	-	-	6212417-7	•Justerbricka	•Shim.....	5	TJ=1,200MM ALT (844305)	0301
	1	-	-	-	244805-8	•Justerbricka	•Shim.....	5	TJ=1,225MM ALT (846948)	0320
	1	-	-	-	244807-4	•Justerbricka	•Shim.....	5	TJ=1,250MM ALT (846964)	0321
	1	-	-	-	844308-7	•Justerbricka	•Shim.....	5	TJ=1,280MM ALT	0381
	1	-	-	-	244789-4	•Justerbricka	•Shim.....	5	TJ=1,300MM ALT (846965)	0400
	1	-	-	-	858908-7	•Justerbricka	•Shim.....	5	TJ=1,320MM ALT (846950)	0420
	1	-	-	-	846966-0	•Justerbricka	•Shim.....	5	TJ=1,340MM ALT (844311)	0421
	1	-	-	-	244800-9	•Justerbricka	•Shim.....	5	TJ=1,375MM ALT (844312)	0440
	1	-	-	-	6212393-0	•Justerbricka	•Shim.....	5	TJ=1,400MM ALT (844313)	0441
	1	-	-	-	244790-2	•Justerbricka	•Shim.....	5	TJ=1,425MM ALT (846952)	0460
	1	-	-	-	244807-4	•Justerbricka	•Shim.....	5	TJ=1,440MM ALT (844315)	0461
	1	-	-	-	844316-0	•Justerbricka	•Shim.....	5	TJ=1,475MM ALT	0500
	1	-	-	-	244791-0	•Justerbricka	•Shim.....	5	TJ=1,500MM ALT (846968)	0501
	1	-	-	-	846954-6	•Justerbricka	•Shim.....	5	TJ=1,525MM ALT (844318)	0520
	1	-	-	-	858906-1	•Justerbricka..	•Shim.....	5	TJ=1,550MM ALT (846969)	0521
	1	-	-	-	244793-6	•Justerbricka	•Shim.....	5	TJ=1,580MM ALT (844320)	0600
	1	-	-	-	846970-2	•Justerbricka	•Shim.....	5	TJ=1,600MM ALT	0601
	1	-	-	-	244806-6	•Justerbricka	•Shim.....	5	TJ=1,625MM ALT (846956)	0620
	1	-	-	-	244803-3	•Justerbricka	•Shim.....	5	TJ=1,640MM ALT (844323)	0629
	1	-	-	-	858905-3	•Justerbricka	•Shim.....	5	TJ=1,675MM ALT (844324)	0640
	1	-	-	-	244794-4	•Justerbricka	•Shim.....	5	TJ=1,700MM ALT (844325)	0681



4680

Sida Page	Grupp Group	Insprutare			Fuel injector			Illustration	1500		
56	2c							4680			
								1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
	-	-	-	-						TJ=1,725MM ALT	077
	1	-	-	-	846957-9	•Justerbricka.....	•Shim.....	5		TJ=1,750MM ALT	076
	1	-	-	-	846975-1	•Justerbricka.....	•Shim.....	5		(844327)	0780
										TJ=1,775MM ALT	0781
	1	-	-	-	844328-5	•Justerbricka.....	•Shim.....	5		TJ=1,800MM ALT	0800
	1	-	-	-	6212420-1	•Justerbricka.....	•Shim.....	5		(844329)	0820
	-	-	-	-						TJ=1,825MM ALT	0821
	1	-	-	-	846958-7	•Justerbricka.....	•Shim.....	5		(844330)	0840
										TJ=1,850MM ALT	0841
	1	-	-	-	244813-2	•Justerbricka.....	•Shim.....	5		(846977)	0860
										TJ=1,880MM ALT	0861
	1	-	-	-	844332-7	•Justerbricka.....	•Shim.....	5		TJ=1,900MM ALT	0900
	1	-	-	-	244795-1	•Justerbricka.....	•Shim.....	5		(846978)	0900
										TJ=1,925MM ALT	0901
	1	-	-	-	244795-1	•Justerbricka.....	•Shim.....	5		(846959)	0920
										TJ=1,920MM ALT	0921
	1	-	-	-	846980-1	•Justerbricka.....	•Shim.....	5		(844335)	0940
										TJ=1,975MM ALT	0940
9	1	-	-	-	844336-8	•Fjader.....	•Spring.....	4			0960
10	1	-	-	-	844337-6	•Tryckstång.....	•Push rod.....	4			0980
11	1	-	-	-	844338-4	•Bricka.....	•Washer.....	4			1000
12	2	-	-	-	844339-2	•Pinne.....	•Pin.....	4			1020
13	1	-	-	-	1542303-1	•Spridare.....	•Nozzle.....	3			1040
14	1	-	-	-	844340-0	•Mutter.....	•Nut.....	4			1060





# **VOLVO PENTA**

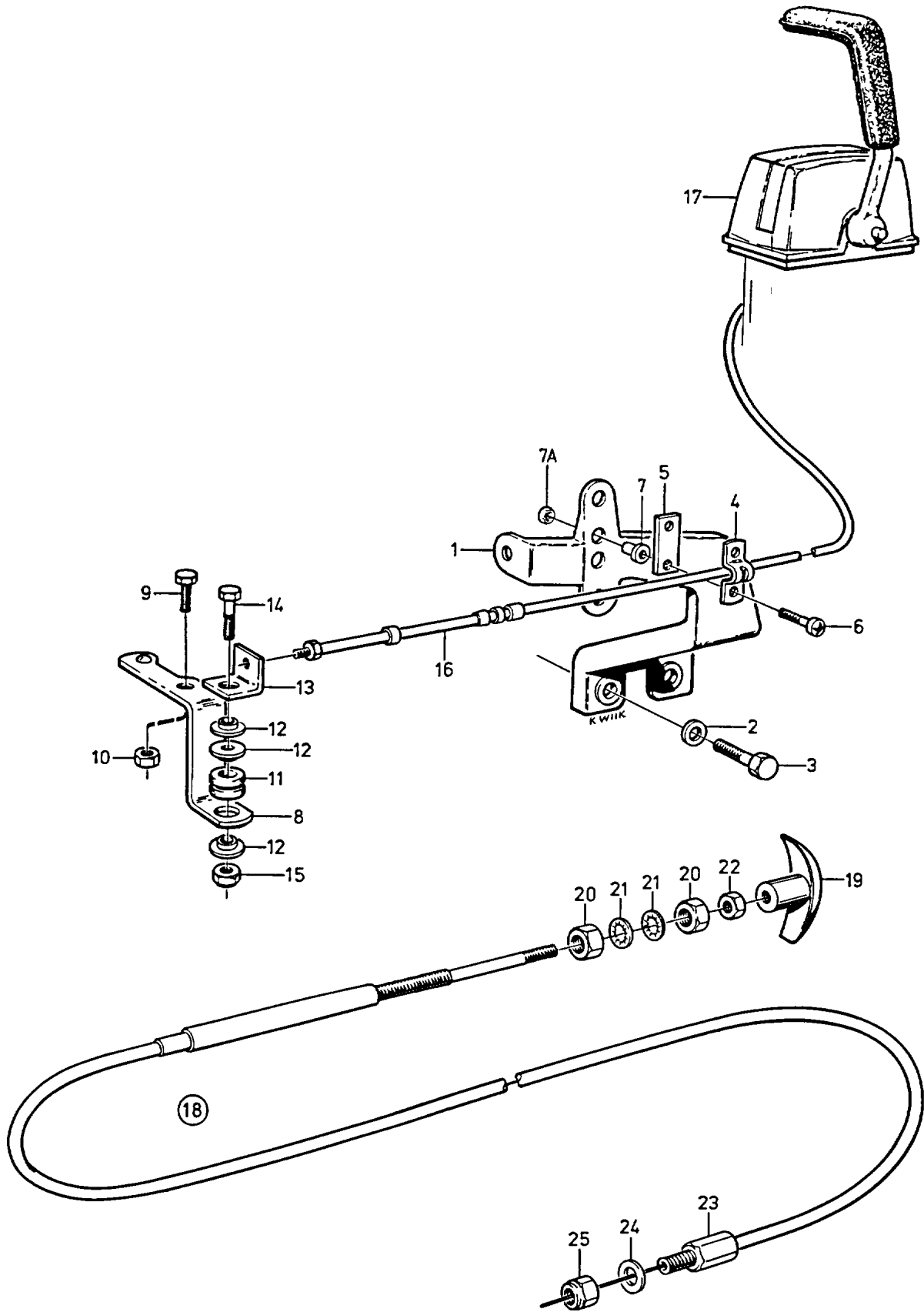
**Originaldelar · Genuine Parts  
Originalteile · Pièces d'origine**

0001

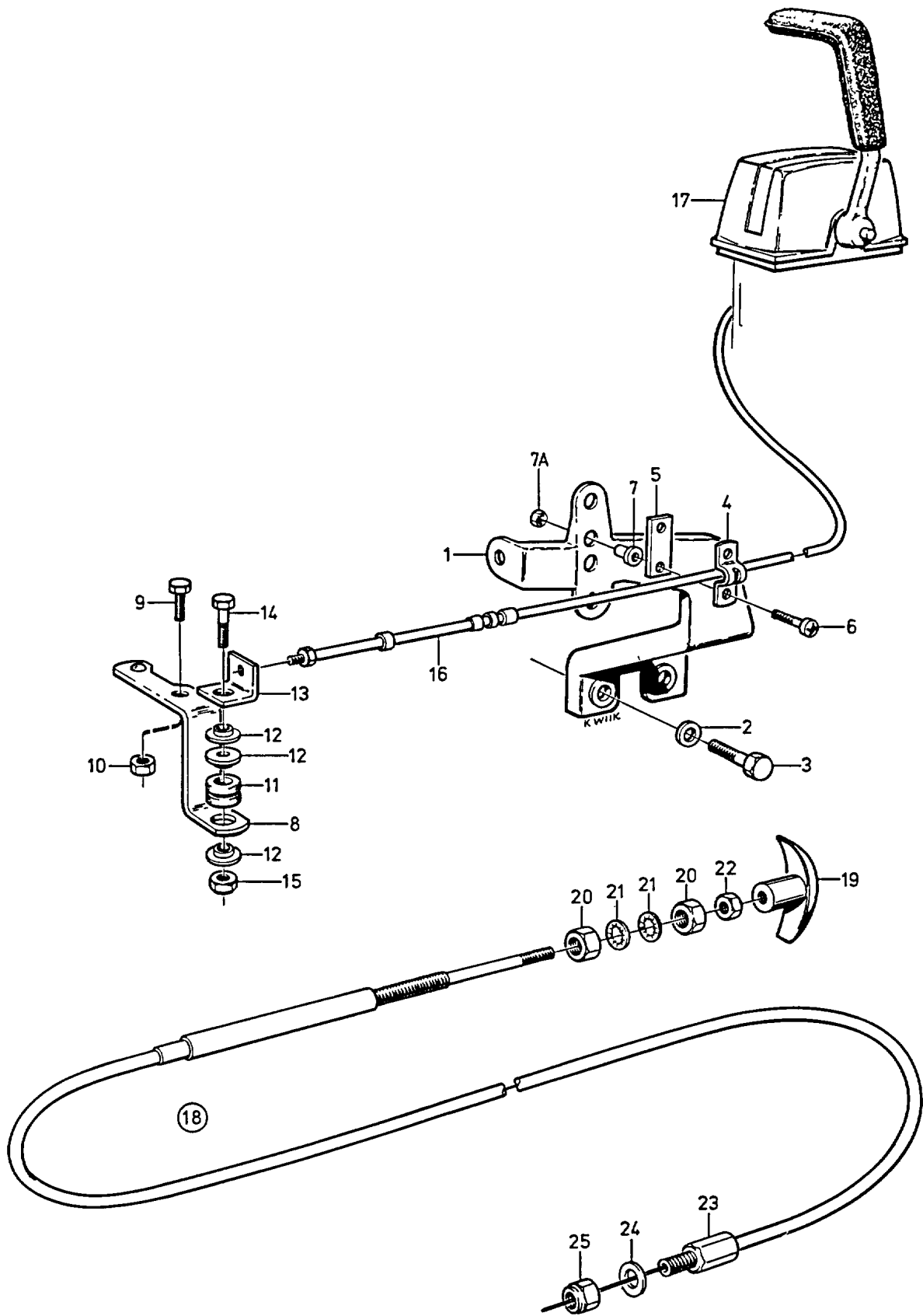
	Innehållsförteckning	Index	Grupp Group	Sida Page
	1987-04		2d	1
0040	Reglage		Sida	Koord
0060	Varvtals- och stoppreglage	MD40A,AQD40A,TAMD40A,TAMD40B, AQAD40A,AQAD40B	2	1-103
0080	Varvtals- och stoppreglage	TMD40A,TMD40B,TMD40C	4	1-105
2000	Controls		Page	Grid
2020	Engine speed control and stop control	MD40A,AQD40A,TAMD40A,TAMD40B, AQAD40A,AQAD40B	2	1-103
2040	Engine speed control and stop control	TMD40A,TMD40B,TMD40C	4	1-105
2060				
2080				
2100				
2120				
2140				



Sida Page	Grupp Group	Varvtals- och stoppreglage			Engine speed control and stop control			Illustration	0500		
2	2d	MD40A,AQD40A,TAMD40A,TAMD40B, AQAD40A,AQAD40B						6370 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	842996-1	Konsol. ....	Bracket .....	6			00
2	2	-	-	-	960148-5	Bricka. ....	Washer.....	0	SE GRUPP 2C		004.
3	2	-	-	-	955318-1	Skruv. ....	Screw.....	0	SE GRUPP 2C		0060
4	1	-	-	-	819067-0	Klamma.....	Clamp.....	4			0080
5	1	-	-	-	819068-8	Bricka.....	Washer.....	4			0100
6	2	-	-	-	956079-8	Skruv.....	Screw.....	0			0120
7	2	-	-	-	843108-2	Bussning.....	Bushing.....	2			0140
7a	2	-	-	-	963104-5	Mutter.....	Nut.....	0	MO 28434-		0145
8	1	-	-	-	843104-1	Hävarm.....	Lever.....	4			0160
9	1	-	-	-	955270-4	Skruv.....	Screw.....	0			0180
10	1	-	-	-	946035-3	Mutter.....	Nut.....	0			0200
11	1	-	-	-	843109-0	Bussning.....	Bushing.....	2			20
12	3	-	-	-	843105-8	Distansbricka.....	Washer.....	4			0240
13	1	-	-	-	843106-6	Faste.....	Bracket.....	2			0260
14	1	-	-	-	955274-6	Skruv.....	Screw.....	0			0280
15	1	-	-	-	946035-3	Mutter.....	Nut.....	0			0300
16	1	-	-	-		Reglagekabel.....	Control cable.....		SE GRUPP 9		0320
17	1	-	-	-		Reglage.....	Control.....		SE GRUPP 9		0340
18	1	-	-	-	818478-0	Reglagekabel.....	Control cable.....	4	L=3300MM		0360
	1	-	-	-	818470-7	Reglagekabel.....	Control cable.....	4	L=6900MM		0380
19	1	-	-	-	829241-9	Handtag.....	Handle.....	4			0400
20	2	-	-	-	955857-8	Mutter.....	Nut.....	0			0420
21	2	-	-	-	955950-1	Låsbricka.....	Washer.....	0			0440
22	1	-	-	-	955844-6	Mutter.....	Nut.....	0			0460
23	1	-	-	-	829070-2	Reglagetarning.....	Cube.....	4			0480
24	2	-	-	-	955894-1	Bricka.....	Washer.....	0			0500
25	1	-	-	-	950363-2	Mutter.....	Nut.....	0			0520



Sida Page	Grupp Group	Varvtals- och stoppreglage	Engine speed control and stop control	Illustration 6370 1987-04	0550					
4	2d	TMD40A,TMD40B,TMD40C								
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	842996-1	Konsol.....	Bracket....	6			002
2	2	-	-	960148-5	Bricka.....	Washer....	0		SE GRUPP2C	0040
3	2	-	-	955318-1	Skruv.....	Screw.....	0		SE GRUPP2C	0060
4	1	-	-	819067-0	Klamma.....	Clamp.....	4			0080
5	1	-	-	819068-8	Bricka.....	Washer....	4			0100
6	2	-	-	956079-8	Skruv.....	Screw.....	0			0120
7	2	-	-	843108-2	Bussning.....	Bushing....	2			0140
7a	2	-	-	963104-5	Mutter.....	Nut.....	0		MO 28434-	0145
8	1	-	-	843104-1	Håvarm.....	Lever.....	4			0160
9	1	-	-	955270-4	Skruv.....	Screw.....	0			0180
10	1	-	-	946035-3	Mutter.....	Nut.....	0			0
11	1	-	-	843109-0	Bussning.....	Bushing....	2			0
12	3	-	-	843105-8	Distansbricka.....	Washer.....	4			0240
13	1	-	-	843106-6	Fäste.....	Bracket.....	2			0260
14	1	-	-	955274-6	Skruv.....	Screw.....	0			0280
15	1	-	-	946035-3	Mutter.....	Nut.....	0			0300
16	1	-	-		Reglagekabel.....	Control cable.....			SE GRUPP9	0
17	1	-	-		Reglage.....	Control.....			SE GRUPP9	J
18	1	-	-	818478-0	Reglagekabel.....	Control cable.....	4		L=3300MM	0360
	1	-	-	818470-7	Reglagekabel.....	Control cable.....	4		L=6900MM	0380
19	1	-	-	829241-9	Handtag.....	Handle.....	4			0400
20	2	-	-	955857-8	Mutter.....	Nut.....	0			0420
21	2	-	-	955950-1	Låsbricka.....	Washer.....	0			0440
22	1	-	-	955844-6	Mutter.....	Nut.....	0			0460
23	1	-	-	829070-2	Reglagetärning.....	Cube.....	4			0480
24	2	-	-	955894-1	Bricka.....	Washer.....	0			05r
25	1	-	-	950363-2	Mutter.....	Nut.....	0			05



# **VOLVO PENTA**

Originaldelar · Genuine Parts  
Originalteile · Pièces d'origine

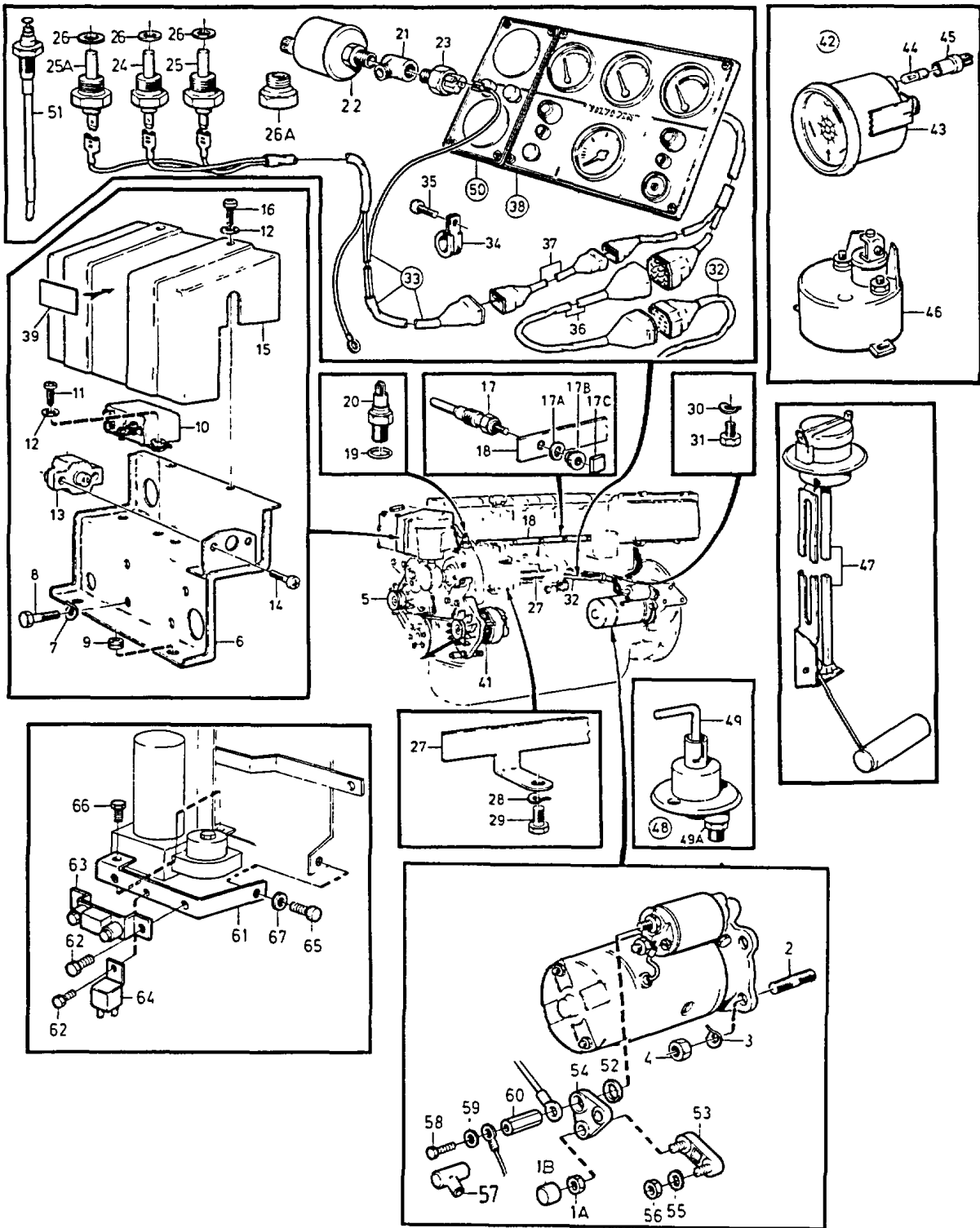
0001	Innehållsfor-teckning	Index	Grupp Group	Sida Page
	1987-04		3	1
0040	Esystem och Instrument		Sida	Koord
0060	Esystem och instrument	MD40A,AQD40A,AQAD40A,AQAD40B, TAMD40A,TAMD40B	2	1-J03
0080	Esystem och instrument	TMD40A,TMD40B,TMD40C	8	1-J09
2000	Electrical equipment and Instruments		Page	Grid
2020	Electrical system and instrument	MD40A,AQD40A,AQAD40A,AQAD40B, TAMD40A,TAMD40B	2	1-J03
2040	Electrical system and instrument	TMD40A,TMD40B,TMD40C	8	1-J09
2060				
2080				
2100				
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2140				





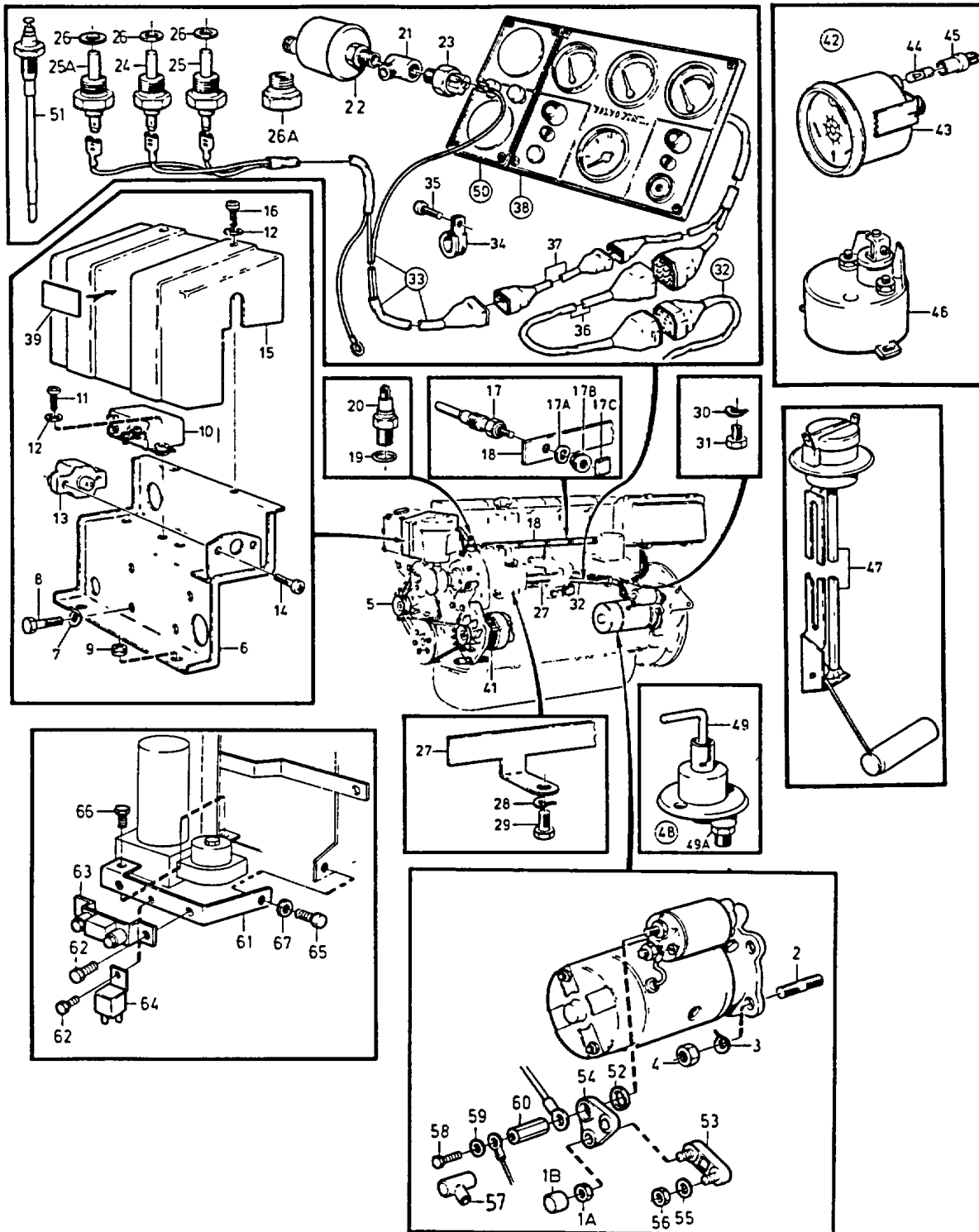
Sida Page	Grupp Group	Elsystem och instrument			Electrical system and instrument			Illustration	
2	3	MD40A,AQD40A,AQAD40A,AQAD40B, TAMD40A,TAMD40B						7595 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B Anmärkning Notes
1	1	-	-	-	829527-1	Startmotor ....	Starter motor .....	6	
	-	-	-	-		.Det se sida 26, 1-K03 ..	.Comp page 26, 1-K03 ..		
	-	-	-	-	838987-6	Startmotor .....	Starter motor .....	6	24V
	-	-	-	-		.Det se sida 28, 1-K05 ..	.Comp page 28, 1-K05 ..		
1a	1	-	-	-	853573-4	Sexkantmutter .....	Nut .....	2	
1b	1	-	-	-	853572-6	Skyddshatt .....	Cap .....	2	
2	3	-	-	-	953067-6	Skruv .....	Screw .....	0	
3	3	-	-	-	941908-6	Fjaderbricka .....	Washer .....	0	
4	3	-	-	-	955783-6	Mutter .....	Nut .....	0	
5	-	-	-	-	834625-6	Vaxelströmgenerator med monteringsdetaljer	Alternator and installation comps	8	MO-1900 ERS AV 834964
	1	-	-	-	834964-9	Vaxelströmgenerator med monteringsdetaljer	Alternator and installation comps	8	MO-12769 ERS AV 841378
	1	-	-	-	841378-3	Vaxelströmgenerator med monteringsdetaljer	Alternator and installation comps	8	350)MO12770-21869
	1	-	-	-	841768-5	Vaxelströmgenerator med monteringsdetaljer	Alternator and installation comps	8	355)MO21870-25724
	1	-	-	-	841765-1	Vaxelströmgenerator med monteringsdetaljer	Alternator and installation comps	6	ERS AV 858838
	-	-	-	-					MO25725-
	1	-	-	-	858838-6	Vaxelströmgenerator med monteringsdetaljer	Alternator and installation comps		SE SIDA 16, 1-J17
	1	-	-	-	845940-6	Vaxelströmgenerator med monteringsdetaljer	Alternator .....	6	438)24V ERS AV 849563
	1	-	-	-	849563-2	Vaxelströmgenerator med monteringsdetaljer	Alternator and installation comps		SE SIDA 16, 1-J17
6	1	-	-	-	843140-5	Kopplingslåda	Connection box .....	6	SE SIDA 16, 1-J17
	1	-	-	-	846791-2	Kopplingslåda	Connection box .....	6	SE SIDA 14, 1-J15
7	4	-	-	-	941907-8	Bricka	Washer .....	0	SE GRUPP 2B
8	4	-	-	-	955305-8	Skruv	Screw .....	0	SE GRUPP 2B
9	2	-	-	-	94026-2	Bussning	Bushing .....	3	
10	2	-	-	-	843145-4	Relä	Relay .....	4	459)
	2	-	-	-	838518-9	Relä	Relay .....	4	
11	4	-	-	-	955140-9	Skruv	Screw .....	0	
12	6	-	-	-	940090-4	Bricka	Washer .....	0	
13	1	-	-	-	841178-7	Säkring	Fuse .....	3	(835596)
14	2	-	-	-	950013-3	Skruv	Screw .....	0	
15	1	-	-	-	842915-1	Lock	Cover .....	6	
16	2	-	-	-	955138-3	Skruv	Capscrew .....	0	
17	6	-	-	-	1542411-2	Glödstift	Glow plug .....	3	(1542319)
	6	-	-	-	838954-6	Glödstift	Glow plug .....	3	438)
17a	6	-	-	-	941905-2	Bricka	Washer .....	0	
17b	6	-	-	-	955780-2	Mutter	Nut .....	0	
17c	6	-	-	-	1542408-8	Skyddskåpa	Protecting cap .....	2	
18	1	-	-	-	1542296-7	Skena	Bar .....	4	
19	1	-	-	-	925059-8	Gummring	Rubber ring .....	S 1	
20	1	-	-	-	1502028-2	Varvråknargivare	Rev.counter sender .....	2	(829571)
21	1	-	-	-	942490-4	T-nippel	T-fitting .....	3	
22	1	-	-	-	843231-2	Givare	Sensor .....	2	
	1	-	-	-	834920-1	Givare	Sensor .....	2	342)
23	1	-	-	-	881348-7	Oljetrycksgivare	Oil pressure sensor .....	2	

- 342 . For TMD40A SPEC 867478, AQD40A SPEC 867479. For TMD40A SPEC 867478, AQD40A SPEC 867479.
- 350 . ERS AV 841768. Replaced by 841768.
- 355 . ERS AV generator 841765 + remskiva 841812 + spännjarn 845021. Replaced by alternator 841765 + pulley 841812 + tension iron 845021.
- 438 . Spec 867948. Spec 867948.
- 459 . Ersatt av 1st RELÄ-838518, 2st FLATSTIFT-881485 och 1st HYLISOLATOR-958210. Replaced by 1pc RELAY-838510, 2pcs cable TERMINAL-881485 and 1pc INSULATOR-958210.

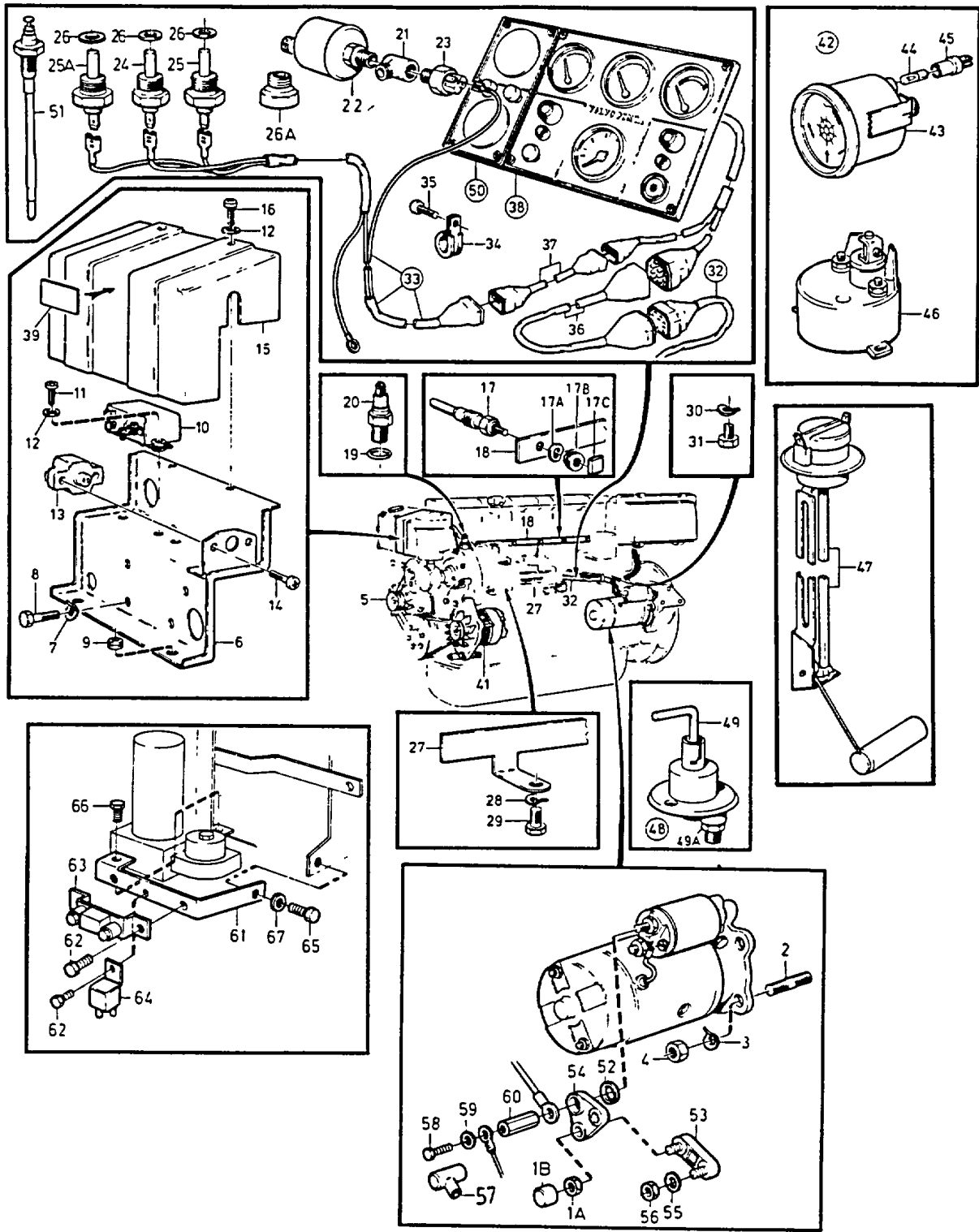


Sida Page	Grupp Group	Elsystem och instrument			Electrical system and instrument			Illustration	0600
4	3	MD40A,AQD40A,AQAD40A,AQAD40B, TAMD40A,TAMD40B						7595	
								1987-04	
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
24	1	-	-	-	827151-2	Temperaturgivare... ..	Temperature sensor. ....	2	09:
	1	-	-	-	834629-8	Temperaturgivare... ..	Temperature sensor. ....	2	342)
	1	-	-	-	858596-0	Temperaturgivare... ..	Temperature sensor. ....	2	460,461)
									MO38777-
25	1	-	-	-	833927-7	Temperaturvakt ... ..	Temperature sensor... ..	2	0960
	1	-	-	-	822858-7	Temperaturkontakt ... ..	Temp contact ... ..	2	438)
25a	1	-	-	-	840345-3	Temperaturindikator ... ..	Temperature indicator ... ..	2	429)
	1	-	-	-	843325-2	Temperaturgivare... ..	Temperature sensor. ....	2	438)
26	3	-	-	-	957181-1	Packning ... ..	Gasket ... ..	S	1
26a	1	-	-	-	844828-4	Forskruvning ... ..	Screw union ... ..	3	342)
27	ERF	-	-	-		Kabeljarn ... ..	Cable holder ... ..	8	70
28	1	-	-	-	941908-6	Fjaderbricka ... ..	Washer ... ..	0	MO-26461
29	1	-	-	-	955314-0	Skruv ... ..	Screw ... ..	0	MO-26461
30	1	-	-	-	941907-8	Bricka ... ..	Washer ... ..	0	MO-26461
31	1	-	-	-	955293-6	Skruv ... ..	Screw ... ..	0	MO-26461
	1	-	-	-	940199-3	Skruv ... ..	Screw ... ..	0	347)
32	1	-	-	-	843450-8	Kabelstock ... ..	Cable unit ... ..	6	MOTOR-ENGINE L=7000MM
	1	-	-	-	844869-8	Kabelstock ... ..	Cable unit ... ..	6	342) MOTOR-ENGINE L=7000MM
	1	-	-	-	845344-1	Kabelstock ... ..	Cable unit ... ..	6	347) MOTOR-ENGINE L=7000MM
	1	-	-	-	846648-4	Kabelstock ... ..	Cable unit ... ..	6	CPC,L=3000MM
	1	-	-	-	846649-2	Kabelstock ... ..	Cable unit ... ..	6	CPC,L=5000MM
	1	-	-	-	846650-0	Kabelstock ... ..	Cable unit ... ..	6	CPC,L=7000MM
33	1	-	-	-	843501-8	Kabelstock ... ..	Cable unit ... ..	6	LARM-ALARM
	1	-	-	-	844892-0	Kabelstock ... ..	Cable unit ... ..	6	342) LARM-ALARM L=7000MM
	1	-	-	-	845451-4	Kabelstock ... ..	Cable unit ... ..	6	347) LARM-ALARM L=7000MM
	1	-	-	-	858057-3	Kabelstock ... ..	Cable unit ... ..	6	438)
34	1	-	-	-	952628-6	Klamma ... ..	Clamp ... ..	0	MO-26461
35	1	-	-	-	956094-7	Skruv ... ..	Screw ... ..	0	MO-26461
36	1	-	-	-	843214-8	Kabelstock ... ..	Cable unit ... ..	6	343) MOTOR-ENGINE
37	1	-	-	-	839180-7	Forlångningskabel ... ..	Extension cable ... ..	6	343) LARM-ALARM, L=7000MM
38	1	-	-	-	843525-7	Instrumenttavla ... ..	Instrument panel ... ..	6	343)
	1	-	-	-		.Det se sida 30, 1-K07	.Comp page 30, 1-K07		1600
	1	-	-	-	838926-4	Instrumenttavla ... ..	Instrument panel ... ..	6	70
	1	-	-	-		.Det se sida 32, 1-K09	.Comp page 32, 1-K09		70
	1	-	-	-	858036-7	Instrumenttavla ... ..	Instrument panel ... ..	6	24V
	1	-	-	-		.Det se sida 32, 1-K09	.Comp page 32, 1-K09		1660
	1	-	-	-		Instrumenttavla ... ..	Instrument panel ... ..		1680
39	1	-	-	-	843141-3	Dekal ... ..	Decal ... ..	5	1700
40	1	-	-	-	955949-3	Bricka ... ..	Washer ... ..	0	1720
41	ERF	-	-	-		Vaxelstromsgenerator- sats	Alternator kit ... ..		SEGRUPP 9
42	1	-	-	-	834401-2	Roderindikator ... ..	Rudder indicator ... ..		1780
43	1	-	-	-	834383-2	.Roderindikator ... ..	.Rudder indicator ... ..	4	1800
44	1	-	-	-	19923-2	.Glodlampa ... ..	.Bulb ... ..	0	1820
45	1	-	-	-	808175-4	.Lamphållare ... ..	.Bulb holder ... ..	4	1840
46	1	-	-	-	837772-3	.Roderlagesgivare ... ..	.Rudder indicator ... ..	2	1860
									1880

342. For TMD40A SPEC 867478, AQD40A SPEC 867479. For TMD40A SPEC 867478, AQD40A SPEC 867479.  
 343. EXCL TMD40A SPEC 867478, AQD40A SPEC 867479. EXCL TMD40A SPEC 867478, AQD40A SPEC 867479.  
 347. AQAD40A SPEC 867560, -561, -562. TAMD40A SPEC 867563, -564, -565. AQAD40A SPEC 867560, -561, -562. TAMD40A SPEC 867563, -564, -565.  
 429. Alternativ for temp givare 827151 och temp vakt 833927. Alternative for temp sender 827151 and thermoswitch Control 833927.  
 438. Spec 867948. Spec 867948.  
 460. For dual station. For dual station.  
 461. Kombinerad tempgivare och vakt. Combined temperature sensor and guard.

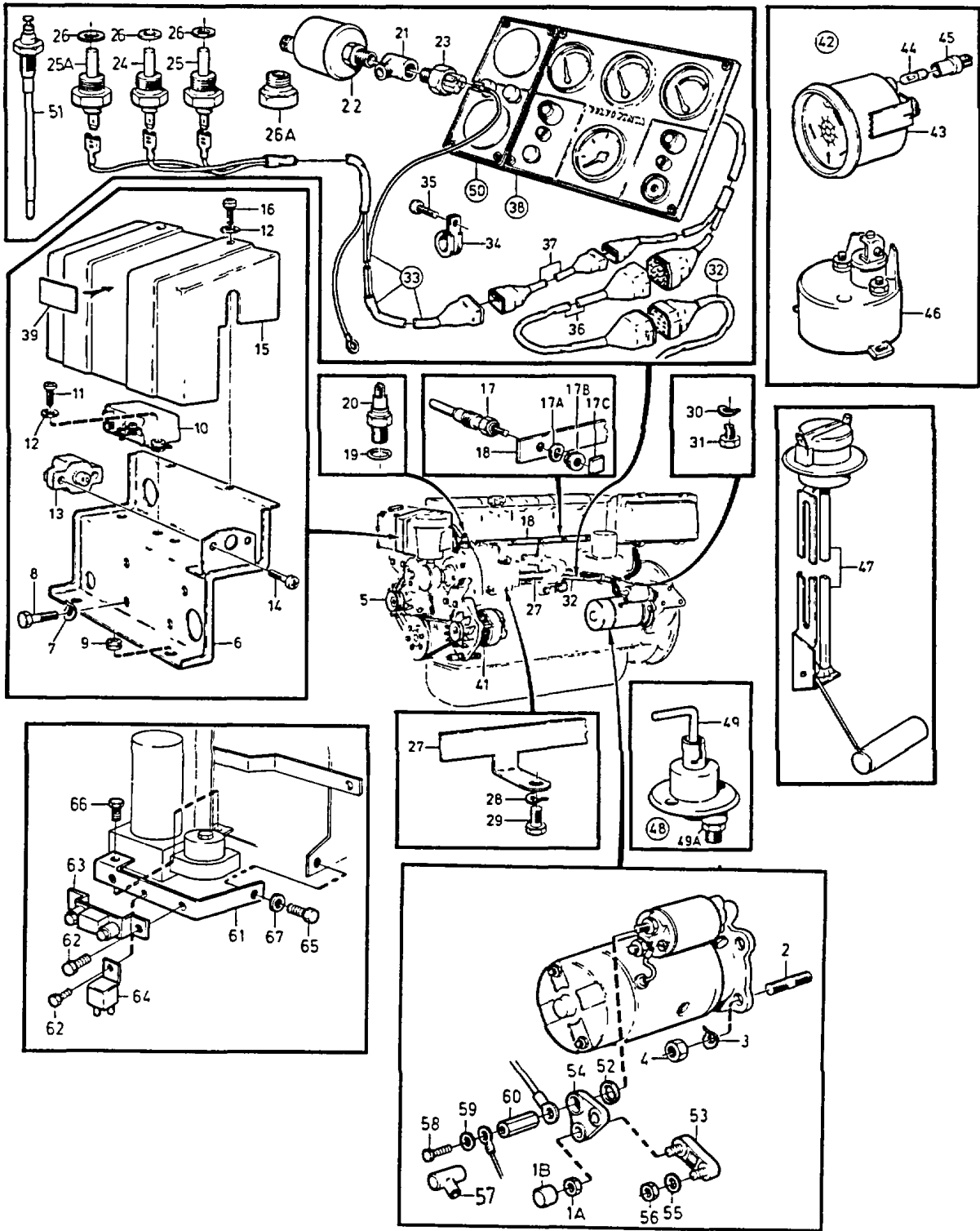


Sida Page	Grupp Group	Elsystem och instrument			Electrical system and instrument			Illustration	0600		
6	3	MD40A,AQD40A,AQAD40A,AQAD40B, TAMD40A,TAMD40B						7595 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
47	1	-	-	-	834400-4	Tankmätare. . . . .	Tank gauge . . . . .	4	SE GRUPP9		19
						dricksvatten	drinking water				192
	1	-	-	-	834399-8	Tankmätare. . . . .	Tank gauge . . . . .	4	SE GRUPP9		1940
						bränsle	fuel				1960
48	1	-	-	-	870980-0	Strömbrytare . . . . .	Switch. . . . .	2			1980
49	1	-	-	-	243700-2	Handtag . . . . .	Handle. . . . .	2			2000
49a	2	-	-	-	955783-6	Mutter. . . . .	Nut. . . . .	0			2020
50	1	-	-	-	843604-0	Instrumenttavla . . . . .	Instrument panel . . . . .	6	SE GRUPP9		2040
	1	-	-	-		Instrumenttavla . . . . .	Instrument panel. . . . .		SE UTF,SE GRUPP9		2060
51	ERF	-	-	-		Kylvattennivåalarm . . . . .	Cooling water . . . . .		SE GRUPP9		2080
						level alarm					2100
52	1	-	-	-	829714-5	Tätning . . . . .	Seal. . . . .	2	AQAD40B/290,290DP		20
53	1	-	-	-	853502-3	Säkring . . . . .	Fuse. . . . .	1	AQAD40B/290,290DP		2140
54	1	-	-	-	852986-9	Strömskena. . . . .	Contact strip . . . . .	3	AQAD40B/290,290DP		2160
55	2	-	-	-	941906-0	Fjädrande bricka . . . . .	Resilient washer. . . . .	0	AQAD40B/290,290DP		2180
56	2	-	-	-	955781-0	Mutter . . . . .	Nut. . . . .	0	AQAD40B/290,290DP		2200
57	1	-	-	-	855798-5	Skyddshylsa . . . . .	Protecting sleeve . . . . .	0			2220
58	1	-	-	-	940199-3	Skruv . . . . .	Screw . . . . .	0			230
59	1	-	-	-	941907-8	Fjädrande bricka . . . . .	Resilient washer. . . . .	0			2260
60	1	-	-	-	855314-1	Mutter. . . . .	Nut. . . . .	2			2280
61	1	-	-	-	858078-9	Konsol. . . . .	Bracket . . . . .	5	438)		2300
62	3	-	-	-	955268-8	Skruv . . . . .	Screw. . . . .	0	438)		2320
63	1	-	-	-	838980-1	Förkopplingmotstånd . . . . .	Series resistance . . . . .	3	438)		2340
64	1	-	-	-	838955-3	Rela . . . . .	Relay. . . . .	2	438)		2360
65	1	-	-	-	955318-1	Skruv . . . . .	Screw . . . . .	0	438)SE GRUPP2B		2380
66	1	-	-	-	955296-9	Skruv . . . . .	Screw . . . . .	0	438)		2400



Sida Page	Grupp Group	Elsystem och instrument			Electrical system and instrument			Illustration	0610
8	3	TMD40A,TMD40B,TMD40C						7595	
								1987-04	
Pos Fig	Antal/Quantity			Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes
1	1	-	-	-	829527-1	Startmotor . . . . . .Det se sida 26, 1-K03 . . . . .	6		00 00
		-	-	-	838987-6	Startmotor . . . . . .Det se sida 28, 1-K05. . . . .	6	24V	0060 0080
1a	1	-	-	-	853573-4	Sexkantmutter. . . . .	2		0100
1b	1	-	-	-	853572-6	Skyddshatt . . . . .	2		0120
2	3	-	-	-	953067-6	Skruv . . . . .	0		0140
3	3	-	-	-	941908-6	Fjäderbricka . . . . .	0		0160
4	3	-	-	-	955783-6	Mutter . . . . .	0		0180
5	-	-	-	-	834625-6	Vaxelströmsgenerator . med monteringsdetaljer	8	MO-1900 ERS AV 834964 SE SIDA 16, 1-J17	0200 0220
	1	-	-	-	834964-9	Vaxelströmsgenerator . med monteringsdetaljer	8	MO-12769 ERS AV 841378 SE SIDA 16, 1-J17	0260 0280
	1	-	-	-	841378-3	Vaxelströmsgenerator . med monteringsdetaljer	8	350)MO12770-21869 SE SIDA 16, 1-J17	0300 0320
	1	-	-	-	841768-5	Vaxelströmsgenerator . med monteringsdetaljer	8	355)MO21870-25724 SE SIDA 16, 1-J17	0340 0360
	1	-	-	-	841765-1	Vaxelströmsgenerator . med monteringsdetaljer	6	MO25725-ERS AV 858838 SE SIDA 16, 1-J17	0380 0390
	1	-	-	-	858838-6	Vaxelströmsgenerator . Med monteringsdetaljer	6	SE SIDA 16, 1-J17	0391
	1	-	-	-	845940-6	Vaxelströmsgenerator . med monteringsdetaljer	6	24V,ERS AV 849563 SE SIDA 16, 1-J17	0400 0420
	1	-	-	-	849563-2	Vaxelströmsgenerator . Med monteringsdetaljer	6	SE SIDA 16, 1-J17	0430 0440
6	1	-	-	-	843140-5	Kopplingslåda . . . . .	6		0
7	4	-	-	-	941907-8	Bricka . . . . .	0	SE GRUPP 2B	C
8	4	-	-	-	955305-8	Skruv . . . . .	0	SE GRUPP 2B	0
9	2	-	-	-	94026-2	Bussning. . . . .	3		0
10	2	-	-	-	843145-4	Rela . . . . .	4	459)	0520
	2	-	-	-	838518-9	Rela . . . . .	4		0530
11	4	-	-	-	955140-9	Skruv . . . . .	0		0540
12	6	-	-	-	940090-4	Bricka . . . . .	0		0560
13	1	-	-	-	841178-7	Sakring . . . . .	3	(835596)	0580
14	2	-	-	-	950013-3	Skruv . . . . .	0		0600
15	1	-	-	-	842915-1	Lock . . . . .	6		0620
16	2	-	-	-	955138-3	Skruv . . . . .	0		0640
17	6	-	-	-	1542411-2	Glödstift . . . . .	3	(1542319)	0700
17a	6	-	-	-	941905-2	Bricka . . . . .	0		0720
17b	6	-	-	-	955780-2	Mutter . . . . .	0		0740
17c	6	-	-	-	1542408-8	Skyddskåpa. . . . .	2		0760
18	1	-	-	-	1542296-7	Skena . . . . .	4		0780
19	1	-	-	-	925059-8	Gummiring . . . . .	S 1		0800
20	1	-	-	-	1502028-2	Varvraknargivare . . . . .	2	(829571)	0820
21	1	-	-	-	942490-4	T-nippel . . . . .	3		0840
22	1	-	-	-	843231-2	Givare . . . . .	2		0860
	1	-	-	-	834920-1	Givare . . . . .	2	342)	0880
23	1	-	-	-	848367-9	Oljetrycksgivare . . . . .	2	(843812)	0900

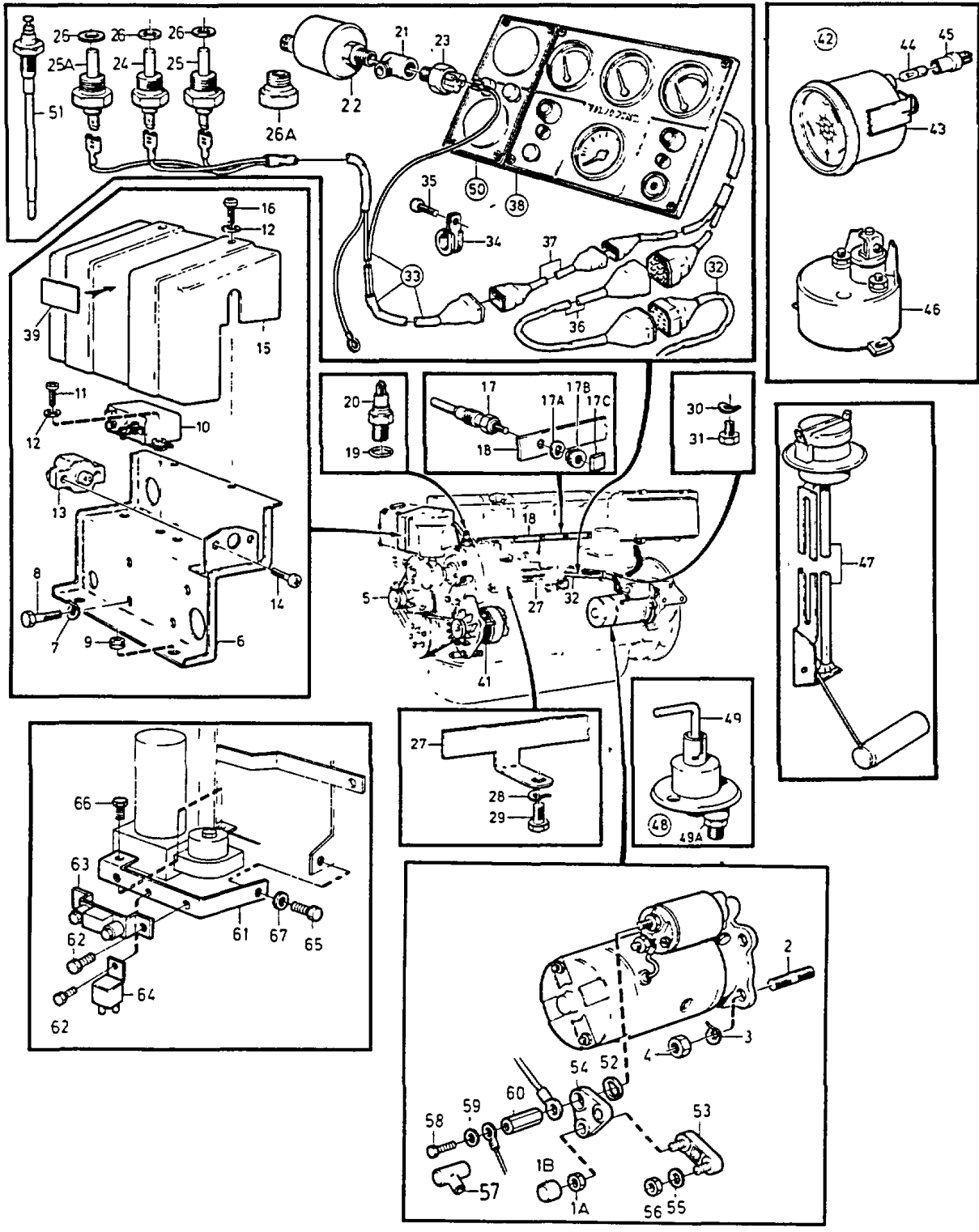
- 342. För TMD40A SPEC 867478, AQD40A SPEC 867479. For TMD40A SPEC 867478, AQD40A SPEC 867479.
- 350. ERS AV 841768. Replaced by 841768.
- 355. ERS AV generator 841765 + remskiva 841812 + spännjarn 845021. Replaced by alternator 841765 + pulley 841812 + tension iron 845021.
- 459. Ersatt av 1st RELA-838518,2st FLATSTIFT-881485 och 1st HYLISOLATOR-958210. Replaced by 1pc RELAY-838510,2pcs cable TERMINAL-881485 and 1pc INSULATOR-958210.



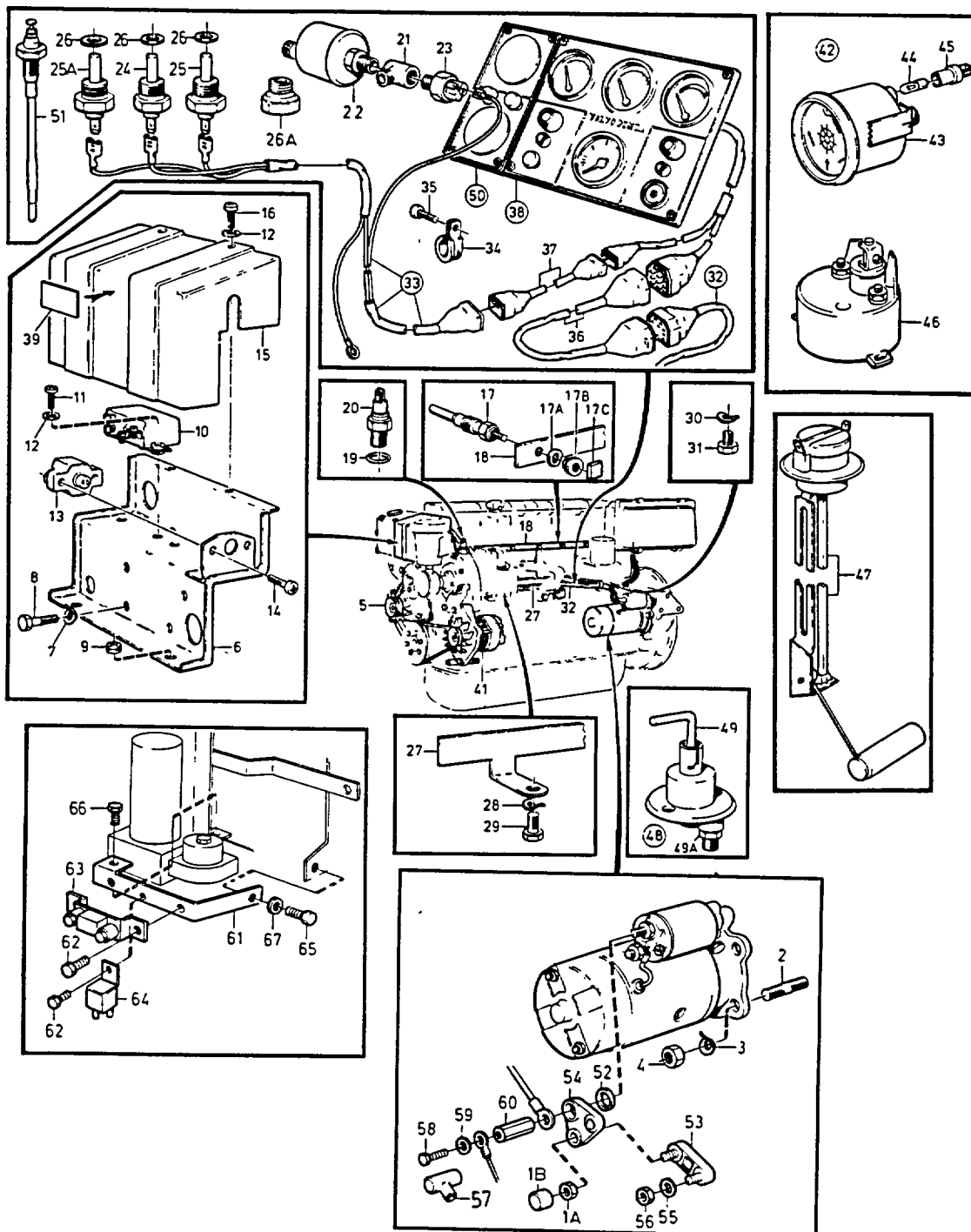


Sida Page	Grupp Group	Elsystem och instrument			Electrical system and instrument			Illustration	
10	3	TMD40A,TMD40B,TMD40C						7595 1987-04	
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
24	1	-	-	-	827151-2	Temperaturgivare ...	Temperature sensor.....	2	
	1	-	-	-	834629-8	Temperaturgivare ...	Temperature sensor.....	2	342)
	1	-	-	-	858595-2	Temperaturgivare..	Temperature sensor.....	2	460,461) MO38777-
	-	-	-	-					MO38777-
	1	-	-	-	858596-0	Temperaturgivare .....	Temperature sensor.....	2	460,461)24V MO38777-
25	1	-	-	-	833927-7	Temperaturvakt .	Temperature sensor .....	2	
	1	-	-	-	822858-7	Temperaturkontakt .....	Temp contact.....	2	438)
25a	1	-	-	-	840345-3	Temperaturindikator ..	Temperature indicator .....	2	429)
26	3	-	-	-	957181-1	Packning ..	Gasket .....	S 1	
26a	1	-	-	-	844828-4	Forskruvning .....	Screw union .....	3	342)
27	ERF	-	-	-		Kabeljarn .....	Cable holder.....	8	
28	1	-	-	-	941908-6	Fjäderbricka .....	Washer .....	0	MO-26461
29	1	-	-	-	955314-0	Skruv.....	Screw.....	0	MO-26461
30	1	-	-	-	941907-8	Bricka ..	Washer .....	0	MO-26461
31	1	-	-	-	955293-6	Skruv ..	Screw .....	0	MO-26461
	1	-	-	-	940199-3	Skruv .....	Screw .....	0	347)
32	1	-	-	-	843450-8	Kabelstock ..	Cable unit .....	6	MOTOR-ENGINE L=7000MM
	1	-	-	-	844869-8	Kabelstock .....	Cable unit.....	6	342) MOTOR-ENGINE L=7000MM
	1	-	-	-	845344-1	Kabelstock ...	Cable unit ...	6	347) LARM-ENGINE L=7000MM
	1	-	-	-	846648-4	Kabelstock .....	Cable unit .....	6	CPC,L=3000MM
	1	-	-	-	846649-2	Kabelstock .....	Cable unit.....	6	CPC,L=5000MM
	1	-	-	-	846650-0	Kabelstock ..	Cable unit .....	6	CPC,L=7000MM
33	1	-	-	-	843501-8	Kabelstock .....	Cable unit .....	6	LARM-ALARM
	1	-	-	-	844892-0	Kabelstock .....	Cable unit .....	6	342) LARM-ALARM L=7000MM
	1	-	-	-	845451-4	Kabelstock .....	Cable unit ..	6	347) LARM-ALARM L=7000MM
	1	-	-	-	858057-3	Kabelstock .....	Cable unit .....	6	438)
34	1	-	-	-	952628-6	Klamma ..	Clamp .....	0	MO-26461
35	1	-	-	-	956094-7	Skruv ..	Screw ..	0	MO-26461
36	1	-	-	-	843214-8	Kabelstock ..	Cable unit .....	6	343) MOTOR-ENGINE
37	1	-	-	-	839180-7	Forlångningskabel ..	Extension cable ..	6	343) LARM-ALARM, L=7000MM
38	1	-	-	-	843525-7	Instrumenttavla ..	Instrument panel .....	6	343)
	-	-	-	-		.Det se sida 30, 1-K07 ..	.Comp page 30, 1-K07.....		
	1	-	-	-	838926-4	Instrumenttavla ..	Instrument panel .....	6	
	-	-	-	-		.Det se sida 32, 1-K09..	.Comp page 32, 1-K09 .....		
	1	-	-	-	858036-7	Instrumenttavla ..	Instrument panel .....	6	24V
	-	-	-	-		.Det se sida 32, 1-K09 ..	.Comp page 32, 1-K09 .....		
	1	-	-	-		Instrumenttavla ..	Instrument panel ..		SEN UTF,SE GRUPP 9
39	1	-	-	-	843141-3	Dekal ..	Decal ..	5	
40	1	-	-	-	955949-3	Bricka ..	Washer.....	0	
41	ERF	-	-	-		Vaxelströmgenerator- sats	Alternator kit ..		SE GRUPP 9
42	1	-	-	-	834401-2	Roderindikator ..	Rudder indicator ...		
43	1	-	-	-	834383-2	.Roderindikator ...	.Rudder indicator ..	4	
44	1	-	-	-	19923-2	.Glödlampa .....	.Bulb .....	0	
45	1	-	-	-	808175-4	.Lamphållare .....	.Bulb holder .....	4	
46	1	-	-	-	837772-3	.Roderlagesgivare .....	.Rudder indicator....	2	

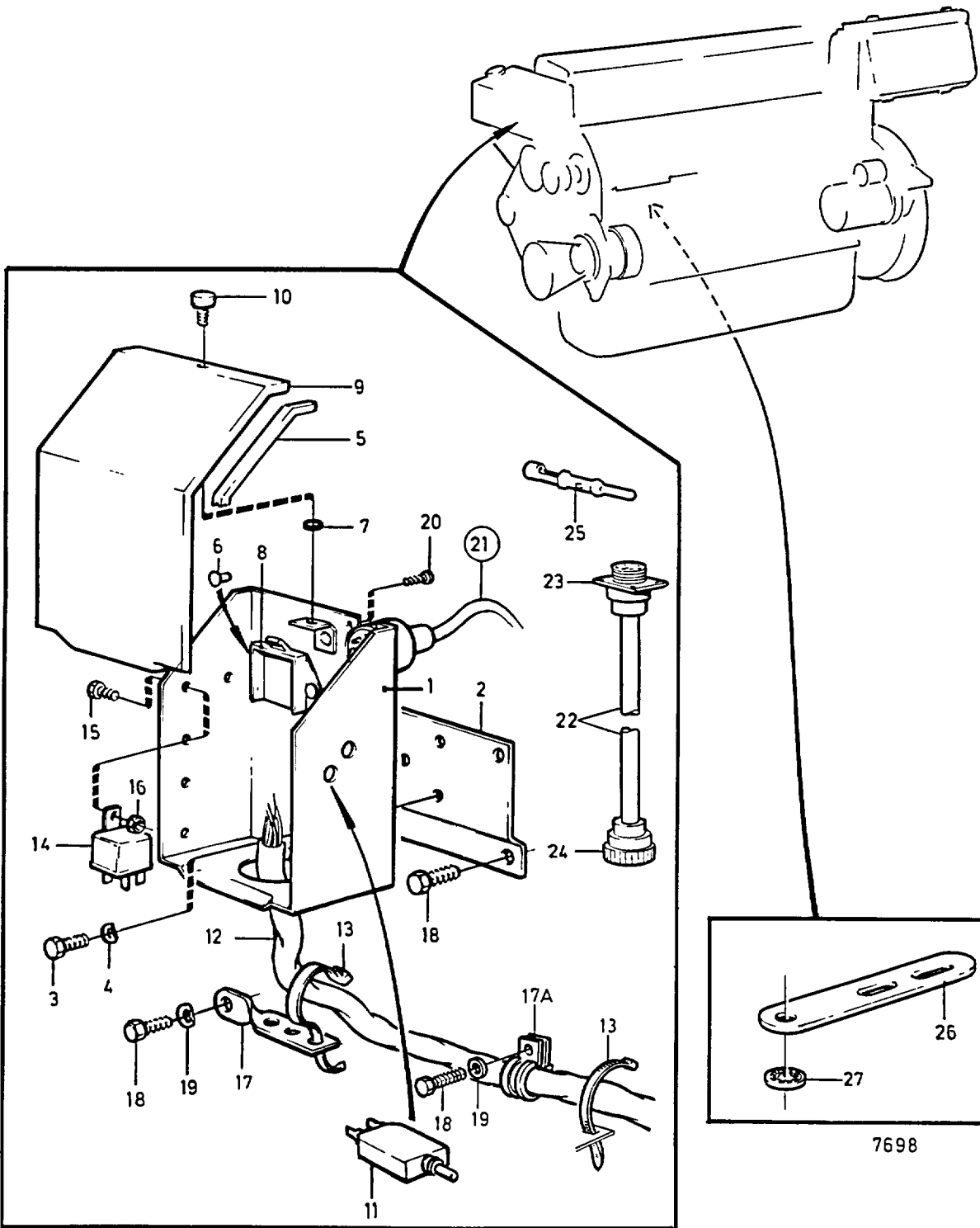
342. For TMD40A SPEC 867478, AQD40A SPEC 867479. For TMD40A SPEC 867478, AQD40A SPEC 867479.  
 343. EXCL TMD40A SPEC 867478, AQD40A SPEC 867479. EXCL TMD40A SPEC 867478, AQD40A SPEC 867479.  
 347. AQAD40A SPEC 867560, -561, -562. TAMD40A SPEC 867563, -564, -565. AQAD40A SPEC 867560, -561, -562. TAMD40A SPEC 867563, -564, -565.  
 429. Alternativ för temp.givare 827151 och temp.vakt 833927. Alternative for temp.sender 827151 and thermoswitch Control 833927.  
 438. Spec 867948. Spec 867948.  
 460. For dual station. For dual station.  
 461. Kombinerad tempgivare och vakt. Combined temperature sensor and guard.



Sida Page	Grupp Group	Elsystem och instrument			Electrical system and instrument			Illustration	0610		
12	3	TMD40A,TMD40B,TMD40C						7595 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
47	1	-	-	-	834400-4	Tankmätare..... dricksvatten	Tank gauge..... drinking water	4		SE GRUPP 9	18-
	1	-	-	-	834399-8	Tankmätare..... bränsle	Tank gauge..... fuel	4		SE GRUPP 9	186, 1880 1900
48	1	-	-	-	870980-0	El-strömbrytare.....	Switch.....	2			1920
49	1	-	-	-	243700-2	Handtag.....	Handle.....	2			1940
49a	2	-	-	-	955783-6	Mutter.....	Nut.....	0			1960
50	1	-	-	-	843604-0	Instrumenttavla.....	Instrument panel.....	6		SE GRUPP 9	1980
	1	-	-	-		Instrumenttavla.....	Instrument panel.....			SEN UTF,SE GRUPP 9	2000
51	ERF	-	-	-		Kylvattennivåarm.....	Cooling water..... level alarm			SE GRUPP 9	2020 40
52	1	-	-	-	829714-5	Tätning.....	Seal.....	2		AQAD40B/290,290DP	0
53	1	-	-	-	853502-3	Säkring.....	Fuse.....	1		AQAD40B/290,290DP	2080
54	1	-	-	-	852986-9	Strömskena.....	Contact strip.....	3		AQAD40B/290,290DP	2100
55	2	-	-	-	941906-0	Fjädrande bricka.....	Resilient washer.....	0		AQAD40B/290,290DP	2120
56	2	-	-	-	955781-0	Mutter.....	Nut.....	0		AQAD40B/290,290DP	2140
57	1	-	-	-	855798-5	Skyddshylsa.....	Protecting sleeve.....	0			2260
58	1	-	-	-	940199-3	Skruv.....	Screw.....	0			0
59	1	-	-	-	941907-8	Fjädrande bricka.....	Resilient washer.....	0			2200
60	1	-	-	-	855314-1	Mutter.....	Nut.....	2			2220
61	1	-	-	-	858078-9	Konsol.....	Bracket.....	5		438)	2240
62	3	-	-	-	955268-8	Skruv.....	Screw.....	0		438)	2260
63	1	-	-	-	838980-1	Förkopplingmotstånd.....	Series resistance.....	3		438)	2280
64	1	-	-	-	838955-3	Relä.....	Relay.....	2		438)	2300
65	1	-	-	-	955318-1	Skruv.....	Screw.....	0		438)SE GRUPP 2B	2320
66	1	-	-	-	955296-9	Skruv.....	Screw.....	0		438)	2340



Sida Page	Grupp Group	Kopplingslåda Connection box			Illustration	0625				
14	3	TAMD40B,AQAD40B			7698					
					1987-04					
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	846791-2	Låda .....	Box .....	5		00
2	1	-	-	-	846763-1	Konsol.....	Bracket .....	8	ERS AV 838539	004
	1	-	-	-	838539-5	Konsol.....	Bracket .....	5		0050
3	3	-	-	-	955268-8	Skruv .....	Screw .....	0		0060
4	3	-	-	-	941907-8	Bricka.....	Washer .....	0	(955894)	0080
5	1	-	-	-	1214306-1	Skyddslist .....	Protecting strip .....	5		0100
6	2	-	-	-	942670-1	Nit. ....	Rivet.....	0		0120
7	1	-	-	-	925051-5	O-ring .....	O-ring .....	0		0160
8	1	-	-	-	1234048-5	Underdel .....	Lower part .....	6		0180
9	1	-	-	-	846662-5	Lock .....	Cover .....	5		0200
10	1	-	-	-	846736-7	Skruv.....	Screw .....	2		00
11	1	-	-	-	966689-2	Sakring .....	Fuse .....	2		00
12	1	-	-	-	846060-2	Kabelstock .....	Cable unit .....	6		0260
13	ERF	-	-	-	948210-0	Buntband.....	Clamping band .....	3		0280
14	2	-	-	-	846762-3	Relä. ....	Relay.....	4		0300
	2	-	-	-	838955-3	Relä. ....	Relay .....	4	438)	0310
15	2	-	-	-	955268-8	Skruv .....	Screw .....	0		00
16	2	-	-	-	955781-0	Mutter .....	Nut .....	0		00
17	1	-	-	-	354842-7	Konsol .....	Bracket .....	8	TID UTF	0360
17a	1	-	-	-	947827-2	Klamma.....	Clamp .....	0	SEN UTF	0370
18	2	-	-	-		Skruv. ....	Screw .....		SE GRUPP 2B	0380
19	1	-	-	-	955894-1	Bricka .....	Washer .....	0		0400
20	4	-	-	-	955119-3	Skruv.....	Screw .....	0		0420
21	ERF	-	-	-	846648-4	Förlängningskabel .....	Extension cable.....	4	ALT, L=3000MM	0440
	ERF	-	-	-	846649-2	Förlängningskabel .....	Extension cable.....	5	ALT, L=5000MM	0460
	ERF	-	-	-	846650-0	Förlängningskabel .....	Extension cable.....	6	ALT, L=7000MM	00
22	ERF	-	-	-	846639-3	.Kabel .....	.Cable .....	3		00
23	1	-	-	-	846647-6	.Kontakt .....	.Terminal .....	3		00
24	1	-	-	-	846612-0	.Kontakt .....	.Terminal .....	3		0540
25	16	-	-	-	849958-4	.Stift. ....	.Plug .....	2	(847040)	0560
26	1	-	-	-	965534-1	Konsol .....	Bracket .....	3		0580
27	1	-	-	-	955949-3	Låsbricka .....	Washer .....	0		0600



7698

Sida Page	Grupp Group	Växelströmgenerator med monteringsdetaljer			Alternator and installation components			Illustration 7702 1987-04	1050		
16	3	MD40A,AQD40A,TMD40A,TMD40B,TMD40C,AQAD40A,AQAD40B,TAMD40A,TAMD40B									
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	834625-6	Växelströmgenerator .....	Alternator .....	8	MO-1900 ERS AV 834964		00
	-	-	-	-		.Det se sida 18, 1-J19 .....	.Comp page 18, 1-J19 ...				004
	1	-	-	-	834964-9	Växelströmgenerator .....	Alternator .....	8	MO-12769 ERS AV 841378		0060
	-	-	-	-		.Det se sida 22, 1-J23 .....	.Comp page 22, 1-J23 ..				0080
	1	-	-	-	841378-3	Växelströmgenerator .....	Alternator .....	8	350)MO12770-21869		0100
	-	-	-	-		.Det se sida 22, 1-J23 .....	.Comp page 22, 1-J23 ..				0120
	1	-	-	-	841768-5	Växelströmgenerator .....	Alternator .....	8	355)MO21870-25724		0140
	-	-	-	-		.Det se sida 22, 1-J23 .....	.Comp page 22, 1-J23 ..				0160
	1	-	-	-	841765-1	Växelströmgenerator .....	Alternator .....	6	MO25725-		0180
	-	-	-	-		.Det se sida 20, 1-J21 .....	.Comp page 20, 1-J21 ..		ERS AV 858838		0200
	1	-	-	-	858838-6	Växelströmgenerator .....	Alternator .....	6			0
	-	-	-	-		.Det. ej spec .....	.Comps. not spec.....				1
	1	-	-	-	845940-6	Växelströmgenerator .....	Alternator .....	6	438)24V		0220
	-	-	-	-		.Det se sida 24, 1-K01 .....	.Comp page 24, 1-K01 ..		ERS AV 849563		0240
	1	-	-	-	849563-2	Växelströmgenerator .....	Alternator .....	6			0250
	-	-	-	-		.Det. ej spec .....	.Comps. not spec.....				0251
2	1	-	-	-	842611-6	Konsol .....	Bracket .....	6			0
	1	-	-	-	858079-7	Konsol .....	Bracket .....	6	440)		0
3	1	-	-	-	841812-1	Remskiva .....	Pulley .....	5			0300
4	1	-	-	-	955700-0	Skruv.....	Screw.....	0			0320
	1	-	-	-	955554-1	Skruv.....	Screw.....	0	440)		0340
5	3	-	-	-	941907-8	Fjädrande bricka .....	Resilient washer .....	0			0360
6	3	-	-	-	955307-4	Skruv.....	Screw.....	0	L=100MM,SE GRUPP 2A		0380
	2	-	-	-	965182-9	Skruv.....	Screw.....	0	440)L=80MM		0400
	1	-	-	-	100222-9	Skruv.....	Screw.....	0	440)L=85MM		0420
	1	-	-	-	965179-5	Skruv.....	Screw.....	0	440)L=50MM		0440
7	1	-	-	-	807186-2	Spännjärn .....	Tension iron.....	5			0
	1	-	-	-	845021-5	Spännjärn .....	Tension iron.....	5	MO25725-		0
	1	-	-	-	845021-5	Spännjärn .....	Tension iron.....	5	440)		0500
8	1	-	-	-	955298-5	Skruv.....	Screw.....	0			0520
9	1	-	-	-	466735-8	Spännogla .....	Tension eye .....	5			0540
10	1	-	-	-	191172-6	Bricka.....	Washer .....	0			0560
11	1	-	-	-	963106-0	Mutter .....	Nut.....	0			0580
12	1	-	-	-	955306-6	Skruv.....	Screw.....	0			0600
13	1	-	-	-	941907-8	Fjädrande bricka .....	Resilient washer .....	0	SE GRUPP 2A		0620
14	1	-	-	-	842350-1	Distanshylsa .....	Spacer sleeve .....	0	441)		0640
15	1	-	-	-	958359-2	Drivremssats .....	Drive belt kit .....	1	L=2X1100MM		0660

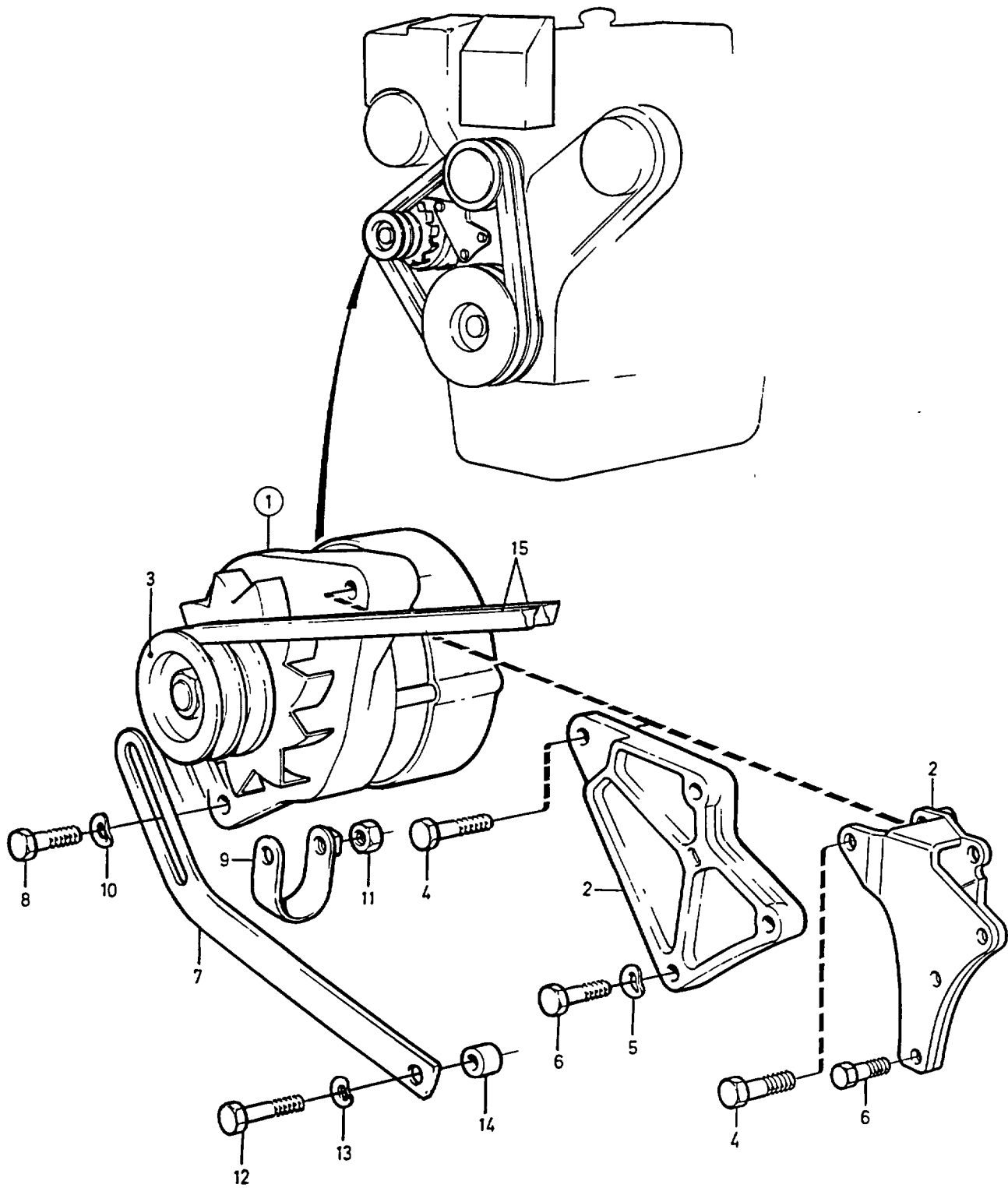
350 . ERS AV 841768. Replaced by 841768.

355 . ERS AV generator 841765 + remskiva 841812 + spännjärn 845021. Replaced by alternator 841765 + pulley 841812 + tension iron 845021.

438 . Spec 867948. Spec 867948.

440 . För generator 845940. För alternator 845940.

441 . Ej för generator 845940 Not for alternator 845940





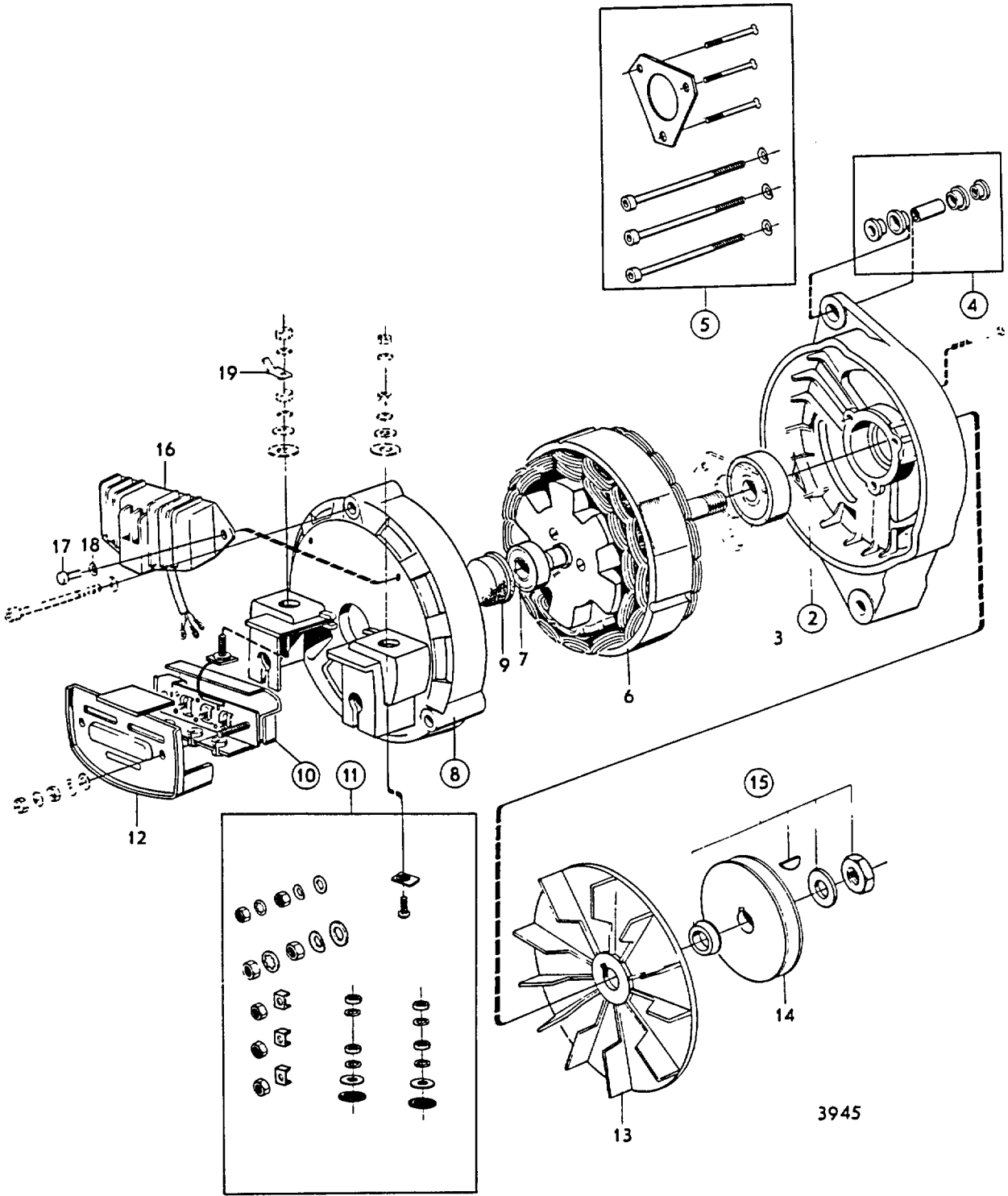
Sida Page		Grupp Group		Växelströmgenerator		Alternator		Illustration	
18		3						3945 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	Anmärkning Notes
	834	625							
1	1	-	-	-	834625-6	Vaxelströmgenerator . . . .	Alternator . . . . .	B	14V35A
2	1	-	-	-	831845-3	.Gavel . . . . .	.Cover . . . . .	5	
3	1	-	-	-	181601-6	..Kullager . . . . .	..Ball bearing . . . . .	4	
4	1	-	-	-	465033-9	..Styrning . . . . .	..Guide . . . . .	4	
5	1	-	-	-	6211438-4	..Skruvsats . . . . .	..Screw kit . . . . .	5	
6	1	-	-	-		.Rotor och stator . . . . .	.Rotor and stator . . . . .	8	
7	1	-	-	-	181797-2	.Kullager . . . . .	.Ball bearing . . . . .	4	
8	1	-	-	-	831847-9	.Gavel . . . . .	.Cover . . . . .	5	
9	1	-	-	-	831848-7	..Plastkåpa . . . . .	..Plastic cover . . . . .	6	
10	1	-	-	-	841575-4	.Diodsats . . . . .	.Diode kit . . . . .	3 18)	
11	1	-	-	-	831851-1	..Skruvsats . . . . .	..Screw kit . . . . .	5	
12	1	-	-	-	831854-5	.Kåpa . . . . .	.Casing . . . . .	6	
13	1	-	-	-		.Fläkt . . . . .	.Fan . . . . .	8 253)	
14	1	-	-	-	834835-1	.Remskiva . . . . .	.Pulley . . . . .	5	
15	1	-	-	-	834644-7	.Monteringssats . . . . .	.Mounting kit . . . . .	4 255)	
16	1	-	-	-	841688-5	.Regulator . . . . .	.Governor . . . . .	4	
17	2	-	-	-	955243-1	.Skruv . . . . .	.Screw . . . . .	0	
18	2	-	-	-	941905-2	.Fjädrande bricka . . . . .	.Resilient washer . . . . .	0	
19	2	-	-	-	829311-0	.Flatstift . . . . .	.Flat pin . . . . .	4	

18 . För laddning av 2 batterier använd laddningsfördelare 831793. For charging of 2 batteries use charge distributor 831793

253 . Tid utf av fläkt, tillverkad av pressad plåt, ersatt av 1st 831855, 1st 831857. Early production of fan, made of pressed plate, replaced by 1pc 831855, 1pc 831857.

255 . För generator med plåtfläkt. For alternator with plate fan.

①

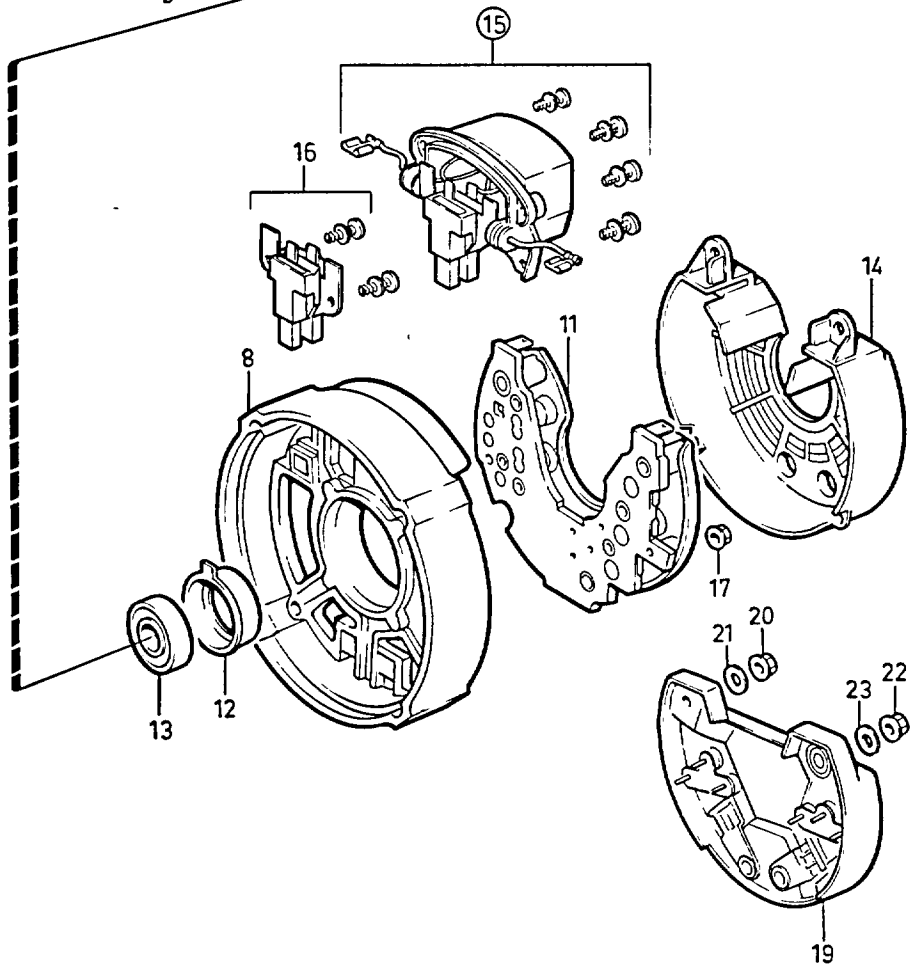
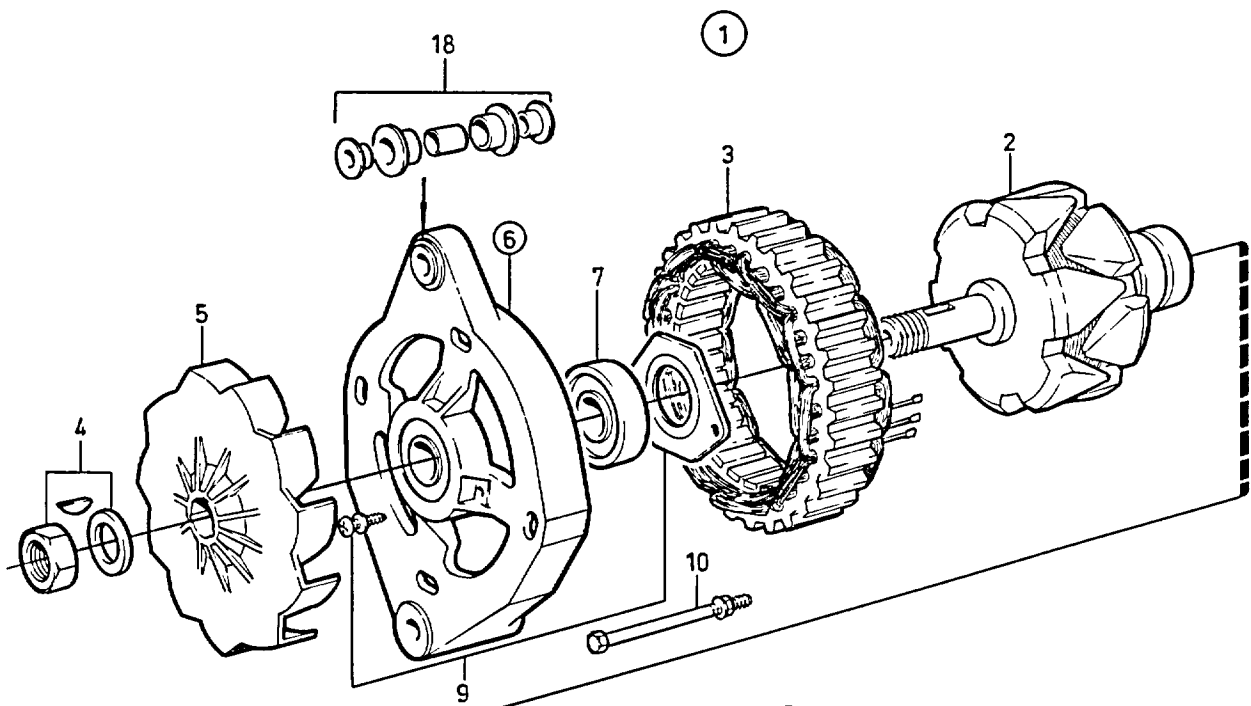


3945

Sida Page	Grupp Group	Växelströmgenerator	Alternator	Illustration 6263 1987-04	1156
20	3				

Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
	841 765										
1	1	-	-	-	841765-1	Växelströmgenerator .....	Alternator .....				0
2	1	-	-	-		.Rotor .....	.Rotor .....	8			01
3	1	-	-	-		.Stator .....	.Stator .....	8			0060
4	1	-	-	-	840620-9	.Monteringssats .....	.Mounting kit .....	3			0080
5	1	-	-	-	840621-7	.Fläkt .....	.Fan .....	5			0100
6	1	-	-	-		.Gavel .....	.Housing .....	8			0120
7	1	-	-	-	848402-4	..Kullager .....	..Ball bearing .....	2	(840623)		0140
8	1	-	-	-		.Hus .....	.Housing .....	8			0160
9	1	-	-	-	840625-8	.Monteringssats .....	.Mounting kit .....	3			0180
10	1	-	-	-	840626-6	.Skruvsats .....	.Screw kit .....	5			0200
11	1	-	-	-	6212687-5	.Diodhållare .....	.Diode holder .....	5			020
12	1	-	-	-	840629-0	.Lagerhållare .....	.Bearing retainer .....	2			0
13	1	-	-	-	840630-8	.Kullager .....	.Ball bearing .....	2			0260
14	1	-	-	-	840631-6	.Gavel .....	.Housing .....	5			0280
15	1	-	-	-	858840-2	.Regulator .....	.Relay .....	2	(840633)		0300
16	1	-	-	-	840632-4	..Kolborstsats .....	..Carbon brush set .....	1			0320
17	1	-	-	-	840624-1	.Muttersats .....	.Nut kit .....	5			040
18	1	-	-	-	840634-0	.Styrningssats .....	.Guide support kit .....	3			0
19	1	-	-	-	840638-1	Dubbeldiod .....	Double diode .....	3	24,163}		0380
20	1	-	-	-	955781-0	Mutter + .....	Nut + .....	0	24)		0400
21	1	-	-	-	949607-6	Bricka .....	Washer .....	0	24)		0420
22	1	-	-	-	955780-2	Mutter .....	Nut .....	0	24)		0440
23	1	-	-	-	941905-2	Fjädrande bricka .....	Resilient washer .....	0	24)		0460

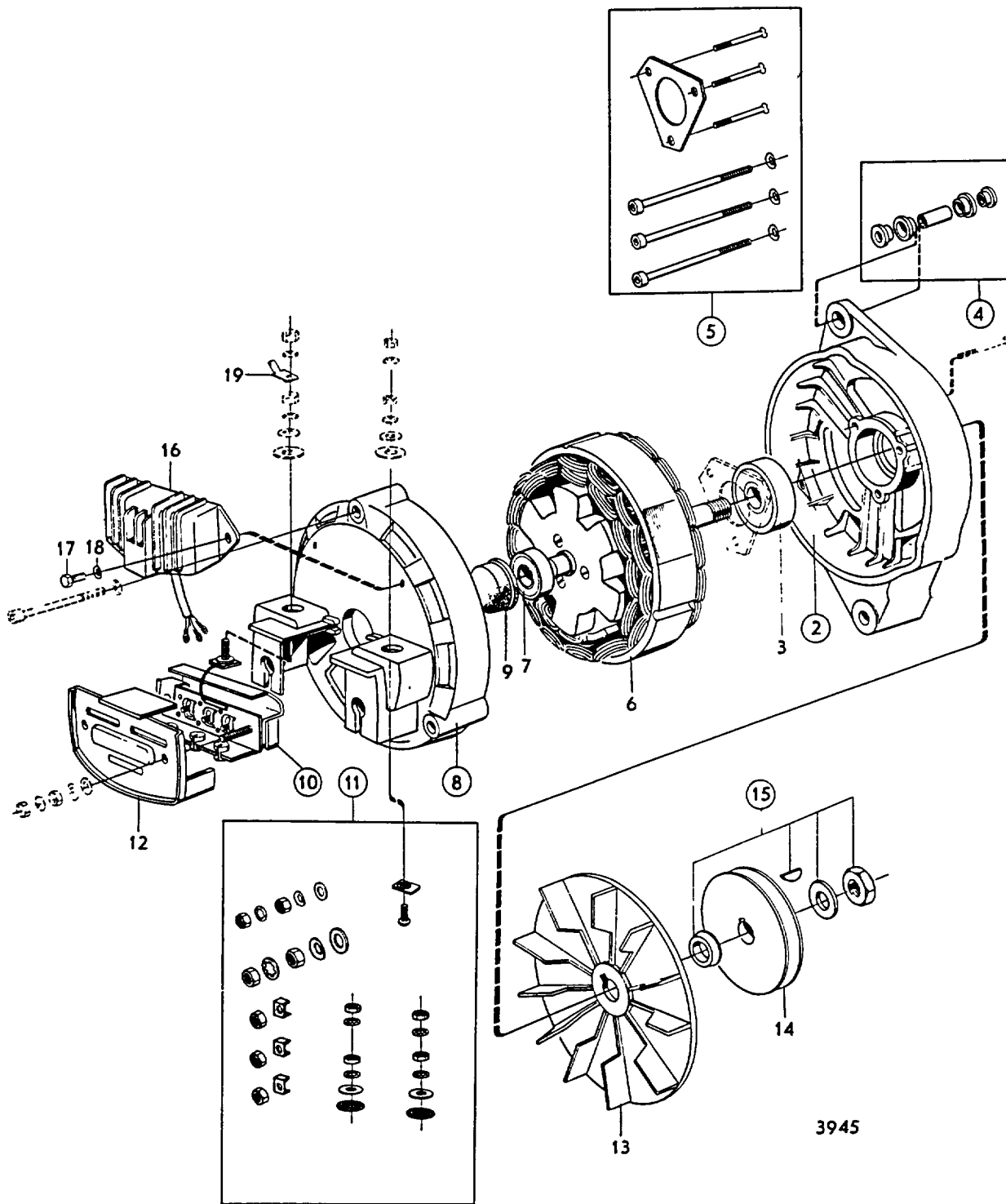
24 . Ingår ej i generator 841765. Not included in alternator 841765.  
163 . För laddning av 2 batterier. For charging of 2 batteries.



Sida Page	Grupp Group	Växelströmgenerator	Alternator	Illustration 3945 1987-04	1200
22	3				

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	834 964	841 378	841 768								
1	1	-	-	-	834964-9	Vaxelstromsgenerator .....	Alternator .....	8		14V 35A	00
	-	1	-	-	841378-3	Växelströmgenerator .....	Alternator .....	8		14V 35A	00.
	-	-	1	-	841768-5	Växelströmgenerator .....	Alternator .....	8		14V 35A	0032
2	1	1	1	-	831845-3	..Gavel.. .....	..Cover .....	5			0040
3	1	1	1	-	181601-6	..Kullager .....	..Ball bearing.. .....	4	(831853)		0060
4	1	1	1	-	465033-9	..Styrning .....	..Guide .....	4			0080
5	1	1	1	-	6211438-4	..Skravsats .....	..Screw kit .....	5	(831846)		0100
6	1	1	1	-		..Rotor och stator .....	..Rotor and stator .....	8			0120
7	1	1	1	-	181797-2	..Kullager .....	..Ball bearing .....	4			0140
8	1	1	1	-	831847-9	..Gavel... .....	..Cover .....	5			0160
9	1	1	1	-	831848-7	..Plastkåpa .....	..Plastic cover.. .....	6			0180
10	1	-	-	-	841575-4	..Diodesats .....	..Diode kit .....	3	18) (831850)		0
	-	1	1	-	841575-4	..Diodesats .....	..Diode kit .....	3	18)		0210
11	1	1	1	-	831851-1	..Skravsats .....	..Screw kit .....	5			0220
12	1	1	1	-	831854-5	..Kåpa .....	..Casing .....	6			0240
13	1	1	1	-	831855-2	..Fläkt .....	..Fan .....	4			0260
14	1	1	1	-	834835-1	..Remskiva .....	..Pulley.. .....	4			0280
15	1	1	1	-	831857-8	..Monteringsatts .....	..Mounting kit. ....	4			0
16	1	-	-	-	841688-5	..Regulator .....	..Governor .....	4	(841381)		020
	-	1	-	-	841688-5	..Regulator .....	..Governor .....	4	(841381)		0330
	-	-	1	-	841688-5	..Regulator .....	..Governor .....	4			0332
17	2	2	2	-	955243-1	..Skruv .....	..Screw .....	0			0340
18	2	2	2	-	941905-2	..Fjädrande bricka .....	..Resilient washer .....	0			0360
19	1	1	1	-	829311-0	..Flatstift .....	..Flat pin .....	4			0380

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3945

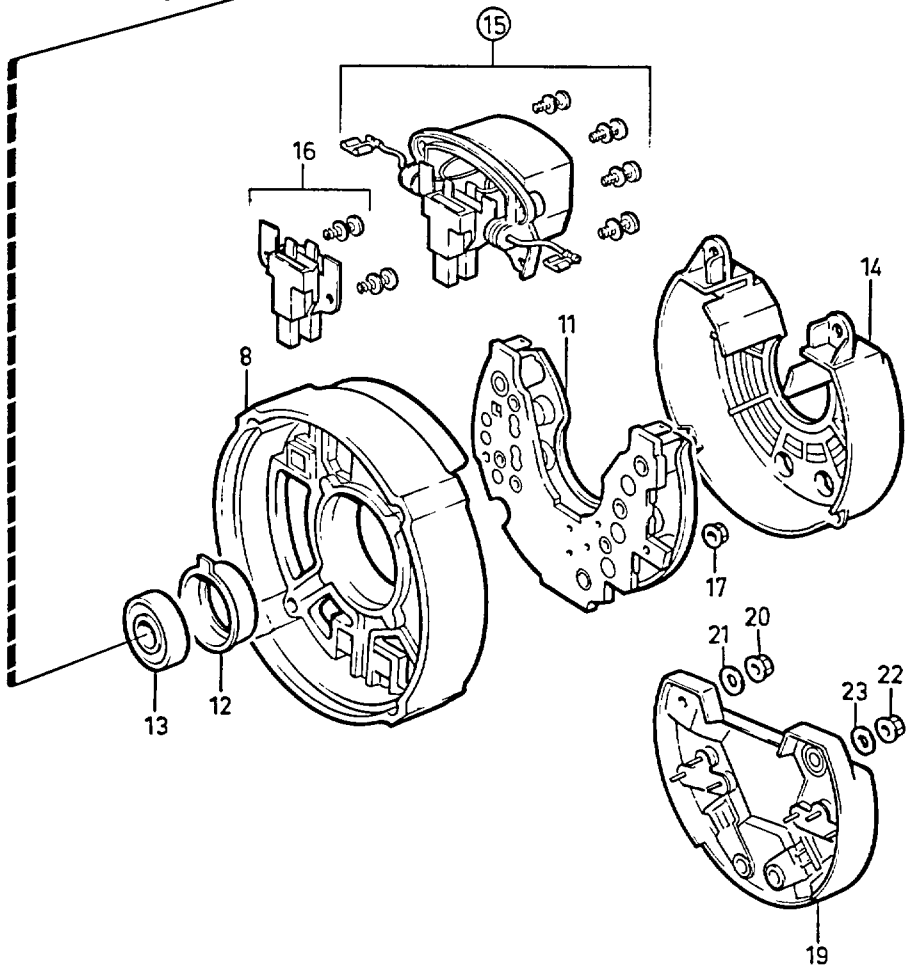
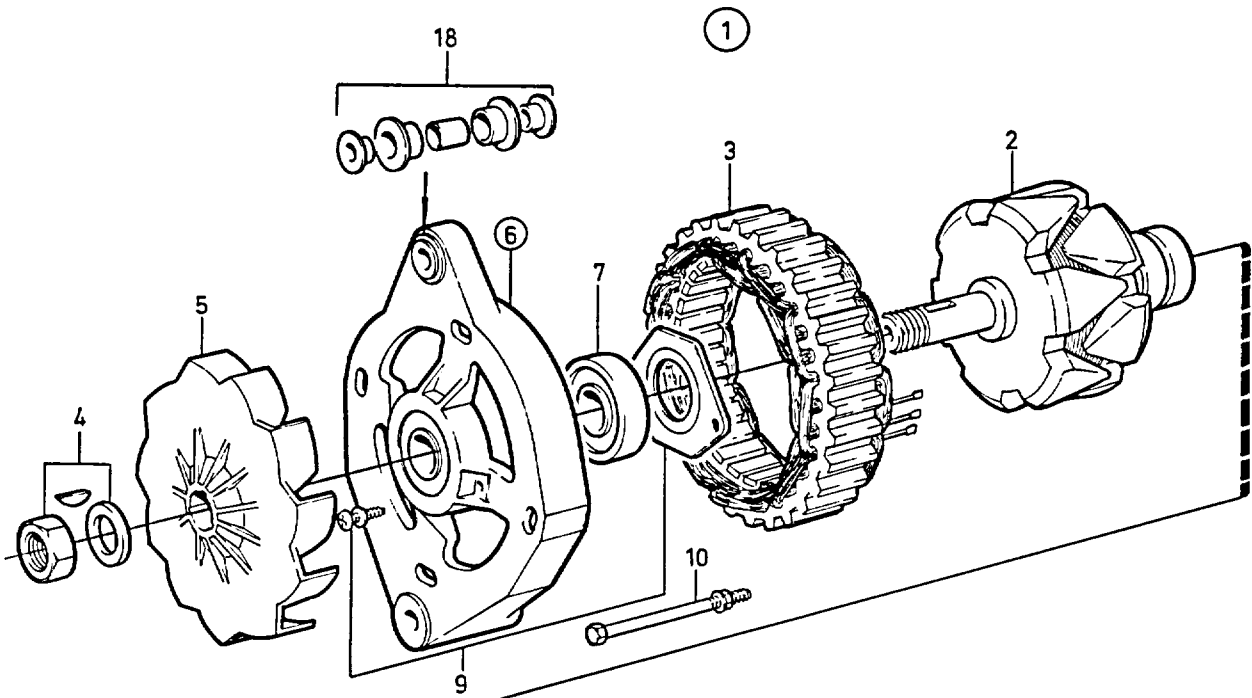
Publ. 4406

Reservdelskatalog  
Parts Catalogue

1-K01

**VOLVO  
PENTA**

Sida Page		Grupp Group		Växlestromsgenerator		Alternator		Illustration		1300	
24		3						6263 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	845 940										
1	1	-	-	-	845940-6	Växlestromsgenerator ...	Alternator .....	6		24V,55A	002'
2	1	-	-	-	847704-4	.Rotor.....	.Rotor .....	4			004L
3	1	-	-	-	847705-1	.Stator .....	.Stator .....	4			0060
4	1	-	-	-	847706-9	.Monteringssats .....	.Mounting kit .....	3			0080
5	1	-	-	-	847707-7	.Fläkt .....	.Fan .....	5			0100
6	1	-	-	-		.Gavel .....	.Housing .....	8			0120
7	1	-	-	-	847708-5	.Kullager .....	.Ball bearing .....	3			0140
8	1	-	-	-		.Hus .....	.Housing .....	8			0160
9	1	-	-	-	847709-3	.Monteringssats .....	.Mounting kit .....	3			0180
10	1	-	-	-	847710-1	.Skruvsats .....	.Screw kit .....	5			0200
11	1	-	-	-	6212687-5	.Diodhållare .....	.Diod holder .....	5			0220
12	1	-	-	-	840629-0	.Lagerbana .....	.Bearing race .....	2			0
13	1	-	-	-	847711-9	.Kullager .....	.Ball bearing .....	2			0260
14	1	-	-	-	847712-7	.Skyddskåpa .....	.Protecting cap .....	5			0280
15	1	-	-	-	847713-5	.Regulator .....	.Governor .....	2			0300
16	1	-	-	-	840632-4	.Borsthållare .....	.Brush holder .....	1			0320
18	1	-	-	-	840634-0	.Styrning .....	.Guide .....	3			0340

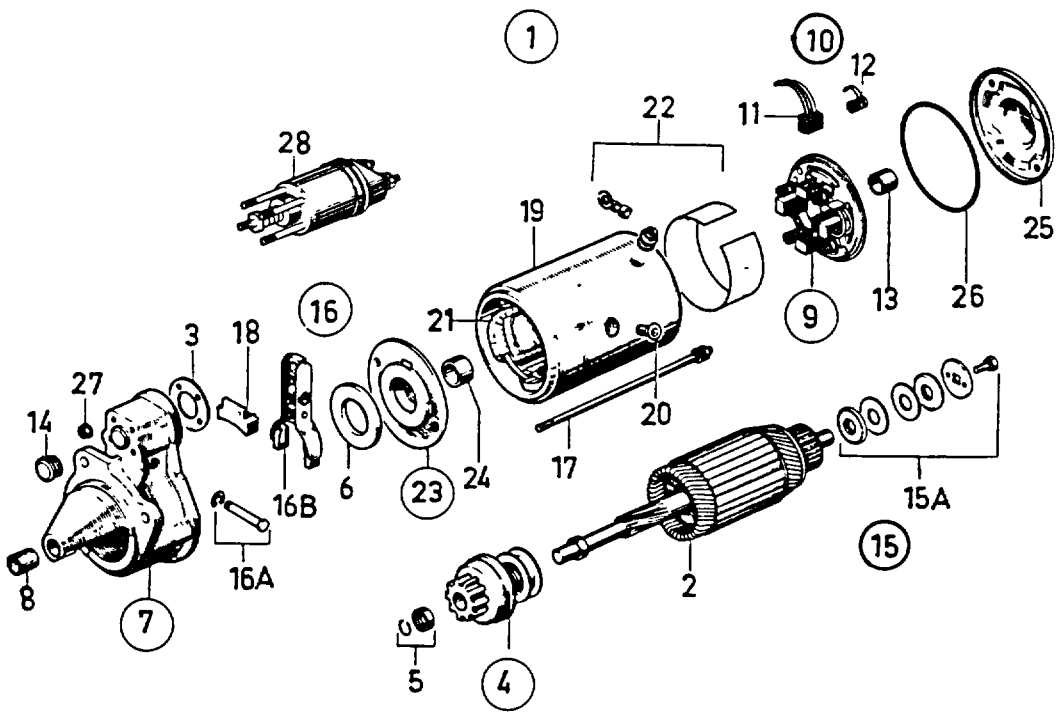




Sida Page		Grupp Group		Startmotor		Starter motor		Illustration		
26		3						8434 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
1	1	-	-	-	829527-1	Startmotor	Starter motor		6	
2	1	-	-	-	834843-5	.Rotor	.Rotor		6	
3	1	-	-	-	834805-4	.Packning	.Gasket		3	
4	1	-	-	-	834845-0	.Startdrev	.Starter pinion		6	
5	1	-	-	-	829012-4	..Reparationssats	..Repair kit		4	
6	1	-	-	-	834799-9	.Bricka	.Washer		5	
7	1	-	-	-	834846-8	.Lagerlock	.Bearing cover		5	
8	1	-	-	-	818147-1	..Bussning	..Bushing		4	
9	1	-	-	-	834849-2	.Kommutatorlager	.Commutator bearing		6	
10	1	-	-	-	858946-7	..Kolborstsats	..Carbon brush kit		6	
11	1	-	-	-	834853-4	...Kolborstsats	...Carbon brush kit		2	ERS AV 858946
12	1	-	-	-	834854-2	...Fjädersats	...Spring kit		2	ERS AV 858946
13	1	-	-	-	818162-0	.Bussning	.Bushing		4	
14	1	-	-	-	826964-9	.Gummikåpa	.Rubber casing		4	
15	1	-	-	-	858936-8	.Reparationssats	.Repair kit		2	
15a	1	-	-	-	834844-3	..Vibrationsdampare	..Vibration damper		5	ERS AV 858936
16	1	-	-	-	859204-0	..Kopplingsarm	..Coupling arm		6	
16a	1	-	-	-	829024-9	...Axel	...Shaft		4	ERS AV 859204
16b	-	-	-	-	829023-1	...Kopplingsarm	...Coupling arm		6	
17	1	-	-	-	834850-0	.Skruvsats	.Screw kit		4	
18	1	-	-	-	834851-8	.Tatning	.Seal		3	
19	1	-	-	-		.Hus	.Housing		8	
20	4	-	-	-	818157-0	.Skruv	.Screw		5	
21	1	-	-	-	834847-6	.Fältlindning	.Field winding		6	
22	1	-	-	-	834848-4	.Isoleringssats	.Insulating kit		6	
23	1	-	-	-	834803-9	.Mellanlager	.Interm bearing		6	
24	1	-	-	-	834806-2	..Bussning	..Bushing		4	
25	1	-	-	-	829017-3	.Skyddslock	.Protection cover		5	
26	1	-	-	-	826986-2	.Tatningsring	.Seal ring		3	
27	1	-	-	-	829031-4	.Muttersats	.Screw kit		4	
28	1	-	-	-	834852-6	.Manovermagnet	.Solenoid		6	
29	1	-	-	-	834805-4	.Packning	.Gasket kit		3	

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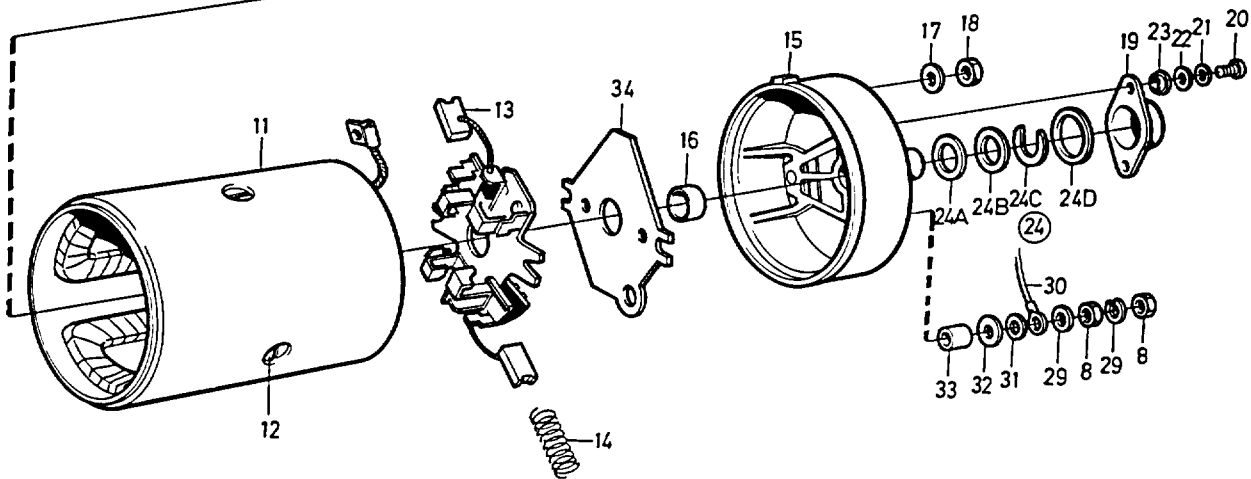
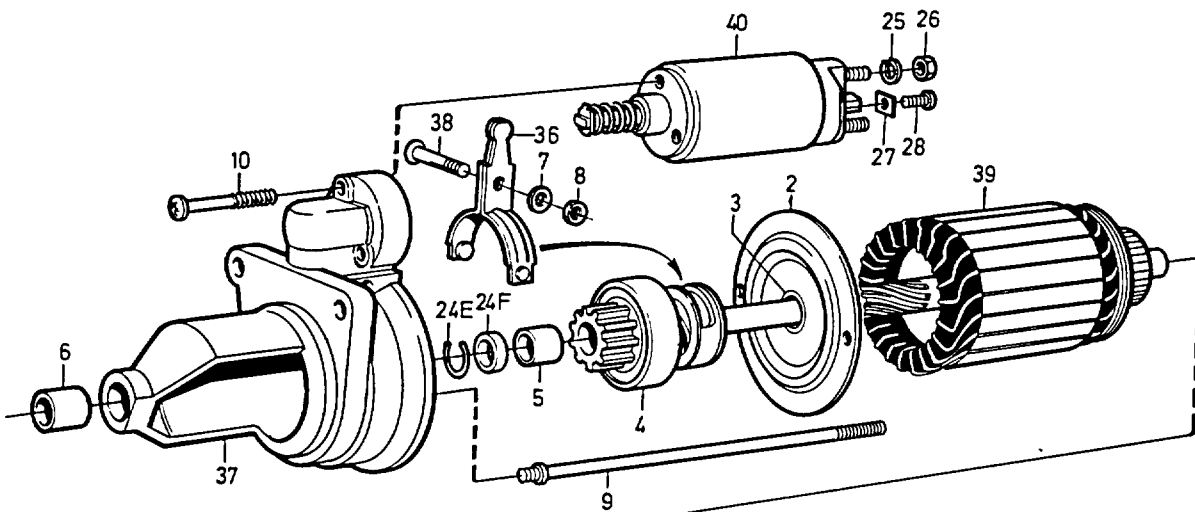
8434

Sida Page		Grupp Group		Startmotor		Starter motor		Illustration	
28		3		GEM				7751 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	Anmärkning Notes
	838	987							
1	1	-	-	-	838987-6	Startmotor.....	Starter motor .....	6	24V
2	1	-	-	-	6210770-1	.Drivlager .....	.Drive end bearing .....	6	
3	1	-	-	-	6644949-7	..Bussning .....	..Bushing .....	6	
4	1	-	-	-	1696543-6	.Startdrev .....	.Starter pinion .....	5	
5	1	-	-	-	6210772-7	..Bussning .....	..Bushing .....	5	
6	1	-	-	-	48109-3	.Bussning .....	.Bushing .....	4	
7	1	-	-	-	941907-8	.Fjädrande bricka .....	.Resilient washer .....	0	
8	3	-	-	-	947941-1	.Mutter .....	.Nut .....	0	
9	2	-	-	-	6210774-3	.Skruv .....	.Screw .....	5	
10	3	-	-	-	1696544-4	.Skruv .....	.Plug .....	5	
11	1	-	-	-	6210775-0	.Fältlindning.....	.Field winding .....	6	
12	4	-	-	-	6211936-7	.Skruv.....	.Screw .....	5	
13	1	-	-	-	858686-9	.Borstållare.....	.Brush holder.....	5	
14	4	-	-	-	6211874-0	.Fjäder .....	.Spring .....	5	
15	1	-	-	-	858687-7	.Lagersköld .....	.Bearing shield.....	6	
16	1	-	-	-	6210777-6	..Bussning .....	..Bushing .....	6	
17	2	-	-	-	86287-0	.Bricka .....	.Washer .....	5	
18	2	-	-	-	955781-0	.Mutter .....	.Nut .....	0	
19	1	-	-	-	858688-5	.Kåpa .....	.Casing .....	4	
20	2	-	-	-	956078-0	.Skruv .....	.Screw .....	0	
21	2	-	-	-	941905-2	.Fjädrande bricka .....	.Resilient washer .....	0	
22	2	-	-	-	858696-8	.Bricka .....	.Washer .....	4	
23	2	-	-	-	858695-0	.Bussning .....	.Bushing .....	4	
24	1	-	-	-	829707-9	.Smådelssats .....	.Small parts kit.....	5	
24a	1	-	-	-		..Mellanlägg .....	..Spacer .....	8	
24b	1	-	-	-		..Mellanlägg .....	..Spacer .....	8	
24c	1	-	-	-		..Låsbricka .....	..Lock washer .....	8	
24d	1	-	-	-		..Packing .....	..Gasket .....	8	
24e	1	-	-	-		..Låsring .....	..Lockring .....	8	
24f	1	-	-	-		..Bricka .....	..Washer .....	8	
25	2	-	-	-	1328134-0	.Bricka .....	.Washer .....	4	
26	2	-	-	-	955791-9	.Mutter .....	.Nut .....	0	
27	1	-	-	-	858689-3	.Klámbygel.....	.Brace .....	4	
28	1	-	-	-	956058-2	.Skruv .....	.Screw .....	0	
29	2	-	-	-	941907-8	.Fjädrande bricka .....	.Resilient washer .....	0	
30	ERF	-	-	-		.Elledning.....	.Cable .....	8	
	ERF	-	-	-		..Detaljer.....	..Components .....		SE SIDA 34,1-K11
31	1	-	-	-	955894-1	.Bricka .....	.Washer .....	0	
32	1	-	-	-	858693-5	.Isoleringskiva .....	.Insulating disc .....	4	
33	1	-	-	-	858692-7	.Bussning .....	.Bushing .....	4	
34	1	-	-	-	858691-9	.Isoleringsplatta .....	.Insulating plate .....	5	
35	1	-	-	-	6210778-4	.Kolborstsats .....	.Carbon brush kit .....	2	
36	1	-	-	-	1696545-1	.Kopplingsarm .....	.Coupling arm .....	6	
37	1	-	-	-	1696578-2	.Lagersköld .....	.Bearing shield .....	5	
38	1	-	-	-	6210773-5	.Skruv .....	.Screw .....	4	
39	1	-	-	-	6210769-3	.Rotor .....	.Rotor .....	5	
40	1	-	-	-	858697-6	.Magnet .....	.Solenoid .....	5	

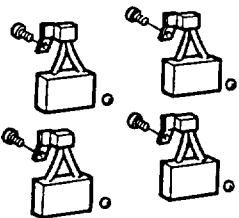
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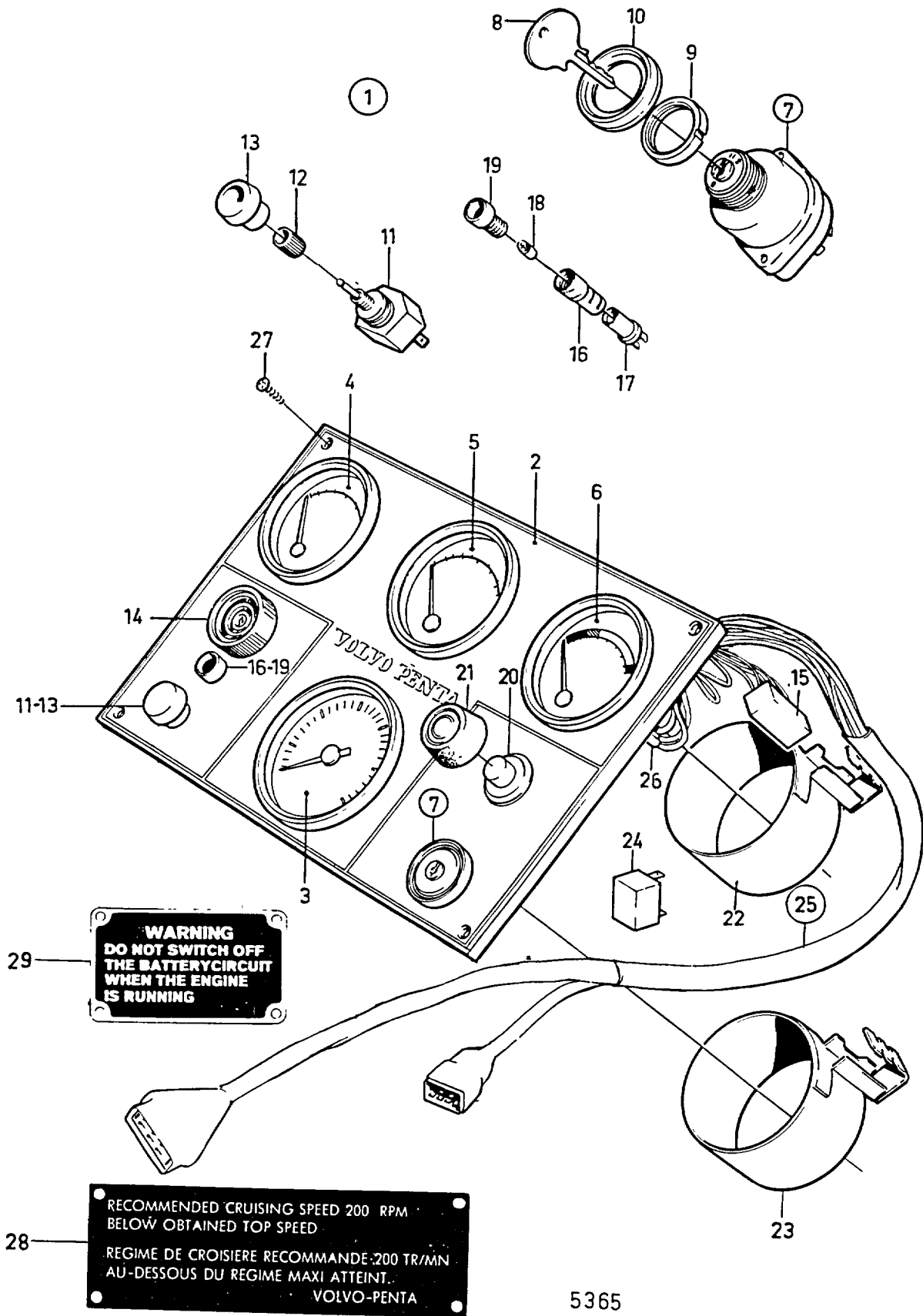
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③⑤



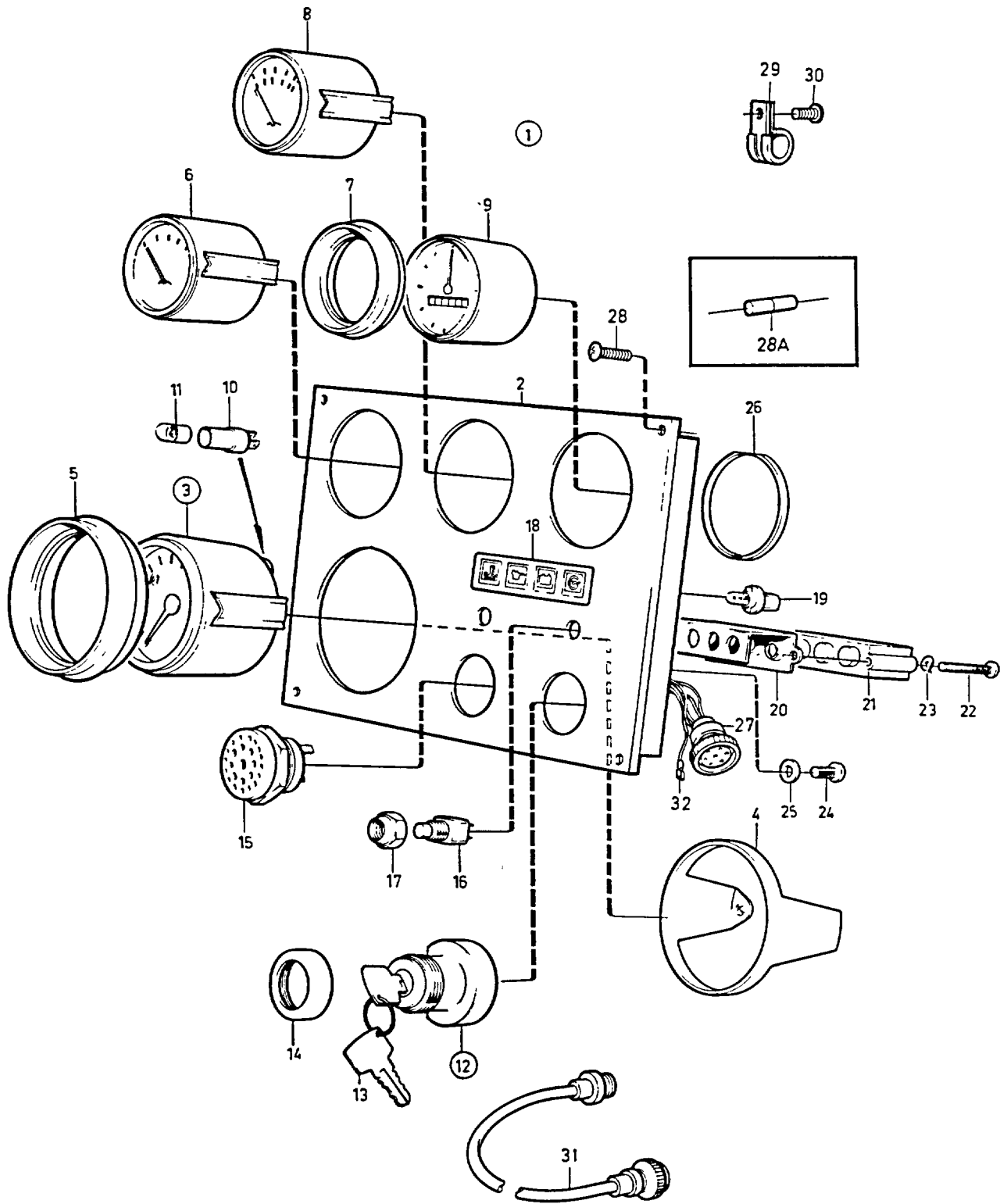
Sida Page		Grupp Group		Instrumenttavla			Instrument panel			Illustration	
30		3								2150 5365 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	843	525									
1	1	-	-	-	843525-7	Instrumenttavla . . . . .	Instrument panel . . . . .	8			002
2	1	-	-	-	843413-6	Instrumentplåt . . . . .	Instrument plate . . . . .	6			0040
3	1	-	-	-	842872-4	Varvraknare . . . . .	Tachometer . . . . .	3			0060
4	1	-	-	-	837759-0	Temperaturmatare . . . . .	Temperature gauge . . . . .	3			0080
5	1	-	-	-	837757-4	Oljemanometer . . . . .	Oil manometer . . . . .	3			0100
6	1	-	-	-	837895-2	Voltmeter . . . . .	Voltmeter . . . . .	3			0120
7	1	-	-	-	241315-1	Startlås . . . . .	Ignition switch . . . . .	3			0140
8	2	-	-	-	241383-9	Nyckel . . . . .	Key . . . . .	5	12)		0160
9	1	-	-	-	829169-2	Mutter . . . . .	Nut . . . . .	4			0180
10	1	-	-	-	827767-5	Låsring . . . . .	Lock ring . . . . .	4			0200
11	1	-	-	-	842918-5	Reostat . . . . .	Relay . . . . .	4	(842917)		'0
12	1	-	-	-	843002-7	Mutter . . . . .	Nut . . . . .	4			.0
13	1	-	-	-	842921-9	Knopp . . . . .	Bolt . . . . .	3			0260
14	1	-	-	-	827597-6	Signaldon . . . . .	Signal device . . . . .	4			0280
15	1	-	-	-	843502-6	Larmseparator . . . . .	Alarm control . . . . .	3			0300
16	1	-	-	-	819350-0	Lamphylsa . . . . .	Housing . . . . .	4			0320
17	5	-	-	-	808175-4	Lamphållare . . . . .	Bulb holder . . . . .	4			'0
18	5	-	-	-	19923-2	Glodlampa . . . . .	Lamp bulb . . . . .	1			0
19	1	-	-	-	827766-7	Konsol . . . . .	Bracket . . . . .	5			0380
20	1	-	-	-	843684-2	Strombrytare . . . . .	Switch . . . . .	4			0400
21	1	-	-	-	837533-9	Gummihatt . . . . .	Rubber cap . . . . .	4			0420
22	1	-	-	-	837859-8	Fäste . . . . .	Attachment . . . . .	6			0440
23	1	-	-	-	837860-6	Kabelfaste . . . . .	Cable attachment . . . . .	6			0460
24	1	-	-	-	837723-6	Omkopplare . . . . .	Resistance . . . . .	4			0480
25	1	-	-	-	843443-3	Kabelstock . . . . .	Cable unit . . . . .	6			0500
26	ERF	-	-	-		Kablar och kabelskor . . . . .	Cables and cable . . . . .	6	SE SIDA 34, 1-K11		05'
						terminals					0E
27	4	-	-	-	944540-4	Skruv . . . . .	Screw . . . . .	0			05.
28	1	-	-	-	837374-8	Skylt . . . . .	Sign . . . . .	8			0580
29	1	-	-	-	821042-9	Skylt . . . . .	Sign . . . . .	6			0600



**WARNING**  
 DO NOT SWITCH OFF  
 THE BATTERY CIRCUIT  
 WHEN THE ENGINE  
 IS RUNNING



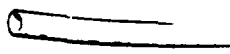

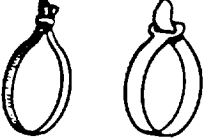


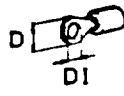
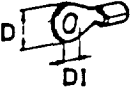
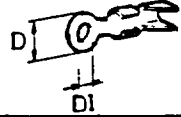
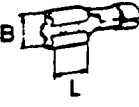
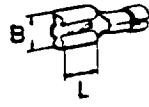
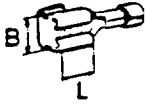
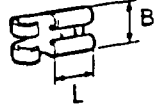
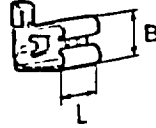




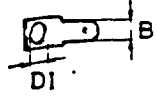


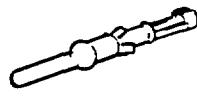
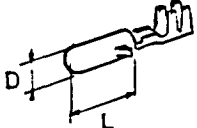
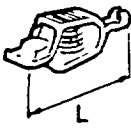

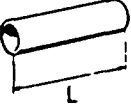




RECOMMENDED CRUISING SPEED 200 RPM  
 BELOW OBTAINED TOP SPEED  
 REGIME DE CROISIERE RECOMMANDE: 200 TR/MN  
 AU-DESSOUS DU REGIME MAXI ATTEINT.  
 VOLVO-PENTA

Sida Page	Grupp Group	Instrumenttavla med monteringsdetaljer			Instrument panel and installation components			Illustration	2160	
32	3	GEM						7699		
								1987-04		
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	838 926	858 036								
1	1	-	-	838926-4	Instrumenttavla.....	Instrument panel.....	7		12V	002C
	-	1	-	858036-7	Instrument tavla.....	Instrument panel.....	7		24V	0040
2	1	1	-	828588-4	Instrumentplåt.....	Instrument panel.....	7			0060
3	1	-	-	828601-5	Varvräknare.....	Tachometer.....	4		ERS AV 858558	0100
	1	-	-	858558-0	Varvräknaresats.....	Tachometer kit.....	4			0110
	-	1	-	838941-3	Varvräknare.....	Tachometer kit.....	4			0120
4	1	1	-	828558-7	Fästring.....	Attachment ring.....	5			0140
5	1	1	-	828559-5	Frontring.....	Front ring.....	4			0160
6	1	-	-	828612-2	Temperaturmatare ..	Temperature gauge.....	4			0180
	-	1	-	828613-0	Temperaturmatare ..	Temperature gauge.....	4			0200
7	3	3	-	828542-1	Frontring.....	Front ring.....	5			0200
8	1	-	-	828618-9	Oljetryckmätare ..	Oil pressure gauge.....	4			0260
	-	1	-	828619-7	Oljetryckmätare ..	Oil pressure gauge.....	4			0280
9	1	-	-	828628-8	Voltmeter ..	Voltmeter ..	4			0300
	-	1	-	828630-4	Voltmätare ..	Voltmeter ..	4			0320
10	4	4	-	808175-4	Lamphållare ..	Bulb holder.....	3			0380
11	4	-	-	19923-2	Glodlampa.....	Bulb.....	2			0400
	-	4	-	182059-6	Glodlampa.....	Bulb.....	2			0420
12	1	1	-	828778-1	Startlås ..	Ignition lock.....	4			0440
13	2	2	-	828676-7	Nyckel ..	Key.....	2			0460
14	1	1	-	1581184-7	Rundmutter ..	Nut ..	3			0480
15	1	1	-	828587-6	Larm ..	Alarm.....	4			0500
16	1	1	-	828584-3	Tryckströmbrytare ..	Switch.....	4		TESTALARM	0520
	1	1	-	828585-0	Tryckströmbrytare ..	Switch.....	4			0540
17	2	2	-	828586-8	Mutter ..	Nut ..	3			0560
18	1	1	-	828560-3	Skylt ..	Sign.....	5			0600
19	4	-	-	19923-2	Glodlampa.....	Bulb.....	2			0620
	-	4	-	828818-5	Glodlampa.....	Bulb.....	2			0640
20	1	1	-	828784-9	Reflektor.....	Reflector.....	4			0660
21	1	1	-	828783-1	Elektronikenhet ..	Electronic unit.....	5			0680
22	2	2	-	941615-7	Skruv ..	Screw ..	0			0700
23	2	2	-	941904-5	Bricka ..	Washer ..	0			0720
24	1	1	-	949947-6	Skruv ..	Screw ..	0			0740
25	1	1	-	941904-5	Bricka ..	Washer ..	0			0760
26	3	3	-	828803-7	Ring.....	Ring.....	4			0780
27	1	-	-	828646-0	Kabelsats ..	Cable unit ..	4			0800
	-	1	-	858035-9	Kabelstock ..	Cable unit ..	4			0820
28	4	4	-	828647-8	Skruv.....	Screw ..	4			0840
28a	-	3	-	1518870-9	Diod ..	Diode ..	4			0860
29	ERF	ERF	-	952629-4	Klammer ..	Clamp ..	0			0880
30	ERF	ERF	-	949947-6	Skruv ..	Screw ..	0			0900
31	ERF	ERF	-	846648-4	Kabelstock ..	Cable unit ..	4		L=3000MM	0920
	ERF	ERF	-	846649-2	Kabelstock ..	Cable unit ..	4		L=5000MM	0940
	ERF	ERF	-	846650-0	Kabelstock ..	Cable unit ..	4		L=7000MM	0960
32	ERF	ERF	-		Kablar och kabelskor ..	Cables and terminals ..			SE SIDA 34, 1-K11	0980







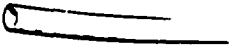

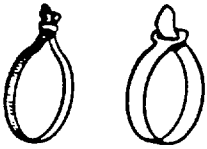



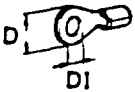
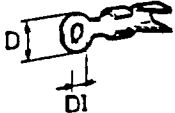
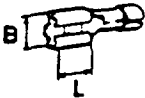

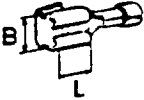
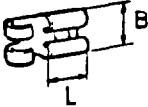
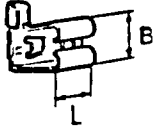



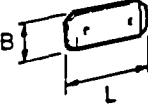
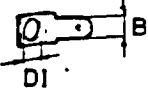



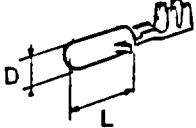


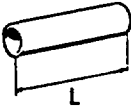




Sida Page	Grupp Group	Kablar och kabelskor			Cables and terminals			Illustration	2200		
34	3	GEM						7903 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	ERF	-	-	-	964131-7	Kabel ... ..	Cable .....	8		RK 0,75 KVMM	002
	ERF	-	-	-	964132-5	Kabel .....	Cable .....	8		BENVIT/SVART	0040
	ERF	-	-	-	964135-8	Kabel ... ..	Cable .....	8		RK 0,75 KVMM	0060
	ERF	-	-	-	964136-6	Kabel....	Cable .....	8		BENVIT/RÖD	0080
	ERF	-	-	-	954443-8	Kabel .....	Cable .....			RK 0,75 KVMM	0100
	ERF	-	-	-	954444-6	Kabel..	Cable .....			GRÖN/SVART	0120
	ERF	-	-	-	954445-3	Kabel .....	Cable .....			RK 0,75 KVMM	0140
	ERF	-	-	-	965754-5	Kabel .....	Cable .....			GRÖN/ROD	0160
	ERF	-	-	-	954446-1	Kabel .....	Cable .....			RK 1,5 KVMM,SVART	0180
	ERF	-	-	-	954447-9	Kabel .....	Cable .....			RK 1,5 KVMM,BRUN	0200
	ERF	-	-	-	954448-7	Kabel .....	Cable .....			RK 1,5 KVMM,ROD	0200
	ERF	-	-	-	954449-5	Kabel .....	Cable .....			RK 1,5 KVMM,PURPUR	0260
	ERF	-	-	-	954450-3	Kabel .....	Cable .....			RK 1,5 KVMM,GUL	0280
	ERF	-	-	-	961792-9	Kabel .....	Cable .....	8		RK 1,5 KVMM,GRÖN	0300
	ERF	-	-	-	961795-2	Kabel .....	Cable .....	8		RK 1,5 KVMM,GRÅ	0320
	ERF	-	-	-	961794-5	Kabel..	Cable .....	8		RK 1,5 KVMM,BENVIT	0380
	ERF	-	-	-	961798-6	Kabel .....	Cable .....			BENVIT/SVART	0400
	ERF	-	-	-	961800-0	Kabel .....	Cable .....			RK 1,5 KVMM	0400
	ERF	-	-	-	964142-4	Kabel .....	Cable .....			BENVIT/BLÅ	0420
	ERF	-	-	-	954451-1	Kabel .....	Cable .....			RK 1,5 KVMM	0440
	ERF	-	-	-	954452-9	Kabel .....	Cable .....			RK 1,5 KVMM	0460
	ERF	-	-	-	954453-7	Kabel .....	Cable .....			BENVIT/GRÖN	0480
	ERF	-	-	-	954455-2	Kabel .....	Cable .....			RK 1,5 KVMM	0500
	ERF	-	-	-	954456-0	Kabel .....	Cable .....			GRÖN/BLÅ	0500
	ERF	-	-	-	954458-6	Kabel .....	Cable .....			RK 1,5 KVMM	0500
	ERF	-	-	-	954461-0	Kabel .....	Cable .....			RK 1,5 KVMM	0500
	ERF	-	-	-	954464-4	Kabel .....	Cable .....			BLÅ/GUL	0500
	ERF	-	-	-	954465-1	Kabel .....	Cable .....			RK 1,5 KVMM	0500
	ERF	-	-	-	954463-6	Kabel .....	Cable .....			GRÖN/GUL	0580
	ERF	-	-	-	954467-7	Kabel .....	Cable .....	8		RK 2,5 KVMM,SVART	0600
	ERF	-	-	-	954469-3	Kabel .....	Cable .....			RK 2,5 KVMM,BRUN	0620
	ERF	-	-	-	954471-9	Kabel .....	Cable .....			RK 2,5 KVMM,RÖD	0640
	ERF	-	-	-	954485-9	Kabel .....	Cable .....			RK 2,5 KVMM,GRÖN	0660
	ERF	-	-	-	954500-5	Kabel .....	Cable .....			RK 2,5 KVMM,BLÅ	0680
	ERF	-	-	-	954502-1	Kabel .....	Cable .....			RK 2,5 KVMM,BENVIT	0700
2	ERF	-	-	-	842092-9	Fartygsledning	Ship cable .....			RK 4 KVMM,RÖD	0720
	ERF	-	-	-	846273-1	Fartygsledning	Ship cable .....			RK 4 KVMM,BLÅ	0740
	ERF	-	-	-	842093-7	Fartygsledning	Ship cable .....			RK 4 KVMM,GRÅ	0800
	ERF	-	-	-	843084-5	Fartygsledning	Ship cable .....			RK 6 KVMM,SVART	0820
	ERF	-	-	-	846639-3	Fartygsledning	Ship cable .....			RK 6 KVMM,ROD	0840
	ERF	-	-	-	842091-1	Fartygsledning	Ship cable .....			RK 6 KVMM,GRÖN	0840
	ERF	-	-	-	844578-5	Fartygsledning	Ship cable .....			RK 16 KVMM,ROD	0860
	ERF	-	-	-	842090-3	Fartygsledning	Ship cable .....			RK 25 KVMM,ROD	0860
	ERF	-	-	-	843085-2	Fartygsledning	Ship cable .....			RK 35 KVMM,ROD	0920
	ERF	-	-	-	846345-7	Fartygsledning	Ship cable .....			3X1,5 KVMM CLASS	0940
	ERF	-	-	-	846346-5	Fartygsledning	Ship cable .....			4X1,5 KVMM CLASS	0960
3	ERF	-	-	-	185501-4	Skyddshölje	Protecting cap .....	4		7X1,5 KVMM CLASS	0980
	ERF	-	-	-	949988-0	Slang	Hose .....	4		12X1,5 KVMM CLASS	0980
	ERF	-	-	-	185506-3	Skyddshölje	Protecting cap .....	4		16X1,5 KVMM CLASS	1000
	ERF	-	-	-	185507-1	Skyddshölje	Protecting cap .....	4		2X2,5 KVMM CLASS	1020
	ERF	-	-	-	185509-7	Skyddshölje	Protecting cap .....	4		4X2,5 KVMM CLASS	1040
	ERF	-	-	-						3X6 KVMM CLASS	1060
	ERF	-	-	-						3X16 KVMM CLASS	1060
	ERF	-	-	-						2X6+2X1,5 KVMM CLASS	1100
	ERF	-	-	-						2X16+2X1,5 KVMM CLASS	1120
	ERF	-	-	-						D=9MM,DI=8MM	1140
	ERF	-	-	-						D=11,5MM,DI=8MM	1160
	ERF	-	-	-						D=6MM,DI=5MM	1180
	ERF	-	-	-						D=11MM,DI=10MM	1200
	ERF	-	-	-						D=19MM,DI=15MM	1220

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Sida Page	Grupp Group	Kablar och kabelskor			Cables and terminals			Illustration	2200		
36	3	GEM						7903 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
4	ERF	-	-	-	899751-2	Kabelmärke ...	Terminal marking .....	3		419,420)	124
5	ERF	-	-	-	948210-0	Bandklämma .	Strip clamp .....	5		NYLON	1260
	ERF	-	-	-	335146-7	Buntband .	Clamping band .....	5		ALUMINIUM	1280
6	ERF	-	-	-	942659-4	Kopplingsplint.	Connector .....	4		397)	1300
	ERF	-	-	-	942660-2	Kopplingsplint	Connector .....	4		399)	1320
	ERF	-	-	-	942558-8	Kopplingsplint	Connector .....	4		400)	1340
	ERF	-	-	-	942661-0	Kopplingsplint	Connector ..	8		401)	1360
	ERF	-	-	-	942662-8	Kopplingsplint	Connector ..	8		403)	1380
7	ERF	-	-	-	182010-9	Kopplingsstycke...	Connector .....	4		395) MAX 15KVMM	1400
	ERF	-	-	-	190128-9	Kopplingsstycke..	Connector .....	4		398) MAX 15KVMM	1420
	ERF	-	-	-	926219-7	Kopplingsstycke	Connector ..	4		399)(182008)	'0
		-	-	-						MAX 20KVMM	,1
	ERF	-	-	-	941412-9	Kopplingsstycke	Connector .....	4		396) MAX 20KVMM	1460
8	ERF	-	-	-	956924-5	Kabelsko ...	Cable terminal ..	0		1) DI=3,7MM D=5,6MM	1480
	ERF	-	-	-	956927-8	Kabelsko ...	Cable terminal ..	0		3) DI=3,7MM D=17MM	1500
	ERF	-	-	-	956928-6	Kabelsko ...	Cable terminal .....	0		3) DI=4,3MM D=18MM	1520
9	ERF	-	-	-	881516-9	Kabelsko .	Cable terminal ..	3		1) DI=3,5MM D=5,5MM	'40
	ERF	-	-	-	881519-3	Kabelsko ..	Cable terminal .....	3		421) DI=3,7MM D=7,1MM	0
	ERF	-	-	-	949591-2	Kabelsko .	Cable terminal...	3		5) DI=4,3MM D=8MM	1580
	ERF	-	-	-	881492-3	Kabelsko ..	Cable terminal..	3		2) DI=4,3MM D=8,7MM	1600
	ERF	-	-	-	881506-0	Kabelsko ..	Cable terminal ..	3		4) DI=4,3MM D=9,5MM	1620
	ERF	-	-	-	881493-1	Kabelsko .	Cable terminal .	3		3) DI=5,2MM D=8,7MM	1640
	ERF	-	-	-	881495-6	Kabelsko ..	Cable terminal ..	3		4) DI=5,2MM D=9,5MM	1660
	ERF	-	-	-	958235-4	Kabelsko ...	Cable terminal ....	3		6)(881500)	1680
		-	-	-						DI=5,2MM D=15,9MM	1681
	ERF	-	-	-	958235-4	Kabelsko ..	Cable terminal .....	0		422) DI=5,2MM D=15,9MM	1700
	ERF	-	-	-	940335-3	Kabelsko ..	Cable terminal ..	0		423) DI=6,5MM D=16MM	17
	ERF	-	-	-	881508-6	Kabelsko .	Cable terminal ..	3		3) DI=6,7MM D=11,9MM	1740
	ERF	-	-	-	881496-4	Kabelsko ..	Cable terminal .....	3		4) DI=6,7MM D=12,7MM	1760
	ERF	-	-	-	940335-3	Kabelsko ..	Cable terminal .....	3		6)(881501)	1780
		-	-	-						DI=6,7MM D=15,9MM	1781
	ERF	-	-	-	881494-9	Kabelsko ..	Cable terminal..	3		3) DI=8,3MM D=11,9MM	1800
	ERF	-	-	-	881497-2	Kabelsko .	Cable terminal..	3		4) DI=8,3MM D=12,7MM	1820
	ERF	-	-	-	940333-8	Kabelsko ..	Cable terminal ..	0		5) DI=8,3MM D=15,1MM	1840
	ERF	-	-	-	881502-9	Kabelsko ..	Cable terminal .....	8		6) DI=8,3MM D=15,9MM	1860
	ERF	-	-	-	940336-1	Kabelsko ..	Cable terminal .....	0		423) DI=8,4MM D=16MM	1880
	ERF	-	-	-	940336-1	Kabelsko ..	Cable terminal .....	0		5) DI=10,5MM D=15,1MM	1900
	ERF	-	-	-	881498-0	Kabelsko ..	Cable terminal...	3		4) DI=10,5MM D=15,4MM	'0
	ERF	-	-	-	940337-9	Kabelsko ..	Cable terminal ..	3		6) DI=10,5MM D=15,9MM	40
10	ERF	-	-	-	11426-4	Kabelsko .	Cable terminal ..	3		424) DI=4,5MM D=8MM	1960
11	ERF	-	-	-	949404-8	Kabelsko ..	Cable terminal ..	0		420) L=6,4MM B=5,6MM	1980





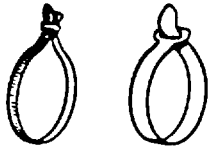


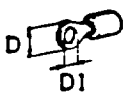
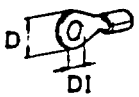
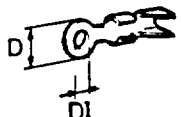
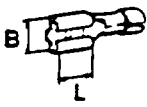
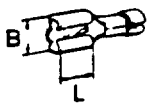
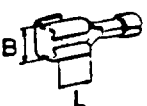
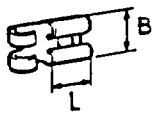
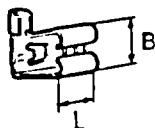

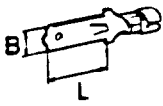
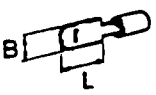
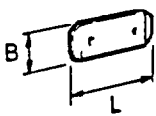
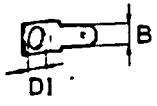


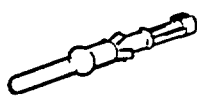
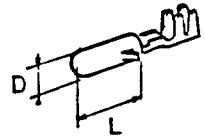
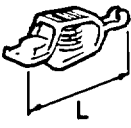

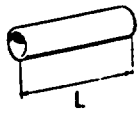




1. For kabelarea 0,5-1,5 kvmm. For cable area 0,5-1,5 sqmm.
  2. För kabelarea 0,75-2,0 kvmm For cable area 0,75-2,0 sqmm.
  3. For kabelarea 1,5-2,5 kvmm. For cable area 1,5-2,5 sqmm.
  4. For kabelarea 3,0-6,0 kvmm. For cable area 3,0-6,0 sqmm
  5. For kabelarea 6,5-10,5 kvmm. For cable area 6,5-10,5 sqmm.
  6. For kabelarea 10,5-16,0 kvmm. For cable area 10,5-16,0 sqmm.
395. 2-Polig. 2-Way
  396. 3-Polig. 3-Way.
  397. 4-Polig. 4-Way.
  398. 5-Polig. 5-Way.
  399. 6-Polig. 6-Way.
  400. 8-Polig. 8-Way.
  401. 10-Polig. 10-Way.
  403. 12-Polig. 12-Way.
  419. För jordledning For ground wire
  420. För kabelarea 1-2,5 kvmm For cable area 1-2,5 sqmm
  421. For kabelarea 2,7-6,6 kvmm For cable area 2,7-6,6 sqmm
  422. For kabelarea 10,5-16,5 kvmm For cable area 10,5-16,5 sqmm
  423. For kabelarea 16 kvmm For cable area 16 sqmm
  424. For kabelarea 0,75-2,5 kvmm For cable area 0,75-2,5 sqmm

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Sida Page	Grupp Group	Kablar och kabelskor				Cables and terminals				Illustration	
38	3	GEM								7903 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
12	ERF	-	-	-	949210-9	Kabelsko . . . . .	Cable terminal . . . . .	0	425) L=7,4MM B=6,5MM	201	
	ERF	-	-	-	881483-2	Kabelsko . . . . .	Cable terminal . . . . .	3	3) L=7,7MM B=7,6MM	202	
	ERF	-	-	-	881484-0	Kabelsko . . . . .	Cable terminal . . . . .	3	4) L=7,7MM B=7,6MM	2040	
	ERF	-	-	-	949204-2	Kabelsko . . . . .	Cable terminal . . . . .	8	420) L=7,7MM B=7,4MM	2060	
13	ERF	-	-	-	881485-7	Kabelsko . . . . .	Cable terminal . . . . .	3	3) L=7,7MM B=7,6MM	2080	
	ERF	-	-	-	881486-5	Kabelsko . . . . .	Cable terminal . . . . .	3	4) L=7,7MM B=7,6MM	2100	
	ERF	-	-	-	941730-4	Kabelsko . . . . .	Cable terminal . . . . .	0	3) L=7,7MM B=6,4MM	2120	
	ERF	-	-	-	881491-5	Kabelsko . . . . .	Cable terminal . . . . .	3	3) L=7,7MM B=7,6MM	2140	
14	ERF	-	-	-	881517-7	Kabelsko . . . . .	Cable terminal . . . . .	8	1) L=6,2MM B=5,6MM	2160	
	ERF	-	-	-	881489-9	Kabelsko . . . . .	Cable terminal . . . . .	3	420) L=7,6MM B=7,6MM	2180	
16	ERF	-	-	-	881511-0	Kabelsko . . . . .	Cable terminal . . . . .	3	4) DI=4,4MM D=8MM	2200	
	ERF	-	-	-	881509-4	Kabelsko . . . . .	Cable terminal . . . . .	3	3) DI=4,4MM D=9,8MM	2200	
	ERF	-	-	-	881505-2	Kabelsko . . . . .	Cable terminal . . . . .	3	3) DI=5,2MM D=8,7MM	2240	
	ERF	-	-	-	943799-7	Kabelsko . . . . .	Cable terminal . . . . .	8	7) L=8MM B=6,3MM	2260	
18	ERF	-	-	-	881487-3	Kabelsko . . . . .	Cable terminal . . . . .	3	3) L=15,7MM B=6,3MM	2280	
	ERF	-	-	-	881488-1	Kabelsko . . . . .	Cable terminal . . . . .	3	4) L=15,7MM B=6,3MM	2300	
	ERF	-	-	-	881518-5	Kabelsko . . . . .	Cable terminal . . . . .	3	3) L=10MM B=6,3MM	2320	
	ERF	-	-	-	839328-2	Flatstift . . . . .	Flat pin . . . . .	3	L=16,3MM B=6,3MM	2300	
20	ERF	-	-	-	941449-1	Flatstift . . . . .	Flat pin . . . . .	8	DI=3,7MM B=6,3MM 90	2360	
	ERF	-	-	-	941090-3	Flatstift . . . . .	Flat pin . . . . .	0	DI=4,1MM B=6,3MM	2380	
	ERF	-	-	-	944485-2	Flatstift . . . . .	Flat pin . . . . .	0	RAK/STRAIGHT	2400	
	ERF	-	-	-	944485-2	Flatstift . . . . .	Flat pin . . . . .	0	DI=5,2MM B=6,3MM	2420	
21	ERF	-	-	-	942888-9	Flatstift . . . . .	Flat pin . . . . .	0	DI=5,2MM B=6,3MM 45	2460	
	ERF	-	-	-	829311-0	Flatstift . . . . .	Flat pin . . . . .	3	DI=5,2MM B=6,35MM 45	2480	
	ERF	-	-	-	942429-2	Kabelsko . . . . .	Cable terminal . . . . .	3	3) DI=1,8MM L=14,4MM	2500	
	ERF	-	-	-	847041-1	Hylsa . . . . .	Sleeve . . . . .	3	FOR/FOR 846612	2500	
23	ERF	-	-	-	847040-3	Stift . . . . .	Pin . . . . .	3	FOR/FOR 846647	2500	
	ERF	-	-	-	849958-4	Kabelsko . . . . .	Cable unit . . . . .	3	ERS AV 849958	2540	
	ERF	-	-	-	948291-0	Kabelsko . . . . .	Cable terminal . . . . .	0	426) D=3,56MM L=12,5MM	2560	
	ERF	-	-	-	948291-0	Kabelsko . . . . .	Cable terminal . . . . .	0	ERS AV 965824	2561	
25	ERF	-	-	-	965824-6	Kabelsko . . . . .	Cable unit . . . . .	0	FOR/FOR 1608765	2570	
	ERF	-	-	-	844280-8	Kabelsko . . . . .	Cable terminal . . . . .	3	L=61MM	2580	
26	ERF	-	-	-	954505-4	Batteriledningssko . . . . .	Battery cable terminal . . . . .	0	MÄRKT/MARKED-	2600	
	ERF	-	-	-	954506-2	Batteriledningssko . . . . .	Battery cable terminal . . . . .	0	MÄRKT/MARKED +	2620	
27	ERF	-	-	-	956956-7	Ledningshylsa . . . . .	Butt connector . . . . .	0	1) L=26MM	2640	
	ERF	-	-	-	956958-3	Skarvhylsa . . . . .	Butt connector . . . . .	0	3) L=26MM	2660	
	ERF	-	-	-	956960-9	Skarvhylsa . . . . .	Butt connector . . . . .	0	4) L=28MM	2680	
	ERF	-	-	-	944221-1	Skyddshylsa . . . . .	Protecting sleeve . . . . .	0	FÖR/FOR 881489	2700	
29	ERF	-	-	-	858283-5	Elektrotejp . . . . .	Electro tape . . . . .	3		2720	
	ERF	-	-	-	949371-9	Kabelsko . . . . .	Cable terminal . . . . .	0	FOR/FOR 1598753	2740	
31	ERF	-	-	-	944306-0	Skarvhylsa . . . . .	Joint . . . . .	0		2760	

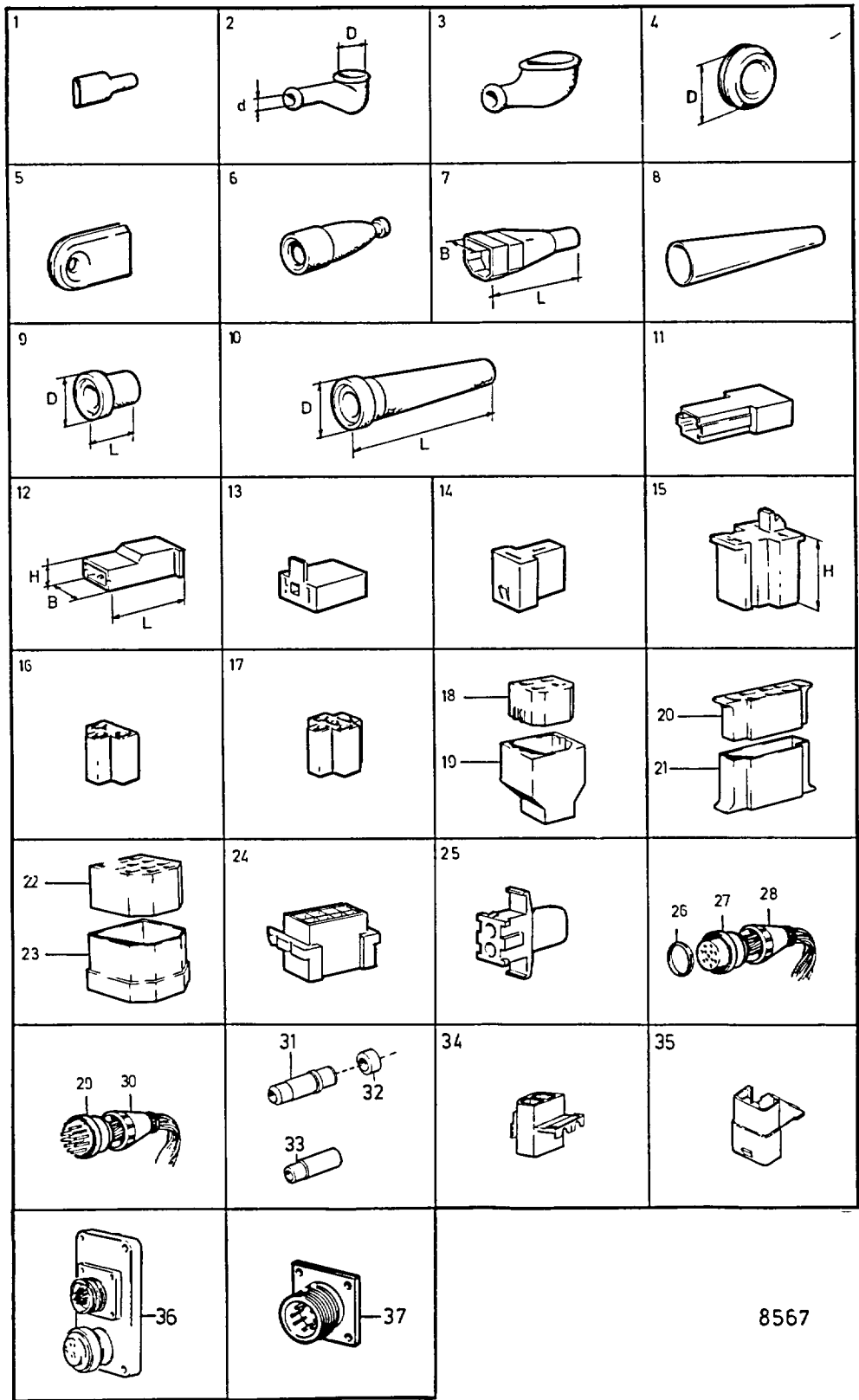
- 1. For kabelarea 0,5-1,5 kvmm. For cable area 0,5-1,5 sqmm.
- 3. For kabelarea 1,5-2,5 kvmm. For cable area 1,5-2,5 sqmm.
- 4. For kabelarea 3,0-6,0 kvmm. For cable area 3,0-6,0 sqmm.
- 7. For kabelarea 16 kvmm. For cable area 16 sqmm.
- 420. For kabelarea 1-2,5 kvmm. For cable area 1-2,5 sqmm.
- 425. For kabelarea 0,75-1 kvmm. For cable area 0,75-1 sqmm.
- 426. For kabelarea 2,5-4,5 kvmm. For cable area 2,5-4,5 sqmm.

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Sida Page	Grupp Group	Elmateriel			Electrical materials			Illustration	2201		
40	3	GEM						8567			
								1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	ERF	-	-	-	959046-4	Skyddshylsa..	Protecting sleeve ..	5		DI=9MM	00.
2	ERF	-	-	-	855281-2	Gummihatt....	Rubber cap .....	5		(841234) D=16MM D=14MM	004. 0060
	ERF	-	-	-	829200-5	Skyddshatt..	Cap .....	5		D=16MM D=6MM	0080
	ERF	-	-	-	76614-7	Gummikrage..	Rubber collar .....	4			0100
3	ERF	-	-	-	673580-7	Gummikrage..	Rubber collar .....	4			0120
4	ERF	-	-	-	941269-3	Kabelgenomföring.	Cable grommet.....	4		D=25MM	0140
	ERF	-	-	-	821053-6	Gummibussning ..	Rubber bushing.....	4		D=35MM	0160
5	ERF	-	-	-	823759-6	Kabelgenomföring.	Cable grommet.....	4			0180
6	ERF	-	-	-	1576005-1	Gummikåpa .....	Rubber casing .....	5			0200
	ERF	-	-	-	1573077-3	Gummikåpa .....	Rubber casing.....	5			0220
7	ERF	-	-	-	831966-7	Skyddshatt .....	Cap .....	4		L=88MM B=32,5MM	0
8	ERF	-	-	-	844278-2	Isoleringsshuv ..	Insulating case .....	4		SVART, FOR/FOR(844280)	0260
	ERF	-	-	-	844279-0	Isoleringsshuv ..	Insulating case .....	4		RÖD, FÖR/FOR(844280)	0280
9	ERF	-	-	-	847005-6	Tätningsskrage..	Sealing boot .....	4		L=4,6MM D=3,0MM	0300
10	ERF	-	-	-	847005-6	Krage .....	Collar .....	4		L=100MM D=20MM	0320
11	ERF	-	-	-	958207-3	Stiftisolator .....	Tab housing .....	4		394)FOR/FOR958208	0340
12	ERF	-	-	-	947848-8	Hylsisolator .....	Receptacle housing .....	0		394)L=20MM H=6MM B=7,8MM	0360
	ERF	-	-	-	949181-2	Hylsisolator .....	Receptacle housing .....	0		394)L=24MM H=7MM B=10,2MM	0400 0420
	ERF	-	-	-	958208-1	Hylsisolator .....	Receptacle housing .....	0		394)FÖR/FOR958207 L=24MM H=8,2MM B=10MM	0440 0460
	ERF	-	-	-	949597-9	Hylsisolator .....	Receptacle housing .....	0		394)L=24,5MM H=6,1MM B=8,8MM	0480 0500
13	ERF	-	-	-	1578937-3	Hylsisolator .....	Receptacle housing .....	4		427)	0520
14	ERF	-	-	-	958210-7	Hylsisolator .....	Receptacle housing .....	0		427)	0540
15	ERF	-	-	-	945469-5	Hylsisolator .....	Receptacle housing .....	0		396)L=23MM	0560
	ERF	-	-	-	963374-4	Hylsisolator .....	Receptacle housing .....	0		396)L=24MM FÖR/FOR881485	0600
16	ERF	-	-	-	948854-5	Hylsisolator .....	Receptacle housing .....	8		396)	0620
17	ERF	-	-	-	1214948-0	Hylsisolator .....	Insulator .....	5		398)	0640
18	ERF	-	-	-	958213-1	Hylsisolator .....	Receptacle housing .....	0		397)	0660
19	ERF	-	-	-	958212-3	Stiftisolator .....	Tab housing .....	0		397)	0680
20	ERF	-	-	-	941104-2	Hylsisolator .....	Receptacle housing .....	0		400)	0700
21	ERF	-	-	-	941105-9	Stiftisolator .....	Tab housing .....	0		400)	0720
22	ERF	-	-	-	945830-8	Hylsisolator .....	Receptacle housing .....	0		402)	0740
23	ERF	-	-	-	945831-6	Stiftisolator .....	Tab housing .....	0		402)	0760
24	ERF	-	-	-	944077-7	Stiftisolator .....	Tab housing .....	0		400)	0780
25	ERF	-	-	-	948995-6	Stiftisolator .....	Pin insulator .....	0		395)	0800
26	ERF	-	-	-	846615-3	Tätningssring .....	Seal ring .....	4			0820
27	ERF	-	-	-	846612-0	Hylskontakt .....	Connector sleeve .....	4		428)	0840
28	ERF	-	-	-	846613-8	Kabelavlastning .....	Cable grommet .....	4			0860
29	ERF	-	-	-	846647-6	Stiftkontakt .....	Connector pin .....	4		428)	0880
30	ERF	-	-	-	846613-8	Kabelavlastning .....	Cable grommet .....	4			0900
31	ERF	-	-	-	1608765-2	Isolering .....	Insulator .....	2		FÖR/FOR965824	0920
32	ERF	-	-	-	1608766-0	Tätning .....	Seal .....	2		FÖR/FOR1608765	0940
33	ERF	-	-	-	1598753-0	Isolering .....	Insulator .....	2		FOR/FOR949371	0960
34	ERF	-	-	-	1307048-7	Hylsisolator .....	Receptacle housing .....	0			0980
35	ERF	-	-	-	1307049-5	Stiftisolator .....	Pin insulator .....	0			1000
36	ERF	-	-	-	828826-8	T-koppling .....	T-coupling .....	3			1020
37	ERF	-	-	-	846611-2	Hylskontakt .....	Connector sleeve .....	4			1040

- 394 . 1-Polig. 1-Way.
- 395 . 2-Polig. 2-Way.
- 396 . 3-Polig. 3-Way.
- 397 . 4-Polig. 4-Way.
- 398 . 5-Polig. 5-Way.
- 400 . 8-Polig. 8-Way.
- 402 . 11-Polig. 11-Way.
- 427 . 2-polig 2-way
- 428 . 16-polig 16-way





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# **VOLVO PENTA**

Originaldelar · Genuine Parts  
Originalteile · Pièces d'origine

0001

Innehållsförteckning	Index	Grupp Group	Sida Page
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Anslutningsdetaljer för Kraftöverföring

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Anslutningsdetaljer backslag MS3B, MS3C. ....	TMD40A, MD40A . . . . .	12	2-A13
Anslutningsdetaljer backslag MS3B, MS3C. ....	TMD40B, TMD40C . . . . .	14	2-A15
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Anslutningsdetaljer 280DP. . . . .	AQAD40B . . . . .	24	2-B01
Anslutningsdetaljer 280DP med power trim . . . . .	AQAD40B . . . . .	28	2-B05
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Anslutningsdetaljer AQ drev 280 med power trim . . . . .	AQD40A, AQAD40A, AQAD40B . . . . .	36	2-B13
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Kommersiell drift anslutningsdetaljer, STD . . . . .	AQAD40B . . . . .	48	2-C01
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Connecting components for Power transmission

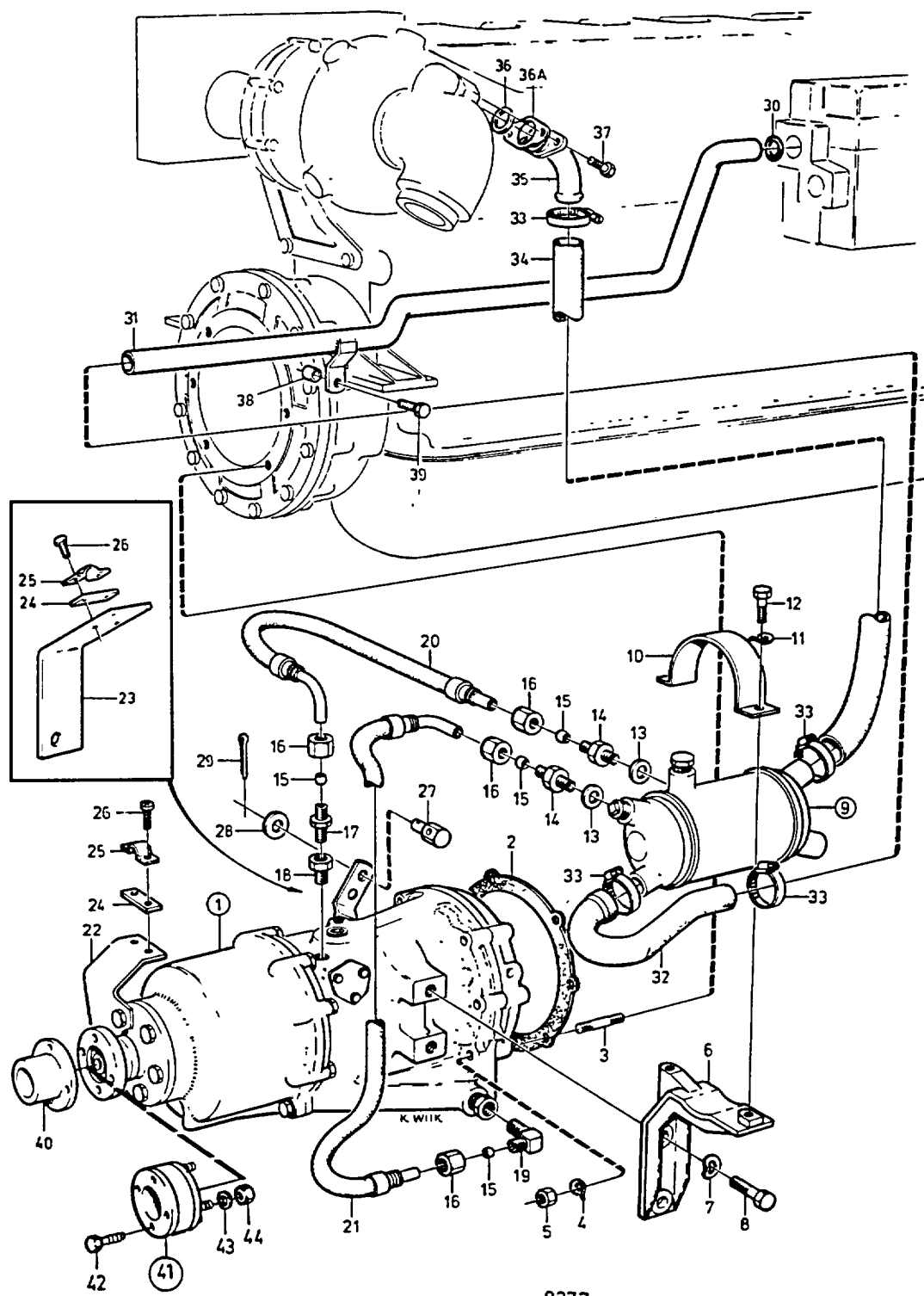
Page Grid

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Connecting components reverse gear MS3B, MS3C. ....	TMD40A, MD40A . . . . .	12	2-A13
Connecting components reverse gear MS3B, MS3C. ....	TMD40B, TMD40C . . . . .	14	2-A15
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Connecting components AQ drive unit 280 . . . . .	AQD40A, AQAD40A, AQAD40B . . . . .	32	2-B09
Connecting components AQ drive unit 280 with . . . . .	AQD40A, AQAD40A, AQAD40B . . . . .	36	2-B13
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Commercial use connecting components, STD . . . . .	AQAD40B . . . . .	48	2-C01
Commercial use connecting components, Cardanshaft. . . . .	AQAD40B . . . . .	50	2-C03



Sida Page	Grupp Group	Anslutningsdetaljer backslag Borg Warner				Connecting components reverse gear Borg Warner				Illustration 8277	0400
2	4a	TMD40A, MD40A								1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
	TMD 40A	MD 40A									
1	1	1	-	-	829457-1	Backslag utv 1,91:1. ...	Rev. gear ratio 1,91:1.	8		3,6) BW AS1-71CR	00
	1	1	-	-	834707-2	Backslag utv 1,91:1. ...	Rev. gear ratio 1,91:1.	8		7) BW AS1-71CR	004.
	1	1	-	-	829458-9	Backslag utv 2,1:1. ...	Rev. gear ratio 2,1:1.	8		4,6) BW AS3-71CR	0060
	1	1	-	-	834708-0	Backslag utv 2,1:1. ...	Rev. gear ratio 2,1:1.	8		7) BW AS3-71CR	0080
	1	1	-	-	829459-7	Backslag utv 2,91:1. ...	Rev. gear ratio 2,91:1.	8		5,7,10) BW AS15-71CR	0100
	1	1	-	-	834709-8	Backslag utv 2,91:1. ...	Rev. gear ratio 2,91:1.	8		7,11) BW AS15-71CR	0120
	ERF	ERF	-	-		detaljer ej spec	components not spec	8			0140
2	1	1	-	-	803921-6	Packning ...	Gasket ...	8			0160
3	6	6	-	-	953081-7	Pinnskruv ...	Stud bolt ...	0			0180
4	6	6	-	-	941908-6	Fjäderbricka ...	Washer ...	0			0200
5	6	6	-	-	955783-6	Mutter ...	Nut ...	0			0220
6	1	1	-	-	842998-7	Konsol ...	Bracket ...	6			0240
7	2	2	-	-	941909-4	Fjäderbricka ...	Washer ...	0			0260
8	2	2	-	-	955548-3	Skruv ...	Screw ...	0			0280
9	1	1	-	-	842240-4	Oljekylare ...	Oil cooler ...	5			0300
	-	-	-	-		.Det se sida 8, 2-A09.	.Comp page 8, 2-A09				0320
10	1	1	-	-	842244-6	Band ...	Strip ...	5			0340
11	2	2	-	-	941907-8	Bricka ...	Washer ...	0			0360
12	2	2	-	-	955295-1	Skruv ...	Screw ...	0			0380
13	2	2	-	-	957184-5	Packning ...	Gasket ...	0			0400
14	2	2	-	-	396033-3	Nippel ...	Nipple ...	3			0420
15	4	4	-	-	956970-8	Skarring ...	Ring ...	1			0440
16	4	4	-	-	956984-9	Mutter ...	Nut ...	0			0460
17	1	1	-	-	941750-2	Nippel ...	Nipple ...	0			0480
18	1	1	-	-	804533-8	Forlångningsnippel	Extension nipple	3			0500
19	1	1	-	-	941757-7	Nippel ...	Nipple ...	0			0520
	1	1	-	-	941750-2	Nippel ...	Nipple ...	0	12)		0540
20	1	1	-	-	829259-1	Slang ...	Hose ...	3	L=360MM		0560
21	1	1	-	-	829259-1	Slang ...	Hose ...	3	12) L=360MM MO-1039		0580
	1	1	-	-	829260-9	Slang ...	Hose ...	3	L=500 MO1040-		0600
22	1	1	-	-		Konsol ...	Bracket ...		TID UTF ERS AV 844359		0620
23	1	1	-	-	844359-0	Reglagekonsol ...	Bracket ...	6	SEN UTF		0640
24	1	1	-	-	819068-8	Bricka ...	Washer ...	5			0660
25	1	1	-	-	819067-0	Klamma ...	Clamp ...	5			0680
26	2	2	-	-	950021-6	Skruv ...	Screw ...	0			0700
27	1	1	-	-	813674-9	Reglagetärning	Cube ...	3			0720
28	2	2	-	-	940191-0	Bricka ...	Washer ...	0			0740
29	1	1	-	-	907834-6	Saxpinne ...	Cotter ...	0	(17276)		0760
30	1	1	-	-	949658-9	O-ring ...	O-ring ...	S	SE GRUPP 2B		0780
31	1	1	-	-	843269-2	Kylvattenror ...	Cooling water pipe	6			0800
32	1	1	-	-	843438-3	Kylvattenslang ...	Cooling water hose	2			0820
33	4	4	-	-	943475-4	Slangklammer ...	Clamp ...	0			0840
34	1	-	-	-	843270-0	Kylvattenslang ...	Cooling water hose	2			0860
	-	1	-	-	844257-6	Kylvattenslang ...	Cooling water house	2			0880
35	1	-	-	-	843333-6	Kylvattenror ...	Cooling water pipe	2	MO-20552		0900
	1	-	-	-	845791-3	Kylvattenror ...	Cooling water pipe	2	MO20553-		0920
	-	1	-	-	844258-4	Kylvattenror ...	Cooling water pipe	2			0940
36	1	-	-	-	842913-6	Tätningarring ...	Seal ring	S	MO-20552 SE GRUPP 2B		0960
	-	1	-	-	842913-6	Tätningarring ...	Seal ring	S	SE GRUPP 2B		0980
36a	1	-	-	-	845527-1	Packning ...	Gasket ...	S	MO20553- SE GRUPP 2B		0990
37	-	2	-	-	955271-2	Skruv ...	Screw ...	0			0970
	2	-	-	-	955271-2	Skruv ...	Screw ...	0	MO-20552		0990
	2	-	-	-	946730-9	Skruv ...	Screw ...	0	MO20553-		0975

3. Ersatt av backslag 834707, flans 819105. Replaced by reverse gear 834707, flange 819105.
4. Ersatt av backslag 834708, flans 819105. Replaced by reverse gear 834708, flange 819105.
5. Ersatt av backslag 834709. Replaced by reverse gear 834709.
6. 4" propelleraxelflans. 4" propeller shaft flange.
7. 5" propelleraxelflans. 5" propeller shaft flange.
10. Spec 867376 MO-1436. - Spec 867379 MO-2207. Spec 867376 MO-1436 - Spec 867379 MO-2207.
11. Spec 867376 MO1437-. - Spec 867379 MO2208-. Spec 867376 MO1437-. - Spec 867379 MO2208-.
12. För backslag 829458. For reverse gear 829458.



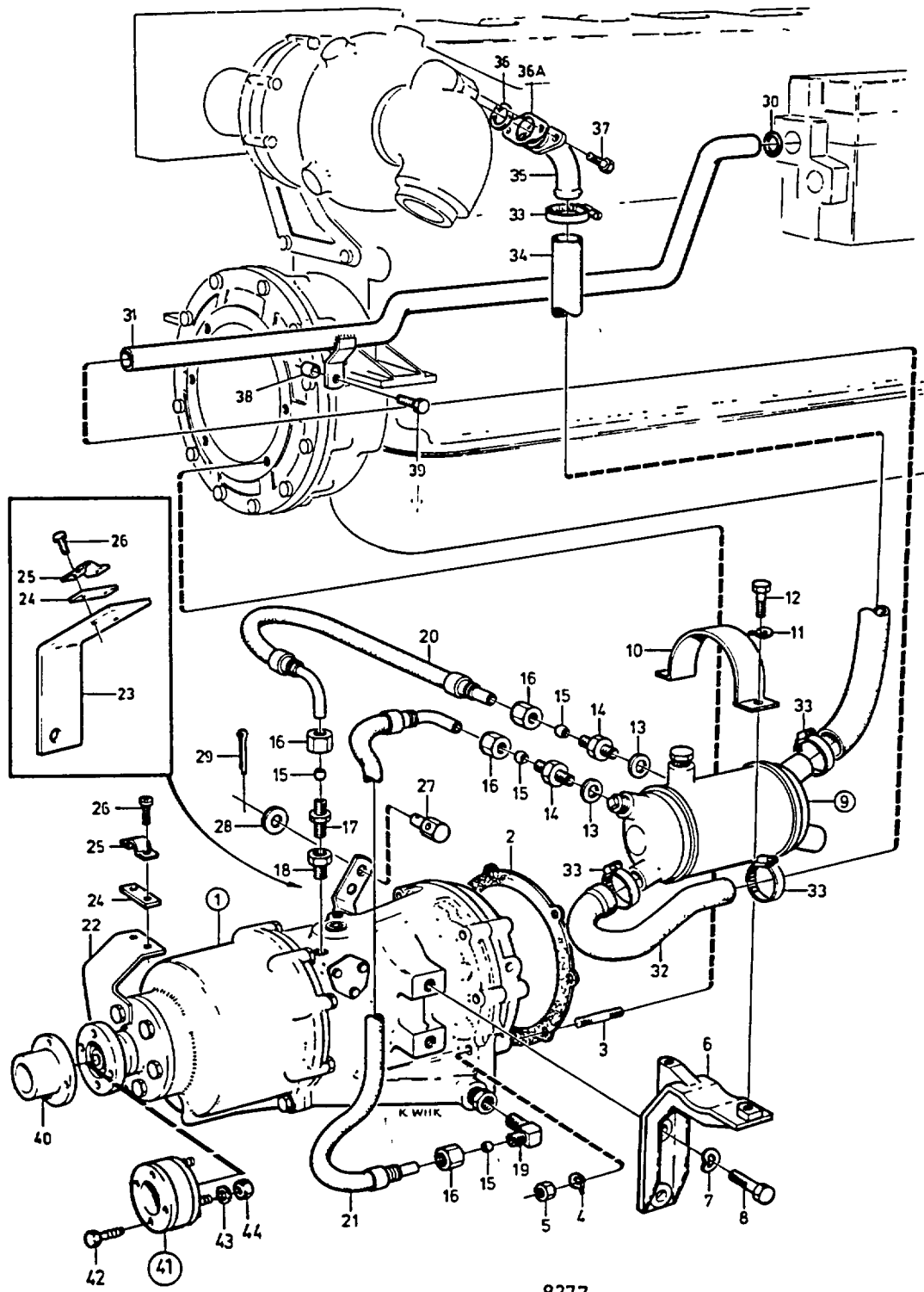
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Reservdelskatalog  
Parts Catalogue

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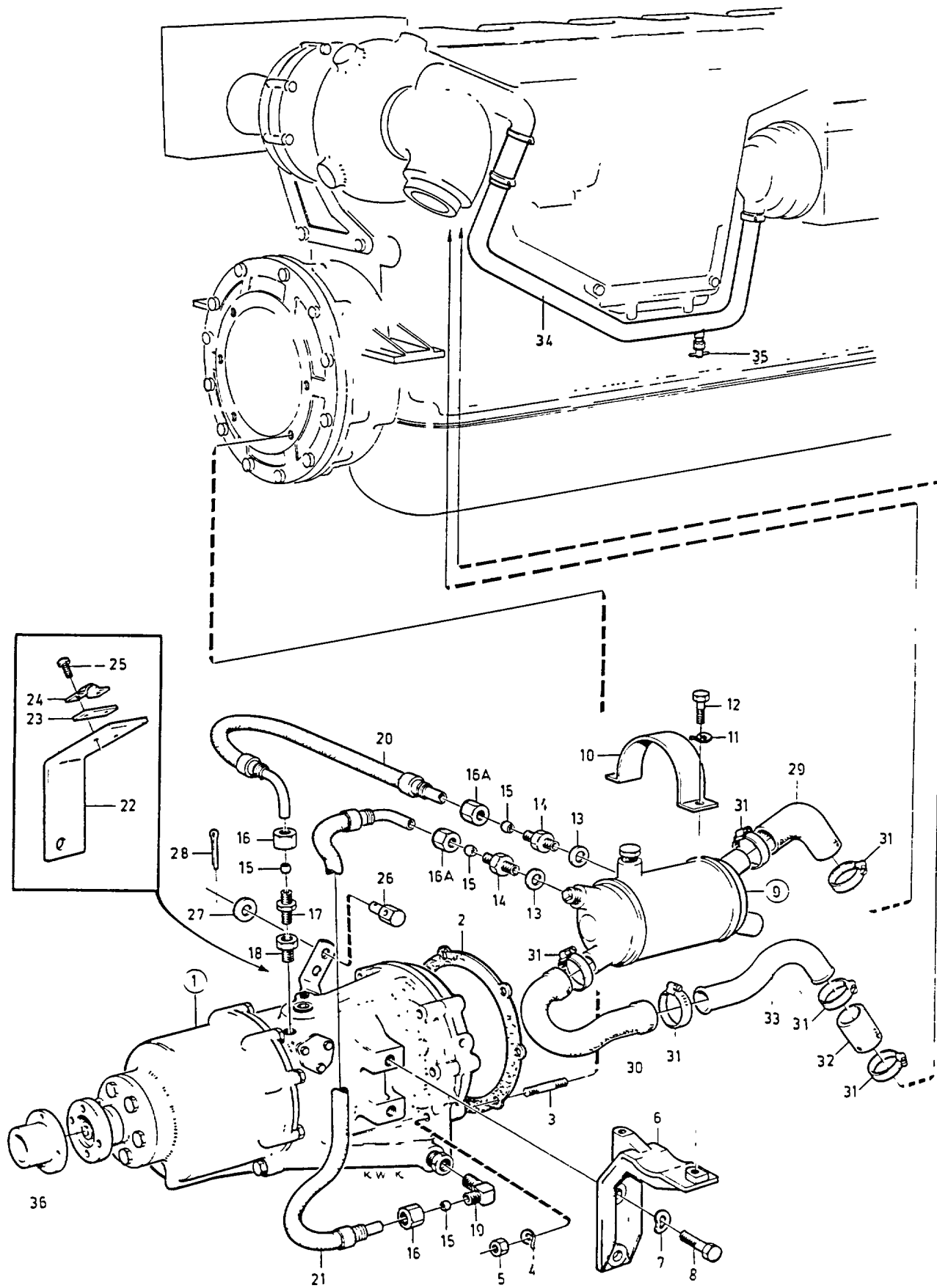
**VOLVO  
PENTA**

Sida Page	Grupp Group	Anslutningsdetaljer backslag Borg Warner TMD40A, MD40A				Connecting components reverse gear Borg Warner				Illustration 8277 1987-04	0400
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
	TMD 40A	MD 40A									
38	1	1	-	-	843122-3	Distanshylsa .....	Spacer sleeve .....	4		SE GRUPP 2A	09
39	1	1	-	-	955342-1	Skruv.....	Screw .....	0		SE GRUPP 2A	1000
40	1	1	-	-		Propelleraxelfläns...	Propeller shaft flange .....			SE GRUPP 9	1020
	ERF	ERF	-	-		Klämkopplingsfläns.....	Coupling flange .....			SE GRUPP 9	1040
41	ERF	-	-	-	828831-8	Propelleraxelkoppl.....	Propellershaftcoupl.....	5			1060
42	4	-	-	-	959241-1	Skruv..	Screw ..	0			1080
43	4	-	-	-	941909-4	Fjädrande bricka.....	Resilient washer .....	0			1100
44	4	-	-	-	955849-5	Mutter..	Nut .....				1120



8277

Sida Page	Grupp Group	Anslutningsdetaljer backslag Borg Warner TAMD40A			Connecting components reverse gear Borg Warner			Illustration 5953 1987-04	0425	
Pos Fig	Antal/Quantity			Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	834707-2	Backslag utv 1,91:1	Rev. gear ratio 1,91:1	8	7)BW AS1-71CR	0021
	1	-	-	-	834708-0	Backslag utv 2,1:1	Rev. gear ratio 2,1:1	8	7)BW AS3-71CR	0046
	1	-	-	-	834709-8	Backslag utv 2,91:1 detaljer ej spec	Rev. gear ratio 2,91:1 components not spec	8	7)BW AS15-71CR	0060
	ERF	-	-	-				8		0080
2	1	-	-	-	803921-6	Packning	Gasket	8		0100
3	6	-	-	-	953081-7	Pinnskruv	Stud bolt	0		0120
4	6	-	-	-	941908-6	Fjadrande bricka	Resilient washer	0		0140
5	6	-	-	-	955783-6	Mutter	Nut	0		0160
6	1	-	-	-	842998-7	Konsol	Bracket	6		0180
7	2	-	-	-	941909-4	Fjadrande bricka	Resilient washer	0		0200
8	2	-	-	-	955548-3	Skruv	Screw	0		?
9	1	-	-	-	842240-4	Oljekylare Det se sida 8, 2-A09	Oil cooler Comp page 8, 2-A09	5		?
10	1	-	-	-	842244-6	Band	Strip	5		0260
11	2	-	-	-	941907-8	Fjadrande bricka	Resilient washer	0		0280
12	2	-	-	-	955295-1	Skruv	Screw	0		0300
13	2	-	-	-	957184-5	Kopparbricka	Copper washer	0		0320
14	2	-	-	-	943755-9	Forskruvning	Screw union	3		?
15	4	-	-	-	956970-8	Skarring	Shear ring	1		?
16	2	-	-	-	956984-9	Mutter	Nut	0		0380
16a	2	-	-	-	941331-1	Mutter	Nut	0		0400
17	1	-	-	-	941750-2	Nippel	Nipple	0		0420
18	1	-	-	-	804533-8	Forlångningsnippel	Extension nipple	3		0440
19	1	-	-	-	941757-7	Vinkelnippel	Elbow nipple	0	ALT	0460
	1	-	-	-	941750-2	Nippel	Nipple	0	ALT	0480
20	1	-	-	-	829259-1	Slang	Hose	3	L=360MM	0500
21	1	-	-	-	829260-9	Slang	Hose	3	L=500MM	0520
22	1	-	-	-	844359-0	Reglagekonsol	Bracket	6		054
23	1	-	-	-	819068-8	Bricka	Washer	5		056
24	1	-	-	-	819067-0	Bygel	Brace	5		0580
25	2	-	-	-	950021-6	Skruv	Screw	0		0600
26	1	-	-	-	813674-9	Reglagetarning	Cube	3		0620
27	1	-	-	-	940191-0	Bricka	Washer	0		0640
28	1	-	-	-	907834-6	Saxpinne	Cotter pin	0	(17276)	0660
29	1	-	-	-	829053-8	Gummikrok	Rubber bend	3		0680
30	1	-	-	-	843438-3	Kylvattenslang	Cooling water hose	2		0700
31	6	-	-	-	943475-4	Slangklamma	Hose clamp	0		0720
32	ERF	-	-	-	941799-9	Slang	Hose	0	L=65MM	0740
33	1	-	-	-	845848-1	Ror	Pipe	3		?
34	1	-	-	-	858039-1	Ror	Pipe	4	SE GRUPP 2B	0800
35	1	-	-	-	82745-1	Kran	Cock	2		0820
36	1	-	-	-		Propelleraxelflans	Propeller shaft flange		SE GRUPP 9	0840
	ERF	-	-	-		Klamkopplingsflans	Coupling flange		SE GRUPP 9	0860

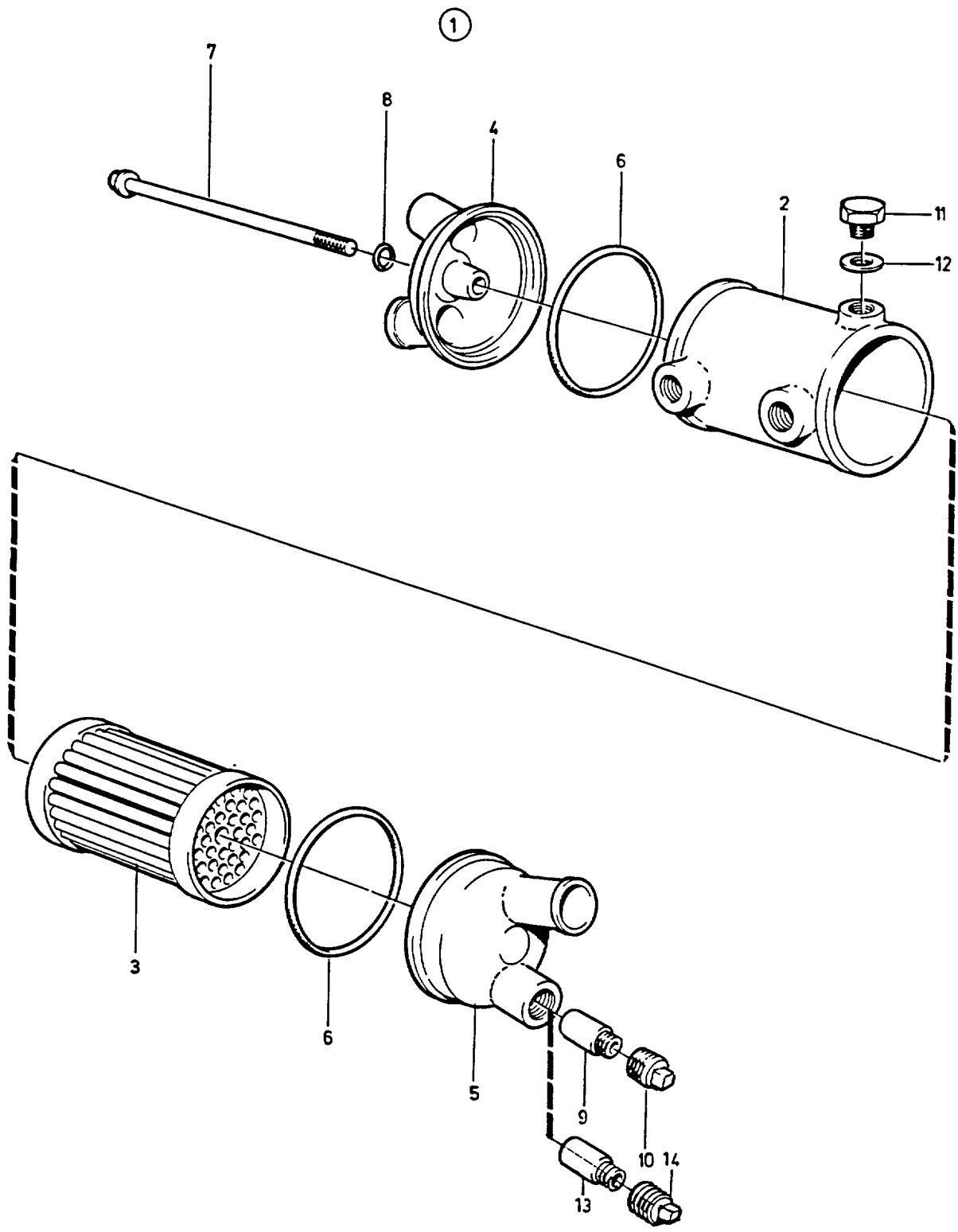




Sida Page		Grupp Group		Oljekylare		Oil cooler		Illustration	
8		4a						8568 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	Anmärkning Notes
	842 240								
1	1	-	-	-	842240-4	Oljekylare .....	Oil cooler .....		
2	1	-	-	-	842241-2	.Hus .....	.Housing .....	7	
3	1	-	-	-	826937-5	.Oljekylarinsats .....	.Oil cooler element .....	5	
4	1	-	-	-	842242-0	.Gavellock .....	.End cover .....	5	
5	1	-	-	-	842243-8	.Gavellock .....	.End cover .....	5	
6	2	-	-	-	925094-5	.O-ring .....	.O ring .....	0	
7	1	-	-	-	824522-7	.Skruv .....	.Screw .....	4	
8	1	-	-	-	955983-2	.O ring .....	.Rubber ring .....	0	
9	1	-	-	-	804107-1	.Zinkelektrod .....	.Zinc electrode .....	1	(204)
10	1	-	-	-	800475-6	.Propp .....	.Plug .....	2	(204)
11	1	-	-	-	960632-8	.Propp .....	.Plug .....	0	
12	1	-	-	-	957181-1	.Packning .....	.Gasket .....	0	
13	1	-	-	-	838929-8	Zinkelektrod .....	Zinc electrode .....	1	
14	1	-	-	-	838928-0	Propp .....	Plug .....	1	

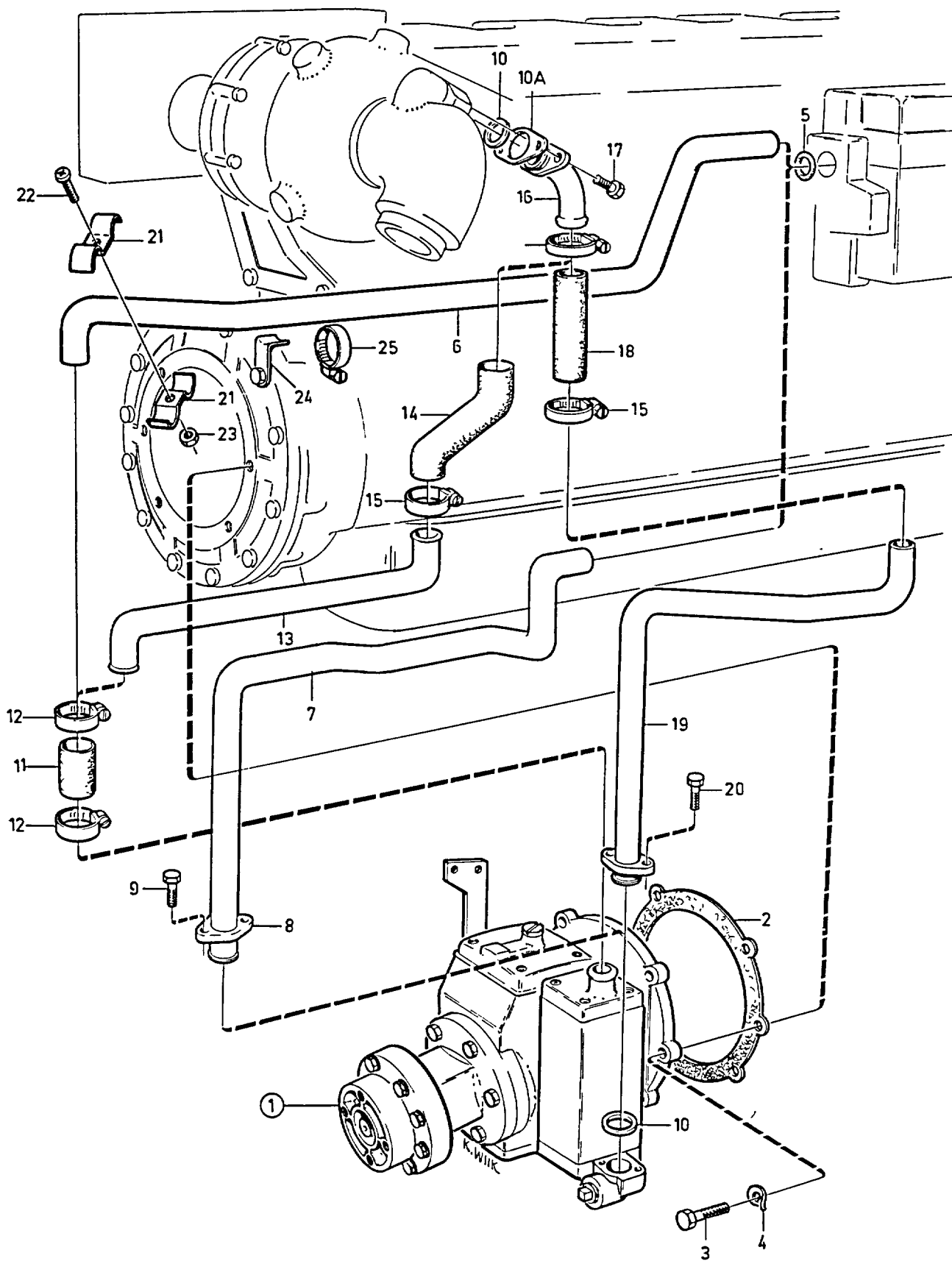
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204. Ersatt av PROPP-838928 och ELEKTROD-838929. Replaced by PLUG-838928 and ELECTRODE-838929.



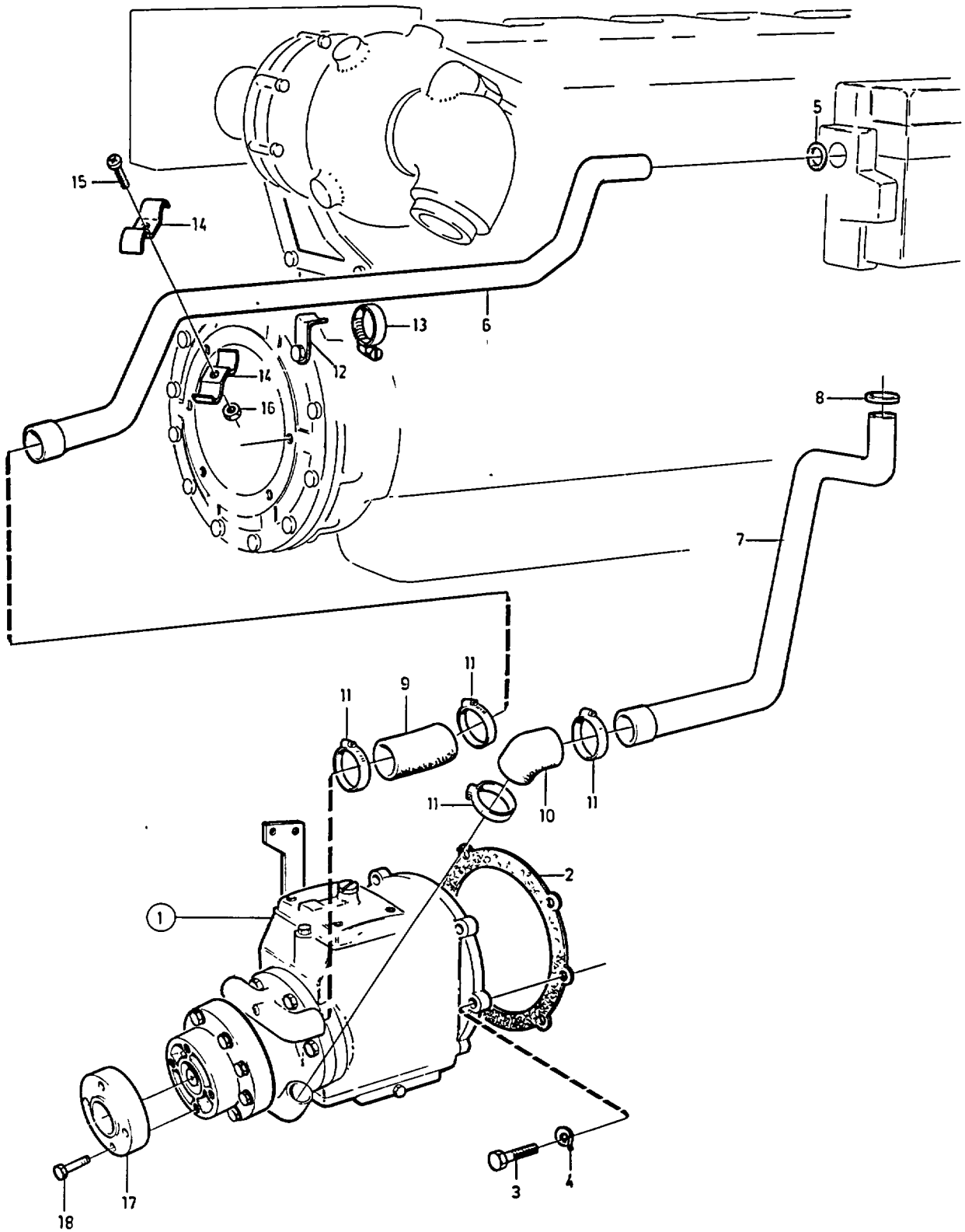
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Sida Page		Grupp Group		Anslutningsdetaljer backslag MS3		Connecting components reverse gear MS3		Illustration 5980		0500
10		4a		TMD40A,MD40A				1987-04		
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	TMD 40A	MD 40A								
1	1	1	-	850413-6	Backslag . . . . .	Reverse gear . . . . .	8		MS3	00.
	ERF	ERF	-		.Detaljer . . . . .	.Components . . . . .			SE GRUPP4B	004
2	1	1	-	803921-6	Packning . . . . .	Gasket . . . . .	8			0060
3	6	6	-	955319-9	Skruv . . . . .	Screw . . . . .	0			0080
4	6	6	-	941908-6	Fjädrande bricka . . . . .	Resilient washer . . . . .	0			0100
5	1	1	-	925061-4	O-ring . . . . .	O-ring . . . . .	S 1		ERS AV949658	0120
	1	1	-	949658-9	O-ring . . . . .	O-ring . . . . .	0			0121
6	1	-	-	843271-8	Kylvattenror . . . . .	Cooling water pipe . . . . .	5			0140
	-	-	-	845715-2	Kylvattenror . . . . .	Cooling water pipe . . . . .	5			0145
7	-	1	-	844425-9	Kylvattenror . . . . .	Cooling water pipe . . . . .	5			0160
	-	-	-	845715-2	Kylvattenror . . . . .	Cooling water pipe . . . . .	5			0165
8	-	1	-	842912-8	Flans . . . . .	Flange . . . . .	5			0
9	-	2	-	956093-9	Skruv . . . . .	Screw . . . . .	0			0200
10	-	2	-	842913-6	Tätningring . . . . .	Seal ring . . . . .	S 1			0220
	-	-	-	842913-6	Tätningring . . . . .	Seal ring . . . . .	S 1			0224
	2	-	-	842913-6	Tätningring . . . . .	Seal ring . . . . .	S 1		MO-20552	0225
10a	2	-	-	845527-1	Packning . . . . .	Packing . . . . .	S 1		MO20553-	0
11	1	1	-	944386-2	Slang . . . . .	Hose . . . . .	0		L=50 MM	0
12	2	2	-	943475-4	Slangklamma . . . . .	Hose clamp . . . . .	0			0260
13	-	1	-	844426-7	Rör . . . . .	Pipe . . . . .	5			0280
	-	-	-	845714-5	Kylvattenror . . . . .	Cooling water pipe . . . . .	5			0285
14	-	1	-	844427-5	Slang . . . . .	Hose . . . . .	5			0300
	-	-	-	845792-1	Slang . . . . .	Hose . . . . .	4			0305
15	2	2	-	943475-4	Slangklammer . . . . .	Clamp . . . . .	0			0320
	-	-	-	943476-2	Slangklamma . . . . .	Hose clamp . . . . .	0			0325
16	1	-	-	843333-6	Kylvattenror . . . . .	Cooling water pipe . . . . .	5		MO-20552	03'
	1	-	-	845791-3	Kylvattenror . . . . .	Connection . . . . .	5		MO20553-	0
	-	1	-	844258-4	Kylvattenror . . . . .	Cooling water pipe . . . . .	5			0
17	-	2	-	955271-2	Skruv . . . . .	Screw . . . . .	0			0380
	2	-	-	955271-2	Skruv . . . . .	Screw . . . . .	0		MO-20552	0385
	2	-	-	959219-7	Skruv . . . . .	Screw . . . . .	0		MO20553-	0390
18	ERF	-	-	952972-8	Gummislang . . . . .	Rubber hose . . . . .	0		L=150MM	0400
	-	-	-	949315-6	Slang . . . . .	Hose . . . . .	0		L=0,070 MM	0405
19	1	-	-	843272-6	Kylvattenror . . . . .	Cooling water pipe . . . . .	5			0420
	-	-	-	845716-0	Kylvattenror . . . . .	Cooling water pipe . . . . .	5			0425
20	2	-	-	956093-9	Skruv . . . . .	Screw . . . . .	0			0440
21	2	2	-	942927-5	Klammer . . . . .	Clamp . . . . .	0			0460
22	1	1	-	956093-9	Skruv . . . . .	Screw . . . . .	0			0
	-	-	-	955270-4	Skruv . . . . .	Screw . . . . .	0			05
23	1	1	-	963105-2	Mutter . . . . .	Nut . . . . .	0			0500
24	-	-	-	843747-7	Faste . . . . .	Attachment . . . . .	5			0520
25	1	1	-	943473-9	Slangklamma . . . . .	Hose clamp . . . . .	0			0540
26	1	1	-	819105-8	Kopplingsflans . . . . .	Clutch flange . . . . .	6		8) SE GRUPP 9	0560
	1	1	-		Klamkopplingsflans . . . . .	Coupling flange . . . . .			SE GRUPP 9	0



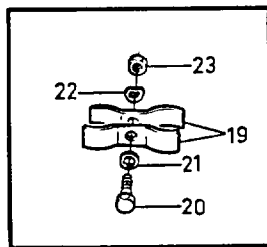
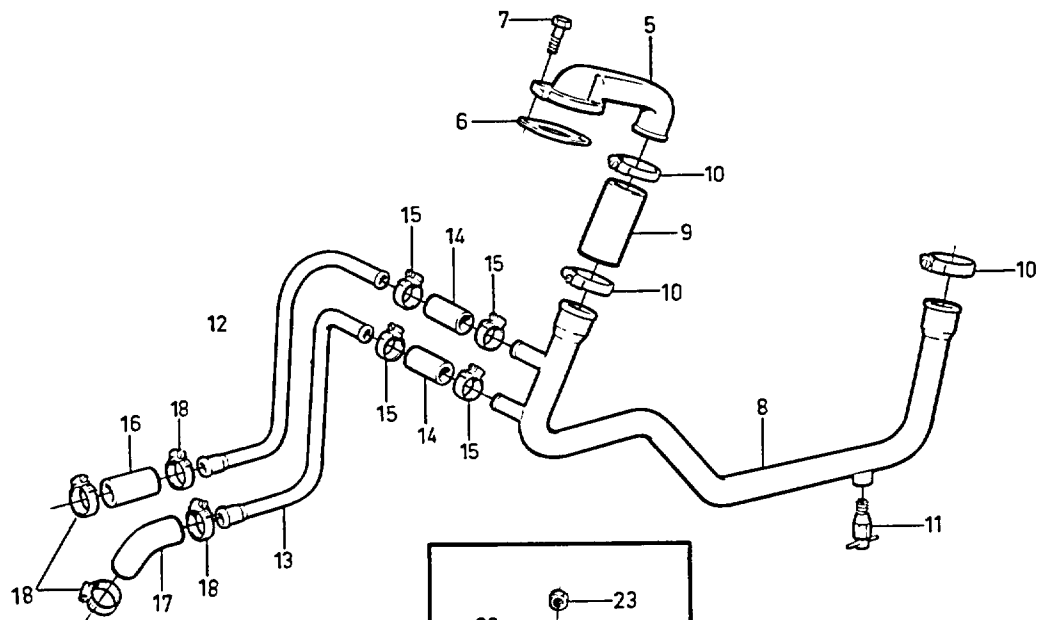
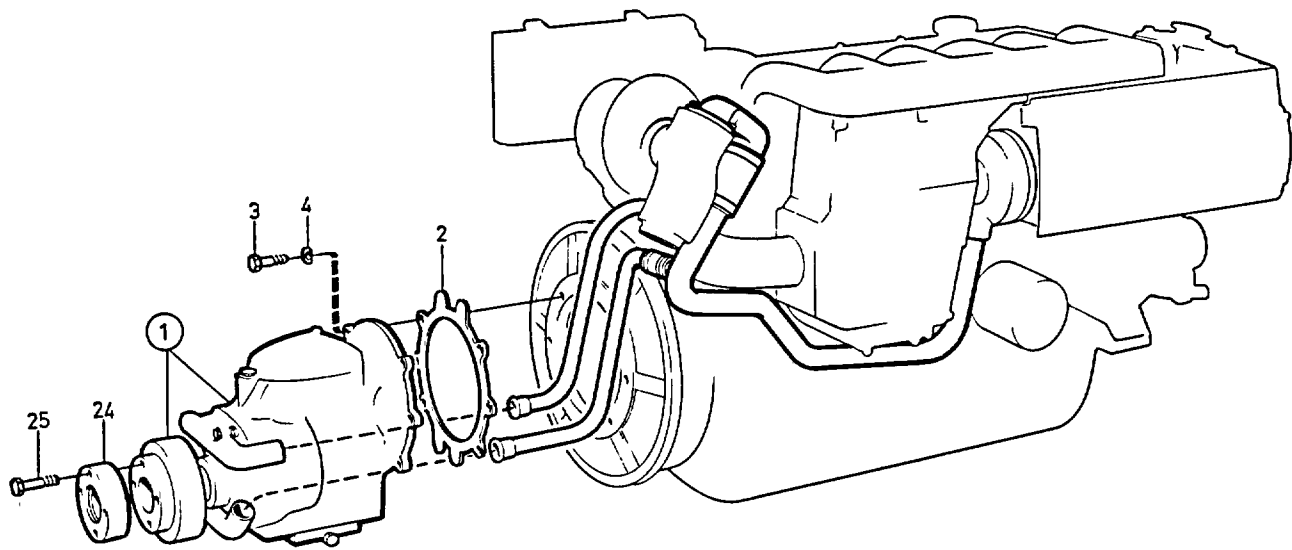
Sida Page		Grupp Group		Anslutningsdetaljer backslag MS3B, MS3C TMD40A,MD40A		Connecting components reverse gear MS3B, MS3C		Illustration 6390 1987-04		0505	
Pos Fig	Antal/Quantity				Artikelnr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	TMD 40A	MD 40A									
1	1	1	-	-	852102-3	Backslag .....	Reverse gear .....	6		MS3B, MO-29164	007
	ERF	ERF	-	-		.Detaljer .....	.Components .....			SE GRUPP 4B	004
	1	1	-	-	852502-4	Backslag .....	Reverse gear .....	6		205)MS3C,MO29165-	0060
	ERF	ERF	-	-		.Detaljer.....	.Components.....			SE GRUPP 4B	0080
	-	1	-	-	852503-2	Backslag.. .....	Reverse gear .....	6		206)MS3C,MO29165-	0100
	-	ERF	-	-		.Detaljer .....	.Components.....			SE GRUPP 4B	0120
2	1	1	-	-	803921-6	Packning .....	Gasket .....	8			0140
3	6	6	-	-	955319-9	Skruv .....	Screw .....	0			0160
4	6	6	-	-	941908-6	Fjädrande bricka .....	Resilient washer.....	0			0180
5	1	1	-	-	949658-9	O-ring .....	O-ring .....	S		(925061)	0200
6	1	1	-	-	845715-2	Kylvattenrör .....	Cooling water pipe .....	5			0220
7	1	-	-	-	845716-0	Kylvattenrör .....	Cooling water pipe .....	5			0260
	-	1	-	-	845714-5	Kylvattenrör .....	Cooling water pipe .....	5			0280
8	1	1	-	-	842913-6	Tätningarring .....	Seal ring.....	S			0300
9	ERF	ERF	-	-	949315-6	Slang .....	Hose.....	0		L=70MM	0320
10	1	1	-	-	845792-1	Gummikrök .....	Rubber bend .....	3			0340
11	4	4	-	-	943476-2	Slangklamma .....	Hose clamp .....	0			0380
12	1	1	-	-	843747-7	Fäste .....	Attachment .....	5			0400
13	1	1	-	-	943473-9	Slangklamma.....	Hose clamp .....	0			0420
14	2	2	-	-	942927-5	Klammer .....	Clamp .....	0			0440
15	1	1	-	-	955270-4	Skruv.....	Screw .....	0			0460
16	1	1	-	-	963105-2	Mutter .....	Nut .....	0			0480
17	1	1	-	-	852611-3	Mellandel .....	Adapter .....	0		(35)	
18	4	4	-	-	955699-4	Skruv .....	Screw .....	0		(35)	

35. Vid byte av backslag MS3B till MS3C. When exchanging reverse gear MS3B to MS3C.  
 205. Ersatt av BACKSLAG-853398 och ANSLUTNINGSSATS-853774. Replaced by reverse GEAR-853398 and connection KIT-853774  
 206. Ersatt av BACKSLAG-853399 och ANSLUTNINGSSATS-853774. Replaced by reverse GEAR-853399 and connection KIT-853774



Sida Page	Grupp Group	Anslutningsdetaljer backslag MS3B, MS3C TMD40B,TMD40C			Connecting components reverse gear MS3B, MS3C			Illustration 6420 1987-04	051		
Pos Fig	Antal/Quantity				Artikelnr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	852102-3	Backslag.....	Reverse gear .....	6		MS3B, MO-29164	00
	ERF	-	-	-		.Detaljer.....	.Components.....			SE GRUPP 4B	004
	1	-	-	-	852502-4	Backslag.....	Reverse gear .....	6		207)MS3C,MO29165-	0060
	ERF	-	-	-		.Detaljer.....	.Components.....			SE GRUPP 4B	0080
	1	-	-	-	852503-2	Backslag.....	Reverse gear .....	6		208)MS3C,MO29165-	0100
	ERF	-	-	-		.Detaljer.....	.Components.....			SE GRUPP 4B	0120
2	1	-	-	-	803921-6	Packning .....	Gasket.....	8			0140
3	6	-	-	-	955319-9	Skruv .....	Screw.....	0			0160
4	6	-	-	-	941908-6	Fjädrande bricka.....	Resilient washer.....	0			0180
5	1	-	-	-	845528-9	Kylvattenanslutning.....	Cooling water pipe.....	4			0200
6	1	-	-	-	845527-1	Packning .....	Gasket.....	S 1			0220
7	2	-	-	-	959219-7	Skruv .....	Screw.....	0			0240
8	1	-	-	-	838304-4	Rör.....	Pipe.....	5		SE GRUPP 2B	0260
9	ERF	-	-	-	858471-6	Slang .....	Hose.....	0		(952976)L=70MM	0280
10	3	-	-	-	961670-7	Slangklamma.....	Hose clamp.....	0			0300
11	1	-	-	-	82745-1	Kran.....	Cock.....	2			0320
12	1	-	-	-	845841-6	Rör.....	Pipe .....	5			0340
13	1	-	-	-	845842-4	Rör.....	Pipe .....	5			0360
14	ERF	-	-	-	941799-9	Slang .....	Hose.....	0		L=2X65MM	0380
15	4	-	-	-	943475-4	Slangklamma.....	Hose clamp.....	0			0400
16	ERF	-	-	-	949315-6	Slang .....	Hose .....	0		L=70MM	0420
17	1	-	-	-	845792-1	Gummikrök .....	Rubber bend.....	1			0440
18	4	-	-	-	943476-2	Slangklamma.....	Hose clamp.....	0			0460
19	2	-	-	-	468684-6	Fästjarn .....	Attachment.....	4			0480
20	1	-	-	-	940132-4	Skruv .....	Screw.....	0			0500
21	1	-	-	-	955894-1	Bricka .....	Washer .....	0			0520
22	1	-	-	-	941907-8	Fjädrande bricka.....	Resilient washer.....	0			0540
23	1	-	-	-	963106-0	Mutter .....	Nut .....	0			0560
24	1	-	-	-	852611-3	Mellandel .....	Adapter.....	6	35)		0580
25	4	-	-	-	955699-4	Skruv.....	Screw .....	0	35)		0600

35 . Vid byte av backslag MS3B till MS3C. When exchanging reverse gear MS3B to MS3C.  
 207 . Ersatt av BACKSLAG-853398 och ANSLUTNINGSSATS-853772. Replaced by reverse GEAR-853398 and connection KIT-853772  
 208 . Ersatt av BACKSLAG-853399 och ANSLUTNINGSSATS-853772. Replaced by reverse GEAR-853399 and connection KIT-853772



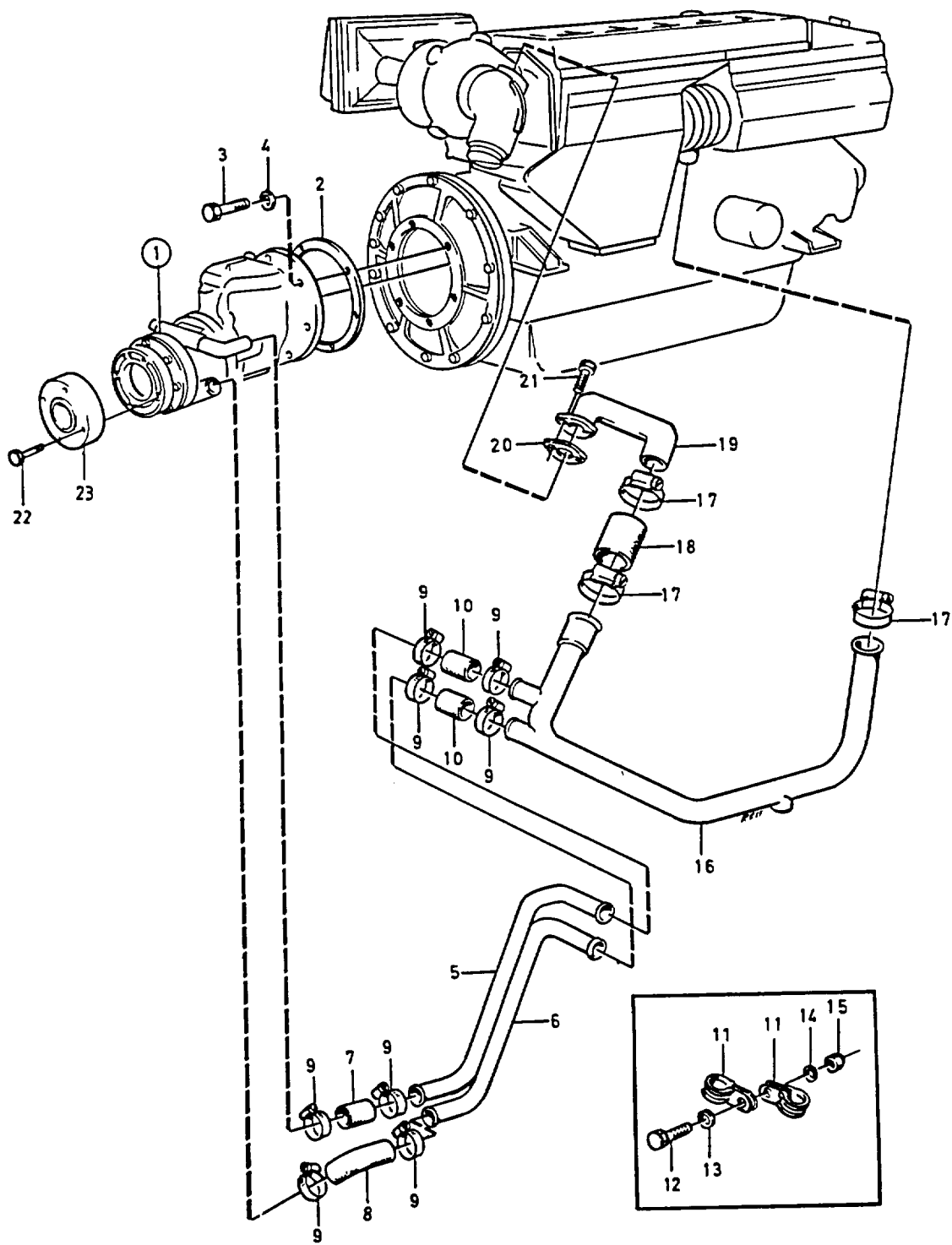
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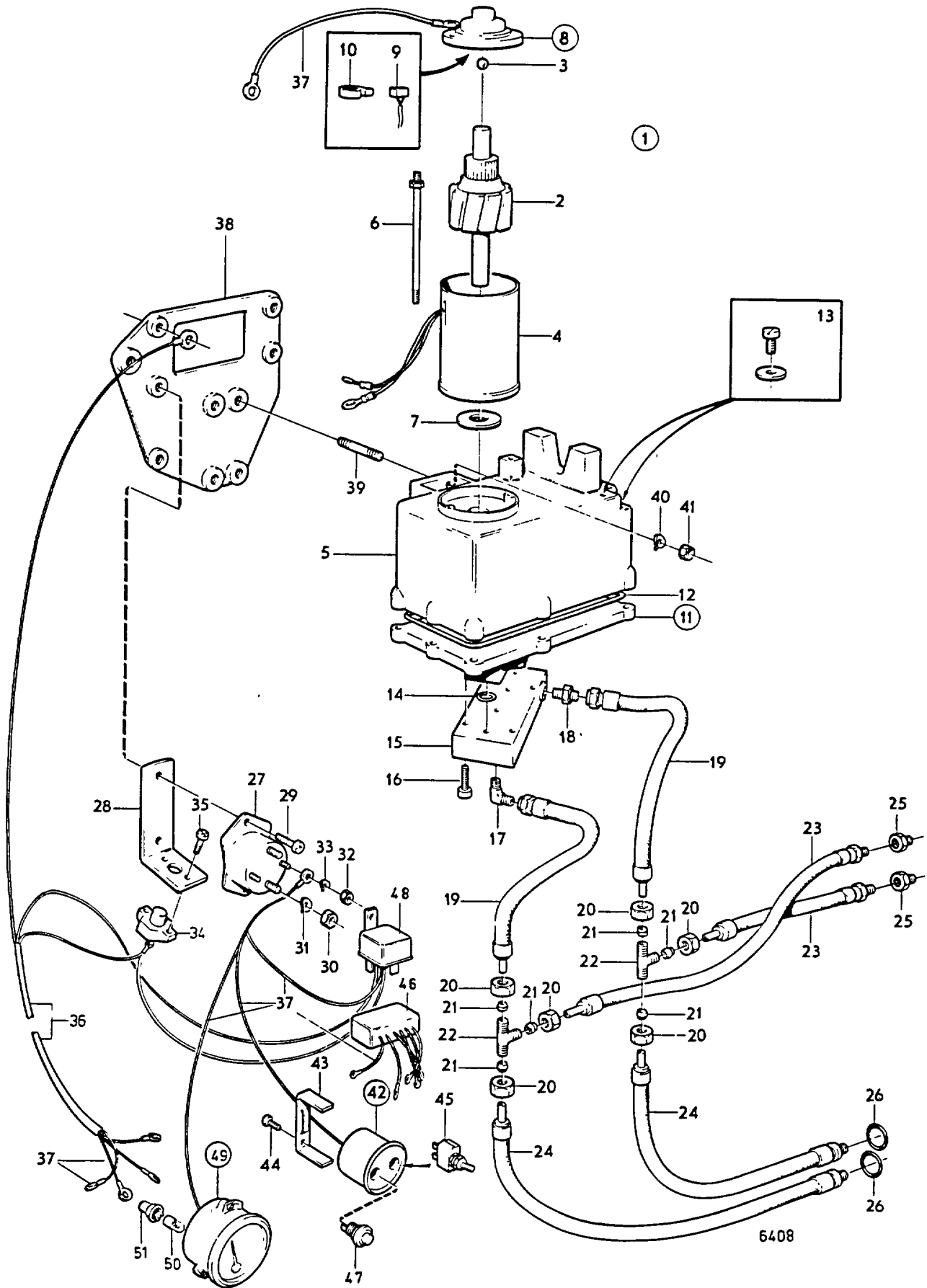
Sida Page		Grupp Group		Anslutningsdetaljer backslag MS3B, MS3C TAMD40A,TAMD40B			Connecting components reverse gear MS3B, MS3C			Illustration 8627 1987-04		0525
Pos Fig	Antal/Quantity			Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes			
	TAMD 40A	TAMD 40B										
1	1	-	-	852001-7	Backslag .....	Reverse gear .....	8		MS3B,MO-29164		00	
	ERF	-	-		.Detaljer .....	.Components .....			SE GRUPP 4B		001	
	1	-	-	852102-3	Backslag .....	Reverse gear .....	6		MS3B,MO-29164		0020	
	ERF	-	-		.Detaljer .....	.Components .....			SE GRUPP 4B		0040	
	1	-	-	852501-6	Backslag .....	Reverse gear .....	8		209)MS3C,MO29165-		0041	
	ERF	-	-		.Detaljer .....	.Components .....			SE GRUPP 4B		0042	
	1	1	-	852502-4	Backslag .....	Reverse gear .....			207)MS3C,MO29165-		0043	
	ERF	ERF	-		.Detaljer .....	.Components .....			SE GRUPP 4B		0044	
	1	1	-	852503-2	Backslag .....	Reverse gear .....			MS3C		0045	
	ERF	ERF	-		.Detaljer .....	.Components .....			SE GRUPP 4B		0046	
2	1	1	-	803921-6	Packning .....	Gasket .....	8				00	
3	6	6	-	955319-9	Skruv .....	Screw .....	0				0	
4	6	6	-	941908-6	Fjädrande bricka .....	Resilient washer .....	0				0100	
5	1	1	-	845841-6	Kylvattenrör .....	Cooling water pipe .....	4				0120	
6	1	1	-	845842-4	Kylvattenrör .....	Cooling water pipe .....	4				0140	
7	ERF	ERF	-	949315-6	Slang .....	Hose .....	0		L=70MM		0160	
8	1	1	-	845792-1	Gummikrök .....	Rubber bend .....	1				0190	
9	8	-	-	943476-2	Slangklamma .....	Hose clamp .....	0				0	
	-	4	-	943476-2	Slangklamma .....	Hose clamp .....	0				0205	
	-	4	-	943475-4	Slangklamma .....	Hose clamp .....	0				0206	
10	ERF	ERF	-	941799-9	Slang .....	Hose .....	0		L=2X65MM		0220	
11	2	2	-	468684-6	Fästjarn .....	Attachment .....	4				0240	
12	1	1	-	940132-4	Skruv .....	Screw .....	0				0260	
13	1	1	-	955894-1	Bricka .....	Washer .....	0				0280	
14	1	1	-	941907-8	Fjädrande bricka .....	Resilient washer .....	0				0300	
15	1	1	-	963106-0	Mutter .....	Nut .....	0				0320	
16	1	1	-	858039-1	Rör .....	Pipe .....	4				03	
17	3	3	-	961670-7	Slangklamma .....	Hose clamp .....	0				03	
18	ERF	ERF	-	858471-6	Gummislang .....	Rubber hose .....	0		(952976)L=70MM		03	
19	1	1	-	845528-9	Kylvattenanslutning .....	Cooling water pipe .....	4				0400	
20	1	1	-	845527-1	Packning .....	Gasket .....	S				0420	
21	2	2	-	959219-7	Skruv .....	Screw .....	0				0440	
22	4	-	-	955699-4	Skruv .....	Screw .....	0		35)		0500	
23	1	-	-	852611-3	Mellandel .....	Adapter .....	6		35)		0520	

35 . Vid byte av backslag MS3B till MS3C. When exchanging reverse gear MS3B to MS3C.  
 207 . Ersatt av BACKSLAG-853398 och ANSLUTNINGSSATS-853772. Replaced by reverse GEAR-853398 and connection KIT-853772  
 209 . Ersatt av BACKSLAG-853397 och ANSLUTNINGSSATS-853773. Replaced by reverse GEAR-853397 and connection KIT-853773



Sida Page	Grupp Group	Hydraulpump med monteringsdetaljer TID UTF		Hydraulic pump with install. comps TID UTF		Illustration	1000			
18	4a	GEM				6408 1987-04				
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	850922-6	Hydraulpump	Hydraulic pump		8	37)	002
2	1	-	-	851086-9	•Rotor	•Rotor		6		004L
3	1	-	-	851087-7	•Kula	•Ball		4		0060
4	1	-	-	851088-5	•Hus	•Housing		7		0080
5	1	-	-	851089-3	•Oljebehållare	•Oil container		7		0100
6	1	-	-	851091-9	•Skrivsats	•Screw kit		5		0120
7	ERF	-	-	851092-7	•Bricksats	•Washer kit		3		0140
8	1	-	-	851083-6	•Hus	•Housing		6		0160
9	1	-	-	851084-4	•Kolborstsats	•Carbon brush set		3		0180
10	1	-	-	851090-1	•Fjädersats	•Spring set		4		0200
11	1	-	-	851080-2	•Pump	•Pump		7	ERSAV 852563	20
	1	-	-	852563-6	•Pump	•Pump		7		30
12	1	-	-	851085-1	•Tatningsring	•Seal ring		2	210)	0240
13	1	-	-	851079-4	•Skrivsats	•Screw kit		3		0260
14	1	-	-	851081-0	•O-ring	•O-ring		3		0280
15	1	-	-	851082-8	•Ventilhus	•Valve housing		7	211)	0300
16	4	-	-	955641-6	•Skruv	•Screw		0		20
17	1	-	-	850916-8	Nippel	Nipple		4		10
18	1	-	-	850903-6	Rorkoppling	Pipe fitting		4		0360
19	2	-	-	850910-1	Slang	Hose		3		0380
20	6	-	-	941521-7	Mutter	Nut		0		0400
21	6	-	-	956967-4	Skarring	Ring		0		0420
22	2	-	-	964034-3	T-nippel	Nipple		0		0440
23	2	-	-	850909-3	Slang	Hose		3		0460
24	2	-	-	850908-5	Slang	Hose		3		0480
25	2	-	-	851042-2	Genomföring	Grommet		2		050
26	2	-	-	941820-3	O-ring	O ring		0		05
27	2	-	-	852565-1	Relä	Relay		6	(850923)	05
28	1	-	-	850905-1	Konsol	Bracket		8	38)	056L
29	3	-	-	950046-3	Skruv	Screw		0		0580
30	4	-	-	955834-7	Mutter	Nut		0		0600
31	4	-	-	941907-8	Bricka	Washer		0		0620
32	4	-	-	955844-6	Mutter	Nut		0		0640
33	4	-	-	941905-2	Bricka	Washer		0		0660
34	1	-	-	841178-7	Sakring	Fuse		1		0680
35	2	-	-	950013-3	Skruv	Screw		0		0700
36	1	-	-	850836-8	Kabel	Cable		8	185)	0720
37	ERF	-	-		Kablar och kabelskor	Cables and cable terminals			SE GRUPP 3	40
										60
38	1	-	-	850803-8	Konsol	Bracket		8	184)	0780
39	4	-	-	941872-4	Pinnskruv	Stud bolt		0		0800
40	4	-	-	941906-0	Fjaderbricka	Washer		0		0820
41	4	-	-	955825-5	Mutter	Nut		0		0840
42	1	-	-	850989-5	Instrumenttavla	Instrument panel		6	USA	260
	1	-	-	851871-4	Instrumenttavla	Instrument panel		8	(851501) EXCL USA	30
43	1	-	-	850372-4	•Bygel	•Brace		6		0900
44	2	-	-	944201-3	•Skruv	•Screw		0		0920
45	1	-	-	814322-4	•Strömbrytare	•Switch		3		0940
46	1	-	-	851870-6	•Trimbegränsare	•Trim limiter		3	(851771)	0960
47	1	-	-	852026-4	•Strömsällare	•Control switch		3		0980
48	1	-	-	876040-7	•Relä	•Relay		3		1000

37. Ersatt av pump 852500 + konsol 852568 + 4ST skruv 950161 + 4ST mutter 955826. Replaced by hydraulic pump 852500 + bracket 852568 + 4 pcs screw 950161 + 4 pcs nut 955826.
38. Ersatt av konsol 852568 + 4ST skruv 950161 + 4ST mutter 955826. Replaced by bracket 852568 + 4 pcs screw 950161 + 4 pcs nut 955826.
184. Ersatt av konsol 852568 + 4ST skruv 950161 + 4ST mutter 955826. Replaced by bracket 852568 + 4 pcs screw 950161 + 4 pcs nut 955826.
185. Ersatt av kabel 852191 + kabel 852192. Replaced by cable 852191 + cable 852192.
210. Ingår i PUMP-851080. Included in PUMP-851080.
211. Ersatt av 1st PUMP-852500, 1st KONSOL-852568, 4st skruv-950161 och 4st MUTTER-955826. Replaced by 1 pcs PUMP-852500, 1 pcs BRACKET-852568, 4 pcs SCREW-950161 and 4 pcs NUT-955826.



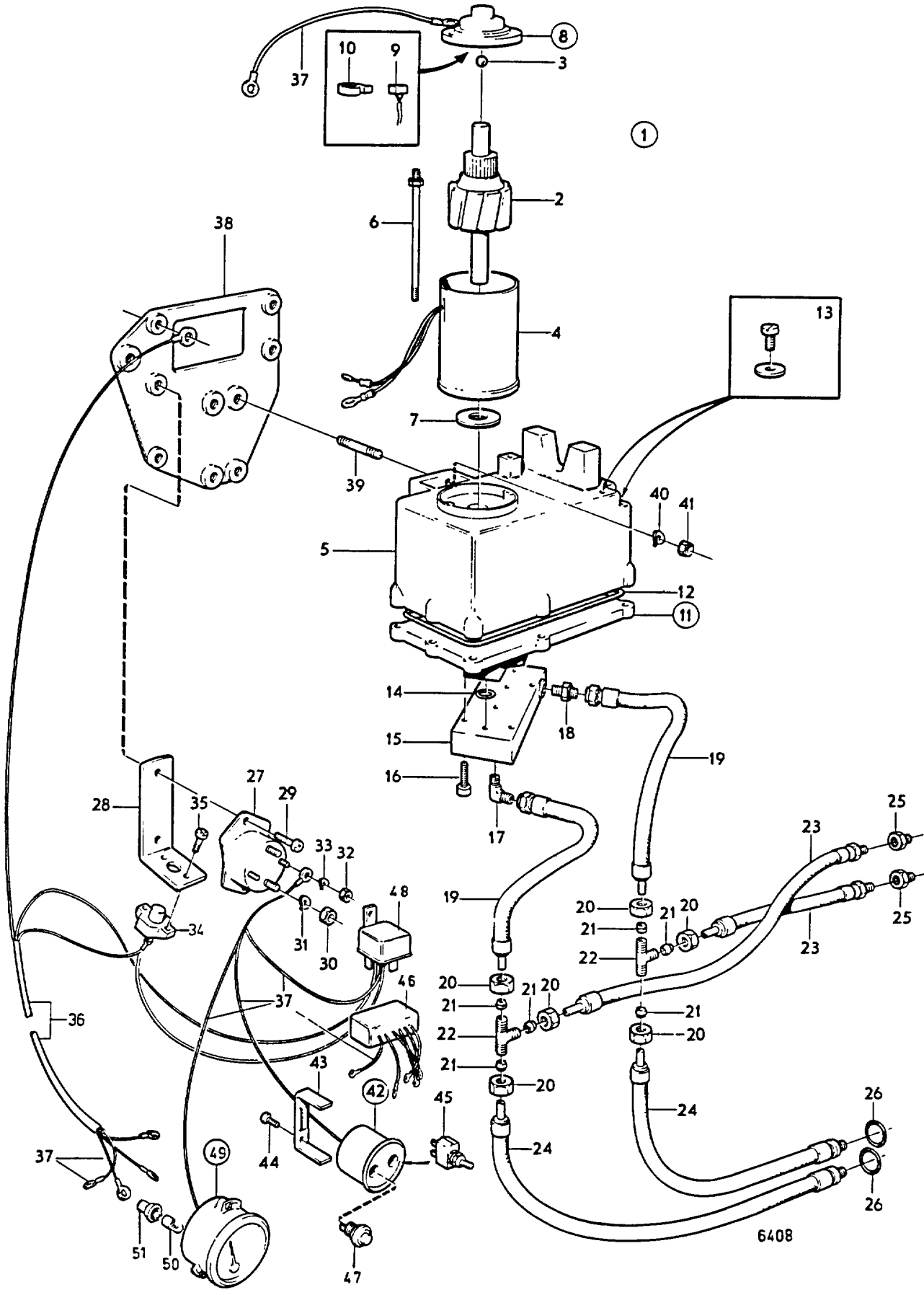
Publ. 4406

Reservdelskatalog  
Parts Catalogue

2-A21

**VOLVO  
PENTA**

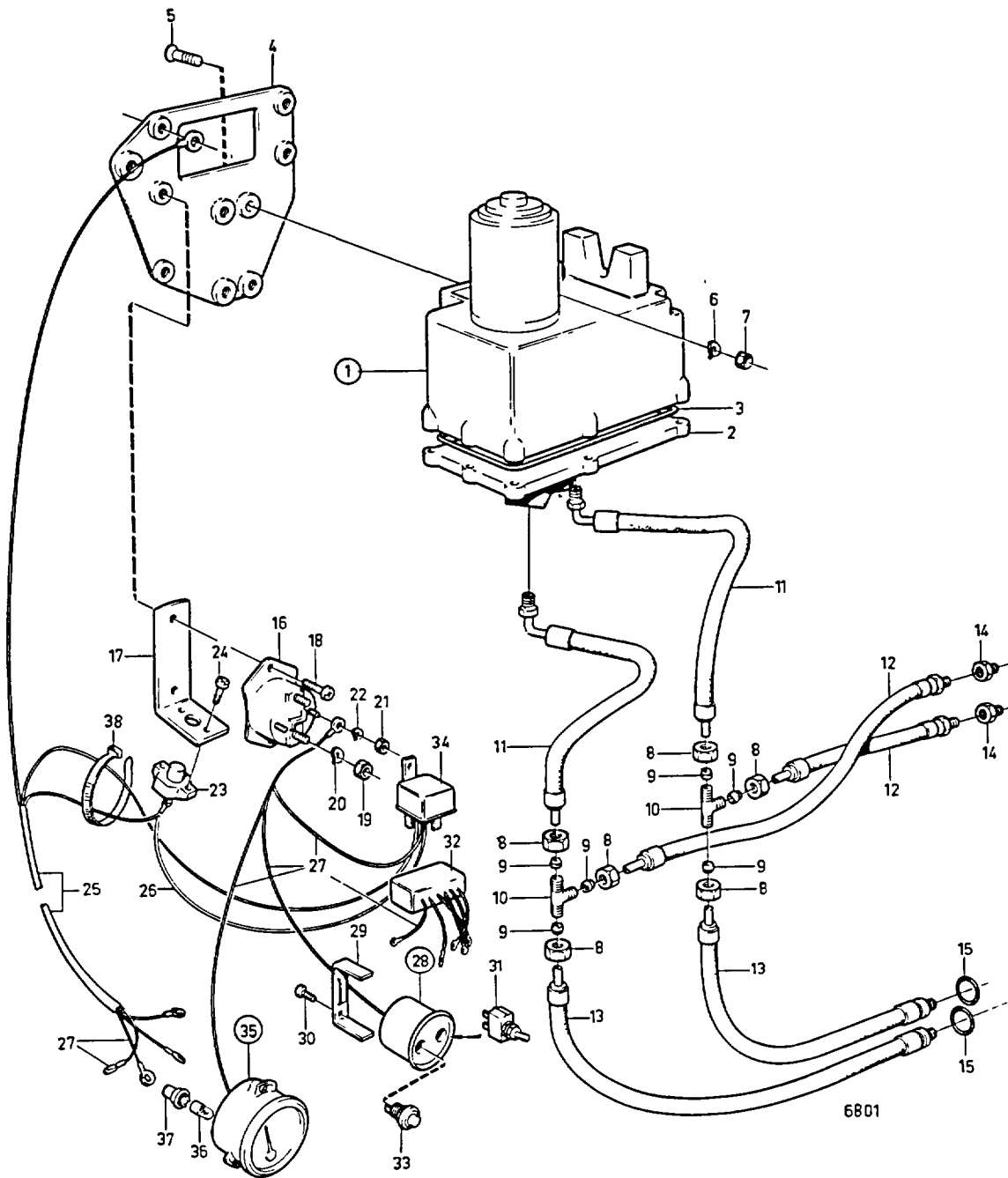
Sida Page		Grupp Group		Hydraulpump med monteringsdetaljer TID UTF GEM		Hydraulic pump with install. comps TID UTF		Illustration 6408 1987-04		1000	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
49	1	-	-	-	851502-5	•Trimindikatorvisare . ....	•Pointer instrument . ....	5		33) EXCL USA	10
50	1	-	-	-	192451-3	••Glodlampa . . . . .	••Bulb . . . . .	1			104
51	1	-	-	-	841954-1	••Lamphållare . . . . .	••Bulb holder . . . . .	4			1060



6408

Sida Page	Grupp Group	Hydraulpump med monteringsdetaljer SEN UTF	Hydraulic pump with install. comps SEN UTF	Illustration 6801	1025
22	4a	GEM		1987-04	

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	852500-8	Hydraulpump	Hydraulic pump		7		0021
2	1	-	-	-	852563-6	•Pump	•Pump		7		0040
3	1	-	-	-	852564-4	•Tätningarring	•Seal ring		2		0060
4	1	-	-	-	852568-5	Konsol	Bracket		7		0085
5	4	-	-	-	950161-0	Skruv	Screw		0	L=32MM	0100
6	4	-	-	-	941906-0	Fjädrande bricka	Resilient washer		0		0120
7	4	-	-	-	955826-3	Mutter	Nut		0		0140
8	9	-	-	-	941521-7	Mutter	Nut		0		0160
9	6	-	-	-	956967-4	Kona	Cone		0		0180
	3	-	-	-	964086-3	Skärring	Ring		0		0185
10	2	-	-	-	964034-3	T-nippel	T-nipple		0		0200
11	2	-	-	-	852504-0	Slang	Hose		3		J
12	2	-	-	-	850909-3	Slang	Hose		3		0240
13	2	-	-	-	850908-5	Slang	Hose		3		0260
14	2	-	-	-	851042-2	Genomforing	Grommet			SE SIDA 30, 2-B07	0280
15	2	-	-	-	941820-3	O-ring	O-ring			SE SIDA 30, 2-B07	0320
16	2	-	-	-	852565-1	Rela	Relay		6		0340
17	1	-	-	-	850905-1	Konsol	Bracket		7		J
18	3	-	-	-	950046-3	Skruv	Screw		0		0400
19	4	-	-	-	955834-7	Mutter	Nut		0		0420
20	4	-	-	-	941907-8	Fjädrande bricka	Resilient washer		0		0440
21	4	-	-	-	955844-6	Mutter	Nut		0		0460
22	4	-	-	-	941905-2	Fjädrande bricka	Resilient washer		0		0480
23	1	-	-	-	841178-7	Säkring	Fuse		1		0500
24	2	-	-	-	950013-3	Skruv	Screw		0		0520
25	1	-	-	-	852191-6	Kabelstock	Cable unit		6		0540
26	1	-	-	-	852192-4	Kabelstock	Cable unit		6		056
27	ERF	-	-	-		Kablar och kabelskor	Cables and cable terminals			SE GRUPP 3	058
28	1	-	-	-	850989-5	Instrumenttavla	Instrument panel		6	USA	0600
	1	-	-	-	851871-4	Instrumenttavla	Instrument panel		6	(851501) EXCLUSA	0620
29	1	-	-	-	850372-4	•Bygel	•Brace		0		0640
30	2	-	-	-	944201-3	•Skruv	•Screw		0		0660
31	1	-	-	-	814322-4	•Strömbrytare	•Switch		3		0680
32	1	-	-	-	851870-6	•Trimbegransare	•Trim limiter		3	(851771)	0700
33	1	-	-	-	852026-4	•Stromställare	•Control switch		3		0720
34	1	-	-	-	876040-7	•Rela	•Relay		3		0740
35	1	-	-	-	851502-5	•Trimindikatorvisare	•Pointer instrument		5	33) EXCLUSA	0760
36	1	-	-	-	192451-3	•Glodlampa	•Bulb		1		J
37	1	-	-	-	841954-1	•Lamphållare	•Bulb holder		4		0820
38	ERF	-	-	-	948210-0	Buntband	Strip clamp		0		0840



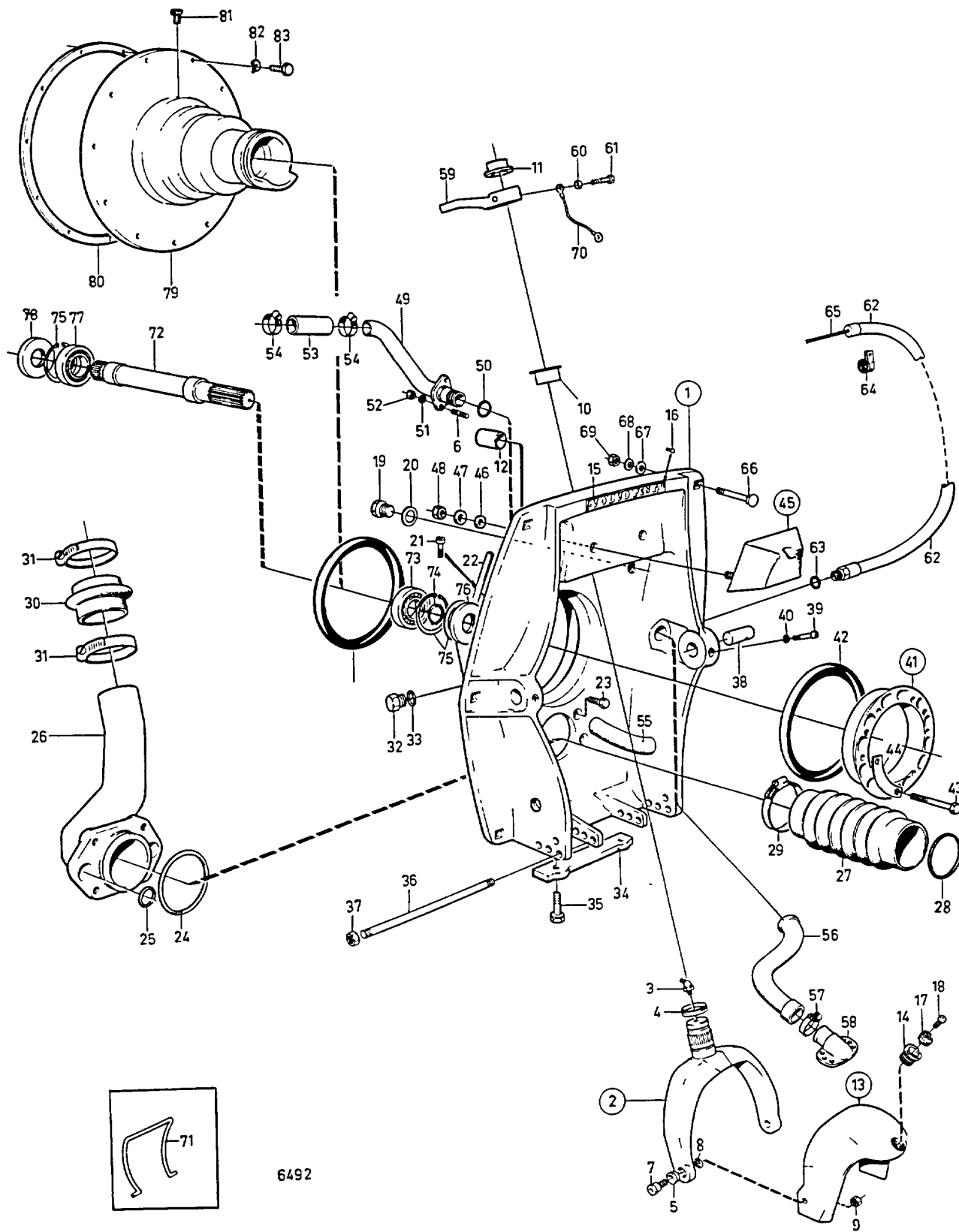
6801



Sida Page	Grupp Group	Anslutningsdetaljer 280DP	Connecting components 280DP	Illustration 6492	1280
24	4a	AQAD40B		1987-04	

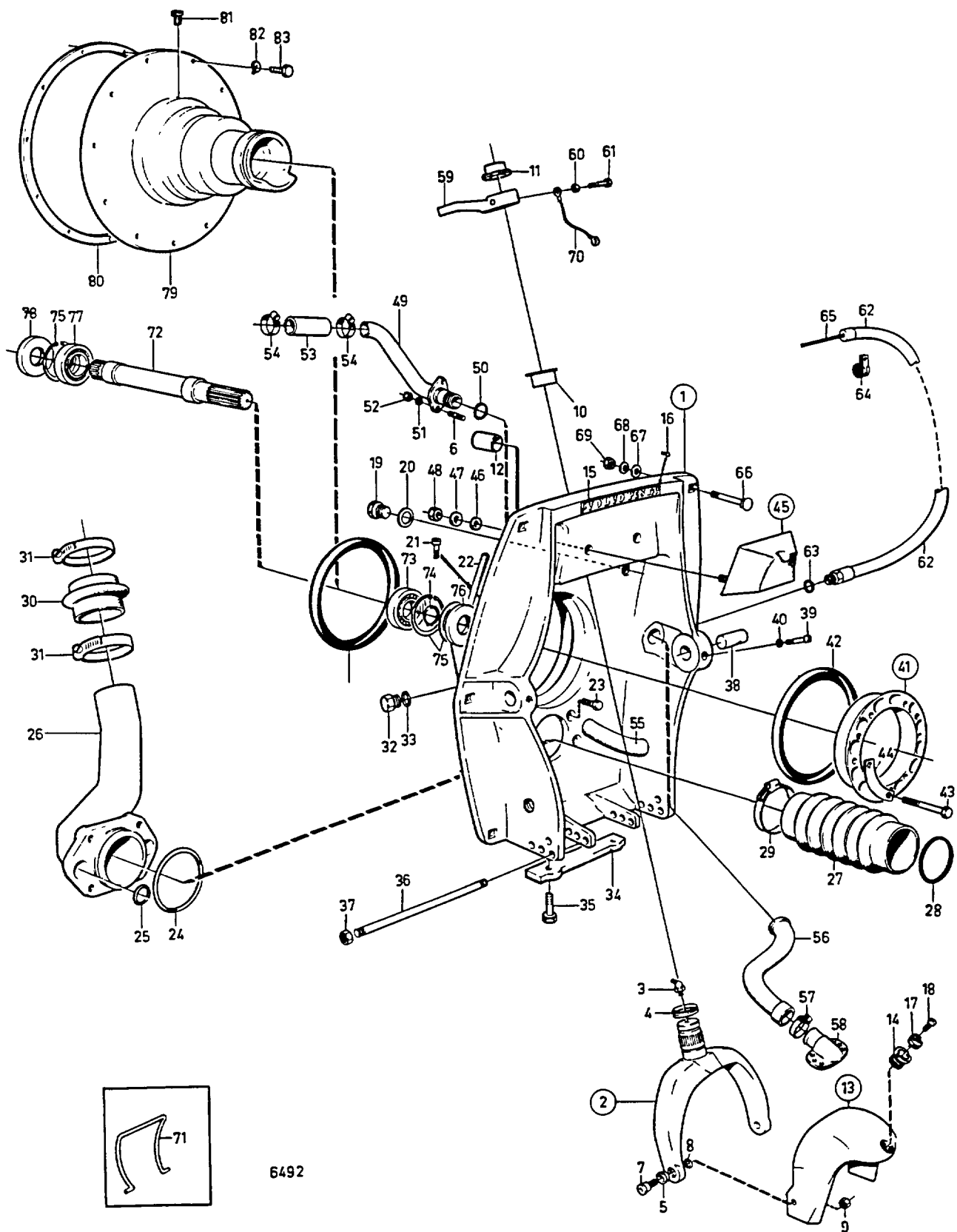
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	875672-8	Skold	Shield		6		01
2	1	-	-	-	839441-3	Styrgaffel	Steering fork		5		004
3	1	-	-	-	914169-8	Smorjnippel	Grease nipple		0		0060
4	1	-	-	-	839195-5	V-ring	V-ring	S	2		0080
5	2	-	-	-	814640-9	Bussning	Bushing		2		0100
6	2	-	-	-	941872-4	Pinnskruv	Stud bolt		0		0120
7	2	-	-	-	897798-5	Skruv	Screw		2		0140
8	2	-	-	-	897244-0	Bricka	Washer		2		0160
9	2	-	-	-	943152-9	Mutter	Nut		0		0180
10	1	-	-	-	853863-9	Bussning	Bushing		2	(853496)	0200
11	1	-	-	-	853864-7	Bussning	Bushing		2	(853497)	0200
12	1	-	-	-	850653-7	Lager	Bearing		4	SE GRUPP 6	0
13	1	-	-	-	851267-5	Skyddshjalm	Protecting cap		5		0260
14	1	-	-	-	851262-6	Bussning	Bushing		2	31)ERS AV 853048	0280
15	1	-	-	-	853048-7	Bussning	Bushing		31		0281
16	2	-	-	-	832608-4	Skylt	Sign		6		0300
17	1	-	-	-	804269-9	Skruv	Screw		3		0320
18	2	-	-	-	852705-3	Lagertapp	Bearing pin		2		0
19	1	-	-	-	941807-0	Skruv	Screw		0		0360
20	1	-	-	-	897744-9	Propp	Plug		4		0380
21	2	-	-	-	897745-6	Packning	Gasket	S	2		0400
22	1	-	-	-	956568-0	Skruv	Screw		0	SE GRUPP 9	0420
23	4	-	-	-	897726-6	Tätningsslist	Sealing strip		2		0440
24	1	-	-	-	959967-1	Skruv	Screw		0		0460
25	4	-	-	-	925256-0	O-ring	O-ring	S	1		0480
26	1	-	-	-	925255-2	O-ring	O-ring	S	1		0500
27	1	-	-	-	842962-3	Avgasgenomforing	Exhaust outlet		6		0
28	1	-	-	-	875848-4	Balgsats	Bellow kit		1		0
29	9	-	-	-		Balg	Bellows		8		0540
30	2	-	-	-		Ring	Ring		8		0560
31	1	-	-	-	961675-6	Slangklamma	Hose clamp		0		0580
32	2	-	-	-	843228-8	Avgasslang	Exhaust hose		1	SE GRUPP 2B	0600
33	1	-	-	-	943483-8	Slangklamma	Hose clamp		0	SE GRUPP 2B	0620
34	1	-	-	-	897744-9	Propp	Plug		4		0640
35	1	-	-	-	897745-6	Packning	Gasket	S	2		0660
36	1	-	-	-	832598-7	Zinkelektrod	Zinc electrode		1		0680
37	2	-	-	-	959438-3	Skruv	Screw		0		0700
38	1	-	-	-	814301-8	Stallpinne	Setting pin		2		0720
39	2	-	-	-	814357-0	Mutter	Nut		2		0740
40	2	-	-	-	853175-8	Lagertapp	Bearing pin		3	(897831)	0760
41	2	-	-	-	941873-2	Skruv	Screw		0		0780
42	2	-	-	-	941670-2	Bricka	Washer		0		0800
43	1	-	-	-	843626-3	Klamringssats	Clamp ring kit		5		0820
44	2	-	-	-	813967-7	Gummiring	Rubber ring		3		0840
45	6	-	-	-	191844-0	Skruv	Screw		0		0
46	3	-	-	-	806624-3	Låsbleck	Lock washer		2		0880
47	1	-	-	-	875531-6	Gummikudde	Rubber block		3		0900
48	2	-	-	-	832565-6	Packning	Gasket		2		0920
49	2	-	-	-	940097-9	Bricka	Washer		0	(960142)	0940
50	2	-	-	-	950364-0	Mutter	Nut		0		0960
51	1	-	-	-	850729-5	Genomforing	Grommet		5		0980
52	1	-	-	-	925063-0	O-ring	O-ring		0		1000
53	2	-	-	-	955893-3	Bricka	Washer		0		1020
54	2	-	-	-	950352-5	Låsmutter	Lock nut		0		10
55	ERF	-	-	-	941799-9	Slang	Hose		0	L=400MM	1
56	2	-	-	-	961670-7	Slangklamma	Hose clamp		0	SE GRUPP 2B	10
57	2	-	-	-	843235-3	Gummkrok	Rubber bend		3		1100
58	1	-	-	-	875822-9	Slang	Hose		3	(897599)	1120
59	1	-	-	-		Slang	Hose		8		1120
60	2	-	-	-	853548-6	Slangklamma	Hose clamp		0	(961668)	1120

31. For lagertapp med 2 skruv. For bearing pin with 2 bolts.



6492

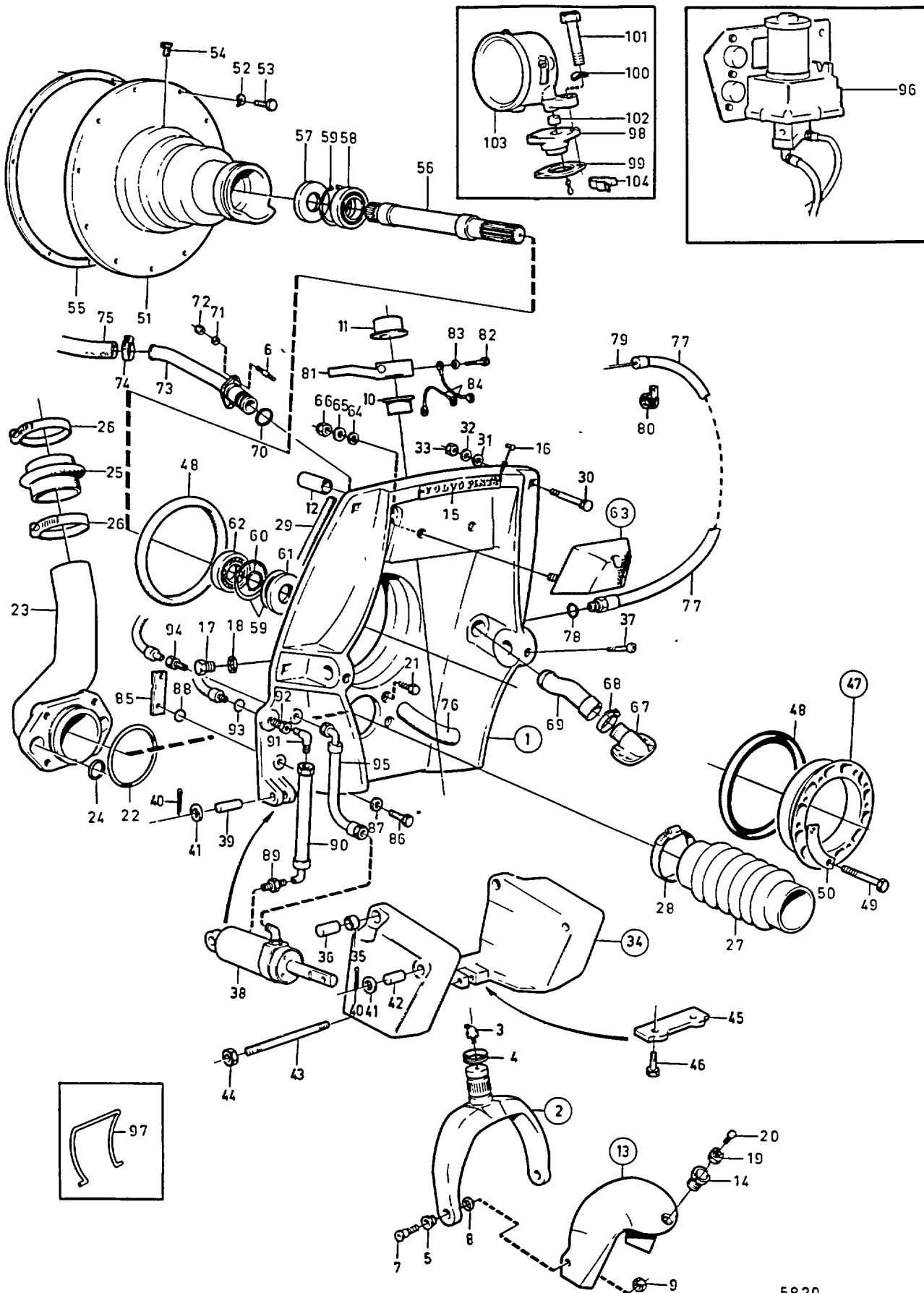
Sida Page	Grupp Group	Anslutningsdetaljer 280DP			Connecting components 280DP			Illustration 6492	1280		
26	4a	AQAD40B						1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
58	1	-	-	-	851766-6	Slanganslutning	Hose connection	5		SE GRUPP4C	11E
59	1	-	-	-	850488-8	Styrarm	Steering arm	5		SE GRUPP6	118L
60	1	-	-	-	940097-9	Bricka	Washer	0			1200
61	1	-	-	-	955537-6	Skruv	Screw	0			1220
62	1	-	-	-	839091-6	Slang	Hose	4			1240
63	1	-	-	-	897745-6	Packning	Gasket	2			1260
64	1	-	-	-	952635-1	Klamma	Clamp	0			1280
65	ERF	-	-	-		Reglagekabel	Control cable			SE GRUPP9	1300
66	6	-	-	-	943426-7	Skruv	Screw	0			1320
67	6	-	-	-	850418-5	O-ring	O-ring	2			1340
68	6	-	-	-	190878-9	Bricka	Washer	0			1360
69	6	-	-	-	940176-1	Mutter	Nut	0			J
70	ERF	-	-	-		Kablar och kabelskor	Cables and cable terminals			SE GRUPP3	1400
71	1	-	-	-	897824-9	Transportspärr	Transport catch	6	19)		1440
72	1	-	-	-	839425-6	Primaraxel	Primary shaft	5			1460
73	1	-	-	-	11013-0	Kullager	Ball bearing	2			1480
74	1	-	-	-	914462-7	Låsring	Circlip	0			J
75	3	-	-	-	914533-5	Spårring	Retaining ring	0			1520
76	1	-	-	-	958860-9	Tätningring	Seal ring	2			1540
77	1	-	-	-	181105-8	Kullager	Ball bearing	2			1560
78	1	-	-	-	958860-9	Tätningring	Seal ring	2			1580
79	1	-	-	-	844519-9	Svanghjulskåpa	Flywheel casing	7		SE GRUPP2A	1600
80	1	-	-	-	829488-6	Packning	Gasket	S			1620
81	1	-	-	-	804262-4	Propp	Plug	4			1640
82	11	-	-	-	941908-6	Fjädrande bricka	Resilient washer	0			1660
83	11	-	-	-	955319-9	Skruv	Screw	0			16"



6492

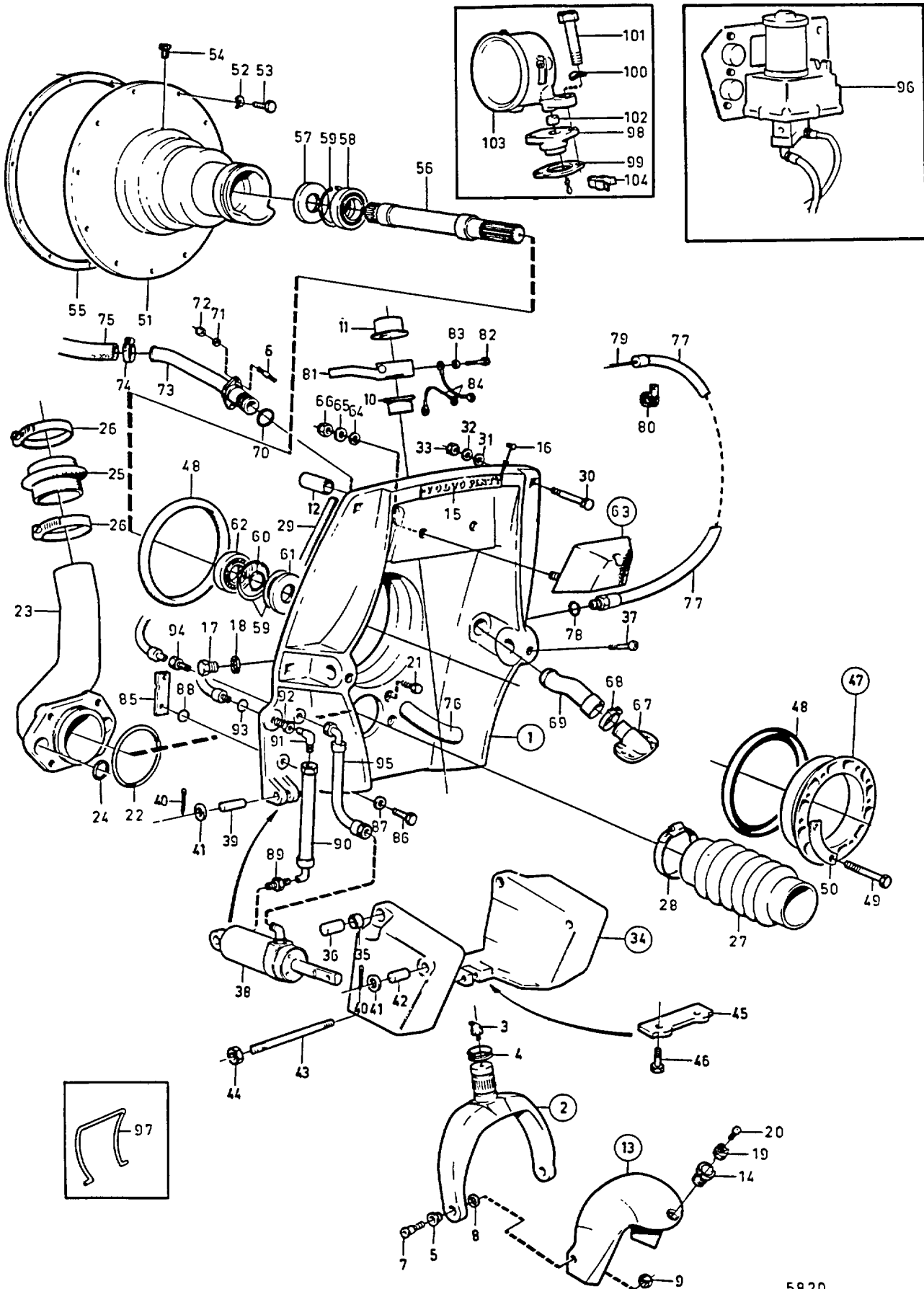
Sida Page	Grupp Group	Anslutningsdetaljer 280DP med power trim AQAD40B	Connecting components 280DP with power trim	Illustration 5820 1987-04	1285
28	4a				

Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	875674-4	Sköld	Shield		6		002
2	1	-	-	-	839441-3	Styrgeffell	Steering fork		5		0040
3	1	-	-	-	914169-8	Smorjnippel	Grease nipple		0		0060
4	1	-	-	-	839195-5	V-ring	V-ring	S	2		0080
5	2	-	-	-	814640-9	Bussning	Bushing		3		0100
6	2	-	-	-	941872-4	Pinnskruv	Stud bolt		0		0120
7	2	-	-	-	897798-5	Skruv	Screw		2		0140
8	2	-	-	-	897244-0	Bricka	Washer		2		0160
9	2	-	-	-	943152-9	Mutter	Nut		0		0180
10	1	-	-	-	853863-9	Bussning	Bushing		2	(853496)	0200
11	1	-	-	-	853864-7	Bussning	Bushing		2	(853497)	0200
12	1	-	-	-	850653-7	Lager	Bearing		3	SE GRUPP 6	0200
13	1	-	-	-	851267-5	Skyddshjäl	Protecting cap		5		0260
14	1	-	-	-	853048-7	Bussning	Bushing		2	(851262)	0280
15	1	-	-	-	832608-4	Skyt	Sign		6		0300
16	2	-	-	-	804269-9	Skruv	Screw		3		0320
17	1	-	-	-	897744-9	Propp	Plug		2		0400
18	1	-	-	-	897745-6	Packning	Gasket		2		0400
19	1	-	-	-	852705-3	Lagertapp	Bearing pin		2	(851263)	0380
20	2	-	-	-	941807-0	Skruv	Screw		0		0400
21	4	-	-	-	959967-1	Skruv	Screw		0		0420
22	1	-	-	-	925256-0	O-ring	O-ring	S	0		0440
23	1	-	-	-	842962-3	Avgasgenomforing	Exhaust outlet		6		0460
24	4	-	-	-	925055-6	O-ring	O-ring	S	0		0480
25	1	-	-	-	843228-8	Avgasslang	Exhaust hose		2	SE GRUPP 2B	0500
26	2	-	-	-	943483-8	Slangklamma	Hose clamp		0	SE GRUPP 2B	0500
27	1	-	-	-	875848-4	Balgsats	Bellow kit		1		0500
	1	-	-	-		Balg	Bellows		8		0500
	9	-	-	-		Ring	Ring		8		0550
28	2	-	-	-	961675-6	Slangklamma	Hose clamp		0		0560
29	1	-	-	-	897726-6	Tätninglist	Sealing strip		2		0580
30	6	-	-	-	943426-7	Skruv	Screw		0		0600
31	6	-	-	-	850418-5	O-ring	O-ring		3		0620
32	6	-	-	-	190878-9	Bricka	Washer		0		0640
33	6	-	-	-	940176-1	Mutter	Nut		0		0660
34	1	-	-	-	850917-6	Bygel	Brace		7		0680
35	2	-	-	-	832820-5	Bussning	Bushing		3		0700
36	2	-	-	-	850804-6	Lagertapp	Bearing pin		3		0700
37	2	-	-	-	850904-4	Låsskruv	Lock screw		2		0700
38	1	-	-	-	850921-8	Hydraulcylinder	Hydraulic cylinder		6	SB	0760
	1	-	-	-	850939-0	Hydraulcylinder	Hydraulic cylinder		6	BB	0780
39	2	-	-	-	850805-3	Cylinderpinne	Cylinder pin		3		0800
40	8	-	-	-	851073-7	Saxpinne	Cotter pin		1		0820
41	8	-	-	-	943194-1	Bricka	Washer		0		0820
42	2	-	-	-	850806-1	Cylinderpinne	Cylinder pin		3		0820
43	1	-	-	-	850807-9	Stallpinne	Setting pin		2		0880
44	2	-	-	-	814357-0	Mutter	Nut		2		0900
45	1	-	-	-	832598-7	Zinkelektrod	Zinc electrode		1		0920
46	2	-	-	-	959438-3	Skruv	Screw		0		0940
47	1	-	-	-	843626-3	Klamringsats	Clamp ring kit		5		0960
48	2	-	-	-	813967-7	Gummiring	Rubber ring		3		0980
49	6	-	-	-	191844-0	Skruv	Screw		0		1000
50	3	-	-	-	806624-3	Låsbleck	Lock washer		2		1020
51	1	-	-	-	844519-9	Kåpa	Casing		7		1020
52	11	-	-	-	941909-4	Fjädrande bricka	Resilient washer		0		1020
53	11	-	-	-	955319-9	Skruv	Screw		0		1060
54	1	-	-	-	804262-4	Propp	Plug		0		1100
55	1	-	-	-	829488-6	Packning	Gasket		8		1120
56	1	-	-	-	839425-6	Primaxel	Primary shaft		5		1120
57	1	-	-	-	958860-9	Tätningring	Seal ring		0		1120
58	1	-	-	-	181105-8	Kullager	Ball bearing		3		1160
59	3	-	-	-	914533-5	Spårring	Retaining ring		0		1200
60	1	-	-	-	914462-7	Låsring	Circlip		0		1220



Sida Page	Grupp Group	Anslutningsdetaljer 280DP med power trim AQAD40B	Connecting components 280DP with power trim	Illustration 5820 1987-04	1285
30	4a				

Pos Fig	Antal/Quantity			Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
61	1	-	-	958860-9	Tatningsring	Seal ring	S	0		124
62	1	-	-	11013-0	Kullager	Ball bearing		3		1260
63	1	-	-	875531-6	Gummikudde	Rubber block		3		1280
64	2	-	-	832565-6	Packning	Gasket		3		1300
65	2	-	-	940097-9	Bricka	Washer		0		1320
66	2	-	-	950364-0	Mutter	Nut		0		1340
67	1	-	-	832846-0	Slangnippel	Hose nipple		5	SE GRUPP 4C	1360
68	2	-	-	853548-6	Slangklamma	Hose clamp		0	(961668)	1380
69	1	-	-	875822-9	Slangsats	Hose kit		2	(897599)	1400
	1	-	-		Slang	Hose		8		1405
	2	-	-	853548-6	Slangklamma	Hose clamp		0	(961668)	1410
70	1	-	-	925063-0	O-ring	O-ring		0		1420
71	2	-	-	955893-3	Bricka	Washer		0		1440
72	2	-	-	950352-5	Låsmutter	Lock nut		0		1460
73	1	-	-	850729-5	Genomföring	Grommet		5		1480
74	2	-	-	943476-2	Slangklamma	Hose clamp		0		1500
75	ERF	-	-	941799-9	Slang	Hose		0	L=300MM	1520
76	1	-	-	843235-3	Gummikrok	Rubber bend		4		160
77	1	-	-	839091-6	Slang	Hose		4		1560
78	1	-	-	897745-6	Packning	Gasket		2		1580
79	ERF	-	-		Reglagekabel	Control cable			SE GRUPP 9	1600
80	1	-	-	952635-1	Klamma	Clamp		0		1620
81	1	-	-	850488-8	Styrarm	Steering arm		5	SE GRUPP 6	1640
82	1	-	-	955537-6	Skruv	Screw		0		1660
83	1	-	-	940097-9	Bricka	Washer		0		1680
84	ERF	-	-		Kablar och kabelskor	Cables and cable terminals			SE GRUPP 3	1700
85	2	-	-	850902-8	Mellanlägg	Spacer		4		17
86	2	-	-	851071-1	Skruv	Screw		3		1760
87	2	-	-	851072-9	Bricka	Washer		3		1780
88	2	-	-	850418-5	O-ring	O-ring		2		1800
89	2	-	-	850903-6	Rörkoppling	Pipe connection		3		1820
90	2	-	-	850907-7	Slang	Hose		2		1840
91	2	-	-	850916-8	Nippel	Nipple		2		1860
92	2	-	-	851221-2	Rörkoppling	Pipe connection		2		1880
93	2	-	-	941820-3	O-ring	O-ring		0	SE SIDA 18, 2-A19	1900
94	2	-	-	851042-2	Genomföring	Grommet		2	SE SIDA 18, 2-A19	1920
95	2	-	-	850906-9	Slang	Hose		2		40
96	-	-	-		Hydraulpump med monteringsdetaljer	Hydraulic pump with installation comps			SE SIDA 22, 2-A23	160
97	1	-	-	897824-9	Transportspärr	Transport catch		6	19)	1980
98	1	-	-	851307-9	Flans	Flange		5		2000
99	1	-	-	851308-7	Packning	Gasket		2		2040
100	2	-	-	955894-1	Bricka	Washer		0		160
101	1	-	-	955525-1	Skruv	Screw		0		80
	1	-	-	940159-7	Skruv	Screw		0		2100
102	1	-	-	830449-5	Tatningsring	Seal ring		8		2120
103	1	-	-	852695-6	Trimindikatorgivare	Trim indie sender		5	(851313)	2140
104	1	-	-	851397-0	Klamma	Clamp		3		2160





Sida Page	Grupp Group	Anslutningsdetaljer AQ drev 280				Connecting components AQ drive unit 280				Illustration	
32	4a	AQD40A, AQAD40A, AQAD40B								1300 5392 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	875635-5	Skoldsats .....	Shield kit.....	8		29) MO-XXXX/187079	002
	1	-	-	-	875672-8	Skoldsats .....	Shield kit.....	6		MOXXXX/187080-	003L
2	1	-	-	-	839441-3	..Styrgaffel .....	..Steering fork .....	5			0040
3	1	-	-	-	914169-8	..Smorjnippl.....	..Nipple .....	0			0060
4	1	-	-	-	839195-5	..V-ring .....	..V-ring .....	S 2			0080
5	2	-	-	-	814640-9	..Bussning .....	..Bushing .....	2			0100
6	2	-	-	-	941872-4	..Pinnskruv..	..Stud bolt .....	0			0120
7	2	-	-	-	897798-5	..Skruv .....	..Screw .....	2			0140
8	2	-	-	-	897244-0	..Bricka .....	..Washer .....	2			0160
9	2	-	-	-	943152-9	..Mutter .....	..Nut .....	0			0180
10	1	-	-	-	853863-9	..Bussning .....	..Bushing .....	2	(853496)		0200
11	1	-	-	-	853864-7	..Bussning..	..Bushing .....	2	(853497)		0
12	1	-	-	-	850653-7	..Lager .....	..Bearing .....	4	SE GRUPP 6		0240
13	1	-	-	-	839592-3	..Skyddshjalm .....	..Protecting cap.....	5	MO-XXXX/187079		0260
	1	-	-	-	851267-5	..Skyddshjalm .....	..Protecting cap.....	5	MOXXXX/187080-		0270
14	1	-	-	-	839698-8	..Bussning .....	..Bushing .....	2	32)		0280
15	1	-	-	-	839697-0	..Bussning .....	..Bushing .....	2	MO-XXXX/187079		0200
15a	1	-	-	-	851262-6	..Bussning .....	..Bushing .....	2	31) ERS AV 853048		0
	1	-	-	-	853048-7	..Bussning .....	..Bushing .....	2	31)		0311
16	1	-	-	-	832608-4	..Skylt .....	..Sign .....	6			0320
17	2	-	-	-	804269-9	..Skruv .....	..Screw .....	3			0340
17a	1	-	-	-	852705-3	Lagertapp .....	Bearing tap .....	2	(851263)		0350
										MOXXXX/187080-	0351
17b	2	-	-	-	941807-0	Ansattsskruv .....	Bearing bolt .....	0		MOXXXX/187080-	0355
18	1	-	-	-	897744-9	Propp .....	Plug .....	4		MOXXXX/187080-	0360
19	1	-	-	-	897745-6	Packning .....	Gasket .....	S 2			0380
20	2	-	-	-	956568-0	Skruv .....	Screw .....	0	SE GRUPP 9		04
21	1	-	-	-	897726-6	Tätninglist .....	Sealing strip .....	2			04
22	4	-	-	-	959967-1	Skruv .....	Screw .....	0			0440
23	1	-	-	-	925256-0	Gummiring .....	Rubber ring .....	S 1			0460
24	4	-	-	-	925055-6	Gummiring .....	Rubber ring .....	S 1			0480
25	1	-	-	-	842962-3	Avgasgenomforing .....	Exhaust outlet .....	6			0500
26	1	-	-	-	875828-6	Bälgsats .....	Bellow kit .....	1	(850004)		0520
	1	-	-	-		..Balg .....	..Bellows .....	8			0525
27	2	-	-	-	961675-6	..Slangklamma .....	..Hose clamp .....	0			0540
28	1	-	-	-	843228-8	Avgasslang .....	Exhaust hose .....	1	SE GRUPP 2B		0560
29	2	-	-	-	943483-8	Slangklamma .....	Hose clamp .....	0	SE GRUPP 2B		0580
30	1	-	-	-	897744-9	Propp .....	Plug .....	4			0600
31	1	-	-	-	897745-6	Packning .....	Gasket .....	S 2			0640
32	1	-	-	-	832598-7	Zinkelektrod .....	Zinc electrode .....	1			0660
33	2	-	-	-	959438-3	Skruv .....	Screw .....	0			0680
34	1	-	-	-	814301-8	Stallpinne .....	Setting pin .....	2			0700
35	2	-	-	-	814357-0	Mutter .....	Nut .....	2			0720
36	2	-	-	-	853175-8	Lagertapp .....	Bearing pin .....	3	(897831)		0740
37	2	-	-	-	941873-2	Skruv .....	Screw .....	0			0760
38	2	-	-	-	941670-2	Bricka .....	Washer .....	0			0780
39	1	-	-	-	843626-3	Klamringssats .....	Clampring kit .....	5			0800
40	2	-	-	-	813967-7	..Gummiring .....	..Rubber ring .....	3			0820
41	6	-	-	-	191844-0	..Skruv .....	..Screw .....	0			0840
42	3	-	-	-	806624-3	..Låsbleck .....	..Lock washer .....	2			0860
43	1	-	-	-	875531-6	Gummikudde .....	Rubber block .....	3			0880
44	2	-	-	-	832565-6	..Packning .....	..Gasket .....	2			0900
45	2	-	-	-	960142-8	..Bricka .....	..Washer .....	0			0920
46	2	-	-	-	950364-0	..Mutter .....	..Nut .....	0			0940
47	1	-	-	-	850697-4	Genomforing .....	Grommet .....	5	20) MO-1507		0960
	1	-	-	-	850729-5	Genomforing .....	Trough-hullfitting .....	5	21) MO1508-		0980

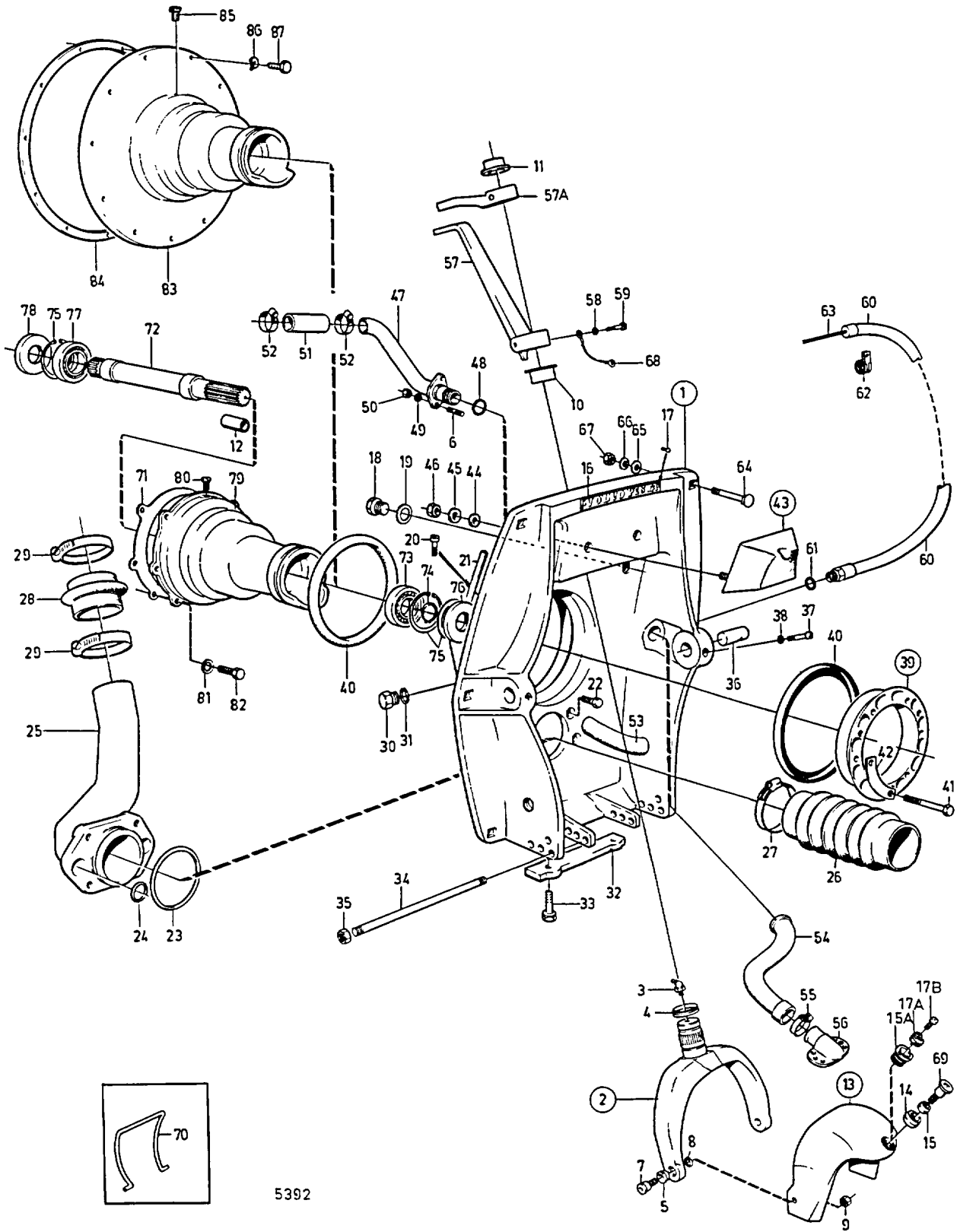
20. För tidigare utförande av styrsystem. For early production of steering system.

21. För senare utförande av styrsystem. For late production of steering system.

29. Ersatt av 1st 875672 1st 851265 1st 851263 2st 941807. Replaced by 1pc 875672 1pc 851265 1pc 851263 2pcs 941807.

31. För lagertapp med 2 skruv. For bearing pin with 2 bolts.

32. För M18 skruv. For M18 bolts.



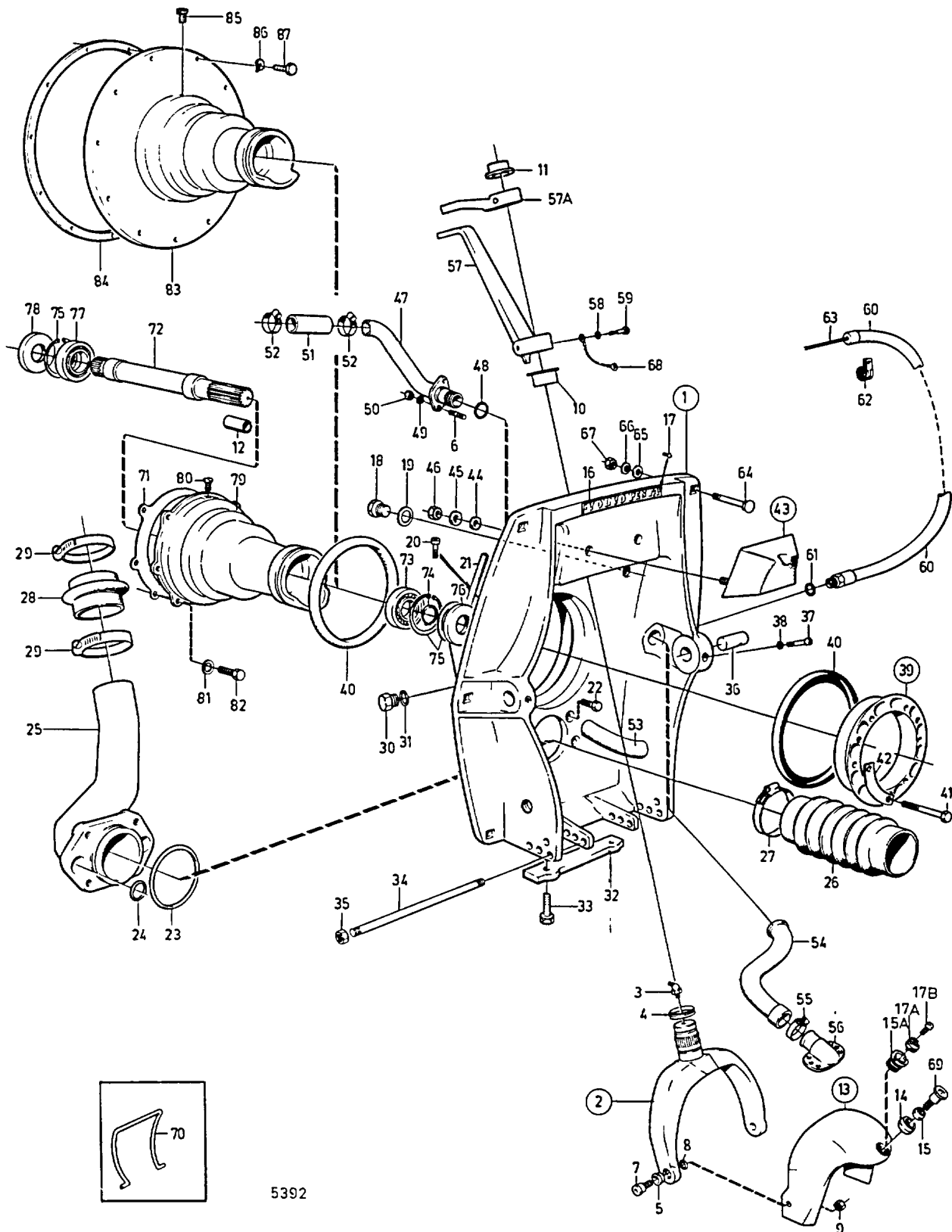
5392

Sida Page	Grupp Group	Anslutningsdetaljer AQ drev 280			Connecting components AQ drive unit 280			Illustration	1300		
34	4a	AQD40A, AQAD40A, AQAD40B			AQ drive unit 280			5392			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
48	1	-	-	-	925063-0	Gummiring .....	Ring .....	0			096
49	2	-	-	-	955893-3	Bricka .....	Washer .....	0			1000
50	2	-	-	-	950352-5	Mutter .....	Cover .....	0			1020
51	ERF	-	-	-	952973-6	Slang .....	Hose .....	0	20) L=140MM MO-1507		1040
	ERF	-	-	-	941799-9	Slang .....	Hose .....	0	21) L=400MM MO1508-		1060
52	2	-	-	-	961670-7	Slangklamma .....	Hose clamp .....	0	SE GRUPP 2B		1080
53	2	-	-	-	843235-3	Gummikrök .....	Rubber elbow .....	3			1100
54	1	-	-	-	875822-9	Slangsats .....	Hose kit .....	3	(897599)		1120
	1	-	-	-		Slang .....	Hose .....	8			1125
55	2	-	-	-	853548-6	Slangklamma .....	Hose clamp .....	0	(961668)		1140
56	1	-	-	-	851766-6	Slangnippel .....	Hose nipple .....	5	(832846) SE GRUPP 4C		120
57	1	-	-	-	842871-6	Styrarm .....	Steering arm .....	5	20) SE GRUPP 6 MO-1507		120
57a	1	-	-	-	850488-8	Styrarm .....	Steering arm .....	5	21) SE GRUPP 6 MO1508-		1190
58	1	-	-	-	940097-9	Bricka .....	Washer .....	0			1200
59	1	-	-	-	955537-6	Skruv .....	Screw .....	0			1220
60	1	-	-	-	839091-6	Slang .....	Hose .....	4			1240
61	1	-	-	-	897745-6	Packning .....	Gasket .....	2			1260
62	1	-	-	-	952635-1	Klamma .....	Clamp .....	0			0
63	ERF	-	-	-		Reglagekabel .....	Control cable .....		SE GRUPP 9		1300
64	6	-	-	-	943426-7	Skruv .....	Screw .....	0			1320
65	6	-	-	-	850418-5	O-ring .....	Rubber ring .....	2			1340
66	6	-	-	-	190878-9	Bricka .....	Washer .....	0			1360
67	6	-	-	-	940176-1	Mutter .....	Nut .....	0			1380
68	ERF	-	-	-		Kablar och kabelskor .....	Cables and cable terminals .....		SE GRUPP 3		1400
69	1	-	-	-		Ansattsskruv .....	Bearing bolt .....		SE GRUPP 4C		1420
	-	-	-	-					MO-XXXX/187079		14
70	1	-	-	-	897824-9	Transportspärr .....	Transport catch .....	6	19)		14
71	1	-	-	-	803921-6	Packning .....	Gasket .....	8			1480
72	1	-	-	-	839425-6	Primaraxel .....	Primary shaft .....	5			1500
73	1	-	-	-	11013-0	Kullager .....	Ball bearing .....	2			1520
74	1	-	-	-	914462-7	Låsring .....	Lock ring .....	0			1540
75	3	-	-	-	914533-5	Låsring .....	Lock ring .....	0			1560
76	1	-	-	-	958860-9	Tätningssring .....	Seal ring .....	2			1580
77	1	-	-	-	181105-8	Kullager .....	Ball bearing .....	2			1600
78	1	-	-	-	958860-9	Tätningssring .....	Seal ring .....	2			1620
79	1	-	-	-		Primäraxelkåpa .....	Primary shaft housing .....		ERS AV 844519		1640
80	1	-	-	-	804262-4	Propp .....	Plug .....	4			170
81	6	-	-	-	941909-4	Fjäderbricka .....	Washer .....	0			1700
82	6	-	-	-	955319-9	Skruv .....	Bolt .....	0			1720
83	1	-	-	-	844519-9	Kåpa .....	Casing .....	7	SEN UTF		1740
84	1	-	-	-	829488-6	Packning .....	Gasket .....	8	SE GRUPP 2A		1740
85	1	-	-	-	804262-4	Propp .....	Plug .....	4			1760
86	11	-	-	-	941909-4	Fjäderbricka .....	Washer .....	0			170
87	11	-	-	-	955319-9	Skruv .....	Bolt .....	0			0

19. Vid transport. For transport.

20. For tidigare utförande av styrsystem. For early production of steering system.

21. For senare utförande av styrsystem. For late production of steering system.

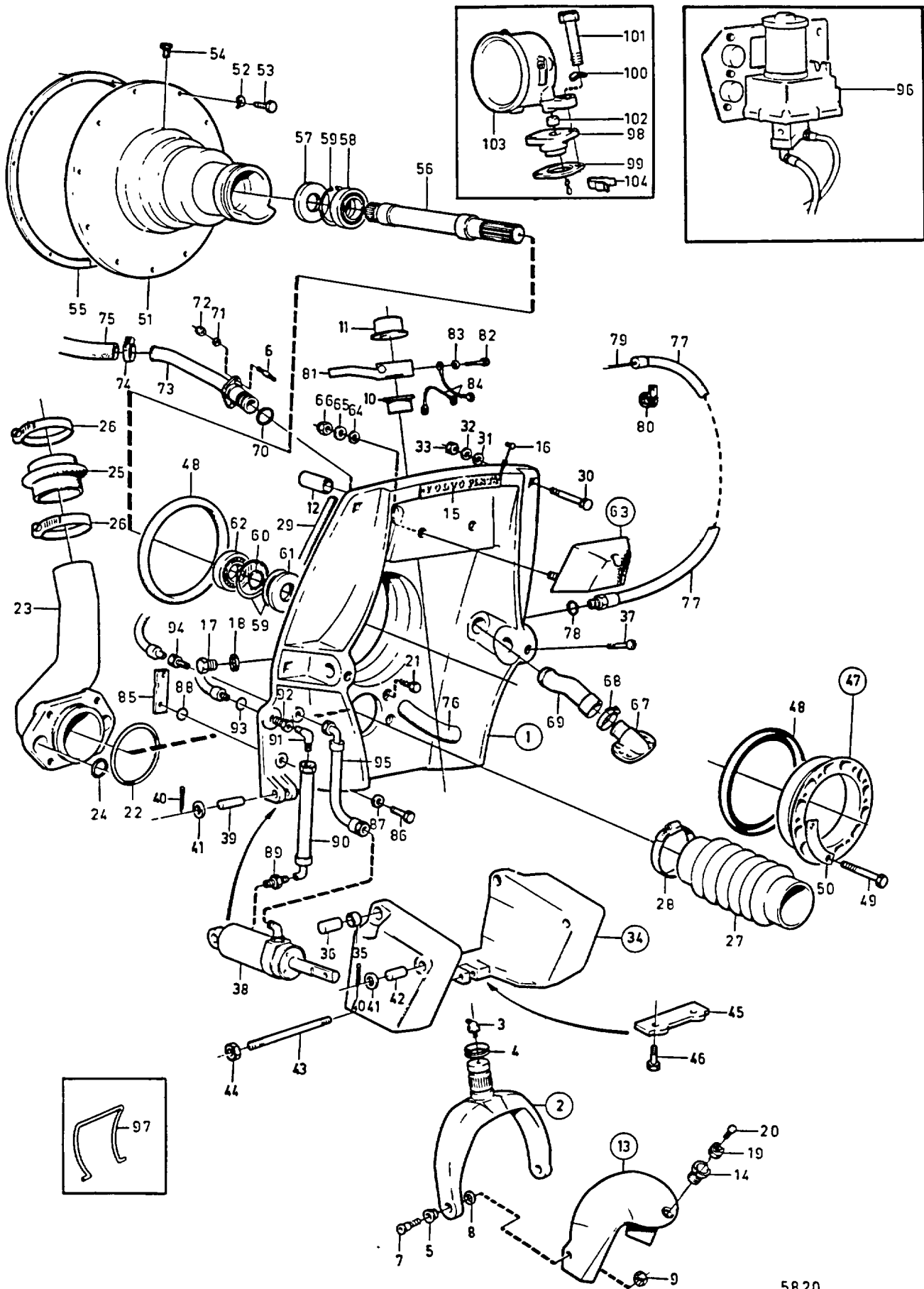


Sida Page	Grupp Group	Anslutningsdetaljer AQ drev 280 med power trim AQD40A, AQAD40A, AQAD40B	Connecting components AQ drive unit 280 with power trim	Illustration 5820 1987-04
36	4a			

1325

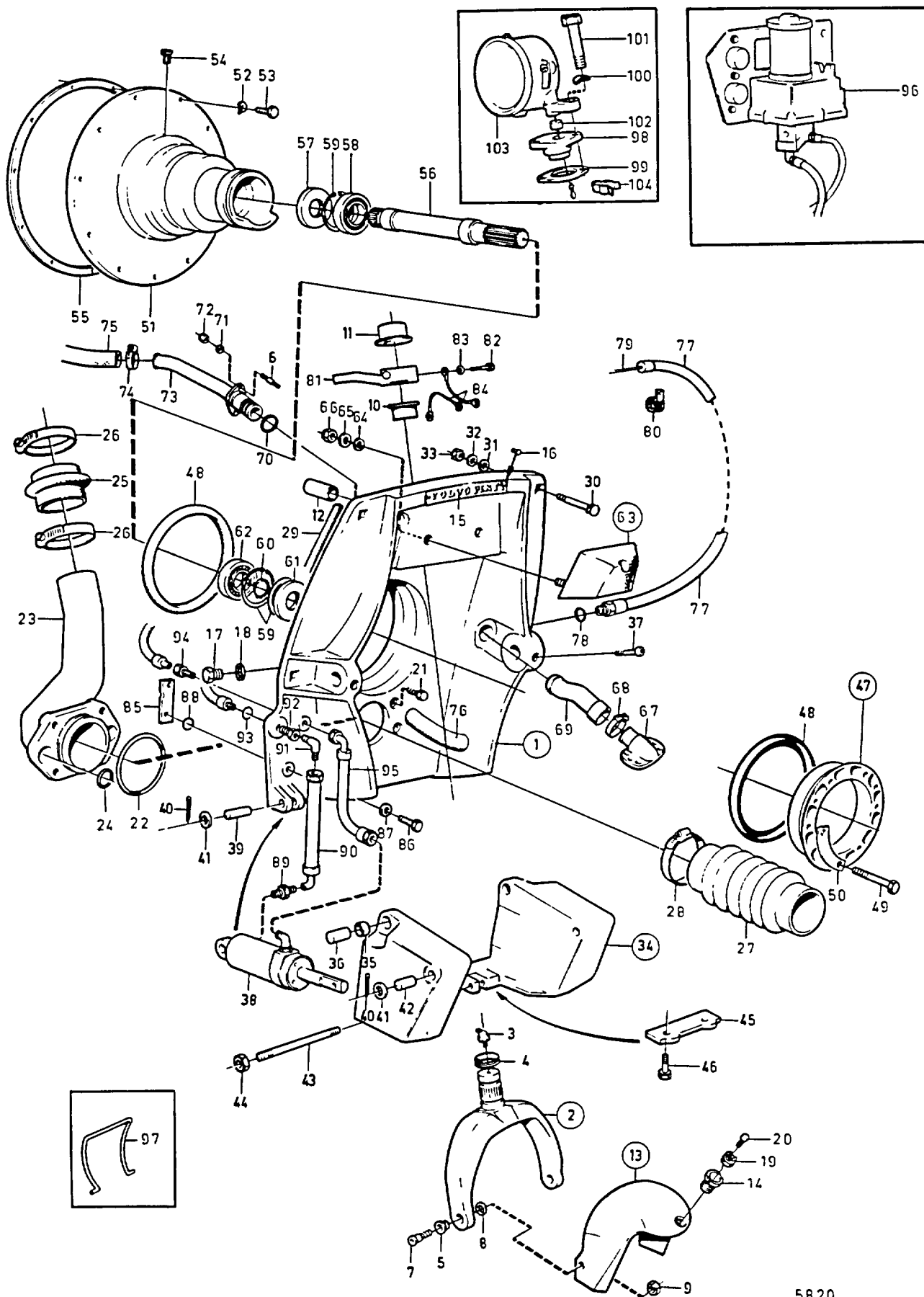
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
1	1	-	-	-	875674-4	Skold	Shield	6		
2	1	-	-	-	839441-3	Styrgaffel	Steering fork	5		
3	1	-	-	-	914169-8	Smörjnippel	Grease nipple	0		
4	1	-	-	-	839195-5	V-ring	V-ring	S 2		
5	2	-	-	-	814640-9	Bussning	Bushing	3		
6	2	-	-	-	941872-4	Pinnskruv	Stud bolt	0		
7	2	-	-	-	897798-5	Skruv	Screw	2		
8	2	-	-	-	897244-0	Bricka	Washer	2		
9	2	-	-	-	943152-9	Mutter	Nut	0		
10	1	-	-	-	853863-9	Bussning	Bushing	2	(853496)	
11	1	-	-	-	853864-7	Bussning	Bushing	2	(853497)	
12	1	-	-	-	850653-7	Lager	Bearing	3	SE GRUPP 6	
13	1	-	-	-	851267-5	Skyddshjäl	Protecting cap	5		
14	1	-	-	-	853048-7	Bussning	Bushing	2	851262	
15	1	-	-	-	832608-4	Skylt	Sign	6		
16	2	-	-	-	804269-9	Skruv	Screw	3		
17	1	-	-	-	897744-9	Propp	Plug	2		
18	1	-	-	-	897745-6	Packning	Gasket	2		
19	1	-	-	-	852705-3	Lagertapp	Bearing pin	2	(851263)	
20	2	-	-	-	941807-0	Skruv	Screw	0		
21	4	-	-	-	959967-1	Skruv	Screw	0		
22	1	-	-	-	925256-0	O-ring	O-ring	S 0		
23	1	-	-	-	842962-3	Avgasgenomföring	Exhaust outlet	6		
24	4	-	-	-	925055-6	O-ring	O-ring	S 0		
25	1	-	-	-	843228-8	Avgasslang	Exhaust hose	2	SE GRUPP 2B	
26	2	-	-	-	943483-8	Slangklamma	Hose clamp	0	SE GRUPP 2B	
27	1	-	-	-	875828-6	Balgsats	Bellow kit	1	(850004)	
	1	-	-	-		Bälg	Bellows	8		
28	2	-	-	-	961675-6	Slangklamma	Hose clamp	0		
29	1	-	-	-	897726-6	Tätninglist	Sealing strip	2		
30	6	-	-	-	943426-7	Skruv	Screw	0		
31	6	-	-	-	850418-5	O-ring	O-ring	3		
32	6	-	-	-	190878-9	Bricka	Washer	0		
33	6	-	-	-	940176-1	Mutter	Nut	0		
34	1	-	-	-	850917-6	Bygel	Brace	7		
35	2	-	-	-	832820-5	Bussning	Bushing	3		
36	2	-	-	-	850804-6	Lagertapp	Bearing pin	3		
37	2	-	-	-	850904-4	Låsskruv	Lock screw	2		
38	1	-	-	-	850921-8	Hydraulcylinder	Hydraulic cylinder	6	SB	
	1	-	-	-		Hydraulcylinder	Hydraulic cylinder	6	BB	
39	2	-	-	-	850805-3	Cylinderpinne	Cylinder pin	3		
40	8	-	-	-	851073-7	Saxpinne	Cotter pin	1		
41	8	-	-	-	943194-1	Bricka	Washer	0		
42	2	-	-	-	850806-1	Cylinderpinne	Cylinder pin	3		
43	1	-	-	-	850807-9	Stallpinne	Setting pin	2		
44	2	-	-	-	814357-0	Mutter	Nut	2		
45	1	-	-	-	832598-7	Zinkelektrod	Zinc electrode	1		
46	2	-	-	-	959438-3	Skruv	Screw	0		
47	1	-	-	-	843626-3	Klämringsatts	Clamp ring kit	5		
48	2	-	-	-	813967-7	Gummiring	Rubber ring	3		
49	6	-	-	-	191844-0	Skruv	Screw	0		
50	3	-	-	-	806624-3	Låsbleck	Lock washer	2		
51	1	-	-	-	844519-9	Kåpa	Casing	7		
52	11	-	-	-	941909-4	Fjädrande bricka	Resilient washer	0		
53	11	-	-	-	955319-9	Skruv	Screw	0		
54	1	-	-	-	804262-4	Propp	Plug	0		
55	1	-	-	-	829488-6	Packning	Gasket	8		
56	1	-	-	-	839425-6	Primäraxel	Primary shaft	5		
57	1	-	-	-	958860-9	Tätningring	Seal ring	0		
58	1	-	-	-	11013-0	Kullager	Ball bearing	3		
59	3	-	-	-	914533-5	Spårring	Retaining ring	0		
60	1	-	-	-	914462-7	Låsring	Circlip	0		
61	1	-	-	-	958860-9	Tätningring	Seal ring	S 0		

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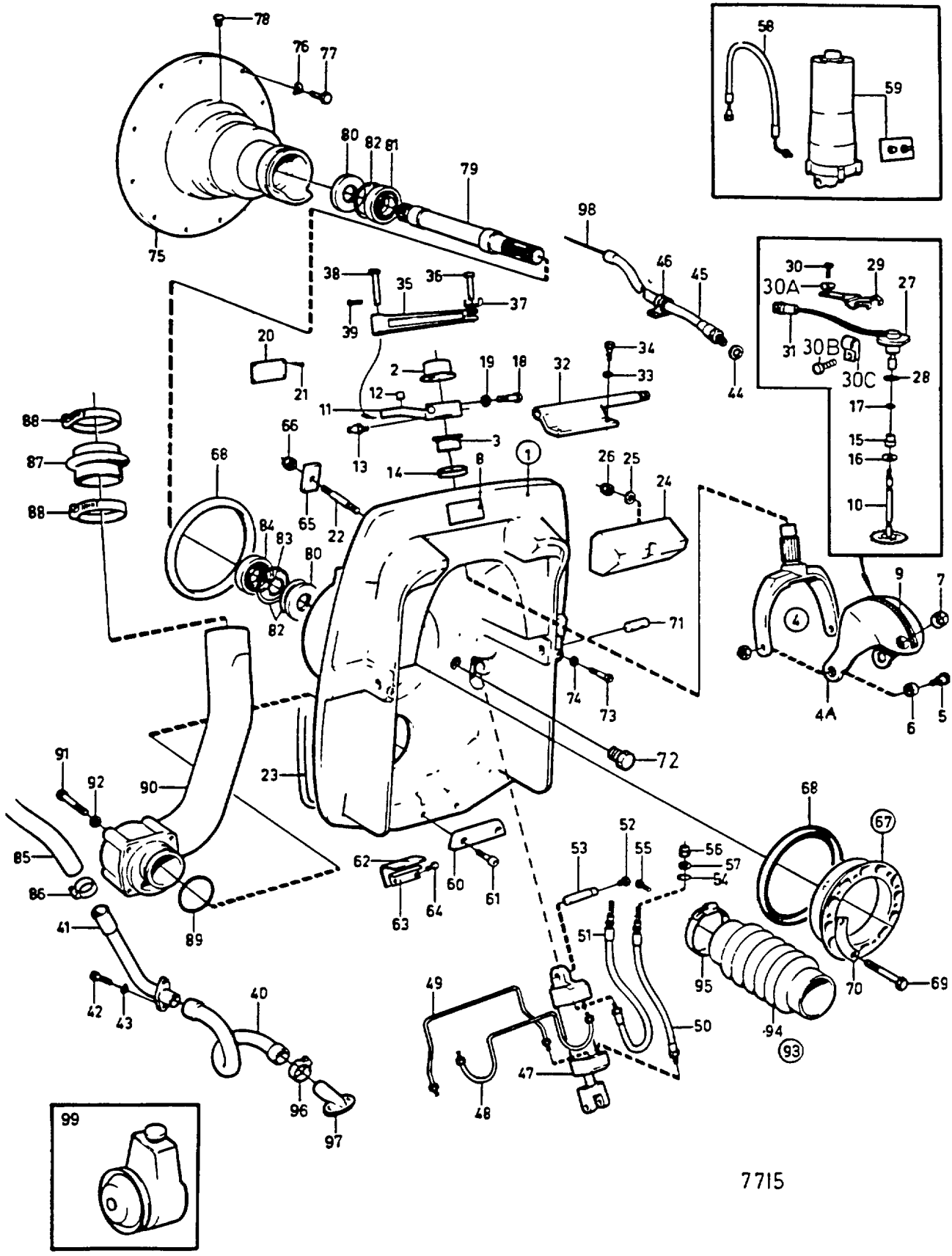
Sida Page	Grupp Group	Anslutningsdetaljer AQ drev 280 med power trim AQD40A, AQAD40A, AQAD40B	Connecting components AQ drive unit 280 with power trim	Illustration 5820 1987-04	1325
38	4a				

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
62	1	-	-	-	181105-8	Kullager	Ball bearing	3			1260
63	1	-	-	-	875531-6	Gummikudde	Rubber block	3			1280
64	2	-	-	-	832565-6	Packning	Gasket	3			1300
65	2	-	-	-	940097-9	Bricka	Washer	0			1320
66	2	-	-	-	950364-0	Mutter	Nut	0			1340
67	1	-	-	-	832846-0	Slangnippel	Hose nipple	5	SE GRUPP 4C		1360
68	2	-	-	-	853548-6	Slangklamma	Hose clamp	0	(961668)		1380
69	1	-	-	-	875822-9	Slangsats	Hose kit	2	(897599)		1400
	1	-	-	-		Slang	Hose	8			1405
	2	-	-	-	853548-6	Slangklamma	Hose clamp	0	(961668)		1410
70	1	-	-	-	925063-0	O-ring	O-ring	0			1410
71	2	-	-	-	955893-3	Bricka	Washer	0			1460
72	2	-	-	-	950352-5	Låsmutter	Lock nut	0			1480
73	1	-	-	-	850729-5	Genomforing	Grommet	5			1500
74	2	-	-	-	943476-2	Slangklamma	Hose clamp	0			1520
75	ERF	-	-	-	941799-9	Slang	Hose	0	L=300MM		1520
76	1	-	-	-	843235-3	Gummikrok	Rubber bend	4			1580
77	1	-	-	-	839091-6	Slang	Hose	4			1600
78	1	-	-	-	897745-6	Packning	Gasket	2			1620
79	ERF	-	-	-		Reglagekabel	Control cable	0	SE GRUPP 9		1640
80	1	-	-	-	952635-1	Klamma	Clamp	0			1660
81	1	-	-	-	850488-8	Styrarm	Steering arm	5	SE GRUPP 6		1660
82	1	-	-	-	955537-6	Skruv	Screw	0			1680
83	1	-	-	-	940097-9	Bricka	Washer	0			1700
84	ERF	-	-	-		Kablar och kabelskor	Cables and cable terminals	0	SE GRUPP 3		1720
85	2	-	-	-	850902-8	Mellanlägg	Spacer	4			176
86	2	-	-	-	851071-1	Skruv	Screw	3			176
87	2	-	-	-	851072-9	Bricka	Washer	3			1780
88	2	-	-	-	850418-5	O-ring	O-ring	2			1800
89	2	-	-	-	850903-6	Rorkoppling	Pipe connection	3			1820
90	2	-	-	-	850907-7	Slang	Hose	2			1840
91	2	-	-	-	850916-8	Nippel	Nipple	2			1860
92	2	-	-	-	851221-2	Rorkoppling	Pipe connection	2			1880
93	2	-	-	-	941820-3	O-ring	O-ring	0	SE SIDA 18, 2-A19		1900
94	2	-	-	-	851042-2	Genomforing	Grommet	2	SE SIDA 18, 2-A19		1920
95	2	-	-	-	850906-9	Slang	Hose	2			1940
96	ERF	-	-	-		Hydraulpump med mont.detaljer TID UTF	Hydraulic pump with install.comps TID UTF		SE SIDA 18, 2-A19		1985
	ERF	-	-	-		Hydraulpump med mont.detaljer SEN UTF	Hydraulic pump with install.comps SEN UTF		SE SIDA 22, 2-A23		1985
97	1	-	-	-	897824-9	Transportsparr	Transport catch	6	19)		2000
98	1	-	-	-	851307-9	Flans	Flange	5			2020
99	1	-	-	-	851308-7	Packning	Gasket	2			2080
100	2	-	-	-	955894-1	Bricka	Washer	0			2100
101	1	-	-	-	955525-1	Skruv	Screw	0			2120
	1	-	-	-	940159-7	Skruv	Screw	0			2140
102	1	-	-	-	830449-5	Tatningsring	Seal ring	8			2160
103	1	-	-	-	852695-6	Trimindikatorgivare	Trim indicator	5	(851313)		2160
104	1	-	-	-	851397-0	Klamma	Clamp	3			2160



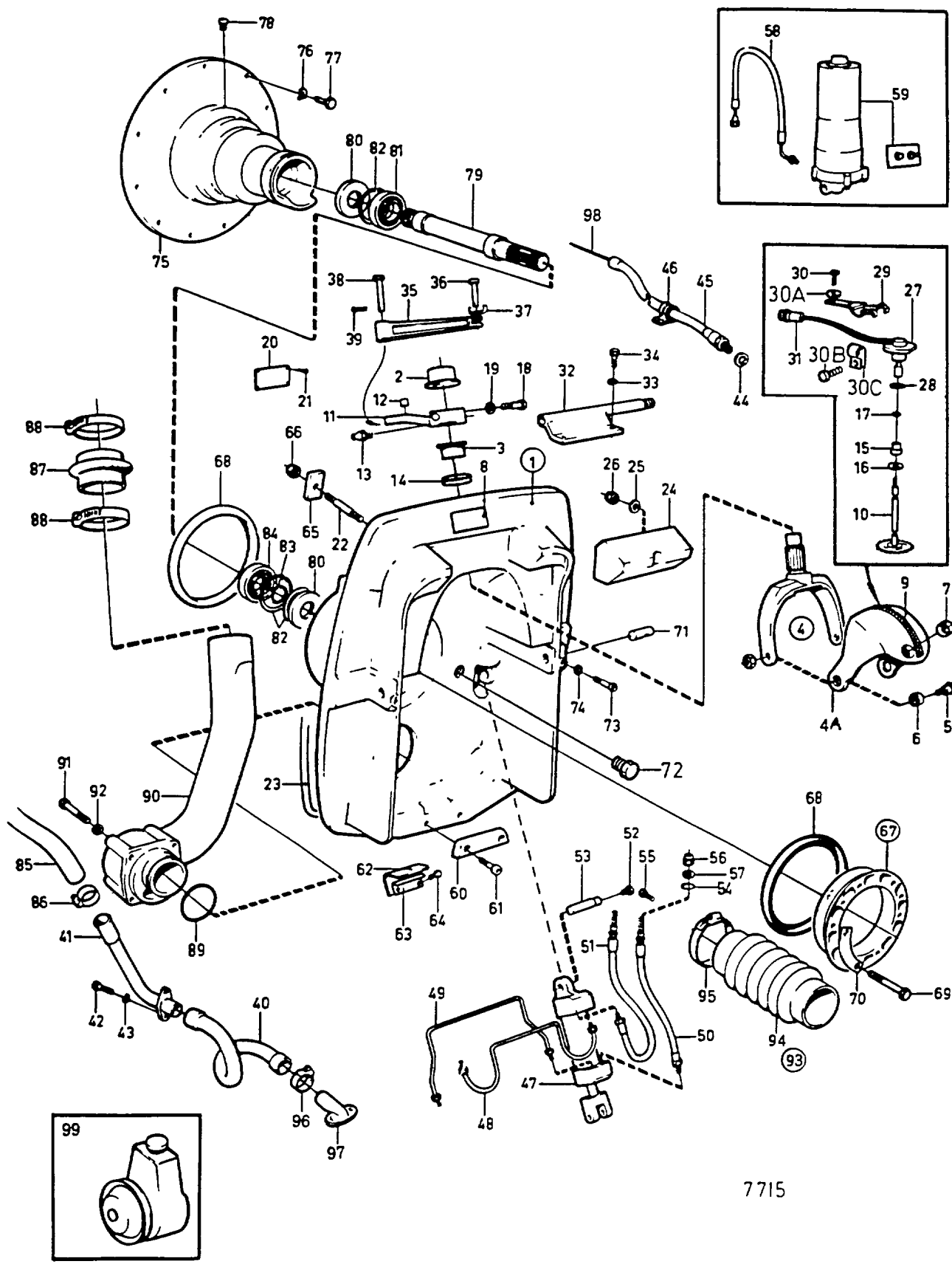


Sida Page	Grupp Group	Anslutningsdetaljer AQ drev 290, 290DP			Connecting components AQ drive unit 290, 290DP			Illustration 7715	1350		
40	4a	AQAD40B						1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	875845-0	Skoldsats	Shield kit	6			002
2	2	-	-	-	853863-9	.Bussning	.Bushing	2	(853496)		0040
3	2	-	-	-	853864-7	.Bussning	.Bushing	2	(853497)		0060
4	1	-	-	-	852950-5	.Styrgaffelsats	.Steering fork kit	5			0080
4a	1	-	-	-		..Skyddshjäl	..Protection cap	8			0100
5	2	-	-	-	851432-5	..Ansattskruv	..Shouter screw	2			0120
6	2	-	-	-		..Bussning	..Bushing	8			0140
7	1	-	-	-	853048-7	..Bussning	..Bushing	2			0160
8	1	-	-	-	852827-5	.Skylt	.Sign	4			0180
9	1	-	-	-	851434-1	.Kuggsegment	.Quadrant	4			0200
10	1	-	-	-	852984-4	.Kugghjul	.Gear	6			0220
11	1	-	-	-	853017-2	.Styrmarm	.Steering arm	5			0240
12	1	-	-	-	949368-5	..Bussning	..Bushing	0			0260
13	1	-	-	-	914169-8	.Smorjnippel	.Grease nipple	0			0280
14	1	-	-	-	839195-5	.V-ring	.V-ring	2			0300
15	1	-	-	-	851430-9	.Bussning	.Bushing	2			0320
16	1	-	-	-	966207-3	.Tätningring	.Seal ring	0			0340
17	1	-	-	-	925050-7	.O-ring	.O-ring	0			0360
18	1	-	-	-	955320-7	.Skruv	.Screw	0			0380
19	1	-	-	-	941908-6	.Fjadrande bricka	.Resilient washer	0			0400
20	1	-	-	-		Skylt	Sign	8			0420
21	4	-	-	-	950885-4	Skruv	Screw	0			0440
22	6	-	-	-	853982-7	Skruv	Screw	3	(853043)		0460
23	1	-	-	-	852868-9	Tätningstrib	Seal strip	2			0480
24	1	-	-	-	852772-3	Gummikudde	Rubber block	3			0500
25	2	-	-	-	960148-5	Bricka	Washer	0			0520
26	2	-	-	-	963107-8	Mutter	Nut	0			0540
27	1	-	-	-	828726-0	Trimgivare	Potentiometer	3			0560
28	1	-	-	-	955991-5	O-ring	O-ring	0			0580
29	1	-	-	-	853039-6	Konsol	Bracket	5			0600
30	1	-	-	-	940199-3	Skruv	Screw	0			0620
30a	1	-	-	-	941907-8	Fjadrande bricka	Resilient washer	0			0640
30b	1	-	-	-	958247-9	Skruv	Screw	8			0660
30c	1	-	-	-	952628-6	Klammer	Clamp	0			0680
31	ERF	-	-	-		Kablar och kabelskor	Cables and terminals		SEGRUPP 3		0700
32	1	-	-	-	852775-6	Kabelfaste	Cable attachment	5			0720
33	2	-	-	-	942336-9	Fjadrande bricka	Resilient washer	0			0740
34	2	-	-	-	959241-1	Skruv	Screw	0			0760
35	1	-	-	-	852786-3	Lankstång	Link rod	5			0780
36	1	-	-	-	913158-2	Saxpinne	Clevis pin	0			0800
37	1	-	-	-	853160-0	Låsbricka	Washer	3			0820
38	1	-	-	-	852788-9	Bult	Screw	4			0840
39	1	-	-	-	907861-9	Saxpinne	Cotter pin	0			0860
40	1	-	-	-	875847-6	Slangsats	Hose kit	3	(852768)		0880
41	1	-	-	-	852771-5	Rör	Pipe	5			0900
42	2	-	-	-	940100-1	Skruv	Screw	0			0920
43	2	-	-	-	941906-0	Fjadrande bricka	Resilient washer	0			0940
44	1	-	-	-	897745-6	Packning	Gasket	2			0960
45	1	-	-	-	839091-6	Slang	Hose	5			0980
46	1	-	-	-	952635-1	Klamma	Clamp	0			1000
47	2	-	-	-	852755-8	Trimcylinder	Trim cylinder	8	186)PZ-29003011 186)PZ-29501175		1020 1040
	2	-	-	-	853439-8	Hydraulcylinder	Hydraulic cylinder	6	PZ29003011-		1060
	2	-	-	-	853439-8	Hydraulcylinder	Hydraulic cylinder	6	PZ29501175-		1080
48	1	-	-	-	852830-9	Rör	Pipe	5			1100
49	1	-	-	-	852832-5	Rör	Pipe	5			1120
50	1	-	-	-	853709-4	Slang	Hose	4	(852848)		1140
51	1	-	-	-	853708-6	Slang	Hose	4	(852847)		1160
52	2	-	-	-	852879-6	Plugg	Plug	4			1180

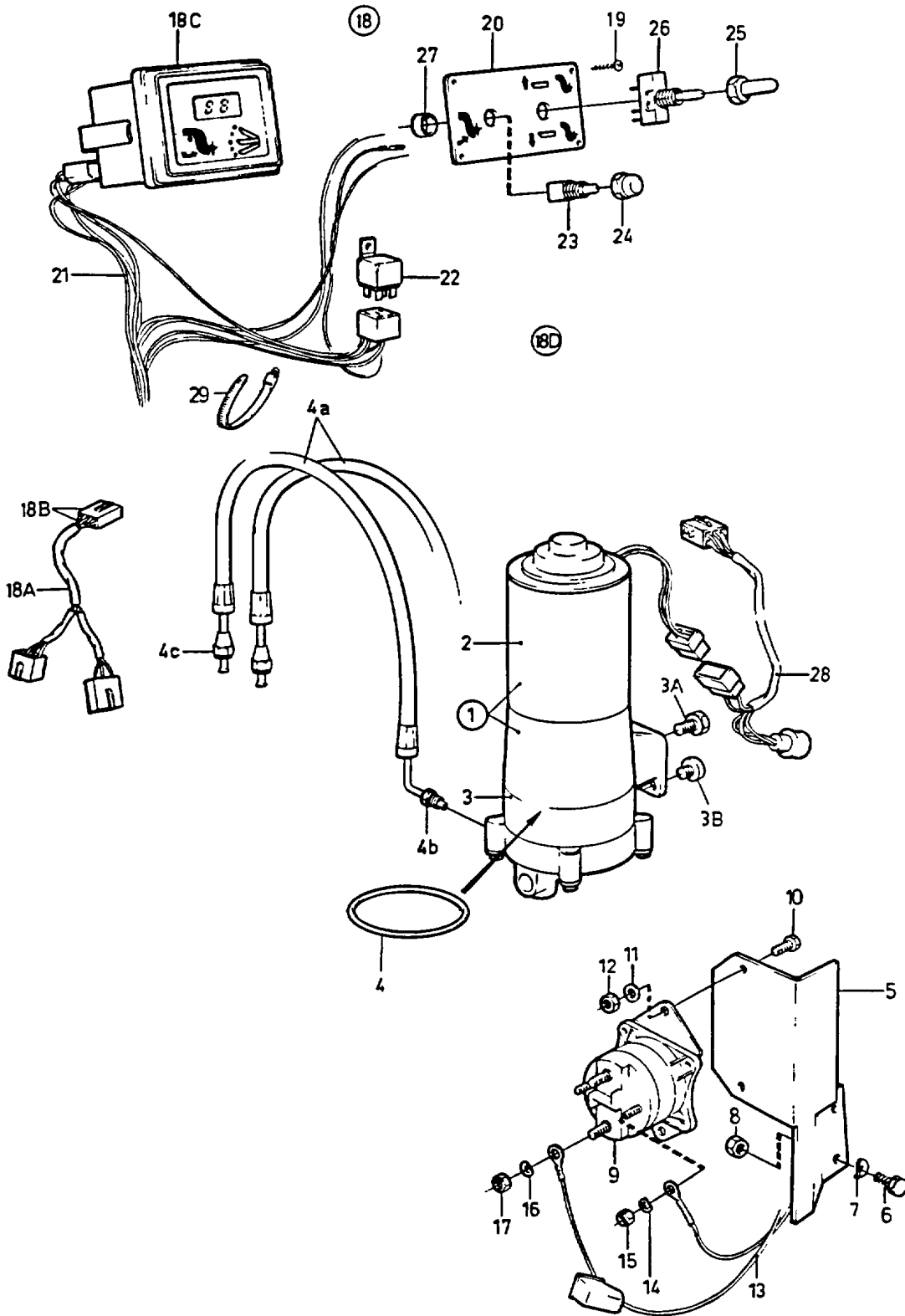


7715

Sida Page	Grupp Group	Anslutningsdetaljer AQ drev 290, 290DP AQAD40B			Connecting components AQ drive unit 290, 290DP			Illustration 7715 1987-04	1350		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
	AQAD 40B										
53	2	-	-	-	852748-3	Axeltapp .....	Shaft pin .....		5		120
54	4	-	-	-	925053-1	O-ring .....	O-ring .....		0		1220
55	2	-	-	-	853060-2	Skruv .....	Screw .....		0		1240
56	2	-	-	-	853100-6	Mutter .....	Nut .....		3		1260
57	2	-	-	-	853059-4	Bricka .....	Washer .....		3		1280
58	2	-	-	-	852839-0	Slang .....	Hose .....		4	SE SIDA 44, 2-B21	1300
59	1	-	-	-		Hydraulpump och triminstrument med monteringsdetaljer	Hydraulic pump and trim instrument with installation comps			SE SIDA 44, 2-B21	1320
60	1	-	-	-	852835-8	Zinkelektrod .....	Zinc electrode .....		1		1340
61	2	-	-	-	946541-0	Skruv .....	Screw .....		0		1360
62	1	-	-	-	852877-0	Backventil .....	Check valve .....		5		1380
63	1	-	-	-	852878-8	Fästplåt .....	Attachment plate .....		5		1440
64	2	-	-	-	963545-9	Skruv .....	Screw .....		0		1460
65	6	-	-	-	852866-3	Bricka .....	Washer .....		3		1480
66	6	-	-	-	963108-6	Mutter .....	Nut .....		0		1500
67	1	-	-	-	843626-3	Klämringssats .....	Clamp ring kit .....		5		1520
68	2	-	-	-	813967-7	Gummiring .....	Rubber ring .....		3		1560
69	6	-	-	-	191844-0	Skruv .....	Screw .....		0		1580
70	3	-	-	-	806624-3	Låsbleck .....	Lock washer .....		2		1600
71	2	-	-	-	853175-8	Lagertapp .....	Bearing pin .....		3	(897831)	1620
72	1	-	-	-	853215-2	Plugg .....	Plug .....		2		1640
73	2	-	-	-	963699-4	Skruv .....	Screw .....		0		1660
74	2	-	-	-	941670-2	Bricka .....	Washer .....		0		1680
75	1	-	-	-	844519-9	Kåpa .....	Casing .....		7	SE GRUPP 2A	1700
76	11	-	-	-	941909-4	Fjädrande bricka .....	Resilient washer .....		0		1720
77	11	-	-	-	955319-9	Skruv .....	Screw .....		0		1740
78	1	-	-	-	804262-4	Propp .....	Plug .....		3		1760
79	1	-	-	-	839425-6	Primäraxel .....	Primary shaft .....		5		1780
80	2	-	-	-	958860-9	Tätningring .....	Seal ring .....		S		1800
81	1	-	-	-	11013-0	Kullager .....	Ball bearing .....		3		1820
82	3	-	-	-	914533-5	Spårring .....	Retaining ring .....		0		1840
83	1	-	-	-	914462-7	Låsring .....	Circlip .....		0		1860
84	1	-	-	-	181105-8	Kullager .....	Ball bearing .....		3		1880
85	1	-	-	-	838513-0	Slang .....	Hose .....		2		1900
86	4	-	-	-	961670-7	Slangklamma .....	Hose clamp .....		0		1920
87	1	-	-	-	843228-8	Avgasslang .....	Exhaust hose .....		2	SE GRUPP 2B	1980
88	2	-	-	-	943483-8	Slangklamma .....	Hose clamp .....		0	SE GRUPP 2B	2000
89	1	-	-	-	925260-2	O-ring .....	O-ring .....		S		2020
90	1	-	-	-	852844-0	Avgasgenomföring .....	Exhaust outlet .....		6		2040
91	4	-	-	-	955328-0	Skruv .....	Screw .....		0		2060
92	4	-	-	-	960148-5	Bricka .....	Washer .....		0		2100
93	1	-	-	-	875848-4	Balgsats .....	Bellow kit .....		1		2120
94	1	-	-	-		Balg .....	Bellow .....		8		2140
95	1	-	-	-	961675-6	Slangklamma .....	Hose clamp .....		0		2160
96	2	-	-	-	853548-6	Slangklamma .....	Hose clamp .....		0	(961668)	2180
97	1	-	-	-	851766-6	Slanganslutning .....	Hose connection .....			SE GRUPP 4C	2200
98	ERF	-	-	-		Reglagekabel .....	Control cable .....			SE GRUPP 9	2240
99	ERF	-	-	-		Servostyrning .....	Power steering .....			SE GRUPP 6	2260
	ERF	-	-	-		Rotopilot .....	Roto pilot .....			SE GRUPP 6	2280

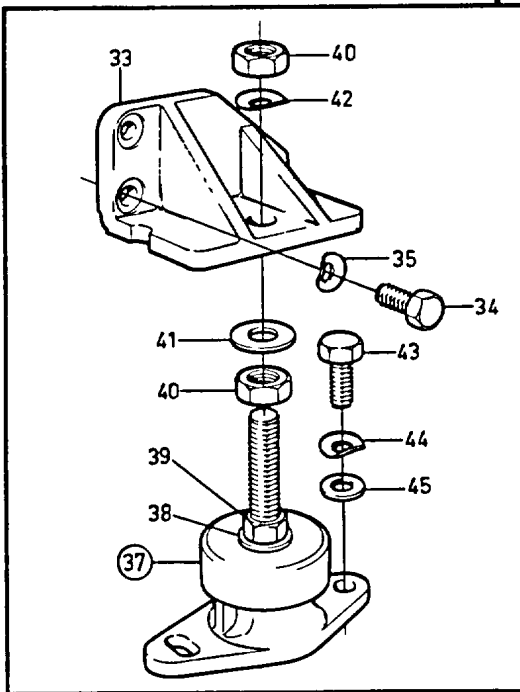
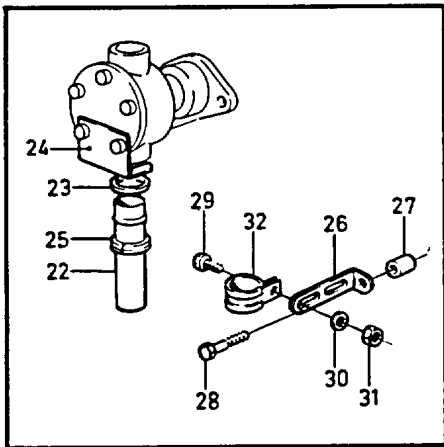
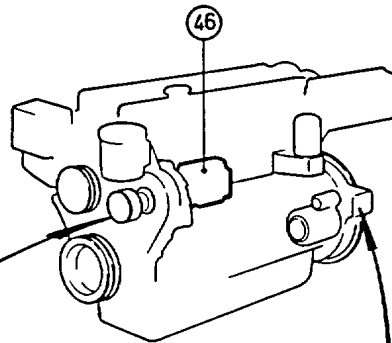
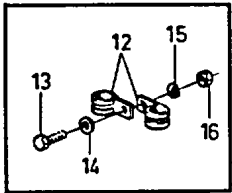
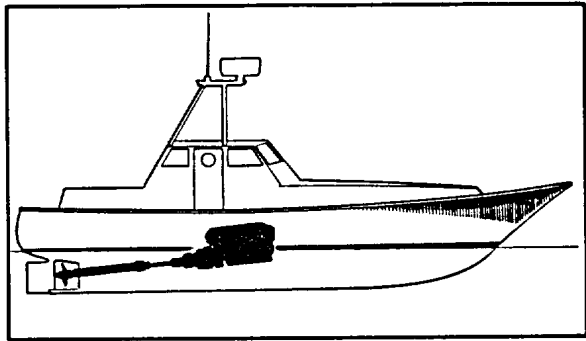
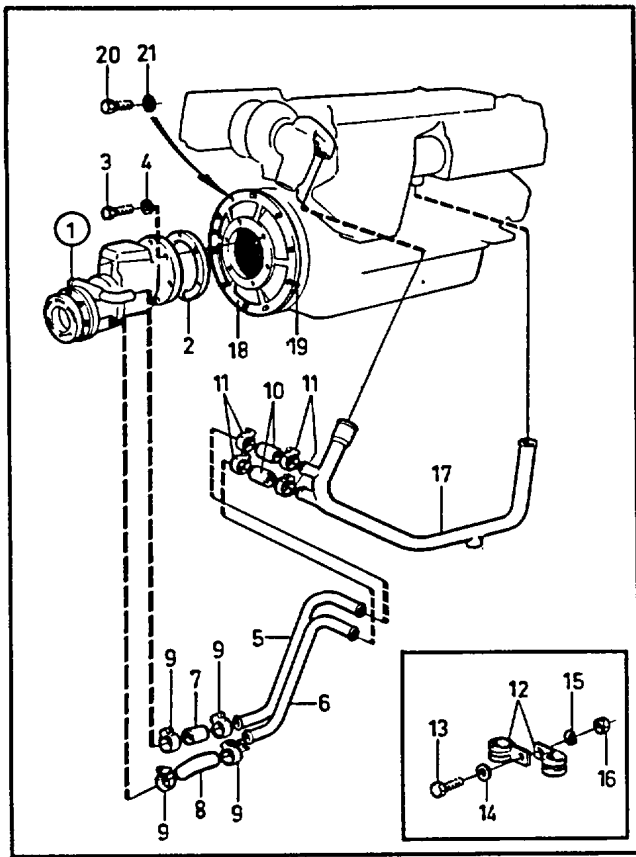


Sida Page	Grupp Group	Hydraulpump och triminstrument med monteringsdetaljer			Hydraulic pump and trim instrument and installation components			Illustration 8271 1987-04	1390		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	852928-1	Hydraulpump	Hydraulic pump	5			00.
2	1	-	-	-		.Motor	.Motor	8			0040
3	1	-	-	-		.Pumphus	.Pump housing	8			0060
3a	1	-	-	-	940148-0	Skruv	Screw	0			0070
3b	2	-	-	-	853215-2	Plugg	Plug	2			0075
4	1	-	-	-	853085-9	.Tatringssats	.Seal ring kit	2			0080
4a	2	-	-	-	852839-0	Slang	Hose	4			0085
4b	2	-	-	-	87698-7	.Nippel	.Nipple	2			0086
4c	2	-	-	-	954320-8	.Mutter	.Nut	0			0087
5	1	-	-	-	853020-6	Konsol	Bracket	5			0100
6	3	-	-	-	955296-9	Skruv	Screw	0			0120
7	3	-	-	-	941907-8	Fjädrande bricka	Resilient washer	0			01
8	3	-	-	-	955782-8	Mutter	Nut	0			0160
9	2	-	-	-	852565-1	Rela	Relay	3			0180
10	2	-	-	-	956094-7	Skruv	Screw	0			0200
11	2	-	-	-	949607-6	Bricka	Washer	0			0220
12	2	-	-	-	955781-0	Mutter	Nut	0			0240
13	ERF	-	-	-		Kablar och kabelskor	Cable and cable terminals			SEGRUPP3	0300
14	4	-	-	-	941905-2	Fjädrande bricka	Resilient washer	0			0320
15	4	-	-	-	955844-6	Mutter	Nut	0			0320
16	4	-	-	-	941907-8	Fjädrande bricka	Resilient washer	0			0340
17	4	-	-	-	955834-7	Mutter	Nut	0			0360
18	1	-	-	-	853067-7	Triminstrument	Trim instrument	5			0380
18a	1	-	-	-		.Kabelstock	.Cable unit	8			0383
18b	ERF	-	-	-		..Kablar och kabelskor	..Cables and terminals			SEGRUPP3	0400
18c	1	-	-	-	828731-0	.Instrumenttavla	.Instrument panel	5			0420
18d	1	-	-	-	853866-2	.Manovertavla	.Control panel	4			0500
19	4	-	-	-	828647-8	..Skruv	..Screw	3			0400
20	1	-	-	-	828739-3	..Manoverpanel	..Control panel	5		ERS AV 853866	0420
21	ERF	-	-	-		..Kablar och kabelskor	..Cables and terminals			SEGRUPP3	0440
22	1	-	-	-	853545-2	..Rela	..Relay	3			0480
23	1	-	-	-	828584-3	..Tryckstrombrytare	..Switch	3			0500
24	1	-	-	-	828586-8	..Mutter	..Nut	4			0520
25	1	-	-	-	828743-5	..Mutter	..Nut	4			0540
26	1	-	-	-	828742-7	..Vippstrombrytare	..Toggle switch	3			0560
27	2	-	-	-	828740-1	..Distansbricka	..Spacer washer	3			0580
28	1	-	-	-	853032-1	Kabelstock	Cable unit	3			0700
29	ERF	-	-	-	949666-2	Klammer	Clamp	0			0800



Sida Page	Grupp Group	Kommersiell drift anslutningsdetaljer, backslag	Commercial use connecting components,reverse gear	Illustration 6944	1400 1987-04						
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	852502-4	Backslag MS3C.....	Reverse gear MS3C .....			207)UTV 1,93:1	001
	ERF	-	-	-		.Detaljer.....	.Components.....			SE GRUPP 4B	001
	1	-	-	-	852503-2	Backslag MS3C .....	Reverse gear MS3C .....			208)UTV 2,73:1	0020
	ERF	-	-	-		.Detaljer.....	.Components.....			SE GRUPP 4B	0040
2	1	-	-	-	803921-6	Packning .....	Gasket.....		8		0060
3	6	-	-	-	955319-9	Skruv.....	Screw .....		0		008C
4	6	-	-	-	941908-6	Fjädrande bricka .....	Resilient washer.....		0		010C
5	1	-	-	-	845841-6	Kylvattenror .....	Cooling water pipe.....		4		012C
6	1	-	-	-	845842-4	Kylvattenror .....	Cooling water pipe.....		4		014C
7	ERF	-	-	-	949315-6	Slang .....	Hose.....		0	L=70MM	016C
8	1	-	-	-	845792-1	Gummikrök .....	Rubber bend .....		4		019C
9	4	-	-	-	943476-2	Slangklamma.....	Hose clamp .....		0		022C
10	2	-	-	-	941799-9	Slang .....	Hose .....		0	L=65MM	024C
11	4	-	-	-	943475-4	Slangklamma .....	Hose clamp .....		0		026C
12	2	-	-	-	468684-6	Fastjarn .....	Attachment.....		4		028C
13	1	-	-	-	940132-4	Skruv.....	Screw.....		0		030C
14	1	-	-	-	955894-1	Bricka .....	Washer.....		0		034C
15	1	-	-	-	941907-8	Fjädrande bricka .....	Resilient washer.....		0		036C
16	1	-	-	-	963106-0	Mutter .....	Nut.....		0		038C
17	1	-	-	-	858039-1	Rör .....	Pipe.....		0		040C
18	1	-	-	-	829489-4	Mellandel .....	Interm piece.....		7		042C
19	1	-	-	-	829488-6	Packning .....	Gasket .....		S		044C
20	11	-	-	-	955319-9	Skruv.....	Screw .....		8		046C
21	11	-	-	-	941908-6	Fjädrande bricka .....	Resilient washer .....		0		048C
22	1	-	-	-	845357-3	Kylvattenrör .....	Cooling water pipe.....		5		050C
23	1	-	-	-	845354-0	Tätningring .....	Seal ring .....		2		052C
24	1	-	-	-	845961-2	Låsbygel.....	Lock brace.....		5		054C
25	1	-	-	-	838554-4	Rorhållare .....	Support.....		5		056C
26	1	-	-	-	965561-4	Konsol.....	Bracket .....		0		058C
27	1	-	-	-	842350-1	Distanshylsa .....	Spacer sleeve .....		5		060C
28	1	-	-	-	955300-9	Skruv .....	Screw .....		0		062C
29	1	-	-	-	955271-2	Skruv .....	Screw.....		0		064C
30	1	-	-	-	955892-5	Bricka.....	Washer .....		0		066C
31	1	-	-	-	955781-0	Mutter .....	Nut .....		0		068C
32	1	-	-	-	952641-9	Klammer .....	Clamp .....		0		070C
33	1	-	-	-	829515-6	Konsol .....	Bracket .....		5	BB	072C
	1	-	-	-	829516-4	Konsol.....	Bracket .....		5	SB	074C
34	6	-	-	-	955341-3	Skruv.....	Screw .....		0		076C
35	6	-	-	-	940143-1	Låsbricka .....	Washer .....		0		078C
37	4	-	-	-	829976-0	Gummielement .....	Rubber element.....		4		080C
38	4	-	-	-	955900-6	.Bricka .....	.Washer .....		0		082C
39	4	-	-	-	829567-7	.Bult .....	.Bolt .....		5		084C
40	8	-	-	-	955805-7	Mutter .....	Nut.....		0		086C
41	8	-	-	-	191940-6	Bricka .....	Washer.....		0		088C
42	16	-	-	-	829892-9	Låsbricka .....	Washer.....		2		090C
43	8	-	-	-	955321-5	Skruv .....	Screw .....		0		092C
44	8	-	-	-	941908-6	Fjädrande bricka .....	Resilient washer.....		0		094C
45	8	-	-	-	960148-5	Bricka .....	Washer .....		0		096C
46	1	-	-	-	838497-6	Insprutningspump.....	Fuel injection pump.....				
	ERF	-	-	-		.Detaljer.....	.Components .....			SE GRUPP 2C	

207 . Ersatt av BACKSLAG-853398 och ANSLUTNINGSSATS-853772. Replaced by reverse GEAR-853398 and connection KIT-853772  
 208 . Ersatt av BACKSLAG-853399 och ANSLUTNINGSSATS-853772. Replaced by reverse GEAR-853399 and connection KIT-853772





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Reservdelskatalog  
Parts Catalogue

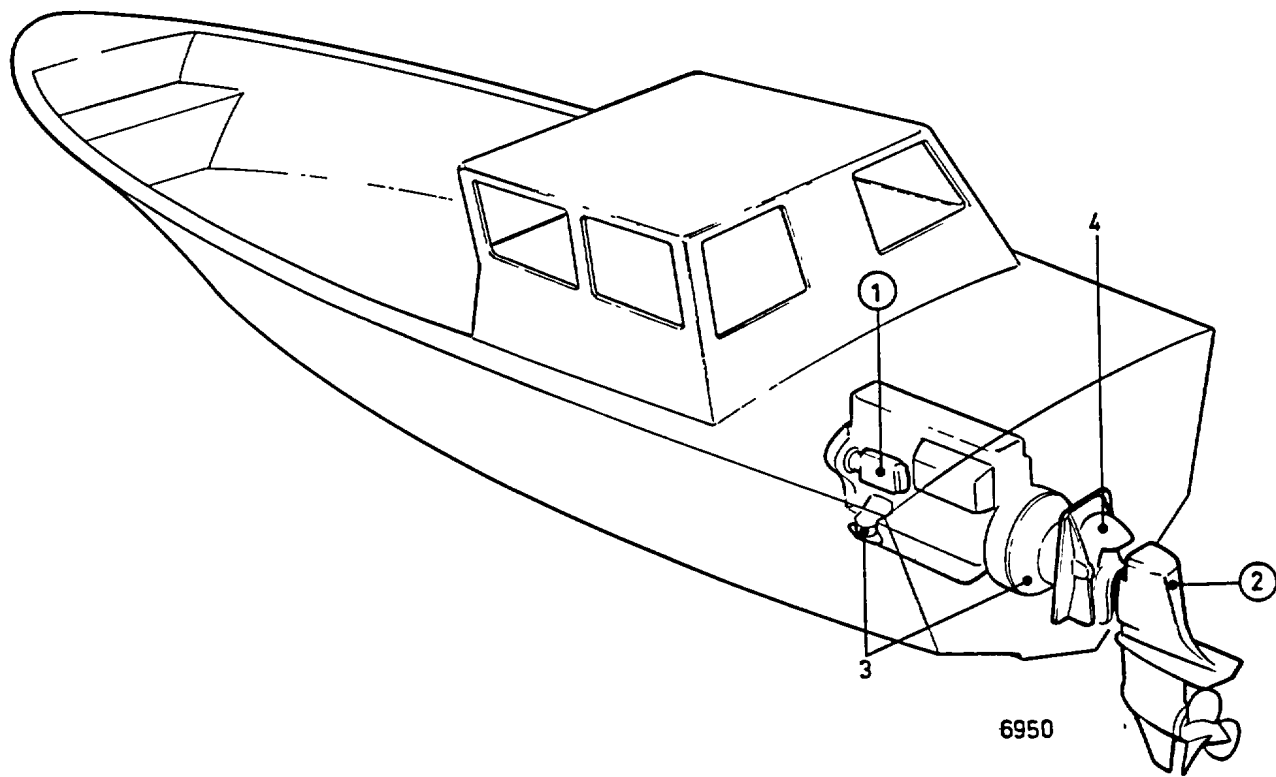
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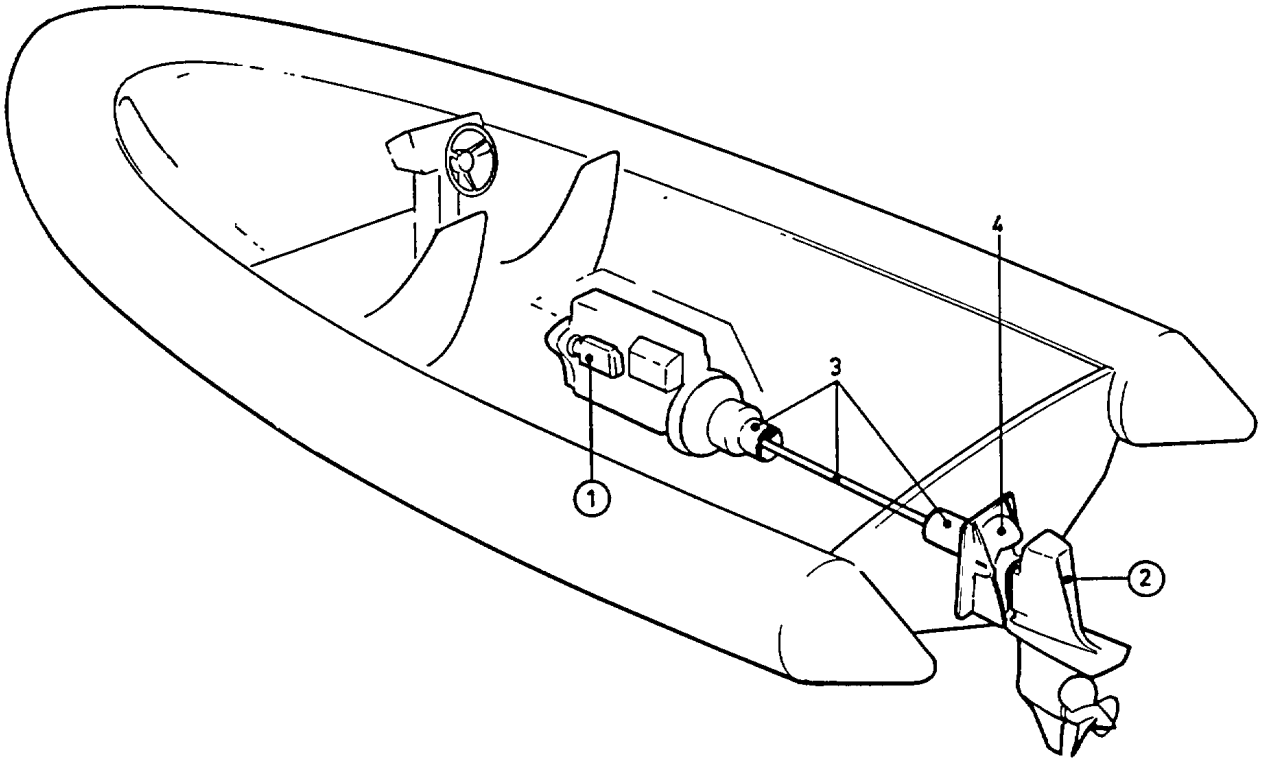
Sida Page	Grupp Group	Kommersiell drift Commercial use		Illustration						
48	4a	anslutningsdetaljer, STD AQAD40B	connecting components, STD	6950 1987-04						
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
1	1	-	-	-	838497-6	Insprutningspump.....	Fuel injection pump.....			
	-	-	-	-		•Detaljer.....	•Components.....			SE GRUPP 2C
2	1	-	-	-	852161-9	AQ drev 280B.....	AQ drive unit 280B.....			
	-	-	-	-		•Detaljer.....	•Components.....			SE GRUPP 4C
3	ERF	-	-	-		Anslutningsdetaljer.....	Connecting components...			SE SIDA 52, 2-C05
	-	-	-	-		-motor	-engine			
4	ERF	-	-	-		Anslutningsdetaljer.....	Connecting components...			SE SIDA 58, 2-C11
	-	-	-	-		-AQ drev	-AQ drive unit			

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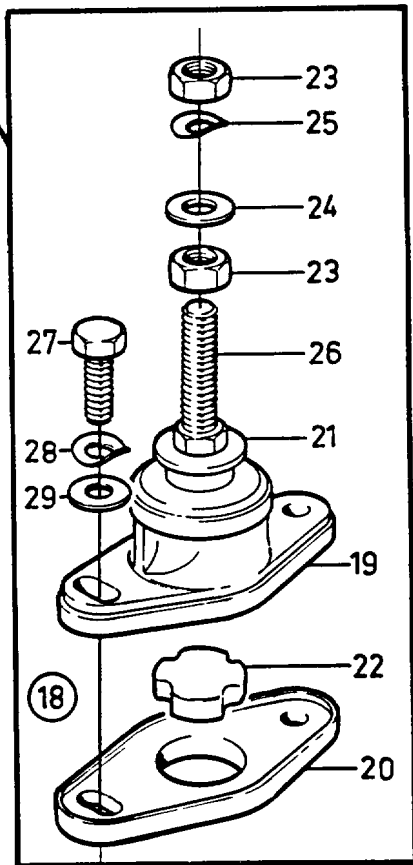
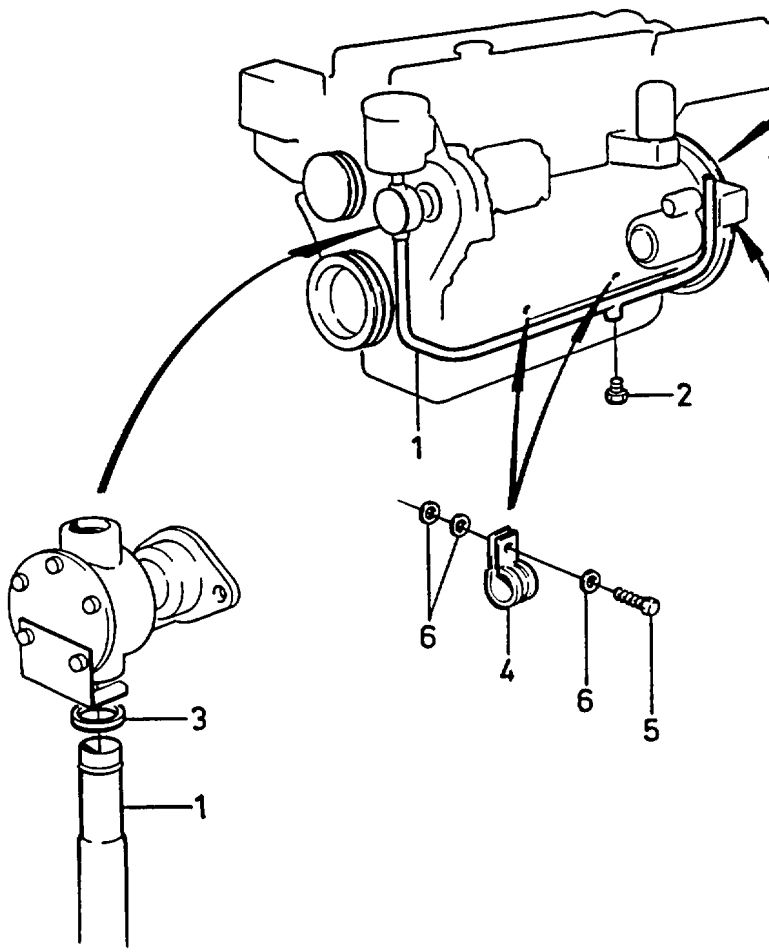
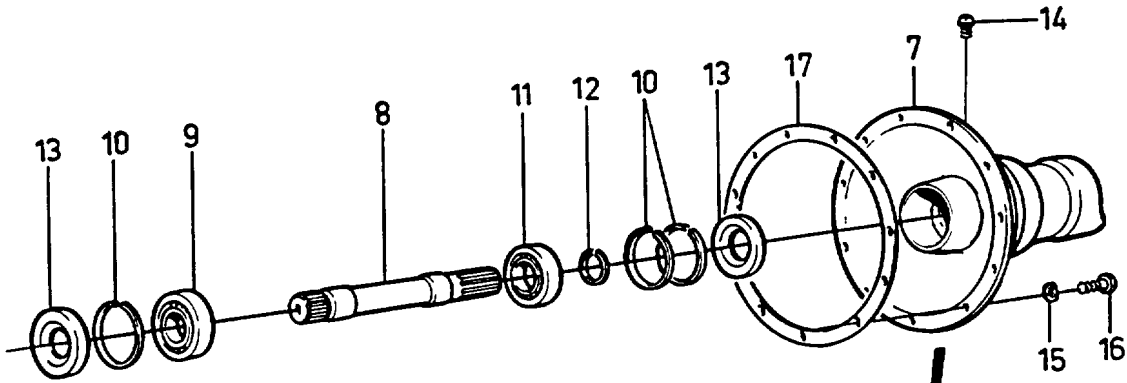


Sida Page	Grupp Group	Kommersiell drift anslutningsdetaljer, Kardanaxel AQAD40B	Commercial use connecting components, Cardanshaft	Illustration 6945 1987-04	1450						
50	4a										
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	838497-6	Insprutningspump .....	Fuel injection pump... ..				0021
	-	-	-	-		.Detaljer.....	.Components.....			SE GRUPP 2C	0046
2	1	-	-	-	852161-9	AQ drev 280B .....	AQ drive unit 280B.....				0060
	-	-	-	-		.Detaljer .....	.Components .....			SE GRUPP 4C	0080
3	ERF	-	-	-		Anslutningsdetaljer.....	Connecting components ...			SE SIDA 54, 2-C07	0100
						-motor, kardanaxel	-engine, cardanshaft				0120
4	ERF	-	-	-		Anslutningsdetaljer.. ...	Connecting components ..			SE SIDA 58, 2-C11	0140
						- AQ drev	- AQ drive unit				0160



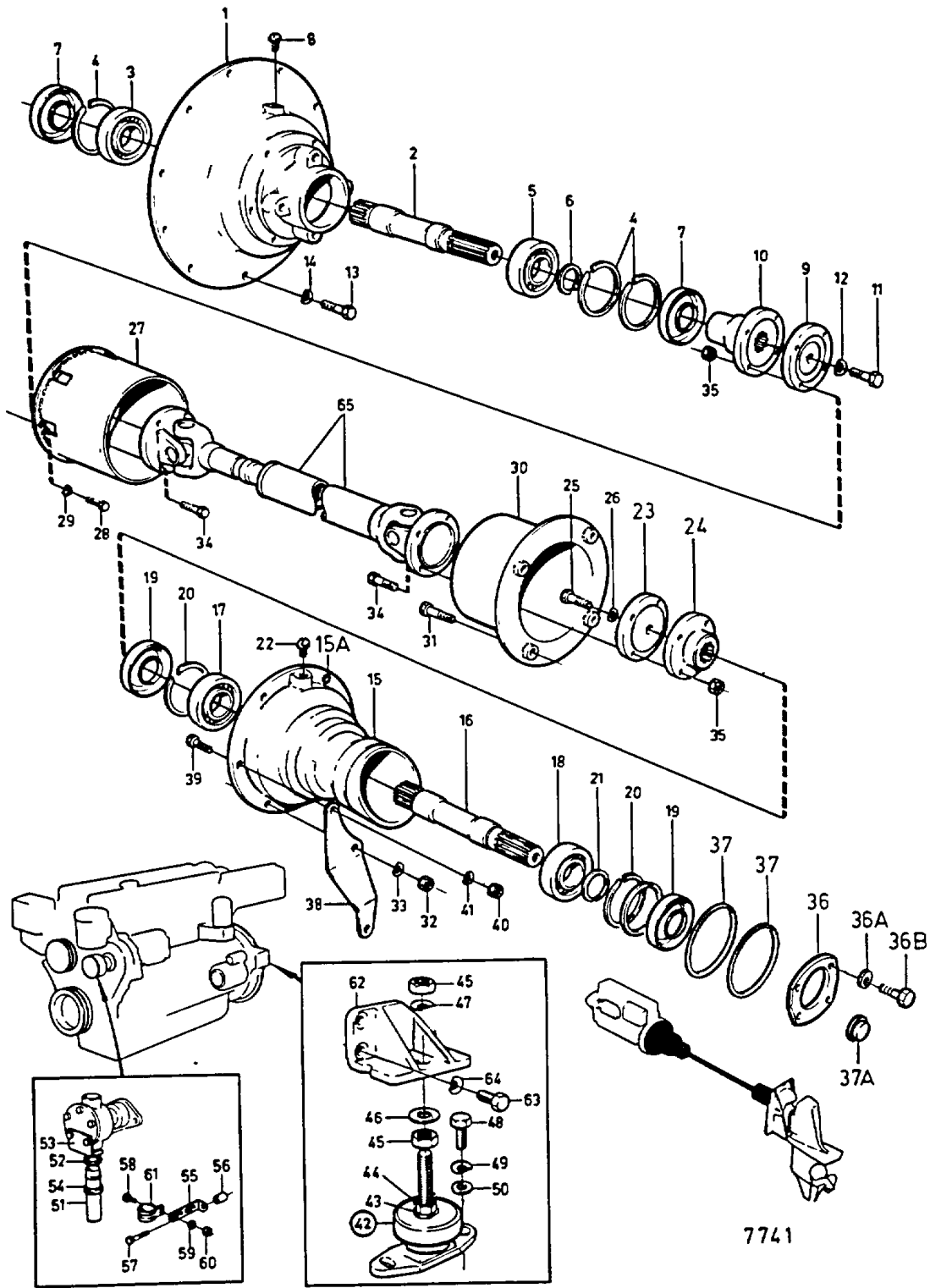
6945

Sida Page	Grupp Group	Anslutningsdetaljer—motor kommersiell drift, STD AQAD40B		Connecting components—engine commercial use, STD		Illustration 6948 1987-04	1500			
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	845443-1	Kylvattenrör .....	Cooling water pipe .....	5		0021
2	1	-	-	-	192134-5	Propp .....	Plug .....	0		0040
3	1	-	-	-	845354-0	Tätningarring .....	Seal ring .....	2		0060
4	2	-	-	-	949850-2	Klammer .....	Clamp .....	0		0080
5	2	-	-	-	955295-1	Skruv .....	Screw .....	0		0100
6	6	-	-	-	955894-1	Bricka .....	Washer .....	0		0120
7	1	-	-	-	844519-9	Kåpa .....	Casing .....	7		0140
8	1	-	-	-	839425-6	Primäraxel .....	Primary shaft .....	5		0160
9	1	-	-	-	181105-8	Kullager .....	Ball bearing .....	2		0180
10	3	-	-	-	914533-5	Spårring .....	Retaining ring .....	0		0200
11	1	-	-	-	11013-0	Kullager .....	Ball bearing .....	2		0
12	1	-	-	-	914462-7	Låsring .....	Circlip .....	0		0
13	2	-	-	-	958860-9	Tätningarring .....	Seal ring .....	0		0260
14	1	-	-	-	804262-4	Propp .....	Plug .....	4		0280
15	11	-	-	-	941908-6	Fjädrande bricka .....	Resilient washer .....	0		0300
16	11	-	-	-	955319-9	Skruv .....	Screw .....	0		0320
17	1	-	-	-	829488-6	Packning .....	Gasket .....	S 8		0
18	2	-	-	-	843297-3	Gummielementsats .....	Rubber element kit .....	8		0
19	2	-	-	-	843323-7	•Gummielement .....	•Rubber element .....	4		0380
20	2	-	-	-	843286-6	•Underlägg .....	•Shim .....	4		0400
21	2	-	-	-	843298-1	•Bricka .....	•Washer .....	5		0420
22	2	-	-	-	843299-9	•Gummiskiva .....	•Rubber disc .....	3		0440
23	4	-	-	-	955805-7	•Mutter .....	•Nut .....	0		0460
24	4	-	-	-	191940-6	•Bricka .....	•Washer .....	0		0480
25	2	-	-	-	941912-8	•Fjädrande bricka .....	•Resilient washer .....	0		0500
26	2	-	-	-	829567-7	•Bult .....	•Bolt .....	5		0520
27	4	-	-	-	955321-5	•Skruv .....	•Screw .....	0		0540
28	4	-	-	-	941908-6	•Fjädrande bricka .....	•Resilient washer .....	0		0560
29	4	-	-	-	960148-5	•Bricka .....	•Washer .....	0		0580



6948

Sida Page		Grupp Group		Anslutningsdetaljer – motor, kardanaxel		Connecting components – engine, cardan shaft		Illustration		
54		4a		AQAD40B				7741 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	Anmärkning Notes	
	280	290								
1	1	1	-	-	838479-4	Svånghjulskåpa	Flywheel casing	7		002
2	1	1	-	-	838424-0	Primaraxel	Primary shaft	5		0040
3	1	1	-	-	181105-8	Kullager	Ball bearing	4		0060
4	3	3	-	-	914533-5	Spårring	Retaining ring	0		0080
5	1	1	-	-	11013-0	Kullager	Ball bearing	4		0100
6	1	1	-	-	914462-7	Låsring	Circlip	0		0120
7	2	2	-	-	958860-9	Tätningring	Seal ring	0		0140
8	1	1	-	-	804262-4	Propp	Plug	5		0160
9	1	1	-	-	838423-2	Mellanfläns	Interm flange	5		0180
10	1	1	-	-	838474-5	Kopplingsfläns	Coupling flange	6		0200
11	1	1	-	-	955318-1	Skruv	Screw	0		0
12	1	1	-	-	942336-9	Fjädrande bricka	Resilient washer	0		0
13	11	11	-	-	955319-9	Skruv	Screw	0		0260
14	11	11	-	-	941908-6	Fjädrande bricka	Resilient washer	0		0280
15	1	1	-	-	839482-7	Mellandel	Interm piece	7		0300
15a	6	6	-	-	956375-0	Gånginsats	Helicoil	0		0320
16	1	1	-	-	838424-0	Primaraxel	Primary shaft	5		0
17	1	1	-	-	181105-8	Kullager	Ball bearing	5		0
18	1	1	-	-	11013-0	Kullager	Ball bearing	6		0380
19	2	1	-	-	958860-9	Tätningring	Seal ring	0		0400
20	3	3	-	-	914533-5	Spårring	Retaining ring	0		0420
21	1	1	-	-	914462-7	Låsring	Circlip	0		0440
22	1	1	-	-	804262-4	Propp	Plug	5		0460
23	1	1	-	-	838423-2	Mellanfläns	Interm flange	5		0480
24	1	1	-	-	838422-4	Kopplingsfläns	Coupling flange	6		0500
25	1	1	-	-	955318-1	Skruv	Screw	0		052
26	1	1	-	-	942336-9	Fjädrande bricka	Resilient washer	0		05
27	1	1	-	-	838475-2	Skyddskåpa	Protecting cap	7		05L
28	6	6	-	-	955535-0	Skruv	Screw	0		0580
29	6	6	-	-	942336-9	Fjädrande bricka	Resilient washer	0		0600
30	1	1	-	-	838421-6	Skyddskåpa	Protecting cap	7		0620
31	4	4	-	-	955549-1	Skruv	Screw	0		0640
32	4	4	-	-	940157-1	Mutter	Nut	0		0660
33	4	4	-	-	941909-4	Fjädrande bricka	Resilient washer	0		0680
34	8	8	-	-	945997-5	Skruv	Screw	0		0700
35	8	8	-	-	945989-2	Mutter	Nut	0		0720
36	1	-	-	-	841136-5	Blindfläns	Flange	6		0740
	-	1	-	-	838934-8	Flans	Flange	6		0
36a	-	4	-	-	941908-6	Fjädrande bricka	Resilient washer	0		0
36b	-	4	-	-	955315-7	Skruv	Screw	0		0800
37	-	2	-	-	858464-1	Gummiring	Rubber ring	5		0820
37a	2	-	-	-	814473-5	Gummiplugg	Rubber plug	5		0840
38	1	-	-	-	838488-5	Fastjarn	Attachment	6	BB	0860
	-	1	-	-	838935-5	Konsol	Bracket	6	BB	0
	1	-	-	-	838489-3	Fästjarn	Attachment	6	SB	0
	-	1	-	-	838936-3	Konsol	Bracket	6	SB	0920
39	2	2	-	-	940134-0	Skruv	Screw	0		0940
40	2	2	-	-	940157-1	Mutter	Nut	0		0960
41	2	2	-	-	941909-4	Fjädrande bricka	Resilient washer	0		0980
42	4	4	-	-	829976-0	Gummielement	Rubber element	4		1000
43	4	4	-	-	955900-6	Bricka	Washer	5		1020
44	4	4	-	-	829567-7	Bult	Bolt	0		1040
45	8	8	-	-	955805-7	Mutter	Nut	0		1060
46	8	8	-	-	191940-6	Bricka	Washer	0		10P
47	16	16	-	-	829892-9	Låsbricka	Washer	2		111
48	8	8	-	-	955321-5	Skruv	Screw	0		112L
49	8	8	-	-	941908-6	Fjädrande bricka	Resilient washer	0		1140
50	8	8	-	-	960148-5	Bricka	Washer	0		1160
51	1	1	-	-	845357-3	Kylvattenror	Cooling water pipe	5		1180
52	1	1	-	-	845354-0	Tätningring	Seal ring	5		120*
53	1	1	-	-	845961-2	Låsbygel	Lock brace	4		122L
54	1	1	-	-	838554-4	Rörhållare	Pipe holder	4		1240
55	1	1	-	-	965561-4	Konsol	Bracket	0		1260





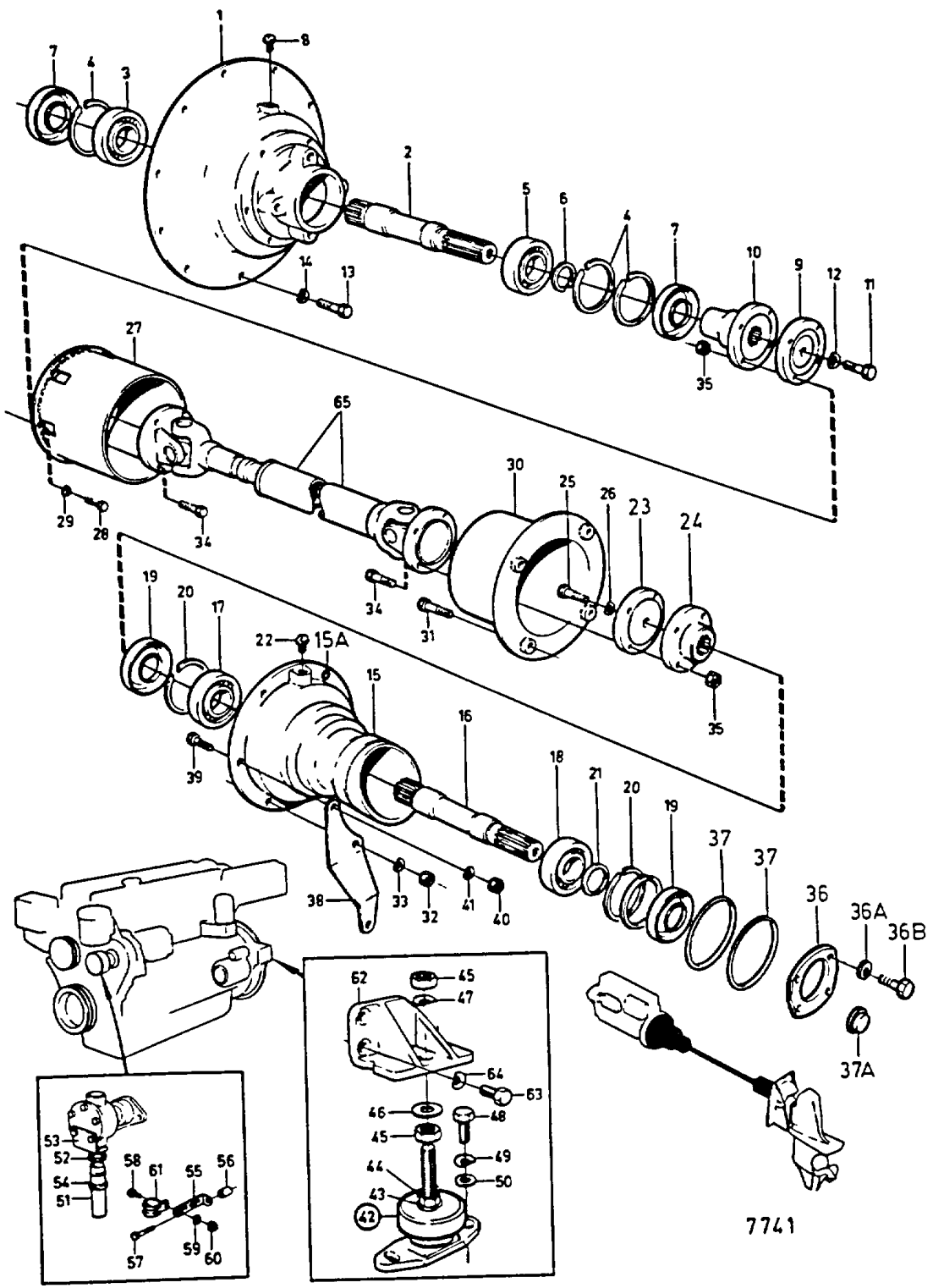
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Reservdelskatalog  
Parts Catalogue

2-C09

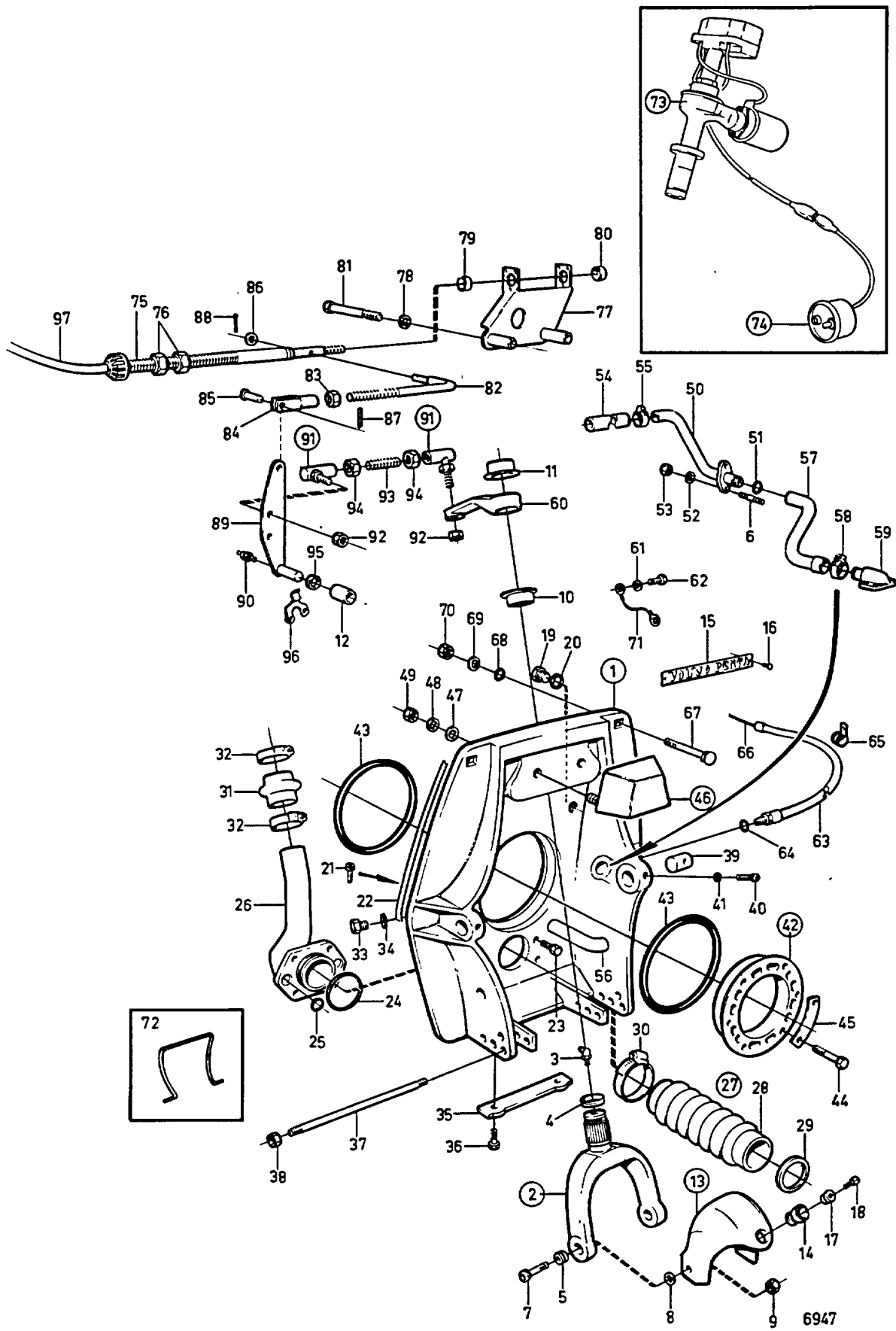
**VOLVO**  
**PENTA**

Sida Page		Grupp Group		Anslutningsdetaljer – motor, kardanaxel		Connecting components – engine, cardan shaft		Illustration 7741 1987-04		1550	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	280	290									
56	1	1	-	-	842350-1	Distanshylsa . . . . .	Spacer sleeve . . . . .	4			12E
57	1	1	-	-	955300-9	Skruv.. . . . .	Screw . . . . .	0			130L
58	1	1	-	-	955271-2	Skruv... . . . .	Screw . . . . .	0			1320
59	1	1	-	-	955892-5	Bricka ... . . . .	Washer ... . . . .	0			1340
60	1	1	-	-	955781-0	Mutter.... . . . .	Nut..... . . . .	0			1360
61	1	1	-	-	952641-9	Klammer. .... . . . .	Clamp .. . . . .	0			1380
62	1	1	-	-	829515-6	Konsol . . . . .	Bracket . . . . .	5	BB		1400
	1	1	-	-	829516-4	Konsol . . . . .	Bracket .... . . . .	5	SB		1420
63	6	6	-	-	955341-3	Skruv . . . . .	Screw..... . . . .	0			1440
64	6	6	-	-	940143-1	Låsbricka ... . . . .	Washer... . . . .	0			1460
65	ERF	ERF	-	-		Kardanaxel ..... . . . .	Cardan shaft ..... . . . .	8			30



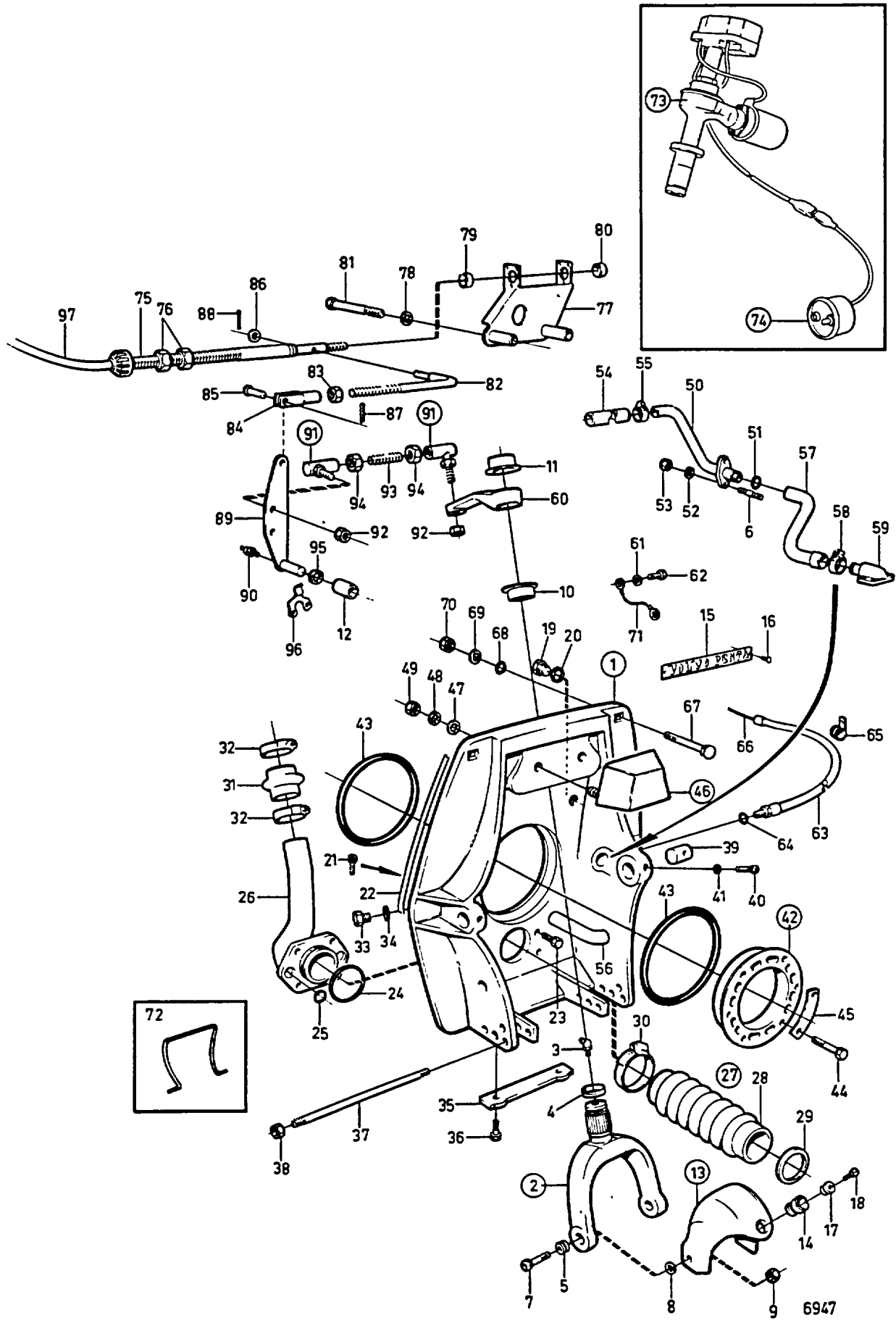
Sida Page	Grupp Group	Anslutningsdetaljer- AQ drev	Connecting components- AQ drive unit	Illustration 6947 1987-04	1600
58	4a	AQAD40B			

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	875672-8	Sköldsats	Shield kit	6			001
2	1	-	-	-	839441-3	Styrgaffel	Steering fork	5			004
3	1	-	-	-	914169-8	Smörnippel	Grease nipple	0			0060
4	1	-	-	-	839195-5	V-ring	V-ring	S 2			0080
5	2	-	-	-	814640-9	Bussning	Bushing	2			0100
6	2	-	-	-	941872-4	Pinnskruv	Stud bolt	0			0120
7	2	-	-	-	897798-5	Skruv	Screw	2			0140
8	2	-	-	-	897244-0	Bricka	Washer	2			0160
9	2	-	-	-	943152-9	Mutter	Nut	0			0180
10	1	-	-	-	853863-9	Bussning	Bushing	2	(853496)		0200
11	1	-	-	-	853864-7	Bussning	Bushing	2	(853497)		20
12	1	-	-	-	850653-7	Lager	Bearing	4			40
13	1	-	-	-	851267-5	Skyddshjalm	Protecting cap	5			0260
14	1	-	-	-	853048-7	Bussning	Bushing	2	(851262)		0280
15	1	-	-	-	832608-4	Skyt	Sign	6			0300
16	2	-	-	-	804269-9	Skruv	Screw	3			0320
17	1	-	-	-	852705-3	Lagertapp	Bearing pin	2			40
18	2	-	-	-	941807-0	Skruv	Screw	0			50
19	1	-	-	-	897744-9	Propp	Plug	4			0380
20	1	-	-	-	897745-6	Packning	Gasket	S 2			0400
21	2	-	-	-	956568-0	Skruv	Screw	0	SE GRUPP 9		0420
22	1	-	-	-	897726-6	Tätning	Sealing strip	2			0440
23	4	-	-	-	959967-1	Skruv	Screw	0			0460
24	1	-	-	-	925256-0	O-ring	O-ring	S 1			0480
25	4	-	-	-	925055-6	O-ring	O-ring	S 1			0500
26	1	-	-	-	842962-3	Avgasgenomföring	Exhaust outlet	6			052
27	1	-	-	-	875828-6	Bälgsats	Bellow kit	1			05
28	1	-	-	-		Gummibalg	Rubber bellow	8			05
29	9	-	-	-		Tätning	Seal ring	8			0580
30	2	-	-	-	961675-6	Slangklamma	Hose clamp	0			0600
31	1	-	-	-	843228-8	Avgasslang	Exhaust hose		SE GRUPP 2B		0620
32	2	-	-	-	943483-8	Slangklamma	Hose clamp		SE GRUPP 2B		0640
33	1	-	-	-	897744-9	Propp	Plug	4			0660
34	1	-	-	-	897745-6	Packning	Gasket	S 2			0680
35	1	-	-	-	832598-7	Zinkelektrod	Zinc electrode	1			0700
36	2	-	-	-	959438-3	Skruv	Screw	0			0720
37	1	-	-	-	814301-8	Ställpinne	Setting pin	2			0740
38	2	-	-	-	814357-0	Mutter	Nut	2			50
39	2	-	-	-	853175-8	Lagertapp	Bearing pin	3	(897831)		50
40	2	-	-	-	941873-2	Skruv	Screw	0			0800
41	2	-	-	-	941670-2	Bricka	Washer	0			0820
42	1	-	-	-	843626-3	Klamringssats	Clamp ring kit	5			0840
43	2	-	-	-	813967-7	Gummiring	Rubber ring	3			0860
44	6	-	-	-	191844-0	Skruv	Screw	0			50
45	3	-	-	-	806624-3	Låsbleck	Lock washer	2			50
46	1	-	-	-	875531-6	Gummikudde	Rubber block	3			0920
47	2	-	-	-	832565-6	Packning	Gasket	2			0940
48	2	-	-	-	940097-9	Bricka	Washer	0			0960
49	2	-	-	-	950364-0	Mutter	Nut	0			0980
50	1	-	-	-	850729-5	Genomföring	Grommet	5			1000
51	1	-	-	-	925063-0	O-ring	O-ring	0			1020
52	2	-	-	-	955893-3	Bricka	Washer	0			1040
53	2	-	-	-	950352-5	Låsmutter	Lock nut	0			1060
54	ERF	-	-	-	941799-9	Slang	Hose	0	L=400MM		10P
55	2	-	-	-	961670-7	Slangklamma	Hose clamp	1			11
56	2	-	-	-	843235-3	Gummikrök	Rubber bend	3			112
57	1	-	-	-	875822-9	Slangsats	Hose kit	1	(897599)		1140
58	2	-	-	-	853548-6	Slangklamma	Hose clamp	0	(961668)		1160
59	1	-	-	-		Slangnippel	Hose nipple		SE GRUPP 4C		1180
60	1	-	-	-	850488-8	Styrmarm	Steering arm	5			120
61	1	-	-	-	940097-9	Bricka	Washer	0			122L
62	1	-	-	-	955537-6	Skruv	Screw	0			1240
63	1	-	-	-	839091-6	Slang	Hose	4			1260



Sida Page	Grupp Group	Anslutningsdetaljer- AQ drev	Connecting components- AQ drive unit	Illustration 6947 1987-04	1600
60	4a	AQAD40B			

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
64	1	-	-	-	897745-6	Packning ..	Gasket.....	2			128
65	1	-	-	-	952635-1	Klamma . . . . .	Clamp .....	0			130
66	ERF	-	-	-		Reglagekabel. . . . .	Control cable .....		SE GRUPP 9		1320
67	6	-	-	-	943426-7	Skruv... ..	Screw.....	0			1340
68	6	-	-	-	850418-5	O-ring ... ..	O-ring.....	0			1360
69	6	-	-	-	190878-9	Bricka ..	Washer .....	0			1380
70	6	-	-	-	940176-1	Mutter .....	Nut.....	0			1400
71	ERF	-	-	-		Kablar och kabelskor.....	Cables and cable .....		SE GRUPP 3		1420
						terminals					1440
	1	-	-	-	851002-6	Kabel .....	Cable .....		SE GRUPP 9		1460
72	1	-	-	-	897824-9	Transportspärr .....	Transport catch.....				1480
73	1	-	-	-	850957-2	Elmekanisk lyft .....	Electro-mech lift.....		ERS AV 853520		1500
	-	-	-	-		.Detaljer .....	.Components.....		SE GRUPP 9		1520
	1	-	-	-	853520-5	Elmekanisk lyft... ..	Electro-mech lift.....				1530
	-	-	-	-		.Detaljer .....	.Components.....		SE GRUPP 9		1531
74	1	-	-	-	850375-7	Instrumenttavla .....	Instrument panel .....				1540
	-	-	-	-		.Detaljer .....	.Components.....		SE GRUPP 9		1560
75	1	-	-	-	850771-7	Faströr .....	Pipe .....	5			1600
76	4	-	-	-	850778-2	Mutter.....	Nut .....	3			1620
77	1	-	-	-	850958-0	Bussning .....	Bushing .....	5			1640
78	2	-	-	-	942336-9	Fjädrande bricka .....	Resilient washer.....	0			1660
79	1	-	-	-	850960-6	Bussning.....	Bushing.....	3			1680
80	1	-	-	-	850959-8	Bussning.....	Bushing .....	3			1700
81	2	-	-	-	955541-8	Skruv .....	Screw.....	0	L=76MM		1720
82	1	-	-	-	850478-9	Länkstång .....	Link rod .....	5	L=318MM		1740
83	1	-	-	-	940154-8	Mutter .....	Nut .....	0			17
84	1	-	-	-	956511-0	Gaffel .....	Yoke .....	0			17
85	1	-	-	-	913158-2	Saxpinnebult .....	Clevis pin.....	0			180
86	1	-	-	-	940097-9	Bricka .....	Washer.....	0			1820
87	1	-	-	-	907856-9	Saxpinne .....	Cotter pin .....	0			1840
88	1	-	-	-	964960-9	Saxpinne .....	Cotter pin .....	0			1860
89	1	-	-	-	851385-5	Länkarm .....	Linkarm .....	5			1880
90	1	-	-	-	914169-8	Smörjnippel .....	Grease nipple.....	0			1900
91	2	-	-	-	875772-6	Kulledssats .....	Ball joint kit .....	4			1920
92	2	-	-	-	851326-9	.Låsmutter .....	.Lock nut .....	2			1940
93	1	-	-	-	850736-0	Reglerstång .....	Control rod.....	3			1960
94	2	-	-	-	940152-2	Mutter .....	Nut .....	0			1980
95	1	-	-	-	955906-3	Bricka .....	Washer.....	0			2000
96	1	-	-	-	850489-6	Stopparm .....	Stop arm.....	4			2020
97	ERF	-	-	-		Styrkabel .....	Steering cable.....		SE GRUPP 6		



# **VOLVO PENTA**

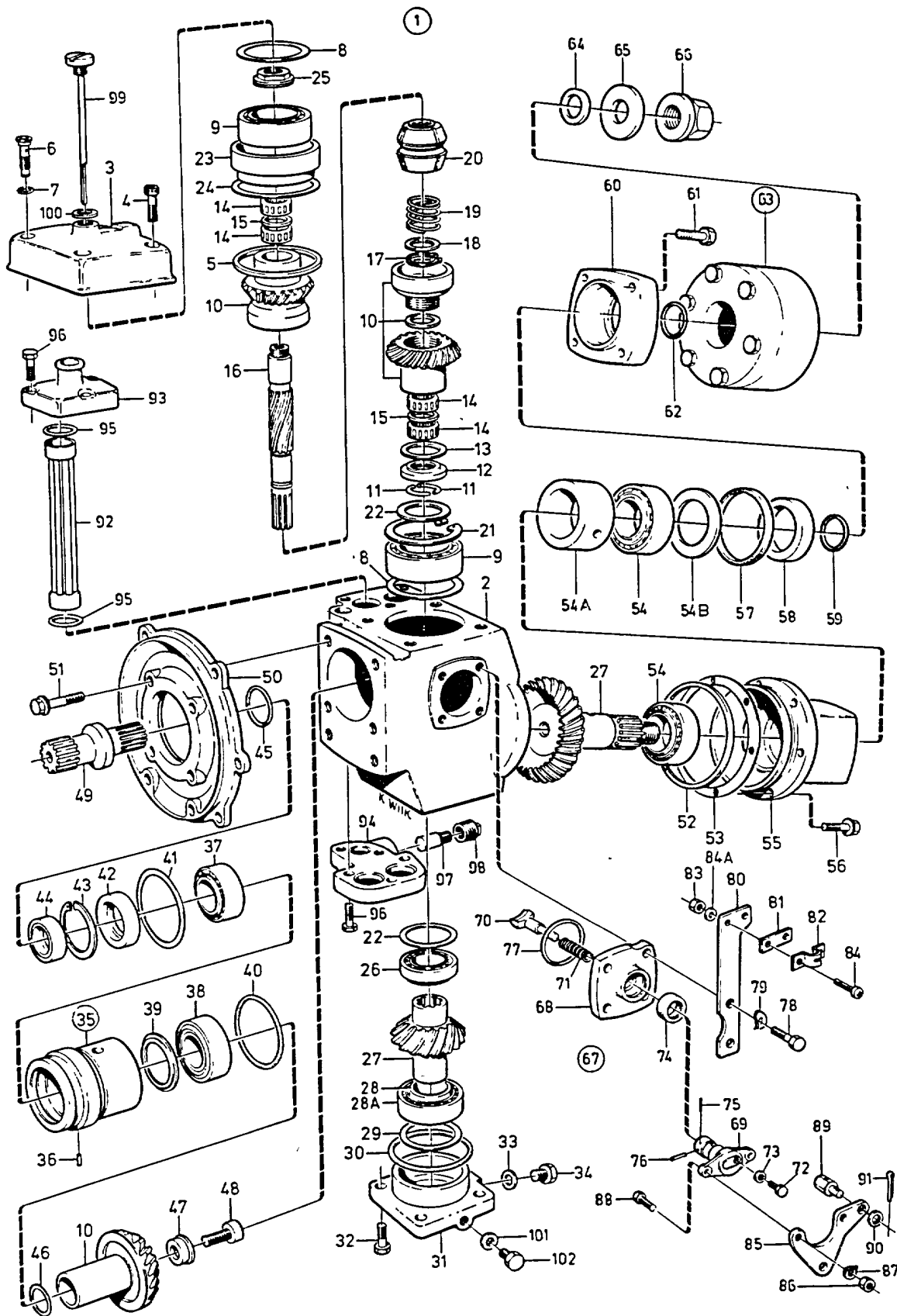
Originaldelar · Genuine Parts  
Originalteile · Pièces d'origine

0001		Innehållsförteckning	Index	Grupp Group	Sida Page
		1987-04		4b	1
				Sida	Koord
3040					
3060		Backslag		2	2-D03
3080		Backslag MS3 Utv 1,92:1 ..	MS3 ..	8	2-D09
^ -		Backslag MS3 Utv 2,91:1 ..	MS3 ..	14	2-D15
		Backslag MS3B ..	MS3B ..	20	2-D21
		Backslag MS3C ..	MS3C ..		
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2000		Reverse gear		2	2-D03
2020		Reverse gear MS3 Ratio 1,92:1 ..	MS3 ..	8	2-D09
2040		Reverse gear MS3 Ratio 2,91:1 ..	MS3 ..	14	2-D15
2060		Reverse gear MS3B ..	MS3B ..	20	2-D21
2080		Reverse gear MS3C ..	MS3C ..		
2100					
2120					
2140					
21					

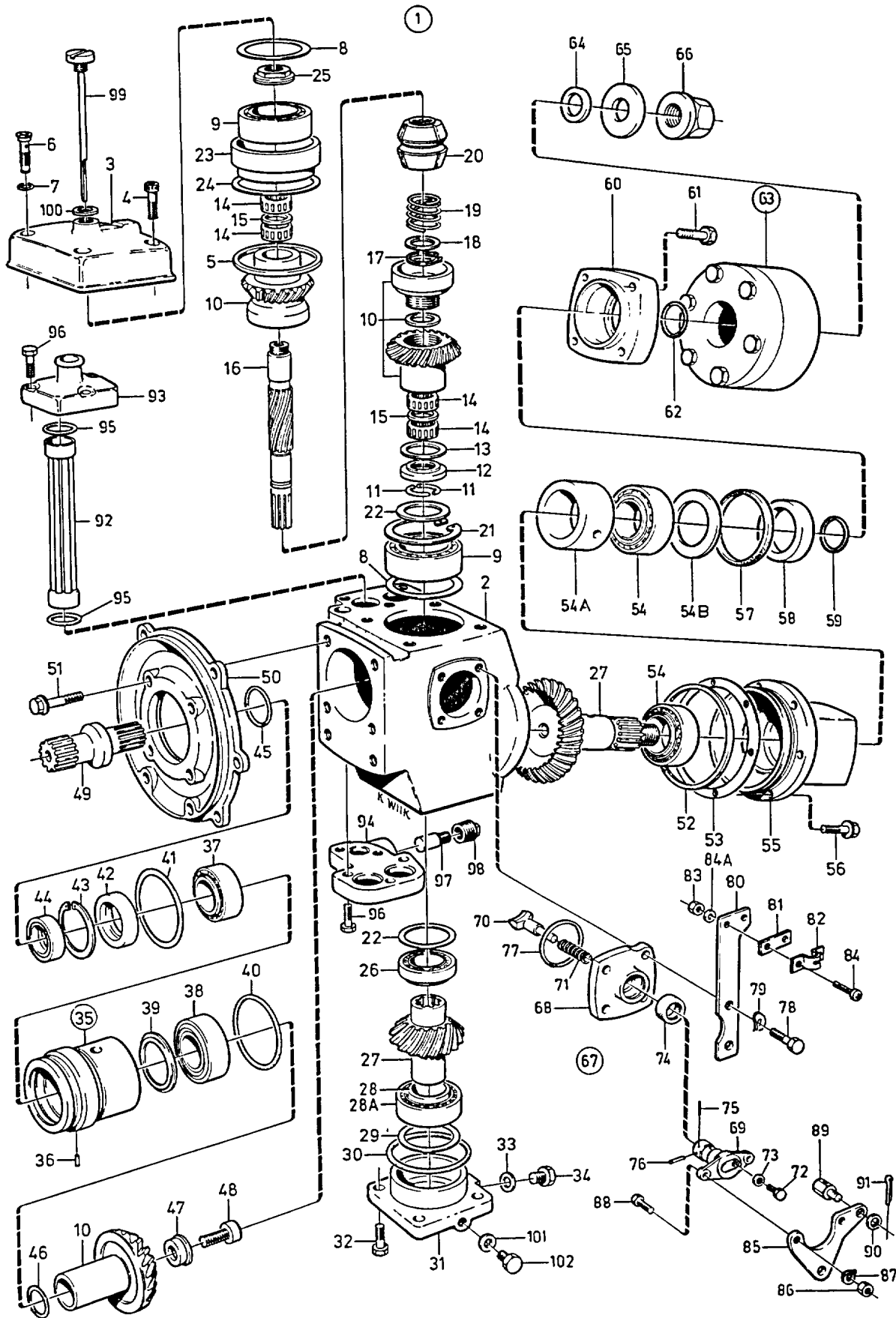


Sida Page	Grupp Group	Backslag MS3 Utv 1,92:1	Reverse gear MS3 Ratio 1,92:1	Illustration 5039 1987-04	0150
2	4b	MS3			

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	850 413										
1	1	-	-	-	850413-6	Backslag	Reserve gear		8	UTV 1,92:1	002
2	1	-	-	-	850414-4	.Vaxelhus	.Gear housing		7		0046
3	1	-	-	-	832667-0	.Lock	.Cover		7	(832668)	0060
4	3	-	-	-	956585-4	.Skruv	.Screw		0		0080
5	1	-	-	-	832669-6	.Packning	.Gasket		S 2		0100
6	1	-	-	-	814643-3	.Hålskruv	.Hollow screw		3		0120
7	1	-	-	-	955989-9	.O ring	.Ring		S 2		0140
8	ERF	-	-	-	943866-4	.Justerbricka	.Shim		0	TJ=0,1MM	0160
	ERF	-	-	-	943867-2	.Justerbricka	.Shim		0	TJ=0,2MM	0180
	ERF	-	-	-	943868-0	.Justerbricka	.Shim		0	TJ=0,4MM	0200
9	2	-	-	-	853542-9	.Lager	.Bearing		3	(183729)	0200
10	1	-	-	-	839027-0	.Drevsats	.Set of gears		4		0260
11	2	-	-	-	897312-5	.Låsring	.Lock ring		3		0280
12	1	-	-	-	850422-7	.Distansring	.Ring		4		0300
13	1	-	-	-	852433-2	.Slitbricka	.Washer		3	(850243)	0320
14	4	-	-	-	181359-1	.Nållager	.Needle bearing		3		0380
15	2	-	-	-	897308-3	.Distansring	.Spacer ring		4		0400
16	1	-	-	-	897385-1	.Axel	.Shaft		5		0420
17	1	-	-	-	951077-7	.Låsring	.Lock ring		0		0440
18	1	-	-	-	26411-9	.Mellanlagg	.Spacer		0		0460
19	1	-	-	-	813970-1	.Fjader	.Spring		3		0480
20	1	-	-	-	852949-7	.Skjuthylsa	.Sliding sleeve		5	(852548)	0500
21	1	-	-	-	850433-4	.Låsring	.Lock ring		2		0520
22	ERF	-	-	-	949071-5	.Justerbricka	.Shim		0	TJ=0,1MM	0540
	ERF	-	-	-	949072-3	.Justerbricka	.Shim		0	TJ=0,15MM	0560
	ERF	-	-	-	949073-1	.Justerbricka	.Shim		0	TJ=0,35MM	0580
	ERF	-	-	-	949074-9	.Justerbricka	.Shim		0	TJ=0,50MM	0600
23	1	-	-	-	832644-9	.Lagerhylsa	.Bearing sleeve		5		0620
24	ERF	-	-	-	946179-9	.Justerbricka	.Shim		0	TJ=0,1MM	0640
	ERF	-	-	-	943870-6	.Justerbricka	.Shim		0	TJ=0,2MM	0660
25	1	-	-	-		.Mutter	.Nut		4	ALTTJ=2,10MM	0680
	ERF	-	-	-	839332-4	..Mutter	..Nut		4	ALTTJ=2,37MM	0700
	ERF	-	-	-	839333-2	..Mutter	..Nut		4	ALTTJ=2,65MM	0720
	ERF	-	-	-	839334-0	..Mutter	..Nut		4		0740
26	1	-	-	-	184165-9	.Rullager	.Roller bearing		4		0760
27	1	-	-	-	850415-1	.Kugghjulssats	.Set of gears		6		0780
28	1	-	-	-	181303-9	.Innerring	.Inner ring		3	(183840)	0800
28a	1	-	-	-	181304-7	.Yttering	.Outer ring		3	(183840)	0820
29	ERF	-	-	-	87655-7	.Justerbricka	.Shim		2	TJ=0,1MM	0840
	ERF	-	-	-	191840-8	.Justerbricka	.Shim		2	TJ=0,15MM	0860
	ERF	-	-	-	87654-0	.Justerbricka	.Shim		2	TJ=0,35MM	0880
30	1	-	-	-	925256-0	.Gummiring	.Rubber ring		3		0900
31	1	-	-	-	850272-6	.Lock	.Cover		5		0920
32	4	-	-	-	946329-0	.Skruv	.Screw		0		0940
33	1	-	-	-	957173-8	.Packning	.Gasket		S 2		0960
34	1	-	-	-	960628-6	.Propp	.Plug		0		0980
35	1	-	-	-	875425-1	.Lagerbox	.Bearing unit		S 6		1000
36	1	-	-	-	951940-6	..Spännstift	..Pin		4		1020
37	1	-	-	-	183247-6	..Lager	..Bearing		4		1040
38	1	-	-	-	183668-3	..Rullager	..Roll bearing		4		1060
39	1	-	-	-	897772-0	..Oljeavkastare	..Oil slinger		4	TIDUTF	1080
40	1	-	-	-	925256-0	.Gummiring	.Rubber ring		S 3		1100
41	ERF	-	-	-	941826-0	.Justerbricka	.Shim		0	TJ=0,05MM	1120
	ERF	-	-	-	941827-8	.Justerbricka	.Shim		0	TJ=0,2MM	1140
	ERF	-	-	-	948230-8	.Justerbricka	.Shim		0	TJ=0,35MM	1160
42	1	-	-	-	839253-2	.Tätningarring	.Seal ring		S 3		1180
43	1	-	-	-	914538-4	.Låsring	.Lock ring		0		1200
44	1	-	-	-	832675-3	.Bricka	.Washer		4		1220
45	1	-	-	-	956000-4	.Gummiring	.Ring		S 3		1240
46	ERF	-	-	-	943871-4	.Justerbricka	.Shim		0	TJ=0,05MM	1260
	ERF	-	-	-	943872-2	.Justerbricka	.Shim		0	TJ=0,1MM	
	ERF	-	-	-	943873-0	.Justerbricka	.Shim		0	TJ=0,2MM	
47	1	-	-	-	839013-0	.Bricka	.Washer		4		



Sida Page		Grupp Group		Backslag MS3 Utv 1,92:1 MS3		Reverse gear MS3 Ratio 1,92:1		Illustration 5039 1987-04		0150	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
	850 413										
48	1	-	-	-	851293-1	.Skruv.....	.Screw.....	0		(945090)	12
49	1	-	-	-	850275-9	.Drivaxel.....	.Drive shaft.....	6			1320
50	1	-	-	-	850276-7	.Mellanlåg.....	.Interm piece.....	7			1320
51	6	-	-	-	965185-2	.Skruv.....	.Screw.....	0			1340
52	1	-	-	-	925096-0	.O-ring.....	.Rubber ring.....	S 2			1360
53	ERF	-	-	-	850472-2	.Justerbricka.....	.Shim.....	2		TJ=0,1MM	1380
	ERF	-	-	-	850473-0	.Justerbricka.....	.Shim.....	2		TJ=0,15MM	1400
	ERF	-	-	-	850474-8	.Justerbricka.....	.Shim.....	2		TJ=0,35MM	1420
54	2	-	-	-	183668-3	.Rullager.....	.Roll bearing.....	4			1440
54a	1	-	-	-	851114-9	.Distansring.....	.Spacer sleeve.....	5		BN1805-	1460
54b	1	-	-	-	84219-5	.Mellanlägg.....	.Spacer.....	4		BN1805-TJ=0,1MM	1460
	1	-	-	-	84218-7	.Mellanlägg.....	.Spacer.....	4		BN1805-TJ=0,35MM	1460
55	1	-	-	-	850269-2	.Lagerhus.....	.Housing.....	7			1520
56	1	-	-	-	946671-5	.Skruv.....	.Screw.....	0			1540
57	1	-	-	-	925256-0	.Gummiring.....	.Rubber ring.....	S 2			1560
58	1	-	-	-	958879-9	.Tätningring.....	.Seal ring.....	S 3			1580
59	1	-	-	-	125018-2	.Tätningring.....	.Ring.....	S 2			1580
60	1	-	-	-	850270-0	.Lock.....	.Cover.....	6			1600
61	4	-	-	-	955297-7	.Skruv.....	.Screw.....	0			1640
62	1	-	-	-	925069-7	.Gummiring.....	.Ring.....	S 2			1660
63	ERF	-	-	-	850417-7	.Slirkoppling.....	.Slip coupling.....	6			1680
	ERF	-	-	-		..detaljer	..components	8			1700
64	ERF	-	-	-	400870-2	.Justerbricka.....	.Shim.....	2		BN-1804 TJ=0,1MM	1720
	ERF	-	-	-	400871-0	.Justerbricka.....	.Shim.....	2		BN-1804 TJ=0,15MM	1740
	ERF	-	-	-	949070-7	.Justerbricka.....	.Shim.....	2		BN-1804 TJ=0,35MM	1760
65	1	-	-	-	850471-4	.Bricka.....	.Washer.....	3			1760
66	1	-	-	-	947855-3	.Mutter.....	.Nut.....	0			1760
67	1	-	-	-	839504-8	.Vaxelmekanism.....	.Shift mechanism.....	5			1840
68	1	-	-	-	839505-5	..Lagerhus.....	..Housing.....	5			1860
69	1	-	-	-	897816-5	..Excenterkolv.....	..Eccentric piston.....	4			1880
70	1	-	-	-	814603-7	..Glidsko.....	..Sliding shoe.....	4			1900
71	1	-	-	-	814184-8	..Fjäder.....	..Spring.....	3			1920
72	1	-	-	-	897711-8	..Skruv.....	..Screw.....	3			1920
73	ERF	-	-	-	897871-0	..Bricka.....	..Washer.....	3		TJ=0,2MM	1940
74	1	-	-	-	958838-5	..O-ring.....	..O-ring.....	0		(941866)	1960
75	1	-	-	-	951924-0	..Spännstift.....	..Pin.....	S 2			1980
76	1	-	-	-	942871-5	..Pinne.....	..Pin.....	S 2			2000
77	1	-	-	-	925093-7	..O-ring.....	..O ring.....	S 2			2040
78	4	-	-	-	955273-8	.Skruv.....	.Screw.....	0			2060
79	4	-	-	-	941906-0	.Fjäderbricka.....	.Washer.....	0			2080
80	1	-	-	-	850350-0	.Kabelfaste.....	.Cable attachment.....	6			2100
81	1	-	-	-	819068-8	.Bricka.....	.Washer.....	4			2120
82	1	-	-	-	819067-0	.Klamma.....	.Clamp.....	4			2120
83	2	-	-	-	946577-4	.Låsmutter.....	.Lock nut.....	0		(940092)	2200
84	2	-	-	-	955246-4	.Skruv.....	.Screw.....	0		(950022)	2200
84a	2	-	-	-	940090-4	.Bricka.....	.Washer.....	0			2180
85	1	-	-	-	852363-1	.Hävarm.....	.Lever.....	4		(834021)	2200
86	2	-	-	-	955781-0	.Mutter.....	.Nut.....	0			2220
87	2	-	-	-	955948-5	.Låsbricka.....	.Washer.....	0			2240
88	2	-	-	-	955270-4	.Skruv.....	.Screw.....	0			2260
89	1	-	-	-	804312-7	.Relagekabeltärning.....	.Control cube.....	4			2280
90	1	-	-	-	955892-5	.Bricka.....	.Washer.....	0			2300
91	1	-	-	-	907834-6	.Saxpinne.....	.Cotter.....	0		(17276)	2320
92	2	-	-	-	850741-0	.Insats.....	.Element.....	6			2320
93	1	-	-	-	850742-8	.Lock.....	.Cover.....	6			2320
94	1	-	-	-	850833-5	.Lock.....	.Cover.....	6		(850743)	2320
95	4	-	-	-	942353-4	.O-ring.....	.O ring.....	S 2			2400
96	6	-	-	-	955276-1	.Skruv.....	.Screw.....	0			2420
97	1	-	-	-	804107-1	.Zinkelektrod.....	.Zinc electrode.....	1		FÖR/FOR 800475	2440
	1	-	-	-	838929-8	.Zinkelektrod.....	.Zinc electrode.....	1		FÖR/FOR 838928	2440



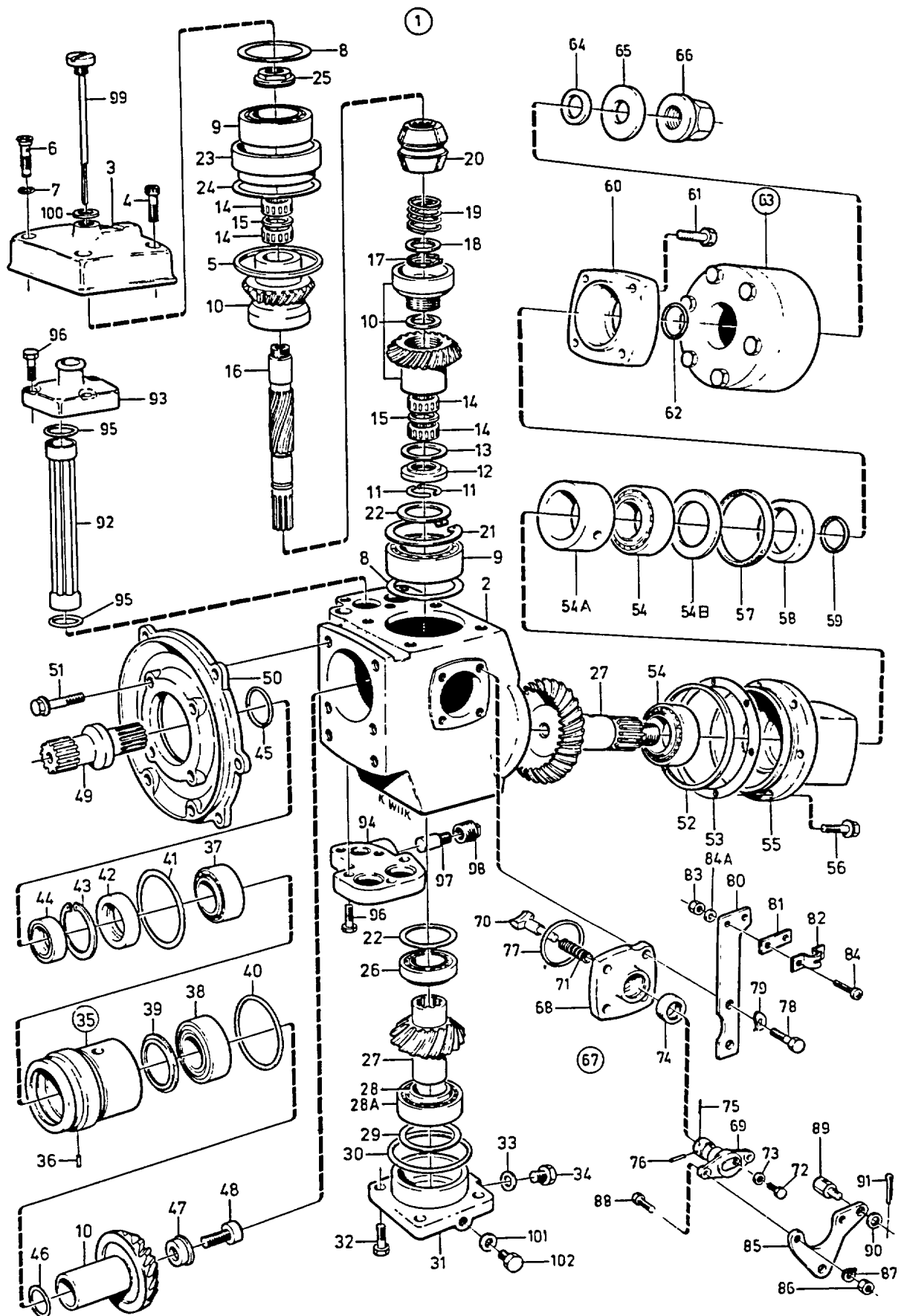
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Reservdelskatalog  
Parts Catalogue

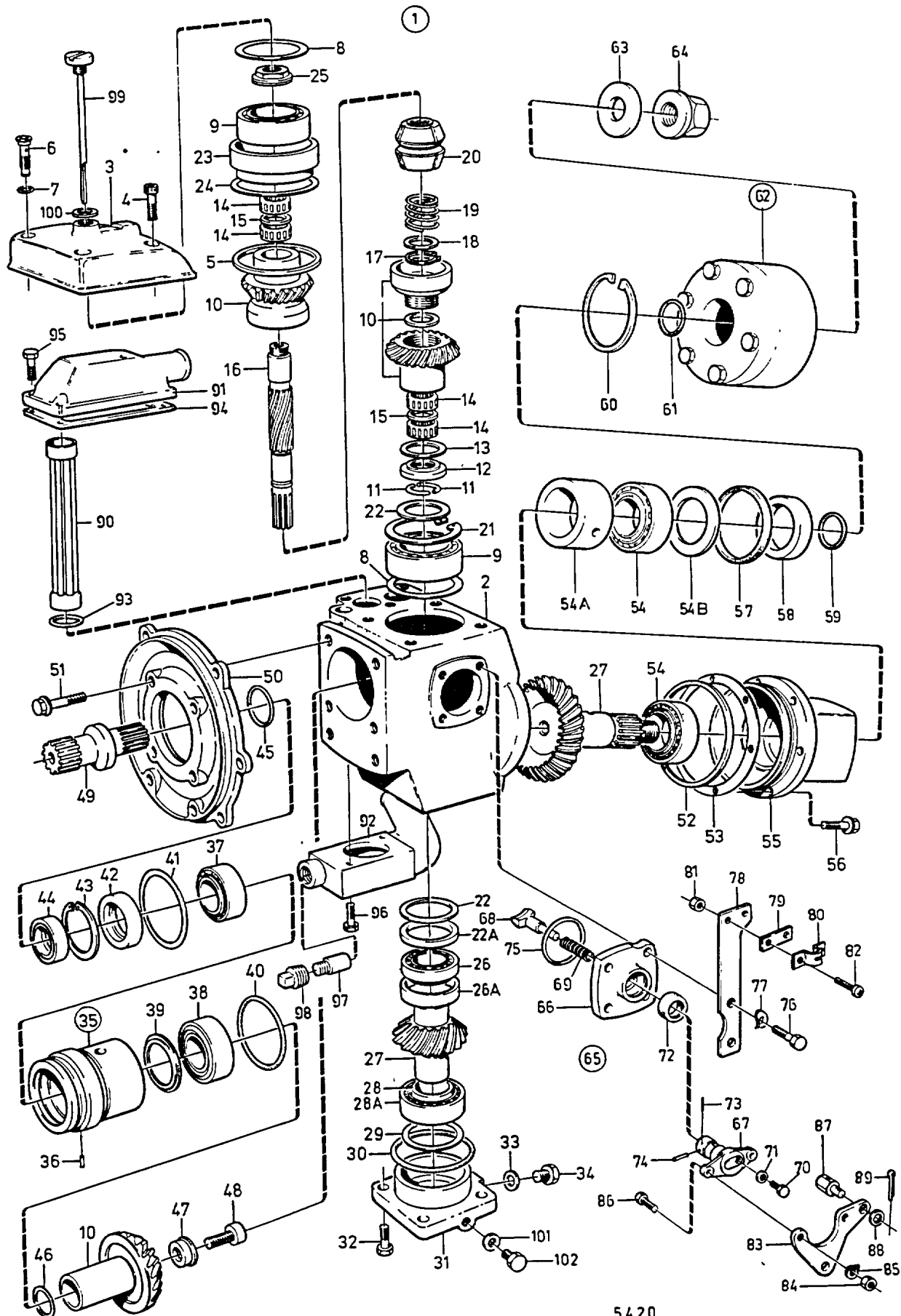
2-D07

**VOLVO  
PENTA**

Sida Page		Grupp Group		Backslag MS3 Utv 1,92:1 MS3		Reverse gear MS3 Ratio 1,92:1		Illustration 5039 1987-04		0150	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	850 413										
98	1	-	-	-	800475-6	.Propp.....	.Plug .....	2	7)		246
	1	-	-	-	838928-0	.Propp.....	.Plug .....	2			2470
99	1	-	-	-	839351-4	.Oljemätsticka.....	.Oil dipstick.....	5			2480
100	1	-	-	-	955974-1	.Packning .....	.Packing.....	3			2500
101	1	-	-	-	897682-1	.Packning .....	.Packing.....	3			2520
102	1	-	-	-	814179-8	.Propp.....	.Plug .....	3			2540
	1	-	-	-	875628-0	Packningsatts .....	Gasket kit .....	2			2560



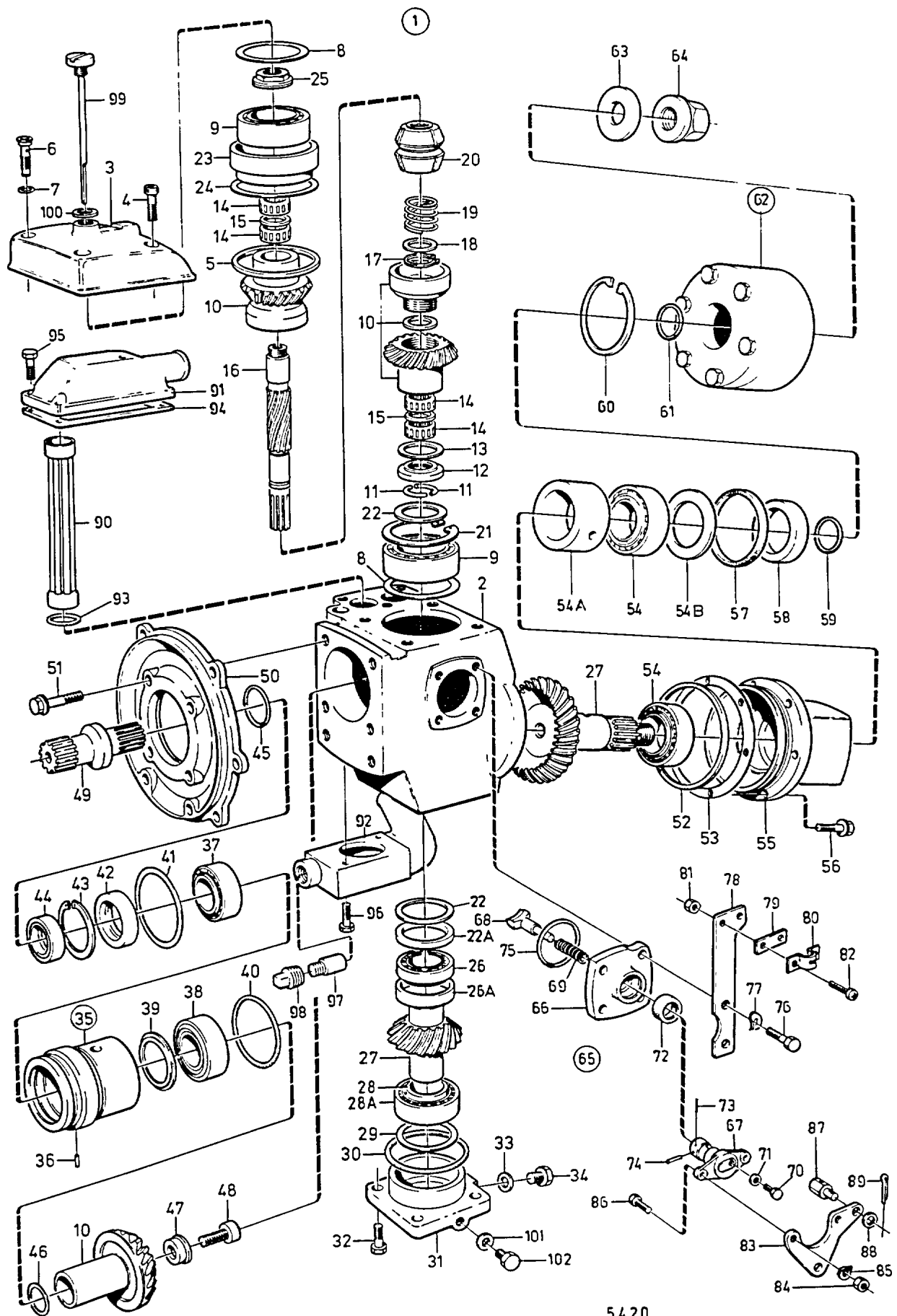
Sida Page		Grupp Group		Backslag MS3 Utv 2,91:1 MS3		Reverse gear MS3 Ratio 2,91:1		Illustration 5420 1987-04		0200	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	851										
1	1	-	-	-	851100-8	Backslag .....	Reverse gear .....	8		UTV 2,91:1	00
2	1	-	-	-	851145-3	·Växelhus .....	·Gear housing .....	7			004
3	1	-	-	-	832667-0	·Lock .....	·Cover .....	7		(832668)	0060
4	3	-	-	-	956585-4	·Skruv .....	·Screw .....				0080
5	1	-	-	-	832669-6	·Packning .....	·Gasket .....	S 2			0100
6	1	-	-	-	814643-3	·Hålskruv .....	·Hollow screw .....	3			0120
7	1	-	-	-	955989-9	·O-ring .....	·O-ring .....	S 0			0140
8	ERF	-	-	-	943866-4	·Justerbricka .....	·Shim .....	0		TJ=0,1MM	0160
	ERF	-	-	-	943867-2	·Justerbricka .....	·Shim .....	0		TJ=0,2MM	0180
	ERF	-	-	-	943868-0	·Justerbricka .....	·Shim .....	0		TJ=0,4MM	0200
9	2	-	-	-	853542-9	·Lager .....	·Bearing .....	3		(183729)	0220
10	1	-	-	-	839027-0	·Drevsats .....	·Set of gears .....	4			J
11	2	-	-	-	897312-5	·Låsring .....	·Circlip .....	3			0260
12	1	-	-	-	850422-7	·Distansring .....	·Spacer ring .....	4			0280
13	1	-	-	-	852433-2	·Slitbricka .....	·Wear plate .....	3		(850243)	0300
14	4	-	-	-	181359-1	·Nållager .....	·Needle bearing .....	3			0320
15	2	-	-	-	897308-3	·Distansring .....	·Spacer ring .....	4			0340
16	1	-	-	-	897385-1	·Axel .....	·Shaft .....	5			J
17	1	-	-	-	951077-7	·Låsring .....	·Circlip .....	0			0380
18	1	-	-	-	26411-9	·Mellanlägg .....	·Spacer .....	0			0400
19	1	-	-	-	813970-1	·Fjäder .....	·Spring .....	3			0420
20	1	-	-	-	852949-7	·Skjuthylsa .....	·Sliding sleeve .....	5		(852548)	0440
21	1	-	-	-	850433-4	·Låsring .....	·Circlip .....	2			0460
22	ERF	-	-	-	949071-5	·Justerbricka .....	·Shim .....	0		TJ=0,1MM	0480
	ERF	-	-	-	949072-3	·Justerbricka .....	·Shim .....	0		TJ=0,15MM	0500
	ERF	-	-	-	949073-1	·Justerbricka .....	·Shim .....	0		TJ=0,35MM	0520
	ERF	-	-	-	949074-9	·Justerbricka .....	·Shim .....	0		TJ=0,50MM	0
22a	1	-	-	-	851539-7	·Distansbricka .....	·Spacer washer .....	4			0
23	1	-	-	-	832644-9	·Lagerhylsa .....	·Bearing sleeve .....	5			0540
24	1	-	-	-	946179-9	·Justerbricka .....	·Shim .....	0		TJ=0,1MM	0600
	1	-	-	-	943870-6	·Justerbricka .....	·Shim .....	0		TJ=0,2MM	0620
25	1	-	-	-		·Mutter .....	·Nut .....	4		ALTTJ=2,10MM	0640
	ERF	-	-	-	839332-4	·Mutter .....	·Nut .....	4		ALTTJ=2,37MM	0660
	ERF	-	-	-	839333-2	·Mutter .....	·Nut .....	4		ALTTJ=2,65MM	0680
	ERF	-	-	-	839334-0	·Mutter .....	·Nut .....	4			0700
26	1	-	-	-	181301-3	·Innerring .....	·Inner ring .....	3			0720
26a	1	-	-	-	181302-1	·Yttering .....	·Outer ring .....	3			0740
27	1	-	-	-	851107-3	·Kuggjulssats .....	·Set of gears .....	5			0
28	1	-	-	-	181303-9	·Rullager, innerring .....	·Roller bearing, cone .....	3			J
28a	1	-	-	-	181304-7	·Rullager, yttering .....	·Roller bearing, cup .....	3			0800
29	ERF	-	-	-	87655-7	·Justerbricka .....	·Shim .....	2		TJ=0,1MM	0820
	ERF	-	-	-	191840-8	·Justerbricka .....	·Shim .....	2		TJ=0,15MM	0840
	ERF	-	-	-	87654-0	·Mellanlägg .....	·Spacer .....	2		TJ=0,35MM	0860
30	1	-	-	-	925258-6	·O-ring .....	·O-ring .....	0			0880
31	1	-	-	-	851144-6	·Lagerlock .....	·Bearing cover .....	5			J
32	4	-	-	-	955318-1	·Skruv .....	·Screw .....	0			0920
32a	4	-	-	-	960148-5	·Bricka .....	·Washer .....	0			0930
33	1	-	-	-	957173-8	·Packning .....	·Gasket .....	S 0			0940
34	1	-	-	-	960628-6	·Propp .....	·Plug .....	0			0960
35	1	-	-	-	875425-1	·Lagerbox .....	·Bearing unit .....	6			0980
36	1	-	-	-	951940-6	·Spannstift .....	·Tension pin .....	4			1000
37	1	-	-	-	183247-6	·Lager .....	·Bearing .....	4			1020
38	1	-	-	-	183668-3	·Rullager .....	·Roller bearing .....	4			1040
39	1	-	-	-	897772-0	·Oljeavkastare .....	·Oil deflector .....	4		TID UTF	10
40	1	-	-	-	925256-0	·O-ring .....	·O-ring .....	S 0			1
41	ERF	-	-	-	941826-0	·Justerbricka .....	·Shim .....	0		TJ=0,05MM	1
	ERF	-	-	-	941827-8	·Justerbricka .....	·Shim .....	0		TJ=0,2MM	1120
	ERF	-	-	-	948230-8	·Justerbricka .....	·Shim .....	0		TJ=0,35MM	1140
42	1	-	-	-	839253-2	·Tättningsring .....	·Seal ring .....	S 3			1160
43	1	-	-	-	914538-4	·Låsring .....	·Circlip .....	0			118
44	1	-	-	-	832675-3	·Bricka .....	·Washer .....	4			12
45	1	-	-	-	956000-4	·O-ring .....	·O-ring .....	S 0			1220
46	ERF	-	-	-	943871-4	·Justerbricka .....	·Shim .....	0		TJ=0,05MM	1240





Sida Page	Grupp Group	Backslag MS3 Utv 2,91:1 MS3	Reverse gear MS3 Ratio 2,91:1	Illustration 5420 1987-04	0200
10	4b				

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	851										
	ERF	-	-	-	943872-2	..Justerbricka .	..Shim		0	TJ=0,1MM	1260
	ERF	-	-	-	943873-0	..Justerbricka	..Shim		0	TJ=0,2MM	1280
47	1	-	-	-	839013-0	..Bricka	..Washer		4		1300
48	1	-	-	-	851293-1	..Skruv	..Screw		3		1320
49	1	-	-	-	850275-9	..Drivaxel	..Drive shaft		6		1340
50	1	-	-	-	850276-7	..Mellandel	..Interm piece		7		1360
51	6	-	-	-	965185-2	..Skruv	..Screw		0		1380
52	1	-	-	-	925267-7	..O-ring	..O-ring		S		1400
53	ERF	-	-	-	851494-5	..Justerbricka	..Shim		2	TJ=0,1MM	1420
	ERF	-	-	-	851495-2	..Justerbricka	..Shim		2	TJ=0,15MM	1440
	ERF	-	-	-	851496-0	..Justerbricka	..Shim		2	TJ=0,35MM	1450
54	2	-	-	-	183668-3	..Rullager	..Roller bearing		4		0
54a	1	-	-	-	851577-7	..Distanshylsa	..Spacer sleeve		5		1500
54b	1	-	-	-	84219-5	..Justerbricka	..Shim		2	TJ=0,1MM	1520
	1	-	-	-	84218-7	..Mellanlagg	..Spacer		2	TJ=0,35MM	1540
55	1	-	-	-	851143-8	..Hus	..Housing		7		1560
56	6	-	-	-	946671-5	..Skruv	..Screw		0		1590
57	1	-	-	-	925095-2	..O-ring	..O-ring		S		0
58	1	-	-	-	958880-7	..Tätningring	..Seal ring		S		1620
59	1	-	-	-	125018-2	..O-ring	..O-ring		S		1640
60	1	-	-	-	914540-0	..Låsring	..Circlip		0		1660
61	1	-	-	-	925069-7	..O-ring	..O-ring		0		1680
62	1	-	-	-	850417-7	..Slirkoppling	..Slip coupling		6		1700
	ERF	-	-	-		..Detaljer	..Components		8		1720
63	1	-	-	-	850471-4	..Bricka	..Washer		3		1740
64	1	-	-	-	947855-3	..Mutter	..Nut		0		1760
65	1	-	-	-	839504-8	..Växelmekanism	..Gear mechanism		5		178
66	1	-	-	-	839505-5	..Lagerhus	..Housing		5		180
67	1	-	-	-	897816-5	..Excenterkolv	..Eccentric piston		4		1820
68	1	-	-	-	814603-7	..Glidsko	..Sliding shoe		4		1840
69	1	-	-	-	814184-8	..Fjäder	..Spring		3		1860
70	1	-	-	-	897711-8	..Skruv	..Screw		3		1880
71	ERF	-	-	-	897871-0	..Bricka	..Washer		3	TJ=0,2MM	1900
72	1	-	-	-	958838-5	..O-ring	..O-ring		0	(941866)	1920
73	1	-	-	-	951924-0	..Spännstift	..Tension pin		S		1940
74	1	-	-	-	942871-5	..Pinne	..Pin		0		1960
75	1	-	-	-	925093-7	..O-ring	..O-ring		S		1980
76	4	-	-	-	955273-8	..Skruv	..Screw		0		2000
77	4	-	-	-	941906-0	..Fjädrande bricka	..Resilient washer		0		2040
78	1	-	-	-	850350-0	..Kabelfaste	..Cable attachment		6		2060
79	1	-	-	-	819068-8	..Bricka	..Washer		4		2080
80	1	-	-	-	819067-0	..Bygel	..Brace		4		2100
81	2	-	-	-	940092-0	..Mutter	..Nut		0		2120
82	2	-	-	-	950022-4	..Skruv	..Screw		0		2140
83	1	-	-	-	852363-1	..Havarm	..Lever		0	(834021)	2160
84	2	-	-	-	955781-0	..Mutter	..Nut		0		2180
85	2	-	-	-	955948-5	..Låsbricka	..Washer		0		2200
86	2	-	-	-	955270-4	..Skruv	..Screw		0		2220
87	1	-	-	-	804312-7	..Relagekabeltärning	..O-ring		4		2240
88	1	-	-	-	955892-5	..Bricka	..Washer		0		2260
89	1	-	-	-	907834-6	..Saxpinne	..Cotter pin		0	(17276)	2280
90	1	-	-	-	851525-6	..Oljekylare	..Oil cooler		6		2300
91	1	-	-	-	851537-1	..Gavellock	..End cover		6		2320
92	1	-	-	-	851538-9	..Gavellock	..End cover		6		234
93	1	-	-	-	942353-4	..O-ring	..O-ring		S		236
94	2	-	-	-	851531-4	..Packning	..Gasket		2		2380
95	3	-	-	-	940326-2	..Skruv	..Screw		0		2400
96	2	-	-	-	955278-7	..Skruv	..Screw		0		2420
97	1	-	-	-	804107-1	..Zinkelektrod	..Zinc electrode		1	FOR/FOR 800475	2440
	1	-	-	-	838929-8	..Zinkelektrod	..Zinc electrode		1	FOR/FOR 838928	2450



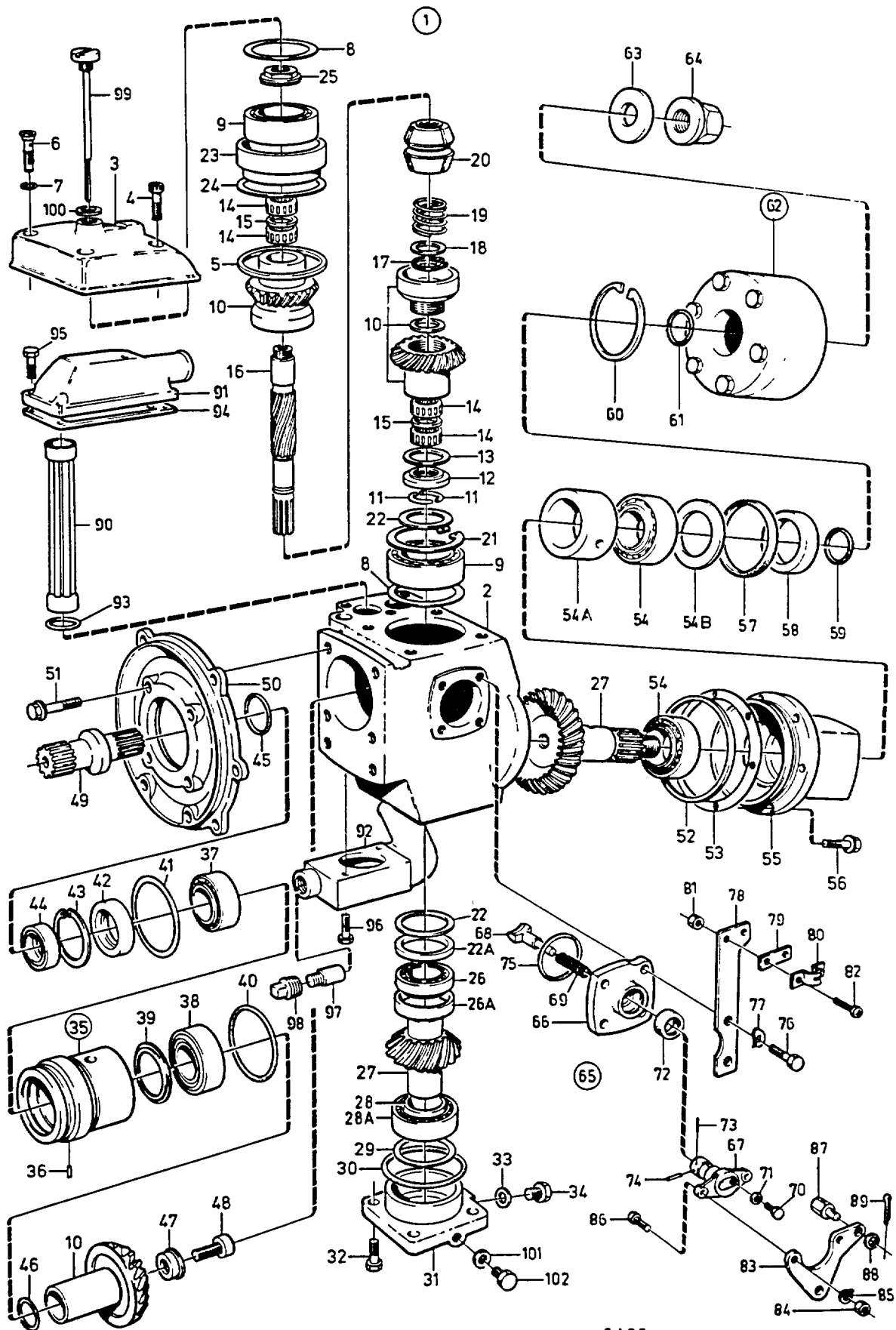
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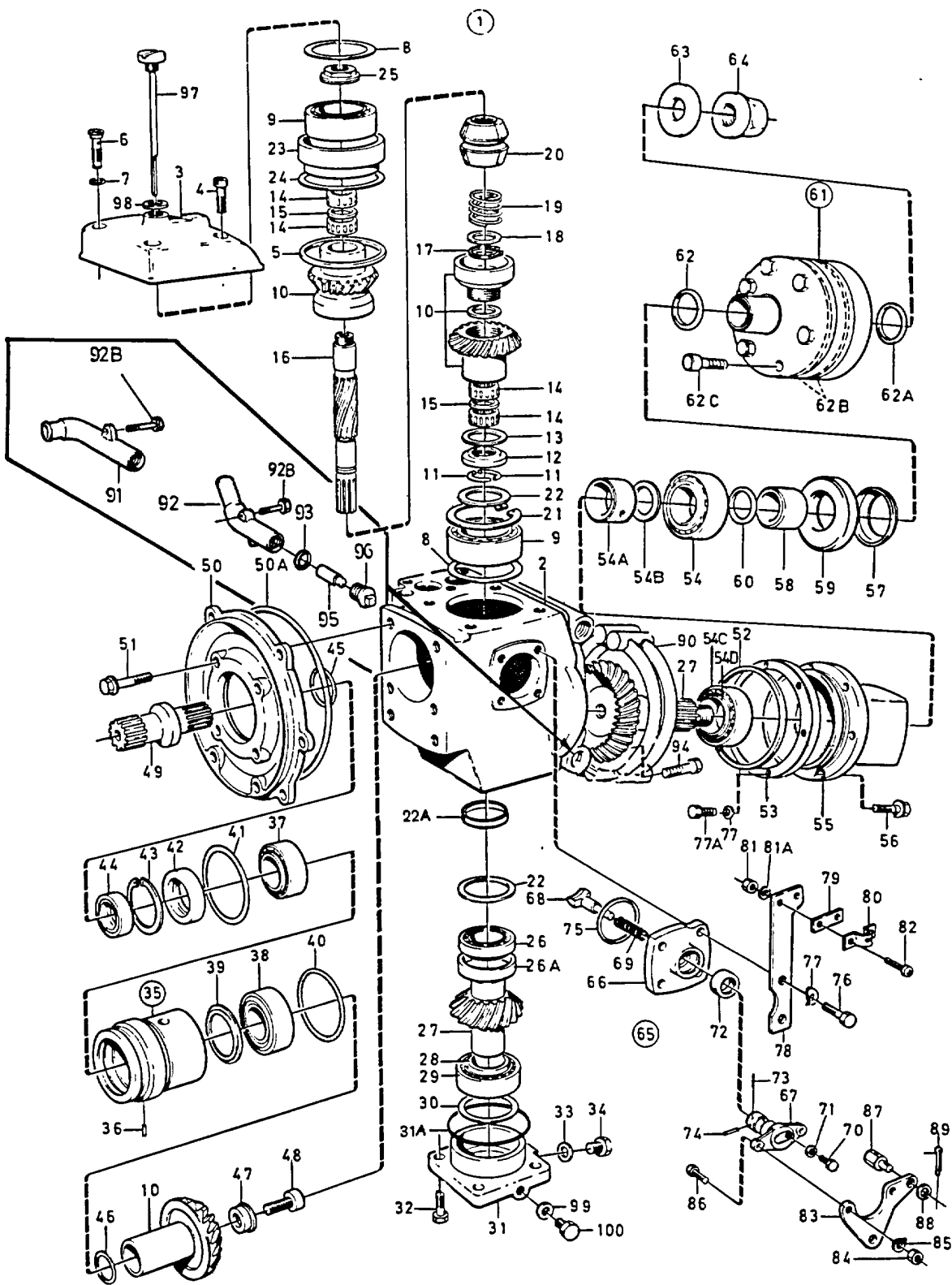
**VOLVO  
PENTA**

Sida Page	Grupp Group	Backslag MS3 Utv 2,91:1 MS3	Reverse gear MS3 Ratio 2,91:1	Illustration 5420 1987-04	0200						
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	851										
	100										
98	1	-	-	-	800475-6	.Propp . . . . .	.Plug . . . . .		1	7)	24
	1	-	-	-	838928-0	.Propp . . . . .	.Plug . . . . .		1		24,
99	1	-	-	-	839351-4	.Oljemätsticka . . . . .	.Oil dipstick . . . . .		5		2480
100	1	-	-	-	955974-1	.O-ring . . . . .	.O-ring . . . . .		0		2500
101	1	-	-	-	897682-1	.Packning . . . . .	.Gasket . . . . .		1		2520
102	1	-	-	-	814179-8	.Propp . . . . .	.Plug . . . . .		3		2540
	1	-	-	-	875628-0	Packningssats . . . . .	Gasket kit . . . . .		1	SE GRUPP10A	2560

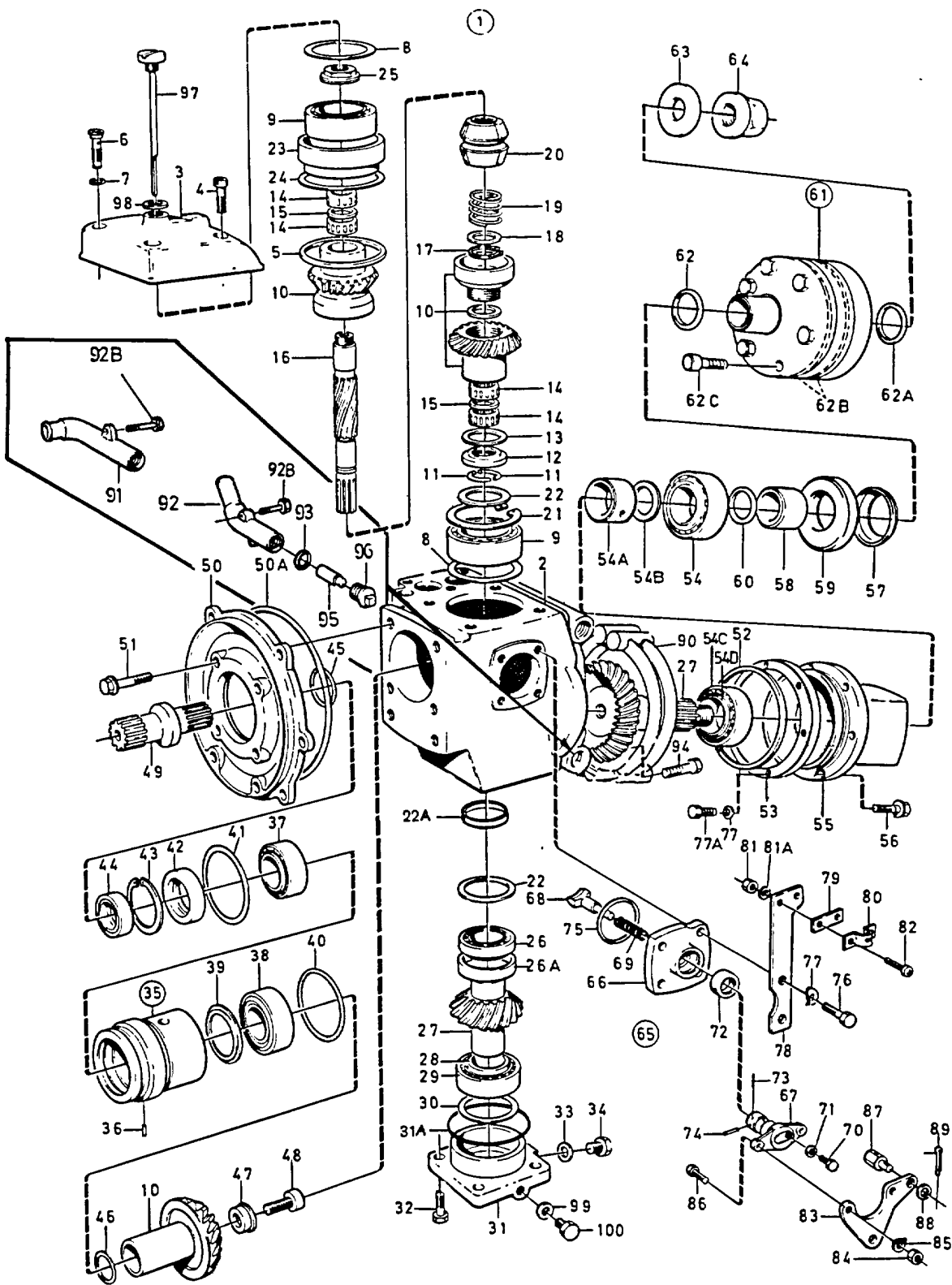


Sida Page		Grupp Group		Backslag MS3B		Reverse gear MS3B		Illustration	
14		4b		MS3B				7522 1987-04	
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	852 102	852 002	852 001						
1	1	-	-	852102-3	Backslag . . . . .	Reverse gear . . . . .	8	6) UTV.1,93:1	00.
	-	1	-	852002-5	Backslag .. . . .	Reverse gear . . . . .	8	6) UTV.1,93:1	0040
	-	-	1	852001-7	Backslag . . . . .	Reverse gear . . . . .		8) UTV.1,54:1	0050
2	1	1	1	851673-4	.Vaxelhus . . . . .	.Gear housing . . . . .	7		0060
3	1	1	1	832667-0	.Vaxelhuslock . . . . .	.Cover . . . . .	7	(832668)	0080
4	3	3	3	956585-4	.Skruv . . . . .	.Screw . . . . .	0		0100
5	1	1	1	832669-6	.Packning . . . . .	.Gasket . . . . .	S 2		0120
6	1	1	1	814643-3	.Hålskruv . . . . .	.Hollow screw . . . . .	3		0140
7	1	1	1	955989-9	.O-ring . . . . .	.O-ring . . . . .	S 0		0160
8	ERF	ERF	ERF	943866-4	.Justerbricka . . . . .	.Shim . . . . .	0	TJ=0,1MM	0180
	ERF	ERF	ERF	943867-2	.Justerbricka . . . . .	.Shim . . . . .	0	TJ=0,2MM	00
	ERF	ERF	ERF	943868-0	.Justerbricka . . . . .	.Shim . . . . .	0	TJ=0,4MM	00
9	2	2	2	853542-9	.Lager . . . . .	.Bearing . . . . .	3	(183729)	0240
10	1	1	1	839027-0	.Drevsats . . . . .	.Set of gears . . . . .	4		0260
11	2	2	2	897312-5	.Låsring . . . . .	.Circlip . . . . .	3		0280
12	1	1	1	850422-7	.Distansring . . . . .	.Spacer ring . . . . .	4		0300
13	1	1	1	852433-2	.Slitbricka . . . . .	.Wear plate . . . . .	3	(850243)	00
14	4	4	4	181359-1	.Nållager . . . . .	.Needle bearing . . . . .	3		00
15	2	2	2	897308-3	.Distansring . . . . .	.Spacer ring . . . . .	4		0360
16	1	1	1	897385-1	.Axel . . . . .	.Shaft . . . . .	5		0380
17	1	1	1	951077-7	.Låsring . . . . .	.Circlip . . . . .	0		0400
18	1	1	1	26411-9	.Mellanlägg . . . . .	.Spacer . . . . .	0		0420
19	1	1	1	813970-1	.Fjäder . . . . .	.Spring . . . . .	3		0440
20	1	1	1	852949-7	.Skjuthylsa . . . . .	.Sliding sleeve . . . . .	5	(852548)	0460
21	1	1	1	850433-4	.Låsring . . . . .	.Circlip . . . . .	2		0480
22	ERF	ERF	ERF	949071-5	.Justerbricka . . . . .	.Shim . . . . .	0	TJ=0,1MM	05
	ERF	ERF	ERF	949072-3	.Justerbricka . . . . .	.Shim . . . . .	0	TJ=0,15MM	00
	ERF	ERF	ERF	949073-1	.Justerbricka . . . . .	.Shim . . . . .	0	TJ=0,50MM	05
	ERF	ERF	ERF	949074-9	.Justerbricka . . . . .	.Shim . . . . .	0	TJ=0,50MM	0560
23	1	1	1	832644-9	.Lagerhylsa . . . . .	.Bearing sleeve . . . . .	5		0580
24	ERF	ERF	ERF	946179-9	.Justerbricka . . . . .	.Shim . . . . .	0	TJ=0,1MM	0600
	ERF	ERF	ERF	943870-6	.Justerbricka . . . . .	.Shim . . . . .	0	TJ=0,2MM	0620
25	1	1	1		.Mutter . . . . .	.Nut . . . . .			0640
	ERF	ERF	ERF	839332-4	..Mutter . . . . .	..Nut . . . . .	4	ALT TJ=2,10MM	0660
	ERF	ERF	ERF	839333-2	..Mutter . . . . .	..Nut . . . . .	4	ALT TJ=2,37MM	0680
	ERF	ERF	ERF	839334-0	..Mutter . . . . .	..Nut . . . . .	4	ALT TJ=2,65MM	0700
26	1	1	1	181301-3	.Innerring . . . . .	.Inner ring . . . . .	3		0720
26a	1	1	1	181302-1	.Yttering . . . . .	.Outer ring . . . . .	3		00
27	1	1	-	851715-3	.Drevsats . . . . .	.Set of gears . . . . .	5		00
	-	-	1	851720-3	.Drevsats . . . . .	.Set of gears . . . . .	5		0770
28	1	1	1	181303-9	.Rullager . . . . .	.Roller bearing . . . . .	3		0780
29	1	1	1	181304-7	.Rullager . . . . .	.Roller bearing . . . . .	3		0800
30	ERF	ERF	ERF	941835-1	.Justerbricka . . . . .	.Shim . . . . .	0	TJ=0,05MM	0820
	ERF	ERF	ERF	87655-7	.Justerbricka . . . . .	.Shim . . . . .	0	TJ=0,1MM	00
	ERF	ERF	ERF	191840-8	.Justerbricka . . . . .	.Shim . . . . .	0	TJ=0,15MM	00
	ERF	ERF	ERF	87654-0	.Mellanlägg . . . . .	.Spacer . . . . .	0	TJ=0,35MM	0880
31	1	1	1	851697-3	.Lagerlock . . . . .	.Bearing cover . . . . .	5		0900
31a	1	1	1	925257-8	.O-ring . . . . .	.O-ring . . . . .	0		0920
32	4	4	4	946329-0	.Skruv . . . . .	.Screw . . . . .	0		0940
33	1	1	1	957173-8	.Packning . . . . .	.Gasket . . . . .	S 0		0960
34	1	1	1	960628-6	.Propp . . . . .	.Plug . . . . .	0		0980
35	1	1	1	875425-1	.Lagerbox . . . . .	.Bearing unit . . . . .	6		1000
36	1	1	1	951940-6	..Spännstift . . . . .	..Tension pin . . . . .	4		1020
37	1	1	1	183247-6	..Lager . . . . .	..Bearing . . . . .	4		00
38	1	1	1	183668-3	..Rullager . . . . .	..Roller bearing . . . . .	4		00
39	1	1	1	897772-0	..Oljeavkastare . . . . .	..Oil deflector . . . . .	4		1000
40	1	1	1	925256-0	.O-ring . . . . .	.O-ring . . . . .	S 0		1100

6. Ers av backslag MS3C-852502, ADAPTER-852611 och 4st SKRUVAR-955699. Replaced by reverse gear MS3C-852502, ADAPTER-852611 and 4 SCREWS-955699.
8. Ersatt av BACKSLAG-852501, ADAPTER-852611 och 4st SKRUV-955699. Replaced by reverse GEAR-852501, ADAPTER-852611 and 4pcs SCREW-955699.

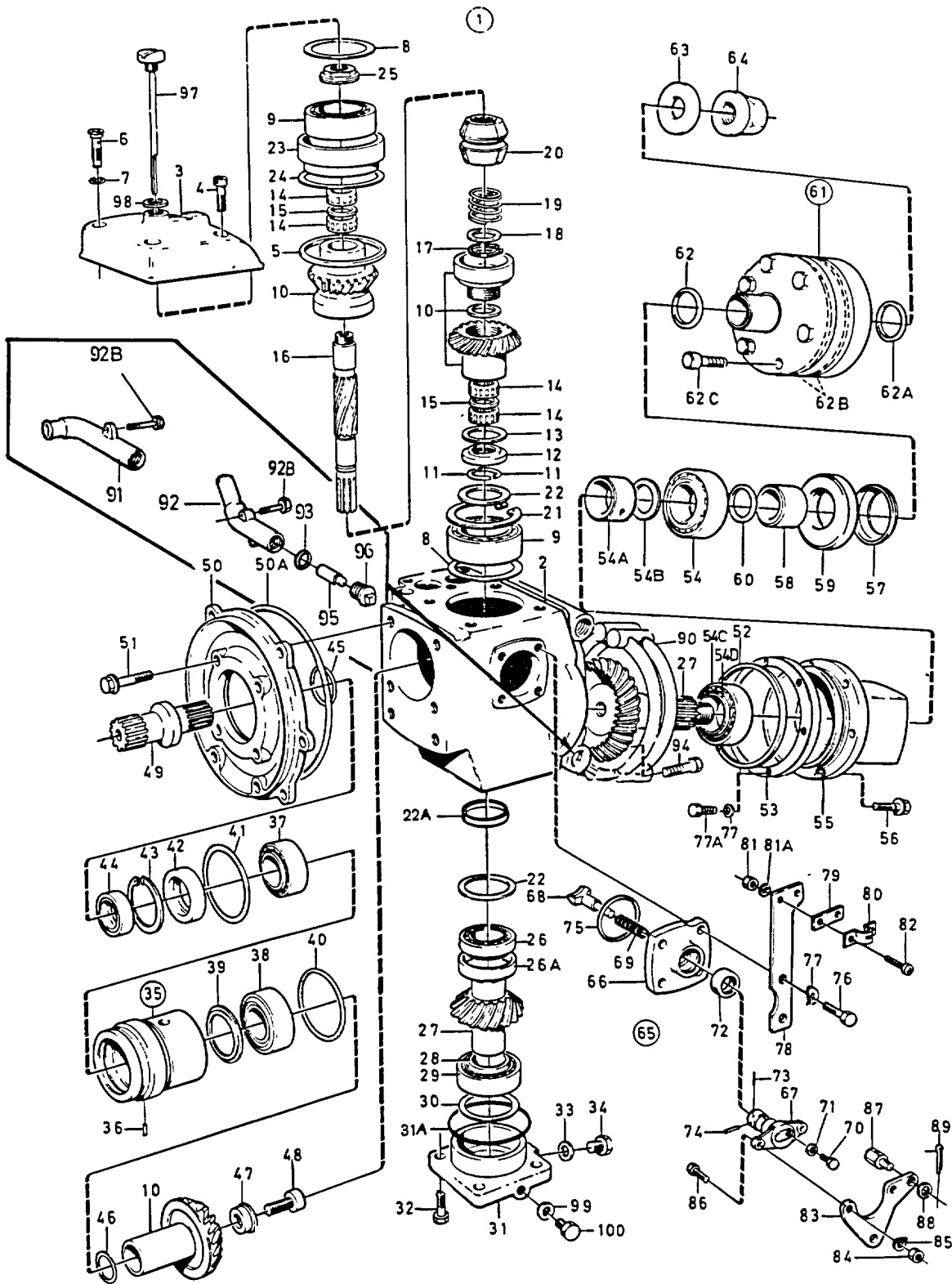


Sida Page		Grupp Group		Backslag MS3B		Reverse gear MS3B		Illustration		
16		4b		MS3B				7522 1987-04		
Pos Fig	Antal/Quantity			Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
	852 102	852 002	852 001							
41	ERF	ERF	ERF	941826-0	..Justerbricka .....	..Shim.. .....	0		TJ=0,05MM	112
	ERF	ERF	ERF	941827-8	..Justerbricka.. .....	..Shim.. .....	0		TJ=0,2MM	1140
	ERF	ERF	ERF	948230-8	..Justerbricka.. .....	..Shim.. .....	0		TJ=0,35MM	1160
42	1	1	1	839253-2	..Tätningarring.....	..Seal ring.....	S	3		1180
43	1	1	1	914538-4	..Låsring .....	..Circlip .....	0			1200
44	1	1	1	832675-3	..Bricka .....	..Washer .....	4			1220
45	1	1	1	956000-4	..O-ring.....	..O-ring.....	S	0		1240
46	ERF	ERF	ERF	943871-4	..Justerbricka.....	..Shim.....	0		TJ=0,05MM	1260
	ERF	ERF	ERF	943872-2	..Justerbricka .....	..Shim.....	0		TJ=0,1MM	1280
	ERF	ERF	ERF	943873-0	..Justerbricka .....	..Shim.....	0		TJ=0,2MM	1300
47	1	1	1	839013-0	..Bricka .....	..Washer .....	4			20
48	1	1	1	851293-1	..Skruv .....	..Screw .....	3			40
49	1	1	1	850275-9	..Drivaxel .....	..Drive shaft.....	6			1360
50	1	1	1	850276-7	..Mellandel .....	..Interm piece .....	7			1380
50a	1	1	1	925257-8	..O-ring .....	..O-ring .....	0			1400
51	6	6	6	965185-2	..Skruv .....	..Screw .....	0			1420
52	1	1	1	925267-7	..O-ring.....	..O-ring.....	S	0		40
53	ERF	ERF	ERF	851496-0	..Justerbricka.....	..Shim.....	2		TJ=0,1MM	30
	ERF	ERF	ERF	851495-2	..Justerbricka.....	..Shim.....	2		TJ=0,15MM	1480
	ERF	ERF	ERF	851494-5	..Justerbricka.....	..Shim.....	2		TJ=0,35MM	1500
54	1	1	1	183668-3	..Rullager .....	..Roller bearing .....	4			1520
54a	1	1	1	851699-9	..Distansring.....	..Spacer ring .....	5			1540
54b	ERF	1	1	852184-1	..Justerbleck .....	..Washer .....	2		TJ=0,05MM	1560
	ERF	1	1	84219-5	..Justerbricka .....	..Shim .....	2		TJ=0,1MM	1580
	ERF	1	1	84218-7	..Mellanlägg .....	..Spacer .....	2		TJ=0,35MM	1600
54c	1	1	1	183328-4	..Yttering .....	..Outer ring.....	4			1620
54d	1	1	1	183327-6	..Innerring .....	..Inner ring .....	4			16
55	1	1	1	851673-3	..Lagerhus.....	..Housing.....	7			161
56	6	6	6	946671-5	..Skruv .....	..Screw .....	0			1680
57	1	1	1	944530-5	..V-ring .....	..V-ring.....	0			1700
58	1	1	1	851679-1	..Distansring.....	..Spacer ring .....	3			1720
59	1	1	1	853757-3	..Tätningarring.....	..Seal ring .....	0		(959026)	1740
60	1	1	1	925063-0	..O-ring .....	..O-ring .....	0			1760
61	1	1	1	852072-8	..Slirkoppling .....	..Slip coupling.....	6			1780
62	1	1	1	925069-7	..O-ring.....	..O-ring .....	0			1800
62a	1	1	1	925092-9	..O-ring.....	..O-ring .....	0			1820
62b	2	2	2	925263-6	..O-ring.....	..O-ring .....	0			1840
62c	8	8	8	955299-3	..Skruv .....	..Screw .....	0			30
63	1	1	1	850471-4	..Bricka .....	..Washer .....	3			380
64	1	1	1	947855-3	..Låsmutter .....	..Nut .....	0			1900
65	1	1	1	839504-8	..Vaxlingsmekanism .....	..Gearshift mechanism .....	5			1920
66	1	1	1	839505-5	..Lagerhus .....	..Housing .....	5			1940
67	1	1	1	897816-5	..Excenterkolv.....	..Eccentric piston.....	4			1960
68	1	1	1	814603-7	..Glidsko .....	..Sliding shoe .....	4			30
69	1	1	1	814184-8	..Fjäder .....	..Spring .....	3			00
70	1	1	1	897711-8	..Skruv .....	..Screw .....	3			2020
71	ERF	ERF	ERF	897871-0	..Bricka .....	..Washer.....	3		TJ=0,2MM	2040
72	1	1	1	958838-5	..O-ring .....	..O-ring .....	S	0		2060
73	1	1	1	951924-0	..Spännstift .....	..Tension pin .....	S	0		2080
74	1	1	1	942871-5	..Pinne .....	..Pin .....	0			2100
75	1	1	1	925093-7	..O-ring.....	..O-ring .....	S	0		2120
76	4	4	4	955273-8	..Skruv .....	..Screw .....	0			2140
77	8	8	8	941906-0	..Fjädrande bricka .....	..Resilient washer.....	0			2160
77a	2	2	2	942000-1	..Skruv.....	..Screw .....	0			21P
78	1	1	1	850350-0	..Kabelfäste.....	..Cable attachment .....	6			22
79	1	1	1	819068-8	..Bricka .....	..Washer.....	4			222
80	1	1	1	819067-0	..Bygel .....	..Brace .....	4			2240
81	2	2	2	946577-4	..Låsmutter .....	..Lock nut .....	0			2260
81a	2	2	2	940090-4	..Bricka .....	..Washer .....	0			2280
82	2	2	2	955246-4	..Skruv .....	..Screw .....	0			230
83	1	1	1	852363-1	..Hävarm .....	..Lever .....	4		(834021)	232
84	2	2	2	955781-0	..Mutter.....	..Nut.....	0			2340
85	2	2	2	955948-5	..Låsbricka.....	..Washer .....	0			2360

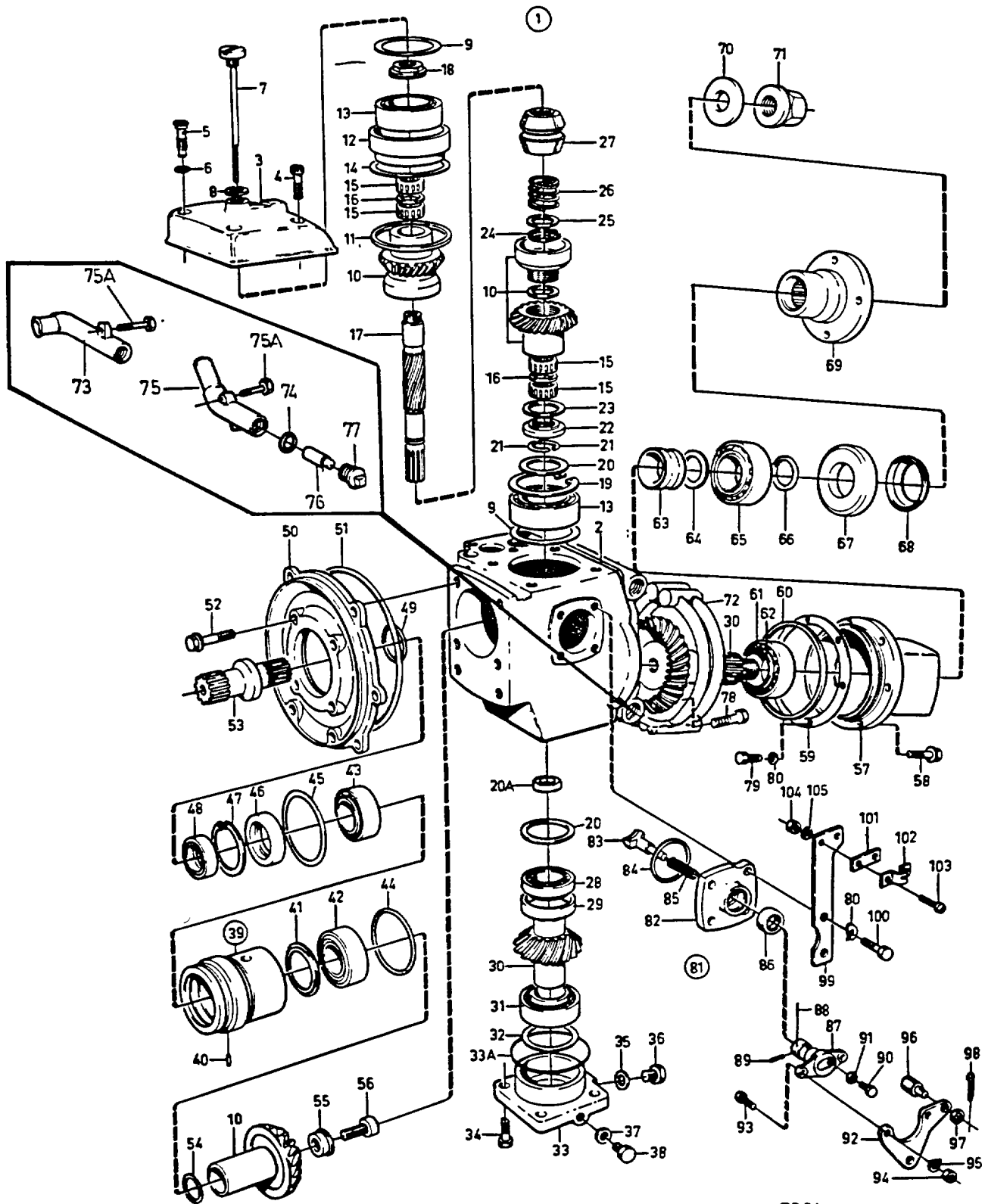




Sida Page		Grupp Group		Backslag MS3B		Reverse gear MS3B		Illustration		
18		4b		MS3B				7522 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	852 102	852 002	852 001							
86	2	2	2	-	955270-4	•Skruv .....	•Screw .....		0	
87	1	1	1	-	804312-7	•Reglagekabeltärning .....	•Control cube .....		4	
88	1	1	1	-	955892-5	•Bricka .....	•Washer .....		0	
89	1	1	1	-	907834-6	•Saxpinne .....	•Cotter pin .....		0	(17276)
90	2	2	2	-	851786-4	•Oljekylare .....	•Oil cooler .....		6	
91	1	1	1	-	852007-4	•Anslutningsrör .....	•Connection pipe .....		4	
92	1	1	1	-	851730-2	•Anslutningsrör .....	•Cover .....		4	
92b	4	4	4	-	959207-2	•Skruv .....	•Screw .....		0	
93	4	4	4	-	960169-1	•O-ring .....	•O-ring .....	S	0	
94	4	4	4	-	959207-2	•Skruv .....	•Screw .....		0	
95	2	2	2	-	804107-1	•Zinkelektrod .....	•Zinc electrode .....		1	FOR/FOR 800475
	2	2	2	-	838929-8	•Zinkelektrod .....	•Zinc electrode .....		1	FOR/FOR 838928
96	2	2	2	-	800475-6	•Propp .....	•Plug .....		1	7)
	2	2	2	-	838928-0	•Propp .....	•Plug .....		1	
97	1	1	1	-	839351-4	•Oljemätsticka .....	•Oil dipstick .....		5	
98	1	1	1	-	897682-1	•Packning .....	•Gasket .....		1	
99	1	1	1	-	955974-1	•O-ring .....	•O-ring .....		0	
100	1	1	1	-	814179-8	•Propp .....	•Plug .....		2	
	1	1	1	-	875628-0	•Packningssats .....	•Gasket kit .....		1	SE GRUPP 10A



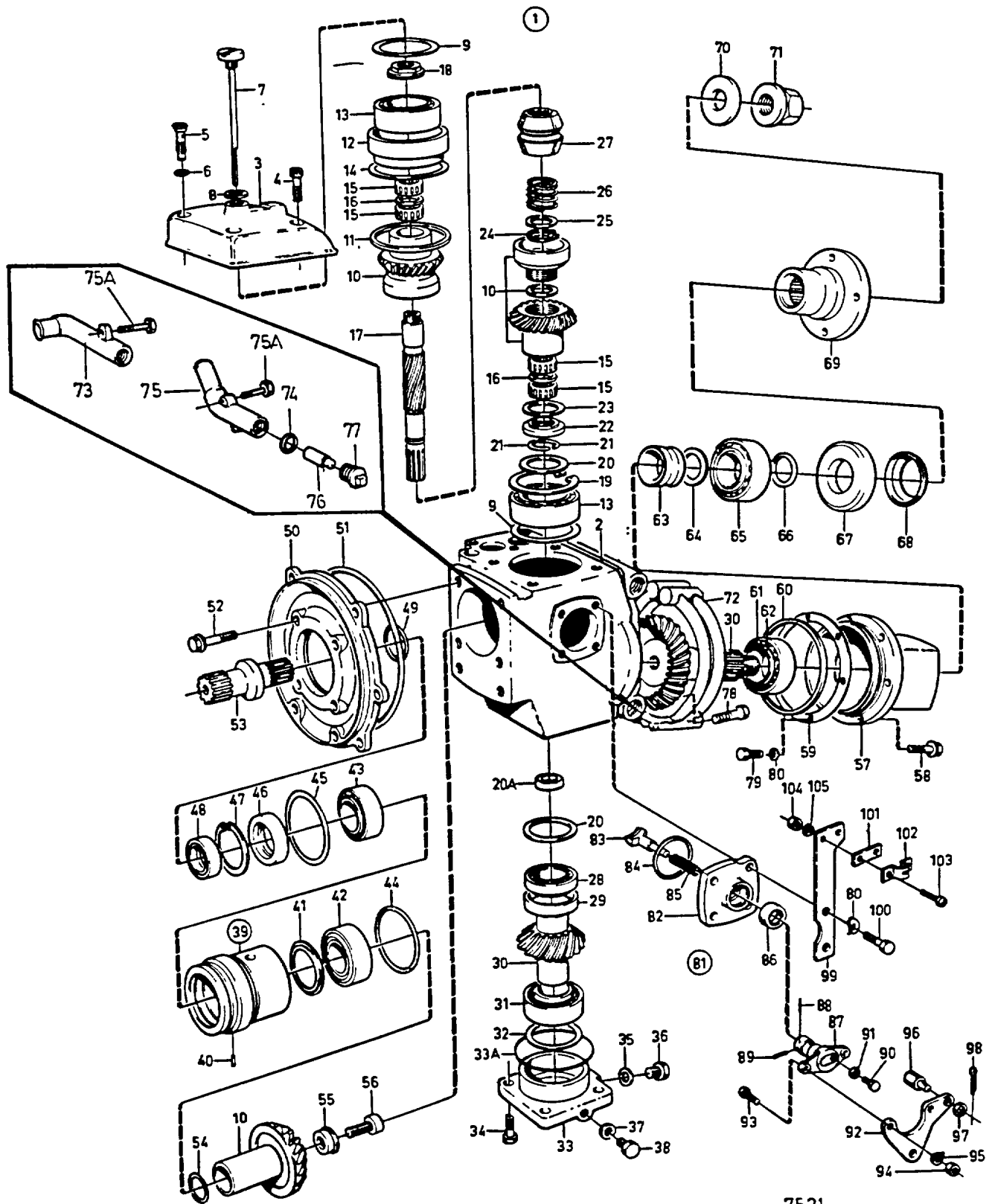
Sida Page		Grupp Group		Backslag MS3C		Reverse gear MS3C		Illustration	
20		4b		MS3C				7521 1987-04	
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	852 501	852 502	852 503						
1	1	-	-	852501-6	Backslag....	Reverse gear .	6	UTV 1,54:1	002L
	-	1	-	852502-4	Backslag.....	Reverse gear .	6	UTV 1,93:1	0040
	-	-	1	852503-2	Backslag.....	Reverse gear ....	6	UTV2,73:1	0045
2	1	1	1	851673-4	.Vaxelhus .....	.Gear housing.....	7		0060
3	1	1	1	832667-0	.Lock .....	.Cover .....	7	(832668)	0080
4	3	3	3	956585-4	.Skruv .....	.Screw .....	0		0100
5	1	1	1	814643-3	.Hålskruv .....	.Hollow screw.....	3		0120
6	1	1	1	955989-9	.O-ring .....	.O-ring .....	S 0		0140
7	1	1	1	839351-4	.Oljemattsticka.....	.Oil dipstick.....	5		0160
8	1	1	1	897682-1	.Packning.....	.Gasket.....	S 1		0180
9	ERF	ERF	ERF	943866-4	.Justerbricka.....	.Shim.....	0	TJ=0,1MM	0
	ERF	ERF	ERF	943867-2	.Justerbricka.....	.Shim .....	0	TJ=0,2MM	0
	ERF	ERF	ERF	943868-0	.Justerbricka.....	.Shim .....	0	TJ=0,4MM	0240
10	1	1	1	839027-0	.Drevsats .....	.Set of gears.....	4		0260
11	1	1	1	832669-6	.Packning .....	.Gasket .....	S 2		0280
12	1	1	1	832644-9	.Lagerhylsa .....	.Bearing sleeve .....	5		0300
13	2	2	2	853542-9	.Lager .....	.Bearing .....	3	(183729)	0
14	ERF	-	-	943869-8	.Justerbricka.....	.Shim .....	0	TJ=0,05MM	05
	ERF	ERF	ERF	946179-9	.Justerbricka.....	.Shim.....	0	TJ=0,1MM	0340
	ERF	ERF	ERF	943870-6	.Justerbricka.....	.Shim.....	0	TJ=0,2MM	0350
15	4	4	4	181359-1	.Nållager.....	.Needle bearing.....	3		0360
16	2	2	2	897308-3	.Distansring .....	.Spacer ring .....	4		0380
17	1	1	1	852371-4	.Axel .....	.Shaft .....	5		0400
18	1	1	1		.Mutter .....	.Nut .....	4	ALTTJ=2,00MM	0405
	ERF	ERF	ERF	839332-4	..Mutter .....	..Nut .....	4	ALTTJ=2,37MM	0407
	ERF	ERF	ERF	839333-2	..Mutter .....	..Nut .....	4	ALTTJ=2,65MM	040
	ERF	ERF	ERF	839334-0	..Mutter .....	..Nut .....	4		04
19	1	1	1	850433-4	.Låsring .....	.Circlip .....	2		042L
20	ERF	ERF	ERF	944522-2	.Justerbricka.....	.Shim .....	0	TJ=0,05MM	0435
	ERF	ERF	ERF	42981-1	.Justerbricka .....	.Shim .....	0	TJ=0,1MM	0440
	ERF	ERF	ERF	42980-3	.Justerbricka .....	.Shim .....	0	TJ=0,35MM	0480
20a	-	-	1	851539-7	.Distanshylsa .....	.Spacer sleeve.....	5		0505
21	2	2	2	897312-5	.Låsring .....	.Circlip .....	3		0520
22	1	1	1	850422-7	.Distansring.....	.Spacer ring.....	4		0540
23	1	1	1	852433-2	.Slitbricka .....	.Wear plate .....	3		0560
24	1	1	1	951077-7	.Låsring .....	.Circlip .....	0		0580
25	1	1	1	26411-9	.Mellanlägg .....	.Spacer .....	0		0600
26	1	1	1	813970-1	.Fjäder .....	.Spring .....	3		0
27	1	1	-	852548-7	.Skjuthylsa .....	.Sliding sleeve.....	8	PZ-22152, ERS AV 852949	0641
	-	-	1	852548-7	.Skjuthylsa .....	.Sliding sleeve.....	8	PZ-21999, ERS AV 852949	0642
	1	1	-	852949-7	.Skjuthylsa .....	.Sliding sleeve .....	5	PZ 22153-	0643
	-	-	1	852949-7	.Skjuthylsa .....	.Sliding sleeve .....	5	PZ 22000-	0644
28	1	1	1	181301-3	.Innerring .....	.Inner ring .....	3		0
29	1	1	1	181302-1	.Yttering .....	.Outer rage .....	3		0680
30	1	-	-	852608-9	.Drevsats .....	.Set of gears .....	5		0700
	-	1	-	852609-7	.Drevsats.....	.Set of gears .....	5		0720
	-	-	1	852610-5	.Drevsats.....	.Set of gears .....	5		0725
31	1	1	1	184649-2	.Lager .....	.Bearing .....	3		0740
32	ERF	ERF	ERF	967352-6	.Justerbricka.....	.Shim.....	0	TJ=0,05MM	0755
	ERF	ERF	ERF	941823-7	.Justerbricka.....	.Shim.....	0	TJ=0,1MM	0760
	ERF	ERF	ERF	967351-8	.Justerbricka.....	.Shim.....	0	TJ=0,15MM	0765
	ERF	ERF	ERF	941824-5	.Justerbricka.....	.Shim.....	0	TJ=0,2MM	077
	ERF	ERF	ERF	967557-0	.Justerbricka.....	.Shim .....	0	TJ=0,3MM	07
	ERF	ERF	ERF	941825-2	.Justerbricka .....	.Shim .....	0	TJ=0,4MM	080L
33	1	1	-	852373-0	.Lagerlock .....	.Bearing cover.....	5		0820
	-	-	1	852372-2	.Lagerlock .....	.Bearing cover .....	5		0825
33a	1	1	1	925257-8	.O-ring .....	.O-ring .....	0		0830
34	4	4	4	946472-8	.Skruv .....	.Screw .....	0		084L
35	1	1	1	947084-0	.Bricka .....	.Washer .....	0	(957175)	086L
36	1	1	1	960629-4	.Propp .....	.Plug .....	0		0880
37	1	1	1	955974-1	.O-ring .....	.O-ring .....	S 0		0900



7521

Sida Page	Grupp Group	Backslag MS3C	Reverse gear MS3C	Illustration	0300
22	4b	MS3C		7521	
				1987-04	

Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	852 501	852 502	852 503							
38	1	1	1	814179-8	•Propp .....	•Plug .....		2		0920
39	1	1	1	875425-1	•Lagerbox ..	•Bearing unit.....		6		0940
40	1	1	1	951940-6	•Spännstift .....	•Tension pin .....		4		0960
41	1	1	1	897772-0	•Oljeavkastare..	•Oil deflector.....		4	TID UTF	0980
42	1	1	1	183668-3	•Rullager.....	•Roller bearing .....		4		1000
43	1	1	1	183247-6	•Lager .....	•Bearing .....		4		1020
44	2	2	2	925256-0	•O-ring .....	•O-ring .....	S	0		1040
45	ERF	ERF	ERF	941826-0	•Justerbricka .....	•Shim .....		0	TJ=0,05MM	1060
	ERF	ERF	ERF	941827-8	•Justerbricka .....	•Shim .....		0	TJ=0,2MM	1080
	ERF	ERF	ERF	948230-8	•Justerbricka .....	•Shim .....		0	TJ=0,35MM	1100
46	1	1	1	839253-2	•Tätningarring..	•Seal ring .....	S	3		?
47	1	1	1	914538-4	•Låsring .....	•Circlip .....		0		J
48	1	1	1	832675-3	•Bricka .....	•Washer .....		4		1160
49	1	1	1	956000-4	•O-ring .....	•O-ring .....	S	0		1180
50	1	1	1	850276-7	•Mellandel .....	•Interm piece .....		7		1200
51	1	1	1	925257-8	•O-ring .....	•O-ring .....		0		1220
52	6	6	6	965185-2	•Skruv .....	•Screw .....		0		?)
53	1	1	1	850275-9	•Drivaxel .....	•Drive shaft .....		6		J
54	ERF	ERF	ERF	943871-4	•Justerbricka .....	•Shim .....		0	TJ=0,05MM	1280
	ERF	ERF	ERF	943872-2	•Justerbricka .....	•Shim .....		0	TJ=0,1MM	1300
	ERF	ERF	ERF	943873-0	•Justerbricka .....	•Shim .....		0	TJ=0,2MM	1320
55	1	1	1	839013-0	•Bricka .....	•Washer .....		4		1340
56	1	1	1	851293-1	•Skruv .....	•Screw .....		3		1360
57	1	1	1	851678-3	•Lagerhus ..	•Housing .....		7		1380
58	6	6	6	946671-5	•Låsskruv .....	•Screw .....		0		1400
59	ERF	ERF	ERF	851496-0	•Justerbricka .....	•Shim .....		2	TJ=0,1MM	142r
	ERF	ERF	ERF	851495-2	•Justerbricka .....	•Shim .....		2	TJ=0,15MM	144
	ERF	ERF	ERF	851494-5	•Justerbricka .....	•Shim .....		2	TJ=0,35MM	146r
60	1	1	1	925267-7	•O-ring .....	•O-ring .....	S	0		1480
61	1	1	1	183328-4	•Lager .....	•Bearing .....		4		1500
62	1	1	1	183327-6	•Lager .....	•Bearing .....		4		1520
63	1	1	1	852696-4	•Hylsa .....	•Sleeve .....		5		1540
64	ERF	ERF	ERF	852184-1	•Justerbleck..	•Washer .....		2	TJ=0,05MM	1560
65	1	1	1	183668-3	•Rullager .....	•Roller bearing .....		4		1620
66	1	1	1	925063-0	•O-ring.....	•O-ring .....		0		1640
67	1	1	1	853757-3	•Tätningarring..	•Seal ring .....		0	(959026)	1660
68	1	1	1	944530-5	•V-ring .....	•V-ring .....		0		1680
69	1	1	1	853481-0	•Propelleraxelflans	•Propeller shaft flang		6	(852368)	'
70	1	1	1	850471-4	•Bricka .....	•Washer .....		3		J
71	1	1	1	947855-3	•Mutter .....	•Nut .....		0		1740
72	2	2	2	851786-4	•Oljekylare ..	•Oil cooler .....		6		1760
73	1	1	1	852007-4	•Gavel .....	•Cover .....		6		1780
74	4	4	4	960169-1	•O-ring .....	•O-ring .....	S	0		1800
75	1	1	1	851730-2	•Gavel .....	•Cover .....		6		?
75a	4	4	4	959207-2	•Skruv .....	•Screw .....		0		J
76	2	2	2	838929-8	•Zinkelektrod .....	•Zinc electrode ..		1	(804107)	1840
77	2	2	2	838928-0	•Propp .....	•Plug .....		1	(800475)	1860
78	4	4	4	959207-2	•Skruv .....	•Screw .....		0		1880
79	2	2	2	942000-1	•Skruv .....	•Screw .....		0		1900
80	8	8	8	941906-0	•Fjädrande bricka.....	•Resilient washer ..		0		1920
81	1	1	1	839504-8	•Växlingsmekanism...	•Gearshift mechanism		5		1940
82	1	1	1	839505-5	•Lagerhus .....	•Housing .....		5		1960
83	1	1	1	814603-7	•Glidsko .....	•Sliding shoe ..		4		1980
84	1	1	1	925093-7	•O-ring .....	•O-ring .....	S	0		200'
85	1	1	1	814184-8	•Fjäder .....	•Spring .....		3		202
86	1	1	1	958838-5	•O-ring .....	•O-ring .....	S	0		2040
87	1	1	1	897816-5	•Excenterkolv....	•Eccentric piston.....		4		2060
88	1	1	1	951924-0	•Spännstift ..	•Tension pin .....		0		2080
89	1	1	1	942871-5	•Pinne .....	•Pin .....		0		2100
90	1	1	1	897711-8	•Skruv .....	•Screw .....		3		2120
91	ERF	ERF	ERF	897871-0	•Bricka .....	•Washer .....		3	TJ=0,2MM	2140
92	1	1	1	852363-1	•Havarm .....	•Lever .....		4		2160
93	2	2	2	955270-4	•Skruv .....	•Screw .....		0		2180



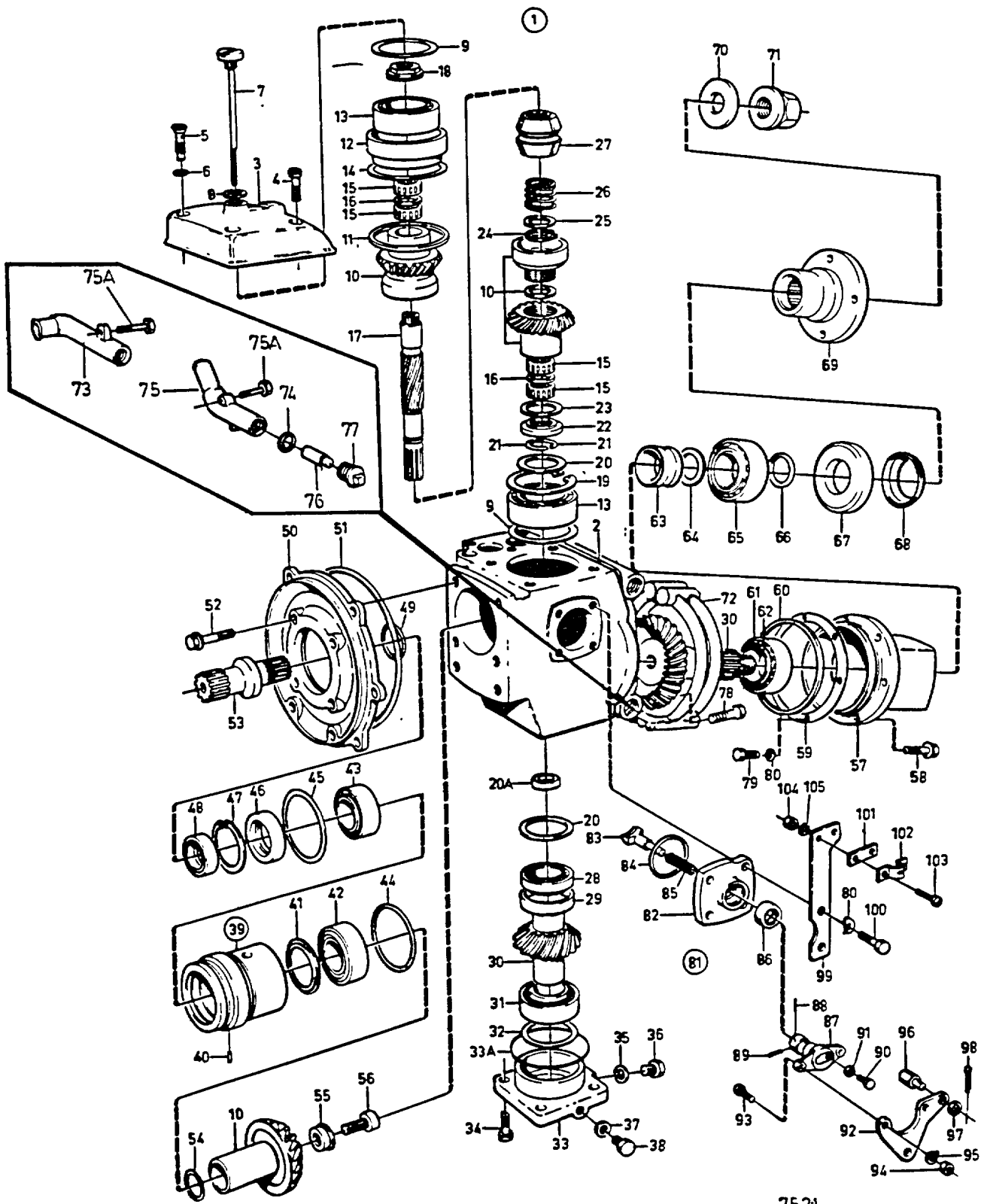
Publ. 4406

Reservdelskatalog  
Parts Catalogue

2-E01

**VOLVO  
PENTA**

Sida Page		Grupp Group		Backslag MS3C			Reverse gear MS3C			Illustration	
24		4b		MS3C						7521	0300
										1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
	852 501	852 502	852 503								
94	2	2	2	-	955781-0	•Mutter.....	•Nut.....	0			2200
95	2	2	2	-	955948-5	•Låsbricka.....	•Washer.....	0			2220
96	1	1	1	-	804312-7	•Reglagekabeltärning. . .	•Control cube.....	4			2240
97	1	1	1	-	955892-5	•Bricka.....	•Washer.....	0			2260
98	1	1	1	-	907834-6	•Saxpinne.....	•Cotter pin.....	0	(17276)		2280
99	1	1	1	-	850350-0	•Kabelfaste.....	•Cable attachment.....	6			2300
100	4	4	4	-	955273-8	•Skruv.....	•Screw.....	0			2320
101	1	1	1	-	819068-8	•Bricka.....	•Washer.....	4			2340
102	1	1	1	-	819067-0	•Bygel.....	•Brace.....	4			2360
103	2	2	2	-	955246-4	•Skruv.....	•Screw.....	0			2380
104	2	2	2	-	946577-4	•Låsmutter.....	•Lock nut.....	0			2400
105	2	2	2	-	940090-4	•Bricka.....	•Washer.....	0			0
	1	1	1	-	875628-0	Packningssats.....	Gasket kit.....	1	SE GRUPP 10A		2500



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# **VOLVO PENTA**

Originaldelar · Genuine Parts  
Originalteile · Pièces d'origine

0001	Innehållsförteckning	Index	Grupp Group	Sida Page
	1987-04		4c	1
0040	Utombordsdrev		Sida	Koord
0060	Aquamaticdrev..	DREV 280,DREV 290	2	2-F03
0080	Duopropdrev.	DREV DP280,DREV DP290	4	2-F05
2020	Outboard drive unit		Page	Grid
2040	Aquamatic drive unit ...	DREV 280,DREV 290	2	2-F03
2060	Duoprop drive unit	DREV DP280,DREV DP290	4	2-F05
2080				
2100				
2120				

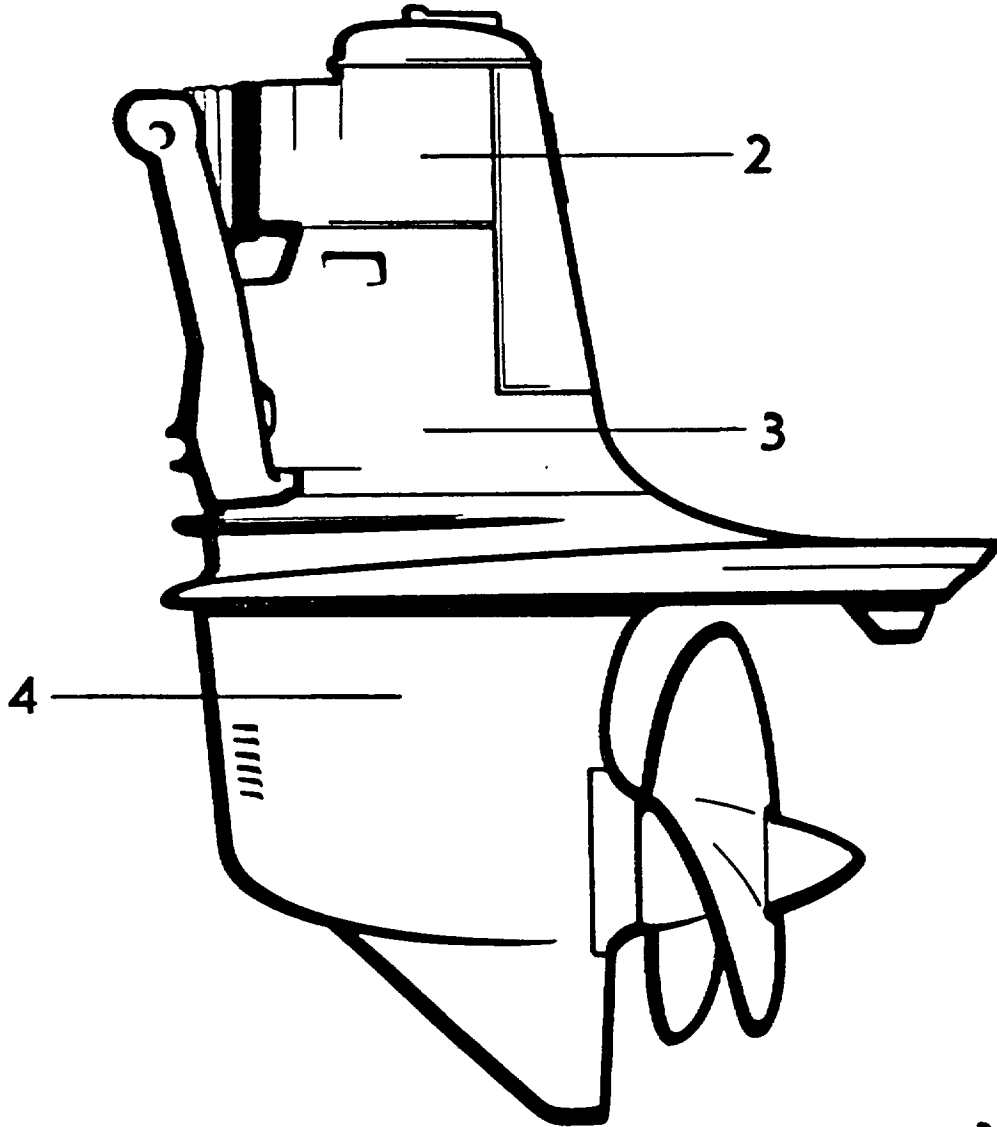


Sida Page	Grupp Group	Aquamaticdrev	Aquamatic drive unit	Illustration	0026
2	4c	DREV 280,DREV 290		3508	
				1987-04	

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	DREV 280	DREV 290									
1	1	-	-	-	839400-9	Aq drev 280b....	Aq drive unit 280b.....	8	31,54	UTV 1,61:1	0021
	1	-	-	-	850354-2	Aq drev 280b .....	Aq drive unit 280b.....	8	32,54	UTV 1,61:1	0040
	1	-	-	-	851317-8	Aq drev 280b .....	Aq drive unit 280b.....	8	62,67	UTV 1,61:1	0060
	1	-	-	-	852161-9	Aq drev 280b... ..	Aq drive unit 280b.....	6		UTV 1,61:1	0080
	-	1	-	-	851400-2	Aq drev 290 .....	Aq drive unit 290.....	8	76	UTV 1,61:1	0100
2	-	1	-	-	853450-5	Aq drev 290 .....	Aq drive unit 290 .....	6	110	UTV 1,61:1	0120
	1	-	-	-	839449-6	.Ovre vaxelenhet .	.Upper gear unit. ....	8	56,104		0140
	1	-	-	-	850460-7	.Ovre vaxelenhet .....	.Upper gear unit. ....	8	56,105	SE SIDA 6,2-F07	0141
	1	-	-	-	851340-0	.Övre växelenhet .....	.Upper gear unit .....	6	106	SE SIDA 6,2-F07	0160
	-	1	-	-	851340-0	.Ovre växelenhet... ..	.Upper gear unit .....	6	107	SE SIDA 6,2-F07	0161
3	1	-	-	-		.Mellanhus. ....	.Interm housing.....	8		SE SIDA 10,2-F11	0200
	-	1	-	-		.Mellanhus. ....	.Interm housing.....	8		SE SIDA 14,2-F15	0201
	1	-	-	-	839390-2	.Undre vaxelenhet ...	.Lower gear unit .....	8		SE SIDA 18,2-F19	0220
4	1	-	-	-		.Undre vaxelenhet ...	.Lower gear unit .....	6		UTV 1,61:1	0240
	-	1	-	-	851875-5	.Undre vaxelenhet.. ..	.Lower gear unit. ....	6		SE SIDA 22,2-F23	0260
	1	1	-	-	875192-7	.Packningssats ...	.Gasket kit .....	6		UTV 1,61.1 SE SIDA 26,2-G03 SE GRUPP 10A	0280 0281 0320

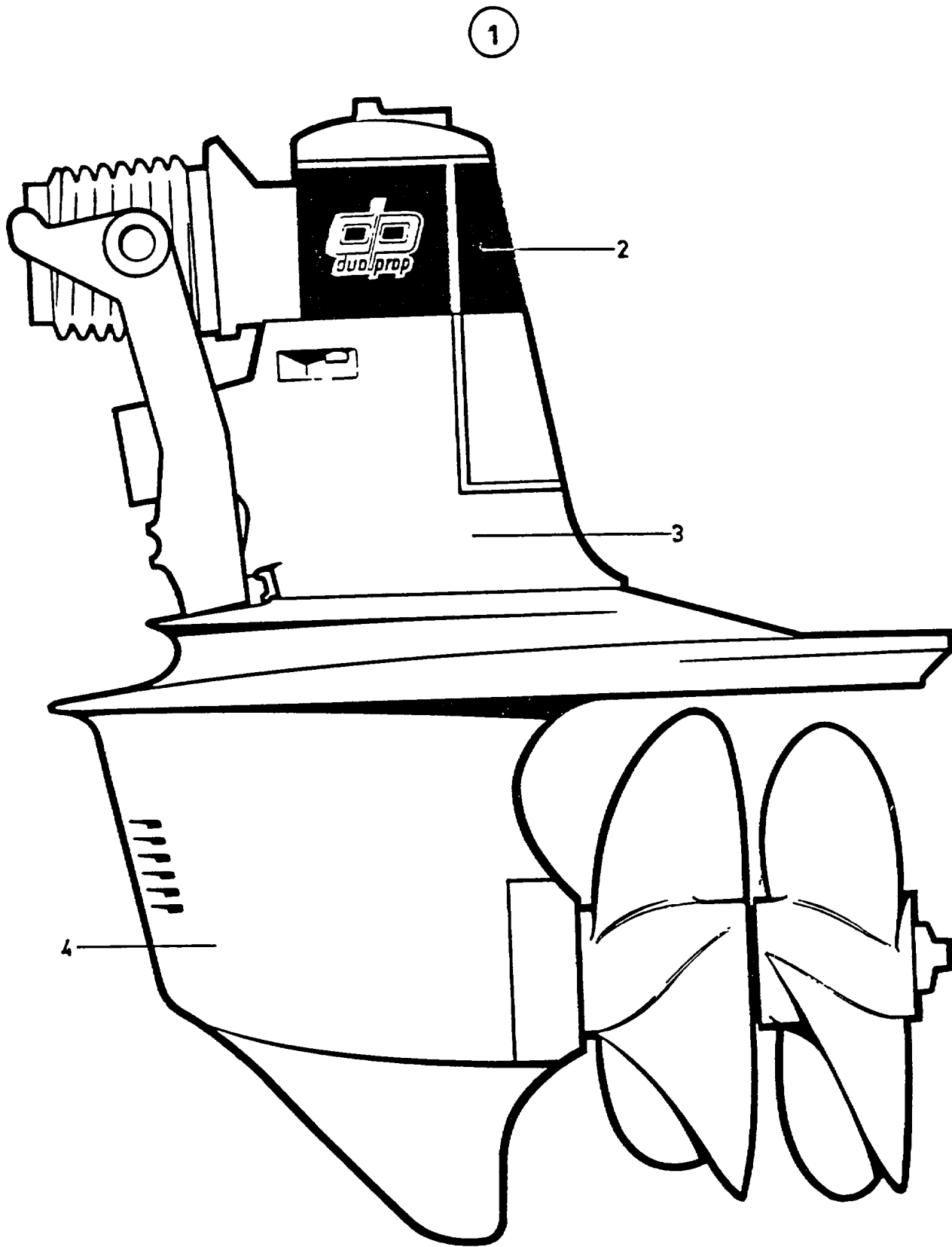
- 31. PZ-2890112. PZ-2890112.
- 32. PZ-2898014 PZ-2898014.
- 54. ERS AV 1st 851317, 1st 851267. Replaced by 1pc 851317, 1pc 851267.
- 56. ERS AV 1st 851340, 1st 851267. Replaced by 1pc 851340, 1pc 851267.
- 62. PZ2898015- PZ 2898015-.
- 67. ERS AV 852161. Replaced by 852161.
- 76. ERS AV 853450. Replaced by 853450.
- 104. Ingår i AQ drev 839400. Included in AQ drive unit 839400.
- 105. Ingår i AQ drev 850354. Included in AQ drive unit 850354.
- 106. Ingår i AQ drev 851317 och 852161. Included in AQ drive unit 851317 and 852161.
- 107. Ingår i AQ drev 851400 och 853450. Included in AQ drive unit 851400 and 853450.
- 110. Ersatt av AQ DREV-853068 och KNUTGAFFELSATS-853560 Replaced by AQ drive UNIT-853068 and joint fork kit-853560

1



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Sida Page		Grupp Group		Duopropdrev			Duoprop drive unit			Illustration	
4		4c		DREV DP280,DREV DP290						6425 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	DREV DP 280	DREV DP 290									
1	1	-	-	-	852411-8	DP280	DP280	8		BYTESENHET,UTV 1,95:1	002.
	1	-	-	-	852412-6	DP280	DP280	8		BYTESENHET,UTV 2,30:1	0040
	-	1	-	-	852921-6	DP290	DP290	8		ERS.AV 853452	0060
	-	1	-	-	852922-4	DP290	DP290	8		ERS.AV 853453	0080
	-	1	-	-	853452-1	DP290	DP290	8		BYTESENHET,UTV 1,95:1	0100
	-	1	-	-	853453-9	DP290	DP290	8		BYTESENHET,UTV 2,30:1	0120
2	1	1	-	-	851340-0	Övre växelenhet	Upper gear unit			SE SIDA 28, 2-G05	0140
3	1	-	-	-		Mellanhus	Interm housing			SE SIDA 32, 2-G09	0160
	-	1	-	-		Mellanhus	Interm housing			SE SIDA 36, 2-G13	0180
4	1	1	-	-	852193-2	Undre växelenhet	Lower gear unit			BYTESENHET,UTV 1,95:1	0220
	-	-	-	-						SE SIDA 40, 2-G17	40
	1	1	-	-	852408-4	Undre växelenhet	Lower gear unit			BYTESENHET,UTV 2,30:1	30
	-	-	-	-						SE SIDA 40, 2-G17	0280
	1	1	-	-	875741-1	Packningssats	Gasket kit			SE GRUPP 10A	0300



6425

Sida Page		Grupp Group		Övre vaxelenhet		Upper gear unit		Illustration			
6		4c		DREV 280				8587 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	839449-6	Övre vaxelenhet	Upper gear unit	8	56)PZ-2890112	002L	
	1	-	-	-	850460-7	Övre vaxelenhet	Upper gear unit	8	56)PZ-2898014	0040	
	1	-	-	-	851340-0	Övre vaxelenhet	Upper gear unit	5	61)PZ2898015-	0060	
2	1	-	-	-	832674-6	Övre vaxelhus	Upper gear housing	6		0080	
3	2	-	-	-	941814-6	Skruv	Screw	0	SE SIDA 14, 2-F15	0100	
4	1	-	-	-	832667-0	Vaxelhuslock	Cover	5		0140	
5	1	-	-	-	814179-8	Propp	Plug	4		0160	
6	1	-	-	-	897682-1	Packning	Gasket	S 2		0180	
7	3	-	-	-	941807-0	Skruv	Screw	0		0200	
8	1	-	-	-	814643-3	Hålskruv	Hollow screw	3		0220	
9	1	-	-	-	955989-9	O-ring	O-ring	S 0		02	
10	1	-	-	-	832669-6	Packning	Gasket	S 2		0	
11	1	-	-	-	839027-0	Drevsats	Set of gears	5		0280	
12	1	-	-	-	875425-1	Lagerbox	Bearing unit	4		0300	
13	1	-	-	-	951940-6	Spännstift	Tension pin	0		0320	
14	1	-	-	-	183247-6	Lager	Bearing	3		0340	
15	1	-	-	-	183668-3	Rullager	Roller bearing	3		0360	
16	1	-	-	-	897772-0	Oljeavkastare	Oil deflector	4	TID UTF	0	
17	2	-	-	-	925256-0	O-ring	O-ring	S 0		0400	
18	ERF	-	-	-	941826-0	Justerbricka	Shim	0	TJ=0,05MM	0420	
	ERF	-	-	-	941827-8	Justerbricka	Shim	0	TJ=0,2MM	0440	
	ERF	-	-	-	948230-8	Justerbricka	Shim	0	TJ=0,35MM	0460	
19	1	-	-	-	839253-2	Tatningsring	Seal ring	S 2		0480	
20	1	-	-	-	914538-4	Låsring	Circlip	0		0500	
21	1	-	-	-	832675-3	Bricka	Washer	4		0520	
22	1	-	-	-	956000-4	O-ring	O-ring	S 0		054'	
23	ERF	-	-	-	943871-4	Justerbricka	Shim	0	TJ=0,05MM	056	
	ERF	-	-	-	943872-2	Justerbricka	Shim	0	TJ=0,1MM	058L	
	ERF	-	-	-	943873-0	Justerbricka	Shim	0	TJ=0,2MM	0600	
24	1	-	-	-	839028-8	Kopplingsknut	Universal joint	5		0620	
25	1	-	-	-	853560-1	Knutgaffelsats	Joint fork kit	4		0630	
25a	1	-	-	-	897774-6	Knutgaffel	Joint fork	4	ERS AV 853560	0640	
25b	2	-	-	-	853331-7	Låsring	Lock ring	2	101)	0650	
26	1	-	-	-	839026-2	Kopplingsknut	Universal joint	4		0660	
27	1	-	-	-	897706-8	Mellanstycke	Interm piece	5		0680	
28	2	-	-	-	897707-6	Korsstycke	Cross piece	8	98)PZ-28159836	0700	
	2	-	-	-	853255-8	Korsstycke	Cross piece	4	PZ28159837-	0710	
29	4	-	-	-	897776-1	Låsring	Circlip	2	102)	0	
	4	-	-	-	853331-7	Låsring	Lock ring	2	101)	0	
30	8	-	-	-		Nållager	Needle bearing	8		0740	
31	8	-	-	-		Skyddsring	Protector ring	8		0760	
32	8	-	-	-		Korkring	Cork ring	8		0780	
33	1	-	-	-	851293-1	Skruv	Screw	2	(945090)	0800	
34	1	-	-	-	839013-0	Bricka	Washer	2		0	
35	1	-	-	-	832573-0	Klämring	Clamp ring	5	104)PZ-2890112	0	
	1	-	-	-	839589-9	Klämring	Clamp ring	5	105)PZ-2898014	0860	
	1	-	-	-	851265-9	Klämring	Clamp ring	5	106)PZ2898015-	0880	
35a	1	-	-	-	852705-3	Lagertapp	Bearing pin	3	(851263)PZ2898015-	0900	
35b	2	-	-	-	941807-0	Skruv	Screw	0	PZ2898015-	0920	
36	4	-	-	-	956590-4	Skruv	Screw	0		0940	
37	4	-	-	-	942598-4	Bricka	Washer	0		0960	
38	2	-	-	-	853542-9	Lager	Bearing	3	(183729)	0980	
39	2	-	-	-	832644-9	Lagerhylsa	Bearing sleeve	4		1000	

56. ERS AV 1st851340, 1st851267. Replaced by 1pc851340, 1pc851267.

61. Ingår i drev 851317, 851318, 852161. Included in drive unit 851317, 851318, 852161.

98. Ers av 853255. Replaced by 853455

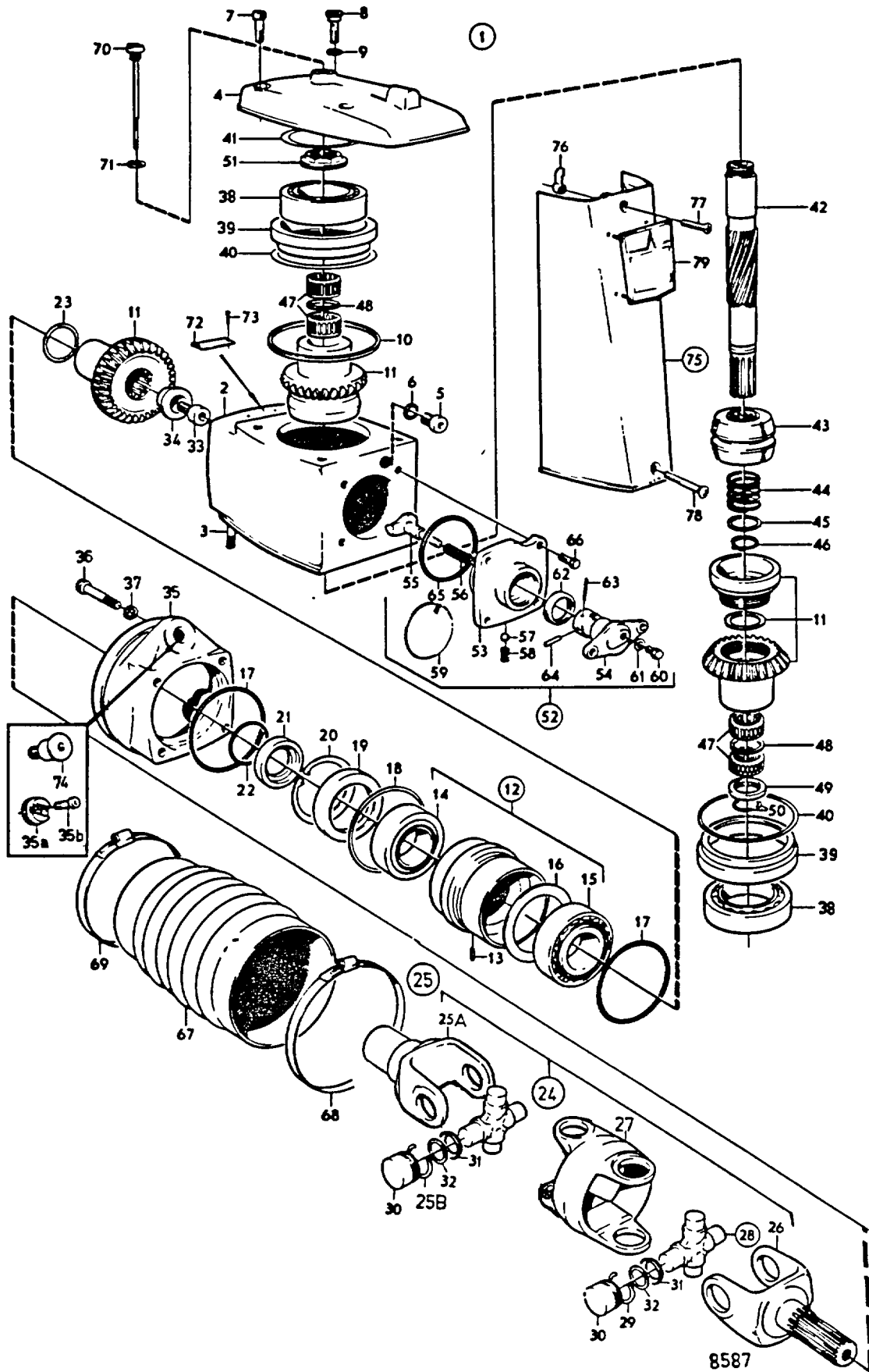
101. För 853255 For 853255

102. För 897707 For 897707

104. Ingår i AQ drev 839400. Included in AQ drive unit 839400.

105. Ingår i AQ drev 850354. Included in AQ drive unit 850354.

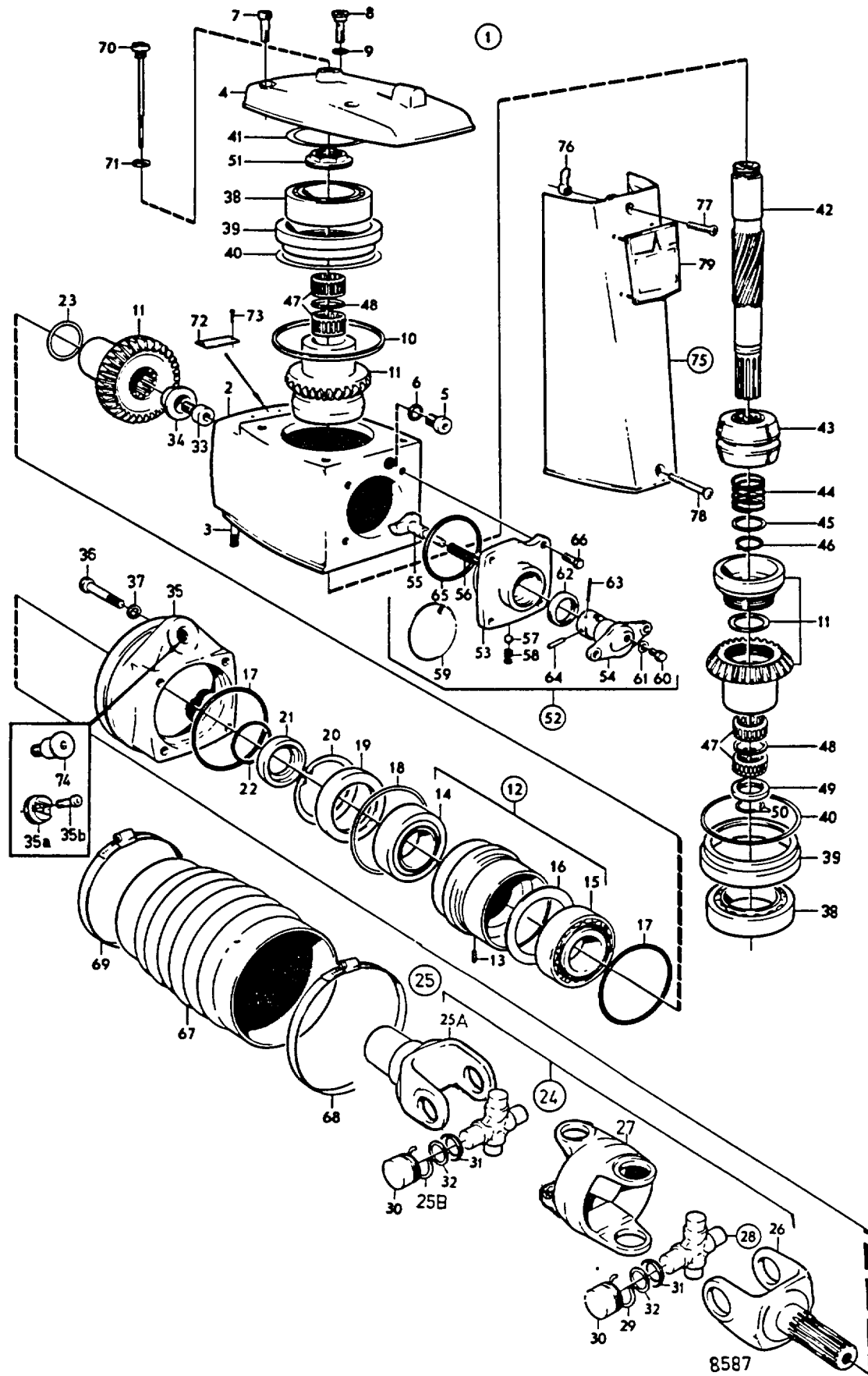
106. Ingår i AQ drev 851317 och 852161. Included in AQ drive unit 851317 and 852161.





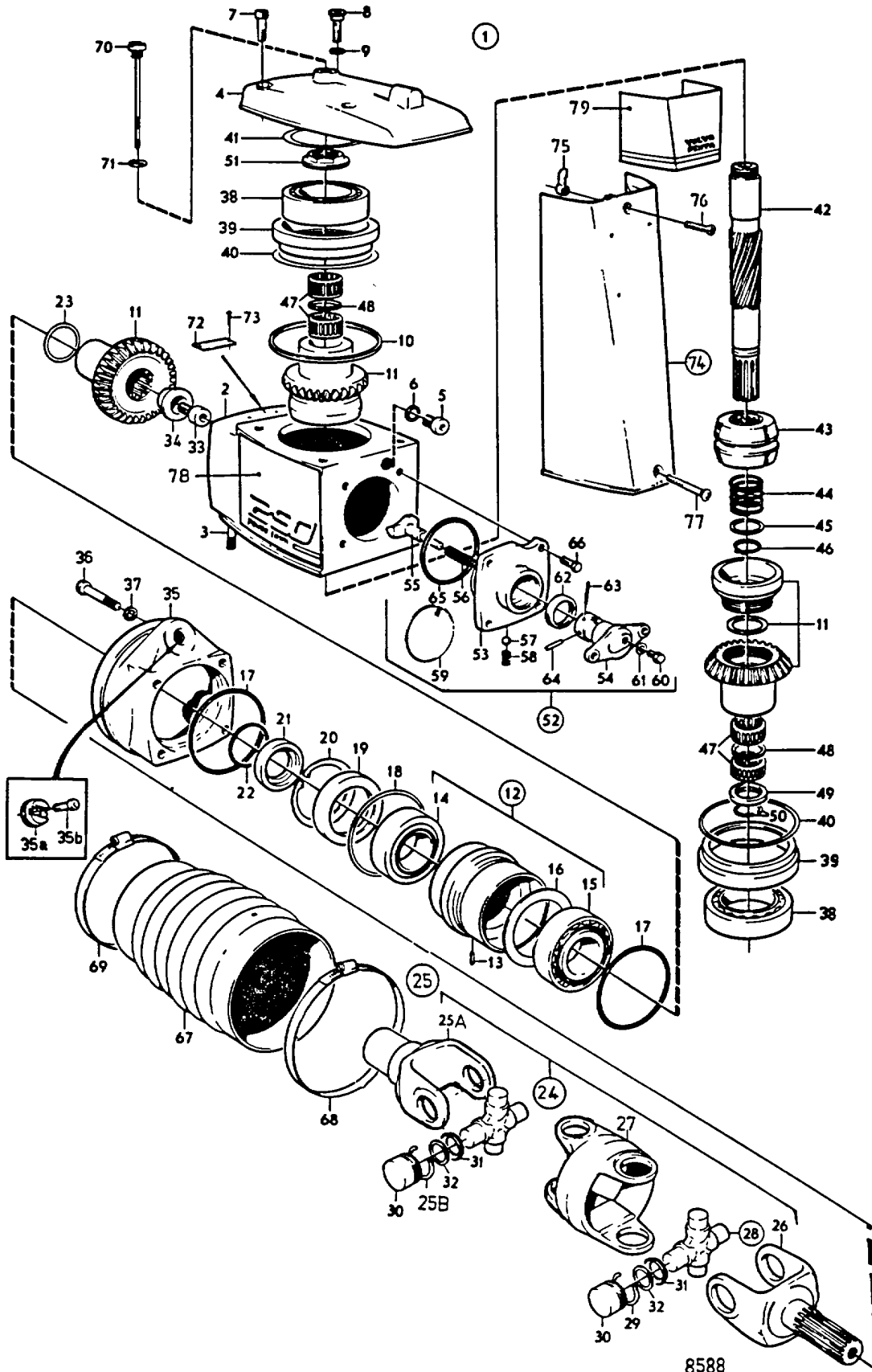
Sida Page	Grupp Group	Ovre vaxelenhet			Upper gear unit			Illustration	0750	
8	4c	DREV 280						8587		
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
40	ERF	-	-	-	943869-8	.Justerbricka..	.Shim.....	0	TJ=0,05MM	102
	ERF	-	-	-	946179-9	.Justerbricka...	.Shim.....	0	TJ=0,1MM	1040
	ERF	-	-	-	943870-6	.Justerbricka...	.Shim.....	0	TJ=0,2MM	1060
41	ERF	-	-	-	967352-6	.Justerbricka...	.Shim.....	0	TJ=0,05MM	1075
	ERF	-	-	-	943866-4	.Justerbricka...	.Shim.....	0	TJ=0,1MM	1080
	ERF	-	-	-	943867-2	.Justerbricka...	.Shim.....	0	TJ=0,2MM	1100
	ERF	-	-	-	943868-0	.Justerbricka...	.Shim.....	0	TJ=0,4MM	1120
42	1	-	-	-	897385-1	.Axel.....	.Shaft.....	5		1140
43	1	-	-	-	814601-1	.Skjuthylsa...	.Sliding sleeve...	5		1160
44	1	-	-	-	813970-1	.Fjader.....	.Spring.....	4		1180
45	1	-	-	-	26411-9	.Mellanlagg...	.Spacer.....	0		1200
46	1	-	-	-	951077-7	.Låsring.....	.Circlip.....	0		0
47	4	-	-	-	181359-1	.Nållager.....	.Needle bearing.....	3		1240
48	2	-	-	-	897308-3	.Distansring...	.Spacer ring.....	4		1260
49	1	-	-	-	897313-3	.Distansring...	.Spacer ring.....	4		1280
50	2	-	-	-	897312-5	.Låsring.....	.Circlip.....	2		1300
51	1	-	-	-	839332-4	.Mutter.....	.Nut.....	4	TJ=2,00MM	1320
	1	-	-	-	839333-2	.Mutter.....	.Nut.....	4	TJ=2,37MM	0
	1	-	-	-	839334-0	.Mutter.....	.Nut.....	4	TJ=2,65MM	1360
52	1	-	-	-	839504-8	.Vaxlingsmekanism	.Gearshift mechanism...	4		1380
53	1	-	-	-	839505-5	.Lagerhus.....	.Housing.....	5		1400
54	1	-	-	-	897816-5	.Excenterkolv...	.Eccentric piston...	3		1420
55	1	-	-	-	814603-7	.Glidsko.....	.Sliding shoe.....	3		1440
56	1	-	-	-	814184-8	.Fjader.....	.Spring.....	3		1460
57	2	-	-	-	60309-2	.Kula.....	.Ball.....	3	PZ-2829528	1480
58	2	-	-	-	839136-9	.Fjader.....	.Spring.....	3	PZ-2829528	1500
59	ERF	-	-	-	941338-6	.Låstråd.....	.Lock wire.....	S	PZ-2829528 L=300MM	1500
60	1	-	-	-	897711-8	.Skruv.....	.Screw.....	3		1500
61	ERF	-	-	-	897871-0	.Bricka.....	.Washer.....	4	TJ=0,2MM	1560
62	1	-	-	-	958838-5	.O-ring.....	.O-ring.....	S	(941866)	1580
63	1	-	-	-	951924-0	.Spannstift.....	.Tension pin.....	S		1600
64	1	-	-	-	942871-5	.Pinne.....	.Pin.....	0		1620
65	1	-	-	-	925093-7	.O-ring.....	.O-ring.....	S		1640
66	4	-	-	-	940169-6	.Skruv.....	.Screw.....	0		1660
67	1	-	-	-	875826-0	.Balgats.....	.Bellow kit.....	1	(875256)	1680
	1	-	-	-	875256-0	.Balg.....	.Bellows.....	2		1685
68	1	-	-	-	853013-1	.Klamma.....	.Clamp.....	0	(961677)	1700
69	1	-	-	-	853012-3	.Klamma.....	.Clamp.....	0	(961676)	1700
70	1	-	-	-	839351-4	.Oljemattsticka...	.Oil dipstick.....	5		1700
71	1	-	-	-	955974-1	.O-ring.....	.O-ring.....	S		1760
72	1	-	-	-	814687-0	.Skylt.....	.Sign.....	6		1780
73	2	-	-	-	804269-9	.Skruv.....	.Screw.....	4		1800
74	1	-	-	-	832716-5	.Skruv.....	.Screw.....	4	104)PZ-2890112 1/2"	1820
	1	-	-	-	839696-2	.Skruv.....	.Screw.....	4	105)PZ-2898014 M18	1840
75	1	-	-	-	832570-6	.Tackkåpa.....	.Protecting cover.....	5		1800
76	1	-	-	-	897873-6	.Låshake.....	.Lock catch.....	4		1880
77	1	-	-	-	943218-8	.Skruv.....	.Screw.....	0		1900
78	1	-	-	-	941816-1	.Skruv.....	.Screw.....	0		1920
79	1	-	-	-	839465-2	.Skylt.....	.Sign.....	6	AQ280	1940

104 . Ingår i AQ drev 839400. Included in AQ drive unit 839400.  
105 . Ingår i AQ drev 850354. Included in AQ drive unit 850354.



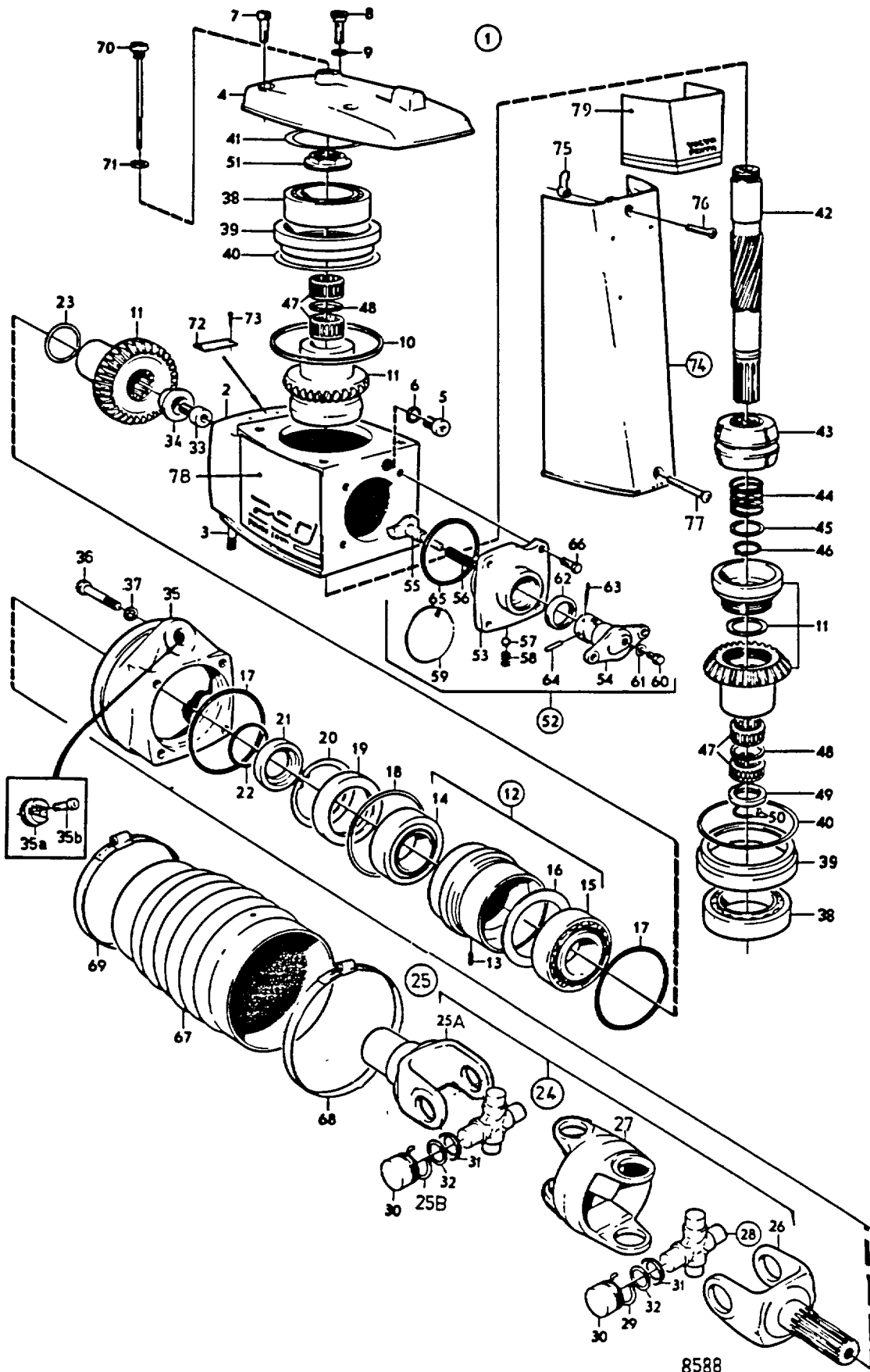
Sida Page		Grupp Group		Ovre vaxelenhet		Upper gear unit		Illustration		
10		4c		DREV 290				8588 1987-04		
Pos Fig	Antal/Quantity				Artikelnr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	851	340								
1	1	-	-	-	851340-0	Ovre vaxelenhet	Upper gear unit	5		002
2	1	-	-	-	832674-6	.Ovre vaxelhus	.Upper gear housing	6		004L
3	2	-	-	-	941814-6	.Pinnskruv	.Stud bolt	0		0060
4	1	-	-	-	832667-0	.Vaxelhuslock	.Cover	5		0080
5	1	-	-	-	814179-8	.Propp	.Plug	4		0100
6	1	-	-	-	897682-1	.Packning	.Gasket	S 2		0120
7	3	-	-	-	941807-0	.Skruv	.Screw	0		0140
8	1	-	-	-	814643-3	.Hålskruv	.Hollow screw	3		0160
9	1	-	-	-	955989-9	.O-ring	.O-ring	S 0		0180
10	1	-	-	-	832669-6	.Packning	.Gasket	S 2		0200
11	1	-	-	-	839027-0	.Drevsats	.Set of gears	5		0220
12	1	-	-	-	875425-1	.Lagerbox	.Bearing unit	4		0
13	1	-	-	-	951940-6	..Spännstift	..Tension pin	0		0260
14	1	-	-	-	183247-6	..Lager	..Bearing	3		0280
15	1	-	-	-	183668-3	.Rullager	.Roller bearing	3		0300
16	1	-	-	-	897772-0	..Oljeavkastare	..Oil deflector	4	TID UTF	0320
17	2	-	-	-	925256-0	.O-ring	.O-ring	S 0		0340
18	ERF	-	-	-	941826-0	.Justerbricka	.Shim	0	TJ=0,05MM	0
	ERF	-	-	-	941827-8	.Justerbricka	.Shim	0	TJ=0,20MM	0380
	ERF	-	-	-	948230-8	.Justerbricka	.Shim	0	TJ=0,35MM	0400
19	1	-	-	-	839253-2	.Tätningring	.Seal ring	S 2		0420
20	1	-	-	-	914538-4	.Låsring	.Circlip	0		0440
21	1	-	-	-	832675-3	.Bricka	.Washer	4		0460
22	1	-	-	-	956000-4	.O-ring	.O-ring	S 0		0480
23	ERF	-	-	-	943871-4	.Justerbricka	.Shim	0	TJ=0,05MM	0500
	ERF	-	-	-	943872-2	.Justerbricka	.Shim	0	TJ=0,10MM	0520
	ERF	-	-	-	943873-0	.Justerbricka	.Shim	0	TJ=0,20MM	054
24	1	-	-	-	839028-8	.Kopplingsknut	.Universal joint	5		05L
25	1	-	-	-	853560-1	..Knutgaffelsats	..Joint fork kit	4		057L
25a	1	-	-	-	897774-6	...Knutgaffel	...Joint fork	4	ERS AV 853560	0580
25b	2	-	-	-	853331-7	...Låsring	...Lock ring	2	101)	0590
26	1	-	-	-	839026-2	..Styrgaffel	..Steering fork	4		0600
27	1	-	-	-	897706-8	..Mellanstycke	..Interm piece	5		0620
28	2	-	-	-	897707-6	..Korsstycke	..Cross piece	8	98) PZ-29002858	0640
	2	-	-	-	853255-8	..Korsstycke	..Cross piece	4	PZ29002859-	0660
29	4	-	-	-	897776-1	...Låsring	...Circlip	2	102)	0680
	4	-	-	-	853331-7	...Låsring	...Lock ring	2	101)	0700
30	8	-	-	-		...Nållager	...Needle bearing	8		07
31	8	-	-	-		...Skyddsring	...Protector ring	8		070
32	8	-	-	-		...Korkring	...Cork ring	8		0760
33	1	-	-	-	851293-1	.Skruv	.Screw	2		0780
34	1	-	-	-	839013-0	.Bricka	.Washer	2		0800
35	1	-	-	-	851265-9	.Klamring	.Clamp ring	5		0820
35a	1	-	-	-	852705-3	.Lagertapp	.Bearing pin	3		0840
35b	2	-	-	-	941807-0	.Skruv	.Screw	0		0
36	4	-	-	-	956590-4	.Skruv	.Screw	0		0880
37	4	-	-	-	942598-4	.Bricka	.Washer	0		0900
38	2	-	-	-	853542-9	.Lager	.Bearing	3	(183729)	0920
39	2	-	-	-	832644-9	.Lagerhylsa	.Bearing sleeve	4		0940
40	ERF	-	-	-	943869-8	.Justerbricka	.Shim	0	TJ=0,05MM	0960
	ERF	-	-	-	946179-9	.Justerbricka	.Shim	0	TJ=0,10MM	0980
	ERF	-	-	-	943870-6	.Justerbricka	.Shim	0	TJ=0,20MM	1000
41	ERF	-	-	-	967352-6	.Justerbricka	.Shims	0	TJ=0,05MM	1020
	ERF	-	-	-	943866-4	.Justerbricka	.Shim	0	TJ=0,10MM	1040
	ERF	-	-	-	943867-2	.Justerbricka	.Shim	0	TJ=0,20MM	10'
	ERF	-	-	-	943868-0	.Justerbricka	.Shim	0	TJ=0,40MM	10
42	1	-	-	-	897385-1	.Axel	.Shaft	5		110L
43	1	-	-	-	814601-1	.Skjuthylsa	.Sliding sleeve	5		1120

98 . Ers av 853255. Replaced by 853455.  
101 . För 853255. For 853255.  
102 . For 897707 For 897707



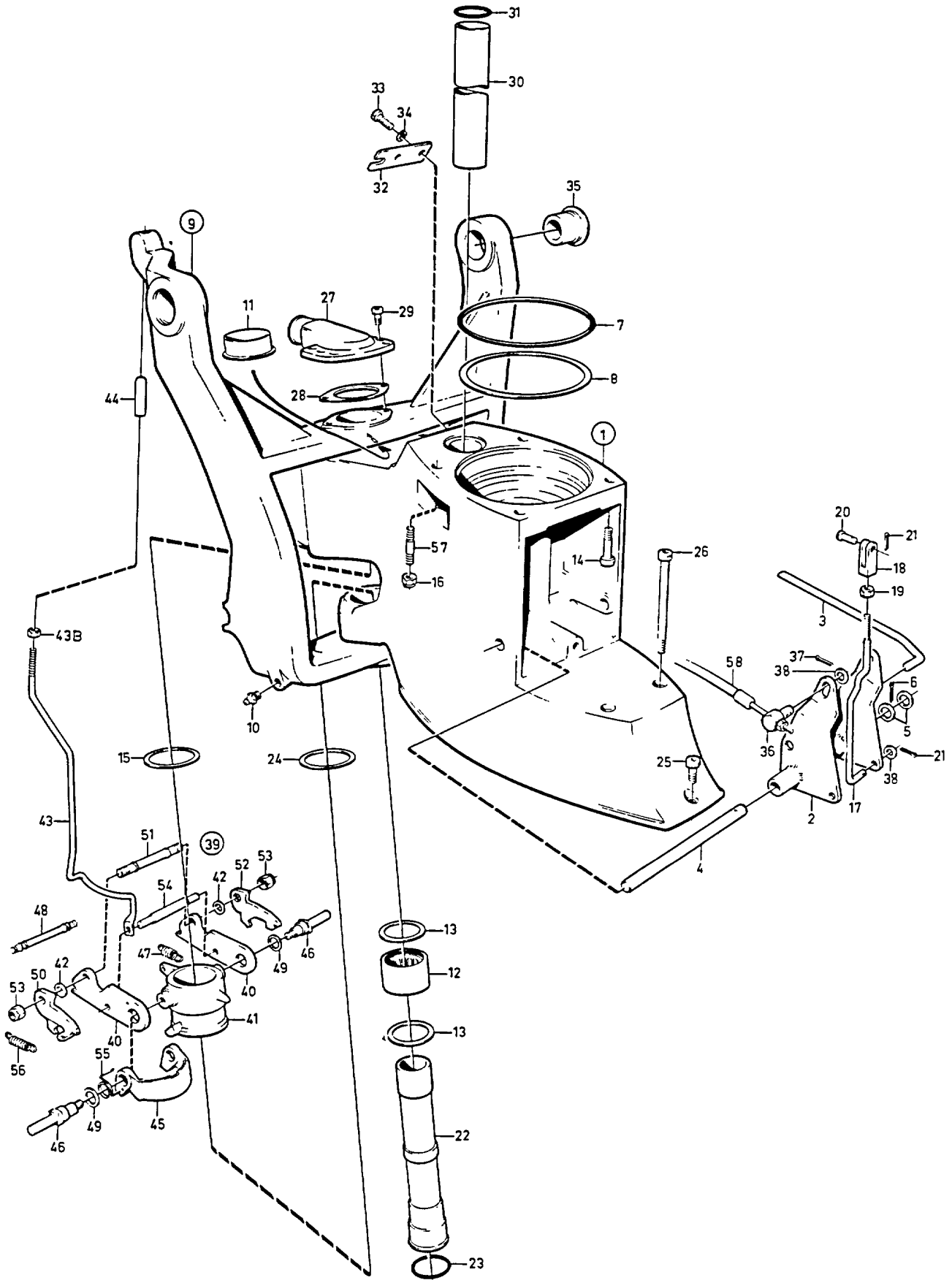
Sida Page	Grupp Group	Ovre växelenhet Upper gear unit			Illustration	0775					
12	4c	DREV 290			8588						
					1987-04						
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	851 340										
44	1	-	-	-	813970-1	..Fjäder.....	..Spring.....	4			114L
45	1	-	-	-	26411-9	..Mellanlägg.....	..Spacer.....	0			1160
46	1	-	-	-	951077-7	..Låsring.....	..Circlip.....	0			1180
47	4	-	-	-	181359-1	..Nållager.....	..Needle bearing.....	3			1200
48	2	-	-	-	897308-3	..Distansring.....	..Spacer ring.....	4			1220
49	1	-	-	-	897313-3	..Distansring.....	..Spacer ring.....	4			1240
50	2	-	-	-	897312-5	..Låsring.....	..Circlip.....	2			1260
51	1	-	-	-	839332-4	..Mutter.....	..Nut.....	4	TJ=2,00MM		1280
	1	-	-	-	839333-2	..Mutter.....	..Nut.....	4	TJ=2,37MM		1300
	1	-	-	-	839334-0	..Mutter.....	..Nut.....	4	TJ=2,65MM		1320
52	1	-	-	-	839504-8	..Växlingsmekanism.....	..Gearshift mechanism.....	4			J
53	1	-	-	-	839505-5	..Lagerhus.....	..Housing.....	5			J
54	1	-	-	-	897816-5	..Excenterkolv.....	..Eccentric piston.....	3			1380
55	1	-	-	-	814603-7	..Glidsko.....	..Sliding shoe.....	3			1400
56	1	-	-	-	814184-8	..Fjäder.....	..Spring.....	3			1420
57	2	-	-	-	60309-2	..Kula.....	..Ball.....	3	PZ-2829528		1440
58	2	-	-	-	839136-9	..Fjäder.....	..Spring.....	3	PZ-2829528		J
59	ERF	-	-	-	941338-6	..Låstråd.....	..Lock wire.....	0	PZ-2829528 L=300MM		J
60	1	-	-	-	897711-8	..Skruv.....	..Screw.....	3			1500
61	ERF	-	-	-	897871-0	..Bricka.....	..Washer.....	4	TJ=0,2MM		1520
62	1	-	-	-	958838-5	..O-ring.....	..O-ring.....	S			1540
63	1	-	-	-	951924-0	..Spännstift.....	..Tension pin.....	S			1560
64	1	-	-	-	942871-5	..Pinne.....	..Pin.....	0			1580
65	1	-	-	-	925093-7	..O-ring.....	..O-ring.....	S			1600
66	4	-	-	-	940169-6	..Skruv.....	..Screw.....	0			1620
67	1	-	-	-	875826-0	..Gummibalg.....	..Rubber bellow.....	1	(875256)		164
68	1	-	-	-	853013-1	..Klamma.....	..Clamp.....	0			16t
69	1	-	-	-	853012-3	..Klamma.....	..Clamp.....	0			168L
70	1	-	-	-	839351-4	..Oljemätsticka.....	..Oil dipstick.....	5			1700
71	1	-	-	-	955974-1	..O-ring.....	..O-ring.....	S			1720
72	1	-	-	-	814687-0	..Skylt.....	..Sign.....	6			1740
73	2	-	-	-	804269-9	..Skruv.....	..Screw.....	4			1760
74	1	-	-	-	832570-6	Täckkåpa.....	Protecting cover.....	5	79,80)		1780
75	1	-	-	-	897873-6	..Låshake.....	..Lock catch.....	4			1800
76	1	-	-	-	943218-8	..Skruv.....	..Screw.....	0			1820
77	1	-	-	-	941816-1	..Skruv.....	..Screw.....	0	79,80)		1840
78	1	-	-	-	853031-3	..Dekal.....	..Decal.....	4	79,80) BB		1860
	1	-	-	-	853030-5	..Dekal.....	..Decal.....	4	79,80) SB		J
79	1	-	-	-	853029-7	..Dekal.....	..Decal.....	4	79,80)		J

79 . Ingår i komplett AQ 290 drev 853451. Included in complete AQ 290 drive unit 853451.  
80 . Ingår i komplett AQ 290 drev 853459. Included in complete AQ 290 drive unit 853459.



Sida Page	Grupp Group	Mellanhus AQ drev 280 DREV 280	Intermediate housing AQ drive unit 280	Illustration 5973 1987-04	0800
14	4c				

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	832682-9	Mellanhus	Interm housing		6		002L
2	1	-	-	-	897829-8	.Vaxelok	.Gear yoke		5		0040
3	1	-	-	-	814397-6	.Kopplingsstång	.Astern lock rod		4		0060
4	1	-	-	-	897447-9	.Axel	.Shaft		5		0080
5	2	-	-	-	897511-2	.Bricka	.Washer		3		0100
6	1	-	-	-	17253-6	.Saxpinne	.Cotter		0		0120
7	1	-	-	-	925259-4	O-ring	Rubber ring		0		0140
8	ERF	-	-	-	943866-4	Shims	Shim		0	TJ=0,1MM	0160
	ERF	-	-	-	943867-2	Shims	Shim		0	TJ=0,2MM	0180
	ERF	-	-	-	943868-0	Shims	Shim		0	TJ=0,4MM	0200
9	1	-	-	-	875365-9	Knutgaffel	Joint fork		5		
10	1	-	-	-	940194-4	.Nippel	.Nipple		0		
11	1	-	-	-	814388-5	.Bussning	.Bushing		3		0260
12	1	-	-	-	183391-2	.Nållager	.Needle bearing		3		0280
13	2	-	-	-	181620-6	.Tätning	.Seal ring		2		0300
14	2	-	-	-	941807-0	Skruv	Screw		0		0320
15	2	-	-	-	814390-1	Bricka	Washer		3		
16	2	-	-	-	941885-6	Mutter	Nut		0		
17	1	-	-	-	897448-7	Reglagestång	Control rod		4		0380
18	1	-	-	-	813954-5	Reglagegaffel	Control fork		4		0400
19	1	-	-	-	940190-2	Mutter	Nut		0		0420
20	1	-	-	-	192662-5	Pinnbult	Stud bolt		0		0440
21	2	-	-	-	17253-6	Saxpinne	Cotter		0		0460
22	1	-	-	-	814386-9	Rör	Pipe		5		0480
23	1	-	-	-	941820-3	O-ring	O-ring		0		0500
24	1	-	-	-	897696-1	Bricka	Washer		3		052
25	1	-	-	-	941809-6	Skruv	Screw		0		054
26	2	-	-	-	941808-8	Skruv	Screw		0		056L
27	1	-	-	-	851766-6	Slangnippel	Hose nipple		5	SE GRUPP 4A	0580
	1	-	-	-	832846-0	Slangnippel	Hose nipple		5	POWER TRIM, SE GRUPP 4A	0585
28	1	-	-	-	814356-2	Tätning	Sealing		2		0586
29	2	-	-	-	941813-8	Skruv	Screw		0		0600
30	1	-	-	-	897644-1	Rör	Pipe		4		0620
31	2	-	-	-	125017-4	O-ring	Seal ring		1		0640
32	1	-	-	-	897457-8	Kabelfäste	Cable attachment		4		0660
33	2	-	-	-	940168-8	Skruv	Screw		0		0680
34	2	-	-	-	940191-0	Bricka	Washer		0		0700
35	2	-	-	-	826341-0	Bussning	Bushing		3		
36	1	-	-	-	804312-7	Relagekabeltarning	Control cube		3		0760
37	1	-	-	-	907834-6	Saxpinne	Cotter pin		0	(17276)	0780
38	2	-	-	-	940191-0	Bricka	Washer		0		0800
39	1	-	-	-	814434-7	Backhake	Astern lever		5		0820
40	2	-	-	-	814391-9	.Backhake	.Astern lever		4		
41	1	-	-	-	814389-3	.Lagerhylsa	.Bearing sleeve		4		
42	2	-	-	-	814422-2	.Distansbricka	.Spacer washer		2		0880
43	1	-	-	-	852046-2	.Tryckstång	.Push rod		4	(814421)	0900
43b	1	-	-	-		.Mutter	.Nut		8	(940197)	0910
44	1	-	-	-	897722-5	.Tryckhylsa	.Thrust sleeve		3		0920
45	1	-	-	-	814394-3	.Låsbygel	.Lock bail		4		0940
46	2	-	-	-	814395-0	.Axeltapp	.Bearing pin		3		0960
47	1	-	-	-	832534-2	.Fjäder	.Spring		2		0980
48	1	-	-	-	814399-2	.Axel	.Shaft		3		1000
49	1	-	-	-	943194-1	.Bricka	.Washer		0		102
50	1	-	-	-	814392-7	.Fjäderhake	.Spring catch		2		104
51	1	-	-	-	814419-8	.Axel	.Shaft		3		106L
52	1	-	-	-	814393-5	.Fjäderhake	.Spring catch		2		1080
53	2	-	-	-	943197-4	.Mutter	.Nut		0		1100
54	1	-	-	-	814398-4	.Axel	.Shaft		3		1120
55	1	-	-	-	814396-8	.Fjäder	.Spring		2		114L
56	2	-	-	-	814332-3	.Fjäder	.Spring		2		116L
57	2	-	-	-	941814-6	Skruv	Screw		2	SE SIDA 6, 2-F07	1200
58	ERF	-	-	-		Reglagekabel	Control cable			SE GRUPP 9	1220





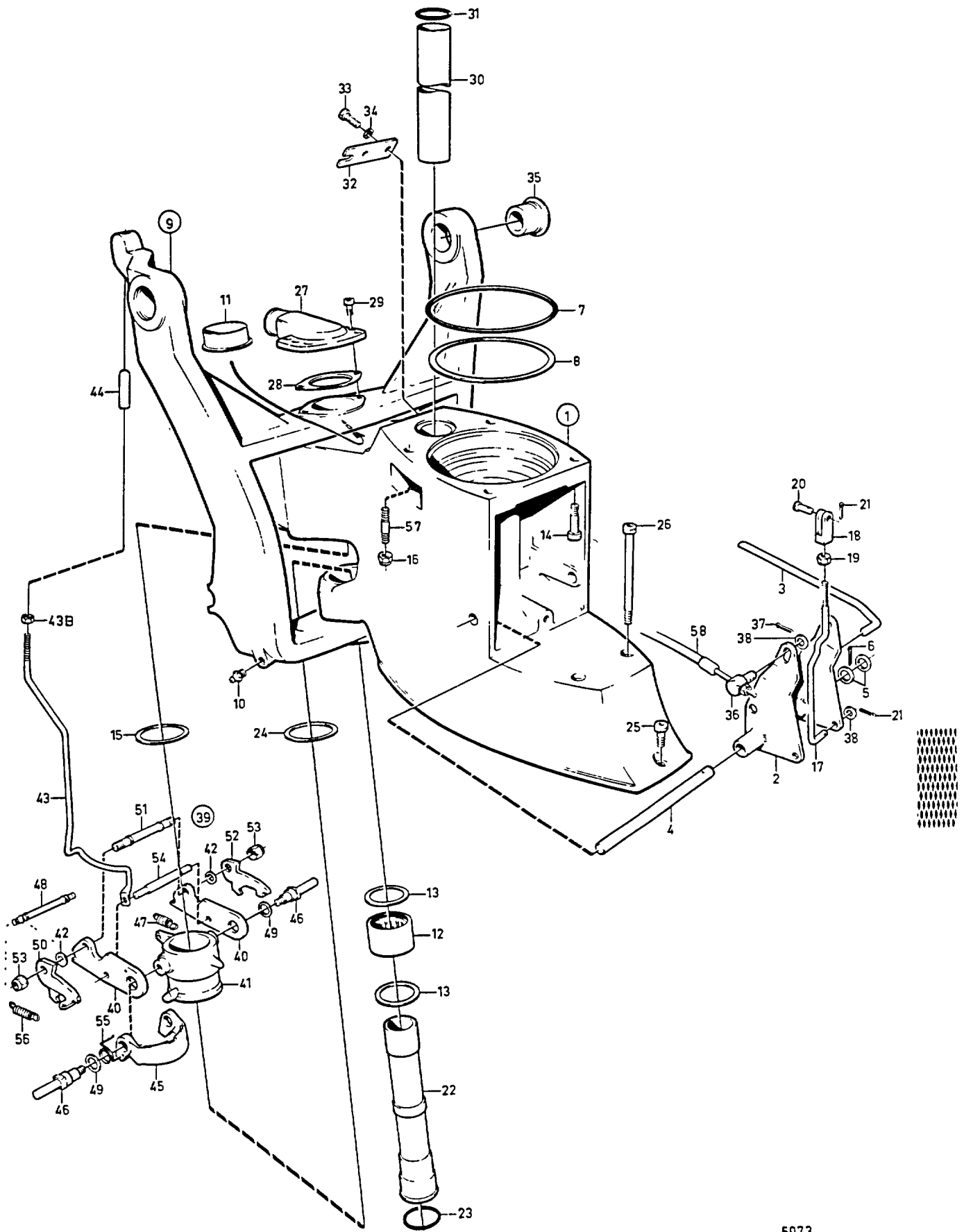
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Parts Catalogue

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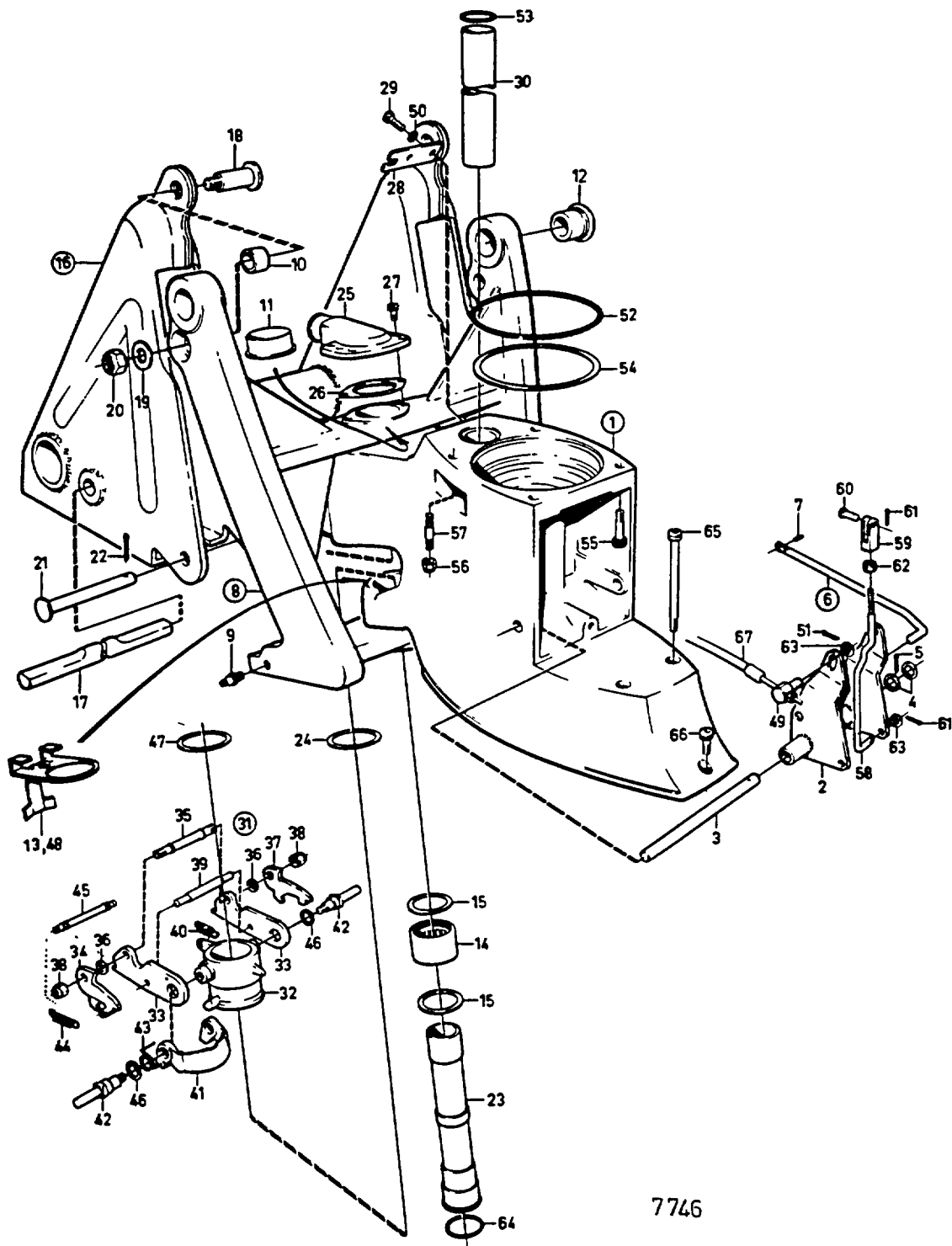
**VOLVO  
PENTA**

Sida Page	Grupp Group	Mellanhus AQ drev 280 DREV 280	Intermediate housing AQ drive unit 280	Illustration 5973 1987-04	0800						
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	1	-	-	-	875361-8	Reparationssats. backhake	..... Repair kit.... astern lever	.....	2		124 1260



Sida Page	Grupp Group	Mellanhus AQ drev 290 DREV 290	Intermediate housing AQ drive unit 290	Illustration 7746 1987-04	0825					
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	852851-5	Mellanhus	Interm housing		6		002
2	1	-	-	897829-8	.Vaxelok	.Gear yoke		5		0040
3	1	-	-	897447-9	.Axel	.Shaft		5		0060
4	2	-	-	897511-2	.Bricka	.Washer		3		0080
5	1	-	-	17253-6	.Saxpinne	.Cotter pin	S	0		0100
6	1	-	-	851412-7	.Backlässtång	.Astern lever rod		5		0120
7	1	-	-	967556-2	.Rorpinne	.Pin		2		0140
8	1	-	-	852869-7	Upphångningsgaffel	Hook up fork		5		0160
9	1	-	-	940194-4	.Nippel	.Nipple		0		0180
10	2	-	-	852912-5	.Bussning	.Bushing		3		0200
11	1	-	-	853062-8	.Bussning	.Bushing		3		0
12	2	-	-	853223-6	Bussning	Bushing		2		0
13	1	-	-	851426-7	Styrbricka	Anch block		3		0260
14	1	-	-	183391-2	Nållager	Needle bearing		3		0280
15	2	-	-	181620-6	Tätningring	Seal ring	S	2		0300
16	1	-	-	852769-9	Faste	Attachment	81)	8		0320
17	1	-	-	853310-1	Cylinderfäste	Cylinder attachment	PZ 29003011-	5		040
18	2	-	-	852751-7	Ansatssskruv	Shouldered screw		8		0
19	2	-	-	853308-5	Ansatssskruv	Shouldered screw	PZ 29003011-	3		0380
20	2	-	-	853071-9	Bricka	Washer		3		0400
21	2	-	-	946672-3	Låsmutter	Lock nut		2		0420
22	2	-	-	852749-1	Saxpinnebult	Clevis pin		3		0440
23	2	-	-	853309-3	Saxpinnebult	Clevis pin	PZ 29003011-	3		0460
24	2	-	-	967707-1	Saxpinne	Cotter pin		2		0480
25	1	-	-	814386-9	Ror	Pipe		5		0500
26	2	-	-	897696-1	Bricka	Washer		3		0520
27	1	-	-	851766-6	Slanganslutning	Hose connection		5		054
28	1	-	-	814356-2	Tätning	Seal	S	2		056
29	2	-	-	941813-8	Skruv	Screw		0		0580
30	1	-	-	853078-4	Kabelfäste	Cable attachment		4		0600
31	2	-	-	940168-8	Skruv	Screw		0		0620
32	1	-	-	897644-1	Ror	Pipe		4		0640
33	1	-	-	851422-6	Backhake	Aster lever		5		0660
34	1	-	-	851402-8	.Lagerhylsa	.Bearing sleeve		4		0680
35	2	-	-	814391-9	.Backhake	.Astern lever		4		0700
36	1	-	-	814392-7	.Fjaderhake	.Spring catch		4		0720
37	1	-	-	814419-8	.Axel	.Shaft		3		0740
38	2	-	-	814422-2	.Distansbricka	.Spacer washer		2		0
39	1	-	-	814393-5	.Fjaderhake	.Spring catch		2		0800
40	2	-	-	943197-4	.Mutter	.Nut		0		0820
41	1	-	-	851424-2	.Stopparm	.Stop arm		4		0840
42	1	-	-	832534-2	.Fjader	.Spring		3		0860
43	1	-	-	851403-6	.Låsbygel	.Lock brace		4		0
44	2	-	-	851423-4	.Axeltapp	.Shaft pin		4		0
45	1	-	-	814396-8	.Fjader	.Spring		2		0920
46	2	-	-	814332-3	.Fjader	.Spring		2		0940
47	1	-	-	814399-2	.Axel	.Shaft		3		0960
48	2	-	-	943194-1	.Bricka	.Washer		0		0980
49	1	-	-	814390-1	Bricka	Washer		3		1000
50	1	-	-	851426-7	Styrbricka	Anch block		3		1020
51	1	-	-	804312-7	Reglagekabeltarning	Control cube		4		1040
52	2	-	-	940191-0	Bricka	Washer		0		1060
53	1	-	-	17276-7	Saxpinne	Cotter pin		0		1080
54	1	-	-	925259-4	O-ring	O-ring	S	0		110
55	2	-	-	125017-4	O-ring	O-ring	S	1		112
56	ERF	-	-	967352-6	Justerbricka	Shim		0	TJ=0,05MM	1140
57	ERF	-	-	943866-4	Justerbricka	Shim		0	TJ=0,10MM	1160
58	ERF	-	-	943867-2	Justerbricka	Shim		0	TJ=0,20MM	1180

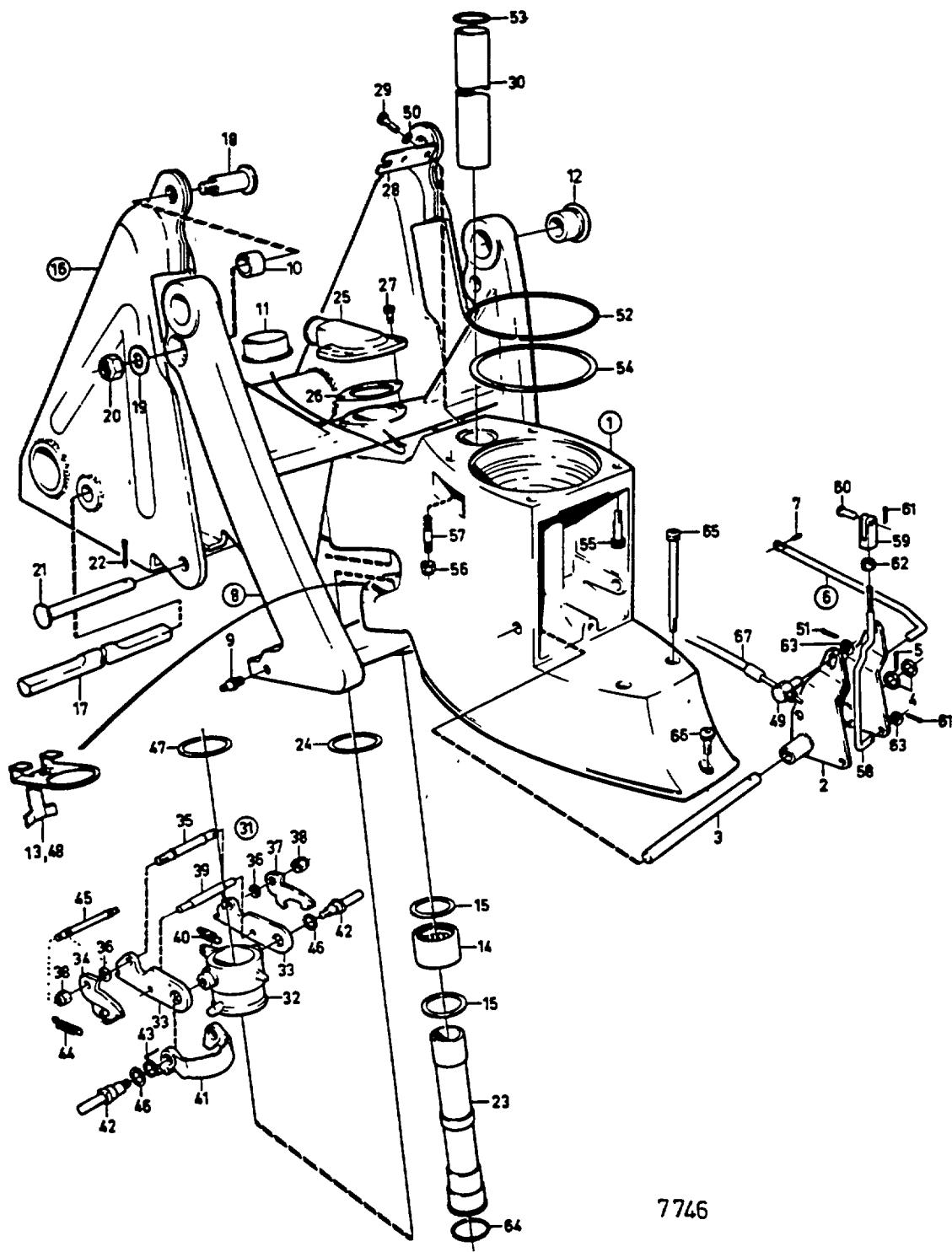
81. ERS AV 1ST 853310 cylinderfaste + 2ST 853308 skruv + 2ST 853309 saxpinnebult. Replaced by 1pc 853310 attachment + 2pcs 853308 screw + 2pcs 853309 clevis pin.



7746

Sida Page	Grupp Group	Mellanhus AQ drev 290 DREV 290	Intermediate housing AQ drive unit 290	Illustration 7746 1987-04	0825
20	4c				

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	290										
	ERF	-	-	-	943868-0	Justerbricka . . . . .	Shim .. . . . . .	0		TJ=0,40MM	12
55	2	-	-	-	941807-0	Skruv... . . . . .	Screw . . . . .	0			1220
56	2	-	-	-	941885-6	Mutter... . . . . .	Nut..... . . . . .	0			1240
57	2	-	-	-	941814-6	Skruv... . . . . .	Screw. . . . .	0			1260
58	1	-	-	-	897448-7	Reglagestång. . . . .	Control rod..... . . . .	4			1280
59	1	-	-	-	813954-5	Reglagegaffel.. . . . .	Control fork..... . . . .	4			1300
60	1	-	-	-	192662-5	Pinnbult .... . . . .	Stud ... . . . .	0			1320
61	2	-	-	-	17253-6	Saxpinne... . . . .	Cotter pin ..... . . . .	0			1340
62	1	-	-	-	940190-2	Mutter..... . . . .	Nut .. . . . . .	0			1360
63	2	-	-	-	940191-0	Bricka ..... . . . .	Washer..... . . . .	0			1380
64	1	-	-	-	941820-3	O-ring ..... . . . .	O-ring ..... . . . .	S 0			1400
65	2	-	-	-	941808-8	Skruv..... . . . .	Screw ..... . . . .	0			20
66	1	-	-	-	941809-6	Skruv..... . . . .	Screw..... . . . .	0			1440
67	ERF	-	-	-		Reglagekabel. . . . .	Control cable .. . . . .			SE GRUPP 9	1460

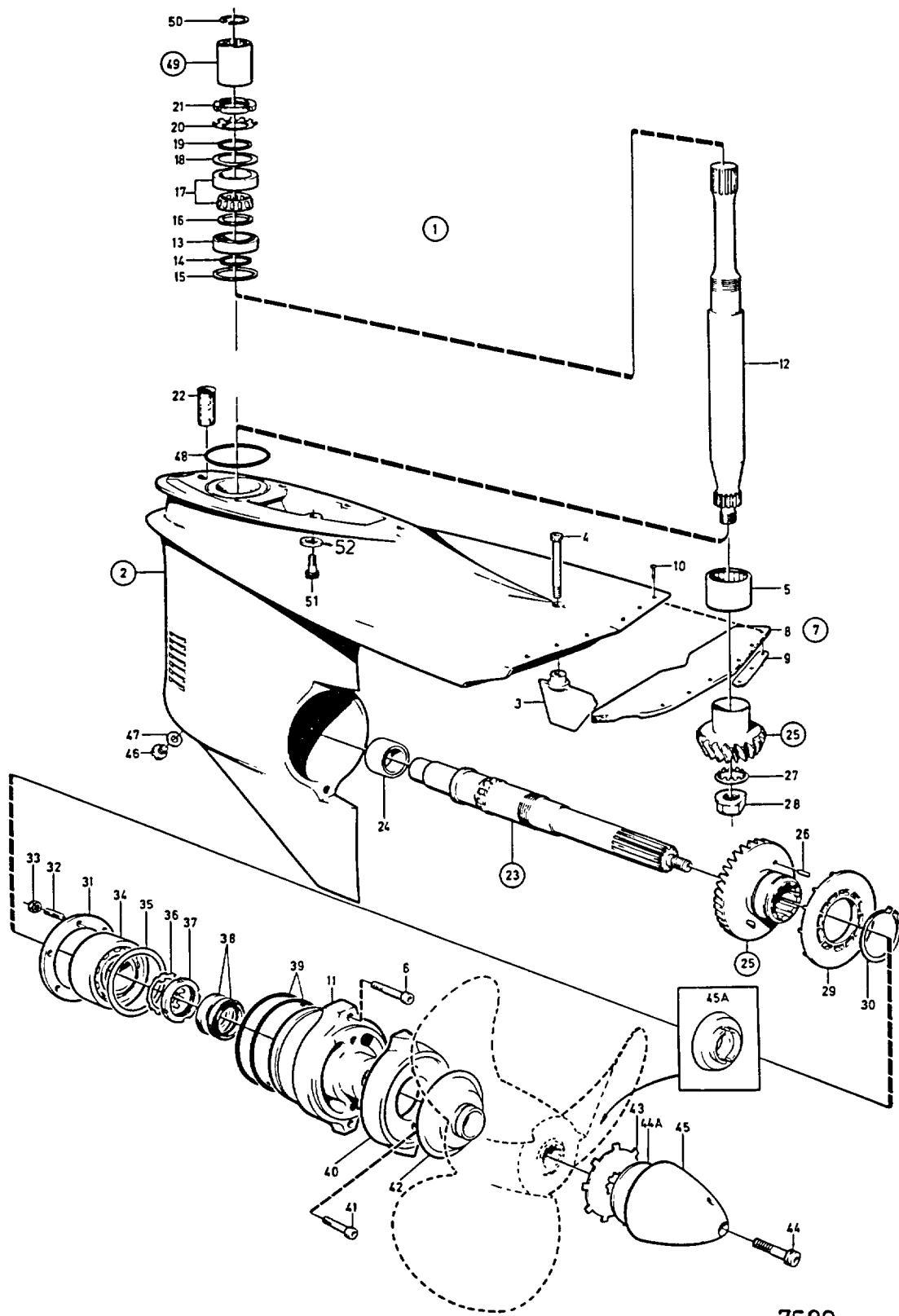


7746



Sida Page		Grupp Group		Undre växelenhet Lower gear unit		Illustration 7589 1987-04		0900		
22		4c		DREV 280						
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	839390-2	Undre växelenhet..	Lower gear unit.....	4	UTV 1,61:1	002	
2	1	-	-	875523-3	..Undre växelhus.....	..Lower gear unit.....	5		0080	
3	1	-	-	851567-8	..Styrfena.....	..Steering fin.....	3	(850012) PZ-2862967	0100	
	1	-	-		..Styrfena.....	..Steering fin.....		65)(850492) PZ2862968-	0120	
	1	-	-					PZ-28004759	0140	
4	1	-	-	851452-3	..Styrfena.....	..Steering fin.....	3	PZ28004760-	0160	
	1	-	-	959422-7	..Skruv.....	..Screw.....	0	PZ-2862967	0180	
	1	-	-				6	=32MM 1/4"UNC	0200	
	1	-	-	959421-9	..Skruv.....	..Screw.....	0	PZ-2862967	0220	
	1	-	-				0	L=25MM 1/4"UNC	0240	
	1	-	-	959439-1	..Skruv.....	..Screw.....	0	PZ2862968-	0260	
	1	-	-				0	PZ-28004759/16"UNC	0	
	1	-	-	959440-9	..Skruv.....	..Screw.....	0	PZ28004760-	0300	
5	1	-	-	183497-7	..Nållager.....	..Needle bearing.....	3		0320	
6	2	-	-	941812-0	..Skruv.....	..Screw.....	0		0340	
7	1	-	-		..Avgasutlopp.....	..Exhaust port.....		53) PZ-2850005	0360	
8	1	-	-		..Gummilapp.....	..Rubber lip.....	8		0380	
9	2	-	-		..Fastplåt.....	..Plate.....	8		0	
10	6	-	-		..Nit.....	..Rivet.....	8		020	
11	1	-	-	839389-4	..Lagerhus.....	..Housing.....	5		0440	
12	1	-	-	832555-7	..Mellanaxel.....	..Intern shaft.....	5		0460	
13	1	-	-	183374-8	..Kullager.....	..Ball bearing.....	3		0480	
14	ERF	-	-	941832-8	..Justerbricka.....	..Shim.....	0	TJ=0,05MM	0500	
	ERF	-	-	941833-6	..Justerbricka.....	..Shim.....	0	TJ=0,20MM	0520	
15	1	-	-	832191-1	..Packning.....	..Gasket.....	S2		0540	
16	ERF	-	-	944970-3	..Justerbricka.....	..Shim.....	0	TJ=1,60MM	0560	
17	1	-	-	11072-6	..Rullager.....	..Roller bearing.....	3		058	
18	ERF	-	-	944522-2	..Justerbricka.....	..Shim.....	0	TJ=0,05MM	06L	
	ERF	-	-	42981-1	..Justerbricka.....	..Shim.....	0	TJ=0,10MM	0620	
	ERF	-	-	42980-3	..Justerbricka.....	..Shim.....	0	TJ=0,35MM	0640	
19	1	-	-	897387-7	..Klamring.....	..Clamp ring.....	5		0660	
20	1	-	-	907023-6	..Låsbricka.....	..Washer.....	S0		0680	
21	1	-	-	906633-3	..Mutter.....	..Nut.....	0		0700	
22	1	-	-	814482-6	..Oljesil.....	..Oil strainer.....	3		0720	
23	1	-	-	875524-1	..Propelleraxel.....	..Propeller shaft.....	5		0740	
24	1	-	-	183390-4	..Nållager.....	..Needle bearing.....	3		0760	
25	1	-	-	832624-1	..Kugghjulssats.....	..Set of gears.....	5	UTV 1,61:1	0780	
26	ERF	-	-	948407-2	..Pinne.....	..Pin.....	0		0740	
27	1	-	-	814165-7	..Bricka.....	..Washer.....	S2		0	
28	1	-	-	814164-0	..Mutter.....	..Nut.....	2		0880	
29	1	-	-	832548-2	..Centrifugalpump.....	..Centrifugal pump.....	5		0900	
30	1	-	-	914474-2	..Låsring.....	..Circlip.....	0		0920	
31	1	-	-	832725-6	..Bricka.....	..Washer.....	4		0940	
32	6	-	-	953449-6	..Pinnskruv.....	..Stud bolt.....	0		0960	
33	6	-	-	955825-5	..Mutter.....	..Nut.....	0		0	
34	1	-	-	181366-6	..Kullager.....	..Ball bearing.....	3		1000	
35	ERF	-	-	944561-0	..Justerbricka.....	..Shim.....	0	TJ=0,05MM	1020	
	ERF	-	-	944562-8	..Justerbricka.....	..Shim.....	0	TJ=0,10MM	1040	
	ERF	-	-	851767-4	..Justerbricka.....	..Shim.....	0	TJ=0,20MM	1060	
36	1	-	-	907025-1	..Låsbricka.....	..Washer.....	S0		1080	
37	1	-	-	906635-8	..Rundmutter.....	..Round nut.....	0		1100	
38	2	-	-	897426-3	..Tätningring.....	..Seal ring.....	S2		1120	
39	2	-	-	925261-0	..O-ring.....	..O-ring.....	S0		1140	
40	1	-	-	875815-3	..Zinkringssats.....	..Zinc ring kit.....	S1		11F	
41	2	-	-	941809-6	..Skruv.....	..Screw.....	S0		11	
42	1	-	-	839423-1	..Tryckring.....	..Thrust ring.....	3		12L	
43	1	-	-	897367-9	..Bricka.....	..Washer.....	2	TID UTF	1220	
44	1	-	-	850889-7	..Skruv.....	..Screw.....	2	SEN UTF	1240	
44a	1	-	-	850888-9	..Bricka.....	..Washer.....	2	SEN UTF	1260	

53. ERS AV 850443 (avgasbåg med backventil). Replaced by 850443 (exhaust bellow with check valve).  
65. ERS AV 851452 959440. Replaced by 851452, 959440.



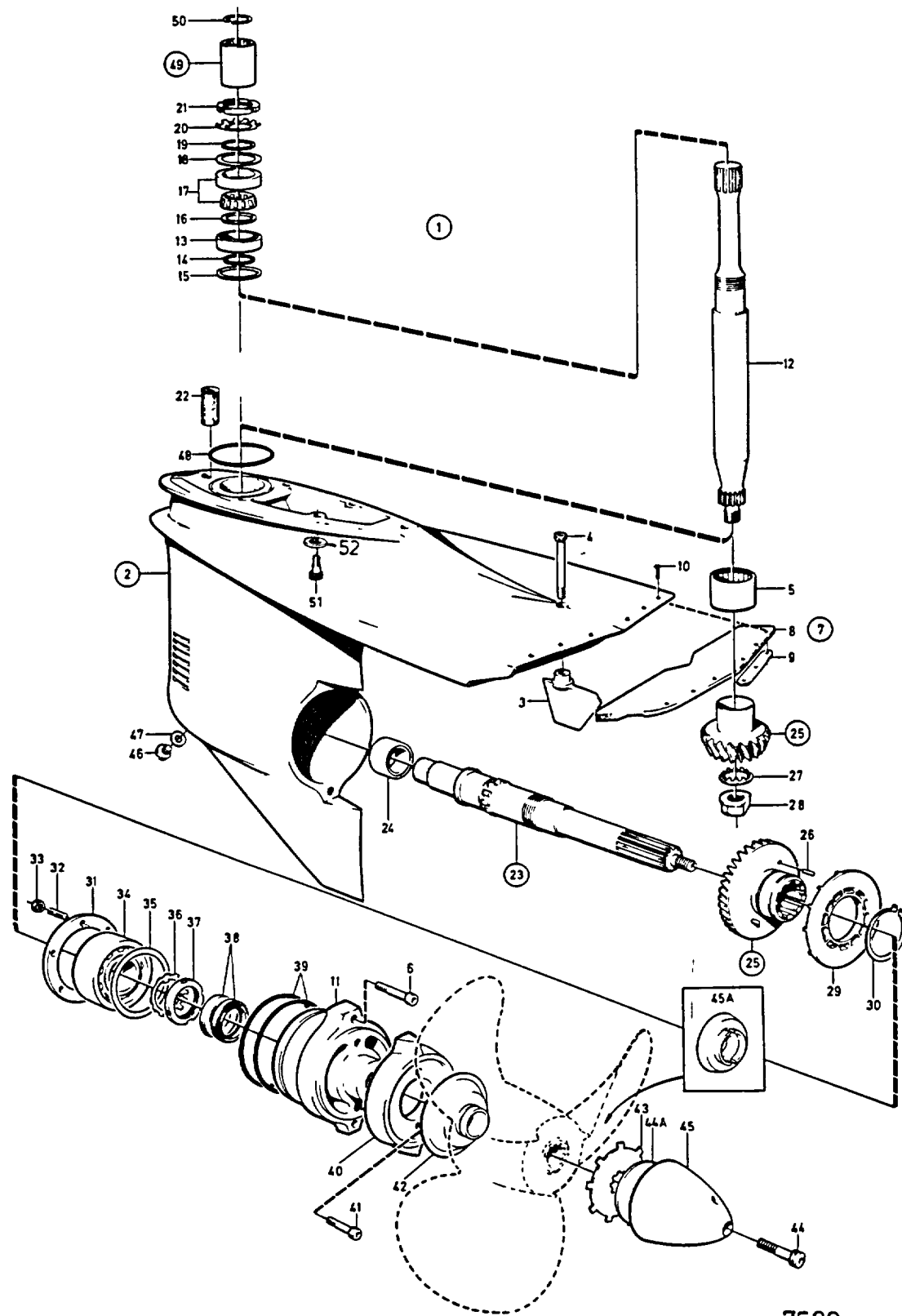
7589



Sida Page	Grupp Group	Undre vaxelenhet DREV 280	Lower gear unit	Illustration 7589 1987-04	0900					
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
45	1	-	-	-		.Propellerkona ....	.Propeller cone..		63)	1280
	1	-	-	-	850785-7	.Propellerkona .....	.Propeller cone .....	2		1300
45a	1	-	-	-	851261-8	.Bricka .....	.Washer .....	3	64)	1320
46	1	-	-	-	839354-8	.Propp .....	.Plug .....	3		1340
47	1	-	-	-	955974-1	.O-ring .....	.O-ring .....	S 2		1360
48	1	-	-	-	925256-0	.O-ring .....	.O-ring .....	S 0		1380
49	1	-	-	-	875183-6	Splineshylsa .....	Spline sleeve .....	4		1400
50	1	-	-	-	914508-7	.Spårring .....	.Retaining ring .....	0		1420
51	4	-	-	-	941810-4	Skruv .....	Screw .....	0		1440
52	4	-	-	-	853095-8	Bricka .....	Washer .....	2		1460

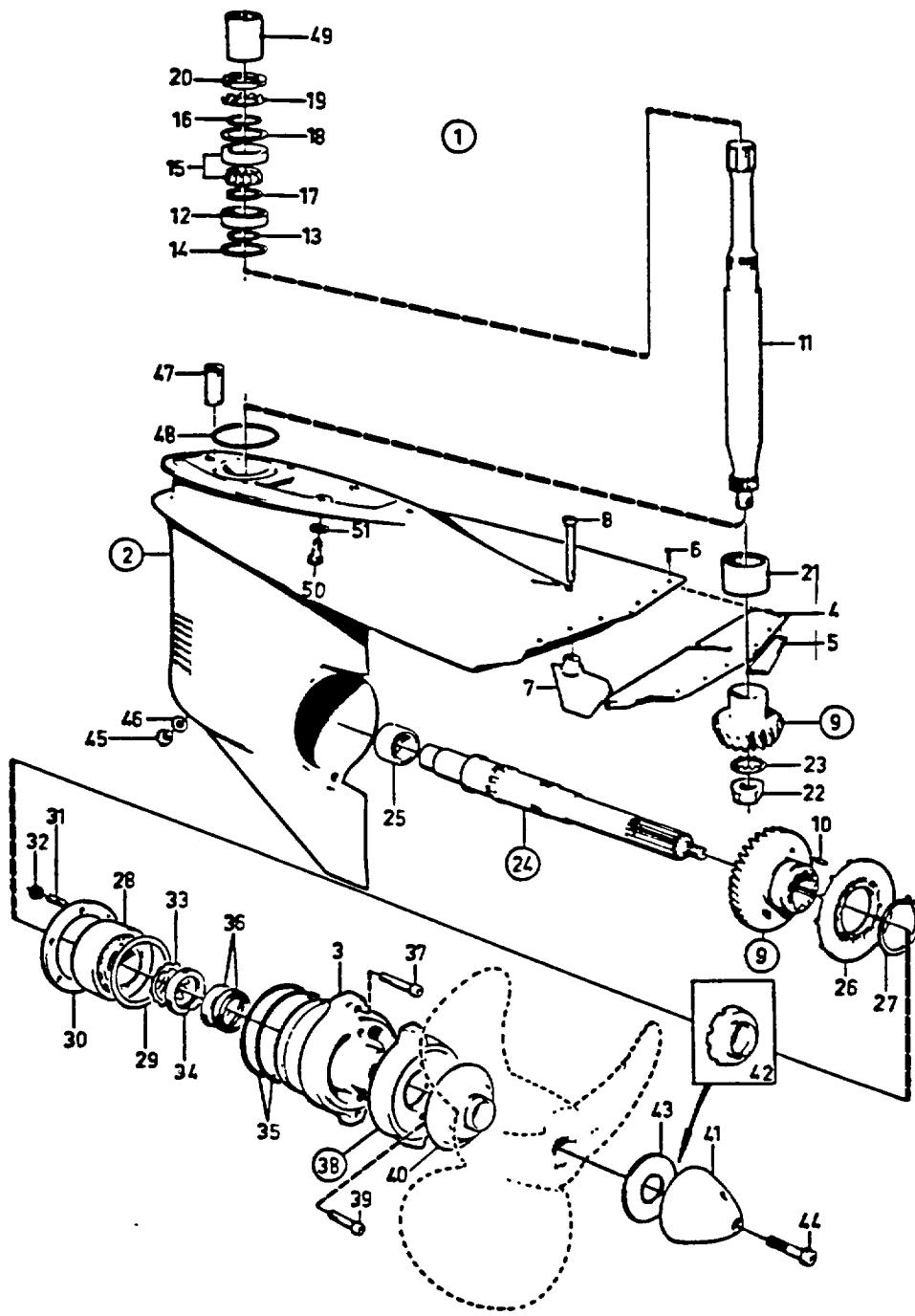
63. ERS AV 850785 851261. Replaced by 850785, 851261.

64. För propeller med kort nav, PZ 28015547- For propeller with short hub, PZ 28015547-



7589

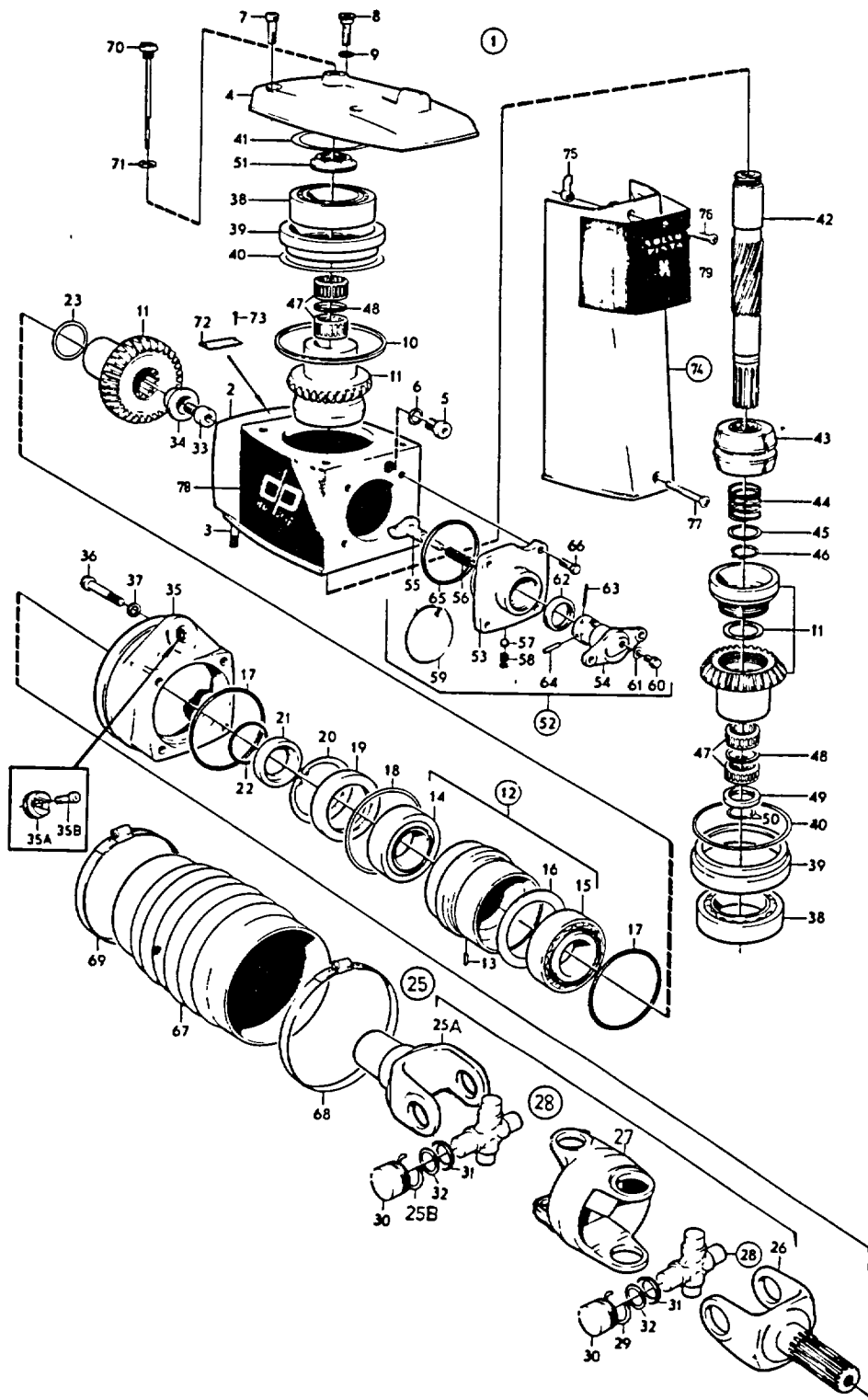
Sida Page		Grupp Group		Undre vaxelenhet Lower gear unit			Illustration 7590 1987-04		0910	
26		4c		DREV 290						
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	851875-5	Undre växel..	Lower gear unit.	4		UTV1,61:1	0021
2	1	-	-	851877-1	..Undre vaxelhus	..Lower gear housing	5			0060
3	1	-	-	839389-4	..Lagerhus	..Housing	5			0080
4	1	-	-	852644-4	..Backventil	..Check valve	4			0100
5	2	-	-	852643-6	..Fästplåt	..Attachment plate	4			0120
6	6	-	-	948338-9	..Nit	..Rivet	0			0140
7	1	-	-	851452-3	..Trimfena	..Trim fin	4			0160
8	1	-	-	959440-9	..Skruv	..Screw	0			0180
9	1	-	-	832624-1	..Kugghjulssats	..Set of gears	5		UTV1,61:1	0200
10	ERF	-	-	948407-2	..Rorpinne	..Pin	0			0240
11	1	-	-	832555-7	..Mellanaxel	..Interm shaft	5			0300
12	1	-	-	183374-8	..Kullager	..Ball bearing	3			0320
13	ERF	-	-	941832-8	..Justerbricka	..Shim	0		TJ=0,05MM	0340
	ERF	-	-	941833-6	..Justerbricka	..Shim	0		TJ=0,20MM	0360
14	1	-	-	832191-1	..Packing	..Gasket	S	2		0390
15	1	-	-	11072-6	..Rullager	..Roller bearing	3			0420
16	1	-	-	897387-7	..Klämring	..Clamp ring	5			0440
17	ERF	-	-	944970-3	..Justerbricka	..Shim	0		TJ=1,60MM	0460
18	ERF	-	-	944522-2	..Justerbricka	..Shim	0		TJ=0,05MM	0480
	ERF	-	-	42981-1	..Justerbricka	..Shim	0		TJ=0,10MM	0500
	ERF	-	-	42980-3	..Justerbricka	..Shim	0		TJ=0,35MM	0520
19	1	-	-	907023-6	..Låsbricka	..Washer	0			0540
20	1	-	-	906633-3	..Mutter	..Nut	0			0560
21	1	-	-	183497-7	..Nållager	..Needle bearing	3			0580
22	1	-	-	814164-0	..Mutter	..Nut	2			0600
23	1	-	-	814165-7	..Bricka	..Washer	S	2		0620
24	1	-	-	875524-1	..Propelleraxel	..Propeller shaft	5			0640
25	1	-	-	183390-4	..Nållager	..Needle bearing	3			0660
26	1	-	-	832548-2	..Centrifugalpump	..Centrifugal pump	5			0680
27	1	-	-	914474-2	..Låsring	..Circlip	0			0700
28	1	-	-	181366-6	..Kullager	..Ball bearing	3			0720
29	ERF	-	-	944561-0	..Justerbricka	..Shim	0		TJ=0,05MM	0740
	ERF	-	-	944562-8	..Justerbricka	..Shim	0		TJ=0,10MM	0760
	ERF	-	-	851767-4	..Justerbricka	..Shim	1		TJ=0,20MM	0780
30	1	-	-	832725-6	..Bricka	..Washer	4			0800
31	6	-	-	953449-6	..Pinnskruv	..Stud bolt	0			0820
32	6	-	-	955825-5	..Mutter	..Nut	0			0840
33	1	-	-	907025-1	..Låsbricka	..Washer	S	0		0860
34	1	-	-	906635-8	..Rundmutter	..Round nut	S	0		0880
35	2	-	-	925261-0	..O-ring	..O-ring	S	0		0900
36	2	-	-	897426-3	..Tätningring	..Seal ring	S	2		0920
37	2	-	-	941812-0	..Skruv	..Screw	0			0940
38	1	-	-	875815-3	..Zinkringsats	..Zinc ring kit	S	1		0960
39	2	-	-	941809-6	..Skruv	..Screw	S	0		0980
40	1	-	-	839423-1	..Tryckring	..Thrust ring	3			1000
41	1	-	-	850785-7	..Propellerkona	..Propeller cone	2			1020
42	1	-	-	851261-8	..Bricka	..Washer	3			1040
43	1	-	-	850888-9	..Bricka	..Washer	2			1060
44	1	-	-	350889-7	..Skruv	..Screw	2			1080
45	1	-	-	839354-8	..Propp	..Plug	3			1100
46	1	-	-	955974-1	..O-ring	..O-ring	S	0		1120
47	1	-	-	814482-6	..Oljesil	..Oil strainer	3			1140
48	1	-	-	925256-0	..O-ring	..O-ring	S	0 74)		1160
49	1	-	-	850304-7	..Splineshylsa	..Spline sleeve	4	74)		1180
50	4	-	-	941810-4	..Skruv	..Screw	4	74)		1200
51	4	-	-	853095-8	..Bricka	..Washer	4			1220



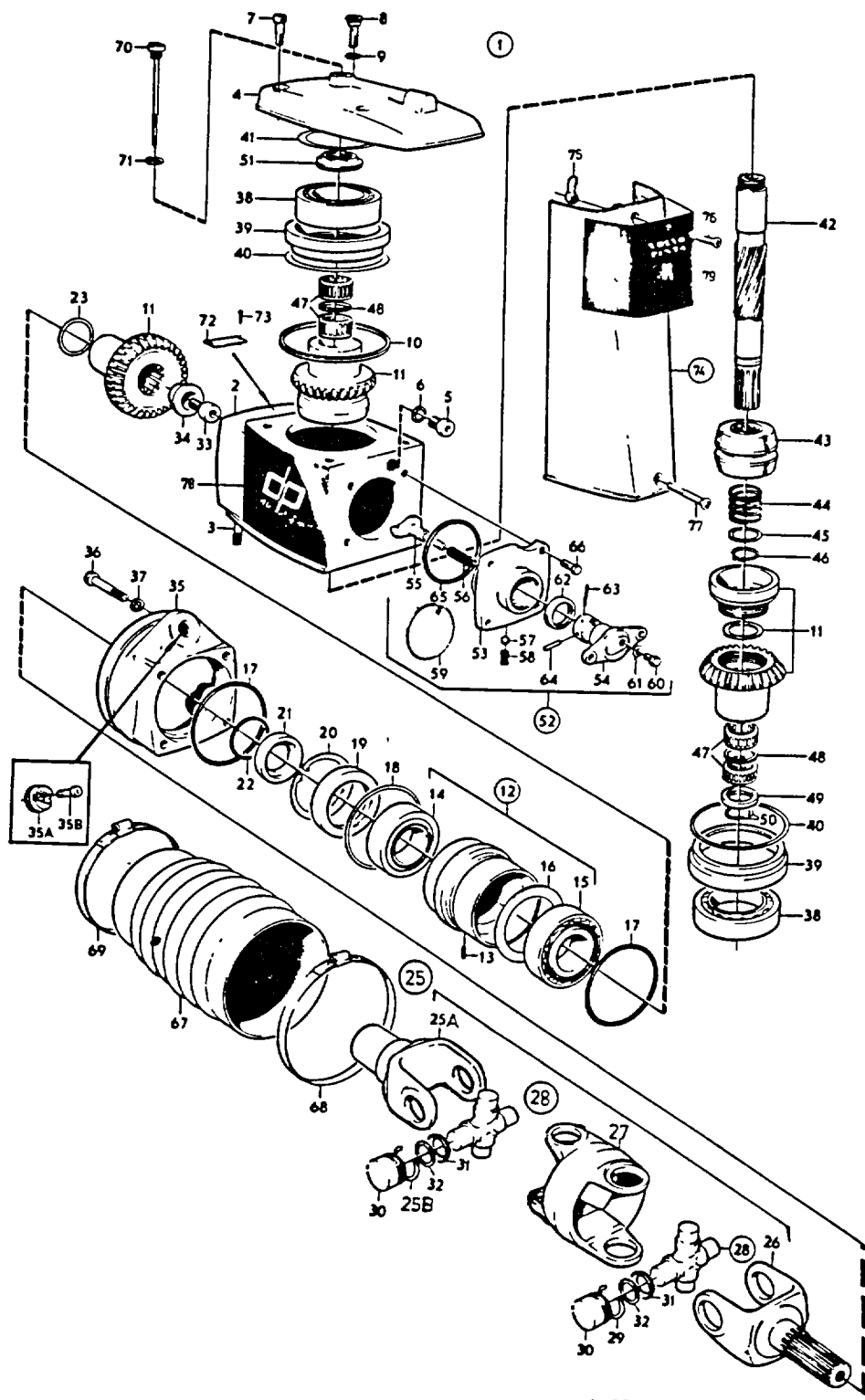
7590

Sida Page		Grupp Group		Ovre vaxelenhet		Upper gear unit		Illustration	
28		4c		DREV DP280,DREV DP290				8589 1987-04	
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	851								
1	1	-	-	851340-0	Ovre vaxelenhet . . . . .	Upper gear unit . . . . .		5	
2	1	-	-	832674-6	.Ovre växelhus . . . . .	.Upper gear housing . . . . .		6	
3	2	-	-	941814-6	.Skruv . . . . .	.Screw . . . . .		0	SE SIDA 32, 2-G09
4	1	-	-	832667-0	.Vaxelhuslock . . . . .	.Cover . . . . .		5	
5	1	-	-	814179-8	.Propp . . . . .	.Plug . . . . .		4	
6	1	-	-	897682-1	.Packning . . . . .	.Gasket . . . . .	S	2	
7	3	-	-	941807-0	.Skruv . . . . .	.Screw . . . . .		0	
8	1	-	-	814643-3	.Hålskruv . . . . .	.Hollow screw . . . . .		3	
9	1	-	-	955989-9	.O-ring . . . . .	.O-ring . . . . .	S	0	
10	1	-	-	832669-6	.Packning . . . . .	.Gasket . . . . .	S	2	
11	1	-	-	839027-0	.Drevsats . . . . .	.Set of gears . . . . .		5	
12	1	-	-	875425-1	.Lagerbox . . . . .	.Bearing unit . . . . .		4	
13	1	-	-	951940-6	.Spännstift . . . . .	.Tension pin . . . . .		0	
14	1	-	-	183247-6	.Lager . . . . .	.Bearing . . . . .		3	
15	1	-	-	183668-3	.Rullager . . . . .	.Roller bearing . . . . .		3	
16	1	-	-	897772-0	.Oljeavkastare . . . . .	.Oil deflector . . . . .		4	TID UTF
17	2	-	-	925256-0	.O-ring . . . . .	.O-ring . . . . .	S	0	
18	ERF	-	-	941826-0	.Justerbricka . . . . .	.Shim . . . . .		0	TJ=0,50MM
	ERF	-	-	941827-8	.Justerbricka . . . . .	.Shim . . . . .		0	TJ=0,20MM
	ERF	-	-	948230-8	.Justerbricka . . . . .	.Shim . . . . .		0	TJ=0,35MM
19	1	-	-	839253-2	.Tätningarring . . . . .	.Seal ring . . . . .	S	2	
20	1	-	-	914538-4	.Låsring . . . . .	.Circlip . . . . .		0	
21	1	-	-	832675-3	.Bricka . . . . .	.Washer . . . . .		4	
22	1	-	-	956000-4	.O-ring . . . . .	.O-ring . . . . .	S	0	
23	ERF	-	-	943871-4	.Justerbricka . . . . .	.Shim . . . . .		0	TJ=0,05MM
	ERF	-	-	943872-2	.Justerbricka . . . . .	.Shim . . . . .		0	TJ=0,10MM
	ERF	-	-	943873-0	.Justerbricka . . . . .	.Shim . . . . .		0	TJ=0,20MM
24	1	-	-	839028-8	.Kopplingsknut . . . . .	.Universal joint . . . . .		5	
25	1	-	-	853560-1	.Knutgaffelsats . . . . .	.Joint fork kit . . . . .		4	
25a	1	-	-	897774-6	.Knutgaffel . . . . .	.Joint fork . . . . .		4	ERS AV 853560
25b	2	-	-	853331-7	.Låsring . . . . .	.Lock ring . . . . .		2	101)
26	1	-	-	839026-2	.Styrgaffel . . . . .	.Steering fork . . . . .		4	
27	1	-	-	897706-8	.Mellanstycke . . . . .	.Interm piece . . . . .		5	
28	2	-	-	897707-6	.Korsstycke . . . . .	.Cross piece . . . . .		8	98,99)
	2	-	-	853255-8	.Korsstycke . . . . .	.Cross piece . . . . .		4	100)
29	4	-	-	897776-1	.Låsring . . . . .	.Circlip . . . . .		2	FOR/FOR 897707
	4	-	-	853331-7	.Låsring . . . . .	.Lock ring . . . . .		2	FOR/FOR 853255
30	8	-	-		.Nållager . . . . .	.Needle bearing . . . . .		8	
31	8	-	-		.Skyddsring . . . . .	.Protector ring . . . . .		8	
32	8	-	-		.Korkring . . . . .	.Cork ring . . . . .		8	
33	1	-	-	851293-1	.Skruv . . . . .	.Screw . . . . .		2	
34	1	-	-	839013-0	.Bricka . . . . .	.Washer . . . . .		2	
35	1	-	-	851265-9	.Klamring . . . . .	.Clamp ring . . . . .		5	
35a	1	-	-	852705-3	.Lagertapp . . . . .	.Bearing pin . . . . .		3	
35b	2	-	-	941807-0	.Skruv . . . . .	.Screw . . . . .		0	
36	4	-	-	956590-4	.Skruv . . . . .	.Screw . . . . .		0	
37	4	-	-	942598-4	.Bricka . . . . .	.Washer . . . . .		0	
38	2	-	-	853542-9	.Lager . . . . .	.Bearing . . . . .		3	(183729)
39	2	-	-	832644-9	.Lagerhylsa . . . . .	.Bearing sleeve . . . . .		4	
40	ERF	-	-	943869-8	.Justerbricka . . . . .	.Shim . . . . .		0	TJ=0,05MM
	ERF	-	-	946179-9	.Justerbricka . . . . .	.Shim . . . . .		0	TJ=0,10MM
	ERF	-	-	943870-6	.Justerbricka . . . . .	.Shim . . . . .		0	TJ=0,20MM
41	ERF	-	-	967352-6	.Justerbricka . . . . .	.Shim . . . . .		0	TJ=0,05MM
	ERF	-	-	943866-4	.Justerbricka . . . . .	.Shim . . . . .		0	TJ=0,10MM
	ERF	-	-	943867-2	.Justerbricka . . . . .	.Shim . . . . .		0	TJ=0,20MM
	ERF	-	-	943868-0	.Justerbricka . . . . .	.Shim . . . . .		0	TJ=0,40MM
42	1	-	-	897385-1	.Axel . . . . .	.Shaft . . . . .		5	

98 . Ers av 853255. Replaced by 853455.  
 99 . For drev 853452,853453 PZ-29500949. For drive units 853452,853453 PZ-29500949.  
 100 . For drev 853452,853453 PZ29500950-. For drive units 853452,853453 PZ29500950-.  
 101 . För 853255. For 853255.

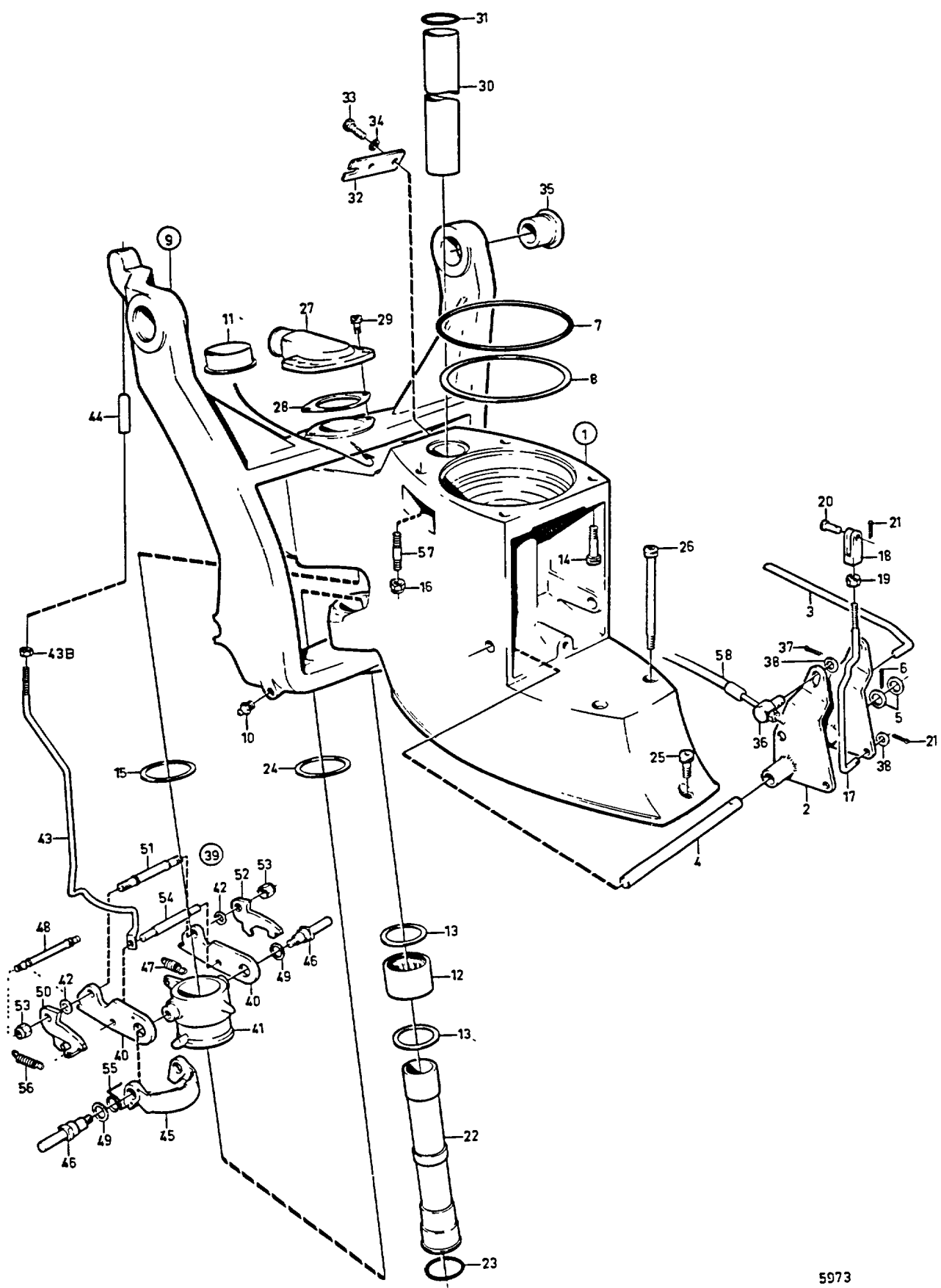


Sida Page	Grupp Group	Ovre vaxelenhet	Upper gear unit	Illustration							
30	4c	DREV DP280,DREV DP290		8589 1987-04							
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
	851	340									
43	1	-	-	-	814601-1	..Skjuthylsa	..Sliding sleeve	5			106L
44	1	-	-	-	813970-1	..Fjäder	..Spring	4			1080
45	1	-	-	-	26411-9	..Mellanlägg	..Spacer	0			1100
46	1	-	-	-	951077-7	..Låsring	..Circlip	0			1120
47	4	-	-	-	181359-1	..Nållager	..Needle bearing	3			1140
48	2	-	-	-	897308-3	..Distansring	..Spacer ring	4			1160
49	1	-	-	-	897313-3	..Distansring	..Spacer ring	4			1180
50	2	-	-	-	897312-5	..Låsring	..Circlip	2			1200
51	1	-	-	-	839332-4	..Mutter	..Nut	4	TJ=2,00MM		1220
	1	-	-	-	839333-2	..Mutter	..Nut	4	TJ=2,37MM		1240
	1	-	-	-	839334-0	..Mutter	..Nut	4	TJ=2,65MM		J
52	1	-	-	-	839504-8	..Vaxlingsmekanism	..Gearshift mechanism	4			J
53	1	-	-	-	839505-5	..Lagerhus	..Housing	5			J
54	1	-	-	-	897816-5	..Excenterkolv	..Eccentric piston	3			J
55	1	-	-	-	814603-7	..Glidsko	..Sliding shoe	3			J
56	1	-	-	-	814184-8	..Fjäder	..Spring	3			J
57	2	-	-	-	60309-2	..Kula	..Ball	3	PZ-2829528		J
58	2	-	-	-	839136-9	..Fjäder	..Spring	3	PZ-2829528		J
59	ERF	-	-	-	941338-6	..Låstråd	..Lock wire	S	PZ-2829528, L=300MM		J
60	1	-	-	-	897711-8	..Skruv	..Screw	3			J
61	ERF	-	-	-	897871-0	..Bricka	..Washer	4	TJ=0,2MM		J
62	1	-	-	-	958838-5	..O-ring	..O-ring	S	0		J
63	1	-	-	-	951924-0	..Spannstift	..Tension pin	S	0		J
64	1	-	-	-	942871-5	..Pinne	..Pin	0			J
65	1	-	-	-	925093-7	..O-ring	..O-ring	S	0		J
66	4	-	-	-	940169-6	..Skruv	..Screw	0			J
67	1	-	-	-	875826-0	..Balg	..Bellow kit	1			J
	1	-	-	-		..Balg	..Bellows	8			J
68	1	-	-	-	853013-1	..Klamma	..Clamp	0	(961677)		J
69	1	-	-	-	853012-3	..Klamma	..Clamp	0	(961676)		J
70	1	-	-	-	839351-4	..Oljemätsticka	..Oil dipstick	5			J
71	1	-	-	-	955974-1	..O-ring	..O-ring	S	0		J
72	1	-	-	-	814687-0	..Skylt	..Sign	6			J
73	2	-	-	-	804269-9	..Skruv	..Screw	4			J
74	1	-	-	-	832570-6	Tackkåpa	Protecting cover	5	68)		J
75	1	-	-	-	897873-6	..Låshake	..Lock catch	4			J
76	1	-	-	-	943218-8	..Skruv	..Screw	0			J
77	1	-	-	-	941816-1	..Skruv	..Screw	0	68)		J
78	2	-	-	-	852823-4	..Dekal	..Decal	3	68)		J
79	1	-	-	-	852824-2	..Dekal	..Decal	3	68)		J





Sida Page	Grupp Group	Mellanhus	Intermediate housing				Illustration	1000			
32	4c	DREV 280DP					5973 1987-04				
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	832682-9	Mellanhus ....	Interm housing . . .		6		0020
2	1	-	-	-	897829-8	.Växelok . . . . .	.Gear yoke . . . . .		5		0040
3	1	-	-	-	814397-6	.Kopplingsstång . . . . .	.Lock rod . . . . .		4		0060
4	1	-	-	-	897447-9	.Axel . . . . .	.Shaft . . . . .		5		0080
5	2	-	-	-	897511-2	.Bricka . . . . .	.Washer . . . . .		3		0100
6	1	-	-	-	17253-6	.Saxpinne . . . . .	.Cotter pin . . . . .		S0		0120
7	1	-	-	-	925259-4	O-ring . . . . .	O-ring . . . . .		S0		0140
8	ERF	-	-	-	943866-4	Justerbricka . . . . .	Shim . . . . .		0	TJ=0,1MM	0160
	ERF	-	-	-	943867-2	Justerbricka . . . . .	Shim . . . . .		0	TJ=0,2MM	0180
	ERF	-	-	-	943868-0	Justerbricka . . . . .	Shim . . . . .		0	TJ=0,4MM	0200
9	1	-	-	-	875365-9	Knutgaffel . . . . .	Joint fork . . . . .		5		0
10	1	-	-	-	940194-4	.Nippel . . . . .	.Nipple . . . . .		0		0
11	1	-	-	-	814388-5	.Bussning . . . . .	.Bushing . . . . .		3		0260
12	1	-	-	-	183391-2	.Nållager . . . . .	.Needle bearing . . . . .		3		0280
13	2	-	-	-	181620-6	.Tätningarring . . . . .	.Seal ring . . . . .		S2		0300
14	2	-	-	-	941807-0	Skruv . . . . .	Screw . . . . .		0		0320
15	2	-	-	-	814390-1	Bricka . . . . .	Washer . . . . .		3		0
16	2	-	-	-	941885-6	Mutter . . . . .	Nut . . . . .		0		0
17	1	-	-	-	897448-7	Reglagestång . . . . .	Control rod . . . . .		4		0380
18	1	-	-	-	813954-5	Reglagegaffel . . . . .	Control fork . . . . .		4		0400
19	1	-	-	-	940190-2	Mutter . . . . .	Nut . . . . .		0		0420
20	1	-	-	-	192662-5	Pinnbult . . . . .	Stud . . . . .		0		0440
21	2	-	-	-	17253-6	Saxpinne . . . . .	Cotter pin . . . . .		0		0460
22	1	-	-	-	814386-9	Rör . . . . .	Pipe . . . . .		5		0480
23	1	-	-	-	941820-3	O-ring . . . . .	O-ring . . . . .		S0		0500
24	1	-	-	-	897696-1	Bricka . . . . .	Washer . . . . .		3		0520
25	1	-	-	-	941809-6	Skruv . . . . .	Screw . . . . .		0		054
26	2	-	-	-	941808-8	Skruv . . . . .	Screw . . . . .		0		0560
27	1	-	-	-	851766-6	Slanganslutning . . . . .	Hose connection . . . . .			SE GRUPP 4A	0580
	1	-	-	-	832846-0	Slanganslutning . . . . .	Hose connection . . . . .			POWER TRIM, SE GRUPP 4A	0585 0586
28	1	-	-	-	814356-2	Tätning . . . . .	Seal . . . . .		S2		0600
29	2	-	-	-	941813-8	Skruv . . . . .	Screw . . . . .		0		0620
30	1	-	-	-	897644-1	Rör . . . . .	Pipe . . . . .		4		0640
31	2	-	-	-	125017-4	O-ring . . . . .	O-ring . . . . .		S1		0660
32	1	-	-	-	897457-8	Kabelfaste . . . . .	Cable attachment . . . . .		4		0680
33	2	-	-	-	940168-8	Skruv . . . . .	Screw . . . . .		0		0700
34	2	-	-	-	940191-0	Bricka . . . . .	Washer . . . . .		0		0
35	2	-	-	-	826341-0	Bussning . . . . .	Bushing . . . . .		3		0
36	1	-	-	-	804312-7	Reglagekabelfärrning . . . . .	Control cube . . . . .		3		0760
37	1	-	-	-	907834-6	Saxpinne . . . . .	Cotter pin . . . . .		0	(17276)	0780
38	2	-	-	-	940191-0	Bricka . . . . .	Washer . . . . .		0		0800
39	1	-	-	-	814434-7	Backhake . . . . .	Astern lever . . . . .		5		0820
40	2	-	-	-	814391-9	.Backhake . . . . .	.Astern lever . . . . .		4		0
41	1	-	-	-	814389-3	.Lagerhylsa . . . . .	.Bearing sleeve . . . . .		4		0
42	2	-	-	-	814422-2	.Distansbricka . . . . .	.Spacer washer . . . . .		S2		0880
43	1	-	-	-	852046-2	.Tryckstång . . . . .	.Push rod . . . . .		4		0900
43b	1	-	-	-		..Mutter . . . . .	..Nut . . . . .		8		0920
44	1	-	-	-	897722-5	.Tryckhylsa . . . . .	.Thrust sleeve . . . . .		3		0940
45	1	-	-	-	814394-3	.Låsbygel . . . . .	.Lock brace . . . . .		4		0960
46	2	-	-	-	814395-0	.Axeltapp . . . . .	.Shaft pin . . . . .		3		0980
47	1	-	-	-	832534-2	.Fjäder . . . . .	.Spring . . . . .		S2		1000
48	1	-	-	-	814399-2	.Axel . . . . .	.Shaft . . . . .		S3		1020
49	1	-	-	-	943194-1	.Bricka . . . . .	.Washer . . . . .		S0		104
50	1	-	-	-	814392-7	.Fjäderhake . . . . .	.Spring catch . . . . .		S2		106
51	1	-	-	-	814419-8	.Axel . . . . .	.Shaft . . . . .		S3		1080
52	1	-	-	-	814393-5	.Fjäderhake . . . . .	.Spring catch . . . . .		S2		1100
53	2	-	-	-	943197-4	.Mutter . . . . .	.Nut . . . . .		S0		1120
54	1	-	-	-	814398-4	.Axel . . . . .	.Shaft . . . . .		S3		1140
55	1	-	-	-	814396-8	.Fjäder . . . . .	.Spring . . . . .		S2		1160
56	2	-	-	-	814332-3	.Fjäder . . . . .	.Spring . . . . .		S2		1180
57	2	-	-	-	941814-6	Skruv . . . . .	Screw . . . . .			SE SIDA 28, 2-G05	1200
58	ERF	-	-	-		Reglagekabel . . . . .	Control cable . . . . .			SE GRUPP 9	1220



Publ. 4406

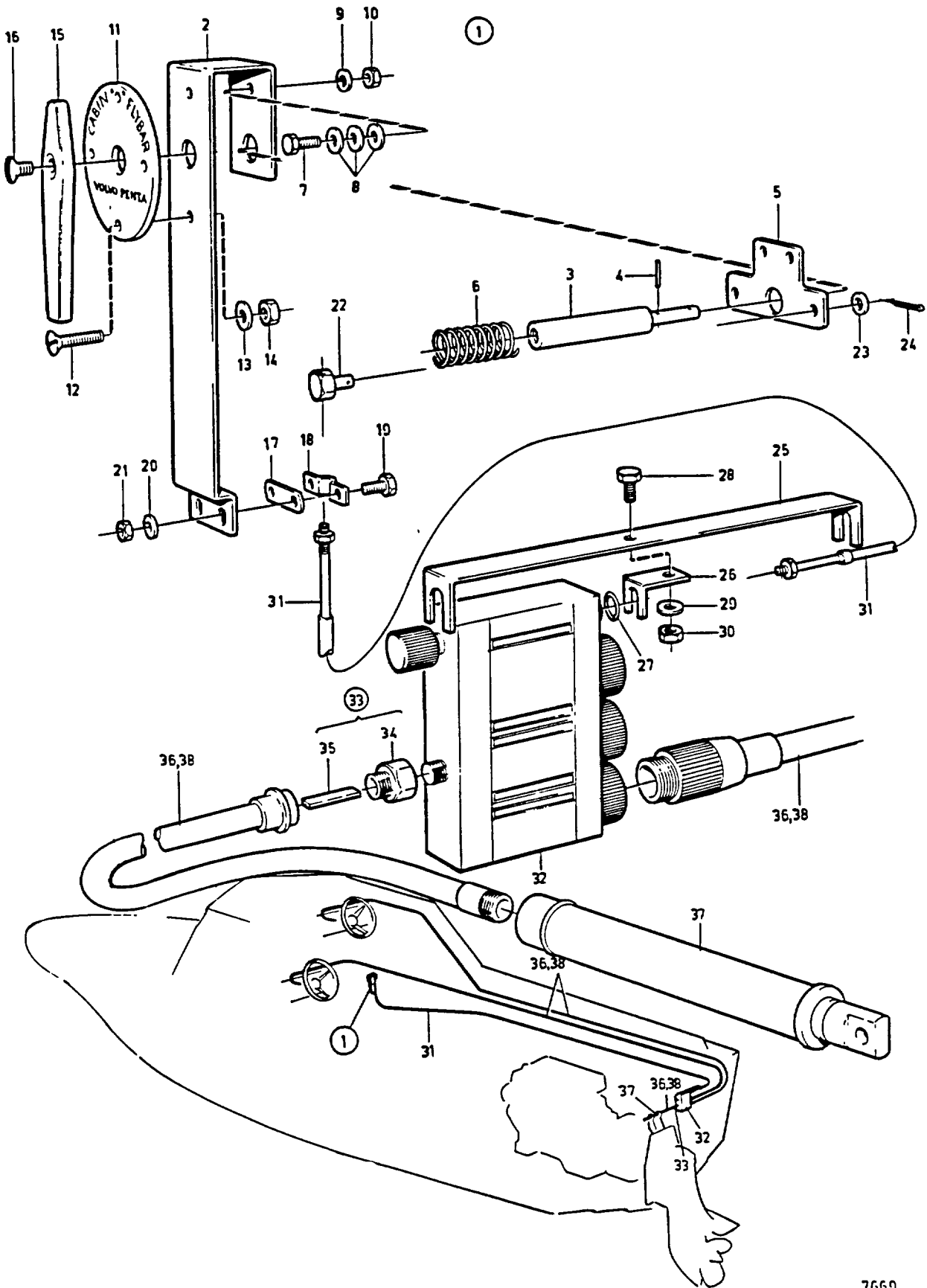
Reservdelskatalog  
Parts Catalogue

2-G11

**VOLVO  
PENTA**

Sida Page		Grupp Group		Mellanhus Intermediate housing			Illustration		1000	
34		4c		DREV 280DP			5973 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes
	1	-	-	-	875361-8	Reparationsatts,.... backhake	Repair kit, .... astern lever		2	

1240  
1260



Sida Page	Grupp Group	Styrmekanism Servostyrning	Steering mechanism Power steering	Illustration 8594 1987-04	0280
22	6	AQD40A,AQAD40A,AQAD40B			

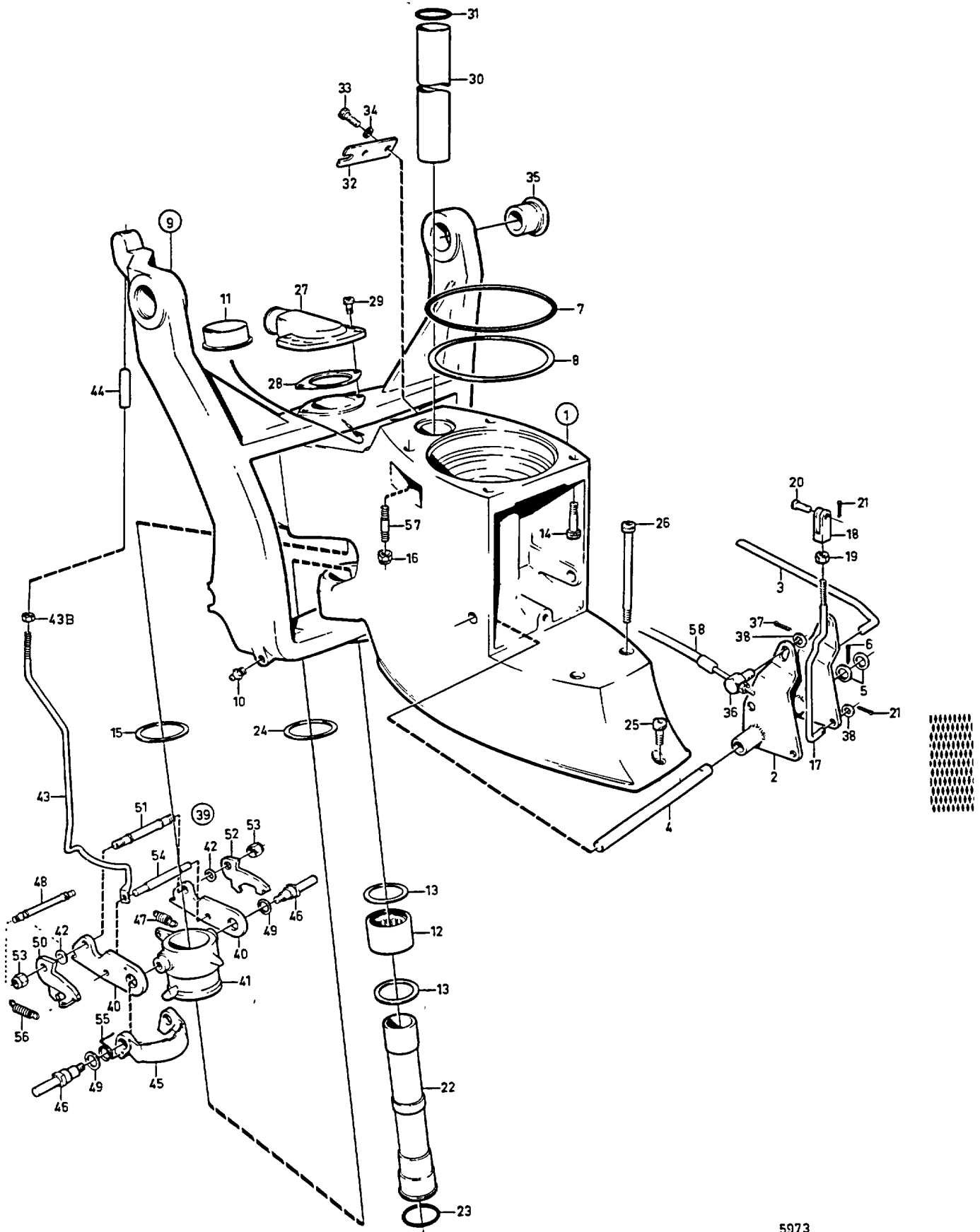
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	851454-9	Servostyrsats ..	Servo steering kit ..	6	38)		002
2	1	-	-	-	851367-3	.Ventil..	.Valve ..	4			0040
3	1	-	-	-	955535-0	.Skruv ..	.Screw ..	0			0060
4	1	-	-	-	942336-9	.Fjädrande bricka...	.Resilient washer ..	0			0080
5	1	-	-	-	951741-8	.Nippel ..	.Nipple ..	8			0100
6	1	-	-	-	851368-1	.Rör ..	.Pipe ..	3			0120
	1	-	-	-	851369-9	.Rör ..	.Pipe ..	3			0140
7	1	-	-	-	851357-4	.Skruv ..	.Screw ..	4			0160
8	1	-	-	-	950386-3	.Mutter ..	.Nut ..	0			0180
9	1	-	-	-	955898-2	.Bricka ..	.Washer ..	0			0200
10	1	-	-	-	851354-1	.Hydraulcylinder ..	.Hydraulic cylinder ..	5			0
11	1	-	-	-	851351-7	.Konsol ..	.Bracket ..	6			0
12	2	-	-	-	851353-3	.Skruv ..	.Screw ..	2			0260
13	2	-	-	-	941912-8	.Fjädrande bricka ..	.Resilient washer ..	0			0280
14	1	-	-	-	851360-8	.Konsol ..	.Bracket ..	5			0300
15	1	-	-	-	851361-6	.Stift ..	.Pin ..	2			0320
16	1	-	-	-	850960-6	.Bussning ..	.Bushing ..	1			0
17	1	-	-	-	955904-8	.Bricka ..	.Washer ..	0			0
18	1	-	-	-	851356-6	.Rör ..	.Pipe ..	5			0380
19	1	-	-	-	851355-8	.Ansatsrör ..	.Coller pipe ..	5			0400
20	1	-	-	-	850771-7	.Faströr ..	.Pipe ..	5	27)		0420
21	2	-	-	-	850778-2	.Mutter ..	.Nut ..	3			0440
22	1	-	-	-	851366-5	.Rör ..	.Pipe ..	4			0460
23	1	-	-	-	851365-7	.Bussning ..	.Bushing ..	2			0480
24	1	-	-	-	851542-1	.Konsol ..	.Bracket ..	6			0500
25	1	-	-	-	851543-9	.Bussning ..	.Bushing ..	2			0520
26	1	-	-	-	851359-0	.Mutter ..	.Nut ..	2			0540
27	1	-	-	-	941914-4	.Fjädrande bricka ..	.Resilient washer ..	0			0560
28	1	-	-	-	851362-4	.Konsol ..	.Bracket ..	5			0580
29	3	-	-	-	851382-2	.Skruv ..	.Screw ..	1			0600
30	5	-	-	-	964960-9	.Saxpinne ..	.Cotter pin ..	0			0620
31	1	-	-	-	940097-9	Bricka ..	Washer ..	0			0640
32	1	-	-	-	850478-9	Länkstång ..	Link rod ..	5			0660
33	1	-	-	-	940154-8	Mutter ..	Nut ..	0			0680
34	1	-	-	-	956511-0	Gaffel ..	Yoke ..	0			0700
35	1	-	-	-	913158-2	Saxpinnebult ..	Clevis pin bolt ..	0			0740
36	1	-	-	-	907856-9	Saxpinne ..	Clevis pin ..	0			0760
37	1	-	-	-	850958-0	Konsol ..	Bracket ..	6			0
38	2	-	-	-	955541-8	Skruv ..	Bolt ..	0			00
39	2	-	-	-	942336-9	Fjädrande bricka ..	Resilient washer ..	0			0820
40	1	-	-	-	850809-5	Styrhuvud ..	Steering head ..	6			0840
	-	-	-	-		.Det se sida 40, 2-117	.Comp page 40, 2-117				0860
41	1	-	-	-	850936-6	Ratt ..	Steering wheel ..	6			0880
42	1	-	-	-	839544-4	Styrkabelås ..	Steering cable lock ..	6			0
	-	-	-	-		.Det se sida 42, 2-119	.Comp page 42, 2-119				0
43	1	-	-	-	839617-8	Forlångningskabel ..	Extension cable ..	6			0940
44	ERF	-	-	-	850810-3	Styrkabel ..	Steering cable ..	8	L=3000MM		0960
	ERF	-	-	-	850811-1	Styrkabel ..	Steering cable ..	6	L=3300MM		0980
	ERF	-	-	-	850812-9	Styrkabel ..	Steering cable ..	6	44)L=3600MM		1000
	ERF	-	-	-	853188-1	Styrkabel ..	Steering cable ..	6	L=3750MM		1001
	ERF	-	-	-	850813-7	Styrkabel ..	Steering cable ..	8	L=3900MM		1020
	ERF	-	-	-	850814-5	Styrkabel ..	Steering cable ..	8	L=4200MM		1040
	ERF	-	-	-	850815-2	Styrkabel ..	Steering cable ..	6	45)L=4500MM		1060
	ERF	-	-	-	853191-5	Styrkabel ..	Steering cable ..	6	L=4500MM		1080
	ERF	-	-	-	850816-0	Styrkabel ..	Steering cable ..	6	L=4800MM		1100

27. For flying bridge installation använd 2st fäströr 850771, för flying bridge installation använd 2st fäströr 850771, och 6st mutter 850778 och 6st mutter 850778. For flying bridge installation use 2pc attachment pipe 850771, and 6pcs nut 850778. 850771, and 6pcs nut 850778.

38. För AQ drev 280 DP280. For AQ drive unit 280 DP280.

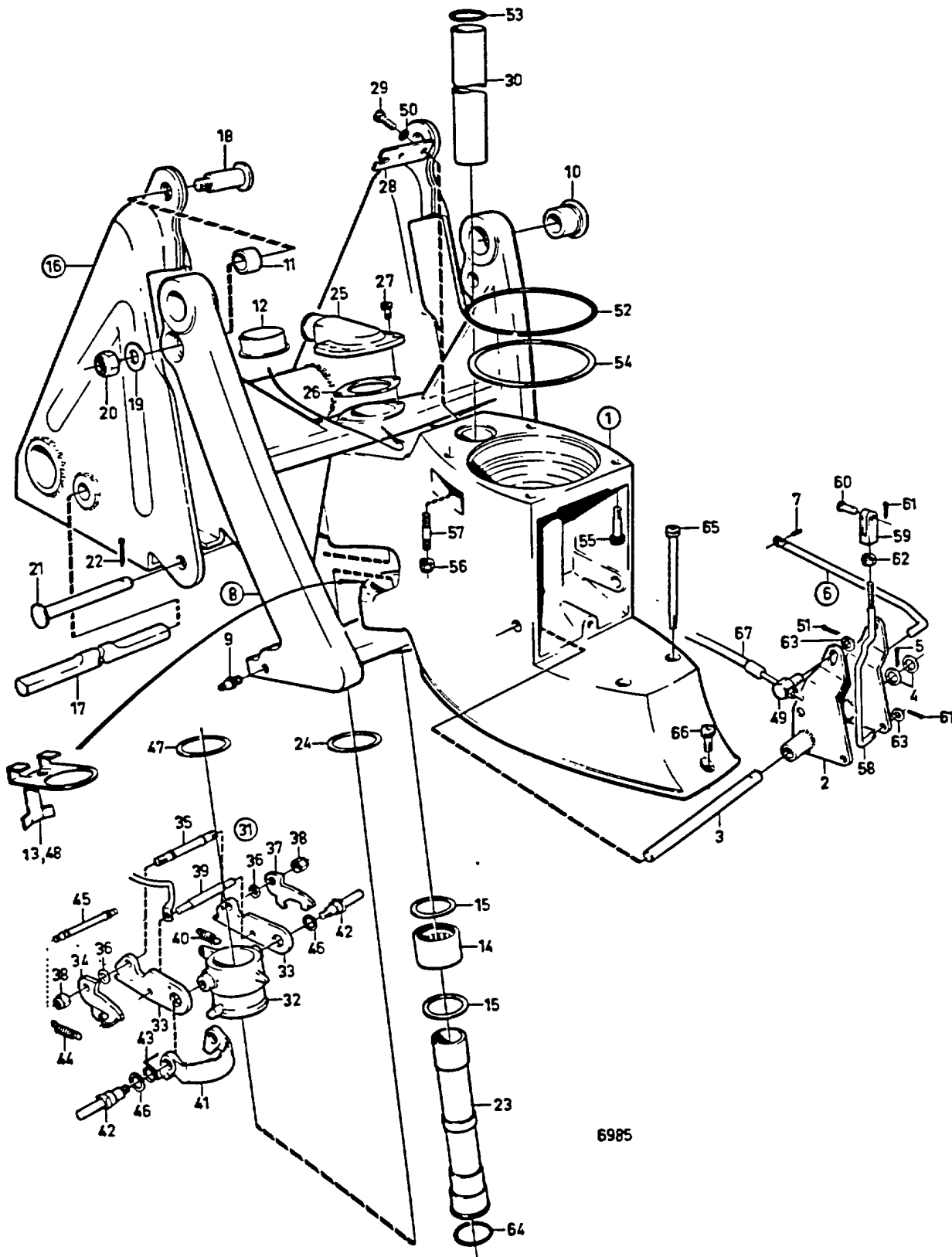
44. Ersatt av STYRKABEL-853188 och ADAPTER-853214. Replaced by steering CABLE-853188 and ADAPTER-853214.

45. Ersatt av STYRKABEL-853191 och ADAPTER-853214. Replaced by steering CABLE-853191 and ADAPTER-853214.



Sida Page	Grupp Group	Mellanhus	Intermediate housing	Illustration	1010						
36	4c	DREV DP290		6985 1987-04							
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	DP 290										
1	1	-	-	-	852851-5	Mellanhus	Interm housing		6		0020
2	1	-	-	-	897829-8	.Vaxelok	.Gear yoke		5		0040
3	1	-	-	-	897447-9	.Axel	.Shaft		5		0060
4	2	-	-	-	897511-2	.Bricka	.Washer		3		0080
5	1	-	-	-	17253-6	.Saxpinne	.Cotter pin		S	0	0100
6	1	-	-	-	851412-7	.Backlåsstång	.Astern lever rod		5		0120
7	1	-	-	-	967556-2	.Rörpinne	.Pin		2		0140
8	1	-	-	-	852869-7	Upphångningsgaffel	Hook up fork		5		0160
9	1	-	-	-	940194-4	.Nippel	.Nipple		0		0180
10	2	-	-	-	967766-7	.Lagerbussning	.Bearing bushing		2	ERS AV 853223	0200
	2	-	-	-	853223-6	Bussning	Bushing		2		0220
11	2	-	-	-	852912-5	.Bussning	.Bushing		3		0
12	1	-	-	-	853062-8	.Bussning	.Bushing		3		0260
13	1	-	-	-	851426-7	Styrbricka	Anch block		3		0280
14	1	-	-	-	183391-2	Nållager	Needle bearing		3		0300
15	2	-	-	-	181620-6	Tätningring	Seal ring		S	2	0320
16	1	-	-	-	852769-9	Faste	Attachment		5	81)	0340
	1	-	-	-	853310-1	Cylinderfäste	Cylinder attachment		5	PZ29501175-	0
17	1	-	-	-		.Axel	.Shaft		8		0380
18	2	-	-	-	852751-7	Ansatsskruv	Shouldered screw		3		0400
	2	-	-	-	853308-5	Ansatsskruv	Shoulder screw		3	PZ29501175-	0420
19	2	-	-	-	853071-9	Bricka	Washer		3		0440
20	2	-	-	-	946672-3	Låsmutter	Lock nut		2		0460
21	2	-	-	-	852749-1	Saxpinnebult	Clevis pin		3		0480
	2	-	-	-	853309-3	Saxpinnebult	Clevis pin		3	PZ29501175-	0500
22	2	-	-	-	967767-1	Saxpinne	Cotter pin		2		0520
23	1	-	-	-	814386-9	Rör	Pipe		5		0540
24	2	-	-	-	897696-1	Bricka	Washer		3		0560
25	1	-	-	-	851766-6	Slanganslutning	Hose connection		5		0580
26	1	-	-	-	814356-2	Tätning	Seal		S	2	0600
27	2	-	-	-	941813-8	Skruv	Screw		0		0620
28	1	-	-	-	853078-4	Kabelfaste	Cable attachment		4		0640
29	2	-	-	-	940168-8	Skruv	Screw		0		0660
30	1	-	-	-	897644-1	Rör	Pipe		4		0680
31	1	-	-	-	851422-6	Backhake	Aster lever		5		0700
32	1	-	-	-	851402-8	.Lagerhylsa	.Bearing sleeve		4		0720
33	2	-	-	-	814391-9	.Backhake	.Astern lever		4		0740
34	1	-	-	-	814392-7	.Fjäderhake	.Spring catch		3		0760
35	1	-	-	-	814419-8	.Axel	.Shaft		3		0
36	2	-	-	-	814422-2	.Distansbricka	.Spacer washer		2		0800
37	1	-	-	-	814393-5	.Fjäderhake	.Spring catch		2		0820
38	2	-	-	-	943197-4	.Mutter	.Nut		0		0840
39	1	-	-	-	851424-2	.Stopparm	.Stop arm		4		0860
40	1	-	-	-	832534-2	.Fjäder	.Spring		3		0880
41	1	-	-	-	851403-6	.Låsbygel	.Lock brace		4		0
42	2	-	-	-	851423-4	.Axeltapp	.Shaft pin		4		0920
43	1	-	-	-	814396-8	.Fjäder	.Spring		2		0940
44	1	-	-	-	814332-3	.Fjäder	.Spring		2		0960
45	1	-	-	-	814399-2	.Axel	.Shaft		3		0980
46	2	-	-	-	943194-1	.Bricka	.Washer		0		1000
47	1	-	-	-	814390-1	Bricka	Washer		3		1020
48	1	-	-	-	851426-7	Styrbricka	Anch block		3		1040
49	1	-	-	-	804312-7	Reglagekabeltärning	Control cube		4		1060
50	2	-	-	-	940191-0	Bricka	Washer		0		1080
51	1	-	-	-	17276-7	Saxpinne	Cotter pin		0		1100
52	1	-	-	-	925259-4	O-ring	O-ring		S	0	1120
53	2	-	-	-	125017-4	O-ring	O-ring		S	1	1140
54	ERF	-	-	-	967352-6	Justerbricka	Shim		0	TJ=0,05MM	1160
	ERF	-	-	-	943866-4	Justerbricka	Shim		0	TJ=0,10MM	1180

81 . ERS AV 1ST 853310 cylinderfäste + 2ST 853308 skruv + 2ST 853309 saxpinnebult. Replaced by 1pc 853310 attachment + 2pcs 853308 screw + 2pcs 853309 clevis pin.

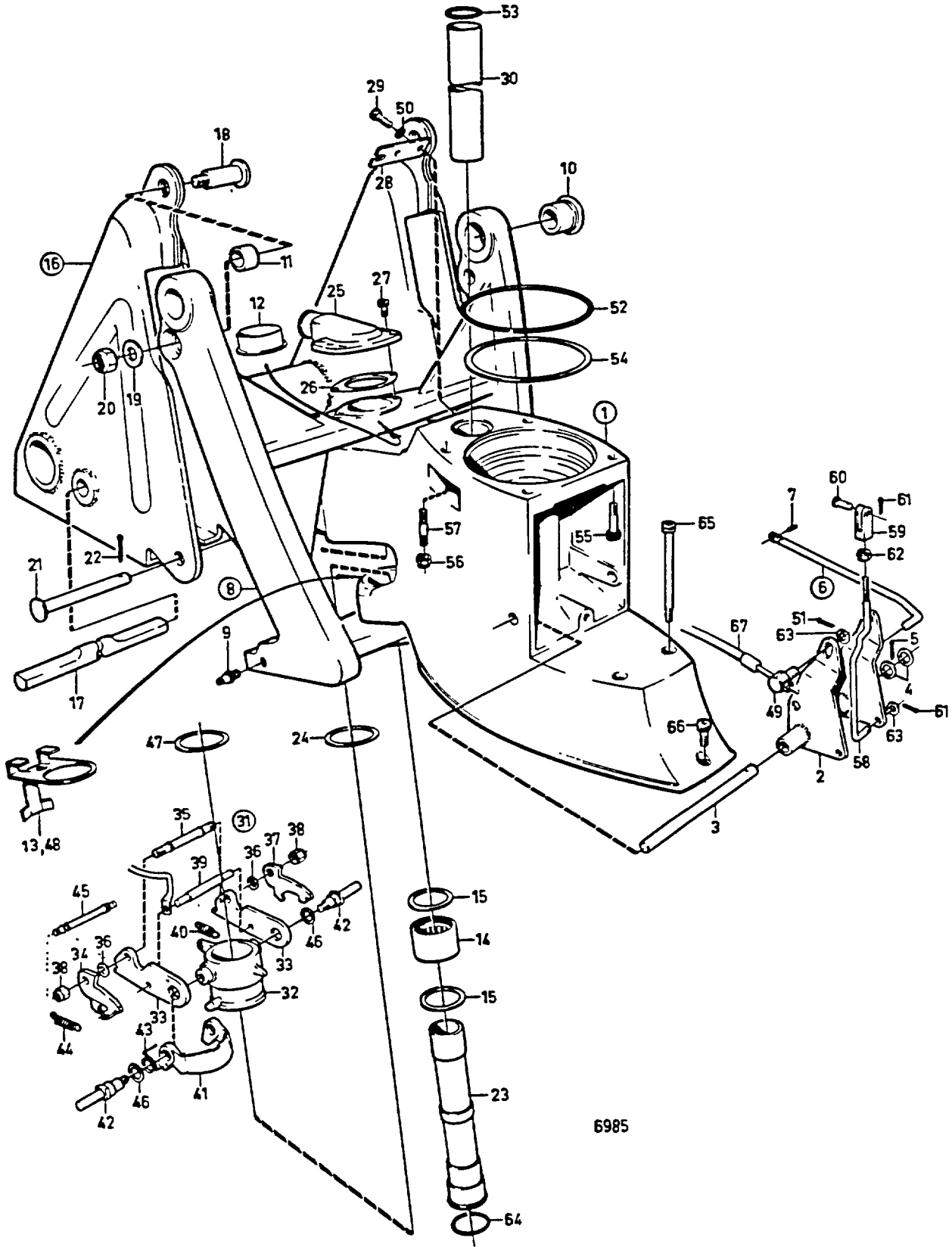


6985





Sida Page		Grupp Group		Mellanhus Intermediate housing			Illustration 1010			
38		4c		DREV DP290			6985 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	Anmärkning Notes	
	DP 290									
	ERF	-	-	-	943867-2	Justerbricka . . . . .	Shim. . . . .	0	TJ=0,20MM	120f
	ERF	-	-	-	943868-0	Justerbricka .. . . .	Shim... . . . .	0	TJ=0,40MM	122l
55	2	-	-	-	941807-0	Skruv . . . . .	Screw . . . . .	0		1240
56	2	-	-	-	941885-6	Mutter . . . . .	Nut. . . . .	0		1260
57	2	-	-	-	941814-6	Skruv . . . . .	Screw. . . . .	0		1280
58	1	-	-	-	897448-7	Reglagestång.....	Control rod . . . . .	4		1300
59	1	-	-	-	813954-5	Reglagegaffel. . . . .	Control fork. . . . .	4		1320
60	1	-	-	-	192662-5	Pinnbult . . . . .	Stud .. . . .	0		1340
61	2	-	-	-	17253-6	Saxpinne . . . . .	Cotter pin . . . . .	0		1360
62	1	-	-	-	940190-2	Mutter . . . . .	Nut . . . . .	0		1380
63	2	-	-	-	940191-0	Bricka.. . . .	Washer.. . . .	0		1400
64	1	-	-	-	941820-3	O-ring . . . . .	O-ring.. . . .	S		0
65	2	-	-	-	941808-8	Skruv . . . . .	Screw . . . . .	0		1440
66	1	-	-	-	941809-6	Skruv . . . . .	Screw. . . . .	0		1460
67	ERF	-	-	-		Reglagekabel . . . . .	Control cable . . . . .		SEGRUPP9	1480



6985

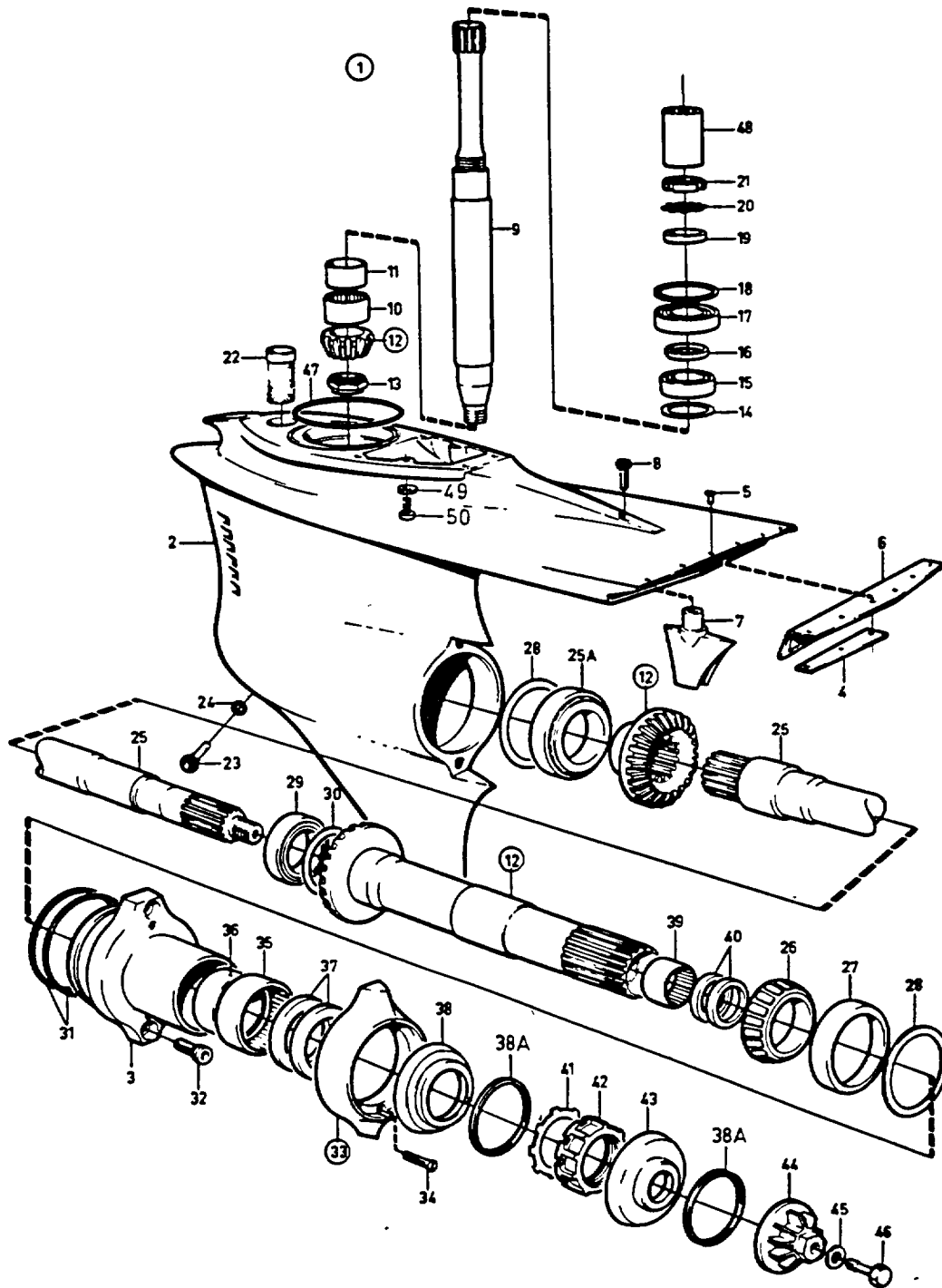


Sida Page	Grupp Group	Undre växelenhet	Lower gear unit	Illustration
40	4c	DREV DP280,DREV DP290		8297 1987-04

1050

Pos Fig	Antal/Quantity		Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	852 193	852 408							
1	1	-	852193-2	Undre vxaxelenhet...	Lower gear unit . . . . .	8		BYTESENHET, UTV 1,95:1	002L
	-	1	852408-4	Undre vxaxelenhet . . . . .	Lower gear unit . . . . .	8		BYTESENHET, UTV 2,35:1	0040
2	1	1	852194-0	Undre vxaxelhus . . . . .	Lower gear housing . . . . .	5			0060
3	1	1	852456-3	Lagerhus . . . . .	Bearing housing . . . . .	5			0080
4	2	2	852643-6	Fastplåt . . . . .	Plate . . . . .	4			0100
5	6	6	948338-9	Nit . . . . .	Rivet . . . . .	0			0120
6	1	1	852644-4	Backventil . . . . .	Check valve . . . . .	4			0140
7	1	1	852646-9	Styrfena . . . . .	Steering fin . . . . .	3			0160
8	1	1	941817-9	Skruv . . . . .	Screw . . . . .	0			0180
9	1	1	852183-3	Mellanaxel . . . . .	Interm. shaft . . . . .	5			0200
10	1	1	184654-2	Nållager . . . . .	Needle bearing . . . . .	3			0200
11	1	1	184682-3	Innerring . . . . .	Inner ring . . . . .	4			0200
12	1	-	852174-2	Kuggghjulssats . . . . .	Set of gears . . . . .	5		UTV 1,95:1	0260
	-	1	852380-5	Kuggghjulssats . . . . .	Set of gears . . . . .	5		UTV 2,30:1	0280
13	1	1	852212-0	Mutter . . . . .	Nut . . . . .	3			0300
14	ERF	ERF	941832-8	Justerbricka . . . . .	Shim . . . . .	0		TJ=0,05MM	0320
	ERF	ERF	941833-6	Justerbricka . . . . .	Shim . . . . .	0		TJ=0,20MM	0340
15	1	1	183374-8	Kullager . . . . .	Ball bearing . . . . .	3			0360
16	ERF	ERF	944970-3	Distansring . . . . .	Spacer ring . . . . .	0		TJ=1,60MM	0380
17	1	1	11072-6	Kullager . . . . .	Ball bearing . . . . .	3			0400
18	ERF	ERF	944522-2	Justerbricka . . . . .	Shim . . . . .	0		TJ=1,0MM	0420
	ERF	ERF	42981-1	Justerbricka . . . . .	Shim . . . . .	0		TJ=0,10MM	0440
	ERF	ERF	968057-0	Justerbricka . . . . .	Shim . . . . .	0		TJ=0,2MM	0460
	ERF	ERF	42980-3	Justerbricka . . . . .	Shim . . . . .	0		TJ=0,35MM	0480
19	1	1	897387-7	Distansring . . . . .	Spacer ring . . . . .	5			0500
20	1	1	907023-6	Låsbricka . . . . .	Lock washer . . . . .	S			0520
21	1	1	906633-3	Mutter . . . . .	Nut . . . . .	0			054
22	1	1	814482-6	Oljesil . . . . .	Oil strainer . . . . .	3			056
23	1	1	852904-2	Propp . . . . .	Plug . . . . .	3			0580
24	1	1	955974-1	O-ring . . . . .	O-ring . . . . .	S			0600
25	1	1	852181-7	Propelleraxel . . . . .	Propeller shaft . . . . .	5			0620
25a	1	1	11044-5	Lager . . . . .	Bearing . . . . .	4			0640
26	1	1	184690-6	Kullager . . . . .	Ball bearing . . . . .	3			0660
27	1	1	184689-8	Innerring . . . . .	Inner ring . . . . .	4			0680
28	ERF	ERF	967352-6	Justerbricka . . . . .	Shim . . . . .	0		TJ=0,05MM	0700
	ERF	ERF	941823-7	Justerbricka . . . . .	Shim . . . . .	0		TJ=0,10MM	0720
	ERF	ERF	967351-8	Justerbricka . . . . .	Shim . . . . .	0		TJ=0,15MM	0740
	ERF	ERF	941824-5	Justerbricka . . . . .	Shim . . . . .	0		TJ=0,20MM	0760
	ERF	ERF	941825-2	Justerbricka . . . . .	Shim . . . . .	0		TJ=0,4MM	0780
29	1	1	184691-4	Kullager . . . . .	Ball bearing . . . . .	3			0800
30	ERF	ERF	81374-1	Justerbricka . . . . .	Shim . . . . .	0		TJ=0,10MM	0820
	ERF	ERF	81375-8	Justerbricka . . . . .	Shim . . . . .	0		TJ=0,15MM	0840
	ERF	ERF	81376-6	Justerbricka . . . . .	Shim . . . . .	8		TJ=0,35MM	0860
31	2	2	925258-6	O-ring . . . . .	O-ring . . . . .	S			0880
32	2	2	941812-0	Skruv . . . . .	Screw . . . . .	0			0900
33	1	1	875821-1	Zinkringssats . . . . .	Zinc ring kit . . . . .	1			0920
	1	1		Zinkring . . . . .	Zinc ring . . . . .	8			0940
34	2	2	966808-8	Skruv . . . . .	Screw . . . . .	0			0960
35	1	1	183859-8	Nållager . . . . .	Needle bearing . . . . .	3			0980
36	1	1	184683-1	Innerring . . . . .	Inner ring . . . . .	4			1000
37	2	2	851407-7	Tatningsring . . . . .	Seal ring . . . . .	S			1020
38	1	1	853440-6	Tryckring . . . . .	Thrust ring . . . . .	4		95)(852198)	1040
38a	2	2	853584-1	Bricka . . . . .	Washer . . . . .	4		(853447)	1060
39	1	1	183272-4	Nållager . . . . .	Needle bearing . . . . .	3			1080
40	2	2	851406-9	Tatningsring . . . . .	Seal ring . . . . .	S			1100
41	1	1	852197-3	Låsbricka . . . . .	Lock washer . . . . .	4			1120
42	1	1	852196-5	Mutter . . . . .	Nut . . . . .	3			1140
43	1	1	853441-4	Tryckring . . . . .	Thrust ring . . . . .	4		96)(852206)	1160
44	1	1	852201-3	Mutter . . . . .	Nut . . . . .	3			1180

95. Främre Forward  
96. Bakre Rear

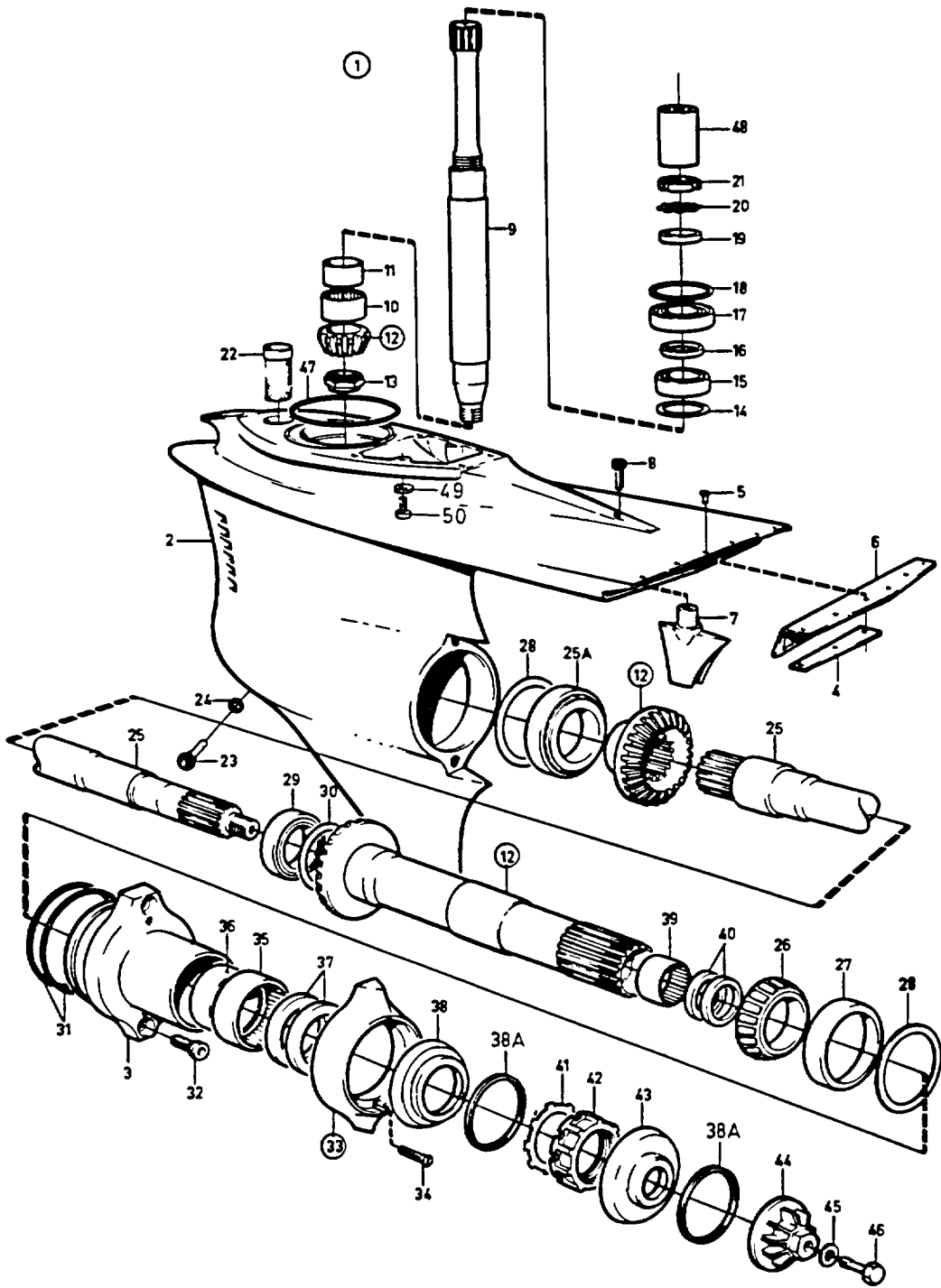


8297

Sida Page	Grupp Group	Undre växelenhet Lower gear unit	Illustration 8297 1987-04	1050
42	4c	DREV DP280,DREV DP290		

Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
	852 193	852 408									
45	1	1	-	-	941670-2	•Bricka. ....	•Washer.....		0		1200
46	1	1	-	-	852216-1	•Låsskruv.....	•Lock screw.....		3		1220
47	1	1	-	-	925256-0	O-ring.....	O-ring.....	S	0	69)	1240
48	1	1	-	-	850304-7	Splineshylsa..	Spline sleeve ..		4	69)	1260
49	4	4	-	-	853095-8	Bricka. ....	Washer.....		2		1280
50	4	4	-	-	941810-4	Skruv.....	Screw.....		0		1300

69. Ingår i komplett duopropdrev. Included in complete duoprop drive unit.



# **VOLVO PENTA**

Originaldelar · Genuine Parts  
Originalteile · Pièces d'origine

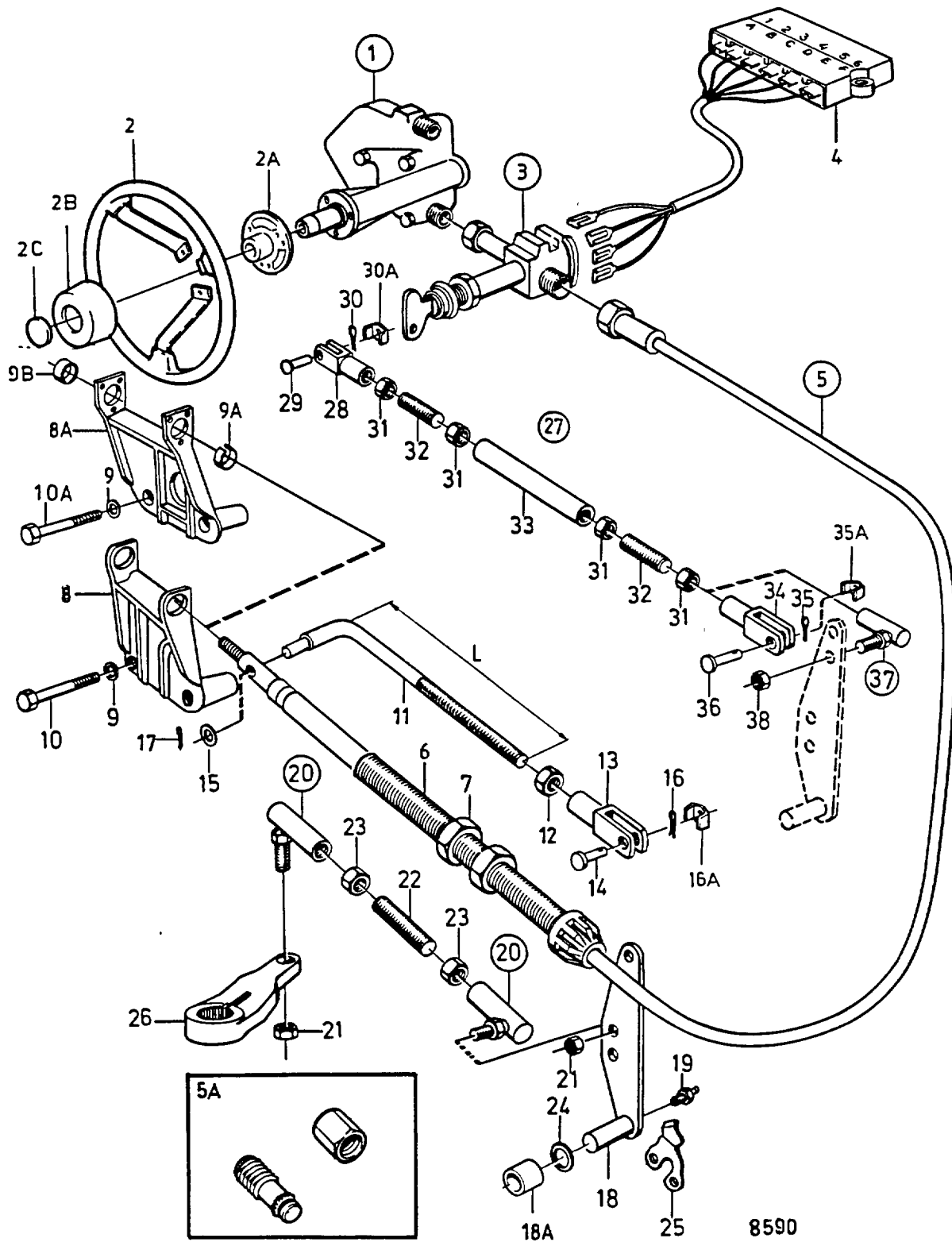
0001	Innehållsförteckning	Index	Grupp Group	Sida Page
	1987-04		6	1
0040	Styrssystem		Sida	Koord
0060				
0080				
	Styrmekanism, kabeltyp .....	GEM .....	2	2-H03
	Styrmekanism Roto pilot .....	AQD40A,AQAD40A,AQAD40B .....	6	2-H07
	Styrmekanism Roto pilot .....	GEM .....	10	2-H11
U 100	Styrmekanism Roto pilot STS 330 .....	GEM .....	14	2-H15
0180	Drivenhet, styrning Roto pilot .....	GEM .....	18	2-H19
0200	Styrmekanism, flying bridge Roto pilot .....	GEM .....	20	2-H21
0220	Styrmekanism Servostyrning .....	AQD40A,AQAD40A,AQAD40B .....	22	2-H23
0240	Servopump med monteringsdetaljer .....	AQD40A,AQAD40A,AQAD40B .....	26	2-I03
0260	Servostyrning .....	AQD40A,AQAD40A,AQAD40B .....	30	2-I07
0280	Styrmekanism, ROTO pilot AQ drev 290, DP290 .....	AQD40A,AQAD40A,AQAD40B .....	34	2-I11
0300	Utväxlingsanordning AQ drev 280 .....	AQD40A,AQAD40A,AQAD40B .....	44	2-I21
20r				
2C				
204u	Steering system		Page	Grid
2060				
2080				
2100	Steering mechanism, cable type .....	GEM .....	2	2-H03
2120	Steering mechanism Roto pilot .....	AQD40A,AQAD40A,AQAD40B .....	6	2-H07
21	Steering mechanism Roto pilot .....	GEM .....	10	2-H11
21bu	Steering mechanism Roto pilot STS 330 .....	GEM .....	14	2-H15
2180	Drive unit, steering Roto pilot .....	GEM .....	18	2-H19
2200	Steering mechanism, flying bridge Roto pilot .....	GEM .....	20	2-H21
2220	Steering mechanism Power steering .....	AQD40A,AQAD40A,AQAD40B .....	22	2-H23
2240	Servo pump with installation components .....	AQD40A,AQAD40A,AQAD40B .....	26	2-I03
2260	Power steering .....	AQD40A,AQAD40A,AQAD40B .....	30	2-I07
2280	Steering mechanism, ROTO pilot AQ drive unit 290 .....	AQD40A,AQAD40A,AQAD40B .....	34	2-I11
2300	Reduction kit AQ drive unit 280 .....	AQD40A,AQAD40A,AQAD40B .....	44	2-I21





Sida Page	Grupp Group	Styrmekanism, kabeltyp			Steering mechanism, cable type			Illustration		
2	6	GEM						8590 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes
1	1	-	-	-	850809-5	Styrhuvud... Det se sida 40, 2-117.	Steering head... Comp page 40, 2-117	6		0020 0040
2	1	-	-	-	850936-6	Ratt	Steering wheel	5	(814138)	0060
2a	1	-	-	-	850937-4	.Rattnav.	.Steering wheel hub	5		0065
2b	1	-	-	-	828943-1	.Rattkudde	.Steering wheel hub	5		0070
2c	1	-	-	-	850938-2	.Rattemblem	.Steering wheel badge	5		0075
3	1	-	-	-	839544-4	Styrlås Det se sida 42, 2-119	Steering lock Comp page 42, 2-119	5		0080 0100
4	1	-	-	-	839617-8	Forlångningskabel	Extension cable	5		0120
5	ERF	-	-	-	850810-3	Styrkabel	Steering cable	8	L=3000MM	0140
	ERF	-	-	-	850811-1	Styrkabel	Steering cable	6	L=3300MM	J
	ERF	-	-	-	850812-9	Styrkabel	Steering cable	6	44)L=3600MM	J
	ERF	-	-	-	853188-1	Styrkabel	Steering cable	6	L=3750MM	0181
	ERF	-	-	-	850813-7	Styrkabel	Steering cable	8	L=3900MM	0200
	ERF	-	-	-	850814-5	Styrkabel	Steering cable	8	L=4200MM	0220
	ERF	-	-	-	850815-2	Styrkabel	Steering cable	6	45)L=4500MM	0240
	ERF	-	-	-	853191-5	Styrkabel	Steering cable	6	L=4500MM	J
	ERF	-	-	-	850816-0	Styrkabel	Steering cable	6	L=4800MM	J
	ERF	-	-	-	850817-8	Styrkabel	Steering cable	8	L=5100MM	0280
	ERF	-	-	-	850818-6	Styrkabel	Steering cable	6	46)L=5500MM	0300
	ERF	-	-	-	853194-9	Styrkabel	Steering cable	6	L=5500MM	0301
	ERF	-	-	-	850820-2	Styrkabel	Steering cable	6	47)L=6100MM	0320
	ERF	-	-	-	853195-6	Styrkabel	Steering cable	6	L=6000MM	0321
	ERF	-	-	-	850822-8	Styrkabel	Steering cable	6	48)L=6700MM	0340
	ERF	-	-	-	828866-4	Styrkabel	Steering cable	6	L=6750MM	0341
	ERF	-	-	-	850826-9	Styrkabel	Steering cable	6	49)L=7900MM	0360
	ERF	-	-	-	853287-1	Styrkabel	Steering cable	6	L=8000MM	036
	ERF	-	-	-	850828-5	Styrkabel	Steering cable	6	50)L=8500MM	038
	ERF	-	-	-	853288-9	Styrkabel	Steering cable	6	L=8500MM	0381
5a	ERF	-	-	-	853214-5	Adapter	Adepter	3		0390
6	1	-	-	-	850771-7	Faströr	Pipe	5	(835693)	0400
7	4	-	-	-	850778-2	Mutter	Nut	3	(955861)	0420
8	1	-	-	-		Konsol	Bracket	8	18)	0440
8a	1	-	-	-	850958-0	Konsol	Bracket	5		0460
9	2	-	-	-	942336-9	Bricka	Washer	0		0480
9a	1	-	-	-	850960-6	Bussning	Bushing	3		0500
9b	1	-	-	-	850959-8	Bussning	Bushing	3		0520
10	2	-	-	-	955542-6	Skruv	Screw	0	L=83MM	J
10a	2	-	-	-	955541-8	Skruv	Screw	0	L=76MM	J
11	1	-	-	-	850478-9	Lankstång	Link rod	5	L=318MM	0580
	1	-	-	-	850479-7	Lankstång	Link rod	5	L=195MM	0600
12	1	-	-	-	940154-8	Mutter	Nut	0		0620
13	1	-	-	-	956511-0	Gaffel	Yoke	0		0640
14	1	-	-	-	913158-2	Saxpinne	Cotter	0		J
15	1	-	-	-	940097-9	Bricka	Washer	0		J
16	1	-	-	-	907856-9	Saxpinne	Cotter	0		0700
16a	1	-	-	-	853160-0	.Låsbricka	.Washer	3	DREV290	0710
17	1	-	-	-	964960-9	Saxpinne	Cotter	0		0720
18	1	-	-	-	851385-5	Lankarm	Link arm	5		0740
18a	1	-	-	-	850653-7	Lager	Bearing	0	SE GRUPP 4A	0760
19	1	-	-	-	914169-8	Smorjnippl	Nipple	0		0780

18. ERS AV 1st konsol 850958, 2st skruv 955541, 1st bussning 850959, 1st bussning 850960. Replaced by 1pc bracket 850958, 2pcs bolt 955541, 1pc bushing 850959, 1pc bushing 850960.
44. Ersatt av STYRKABEL-853188 och ADAPTER-853214. Replaced by steering CABLE-853188 and ADAPTER-853214.
45. Ersatt av STYRKABEL-853191 och ADAPTER-853214. Replaced by steering CABLE-853191 and ADAPTER-853214.
46. Ersatt av STYRKABEL-853194 och ADAPTER-853214. Replaced by steering CABLE-853194 and ADAPTER-853214.
47. Ersatt av STYRKABEL-853195 och ADAPTER-853214. Replaced by steering CABLE-853195 and ADAPTER-853214.
48. Ersatt av STYRKABEL-828866 och ADAPTER-853214. Replaced by steering CABLE-828866 and ADAPTER-853214.
49. Ersatt av STYRKABEL-853287 och ADAPTER-853214. Replaced by steering CABLE-853287 and ADAPTER-853214.
50. Ersatt av STYRKABEL-853288 och ADAPTER-853214. Replaced by steering CABLE-853288 and ADAPTER-853214.

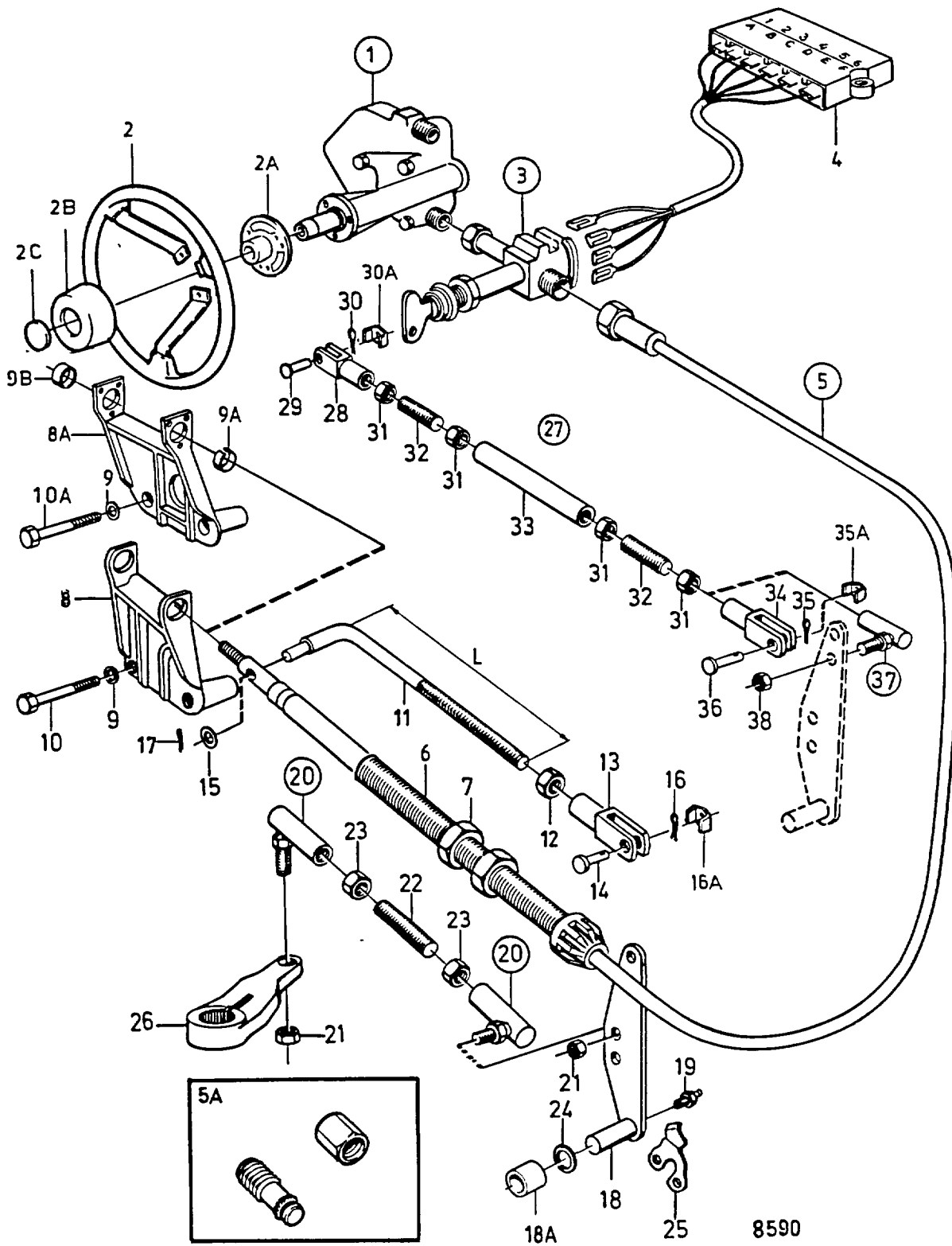


8590



Sida Page	Grupp Group	Styrmekanism, kabeltyp			Steering mechanism, cable type			Illustration	0100	
4	6	GEM						8590 1987-04		
Pos Fig	Antal/Quantity			Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
20	2	-	-	-	875772-6	Kulled ..		4		0800
21	2	-	-	-	851326-9	.Mutter...		2		0820
22	1	-	-	-	850736-0	Reglerstång .....		3		0840
23	2	-	-	-	940152-2	Mutter .....		0		0860
24	1	-	-	-	955906-3	Bricka.....		0		0880
25	1	-	-	-	850489-6	Stopparm...		4		0900
26	1	-	-	-	850488-8	Styrarm .....			SE GRUPP 4A	0920
27	1	-	-	-	828913-4	Parallellstag ..		5	17,32)	0940
	1	-	-	-	851497-8	Parallellstag ..		6	17)(850673)	0960
	1	-	-	-	850776-6	Ror.....		6	17,21)ERS AV 828913	0980
28	1	-	-	-	956511-0	.Gaffel .....		0		1100
29	1	-	-	-	913158-2	.Saxpinnebult .....		0		0
30	1	-	-	-	907856-9	.Saxpinne .....		0		1040
30a	1	-	-	-	853160-0	.Låsbricka .....		3	DREV290	1050
31	4	-	-	-	940154-8	.Mutter .....		0		1060
32	2	-	-	-	839577-4	.Stång.....		3		1080
33	1	-	-	-	839576-6	.Ror .....		5	L=560MM	1100
	1	-	-	-	850775-8	.Ror .....		5	20) L=360MM	0
34	1	-	-	-	956511-0	.Gaffel.....		0	29)	1140
35	1	-	-	-	907856-9	.Saxpinne.....		0		1160
35a	1	-	-	-	853160-0	.Låsbricka.....		3	DREV290	1170
36	1	-	-	-	913158-2	.Saxpinne.....		0		1180
37	1	-	-	-	814152-5	.Kulled .....		4	19)	1200
38	1	-	-	-	950386-3	.Mutter .....		0	19)	1220

- 17 . Endast för dubbelinstallation. Only for twin installation.
- 19 . Ingår endast i 850673. Only included in 850673.
- 20 . Ingår endast i 850776. only included in 850776.
- 21 . Justerbar mellan 540-800mm. Adjustable between 540-800mm.
- 29 . Ingår endast i 850674. Only included in 850674.
- 32 . Justerbar mellan 610-1000 mm Adjustable between 610-1000 mm



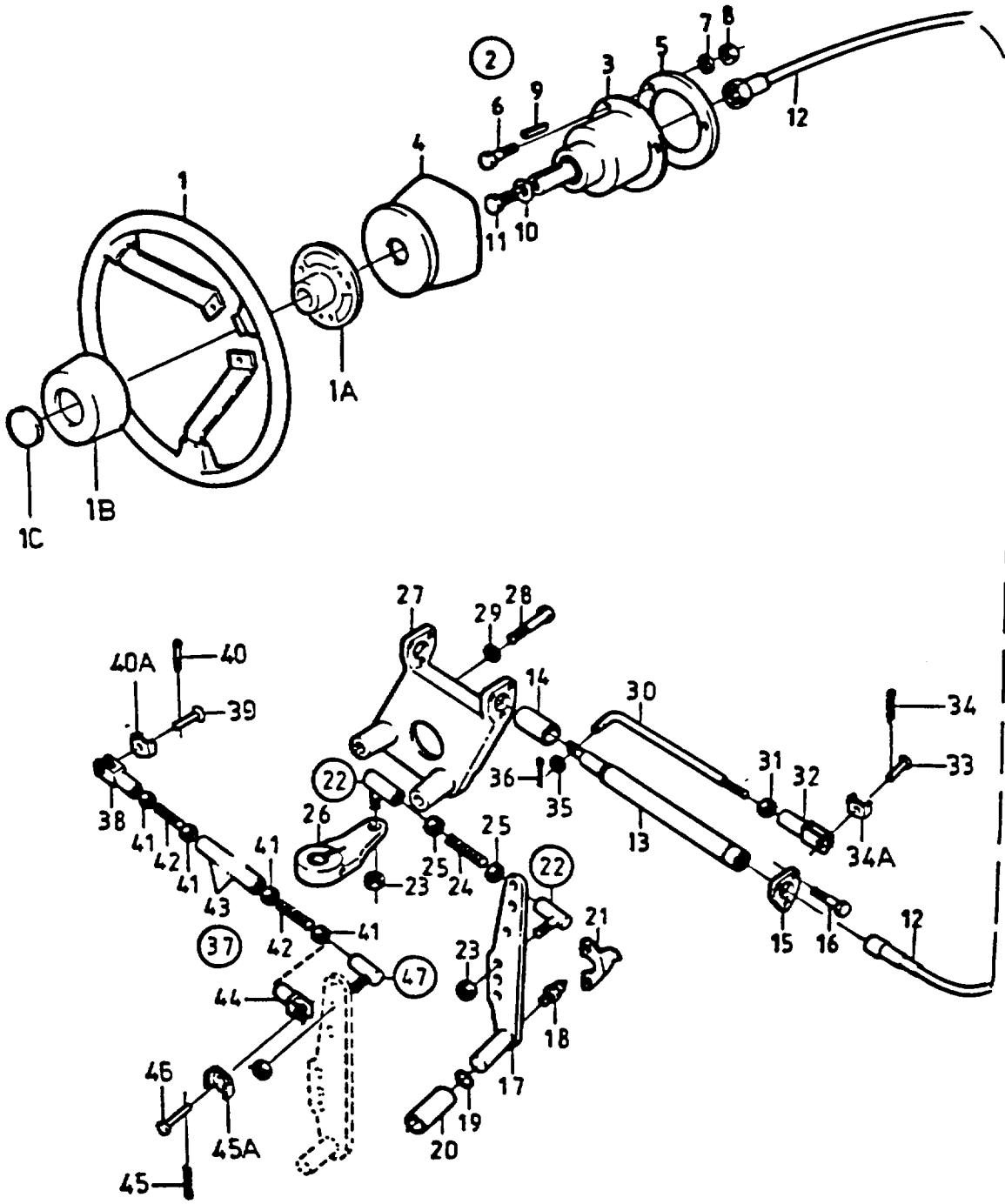
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Sida Page	Grupp Group	Styrmekanism Roto pilot			Steering mechanism Roto pilot			Illustration	0200		
6	6	AQD40A,AQAD40A,AQAD40B						7535			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	850936-6	Ratt .....	Steering wheel .....	5			001
1a	1	-	-	-	850937-4	.Rattnav .....	.Steering wheel hub .....	5			002
1b	1	-	-	-	828943-1	.Rattkudde .....	.Steering wheel pad .....	5			0030
1c	1	-	-	-	850938-2	.Rattemblem .....	.Steering wheel badge .....	5			0035
2	1	-	-	-	851056-2	Styrhuvud .....	Steering head .....	6			0040
3	1	-	-	-		.Styrvaxel .....	.Steering gear .....	8			0060
4	1	-	-	-	851057-0	.Kåpa .....	.Cover .....	5			0080
5	1	-	-	-	851069-5	.Bricka .....	.Washer .....	4			0100
6	3	-	-	-	940101-9	.Skruv .....	.Screw .....	0			0120
7	3	-	-	-	941906-0	.Fjädrande bricka .....	.Resilient washer .....	0	(955892)		0140
8	3	-	-	-	955781-0	.Mutter .....	.Nut .....	0			50
9	1	-	-	-	851349-1	.Kil .....	.Key .....	2			.0
10	1	-	-	-	948823-0	.Bricka .....	.Washer .....	0			0200
11	1	-	-	-	940148-0	.Skruv .....	.Screw .....	0			0220
12	ERF	-	-	-	852035-5	Styrkabel .....	Steering cable .....	6	L=800MM		0225
	ERF	-	-	-	851016-6	Styrkabel .....	Steering cable .....	6	L=2500MM		0240
	ERF	-	-	-					ERS AV 851017		0241
	ERF	-	-	-	851017-4	Styrkabel .....	Steering cable .....	6	L=2750MM		0
	ERF	-	-	-	851018-2	Styrkabel .....	Steering cable .....	6	L=3000MM		0280
	ERF	-	-	-	851019-0	Styrkabel .....	Steering cable .....	6	L=3250MM		0300
	ERF	-	-	-					ERS AV 851020		0301
	ERF	-	-	-	851020-8	Styrkabel .....	Steering cable .....	6	L=3500MM		0320
	ERF	-	-	-	851021-6	Styrkabel .....	Steering cable .....	6	L=3750MM		0340
	ERF	-	-	-	851022-4	Styrkabel .....	Steering cable .....	6	L=4000MM		0360
	ERF	-	-	-	851023-2	Styrkabel .....	Steering cable .....	6	L=4250MM		0380
	ERF	-	-	-	851024-0	Styrkabel .....	Steering cable .....	6	L=4500MM		0400
	ERF	-	-	-	851025-7	Styrkabel .....	Steering cable .....	6	L=4750MM		04"
	ERF	-	-	-	851026-5	Styrkabel .....	Steering cable .....	6	L=5000MM		04
	ERF	-	-	-	851027-3	Styrkabel .....	Steering cable .....	6	L=5250MM		046
	ERF	-	-	-	851028-1	Styrkabel .....	Steering cable .....	6	L=5500MM		0480
	ERF	-	-	-	851029-9	Styrkabel .....	Steering cable .....	6	L=5750MM		0500
	ERF	-	-	-	851030-7	Styrkabel .....	Steering cable .....	6	L=6000MM		0520
	ERF	-	-	-	851031-5	Styrkabel .....	Steering cable .....	6	L=6500MM		0540
	ERF	-	-	-	851032-3	Styrkabel .....	Steering cable .....	6	L=7000MM		0560
	ERF	-	-	-	851033-1	Styrkabel .....	Steering cable .....	6	L=7500MM		0580
	ERF	-	-	-	851034-9	Styrkabel .....	Steering cable .....	6	L=8000MM		0600
	ERF	-	-	-	851921-7	Styrkabel .....	Steering cable .....	6	L=8500MM		0605
	ERF	-	-	-	851922-5	Styrkabel .....	Steering cable .....	6	L=9000MM		0
	ERF	-	-	-	851923-3	Styrkabel .....	Steering cable .....	6	L=9500MM		.5
13	1	-	-	-	851059-6	Styrcylinder .....	Steering cylinder .....	8			0620
	1	-	-	-	851147-9	Styrcylinder .....	Steering cylinder .....	5	23)		0640
14	1	-	-	-	851094-3	.Hylsa .....	.Rel sleeve .....	3			0660
15	1	-	-	-	850961-4	.Bricka .....	.Washer .....	3			0680
16	3	-	-	-	851319-4	.Skruv .....	.Screw .....	2			070
17	1	-	-	-	851385-5	Lankarm .....	Link arm .....	5			.0
18	1	-	-	-	914169-8	Smorjnippel .....	Nipple .....	0			0740
19	1	-	-	-	955906-3	Bricka .....	Washer .....	0			0760
20	1	-	-	-	850653-7	Lager .....	Bearing .....		SE GRUPP 4A		0780
21	1	-	-	-	850489-6	Stopparm .....	Stop arm .....	4			0800
22	2	-	-	-	875772-6	Kulled .....	Ball joint .....	4			0820
23	2	-	-	-	851326-9	.Mutter .....	.Nut .....	2			0860
24	1	-	-	-	850736-0	Reglerstång .....	Rod .....	3			0880
25	2	-	-	-	940152-2	Mutter .....	Nut .....	0			0900
26	1	-	-	-	850488-8	Styrarm .....	Steering arm .....		SE GRUPP 4A		092"
27	1	-	-	-	850958-0	Konsol .....	Bracket .....	5			09
28	2	-	-	-	955541-8	Skruv .....	Screw .....	0			09
29	2	-	-	-	942336-9	Fjädrande bricka .....	Resilient washer .....	0			096
30	1	-	-	-	850478-9	Lankstång .....	Link rod .....	5			1000
31	1	-	-	-	940154-8	Mutter .....	Nut .....	0			1020

23. For styrbordsmontering. For starboard mounting.

24. For babordsmontering. For port mounting

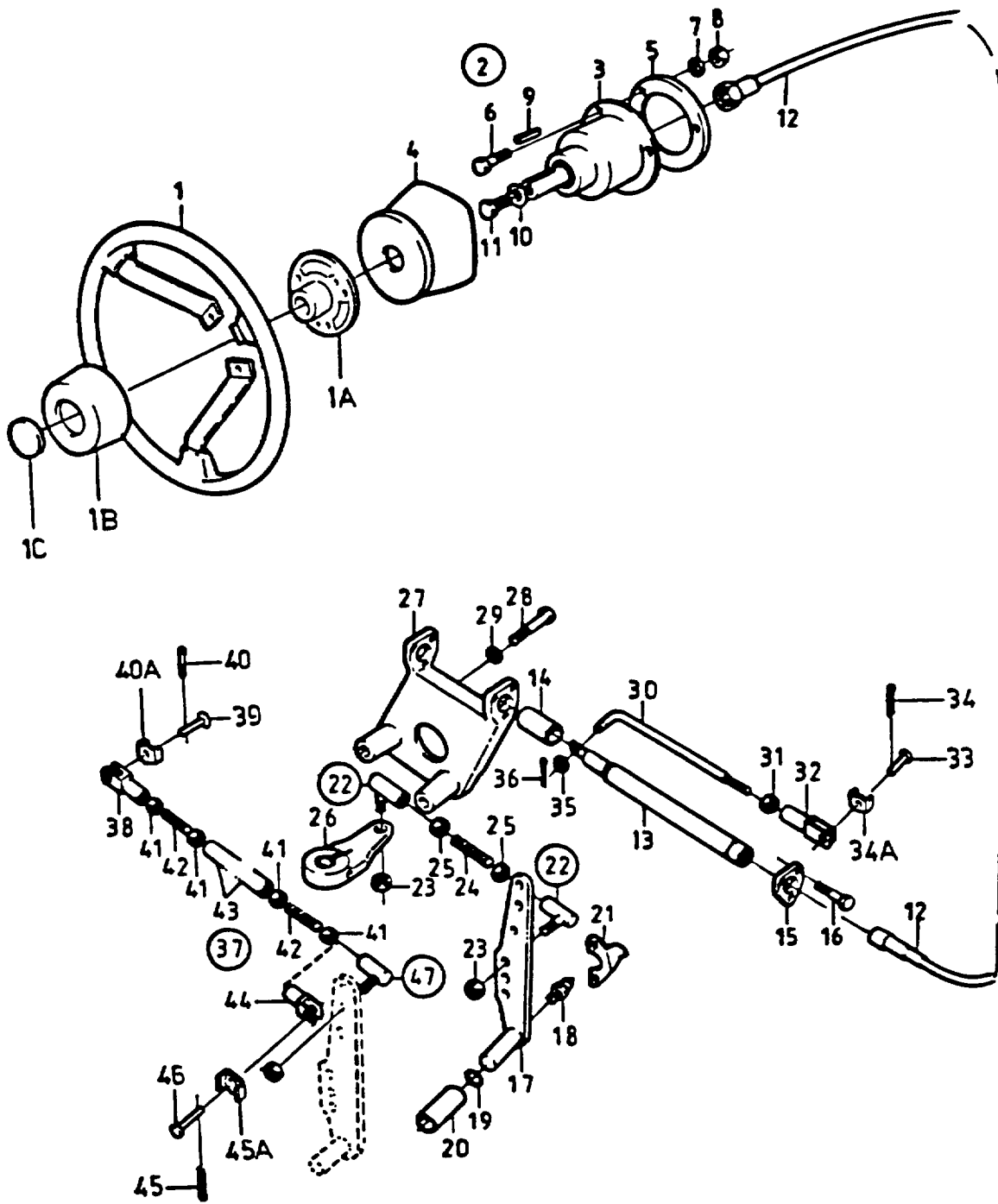


7535



Sida Page	Grupp Group	Styrmekanism Roto pilot		Steering mechanism Roto pilot		Illustration 7535 1987-04	0200				
8	6	AQD40A,AQAD40A,AQAD40B									
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
32	1	-	-	-	956511-0	Gaffel	Yoke	0			104
33	1	-	-	-	913158-2	Saxpinnebult	Clevis pin	0			1060
34	1	-	-	-	907856-9	Saxpinne	Cotter	0			1080
34a	1	-	-	-	853160-0	Låsbricka	Washer	3	DREV290		1090
35	1	-	-	-	940097-9	Bricka	Washer	0			1100
36	1	-	-	-	964960-9	Saxpinne	Cotter	0			1120
37	1	-	-	-	828913-4	Parallellstag	Tie rod	5	17,32)		1140
	1	-	-	-	850776-6	Ror	Pipe	6	17,21)ERS AV 828913		1180
38	1	-	-	-	956511-0	Gaffel	Yoke	0			1200
39	1	-	-	-	913158-2	Saxpinnebult	Clevis pin	0			1220
40	1	-	-	-	907856-9	Saxpinne	Cotter	0			1240
40a	1	-	-	-	853160-0	Låsbricka	Washer	3	DREV290		130
41	4	-	-	-	940154-8	Mutter	Nut	0			1260
42	2	-	-	-	839577-4	Stång	Rod	3			1280
43	1	-	-	-	839576-6	Ror	Pipe	5	L=560MM		1300
	1	-	-	-	850775-8	Ror	Pipe	5	20)L=360MM		1320
44	1	-	-	-	956511-0	Gaffel	Yoke	0			1340
45	1	-	-	-	907856-9	Saxpinne	Cotter	0			1370
45a	1	-	-	-	853160-0	Låsbricka	Washer	3	DREV290		1380
46	1	-	-	-	913158-2	Saxpinnebult	Clevis pin	0			1400
47	1	-	-	-	814152-5	Kulled	Ball joint				1400
48	1	-	-	-	950386-3	Mutter	Nut	0	19)		1420

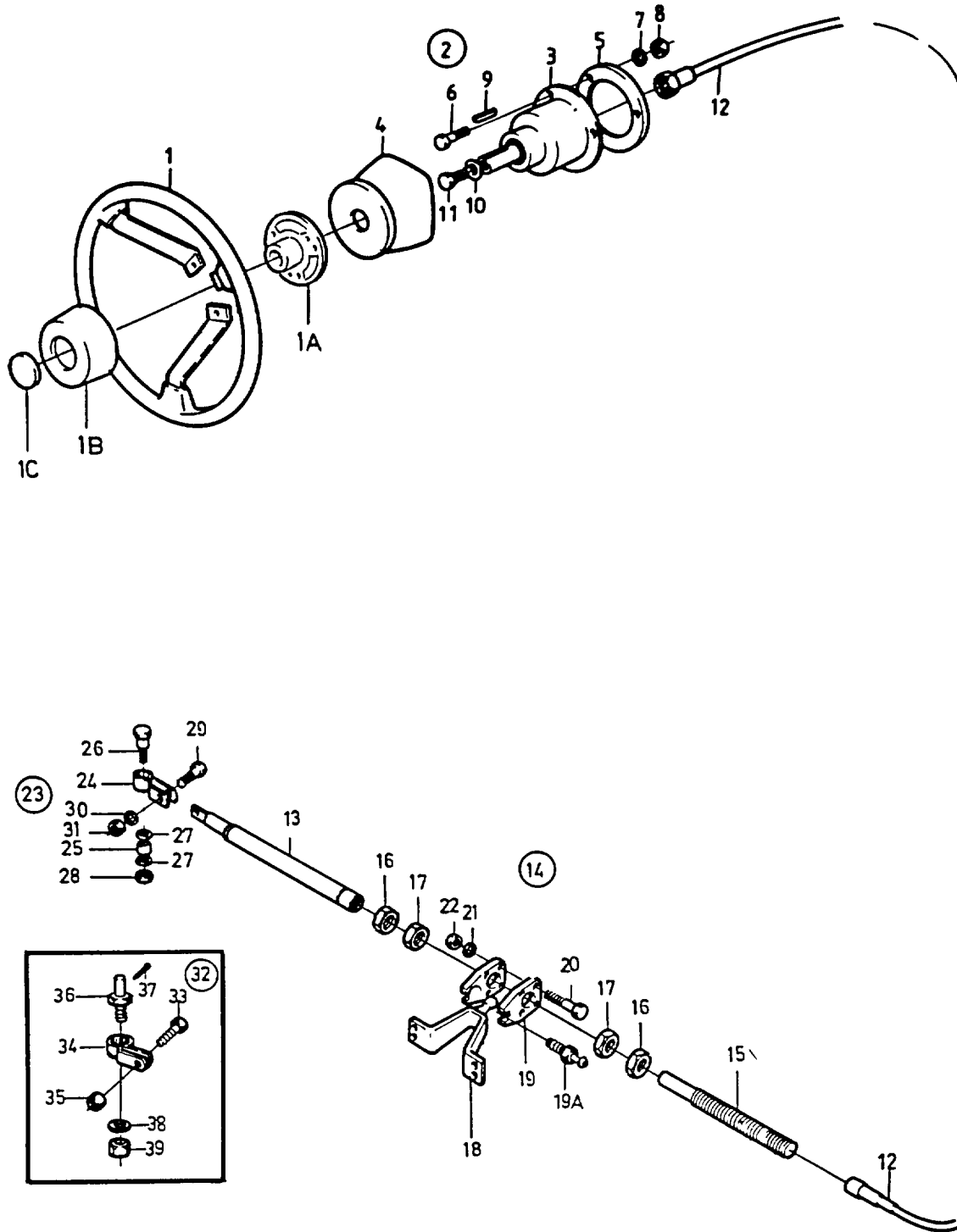
- 17. Endast för dubbelinstallation. Only for twin installation.
- 19. Ingår endast i 850673. Only included in 850673.
- 20. Ingår endast i 850776. Only included in 850776.
- 21. Justerbar mellan 540-800mm. Adjustable between 540-800mm.
- 32. Justerbar mellan 610-1000 mm. Adjustable between 610-1000 mm





Sida Page	Grupp Group	Styrmekanism Roto pilot GEM				Steering mechanism Roto pilot				Illustration 8522 1987-04	0250
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	850936-6	Ratt	Steering wheel	5			002
1a	1	-	-	-	850937-4	.Rattnav	.Steering wheel hub	5			002.
1b	1	-	-	-	828943-1	.Rattkudde	.Steering wheel pad	5			0030
1c	1	-	-	-	850938-2	.Rattblem	.Steering wheel badge	5			0035
2	1	-	-	-	851056-2	Styrhuvud	Steering head	6			0040
3	1	-	-	-		.Styrvaxel	.Steering gear	8			0060
4	1	-	-	-	851057-0	.Kåpa	.Cover	5			0080
5	1	-	-	-	851069-5	.Bricka	.Washer	4			0100
6	3	-	-	-	940101-9	.Skruv	.Screw	0			0120
7	3	-	-	-	941906-0	.Fjädrande bricka	.Resilient washer	0	(955892)		0140
8	3	-	-	-	955781-0	.Mutter	.Nut	0			160
9	1	-	-	-	851349-1	.Kil	.Key	2			30
10	1	-	-	-	948823-0	.Bricka	.Washer	0			0200
11	1	-	-	-	940148-0	.Skruv	.Screw	0			0220
12	ERF	-	-	-	852035-5	Styrkabel	Steering cable	6	L=800MM		0230
	ERF	-	-	-	851016-6	Styrkabel	Steering cable	6	L=2500MM		0240
	-	-	-	-					ERS AV 851017		241
	ERF	-	-	-	851017-4	Styrkabel	Steering cable	6	L=2750MM		30
	ERF	-	-	-	851018-2	Styrkabel	Steering cable	6	L=3000MM		0280
	ERF	-	-	-	851019-0	Styrkabel	Steering cable	6	L=3250MM		0300
	-	-	-	-					ERS AV 851020		0301
	ERF	-	-	-	851020-8	Styrkabel	Steering cable	6	L=3500MM		0320
	ERF	-	-	-	851021-6	Styrkabel	Steering cable	6	L=3750MM		0340
	ERF	-	-	-	851022-4	Styrkabel	Steering cable	6	L=4000MM		0360
	ERF	-	-	-	851023-2	Styrkabel	Steering cable	6	L=4250MM		0380
	ERF	-	-	-	851024-0	Styrkabel	Steering cable	6	L=4500MM		0400
	ERF	-	-	-	851025-7	Styrkabel	Steering cable	6	L=4750MM		0420
	ERF	-	-	-	851026-5	Styrkabel	Steering cable	6	L=5000MM		04
	ERF	-	-	-	851027-3	Styrkabel	Steering cable	6	L=5250MM		04
	ERF	-	-	-	851028-1	Styrkabel	Steering cable	6	L=5500MM		0480
	ERF	-	-	-	851029-9	Styrkabel	Steering cable	6	L=5750MM		0500
	ERF	-	-	-	851030-7	Styrkabel	Steering cable	6	L=6000MM		0520
	ERF	-	-	-	851031-5	Styrkabel	Steering cable	6	L=6500MM		0540
	ERF	-	-	-	851032-3	Styrkabel	Steering cable	6	L=7000MM		0560
	ERF	-	-	-	851033-1	Styrkabel	Steering cable	6	L=7500MM		0580
	ERF	-	-	-	851034-9	Styrkabel	Steering cable	6	L=8000MM		0600
	ERF	-	-	-	851921-7	Styrkabel	Steering cable	6	L=8500MM		0605
	ERF	-	-	-	851922-5	Styrkabel	Steering cable	6	L=9000MM		10
	ERF	-	-	-	851923-3	Styrkabel	Steering cable	6	L=9500MM		15
13	1	-	-	-	851059-6	Styrcylinder	Steering cylinder	8	24)		0620
	1	-	-	-	851147-9	Styrcylinder	Steering cylinder	4	23)		0640
14	1	-	-	-	853290-5	Akterspegelfäste	Transom mounting	6			0660
15	1	-	-	-	850771-7	.Fäströr	.Pipe	4			0680
16	2	-	-	-	850778-2	.Mutter	.Nut	2			700
17	2	-	-	-	853306-9	.Mutter	.Nut	2			20
18	1	-	-	-	851093-5	.Konsol	.Bracket	4			0740
19	2	-	-	-	828854-0	.Fäste	.Attachment	S	4	TID UTF	0760
	1	-	-	-	828854-0	.Fäste	.Attachment	4		SEN UTF	0761
	1	-	-	-	828857-3	.Fäste	.Attachment	4		SEN UTF	0762
19a	1	-	-	-	951739-2	.Smörjnippel	.Grease nipple	0		FOR/FOR 828857	0770
20	4	-	-	-	940101-9	.Skruv	.Screw	0		TID UTF	0780
	2	-	-	-	940101-9	.Skruv	.Screw	0		SEN UTF	0781
21	4	-	-	-	941906-0	.Fjädrande bricka	.Resilient washer	0		TID UTF	0800
	2	-	-	-	941906-0	.Fjädrande bricka	.Resilient washer	0		SEN UTF	0801
22	4	-	-	-	963105-2	.Mutter	.Nut	0		TID UTF	0P
	2	-	-	-	963105-2	.Mutter	.Nut	0		SEN UTF	0P
23	1	-	-	-	851122-2	.Kulledsats	.Ball joint kit	4		ERS AV 828924	08
24	1	-	-	-		.Konsol	.Bracket	8			0860
25	1	-	-	-	851121-4	.Hylsa	.Sleeve	3			0880

23. För styrbordsmontering. For starboard mounting.  
24. För babordsmontering. For port mounting.



8522



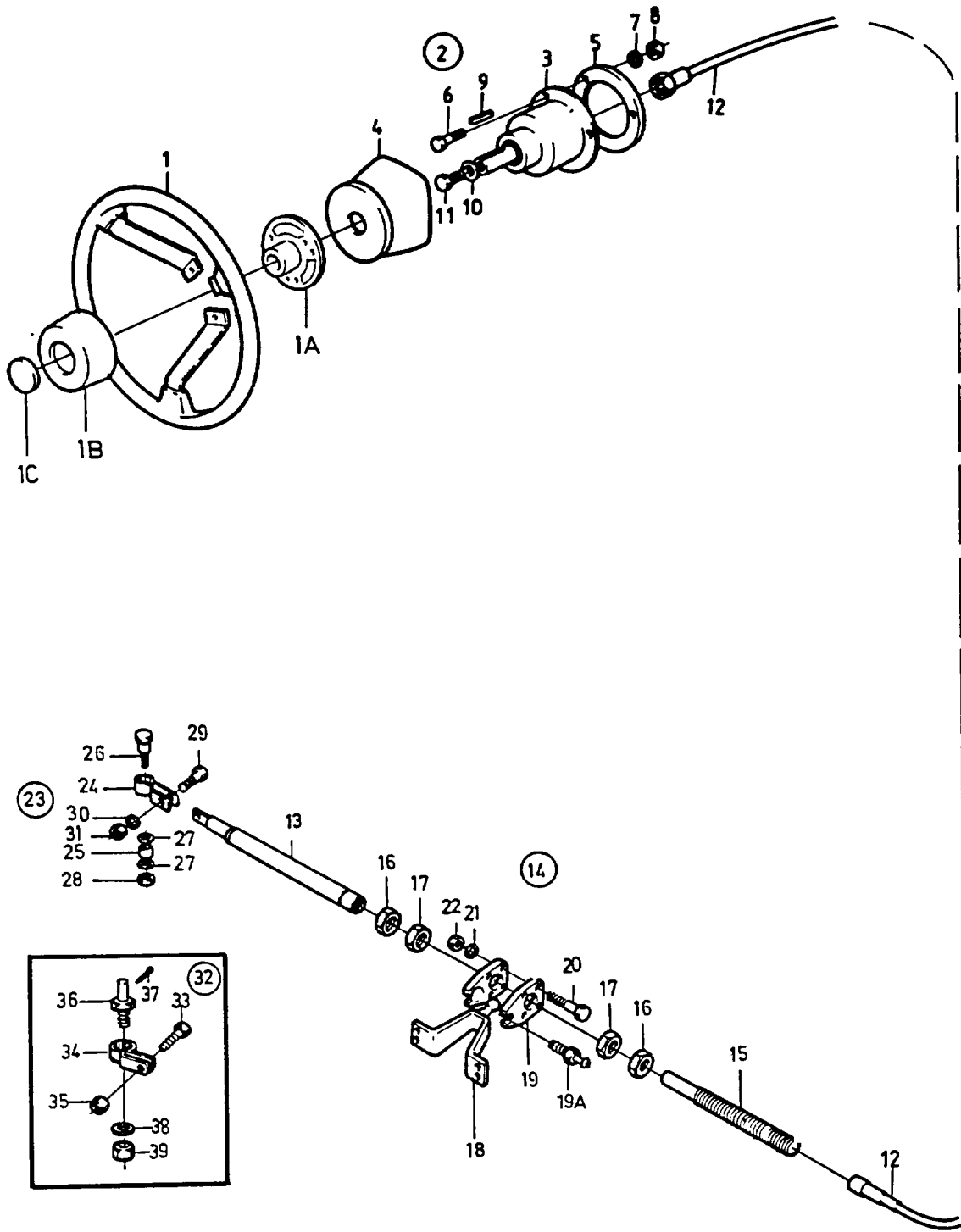
Publ. 4406

Reservdelskatalog  
Parts Catalogue

2-H13

**VOLVO  
PENTA**

Sida Page	Grupp Group	Styrmekanism Roto pilot GEM	Steering mechanism Roto pilot	Illustration 8522 1987-04	0250					
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
26	1	-	-	851117-2	..Skruv .....	..Bolt .....	3			0900
27	2	-	-	942551-3	..Bricka .....	..Washer .....	0			0920
28	1	-	-	966172-9	..Mutter .....	..Nut .....	0			0940
29	1	-	-	851118-0	..Skruv .....	..Bolt .....	0			0960
30	1	-	-	941670-2	..Bricka .....	..Washer .....	3			0980
31	1	-	-	966171-1	..Mutter .....	..Nut .....	0			1000
32	1	-	-	828924-1	..Kulledsats .....	..Ball joint kit .....	4	(851122)		1020
33	1	-	-	851118-0	..Ansatsskruv .....	..Shouter screw .....	3			1040
34	1	-	-		..Konsol .....	..Bracket .....	8			1060
35	1	-	-	966171-1	..Mutter .....	..Nut .....	0			1080
36	1	-	-		..Saxpinneskruv .....	..Split pin screw .....	8			1100
37	1	-	-	967707-1	..Saxpinne .....	..Cotter pin .....	0			0
38	1	-	-	955897-4	..Bricka .....	..Washer .....	0			1140
39	1	-	-	963119-3	..Mutter .....	..Nut .....	0			1160

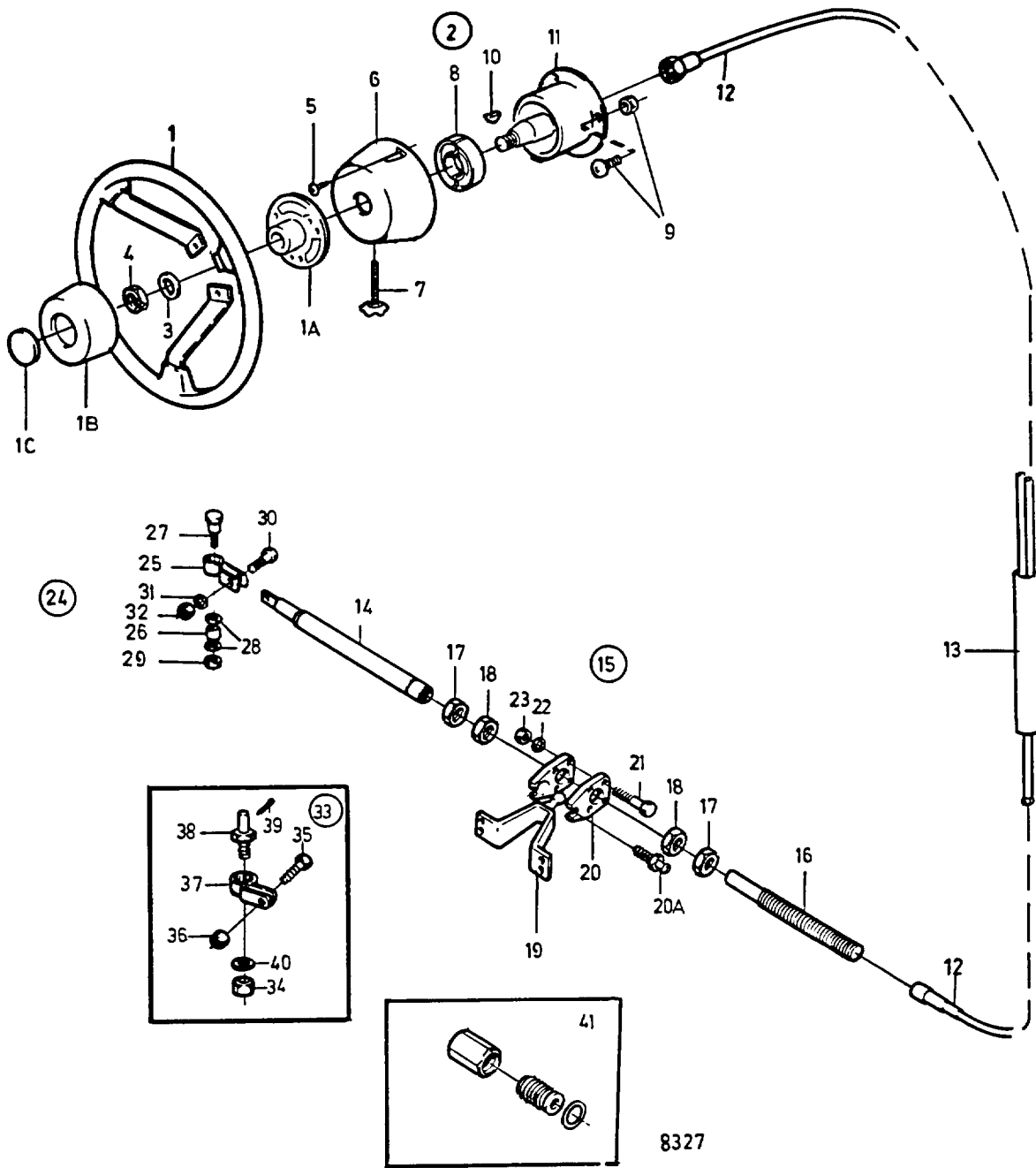


8522

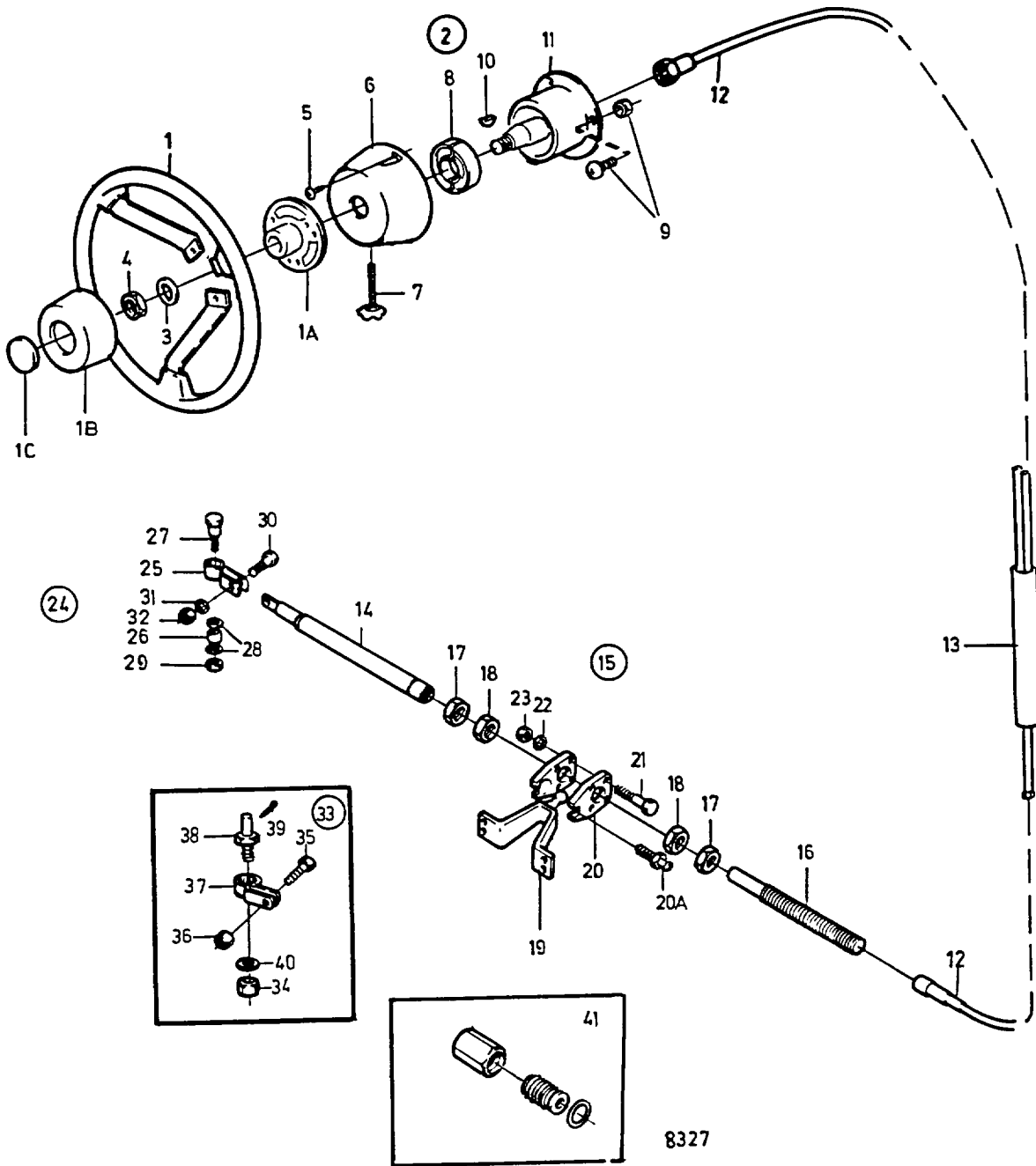


Sida Page	Grupp Group	Styrmekanism Roto pilot STS 330			Steering mechanism Roto pilot STS 330			Illustration 8327 1987-04	0255		
14	6	GEM									
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	850936-6	Ratt .....	Steering wheel .....	4			001
1a	1	-	-	-	850937-4	.Rattnav .....	.Steering wheel hub .....	4			004
1b	1	-	-	-	828943-1	.Rattkudde .....	.Steering wheel hub .....	4			0060
1c	1	-	-	-	850938-2	.Rattblem .....	.Steering wheel badge .....	4			0080
2	1	-	-	-	853182-4	Monteringssats .....	Mounting kit .....	S 2	90°		0100
	1	-	-	-	1140023-1	Monteringssats .....	Mounting kit .....	S 2	90° SVART/BLACK		0110
	1	-	-	-	853183-2	Monteringssats .....	Mounting kit .....	S 2	70°		0120
	1	-	-	-	1140024-9	Monteringssats .....	Mounting kit .....	S 2	70° SVART/BLACK		0130
3	1	-	-	-		.Bricka .....	.Washer .....	S 8			0140
4	1	-	-	-		.Mutter .....	.Nut .....	S 8			0160
5	2	-	-	-		.Skruv .....	.Screw .....	S 8			0180
6	1	-	-	-		.Täckåpa .....	.Cover .....	S 8			0200
7	1	-	-	-		.Bromsskruv .....	.Brake screw .....	S 8			0220
8	1	-	-	-		.Friktionsbroms .....	.Brake .....	S 8			0240
9	4	-	-	-		.Skruv och mutter .....	.Screw and nut .....	S 8			0260
10	1	-	-	-		.Kil .....	.Key .....	S 8			0280
11	1	-	-	-	853181-6	Styrväxel .....	Steering box .....	5			0300
12	1	-	-	-	828886-2	Styrkabel .....	Steering cable .....	6	L=2000MM		0305
	1	-	-	-	828887-0	Styrkabel .....	Steering cable .....	6	L=2250MM		0306
	1	-	-	-	828888-8	Styrkabel .....	Steering cable .....	6	L=2500MM		0307
	1	-	-	-	828889-6	Styrkabel .....	Steering cable .....	6	L=2750MM		0308
ERF	-	-	-	-	853185-7	Styrkabel .....	Steering cable .....	6	L=3000MM		0320
ERF	-	-	-	-	853186-5	Styrkabel .....	Steering cable .....	6	L=3250MM		0340
ERF	-	-	-	-	853187-3	Styrkabel .....	Steering cable .....	6	L=3500MM		0360
ERF	-	-	-	-	853188-1	Styrkabel .....	Steering cable .....	6	L=3750MM		0380
ERF	-	-	-	-	853189-9	Styrkabel .....	Steering cable .....	6	L=4000MM		0400
ERF	-	-	-	-	853190-7	Styrkabel .....	Steering cable .....	6	L=4250MM		0420
ERF	-	-	-	-	853191-5	Styrkabel .....	Steering cable .....	6	L=4500MM		0440
ERF	-	-	-	-	853192-3	Styrkabel .....	Steering cable .....	6	L=4750MM		0460
ERF	-	-	-	-	853193-1	Styrkabel .....	Steering cable .....	6	L=5000MM		0480
ERF	-	-	-	-	828863-1	Styrkabel .....	Steering cable .....	6	L=5250MM		0490
ERF	-	-	-	-	853194-9	Styrkabel .....	Steering cable .....	6	L=5500MM		0500
ERF	-	-	-	-	828864-9	Styrkabel .....	Steering cable .....	6	L=5750MM		0510
ERF	-	-	-	-	853195-6	Styrkabel .....	Steering cable .....	6	L=6000MM		0520
ERF	-	-	-	-	828865-6	Styrkabel .....	Steering cable .....	6	L=6250MM		0530
ERF	-	-	-	-	853196-4	Styrkabel .....	Steering cable .....	6	L=6500MM		0540
ERF	-	-	-	-	828866-4	Styrkabel .....	Steering cable .....	6	L=6750MM		0550
ERF	-	-	-	-	853197-2	Styrkabel .....	Steering cable .....	6	L=7000MM		0570
ERF	-	-	-	-	853286-3	Styrkabel .....	Steering cable .....	6	L=7500MM		0600
ERF	-	-	-	-	853287-1	Styrkabel .....	Steering cable .....	6	L=8000MM		0620
ERF	-	-	-	-	853288-9	Styrkabel .....	Steering cable .....	6	L=8500MM		0640
ERF	-	-	-	-	853289-7	Styrkabel .....	Steering cable .....	6	L=9000MM		0660
ERF	-	-	-	-	828867-2	Styrkabel .....	Steering cable .....	6	L=9750MM		0680
ERF	-	-	-	-	828868-0	Styrkabel .....	Steering cable .....	6	L=10500MM		0700
ERF	-	-	-	-	828869-8	Styrkabel .....	Steering cable .....	6	L=11250MM		0720
ERF	-	-	-	-	828874-8	Styrkabel .....	Steering cable .....	6	L=12000MM		0740
13	1	-	-	-	853291-3	Monteringssats .....	Mounting kit .....	4 35)			0660
14	1	-	-	-	851059-6	Styrcylinder .....	Steering cylinder .....	8 24)			0680
	1	-	-	-	851147-9	Styrcylinder .....	Steering cylinder .....	5 23)			0700
15	1	-	-	-	853290-5	Akterspegelfaste .....	Transom mounting .....	4			0720
16	1	-	-	-	850771-7	.Fäströr .....	.Pipe .....	5			0740
17	2	-	-	-	850778-2	.Mutter .....	.Nut .....	5			0760
18	2	-	-	-	853306-9	.Mutter .....	.Nut .....	5			0780
19	1	-	-	-	851093-5	.Konsol .....	.Bracket .....	5			0800
20	2	-	-	-	851077-8	.Fäste .....	.Attachment .....	5	TID UTF		0820
	1	-	-	-	828854-0	.Fäste .....	.Attachment .....	5	SEN UTF		0840
	1	-	-	-	828857-3	.Fäste .....	.Attachment .....	5	SEN UTF		0860
20a	1	-	-	-	951739-2	.Smörjnippel .....	.Grease nipple .....	0	FÖR/FOR 828857		0880

23 . För styrbordsmontering. For starboard mounting.  
24 . För babordsmontering. For port mounting.  
35 . Endast för flying bridge. Only for flying bridge



Sida Page	Grupp Group	Styrmekanism Steering mechanism		Roto pilot STS 330		Illustration	0255				
16	6	GEM		Roto pilot STS 330		8327					
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
21	4	-	-	-	940101-9	•Skruv .....	•Screw .....	0		TID UTF	0840
	2	-	-	-	940101-9	•Skruv .....	•Screw .....	0		SEN UTF	0841
22	4	-	-	-	941906-0	•Fjädrande bricka .....	•Resilient washer .....	0		TID UTF	0860
	2	-	-	-	941906-0	•Fjädrande bricka .....	•Resilient washer .....	0		SEN UTF	0861
23	4	-	-	-	963105-2	•Mutter .....	•Nut .....	0		TID UTF	0880
	2	-	-	-	963105-2	•Mutter .....	•Nut .....	0		SEN UTF	0881
24	1	-	-	-	851122-2	•Kulledsats .....	•Ball joint kit .....	4		ERS AV 828924	0900
25	1	-	-	-		•Konsol .....	•Bracket .....	3			0920
26	1	-	-	-	851121-4	•Hylsa .....	•Sleeve .....	3			0940
27	1	-	-	-	851117-2	•Ansatsskruv .....	•Shouter screw .....	3			0960
28	2	-	-	-	942551-3	•Bricka .....	•Washer .....	0			?
29	1	-	-	-	966172-9	•Mutter .....	•Nut .....	0			J
30	1	-	-	-	851118-0	•Ansatsskruv .....	•Shouter screw .....	3			1020
31	1	-	-	-	941670-2	•Bricka .....	•Washer .....	0			1040
32	1	-	-	-	966171-1	•Mutter .....	•Nut .....	0			1060
33	ERF	-	-	-	853214-5	Adapter .....	Adapter .....	4	41)		1080
34	1	-	-	-	828924-1	•Kulledsats .....	•Ball joint kit .....				?
35	1	-	-	-	851118-0	•Ansatsskruv .....	•Shouter screw .....	3			J
36	1	-	-	-	966171-1	•Mutter .....	•Nut .....	0			1140
37	1	-	-	-		•Konsol .....	•Bracket .....	8			1160
38	1	-	-	-		•Saxpinneskruv .....	•Split pin screw .....	8			1180
39	1	-	-	-	967707-1	•Saxpinne .....	•Cotter pin .....	0			1200
40	1	-	-	-	955897-4	•Bricka .....	•Washer .....	0			1220
41	1	-	-	-	963119-3	•Mutter .....	•Nut .....	0			1240



8327





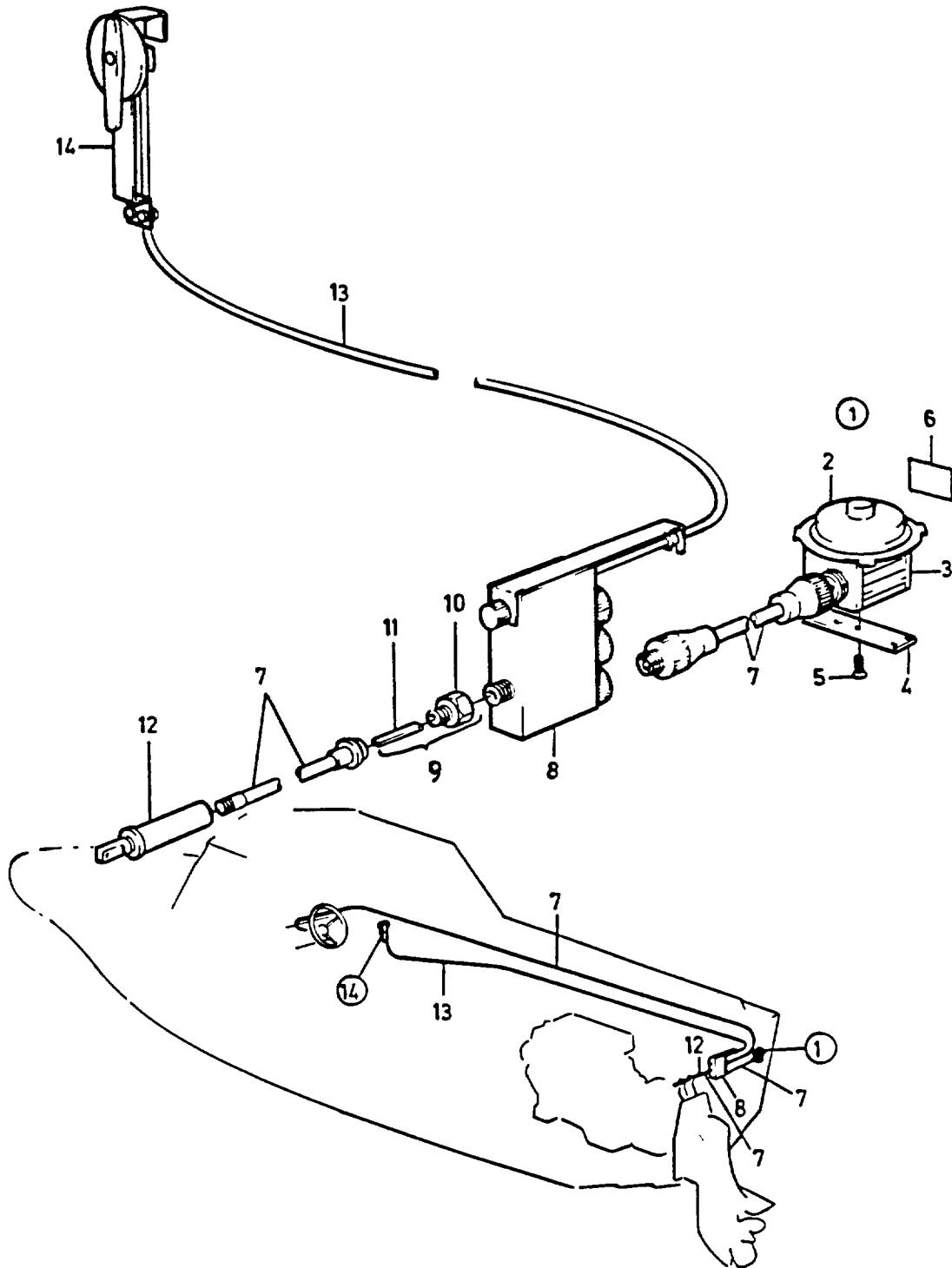
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Parts Catalogue

2-H19

**VOLVO  
PENTA**

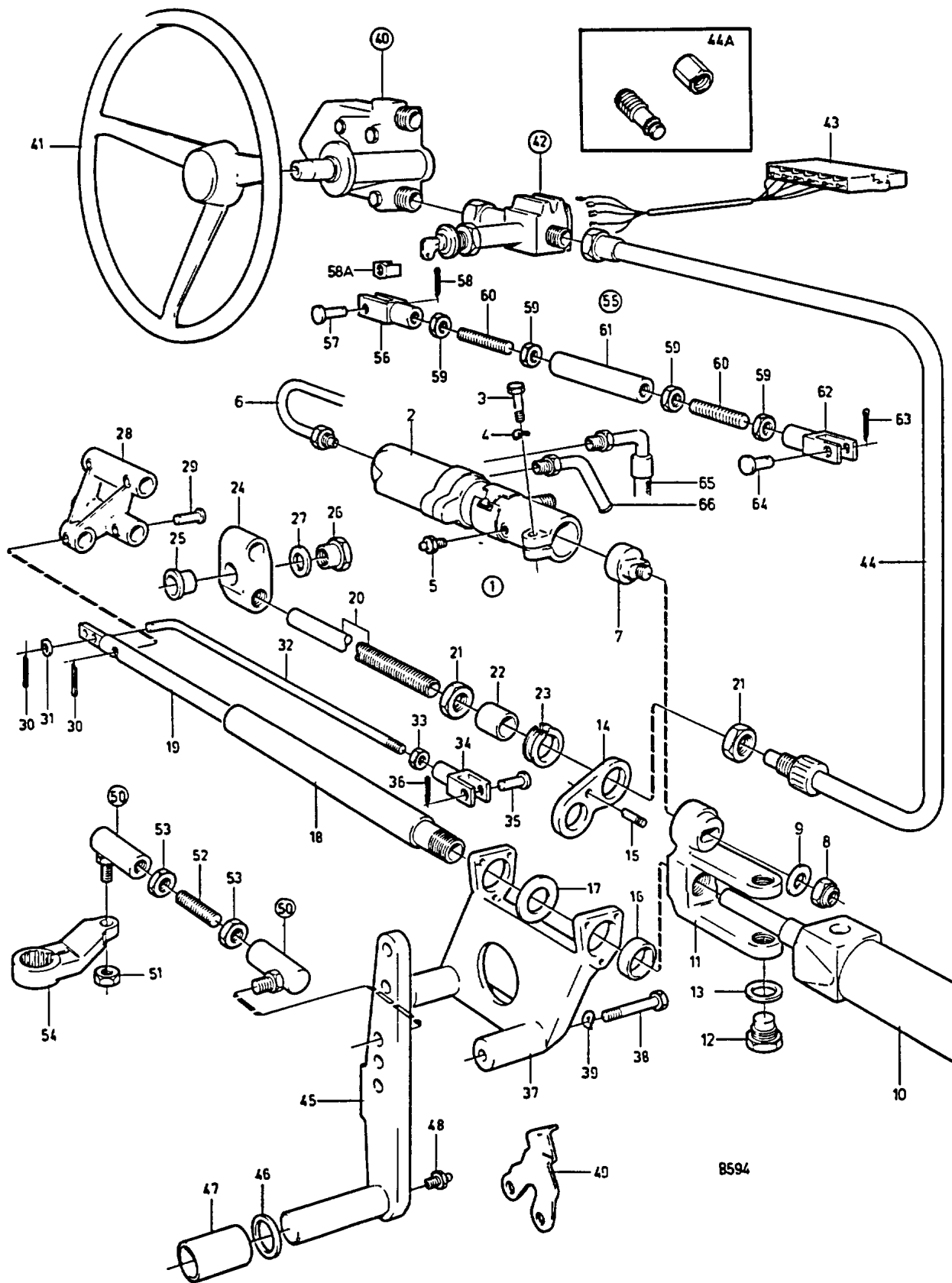
Sida Page	Grupp Group	Drivenhet, styrning Roto pilot		Drive unit, steering Roto pilot		Illustration	0260				
18	6	GEM				7666 1987-04					
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	852031-4	Drivenhet .....	Drive unit.....	6			00.
2	1	-	-	-	852032-2	.Motor.....	.Engine.....	6	12V		0040
3	1	-	-	-		.Växel.....	.Gear.....	8			0060
4	1	-	-	-		.Konsol .....	.Bracket.....	8			0080
5	2	-	-	-		.Skruv .....	.Screw .....	8			0100
6	1	-	-	-		.Dekal .....	.Decal.....	8			0120
7	ERF	-	-	-		Styrkabel .....	Steering cable .....	6	SE SIDA 6,2-H07		0140
	-	-	-	-					SE SIDA 10,2-H11		0160
8	1	-	-	-	851743-5	Fördelningsväxel .....	Gear .....	6	SE SIDA 6,2-H07		0180
9	1	-	-	-	853107-1	Adaptersats.....	Adepter kit.....	S 6			0185
10	1	-	-	-		.Adapter .....	.Adepter .....	8	SE SIDA 10,2-H11		0
11	1	-	-	-	853109-7	.Axel.....	.Shaft.....	6			0
12	1	-	-	-		Styrcylinder.....	Steering cylinder.....		SE SIDA 20,2-H21		0241
13	ERF	-	-	-	825765-1	Reglage .....	Control .....	6	L=3300MMALT		0300
	ERF	-	-	-	825764-4	Reglage .....	Control .....	6	L=6900MMALT		0320
14	1	-	-	-	851744-3	Reglage .....	Control .....	6			0360



7666



Sida Page	Grupp Group	Styrmekanism, flying bridge			Steering mechanism, flying bridge			Illustration			
20	6	Roto pilot			Roto pilot			7669			
		GEM						1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	851744-3	Manöverplatsväljare..	Control pos. selector	6			002
2	1	-	-	-	851902-7	.Konsol . . . . .	.Bracket. . . . .	6			0040
3	1	-	-	-	851903-5	.Axel . . . . .	.Shaft.....	5			0060
4	2	-	-	-	951947-1	.Pinne . . . . .	.Pin . . . . .	0			0080
5	1	-	-	-	851904-3	.Konsol . . . . .	.Bracket..	4			0100
6	1	-	-	-	851901-9	.Fjäder . . . . .	.Spring.....	4			0120
7	1	-	-	-	851940-7	.Skruv . . . . .	.Screw . . . . .	1			0140
8	3	-	-	-	960137-8	.Bricka . . . . .	.Washer . . . . .	0			0160
9	1	-	-	-	955945-1	.Bricka . . . . .	.Washer . . . . .	0			0180
10	1	-	-	-	955779-4	.Mutter . . . . .	.Nut . . . . .	0			0200
11	1	-	-	-	851905-0	.Platta . . . . .	.Plate...	6			20
12	4	-	-	-	851941-5	.Skruv . . . . .	.Screw . . . . .	1	L=20MM ALT		0
	4	-	-	-	851942-3	.Skruv . . . . .	.Screw . . . . .	1	L=30MM ALT		0260
	4	-	-	-	851943-1	.Skruv . . . . .	.Screw . . . . .	1	L=40MM ALT		0280
13	4	-	-	-	955946-9	.Bricka . . . . .	.Washer . . . . .	0			0300
14	4	-	-	-	955780-2	.Mutter... . . . .	.Nut . . . . .	0			0320
15	1	-	-	-	851906-8	.Handtag . . . . .	.Handle . . . . .	5			40
16	1	-	-	-	851997-7	.Skruv . . . . .	.Screw . . . . .	1			0
17	1	-	-	-	819068-8	.Bricka . . . . .	.Washer . . . . .	2			0380
18	1	-	-	-	819067-0	.Klamma . . . . .	.Clamp.. . . .	2			0400
19	2	-	-	-	955243-1	.Skruv . . . . .	.Screw . . . . .	0			0420
20	2	-	-	-	955946-9	.Bricka . . . . .	.Washer . . . . .	0			0440
21	2	-	-	-	955780-2	.Mutter . . . . .	.Nut . . . . .	0			0460
22	1	-	-	-	804312-7	.Tarning.. . . .	.Cube . . . . .	1			0480
23	1	-	-	-	940191-0	.Bricka . . . . .	.Washer . . . . .	0			0500
24	1	-	-	-	907834-6	.Saxpinne.. . . .	.Cotter pin . . . . .	0	(17276)		0520
25	1	-	-	-	851907-6	.Konsol . . . . .	.Bracket . . . . .	6			054
26	1	-	-	-	851908-4	.Konsol . . . . .	.Bracket. . . . .	6			056
27	1	-	-	-	850418-5	.O-ring . . . . .	.O-ring . . . . .	1			0580
28	1	-	-	-	955243-1	.Skruv . . . . .	.Screw . . . . .	0			0600
29	1	-	-	-	955946-9	.Bricka . . . . .	.Washer . . . . .	0			0620
30	1	-	-	-	955780-2	.Mutter.. . . .	.Nut. . . . .	0			0640
31	ERF	-	-	-		Reglagekabel . . . . .	Control cable . . . . .		SE GRUPP 9		0660
32	1	-	-	-	851743-5	Fördelningsväxel . . . . .	Transfer gear.....	6			0680
33	1	-	-	-	853107-1	Adaptersats . . . . .	Adepter kit . . . . .	S			0700
34	ERF	-	-	-		.Adapter . . . . .	.Adepter.....				0720
35	1	-	-	-	853109-7	.Axel . . . . .	.Shaft . . . . .				0740
36	ERF	-	-	-		Styrkabel . . . . .	Steering cable . . . . .		SE SIDA 6, 2-H07		0
	-	-	-	-					SE SIDA 10, 2-H11		0
37	ERF	-	-	-		Styrcylinder . . . . .	Steering cylinder . . . . .		SE SIDA 6, 2-H07		0820
	-	-	-	-					SE SIDA 10, 2-H11		0860
38	ERF	-	-	-		Styrkabel . . . . .	Steering cable . . . . .		SE SIDA 6, 2-H07		0880
	-	-	-	-					SE SIDA 10, 2-H11		0920

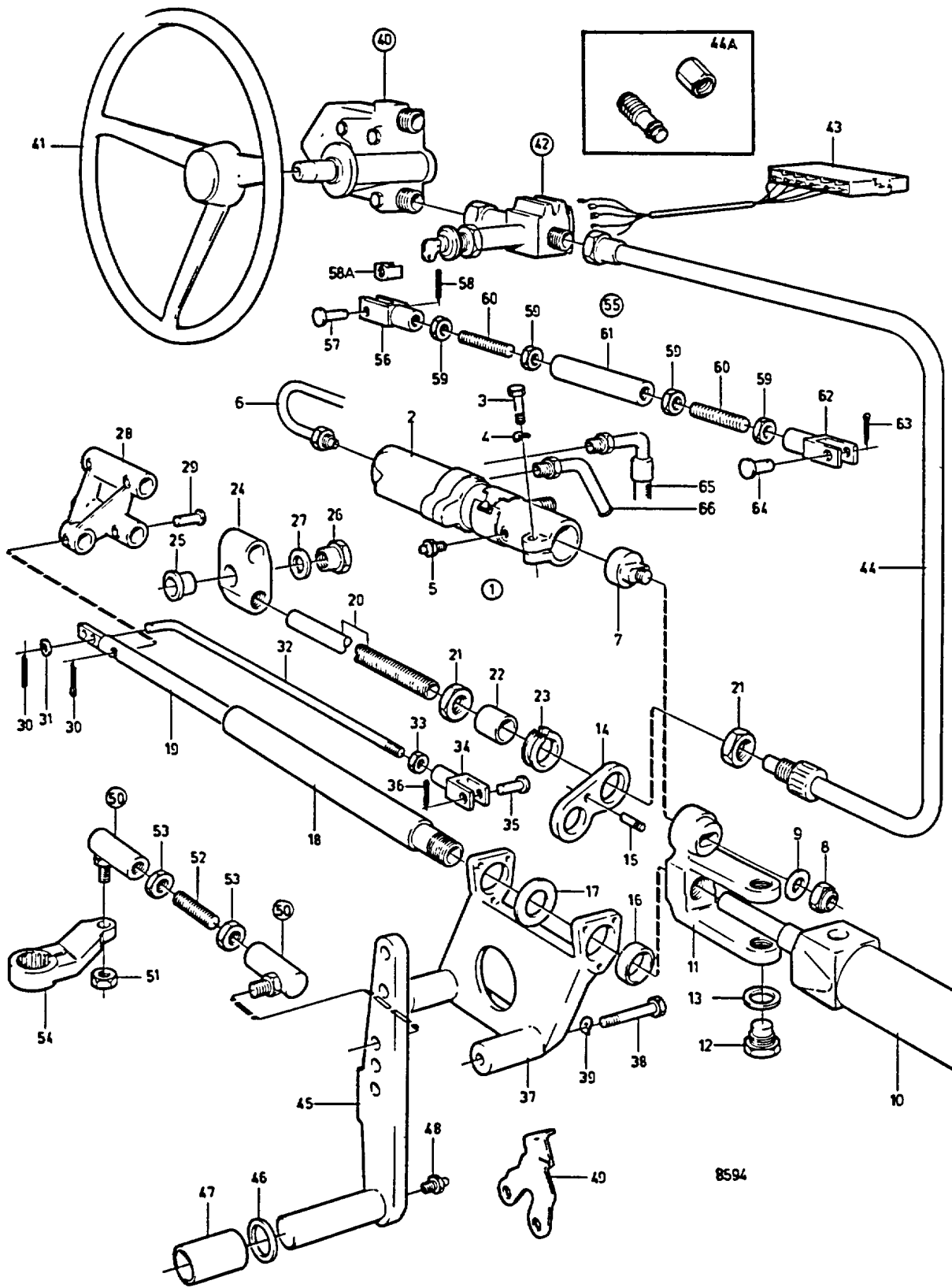


8594



Sida Page	Grupp Group	Styrmekanism Servostyrning			Steering mechanism Power steering			Illustration		
24	6	AQD40A,AQAD40A,AQAD40B						0280 8594 1987-04		
Pos Fig	Antal/Quantity			Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
	ERF	-	-	-	850817-8	Styrkabel .....	Steering cable .....	8	L=5100MM	111
	ERF	-	-	-	850818-6	Styrkabel .....	Steering cable .....	6	46)L=5500MM	1120
	ERF	-	-	-	853194-9	Styrkabel .....	Steering cable .....	6	L=5500MM	1121
	ERF	-	-	-	850820-2	Styrkabel .....	Steering cable .....	6	47)L=6100MM	1140
	ERF	-	-	-	853195-6	Styrkabel .....	Steering cable .....	6	L=6000MM	1141
	ERF	-	-	-	850822-8	Styrkabel .....	Steering cable .....	6	48)L=6700MM	1160
	ERF	-	-	-	828866-4	Styrkabel .....	Steering cable .....	6	L=6750MM	1161
	ERF	-	-	-	850826-9	Styrkabel .....	Steering cable .....	6	49)L=7900MM	1180
	ERF	-	-	-	853287-1	Styrkabel .....	Steering cable .....	6	L=8000MM	1181
	ERF	-	-	-	850828-5	Styrkabel .....	Steering cable .....	6	50)L=8500MM	1200
	ERF	-	-	-	853288-9	Styrkabel .....	Steering cable .....	6	L=8500MM	1201
44a	ERF	-	-	-	853214-5	Adapter .....	Adepter .....	4		120
45	1	-	-	-	851385-5	Länkarm .....	Link arm .....	6		1220
46	1	-	-	-	955906-3	Bricka .....	Washer .....	0		1240
47	1	-	-	-	850653-7	Bussning .....	Bushing .....	2	SE GRUPP 4A	1260
48	1	-	-	-	914169-8	Smorjnippel .....	Grease nipple .....	0		1280
49	1	-	-	-	850489-6	Länkarmsstopp .....	Link arm stop .....	6		1300
50	2	-	-	-	875772-6	Kulled .....	Ball joint .....	4		130
51	2	-	-	-	851326-9	.Mutter .....	.Nut .....	2		1360
52	1	-	-	-	850736-0	Reglerstång .....	Rod .....	3		1380
53	2	-	-	-	940152-2	Mutter .....	Nut .....	0		1400
54	1	-	-	-	850488-8	Styrarm .....	Steering arm .....	0	SE GRUPP 4A	1420
55	1	-	-	-	850674-3	Parallellstag .....	Tie rod .....	6	22,19)	1440
	1	-	-	-	850776-6	Parallellstag .....	Tie rod .....	6	18,20)	1460
56	1	-	-	-	956511-0	.Gaffel .....	.Yoke .....	0		1480
57	1	-	-	-	913158-2	.Saxpinnebult .....	.Clevis pin bolt .....	0		1500
58	1	-	-	-	907856-9	.Saxpinne .....	.Clevis pin .....	0		15
58a	1	-	-	-	853160-0	.Låsbricka .....	.Washer .....	3	DREV 290	15
59	4	-	-	-	940154-8	.Mutter .....	.Nut .....	0		1540
60	2	-	-	-	839577-4	.Reglerstång .....	.Rod .....	3		1560
61	1	-	-	-	839576-6	.Rör .....	.Pipe .....	5	L=560MM	1580
	1	-	-	-	850775-8	.Rör .....	.Pipe .....	5	21)L=360MM	1600
62	1	-	-	-	956511-0	.Gaffel .....	.Yoke .....	0		1620
63	1	-	-	-	907856-9	.Saxpinne .....	.Clevis pin .....	0		1640
64	1	-	-	-	913158-2	.Saxpinnebult .....	.Clevis pin bolt .....	0		1660
65	1	-	-	-	851585-0	Slang .....	Hose .....	2	SE SIDA 26,2-103	1680
66	1	-	-	-	851529-8	Anslutning .....	Connection .....	2	SE SIDA 26,2-103	1700

18. ERS AV 1st konsol 850958, 2st skruv 955541, 1st bussning 850959, 1st bussning 850960. Replaced by 1pc bracket 850958, 2pcs bolt 955541, 1pc bushing 850959, 1pc bushing 850960.
19. Ingår endast i 850673. Only included in 850673.
20. Ingår endast i 850776. only included in 850776.
21. Justerbar mellan 540-800mm. Adjustable between 540-800mm.
22. Justerbar mellan 740-1000mm. Adjustable between 740-1000mm.
46. Ersatt av STYRKABEL-853194 och ADAPTER-853214. Replaced by steering CABLE-853194 and ADEPTER-853214.
47. Ersatt av STYRKABEL-853195 och ADAPTER-853214. Replaced by steering CABLE-853195 and ADEPTER-853214.
48. Ersatt av STYRKABEL-828866 och ADAPTER-853214. Replaced by steering CABLE-828866 and ADEPTER-853214.
49. Ersatt av STYRKABEL-853287 och ADAPTER-853214. Replaced by steering CABLE-853287 and ADEPTER-853214.
50. Ersatt av STYRKABEL-853288 och ADAPTER-853214. Replaced by steering CABLE-853288 and ADEPTER-853214.

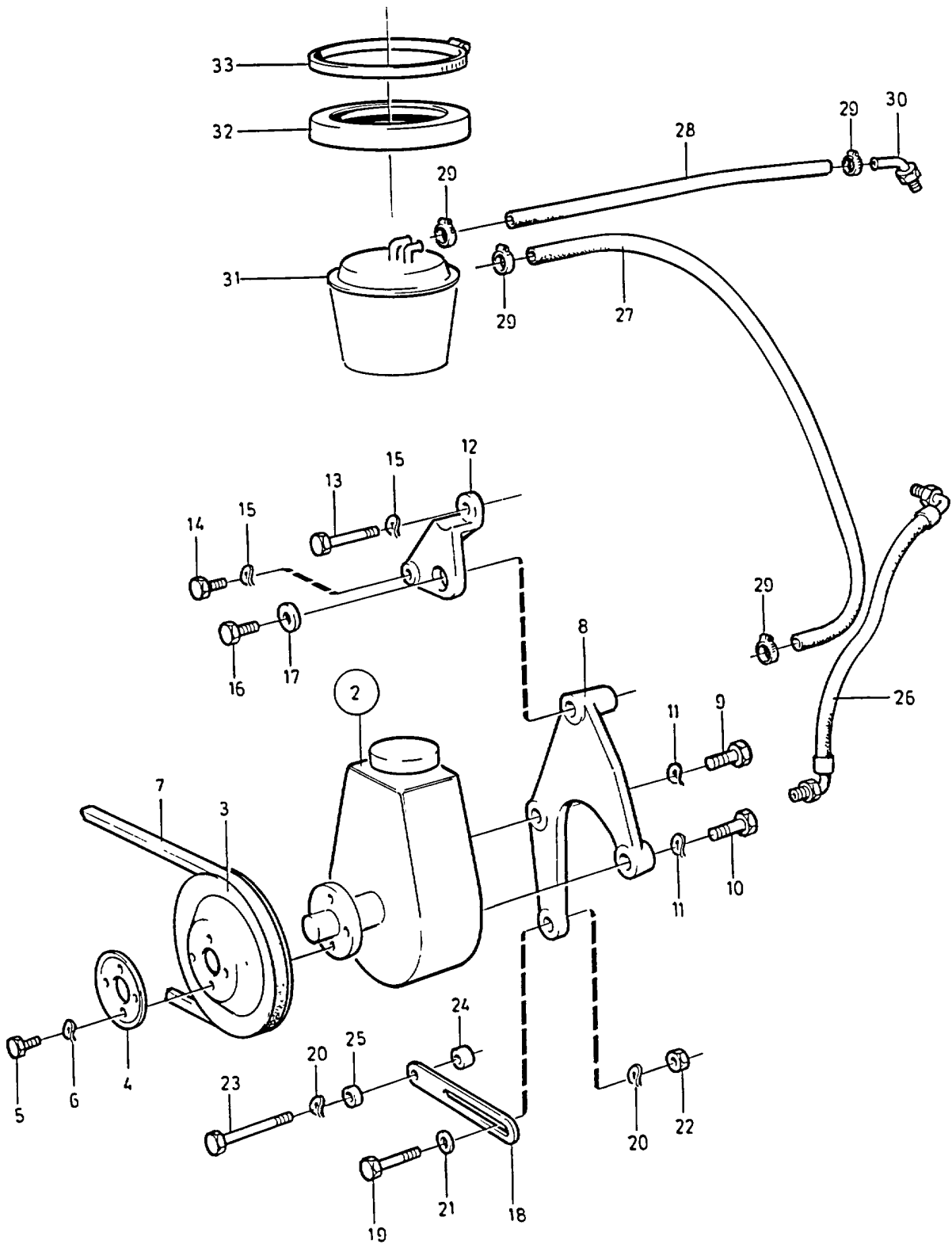


8594



Sida Page	Grupp Group	Servopump med monteringsdetaljer		Servo pump with installation components		Illustration	0285			
26	6	AQD40A,AQAD40A,AQAD40B				6395				
						1987-04				
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	852455-5	Pumpsats .....	6			001
2	1	-	-	-	1276495-7	.Pump.. .....	8	ERSAV1273595		004L
	-	-	-	-		.Det se sida 28, 2-105 .....				0060
	1	-	-	-	1273595-7	.Pump.. .....	8	ERSAV1273972		0080
	-	-	-	-		.Det se sida 28, 2-105 .....				0100
	1	-	-	-	1273972-8	.Pump .....	6			0105
	-	-	-	-		.Det se sida 28, 2-105 .....	6			0106
3	1	-	-	-	1219961-8	.Remskiva ..	5			0120
4	1	-	-	-	464541-2	.Bricka...	5			0140
5	4	-	-	-	955293-6	.Skruv.. ..	0			0160
6	4	-	-	-	941907-8	.Fjädrande bricka.....	0			180
7	1	-	-	-	966383-2	.Drivrem .....	0	(958317)		30
8	1	-	-	-	851540-5	.Konsol... ..	6			0220
9	1	-	-	-	955318-1	.Skruv .....	0			0240
10	1	-	-	-	955319-9	.Skruv .....	0			0260
11	2	-	-	-	941908-6	.Fjädrande bricka.....	0			0280
12	1	-	-	-	843057-1	.Konsol .....	6			300
13	1	-	-	-	955302-5	.Skruv .....	0			30
14	1	-	-	-	940129-0	.Skruv .....	0			340
15	2	-	-	-	941907-8	.Fjädrande bricka.. ..	0			0360
16	1	-	-	-	955701-8	.Skruv .....	0			0380
17	1	-	-	-	955896-6	.Bricka... ..	0			0400
18	1	-	-	-	807186-2	.Spannjarn .....	6			0420
19	1	-	-	-	955298-5	.Skruv .....	0			0440
20	2	-	-	-	941907-8	.Fjädrande bricka .....	0			0460
21	1	-	-	-	960141-0	.Bricka... ..	0			0480
22	1	-	-	-	963106-0	.Mutter .....	0			05
23	1	-	-	-	940129-0	.Skruv .....	0			05.
24	1	-	-	-	842350-1	.Distanshylsa .....	4			054L
25	1	-	-	-	807184-7	.Distanshylsa .....	4			0560
26	1	-	-	-	851585-0	.Tryckslang .....	2	SE SIDA 22, 2-H23		0580
27	ERF	-	-	-	838311-9	.Slang .....	2	(1228399)L=630 MM		0600
28	ERF	-	-	-	838311-9	.Slang.....	2	(1228399)L=1850MM		0620
29	4	-	-	-	943470-5	.Slangklamma .....	2			0640
30	1	-	-	-	851529-8	.Anslutning .....	2	SE SIDA 22, 2-H23		0660
31	1	-	-	-	852142-9	.Oljekylare.. ..	6			0680
32	1	-	-	-	852148-6	.Ringmutter .....	6			0700
33	1	-	-	-	949000-4	.Klamma.. ..	2			70

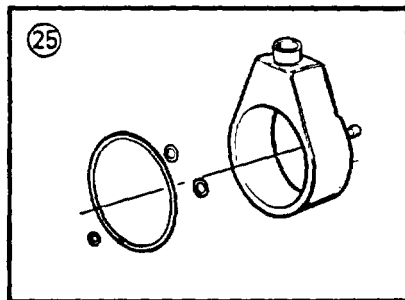
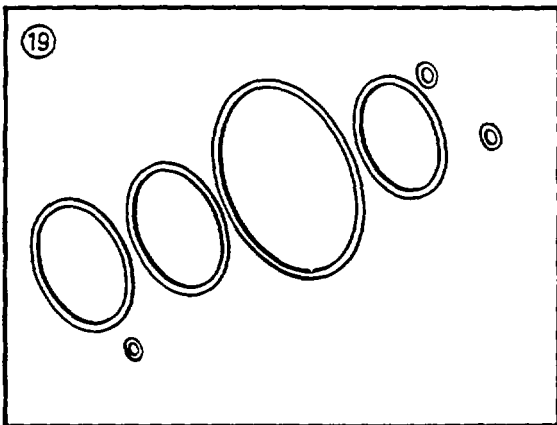
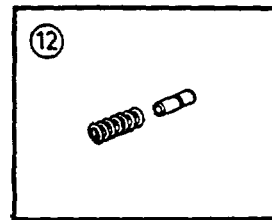
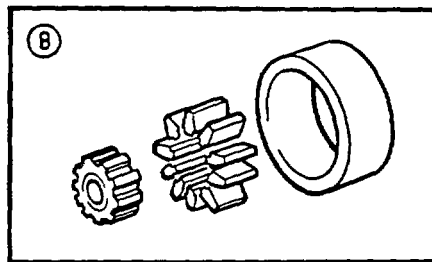
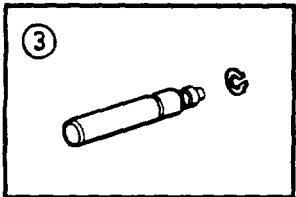
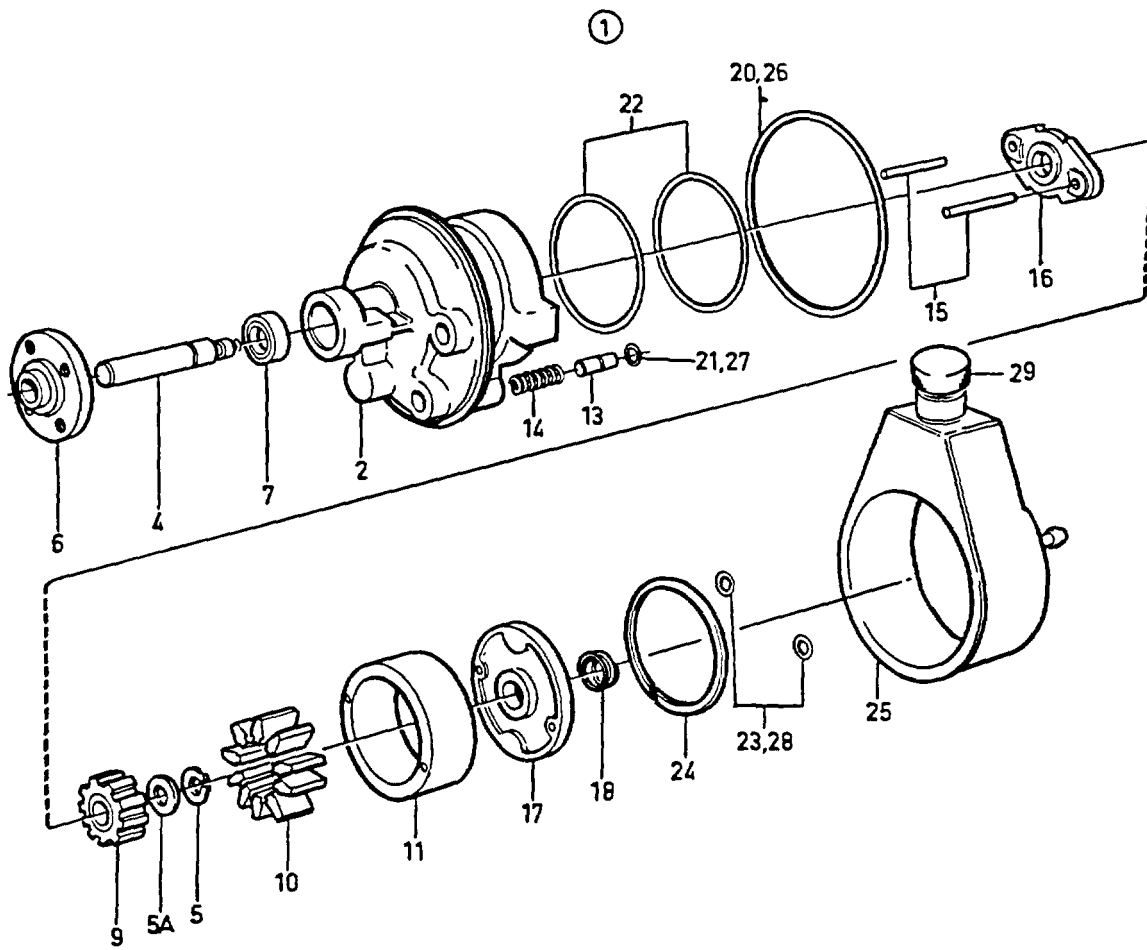
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Sida Page	Grupp Group	Pump,oljebhållare	Hydraulic pump,oil reservoir	Illustration 8797 1987-04	0290
28	6	AQD40A,AQAD40A,AQAD40B			

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	1276 495	1273 595	1273 972	1359 116							
1	1	-	-	-	1276495-7	Servopump	Servo pump	8		ERS AV 1273972	00:
	-	1	-	-	1273595-7	Servopump	Servo pump	8		ERS AV 1273972	0040
	-	-	1	-	1273972-8	Servopump	Servo pump	6		ERS AV 1359116	0060
	-	-	-	1	1359116-9	Servopump	Servo pump	6			0080
2	1	1	1	1		.Hus	.Housing	8			0100
3	1	1	-	-	1272417-5	.Drivaxelsats	.Drive shaft kit	4			0120
	-	-	1	1		.Drivaxelsats	.Drive shaft kit	8			0140
4	1	1	1	1		..Drivaxel	..Drive shaft	8			0180
5	1	1	1	1	1272423-3	..Låsring	..Circlip	4			0200
5a	ERF	ERF	ERF	ERF	1272634-5	.Justerbricka	.Shim	4		TJ=0,05MM	0240
	ERF	ERF	ERF	ERF	1272635-2	.Justerbricka	.Shim	4		TJ=0,1MM	0260
	ERF	ERF	ERF	ERF	1272636-0	.Justerbricka	.Shim	4		TJ=0,2MM	0300
	ERF	ERF	ERF	ERF	1272637-8	.Justerbricka	.Shim	4		TJ=0,3MM	0300
6	1	1	1	1		.Nav	.Hub	8			0340
7	1	1	1	1	1272412-6	.Tatning	.Seal	4			0360
8	1	1	-	-	1272415-9	.Rotorsats	.Rotor kit	4			0380
	-	-	1	1		.Rotorsats	.Rotor kit	8			0400
9	1	1	1	1		.Rotor	.Rotor	8			0400
10	1	1	1	1		.Vinge	.Vane	8			0460
11	1	1	1	1		.Ring	.Ring	8			0480
12	1	1	-	-	1272419-1	.Ventilsats	.Valve kit	4			0500
	-	-	1	1	273905-0	.Ventilsats	.Valve kit	4			0520
13	1	1	1	1		..Ventil	..Valve	8			0540
14	1	1	1	1		..Fjäder	..Spring	8			0560
15	1	1	1	1	1272427-4	.Pinne	.Pin	4			0580
16	1	1	-	-	1272428-2	.Platta	.Plate	4			0600
	-	-	1	1		.Platta	.Plate	8			0600
17	1	1	-	-	1272429-0	.Platta	.Plate	4			0600
	-	-	1	1	1329586-0	.Platta	.Plate	4			0680
18	1	1	-	-	1272430-8	.Fjäder	.Spring	4			0720
	-	-	1	1	1329589-4	.Fjäder	.Spring	4			0740
19	1	1	1	1	1272411-8	.Tatningssats	.Seal kit	8		ERS AV 855735	0760
20	1	1	1	1		..O-ring	..O-ring	8			0800
21	1	1	1	1		..O-ring	..O-ring	8			0820
22	2	2	2	2		..O-ring	..O-ring	8			0840
23	2	2	2	2		..O-ring	..O-ring	8			0860
24	1	1	1	1	1272431-6	..Låsring	..Circlip	4			0880
25	1	1	1	1	1272422-5	.Oljebhållarsats	.Oil container kit	4			0900
26	1	1	1	1		..O-ring	..O-ring	8			0900
27	1	1	1	1		..O-ring	..O-ring	8			0960
28	1	1	1	1		..O-ring	..O-ring	8			0980
29	-	-	1	1	1330839-0	.Lock	.Cover	4			1040
	1	1	-	-		.Lock	.Cover	8			1060

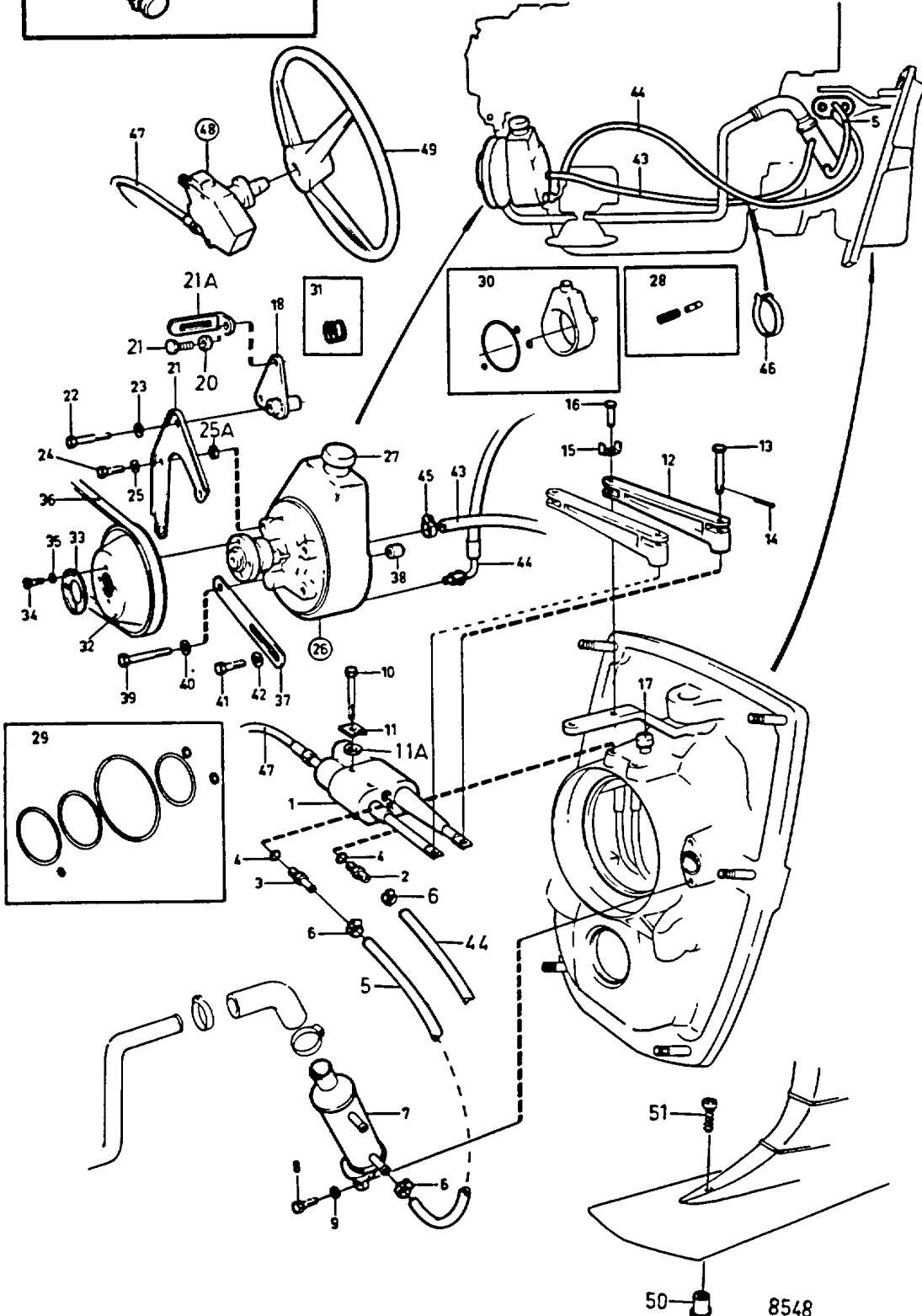
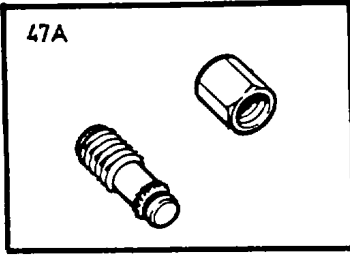


8797



Sida Page	Grupp Group	Servostyrning	Power steering	Illustration	0292
30	6	AQD40A,AQAD40A,AQAD40B		8548	
				1987-04	

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	36)										
1	1	-	-	-	852741-8	Styrcylinder.....	Steering cylinder.....	6			002
	1	-	-	-	853307-7	•Packningsatts.....	•Gasket kit.....	2			004.
2	1	-	-	-	957031-8	Nippel.....	Nipple.....	0			0060
3	1	-	-	-	946152-6	Nippel.....	Nipple.....	0			0080
4	2	-	-	-	958226-3	O-ring.....	O-ring.....	0			0100
5	ERF	-	-	-	838311-9	Slang.....	Hose.....	3	L=500MM		0120
6	3	-	-	-	961664-0	Slangklamma.....	Hose clamp.....	0			0140
7	1	-	-	-	838482-8	Oljekylare.....	Oil cooler.....	6			0160
8	2	-	-	-	955515-2	Skruv.....	Screw.....	0			0180
9	2	-	-	-	941906-0	Fjädrande bricka.....	Resilient washer.....	0			0200
10	2	-	-	-	968247-7	Skruv.....	Screw.....	0			0220
11	2	-	-	-	853254-1	Låsbleck.....	Lock washer.....	0			0250
11a	2	-	-	-	941908-6	Fjädrande bricka.....	Resilient washer.....	0			0260
12	1	-	-	-	852787-1	Länkstång.....	Link rod.....	6			0280
13	1	-	-	-	852789-7	Skruv.....	Screw.....	5			0300
14	2	-	-	-	907856-9	Saxpinne.....	Cotter pin.....	0			0320
15	1	-	-	-	853160-0	Låsbricka.....	Washer.....	3			0360
16	1	-	-	-	913158-2	Saxpinnebult.....	Clevis pin.....	0			0380
17	1	-	-	-	184700-3	Rulle.....	Roller.....	5			0400
18	1	-	-	-	838312-7	Konsol.....	Bracket.....	5			0420
19	2	-	-	-	955298-5	Skruv.....	Screw.....	0			0440
20	2	-	-	-	941907-8	Fjädrande bricka.....	Resilient washer.....	0			0450
21	1	-	-	-	838307-7	Konsol.....	Bracket.....	5			0460
21a	1	-	-	-	965556-4	Konsol.....	Bracket.....	0			0480
22	1	-	-	-	955697-8	Skruv.....	Screw.....	0			0500
23	1	-	-	-	955896-6	Bricka.....	Washer.....	0			0520
24	1	-	-	-	955317-3	Skruv.....	Screw.....	0	L=25MM		0540
	1	-	-	-	955318-1	Skruv.....	Screw.....	0	L=30MM		0560
25	2	-	-	-	941908-6	Fjädrande bricka.....	Resilient washer.....	0			0580
25a	2	-	-	-	940097-9	Bricka.....	Washer.....	0			0600
26	1	-	-	-	838310-1	Servopump.....	Servo pump.....	5	SE SIDA 38, 2-115		0620
27	1	-	-	-		•Lock.....	•Cover.....	8			0640
28	1	-	-	-		•Ventilsats.....	•Valve kit.....	8			0660
29	1	-	-	-	1272411-8	•Tätningssats.....	•Seal kit.....	2			0680
30	1	-	-	-		•Oljebehållarsats.....	•Oil container kit.....	8			0700
31	1	-	-	-	1329589-4	•Fjäder.....	•Spring.....	3			0720
32	1	-	-	-	1219961-8	Remskiva.....	Pulley.....	5			0740
33	1	-	-	-	464541-2	Bricka.....	Washer.....	5			0760
34	4	-	-	-	955293-6	Skruv.....	Screw.....	0			0780
35	4	-	-	-	941907-8	Fjädrande bricka.....	Resilient washer.....	0			0800
36	1	-	-	-	966383-2	Kilrem.....	Drive belt.....	0	L=1175MM		0820
37	1	-	-	-	807186-2	Spannjarn.....	Tension iron.....	5			0840
38	1	-	-	-	842350-1	Distanshylsa.....	Spacer sleeve.....	5	TID UTF		0880
	1	-	-	-	843075-3	Distanshylsa.....	Spacer sleeve.....	5	SEN UTF		0900
39	1	-	-	-	955273-8	Skruv.....	Screw.....	0	L=22MM		0920
	1	-	-	-	955295-1	Skruv.....	Screw.....	0	L=20MM		0940
40	1	-	-	-	960141-0	Bricka.....	Washer.....	0			0960
41	1	-	-	-	940129-0	Skruv.....	Screw.....	0			0980
42	1	-	-	-	960141-0	Bricka.....	Washer.....	0			0990
43	ERF	-	-	-	838311-9	Slang.....	Hose.....	3	L=1800MM		1000
44	1	-	-	-	855270-5	Slang.....	Hose.....	3	TID UTF		1020
	1	-	-	-	853454-7	Slang.....	Hose.....	3	SEN UTF		
45	1	-	-	-	961664-0	Slangklamma.....	Hose clamp.....	0			
46	ERF	-	-	-	948210-0	Bandklamma.....	Strip clamp.....	0			



Sida Page	Grupp Group	Servostyrning Power steering		Illustration 8548 1987-04	0292						
32	6	AQD40A,AQAD40A,AQAD40B									
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
47	ERF	-	-	-	850810-3	Styrkabel .....	Steering cable.....	8	L=3000MM		1040
	ERF	-	-	-	850811-1	Styrkabel .....	Steering cable.....	6	L=3300MM		1060
	ERF	-	-	-	850812-9	Styrkabel .....	Steering cable.....	6	44)L=3600MM		1080
	ERF	-	-	-	853188-1	Styrkabel .....	Steering cable.....	6	L=3750MM		1081
	ERF	-	-	-	850813-7	Styrkabel .....	Steering cable.....	8	L=3900MM		1100
	ERF	-	-	-	850814-5	Styrkabel .....	Steering cable.....	8	L=4200MM		1120
	ERF	-	-	-	850815-2	Styrkabel .....	Steering cable.....	6	45)L=4500MM		1140
	ERF	-	-	-	853191-5	Styrkabel .....	Steering cable.....	6	L=4500MM		1141
	ERF	-	-	-	850816-0	Styrkabel .....	Steering cable.....	6	L=4800MM		1160
	ERF	-	-	-	850817-8	Styrkabel .....	Steering cable.....	8	L=5100MM		1180
	ERF	-	-	-	850818-6	Styrkabel .....	Steering cable.....	6	46)L=5500MM		1
	ERF	-	-	-	853194-9	Styrkabel .....	Steering cable.....	6	L=5500MM		1
	ERF	-	-	-	850820-2	Styrkabel .....	Steering cable.....	6	47)L=6100MM		1220
	ERF	-	-	-	855195-4	Styrkabel .....	Steering cable.....	6	L=6000MM		1221
	ERF	-	-	-	850822-8	Styrkabel .....	Steering cable.....	6	48)L=6700MM		1240
	ERF	-	-	-	828866-4	Styrkabel .....	Steering cable.....	6	L=6750MM		1241
	ERF	-	-	-	850826-9	Styrkabel .....	Steering cable.....	6	49)L=7900MM		?
	ERF	-	-	-	853287-1	Styrkabel .....	Steering cable.....	6	L=8000MM		?
	ERF	-	-	-	850828-5	Styrkabel .....	Steering cable.....	6	50)L=8500MM		1280
	ERF	-	-	-	853288-9	Styrkabel .....	Steering cable.....	6	L=8500MM		1281
47a	ERF	-	-	-	853214-5	Adapter .....	Adepter.....	4			1290
48	1	-	-	-	850809-5	Styrhuvud .....	Steering head .....	6			1300
	-	-	-	-		.Det se sida 40, 2-117 .....	.Comp page 40, 2-117 .....				1320
49	1	-	-	-	850936-6	Ratt .....	Steering wheel .....	6			1340
50	1	-	-	-	853531-2	Propp .....	Plug .....		37,43)		1360
	1	-	-	-	853589-0	Propp .....	Plug .....				1380
51	1	-	-	-	959437-5	Skruv .....	Screw .....	0			1400

36. För AQ drev 290 DP290 290A DP290A. For AQ drive unit 290 DP290 290A DP290A.

37. För AQ drev 290 DP290. For AQ drive unit 290 DP290.

43. For drev DP290A. For drive unit DP290A.

44. Ersatt av STYRKABEL-853188 och ADAPTER-853214. Replaced by steering CABLE-853188 and ADEPTER-853214.

45. Ersatt av STYRKABEL-853191 och ADAPTER-853214. Replaced by steering CABLE-853191 and ADEPTER-853214.

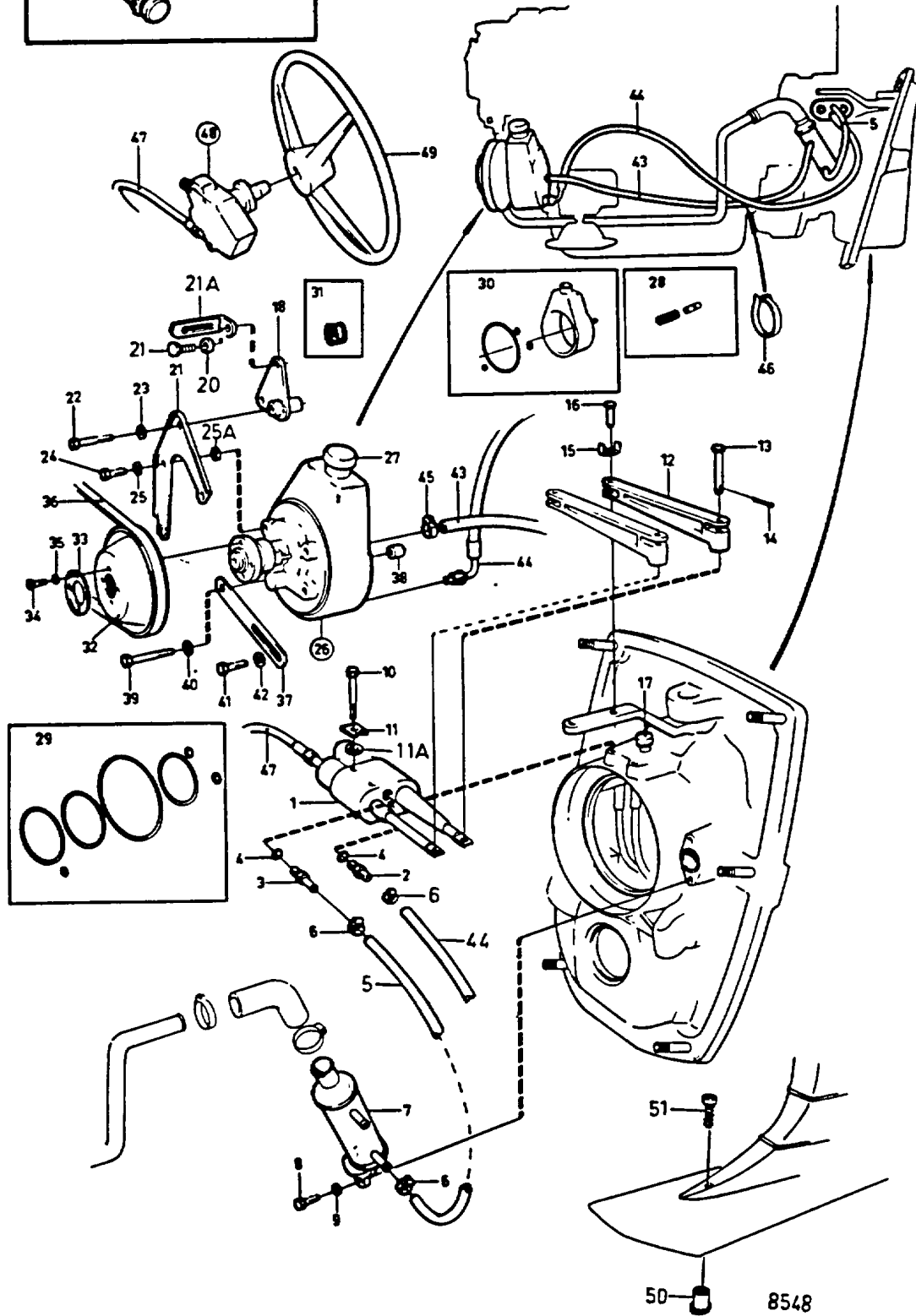
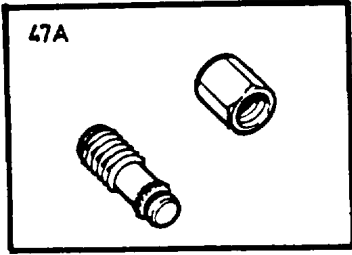
46. Ersatt av STYRKABEL-853194 och ADAPTER-853214. Replaced by steering CABLE-853194 and ADEPTER-853214.

47. Ersatt av STYRKABEL-853195 och ADAPTER-853214. Replaced by steering CABLE-853195 and ADEPTER-853214.

48. Ersatt av STYRKABEL-828866 och ADAPTER-853214. Replaced by steering CABLE-828866 and ADEPTER-853214.

49. Ersatt av STYRKABEL-853287 och ADAPTER-853214. Replaced by steering CABLE-853287 and ADEPTER-853214.

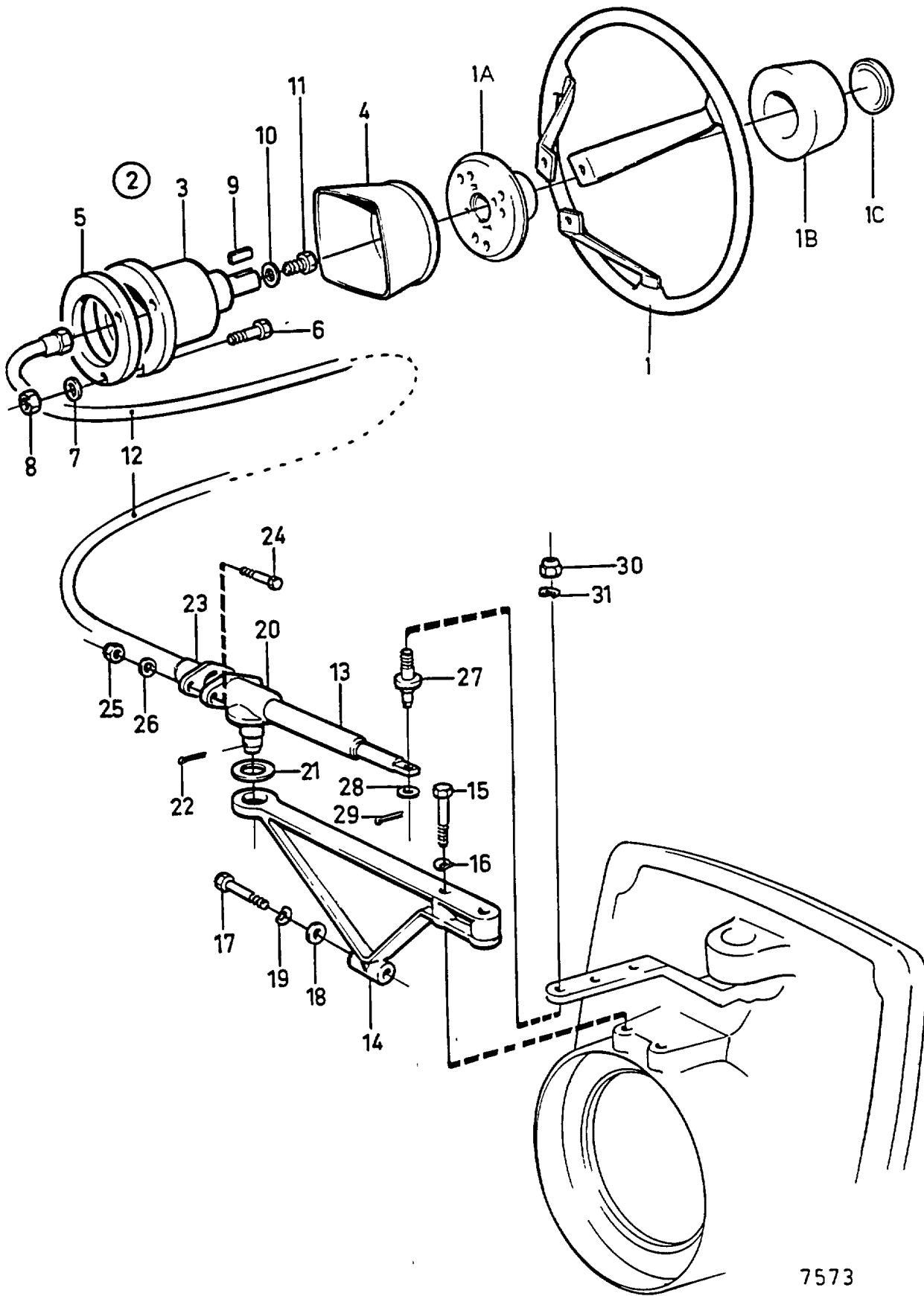
50. Ersatt av STYRKABEL-853288 och ADAPTER-853214. Replaced by steering CABLE-853288 and ADEPTER-853214.



Sida Page <b>34</b>	Grupp Group <b>6</b>	Styrmekanism, ROTO pilot AQ drev 290, DP290 AQD40A,AQAD40A,AQAD40B	Steering mechanism, ROTO pilot AQ drive unit 290	Illustration 7573 1987-04	0293
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Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	850936-6	Ratt .....	Steering wheel .....	5			0020
1a	1	-	-	-	850937-4	.Rattnav .....	.Steering wheel hub .....	5			0025
1b	1	-	-	-	828943-1	.Rattkudde .....	.Steering wheel pad .....	5			0030
1c	1	-	-	-	850938-2	.Rattblem .....	.Steering wheel badge .....	5			0035
2	1	-	-	-	851056-2	Styrhuvud .....	Steering head .....	6			0040
3	1	-	-	-		.Styrväxel .....	.Steering gear .....	8			0060
4	1	-	-	-	851057-0	.Kåpa .....	.Casing .....	5			0080
5	1	-	-	-	851069-5	.Bricka .....	.Washer .....	4			0100
6	3	-	-	-	940101-9	.Skruv .....	.Screw .....	0			0120
7	3	-	-	-	941906-0	.Fjädrande bricka .....	.Resilient washer .....	0			0140
8	3	-	-	-	955781-0	.Mutter .....	.Nut .....	0			?
9	1	-	-	-	851349-1	.Kil .....	.Key .....	2			J
10	1	-	-	-	948823-0	.Bricka .....	.Washer .....	0			0200
11	1	-	-	-	940148-0	.Skruv .....	.Screw .....	0			0220
12	ERF	-	-	-	852035-5	Styrkabel .....	Steering cable .....	6	L=800MM		0240
	ERF	-	-	-	851016-6	Styrkabel .....	Steering cable .....	6	L=2500MM		0260
	-	-	-	-					ERS AV 851017		1
	ERF	-	-	-	851017-4	Styrkabel .....	Steering cable .....	6	L=2750MM		J
	ERF	-	-	-	851018-2	Styrkabel .....	Steering cable .....	6	L=3000MM		0300
	ERF	-	-	-	851019-0	Styrkabel .....	Steering cable .....	6	L=3250MM		0320
	-	-	-	-					ERS AV 851020		0321
	ERF	-	-	-	851020-8	Styrkabel .....	Steering cable .....	6	L=3500MM		0340
	ERF	-	-	-	851021-6	Styrkabel .....	Steering cable .....	6	L=3750MM		0360
	ERF	-	-	-	851022-4	Styrkabel .....	Steering cable .....	6	L=4000MM		0380
	ERF	-	-	-	851023-2	Styrkabel .....	Steering cable .....	6	L=4250MM		0400
	ERF	-	-	-	851024-0	Styrkabel .....	Steering cable .....	6	L=4500MM		0420
	ERF	-	-	-	851025-7	Styrkabel .....	Steering cable .....	6	L=4750MM		044C
	ERF	-	-	-	851026-5	Styrkabel .....	Steering cable .....	6	L=5000MM		0460
	ERF	-	-	-	851027-3	Styrkabel .....	Steering cable .....	6	L=5250MM		0480
	ERF	-	-	-	851028-1	Styrkabel .....	Steering cable .....	6	L=5500MM		0500
	ERF	-	-	-	851029-9	Styrkabel .....	Steering cable .....	6	L=5750MM		0520
	ERF	-	-	-	851030-7	Styrkabel .....	Steering cable .....	6	L=6000MM		0540
	ERF	-	-	-	851031-5	Styrkabel .....	Steering cable .....	6	L=6500MM		0560
	ERF	-	-	-	851032-3	Styrkabel .....	Steering cable .....	6	L=7000MM		0580
	ERF	-	-	-	851033-1	Styrkabel .....	Steering cable .....	6	L=7500MM		0600
	ERF	-	-	-	851034-9	Styrkabel .....	Steering cable .....	6	L=8000MM		0620
	ERF	-	-	-	851921-7	Styrkabel .....	Steering cable .....	6	L=8500MM		0640
	ERF	-	-	-	851922-5	Styrkabel .....	Steering cable .....	6	L=9000MM		?
	ERF	-	-	-	851923-3	Styrkabel .....	Steering cable .....	6	L=9500MM		?
13	1	-	-	-	851147-9	Styrcylinder .....	Steering cylinder .....	5	23)		0700
	1	-	-	-	851059-6	Styrcylinder .....	Steering cylinder .....	8	24)		0720
14	1	-	-	-	853074-3	Konsol .....	Bracket .....	6			0740
15	2	-	-	-	955324-9	Skruv .....	Screw .....	0			0760
16	2	-	-	-	941908-6	Fjädrande bricka .....	Resilient washer .....	0			?
17	1	-	-	-	955300-9	Skruv .....	Screw .....	0	TID UTF		J
	1	-	-	-	940142-3	Skruv .....	Screw .....	0	SEN UTF		0810
18	1	-	-	-	960141-0	Bricka .....	Washer .....	0			0820
19	1	-	-	-	941907-8	Fjädrande bricka .....	Resilient washer .....	0	TID UTF		0840
20	1	-	-	-	853075-0	Kulskruvfäste .....	Ball screw joint .....	5			0860
21	1	-	-	-	955904-8	Bricka .....	Washer .....	0			0880
22	1	-	-	-	907872-6	Saxpinne .....	Split pin .....	0			0900
23	1	-	-	-	853076-8	Overfall .....	Cap .....	5			0920
24	2	-	-	-	940101-9	Skruv .....	Screw .....	0			0940
25	2	-	-	-	963105-2	Mutter .....	Nut .....	0			096F
26	2	-	-	-	949607-6	Bricka .....	Washer .....	0			09E
27	1	-	-	-	853077-6	Saxpinneskruv .....	Split pin screw .....	4			100L
28	1	-	-	-	940097-9	Bricka .....	Washer .....	0			1020
29	1	-	-	-	964960-9	Saxpinne .....	Cotter pin .....	0			1040
30	1	-	-	-	963108-6	Mutter .....	Nut .....	0			1060

23 . För styrbordsmontering. For starboard mounting.  
24 . För babordsmontering. For port mounting.





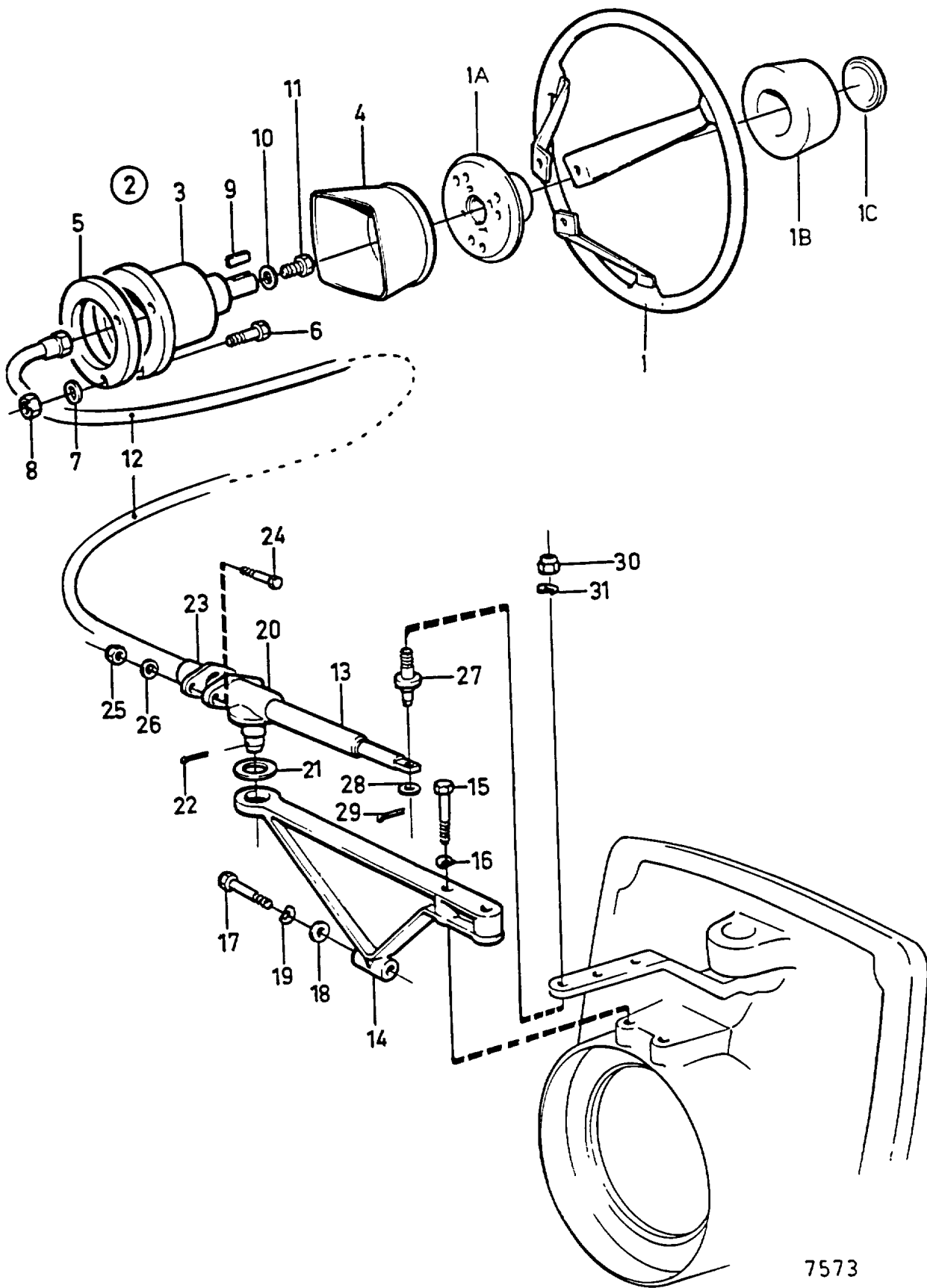
Publ. 4406

Reservdelskatalog  
Parts Catalogue

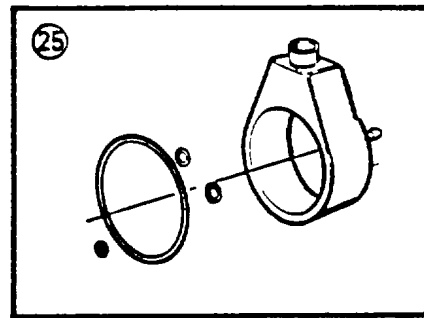
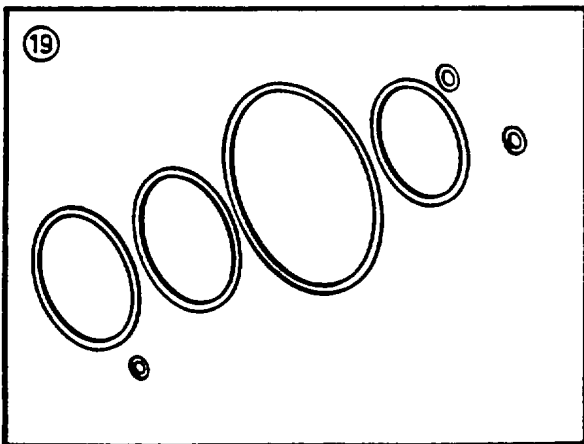
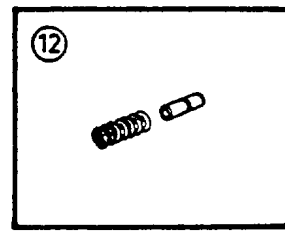
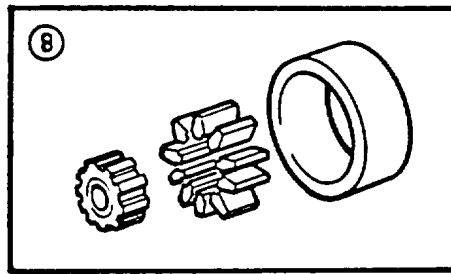
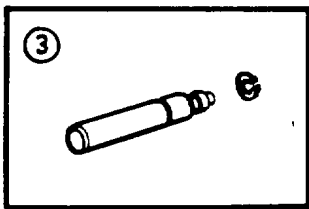
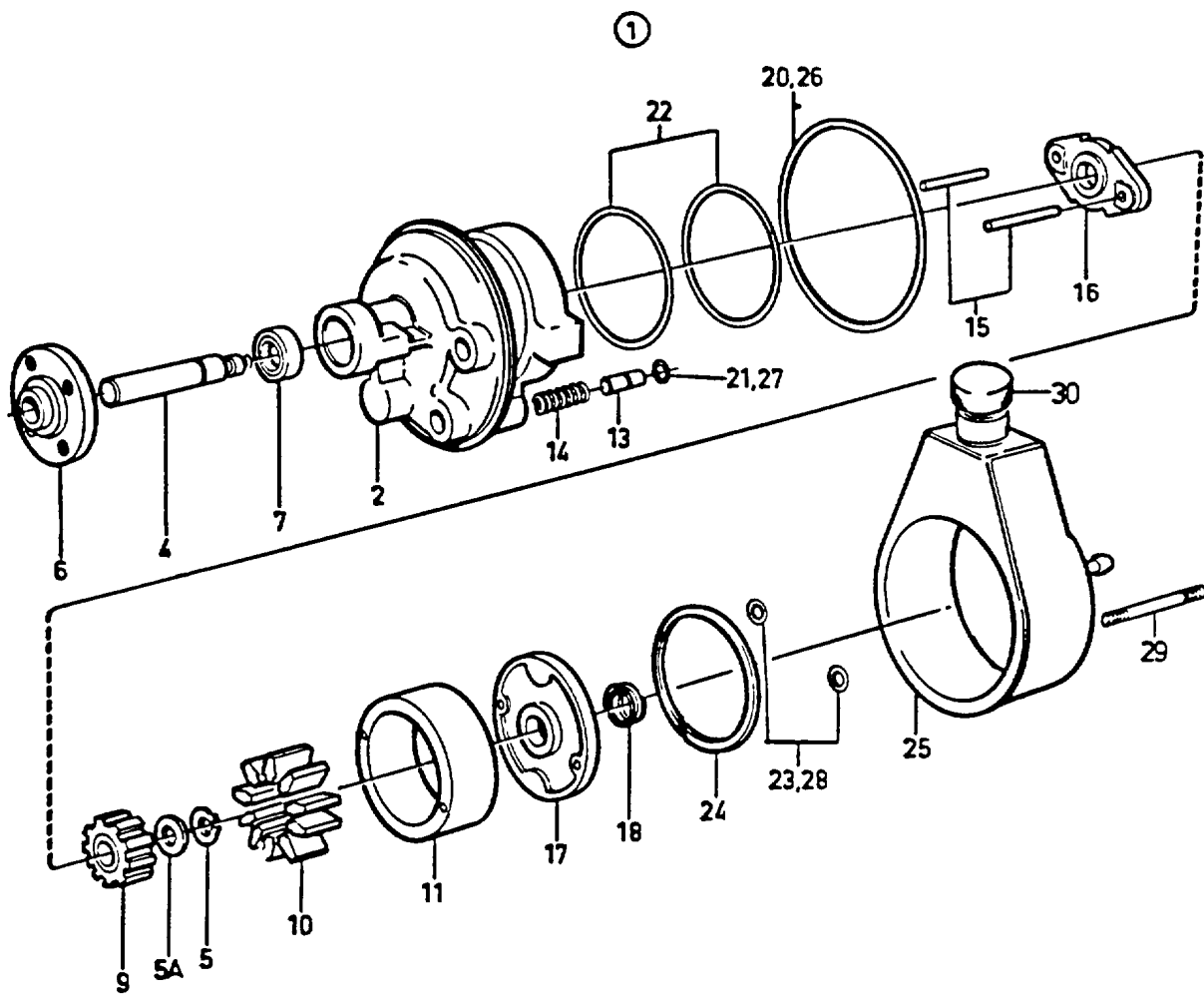
2-113

**VOLVO  
PENTA**

Sida Page	Grupp Group	Styrmekanism, ROTO pilot AQ drev 290, DP290 AQD40A,AQAD40A,AQAD40B	Steering mechanism, ROTO pilot AQ drive unit 290	Illustration 7573 1987-04	0293						
36	6										
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning .	Description	Sats Kit	B P S R	Anmärkning Notes	
31	1	-	-	-	949608-4	Fjäderbricka ... ..	Spring washer. ....		0		1080

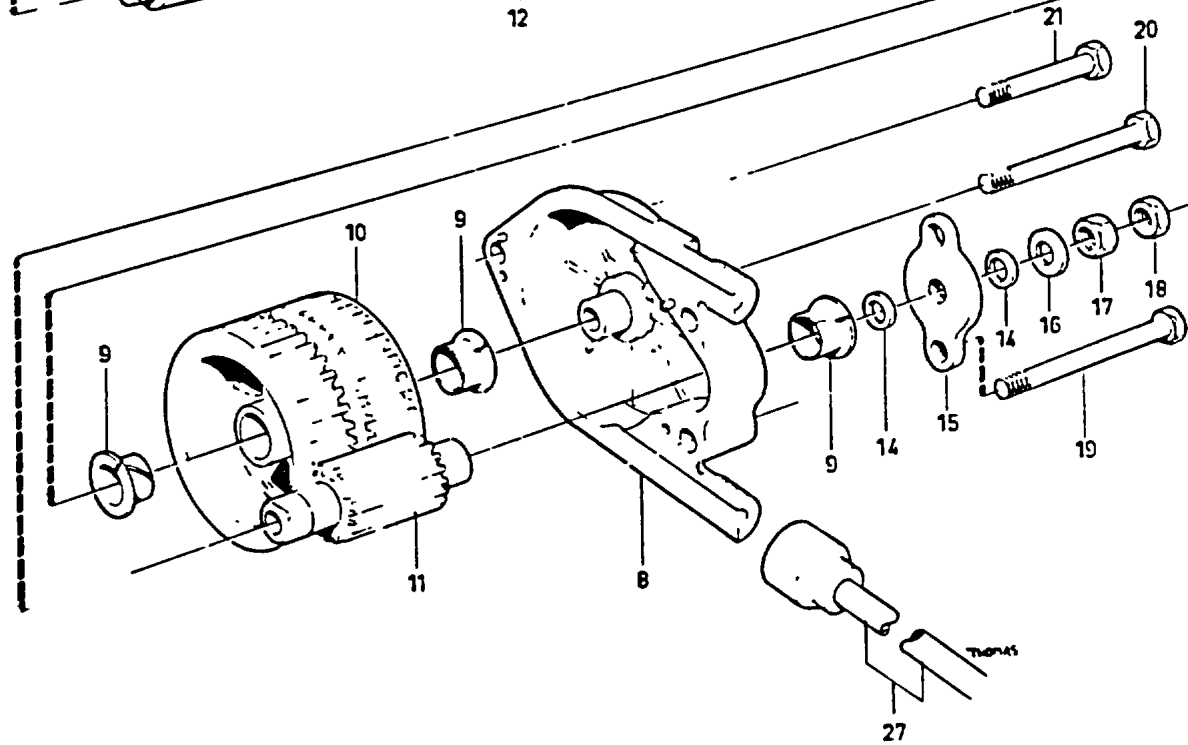
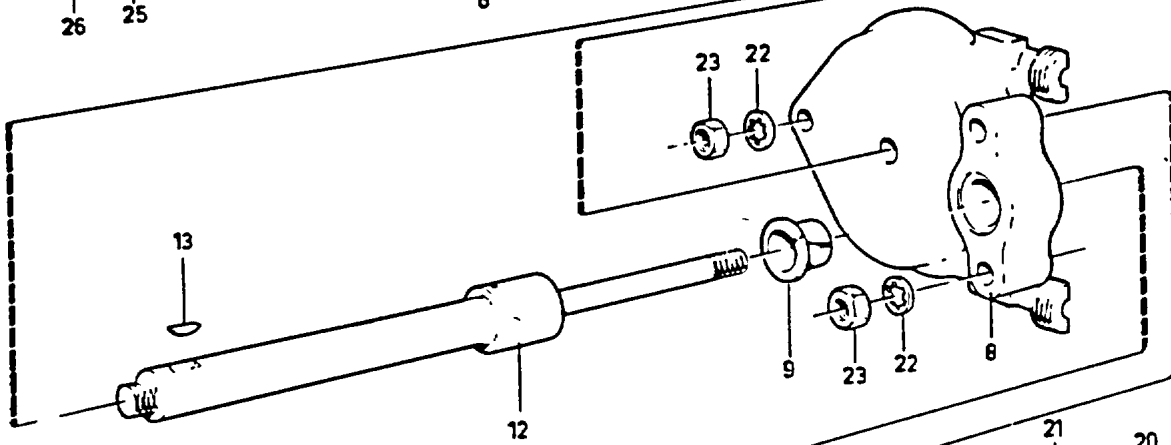
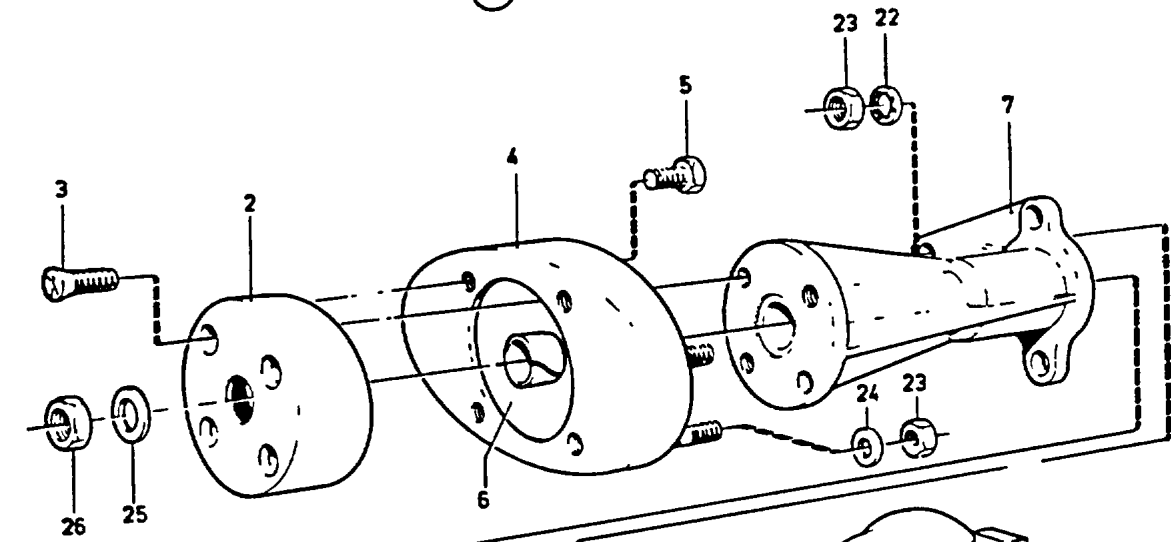


Sida Page		Grupp Group		Pump,oljebehållare			Hydraulic pump,oil reservoir			Illustration	
38		6								7222 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	838										
1	1	-	-	-	838310-1	Servopump .....	Servo pump .....	6			002
2	1	-	-	-		.Hus .....	.Housing .....	8			0040
3	1	-	-	-		.Drivaxelsats .....	.Drive shaft kit. ....	8			0060
4	1	-	-	-		..Drivaxel.....	..Drive shaft.....	8			0080
5	1	-	-	-	273881-3	.Tätningringsats.....	.Seal ring kit.....	4			0100
5a	ERF	-	-	-	1272634-5	.Justerbricka .....	.Shim .....	4	TJ=0,05MM		0120
	ERF	-	-	-	1272635-2	.Justerbricka .....	.Shim .....	4	TJ=0,1MM		0140
	ERF	-	-	-	1272636-0	.Justerbricka .....	.Shim .....	4	TJ=0,2MM		0160
	ERF	-	-	-	1272637-8	.Justerbricka .....	.Shim .....	4	TJ=0,3MM		0180
6	1	-	-	-		.Nav.....	.Hub.....	8			0200
7	2	-	-	-	1272412-6	.Tätning .....	.Seal.....	4			0
8	1	-	-	-		.Rotorsats .....	.Rotor kit.....	8			40
9	1	-	-	-		.Rotor .....	.Rotor.....	8			0260
10	1	-	-	-		.Vinge.....	.Vane.....	8			0280
11	1	-	-	-		.Ring.....	.Ring.....	8			0300
12	1	-	-	-	273905-0	.Ventilsats .....	.Valve kit.....	4			0320
13	1	-	-	-		..Ventil.....	..Valve.....	8			0
14	1	-	-	-		..Fjäder.....	..Spring.....	8			0
15	1	-	-	-	1272427-4	.Pinne.....	.Pin.....	4			0380
16	1	-	-	-	1329586-0	.Platta .....	.Plate.....	4			0400
17	1	-	-	-		.Platta .....	.Plate.....	8			0420
18	1	-	-	-	1329589-4	.Fjäder .....	.Spring .....	4			0440
19	1	-	-	-	855735-7	Tätningssats..	Seal kit ..	4			0460
20	1	-	-	-		..O-ring .....	..O-ring .....	8			0480
21	1	-	-	-		..O-ring.....	..O-ring.....	8			0500
22	2	-	-	-		..O-ring.....	..O-ring.....	8			0520
23	2	-	-	-		..O-ring.....	..O-ring.....	8			054
24	1	-	-	-	1272431-6	..Låsring.....	..Circlip .....	4			056
25	1	-	-	-	855544-3	.Oljebehållarsats .....	.Oil container kit.....	4			0580
26	1	-	-	-		..O-ring.....	..O-ring .....	8			0600
27	1	-	-	-		..O-ring.....	..O-ring .....	8			0620
28	1	-	-	-		..O-ring .....	..O-ring .....	8			0640
29	2	-	-	-	855574-0	.Skruv .....	.Screw .....	4			0660
30	1	-	-	-	1330839-0	.Lock .....	.Cover .....	4			0680



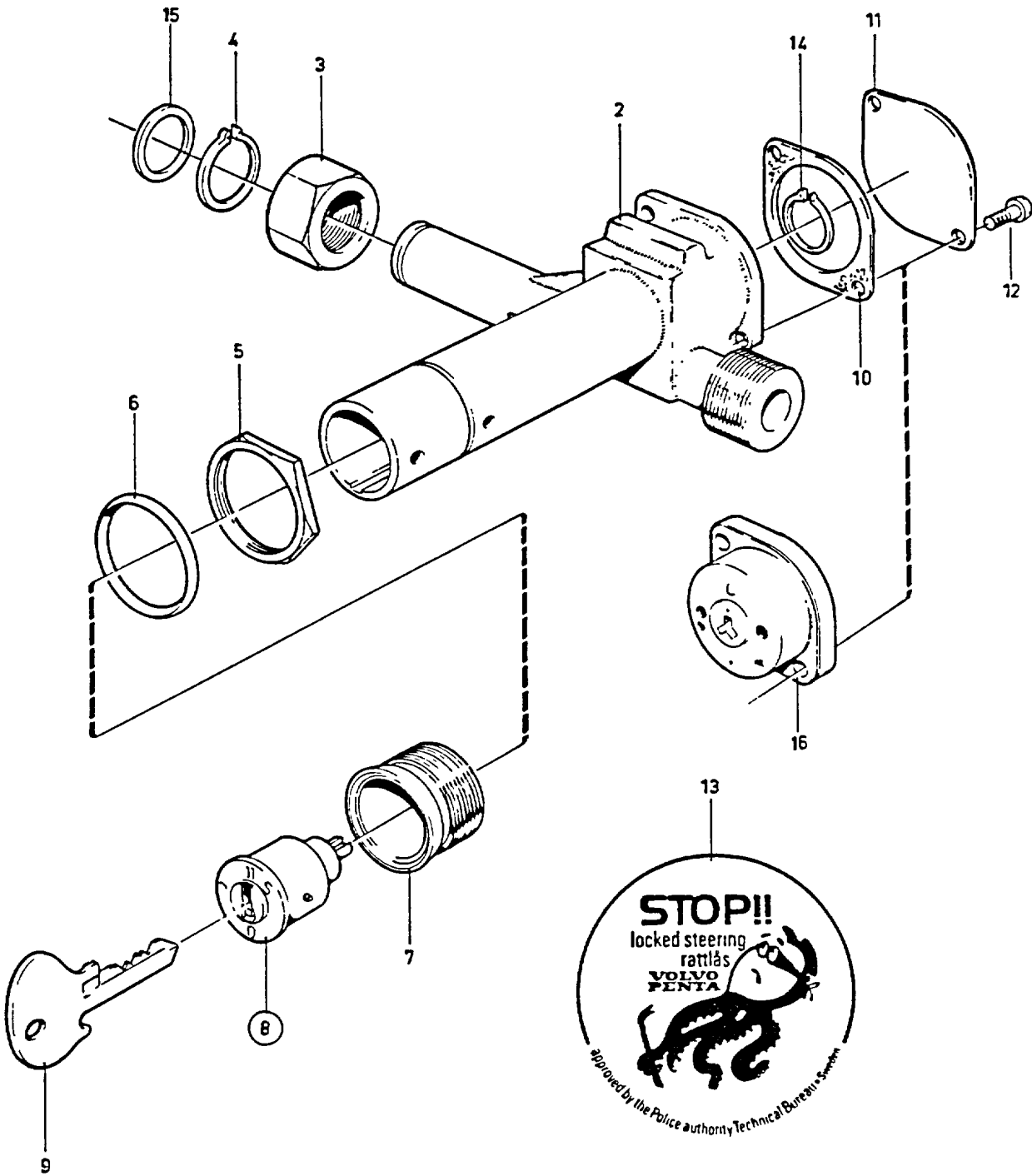
Sida Page		Grupp Group		Styrhuvud Steering head			Illustration 3690 1987-04		0300	
40		6		GEM						
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	Anmärkning Notes	
1	1	-	-	-	850809-5	Styrhuvud....	Steering head .....	5		002.
2	1	-	-	-		.Monteringsplatta...	.Mounting plate .....	8		0040
3	4	-	-	-	941462-4	.Skruv. . . . .	.Screw .....	0		0060
4	1	-	-	-		.Konsol. . . . .	.Bracket... ..	8		0080
5	4	-	-	-	955655-6	.Skruv .. . . .	.Screw .....	0		0100
6	1	-	-	-	839724-2	.Bussning .....	.Bushing... ..	3		0120
7	1	-	-	-		.Konsol .....	.Bracket... ..	8		0140
8	2	-	-	-		.Hus ... ..	.Housing .....	8		0160
9	4	-	-	-	828155-2	.Bussning .....	.Bushing .....	3		0180
10	1	-	-	-		.Kugghjul .....	.Gear .....	8		0200
11	1	-	-	-		.Kugghjul .....	.Gear .....	8		0220
12	1	-	-	-		.Axel....	.Shaft.....	8		40
13	1	-	-	-	835059-7	.Kil .....	.Key .....	2		0260
14	2	-	-	-	839725-9	.Glidbricka .....	.Slip washer.....	2		0280
15	1	-	-	-		.Tryckplatta .....	.Thrust plate .....	8		0300
16	1	-	-	-	940097-9	.Bricka ... ..	.Washer .....	0		0320
17	1	-	-	-	955848-7	.Mutter .....	.Nut .....	0		0340
18	1	-	-	-	955858-6	.Mutter .....	.Nut .....	0		30
19	2	-	-	-	955670-5	.Bult .....	.Bolt .....	8		0380
20	1	-	-	-	955668-9	.Bult. ....	.Bolt .....	0		0400
21	1	-	-	-	955665-5	.Bult. ....	.Bolt .....	0		0420
22	4	-	-	-	955949-3	.Bricka .....	.Washer .....	0		0440
23	8	-	-	-	955847-9	.Mutter .....	.Nut .....	0		0460
24	4	-	-	-	955894-1	.Bricka .....	.Washer .....	0		0480
25	1	-	-	-	960145-1	.Bricka .....	.Washer .....	0		0500
26	1	-	-	-	940154-8	.Mutter .....	.Nut .....	0		0520
27	1	-	-	-	839727-5	.Plastror .....	.Pipe .....	4		054

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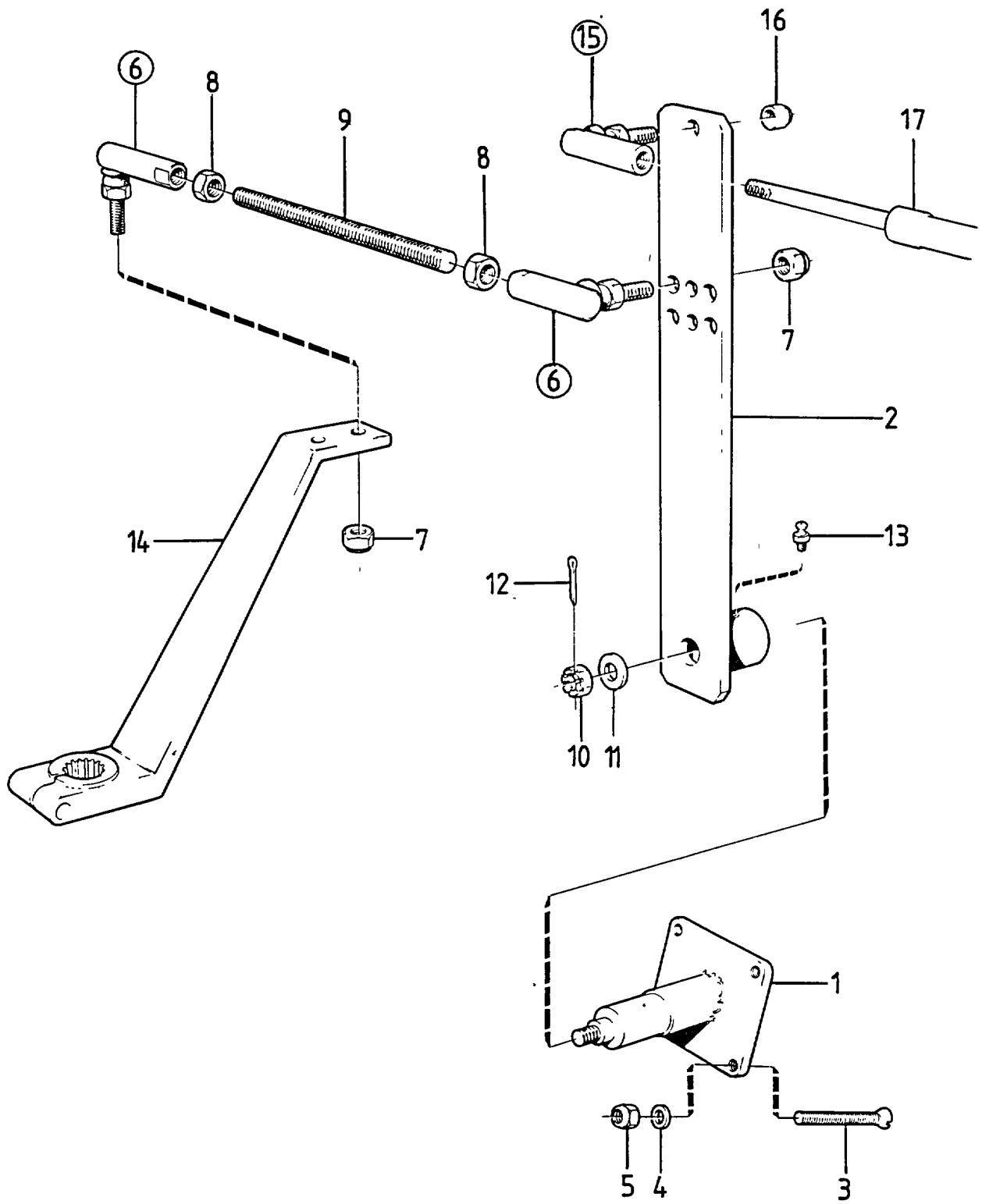
Sida Page		Grupp Group		Styrkabelås			Steering cable lock			Illustration	
42		6		GEM						4153 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	839544-4	Styrlås.....	Steering lock.....				002
2	1	-	-	-		.Hus.....	.Housing.....	8			004L
3	1	-	-	-	839531-1	.Mutter.....	.Nut.....	8			0060
4	1	-	-	-	914450-2	.Låsring.....	.Lock ring.....	0			0080
5	1	-	-	-	832476-6	.Mutter.....	.Nut.....	0			0100
6	1	-	-	-	839523-8	.Låsring.....	.Lock ring.....	4			0120
7	1	-	-	-	839512-1	.Låshylsa.....	.Sleeve.....	8			0140
8	1	-	-	-	839532-9	.Cylinder.....	.Cylinder.....	6			0160
9	1	-	-	-	831606-9	..Tändningsnyckel.....	..Ignition key.....	6	16)		0180
10	1	-	-	-	1140051-2	.Packning.....	.Gasket.....	2	(839543)		0200
11	1	-	-	-	839542-8	.Skyddslock.....	.Protection cover.....	8			^220
12	2	-	-	-	956060-8	.Skruv.....	.Screw.....	0			40
13	1	-	-	-		.Dekal.....	.Decal.....	8			^260
14	1	-	-	-	914448-6	.Låsring.....	.Lock ring.....	0			0280
15	2	-	-	-	850221-3	.Bricka.....	.Washer.....	8			0300
16	1	-	-	-	839492-6	Platta.....	Plate.....	5			0320

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Sida Page		Grupp Group		Utväxlingsanordning AQ drev 280 AQD40A,AQAD40A,AQAD40B		Reduction kit AQ drive unit 280		Illustration 4663 1987-04		0450	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	897029-5	Konsol. . . . .	Bracket . . . . .	7			002L
2	1	-	-	-	897030-3	Styrstång . . . . .	Steering rod . . . . .	7			0040
3	4	-	-	-	804435-6	Skruv . . . . .	Screw . . . . .	4			0060
4	4	-	-	-	955894-1	Bricka . . . . .	Washer . . . . .	0			0080
5	4	-	-	-	950363-2	Mutter . . . . .	Nut . . . . .	0			0100
6	4	-	-	-	814152-5	Kulled . . . . .	Ball joint . . . . .	4			0120
7	4	-	-	-	950386-3	.Mutter . . . . .	.Nut . . . . .	0			0140
8	4	-	-	-	940154-8	Mutter . . . . .	Nut . . . . .	0			0160
9	2	-	-	-	949155-6	Stång . . . . .	Rod . . . . .	3			0180
10	1	-	-	-	955866-9	Mutter . . . . .	Nut . . . . .	0			0200
11	1	-	-	-	955897-4	Bricka . . . . .	Washer . . . . .	0			0
12	1	-	-	-	907849-4	Saxpinne . . . . .	Cotter pin . . . . .	0			0
13	1	-	-	-	951739-2	Smörjnippel . . . . .	Grease nipple . . . . .	0			0260
14	1	-	-	-		Styrarm . . . . .	Steering arm . . . . .		SE GRUPP 4A		0280
15	1	-	-	-	814152-5	Kulled . . . . .	Ball joint . . . . .	4			0300
16	1	-	-	-	950386-3	.Mutter . . . . .	.Nut . . . . .	0			0320
17	ERF	-	-	-		Styrkabel . . . . .	Steering cable . . . . .				0



Sida Page	Grupp Group	Innehållsfor-teckning	Index		0001
1a	9			1987-04	
		Ovrig utrustning		Sida Koord	0020
		Sugrorsats	MD40A,TMD40A,TMD40B,TMD40C, ... TAMD40A,TAMD40B	2 3-A05	0040 0060 0080 010 012
		Elektrisk oljeläns-pump	GEM	4 3-A07	0140
		Värmeväxlare med monteringsdetaljer	TMD40A	6 3-A09	0160
		Värmeväxlare och termostat med monteringsdetaljer	TMD40A	8 3-A11	0180
		Ombyggnadssats oljekylare	AQAD40	10 3-A13	0200
		Vakuumventilsats	MD40A,TMD40A,TMD40B,TMD40C	12 3-A15	0220
		Sjövattensil	MD40A,TMD40A,TMD40B,TMD40C, ... TAMD40A,TAMD40B	14 3-A17	0240 0260
		Kylvattenintag	GEM	16 3-A19	0280
		Sjövattenfilter och sjövattenintag	MD40A,TMD40A,TMD40B,TMD40C	18 3-A21	0300
		Vattenkyld avgasljuddämpare med monteringsdetaljer	MD40A,TMD40A,TMD40B,TMD40C, ... TAMD40A,TAMD40B	20 3-A23	0320 0340
		Varmvattenuttag	GEM	22 3-B01	0360
		Torr avgasledning	TMD40A,TMD40B,TMD40C,TAMD40A TAMD40B	24 3-B03	0380 0400
		Torr avgasledning	MD40A	26 3-B05	0420
		Vattenkyld avgasledning	TMD40A,TMD40B,TMD40C,TAMD40A, TAMD40B	28 3-B07	0440 0460
		Avgastemperaturvakt	MD40A,TMD40A,TAMD40A	30 3-B09	0480
		Anslutningsdetaljer Bränslefilter-bränsletank	GEM	32 3-B11	0500
		Bränsletank och anslutningsdetaljer	GEM	34 3-B13	0520
		Bränslefilter och anslutningsdetaljer	GEM	36 3-B15	0540
		Bränslefilter	GEM	38 3-B17	0560
		Bränslefilter	GEM	40 3-B19	0580
		Tankmätarsats för bränsle och dricksvatten	MD40A,TMD40A,TMD40B,TMD40C AQD40A,TAMD40A,TAMD40B AQAD40A,AQAD40B	42 3-B21	0600 0620 0640
		TID UTF			
		Tankmätarsats för bränsle och dricksvatten SEN UTF	GEM	44 3-B23	0660 0680
		Tankmätarsats för bränsle och dricksvatten	GEM	46 3-C01	0700
		Laddluftsmätarsats	TAMD40B,AQAD40B	48 3-C03	0720
		Reglage för sidomontering	GEM	50 3-C05	0740
		Reglage för toppmontering	GEM	52 3-C07	0760
		Reglage för sidomontering	GEM	54 3-C09	0780
		Reglage för toppmontering	GEM	56 3-C11	0800
		Reglage för toppmontering	GEM	58 3-C13	0820
		Reglagemekanism	GEM	60 3-C15	0840
		Reglagekablar	GEM	62 3-C17	0860
		Universalkonsol	GEM	64 3-C19	0880
		Larmenhet	GEM	66 3-C21	0900
		Vaxelströmgeneratorsats	MD40A,TMD40A,TAMD40A,AQAD40A	68 3-C23	0920
		Vaxelströmgeneratorsats	TMD40C	72 3-D03	0940
		Instrumenttavla med monteringsdetaljer	TMD40B,TMD40C,TAMD40B,AQAD40	82 3-D13	0960
		Instrumenttavla	GEM	84 3-D15	0980
		Extra instrumenttavla	GEM	86 3-D17	1000
		Tilläggstavla	GEM	88 3-D19	1020
		Larmtavla	GEM	90 3-D21	1040
		Instrumenttavla flybridge	GEM	92 3-D23	1060
		Roderindikatorsats drev 290	GEM	94 3-E01	1080
		Power trim panel flying bridge, DREV290	AQD40A,AQAD40A,AQAD40B	96 3-E03	1100
		Kylvattennivåalarm	MD40A,TMD40A,AQD40A,TAMD40A, ... AQAD40A	98 3-E05	1120 1140
		Ombyggnadssats 24v	MD40A,TMD40A,TMD40B,TMD40C ... AQD40A,TAMD40A,TAMD40B AQAD40A,AQAD40B	100 3-E07	1160 1180 1200
		Generator med monteringsdetaljer	MD40A,TMD40A,TMD40B,TMD40C ... AQD40A,TAMD40A,TAMD40B AQAD40A,AQAD40B	102 3-E09	1220 1240 1260
		Klämkopplingsfläns 5"	GEM	104 3-E11	1280
		Propelleraxelfläns	GEM	106 3-E13	1300

0001	Innehållsforteckning	Index	Grupp Group	Sida Page
	1987-04		9	1b
	Propelleraxelfläns .....	GEM .....	108	3-E15
1340	Propelleraxeltätning .....	MD40A,TMD40A,TMD40B,TMD40C ..	110	3-E17
1360		TAMD40A,TAMD40B		
1380	Propelleraxelhylsa .....	GEM .....	112	3-E19
	Propeller, brons zinkanoder .....	GEM .....	114	3-E21
	Propeller, AQ .....	GEM .....	118	3-F01
	Propeller, Duoprop .....	GEM .....	120	3-F03
1460	Trimplan .....	GEM .....	122	3-F05
1480	Mekanisk lyftanordning AQ drev 280 .....	AQAD40A, AQAD40B .....	124	3-F07
1500	Instrumenttavla .....		126	3-F09
1520	Förlängningssats .....	AQD40A,AQAD40A,AQAD40B .....	128	3-F11
1540	Förlängningssats ..	AQD40A,AQAD40A,AQAD40B ..	130	3-F13
1560	Flying bridge, senare utförande Enkel .....	GEM .....	132	3-F15
1580	motorinstallation			
1600	Flying bridge, senare utförande Dubbel .....	GEM .....	134	3-F17
16~	motorinstallation			
16	Instrumenttavla ..	MD40A,TMD40A,AQD40A,TAMD40A ...	138	3-F21
1660		AQAD40A		
1680	Motorrumsfläkt länsypump ..	GEM ..	140	3-F23
1700	Livbåtsmotorsats .....	TAMD40A,TAMD40B .....	142	3-G01
1720	Ombordsats .....	MD40A,TMD40A,AQD40A .....	146	3-G05
17^	Ombordssats .....	AQAD40,TAMD40 .....	148	3-G07
17	Ombordssats ..	GEM ..	150	3-G09
178v	Verktygssats .....	MD40A,TMD40A,TMD40B,TMD40C, .	152	3-G11
1800		AQD40A		
1820	Verktygssats .....	TAMD40A,TAMD40B,AQAD40A .....	154	3-G13
1840		AQAD40B		
1860	Verktygssats .....	GEM ..	156	3-G15
1880	Kemikalier ..	GEM ..	158	3-G17
2000				



Sida Page	Grupp Group	Innehållsförteckning	Index		1987-04	0001
1c	9					
		Miscellaneous equipment		Page	Grid	
		Suction pipe kit .....	MD40A,TMD40A,TMD40B,TMD40C, .....	2	3-A05	2020
			TAMD40A,TAMD40B			2040
		Electrical oil bilge pump.....	GEM .....	4	3-A07	2060
		Heat exchanger with installation components .....	TMD40A .....	6	3-A09	2080
		Heat exchanger and termostat with installation .....	TMD40A .....	8	3-A11	2100
		comps				2120
		Conversion kit oil cooler.....	AQAD40 .....	10	3-A13	2140
		Vacuum valve kit .....	MD40A,TMD40A,TMD40B,TMD40C .....	12	3-A15	2160
		Sea water strainer .....	MD40A,TMD40A,TMD40B,TMD40C, .....	14	3-A17	2180
			TAMD40A,TAMD40B			2200
		Cooling water intake.....	GEM .....	16	3-A19	2220
		Sea water filter and sea water intake .....	MD40A,TMD40A,TMD40B,TMD40C .....	18	3-A21	2240
		Water cooled exhaust silencer with installation.....	MD40A,TMD40A,TMD40B,TMD40C, .....	20	3-A23	2260
		components	TAMD40A,TAMD40B			2280
		Hot water outlet .....	GEM .....	22	3-B01	2300
		Dry exhaust line.....	TMD40A,TMD40B,TMD40C, TAMD40A	24	3-B03	2320
			TAMD40B			2400
		Dry exhaust line.....	MD40A .....	26	3-B05	2420
		Water cooled exhaust line.....	TMD40A,TMD40B,TMD40C,TAMD40A,	28	3-B07	2440
			TAMD40B			2460
		Thermo switch control.....	MD40A,TMD40A,TAMD40A .....	30	3-B09	2500
		Connecting components Fuel filter – fuel tank .....	GEM .....	32	3-B11	2520
		Fuel tank and connecting components.....	GEM .....	34	3-B13	2540
		Fuel filter and connecting components.....	GEM .....	36	3-B15	2560
		Fuel filter .....	GEM .....	38	3-B17	2580
		Fuel filter .....	GEM .....	40	3-B19	2600
		Tank meter kit for fuel and drinking water.....	MD40A,TMD40A,TMD40B,TMD40C .....	42	3-B21	2620
		TID UTF	AQAD40A, TAMD40A, TAMD40B			2640
			AQAD40A,AQAD40B			2660
		Tank meter kit for fuel and drinking water SEN UTF.....	GEM .....	44	3-B23	2680
		Tank meter kit for fuel and drinking water .....	GEM .....	46	3-C01	2700
		Charge pressure gauge kit .....	TAMD40B,AQAD40B .....	48	3-C03	2720
		Control for side installation.....	GEM .....	50	3-C05	2740
		Control for top installation .....	GEM .....	52	3-C07	2760
		Control for side installation .....	GEM .....	54	3-C09	2780
		Control for top installation.....	GEM .....	56	3-C11	2800
		Control for top installation .....	GEM .....	58	3-C13	2820
		Control mechanism.....	GEM .....	60	3-C15	2840
		Control cables .....	GEM .....	62	3-C17	2860
		General bracket.....	GEM .....	64	3-C19	2880
		Alarm unit .....	GEM .....	66	3-C21	2900
		Alternator kit .....	MD40A,TMD40A,TAMD40A,AQAD40A	68	3-C23	2920
		Alternator kit.....	TMD40C .....	72	3-D03	2940
		Instrument panel and installation components.....	TMD40B,TMD40C,TAMD40B, AQAD40	82	3-D13	2960
		Instrument panel .....	GEM .....	84	3-D15	2980
		Extra instrument panel .....	GEM .....	86	3-D17	3000
		Extra panel .....	GEM .....	88	3-D19	3020
		Alarm panel.....	GEM .....	90	3-D21	3040
		Instrument panel fly bridge.....	GEM .....	92	3-D23	3060
		Rudder indicator kit drive unit 290 .....	GEM .....	94	3-E01	3080
		Power trim panel flying bridge,drive UNIT290 .....	AQD40A,AQAD40A,AQAD40B .....	96	3-E03	3100
		Cooling water level alarm .....	MD40A,TMD40A,AQD40A,TAMD40A, .....	98	3-E05	3120
			AQAD40A			3140
		Custom built kit 24v .....	MD40A,TMD40A,TMD40B,TMD40C .....	100	3-E07	3160
			AQD40A, TAMD40A, TAMD40B			3180
			AQAD40A,AQAD40B			3200
		Alternator with installation components .....	MD40A,TMD40A,TMD40B,TMD40C .....	102	3-E09	3220
			AQD40A, TAMD40A, TAMD40B			3240
			AQAD40A,AQAD40B			3260
		Coupling flange 5" .....	GEM .....	104	3-E11	3280

0001

	Innehållsförteckning	Index	Grupp Group	Sida Page
	1987-04		9	1d
J	Propeller shaft flange .....	GEM .....	106	3-E13
3320	Propeller shaft flange .....	GEM .....	108	3-E15
3340	Propeller shaft stuffing box .....	MD40A,TMD40A,TMD40B,TMD40C .....	110	3-E17
3360		TAMD40A,TAMD40B		
340	Propeller shaft sleeve .....	GEM .....	112	3-E19
3420	Propeller, bronze zinc anod .....	GEM .....	114	3-E21
J	Propeller, AQ .....	GEM .....	118	3-F01
3440	Propeller, Duoprop .....	GEM .....	120	3-F03
3460	Trim tabs .....	GEM .....	122	3-F05
3480	Mechanical lift device AQ drive unit 280 .....	AQAD40A, AQAD40B .....	124	3-F07
3500	Instrument panel .....		126	3-F09
3520	Extension set .....	AQD40A,AQAD40A,AQAD40B .....	128	3-F11
3540	Extension set .....	AQD40A,AQAD40A,AQAD40B .....	130	3-F13
3560	Flying bridge, late production Single engine .....	GEM .....	132	3-F15
3580	installation			
3600	Flying bridge late production twin engine .....	GEM .....	134	3-F17
36	installation			
3640	Instrument panel .....	MD40A,TMD40A,AQD40A,TAMD40A .....	138	3-F21
3660		AQAD40A		
3680	Engine room fan bilge pump .....	GEM .....	140	3-F23
3700	Life boat engine kit .....	TAMD40A,TAMD40B .....	142	3-G01
3720	On board kit .....	MD40A,TMD40A,AQD40A .....	146	3-G05
37	On board kit .....	AQAD40,TAMD40 .....	148	3-G07
3760	On board kit .....	GEM .....	150	3-G09
3780	Set of tools .....	MD40A,TMD40A,TMD40B,TMD40C, .....	152	3-G11
3800		AQD40A		
3820	Set of tools .....	TAMD40A,TAMD40B,AQAD40A .....	154	3-G13
3840		AQAD40B		
3860	Set of tools .....	GEM .....	156	3-G15
3880	Chemicals .....	GEM .....	158	3-G17



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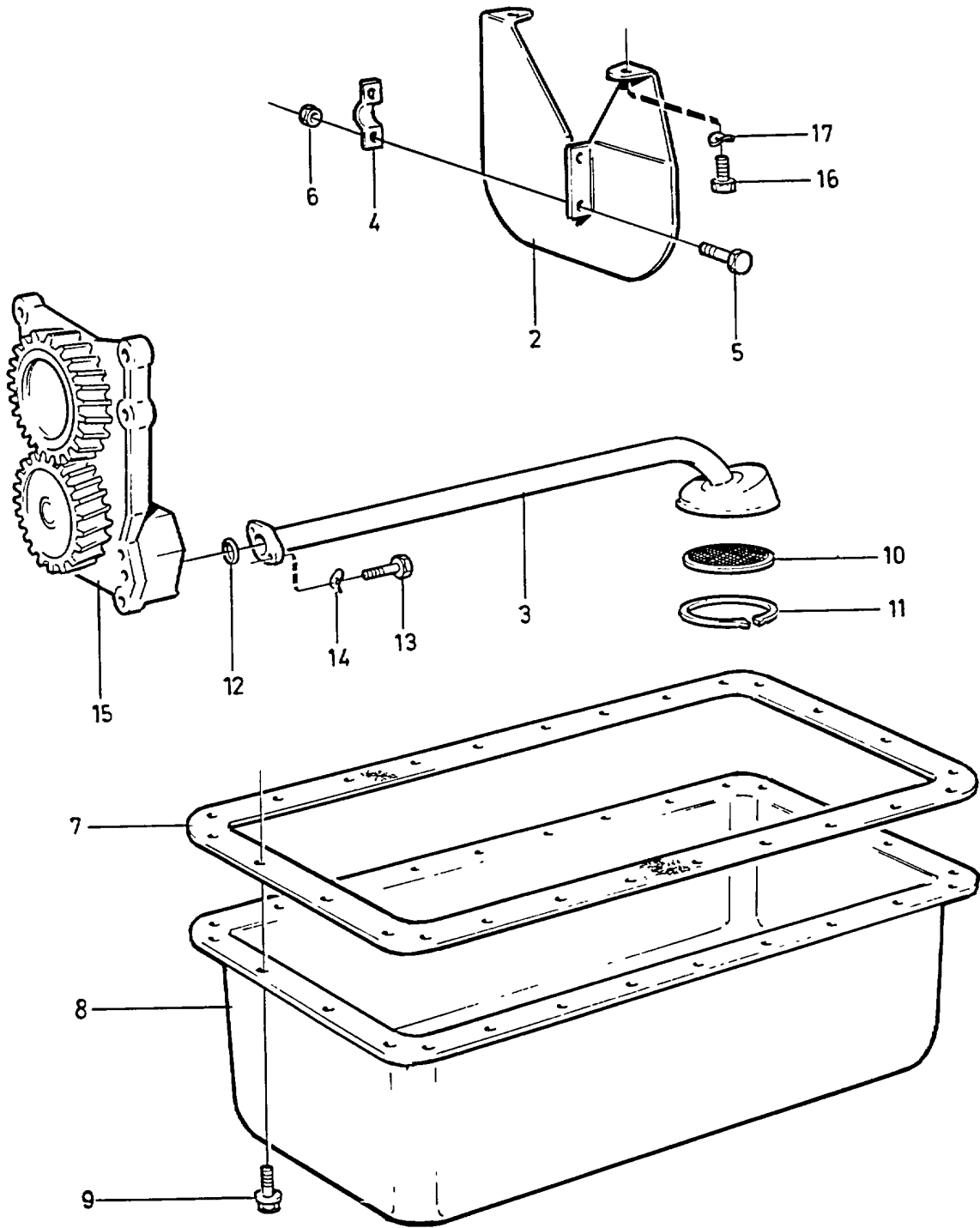
Reservdelskatalog  
Parts Catalogue

3-A05

**VOLVO  
PENTA**

Sida Page	Grupp Group	Sugrörsats			Suction pipe kit			Illustration	0025	
2	9	MD40A,TMD40A,TMD40B,TMD40C, TAMD40A,TAMD40B						6397 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	Anmärkning Notes	
1	1	-	-	-	845588-3	Sugrör .....	Suction pipe.....	B		002C
2	1	-	-	-		.Skvalplåt.. .....	.Battle.....	8		0040
3	1	-	-	-	845557-8	.Oljesugrör .....	.Oil sucker pipe....	4		0060
4	1	-	-	-		.Klamma .....	.Clamp .....	8		0080
5	2	-	-	-	963556-6	.Skruv .....	.Screw .....	0		0100
6	2	-	-	-	946035-3	.Låsmutter .....	.Lock nut.....	0		0120
7	1	-	-	-	859032-5	.Packning .....	.Gasket.....	S 1	(1542247)	0140
8	1	-	-	-		Oljesump .....	Oilpan .....		SEGRUPP 2A	0160
9	32	-	-	-	946440-5	Skruv .....	Screw .....	0		0180
10	1	-	-	-	403483-1	Siltduk.....	Strainer.....	3		0200
11	1	-	-	-	118123-9	Låsring.....	Circlip .....	2		0220
12	1	-	-	-	925060-6	O-ring .....	O-ring.....	S 0		0240
13	2	-	-	-	955303-3	Skruv .....	Screw.....	0		0260
14	2	-	-	-	941907-8	Fjädrande bricka .....	Resilient washer.....	0		0280
15	1	-	-	-		Oljepump .....	Oilpump.....		SEGRUPP 2A	0300
16	2	-	-	-	955293-6	Skruv .....	Screw.....	0		0320
17	2	-	-	-	942385-6	Tallriksfjäder .....	Spring .....	0		0340

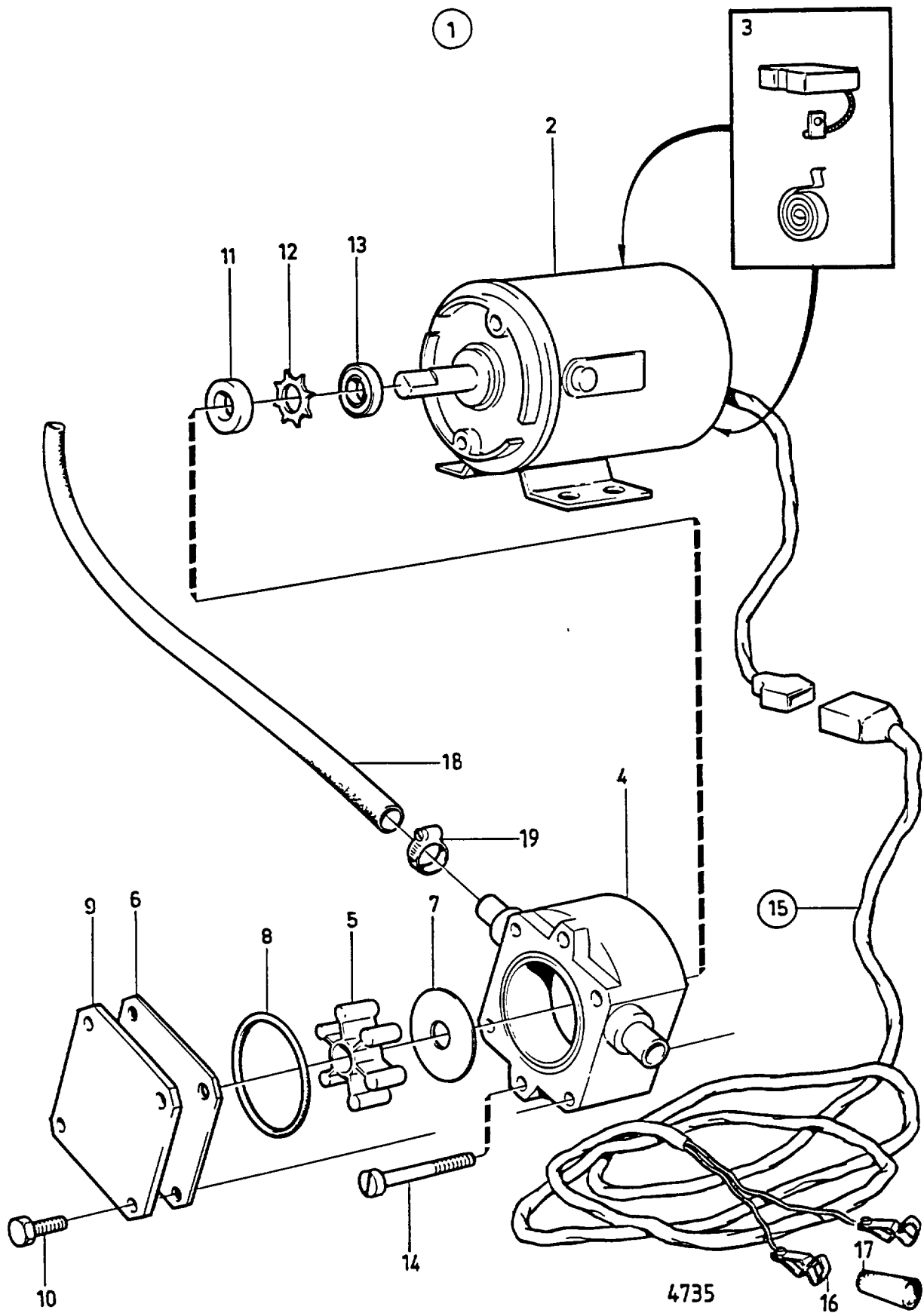
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Sida Page		Grupp Group		Elektrisk oljelanspump Electrical oil bilge pump		Illustration 4735 1987-04		0050			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	12V										
1	1	-	-	-	843114-0	Oljelanspump ..	Oil bilge pump ..	5		12V	0021
2	1	-	-	-		.El. motor ..	.El motor ..	8			0060
3	2	-	-	-	844014-1	..Kolbordsats...	..Carbon brush kit ..	4			0080
4	1	-	-	-	844015-8	.Hus ..	.Housing ..	6			0100
5	1	-	-	-		.Impeller ..	.Impeller ..	S 8			0120
6	1	-	-	-	844017-4	.Slitbricka ..	.Washer ..	6			0140
7	1	-	-	-	844016-6	.Slitbricka ..	.Washer ..	6			0160
8	1	-	-	-		.O-ring ..	.O-ring ..	S 8			0180
9	1	-	-	-	844018-2	.Lock ..	.Cover ..	6			0200
10	4	-	-	-	844021-6	.Skruv ..	.Screw ..	6			0220
11	1	-	-	-		.Tätningarring ..	.Seal ring ..	S 8			0240
12	1	-	-	-		.Låsring ..	.Lockwasher ..	S 8			0280
13	1	-	-	-	844019-0	.Avkastarring ..	.Slinger ..	6			0300
14	2	-	-	-	844020-8	.Skruv ..	.Screw ..	6			0320
15	1	-	-	-	843113-2	.Kabelstock ..	.Cable unit ..	7			0340
16	1	-	-	-		..Batterikabelsko ..	..Battery terminal ..	8	2)+ (843111)		0360
	2	-	-	-		..Batterikabelsko ..	..Battery terminal ..	8	3)- (843112)		0400
	1	-	-	-	844280-8	..Kabelsko ..	..Terminal ..	5	SEN UTF		0420
17	1	-	-	-	844279-0	..Skyddshölje ..	..Casing ..	5	SEN UTF SVART-BLACK		0440
	1	-	-	-	844278-2	..Skyddshölje ..	..Casing ..	5	SEN UTF RÖD-RED		0460
18	ERF	-	-	-	943707-0	.Slang ..	.Hose ..	0	L=3000MM		0480
19	3	-	-	-	943471-3	.Klamma ..	.Clamp ..	0			
	1	-	-	-	844022-4	Impellersats ..	Impeller kit ..	2			

2. ERS AV 1st 844280, 1st 844278. Replaced by 1pc 844280, 1pc 844278.  
3. ERS AV 1st 844280, 1st 844279. Replaced by 1pc 844280, 1pc 844279.

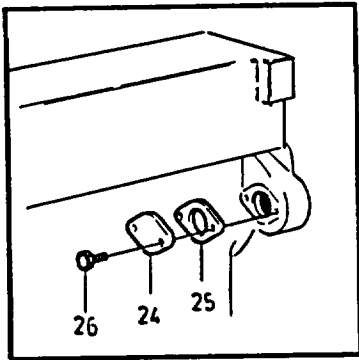
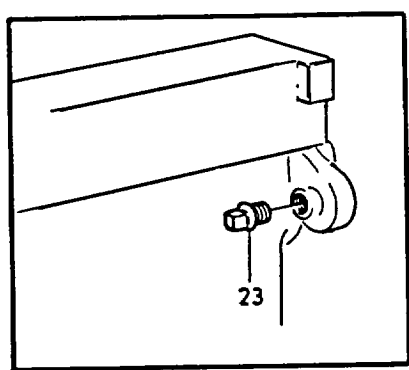
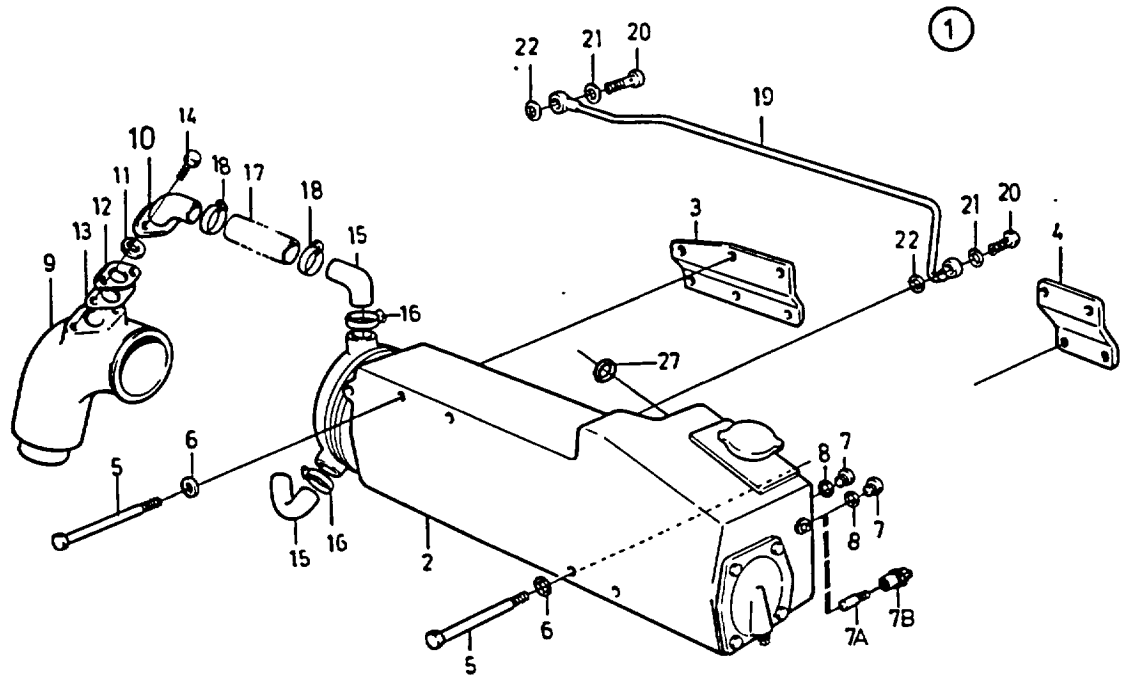
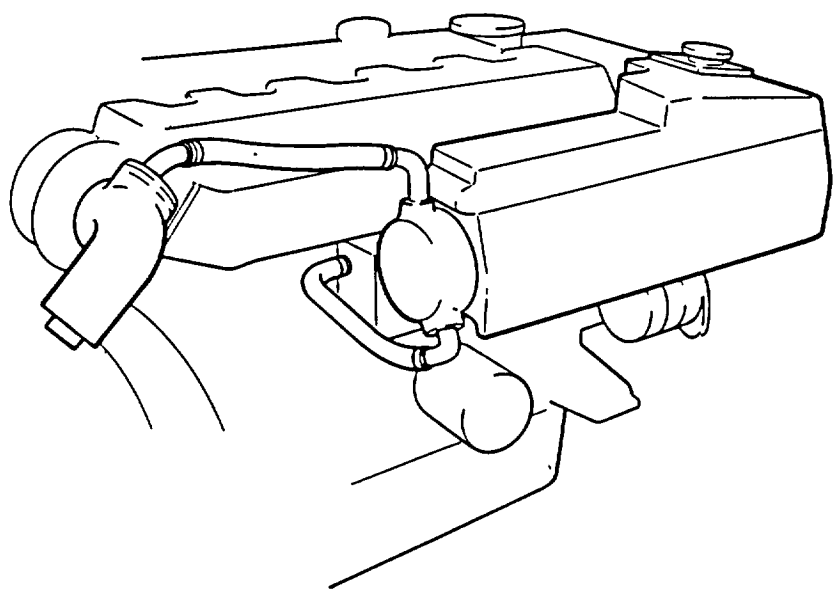


4735



Sida Page	Grupp Group	Varmeväxlare med monteringsdetaljer TMD40A			Heat exchanger with installation components			Illustration 8597 1987-04	0065		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	846270-7	Varmeväxlarsats	Heat exchanger kit	6			0020
2	1	-	-	-		Varmeväxlare och termostat med monteringsdetaljer.	Heat exchanger and thermostat with installation comps			SESIDA 8,3-A11	0040
3	1	-	-	-	845138-7	Konsol	Bracket	5			0060
4	1	-	-	-	845137-9	Konsol	Bracket	5			0080
5	5	-	-	-	955334-8	Skruv	Screw	0			0100
6	5	-	-	-	941908-6	Fjädrande bricka	Resilient washer	0			0120
7	2	-	-	-	960632-8	Propp	Plug	0	235)		0140
7a	2	-	-	-	838929-8	Elektrod	Electrode	1			0160
7b	2	-	-	-	838928-0	Propp	Plug	1			0180
8	2	-	-	-	957181-1	Packning	Gasket	1			0190
9	1	-	-	-	845261-7	Avgaskrok	Exhaust bend	6			0195
10	1	-	-	-	846269-9	Rörkrok	Pipe bend	3			0220
11	1	-	-	-	842913-6	Tätning	Seal ring	1			0240
12	1	-	-	-	845821-8	Flans	Flange	2			0260
13	1	-	-	-	845527-1	Packning	Gasket	1			0280
14	2	-	-	-	946730-9	Skruv	Screw	0			0280
15	2	-	-	-	846268-1	Rörkrok	Pipe bend	3			0300
16	2	-	-	-	961670-7	Slangklamma	Hose clamp	0			0340
17	ERF	-	-	-	944386-2	Slang	Hose	2	L=400 MM		0360
18	2	-	-	-	853548-6	Slangklamma	Hose clamp	0	(961668)		0380
19	1	-	-	-	846215-2	Urluftningsrör	Pipe	3			0400
20	2	-	-	-	846216-0	Hålskruv	Hollow screw	2			0420
21	2	-	-	-	947282-0	Packning	Gasket	0			0440
22	2	-	-	-	907132-5	Packning	Gasket	0			0460
23	1	-	-	-	800475-6	Propp	Plug	0	TID UTF		0480
24	1	-	-	-	418213-5	Flans	Flange	2	SEN UTF		0500
25	1	-	-	-	418771-2	Packning	Gasket	2	SEN UTF		0520
26	2	-	-	-	955271-2	Skruv	Screw	0	SEN UTF		0540
27	4	-	-	-	925067-1	O-ring	O-ring	0			0560

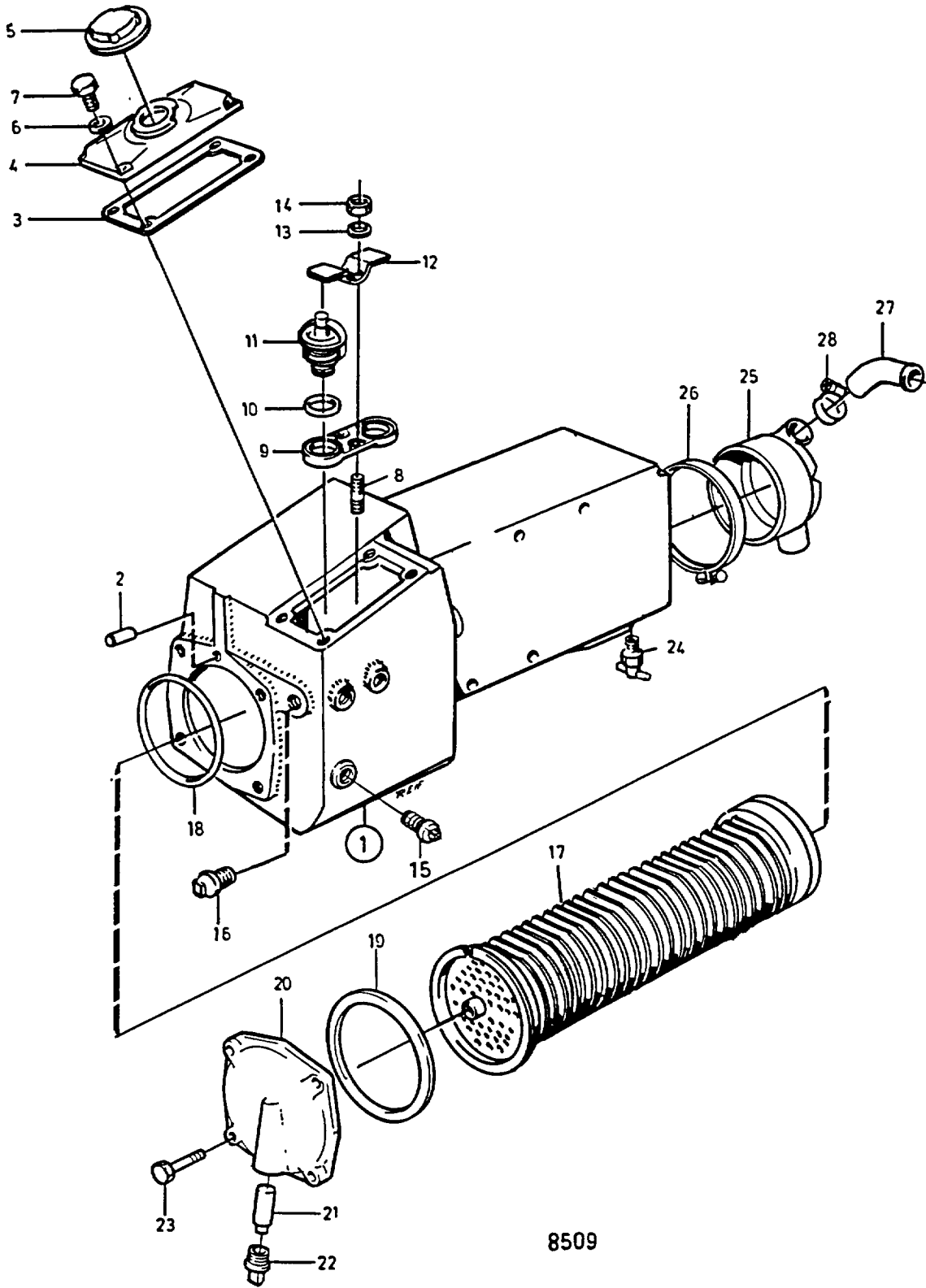
235 . Ersatt av PROPP-838928 och ELEKTROD-838929. Replaced by PLUG-838928 and ELECTRODE-838929.



8597



Sida Page	Grupp Group	Värmeväxlare och termostat med monteringsdetaljer		Heat exchanger and termostat with installation comps		Illustration	0070				
8	9	TMD40A				8509	1987-04				
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	844936-5	Värmeväxlarhus .....	Heat ex housing .....		8	191)	002
	1	-	-	-	838429-9	Värmeväxlarhus .....	Heat ex housing .....		6		0025
2	1	-	-	-	951940-6	Spännstift .....	Tension pin .....		0		0040
3	2	-	-	-	845291-4	Packning .....	Gasket .....		2		0060
4	1	-	-	-	845284-9	Lock .....	Cover .....		5		0080
5	1	-	-	-	845879-6	Lock .....	Cover .....		2		0100
6	4	-	-	-	941907-8	Fjädrande bricka .....	Resilient washer .....		0		0120
7	4	-	-	-	955295-1	Skruv .....	Screw .....		0		0140
8	2	-	-	-	924060-7	Pinnskruv .....	Stud bolt .....		0		0160
9	1	-	-	-	845285-6	Termostathållare .....	Thermostat holder .....		4		0180
10	2	-	-	-	416033-9	Tätningring .....	Seal ring .....		S 1		20
11	1	-	-	-	875788-2	Termostat .....	Thermostat .....		1	70°	20
	1	-	-	-	875787-4	Termostat .....	Thermostat .....		1	76°	0240
12	1	-	-	-	845852-3	Skärmsplåt .....	Baffle cover .....		5		0260
13	2	-	-	-	941670-2	Bricka .....	Washer .....		0		0280
14	2	-	-	-	946330-8	Mutter .....	Nut .....		0		0300
15	1	-	-	-	952077-6	Propp .....	Plug .....		0		20
16	1	-	-	-	952077-6	Propp .....	Plug .....		0		40
17	1	-	-	-	845198-1	Insats .....	Element .....		3	ERS.AV 838590	0360
	1	-	-	-	838590-8	Insats .....	Element .....		3	ERS.AV 858833	0365
	1	-	-	-	858833-7	Insats .....	Element .....		3		0366
18	1	-	-	-	925096-0	O-ring .....	O-ring .....		S 0		0380
19	1	-	-	-	845301-1	Packning .....	Gasket .....		S 1		0400
20	1	-	-	-	846240-0	Gavellock .....	End cover .....		5		0420
21	1	-	-	-	838929-8	Zinkelektrod .....	Zinc electrode .....		1	(804107)	0440
22	1	-	-	-	838928-0	Propp .....	Plug .....		2	(800475)	0460
23	4	-	-	-	940132-4	Skruv .....	Screw .....		0		0480
24	1	-	-	-	947893-4	Kran .....	Cock .....		2		0500
25	1	-	-	-	845373-0	Gavel .....	Cover .....		2		0520
26	2	-	-	-	961678-0	Slangklamma .....	Hose clamp .....		0		0540
27	1	-	-	-	845374-8	Rör .....	Pipe .....		3		0560
28	1	-	-	-	961669-9	Slangklamma .....	Hose clamp .....		0		0580

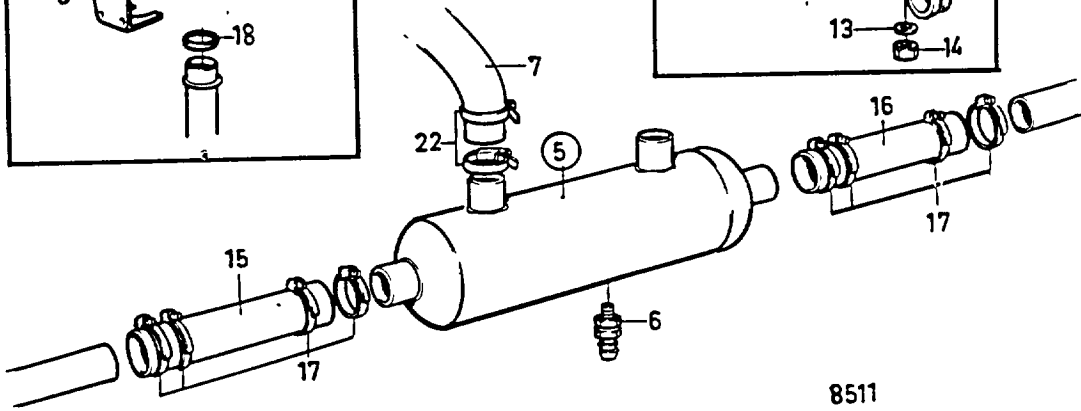
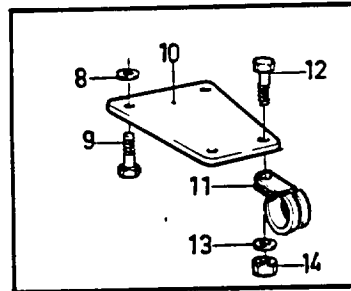
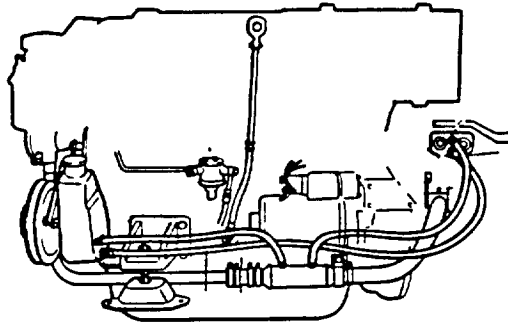
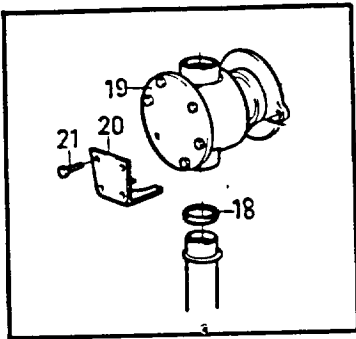
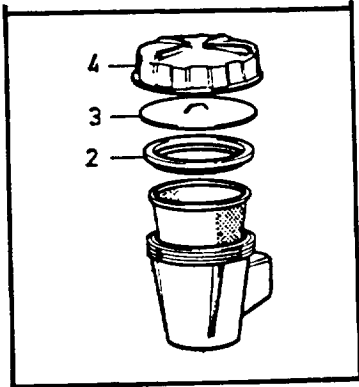


8509



Sida Page	Grupp Group	Ombyggnadssats oljekylare AQAD40			Conversion kit oil cooler			Illustration 8511 1987-04	0075		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	858547-3	Ombyggnadssats	Conversion kit	4		232)	00:
2	1	-	-	-	838977-7	•Gummitätning	•Rubber seal	3			004
3	1	-	-	-	845328-4	•Tryckplatta	•Pressure plate	3			0060
4	1	-	-	-	845317-7	•Lock	•Cover	3			0080
5	1	-	-	-	858541-6	•Oljekylare	•Oil cooler	5			0100
6	1	-	-	-	949918-7	•Avtappningskran	•Drain cock	0			0120
7	ERF	-	-	-	838311-9	•Slang	•Hose	2		L=1000MM	0140
8	2	-	-	-	807183-9	•Distanshylsa	•Spacer sleeve	2			0160
9	2	-	-	-	945444-8	•Skruv	•Screw	0			0180
10	1	-	-	-	858542-4	•Konsol	•Bracket	4			0200
11	2	-	-	-	952639-3	•Klamma	•Clamp	0			20
12	2	-	-	-	955275-3	•Skruv	•Screw	0			40
13	2	-	-	-	955892-5	•Bricka	•Washer	0			0260
14	2	-	-	-	955781-0	•Mutter	•Nut	0			0280
15	ERF	-	-	-	949315-6	•Slang	•Hose	0		L=110MM	0300
16	ERF	-	-	-	949315-6	•Slang	•Hose	0		L=90MM	0320
17	8	-	-	-	943476-2	•Slangklamma	•Hose clamp	0			40
18	1	-	-	-	845354-0	•Tätningring	•Seal ring	2			30
19	1	-	-	-		Sjovattenpump	Sea water pump			SE GRUPP 2B	u380
20	1	-	-	-		Låsbygel	Lock brace			SE GRUPP 2B	0400
21	ERF	-	-	-		Skruv	Screw			SE GRUPP 2B	0420
22	ERF	-	-	-		Slangklamma	Hose clamp				0440

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8511





Publ. 4406

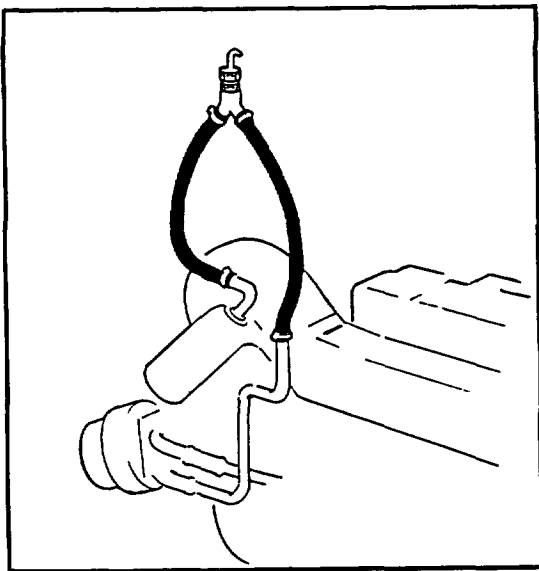
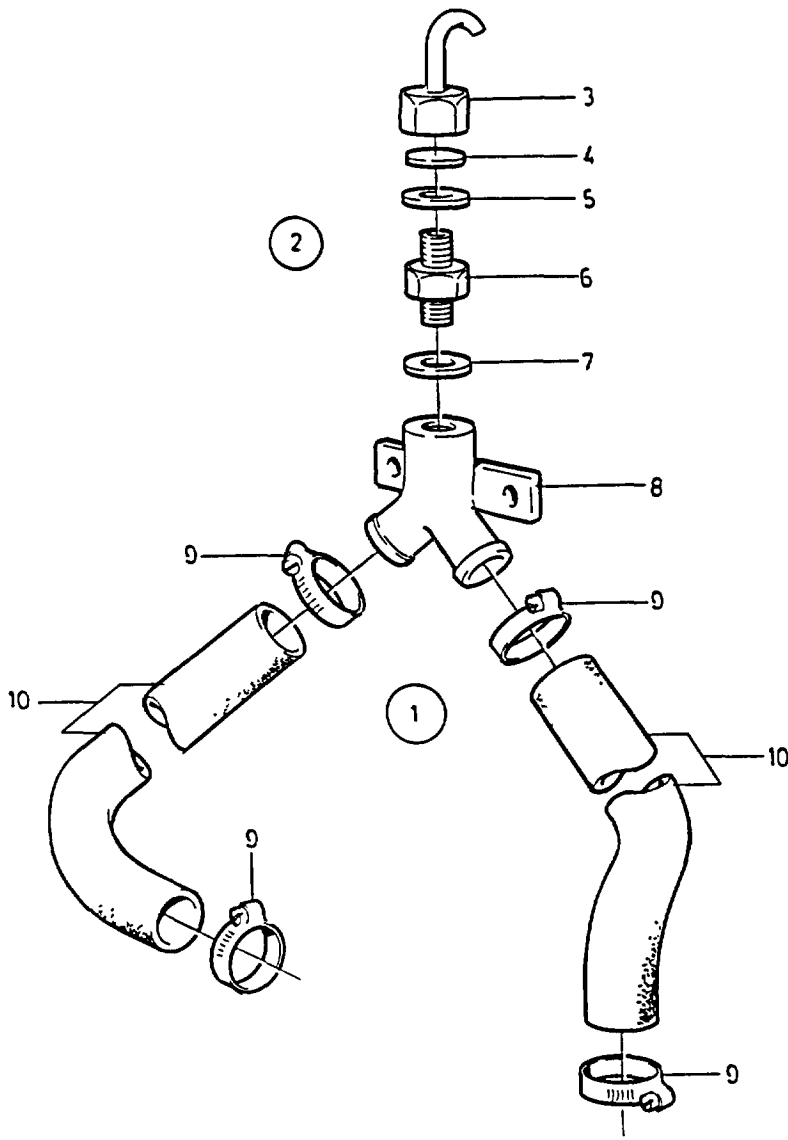
Reservdelskatalog  
Parts Catalogue

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**VOLVO  
PENTA**

Sida Page		Grupp Group		Vakuümventilsats Vacuum valve kit			Illustration 6396 1987-04		0080		
12		9		MD40A, TMD40A, TMD40B, TMD40C							
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	828539-7	Vakuümventilsats .....	Vacuum valve kit .....		4		0020
2	1	-	-	-	828534-8	.Vakuümventil .....	.Vacuum valve .....		4		0040
3	1	-	-	-		..Lock .....	..Cover .....		8		0060
4	1	-	-	-	828264-2	..Membran .....	..Diaphragm .....	S	8		0080
5	1	-	-	-	828424-2	..Packning .....	..Gasket .....	S	1		0100
6	1	-	-	-		..Förskruvning .....	..Screw union .....		8		0120
7	1	-	-	-	947282-0	..Packning .....	..Gasket .....	S	0		0140
8	1	-	-	-		.Grenstycke .....	.Union pipe .....		8		0160
9	4	-	-	-	853548-6	.Slangklamma .....	.Hose clamp .....		2	(961668)	0180
10	ERF	-	-	-	952972-8	Gummislang .....	Rubber hose .....		2		0200
	ERF	-	-	-	875738-7	Reparationssats .....	Repair kit .....		2		0201

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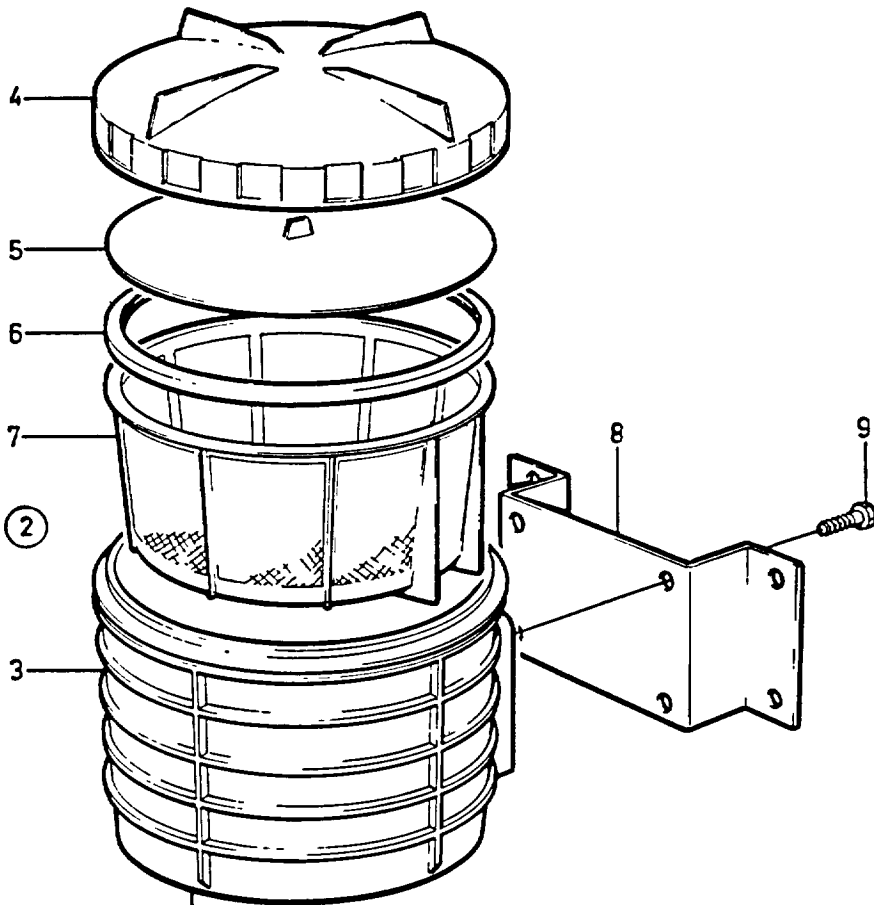


6396

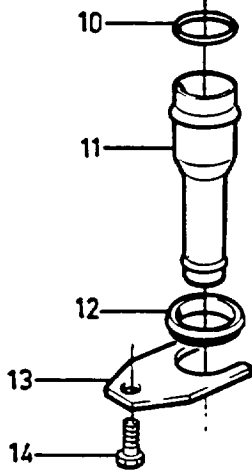


Sida Page		Grupp Group		Sjovattensil Sea water strainer				Illustration 8348 1987-04		0090	
14		9		MD40A,TMD40A,TMD40B,TMD40C, TAMD40A,TAMD40B							
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	846 162	838 315									
1	1	-	-	-	846162-6	Sjövattensilsats.....	Water strainer kit.....	6		ERS AV 838315	002
	-	1	-	-	838315-0	Sjövattensilsats .....	Water strainer kit.....	6			003
2	1	-	-	-		.Sjövattensil.....	.Sea water strainer.....	8			0040
	-	1	-	-	858081-3	.Sil.....	.Trainer .....	6	(845337)		0050
3	1	1	-	-	845338-3	..Silhus .....	..Housing .....	6			0060
4	1	1	-	-	845317-7	..Lock.....	..Cover .....	6			0080
5	1	1	-	-	845328-4	..Tryckplatta .....	..Pressure plate .....	6			0100
6	1	1	-	-	838977-7	..Gummitätning.....	..Rubber seal .....	2	(845329)		0120
7	1	-	-	-	845327-6	..Sil .....	..Strainer .....	2			0140
	-	1	-	-	858081-3	..Sil .....	..Trainer .....	2			0150
8	1	1	-	-	845960-4	.Konsol .....	.Bracket .....	6			0160
9	4	4	-	-	940199-3	.Skruv .....	.Screw .....	0			0
10	2	2	-	-	845354-0	.Tättningsring .....	.Seal ring .....	2			0200
11	2	-	-	-	847002-3	.Slanganslutning.....	.Hose connection.....	6	MD40,TMD40,		0220
	-	1	-	-	847106-2	.Slanganslutning .....	.Hose connection .....	6	MD40,TMD40,L=80MM		0230
	-	1	-	-	838582-5	.Slanganslutning .....	.Hose connection .....	6	MD40,TMD40,L=125MM		0235
	2	-	-	-	845357-3	.Slanganslutning.....	.Hose connection .....	6	TAMD40,		0240
	-	1	-	-	838555-1	.Slanganslutning .....	.Hose connection .....	6	TAMD40,L=80MM		0
	-	1	-	-	838580-9	.Slanganslutning .....	.Hose connection .....	6	TAMD40,L=125MM		0255
12	2	2	-	-	847017-1	.Rorhållare .....	.Pipe retainer .....	2			0260
13	2	2	-	-	847018-9	.Bygel .....	.Brace .....	6			0280
14	2	2	-	-	940199-3	.Skruv .....	.Screw .....	0			0300

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8348

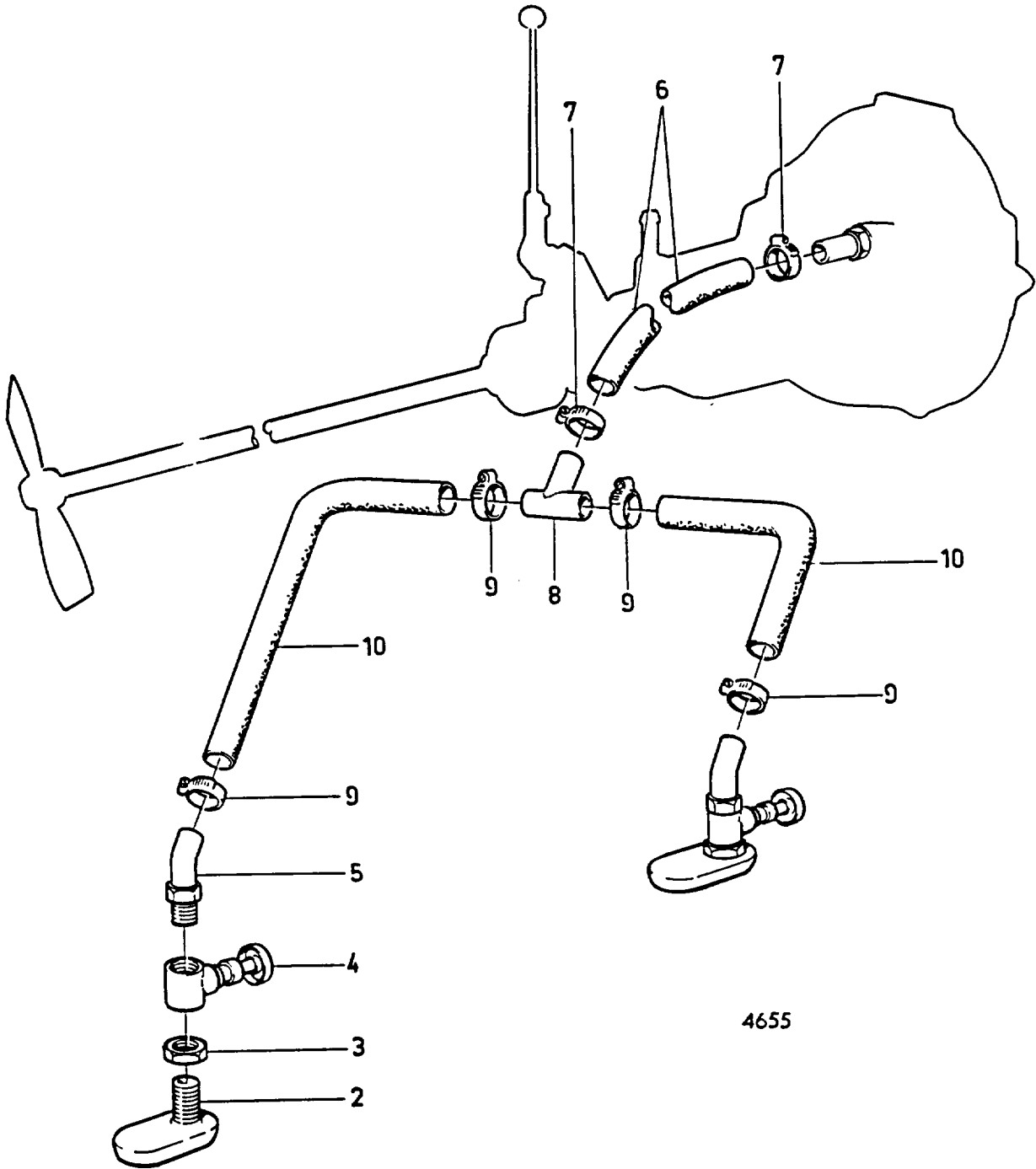


Sida Page		Grupp Group		Kylvattenintag			Cooling water intake			Illustration	
16		9		GEM						4655 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	828 244	828 245	838 541								
1	1	-	-	-	828244-4	Kylvattenintag .....	Water intake .....	6		MD40A	004
	-	1	-	-	828245-1	Kylvattenintag .....	Water intake .....	8		TAMD40A,ERS AV 838541	0050
	-	-	1	-	838541-1	Kylvattenintag .....	Water intake .....	6			0055
2	1	-	-	-	836876-3	.Bottensil .....	.Water int strainer .....	5			0060
	-	1	-	-	836846-6	.Bottensil .....	.Water int strainer .....	5			0070
3	1	-	-	-	836879-7	.Mutter .....	.Nut .....	5			0080
	-	1	-	-	836847-4	.Mutter .....	.Nut .....	5			0090
4	1	-	-	-	828239-4	.Ventil .....	.Valve .....	5			0100
	-	1	-	-	828240-2	.Ventil .....	.Valve .....	5			0110
5	1	-	-	-	836759-1	.Slangfäste .....	.Hose connection .....	5			0140
	-	1	-	-	836848-2	.Slangfäste .....	.Hose connection .....	8		ERS AV 828692	0
	-	1	1	-	828692-4	.Slangfäste .....	.Hose connection .....	5			0
6	ERF	-	-	ERF	941799-9	.Slang .....	.Hose .....	0			0170
	-	ERF	-	-	838440-6	.Slang .....	.Hose .....	2		ERS. AV 858471	0180
	-	ERF	-	-	858471-6	.Slang .....	.Hose .....	2			0181
7	2	-	-	2	961669-9	.Slangklamma .....	.Hose clamp .....	0			0210
	-	4	-	-	943479-6	.Slangklamma .....	.Hose clamp .....	0			0
8	1	-	-	-	829513-1	T-nippel .....	T-nipple .....	5	4,5)		0
9	ERF	-	-	-	961669-9	.Slangklamma .....	.Hose clamp .....	0	4,5)		0260
10	ERF	-	-	-	941799-9	.Slang .....	.Hose .....	0	4,5)		0280

4. Ingarej i828244. Not included in 82244.

5. Avandesda 2st kyvattenintag 82844 ar montered. Used when 2pcs cooling water inteke 828244 are mounted.

1

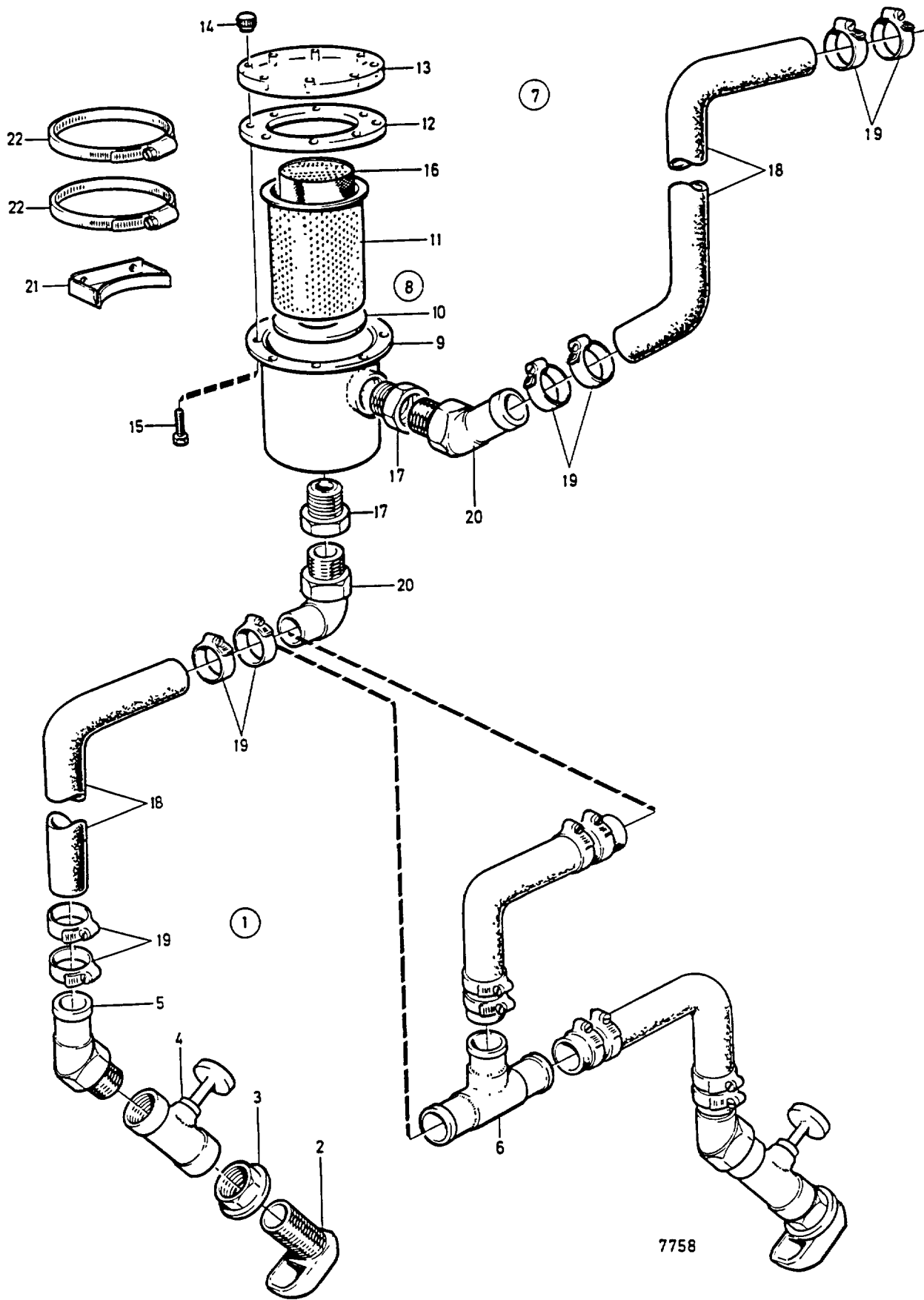


4655



Sida Page	Grupp Group	Sjövattenfilter och sjövattenintag MD40A,TMD40A,TMD40B,TMD40C	Sea water filter and sea water intake	Illustration 7758 1987-04	0150					
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	828244-4	Kylvattenintag .....	Water intake .....	6			00:
2	1	-	-	836876-3	..Bottensil .....	..Water int strainer .....	5			0040
3	1	-	-	836879-7	..Mutter .....	..Nut .....	5			0060
4	1	-	-	828239-4	..Ventil .....	..Valve .....	5			0080
5	1	-	-	836759-1	..Slangfäste .....	..Hose attachment .....	5			0100
6	1	-	-	829513-1	T-nippel .....	T-nipple .....	5	157)		0120
7	1	-	-	844904-3	Vattenfilter .....	Water filter .....	6			0140
8	1	-	-	842466-5	..Renare .....	..Filter .....	5			0160
9	1	-	-		..Hus .....	..Housing .....	8			0180
10	1	-	-	843361-7	..Packning .....	..Gasket .....	3			0200
11	1	-	-	843358-3	..Insats .....	..Insert .....	3			02
12	1	-	-	843360-9	..Packning .....	..Gasket .....	3			03
13	1	-	-	843359-1	..Lock .....	..Cover .....	5			0260
14	8	-	-	843357-5	..Mutter .....	..Nut .....	4			0280
15	8	-	-	843362-5	..Skruv .....	..Screw .....	4			0300
16	1	-	-	844902-7	..Slang .....	..Hose .....	3			0320
17	2	-	-	844903-5	..Bussning .....	..Bushing .....	4			0340
18	ERF	-	-	941799-9	..Slang .....	..Hose .....	0	L=2M		03
19	8	-	-	961669-9	..Slangklamma .....	..Hose clamp .....	0			0380
20	2	-	-	836759-1	..Slangfäste .....	..Hose attachment .....	4			0400
21	2	-	-	828061-2	..Konsol .....	..Bracket .....	6			0420
22	2	-	-	961678-0	..Slangklamma .....	..Hose clamp .....	0			0440

157. Användes datva sjovattening jag ar monterade. Used when two sea water intake are mounted

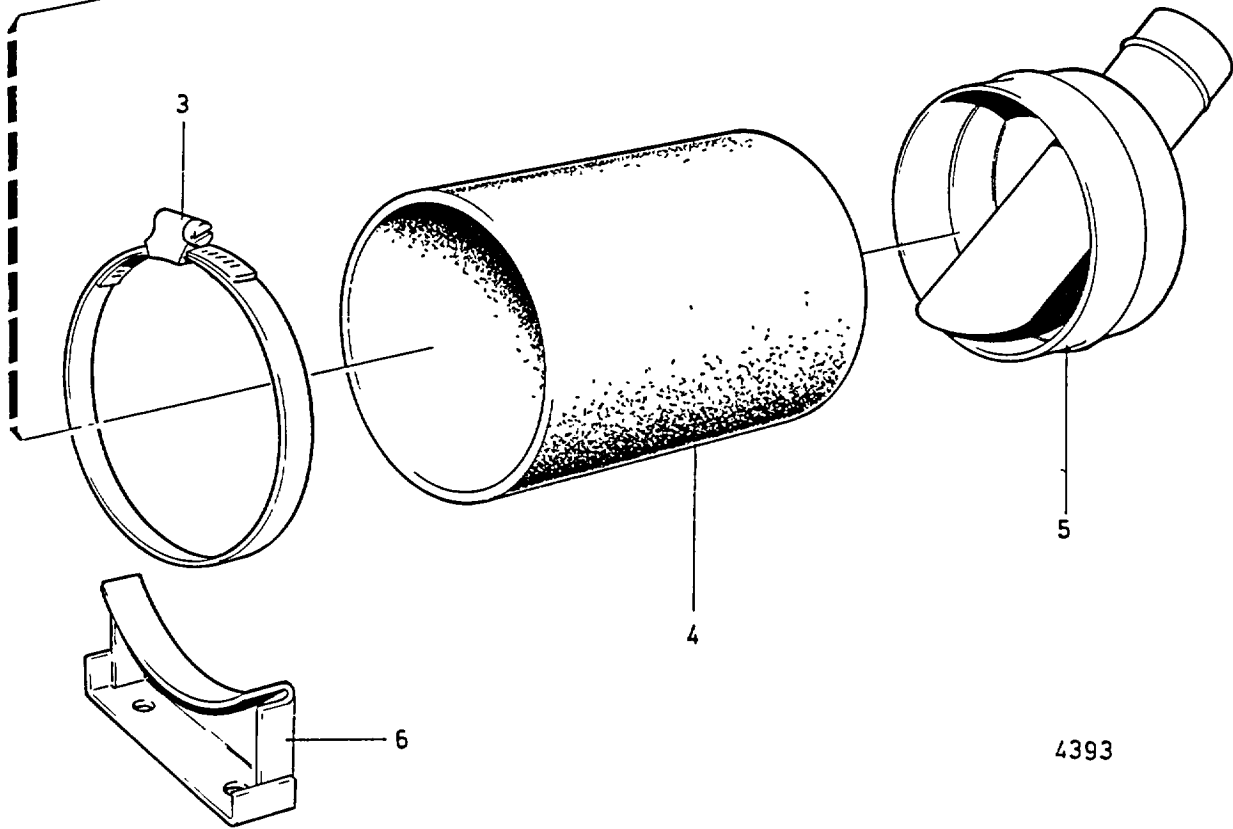
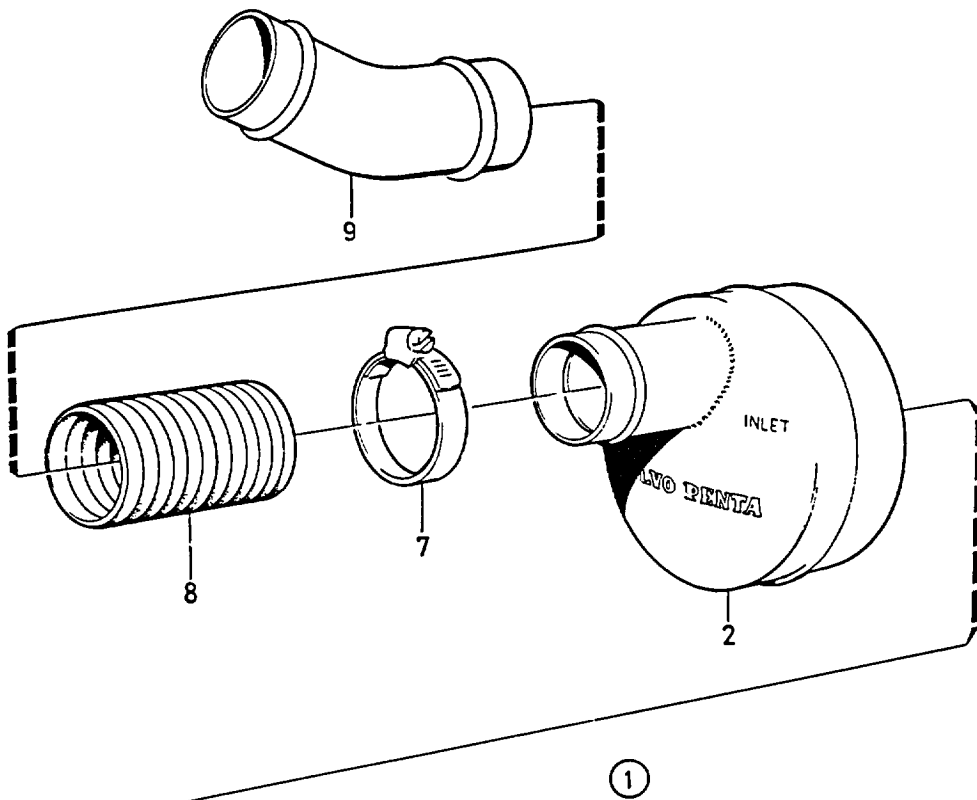


7758





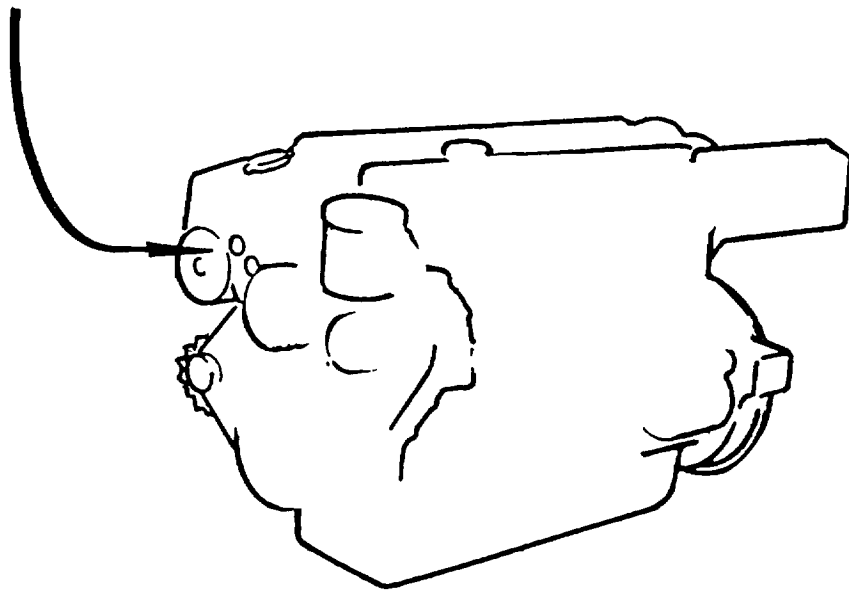
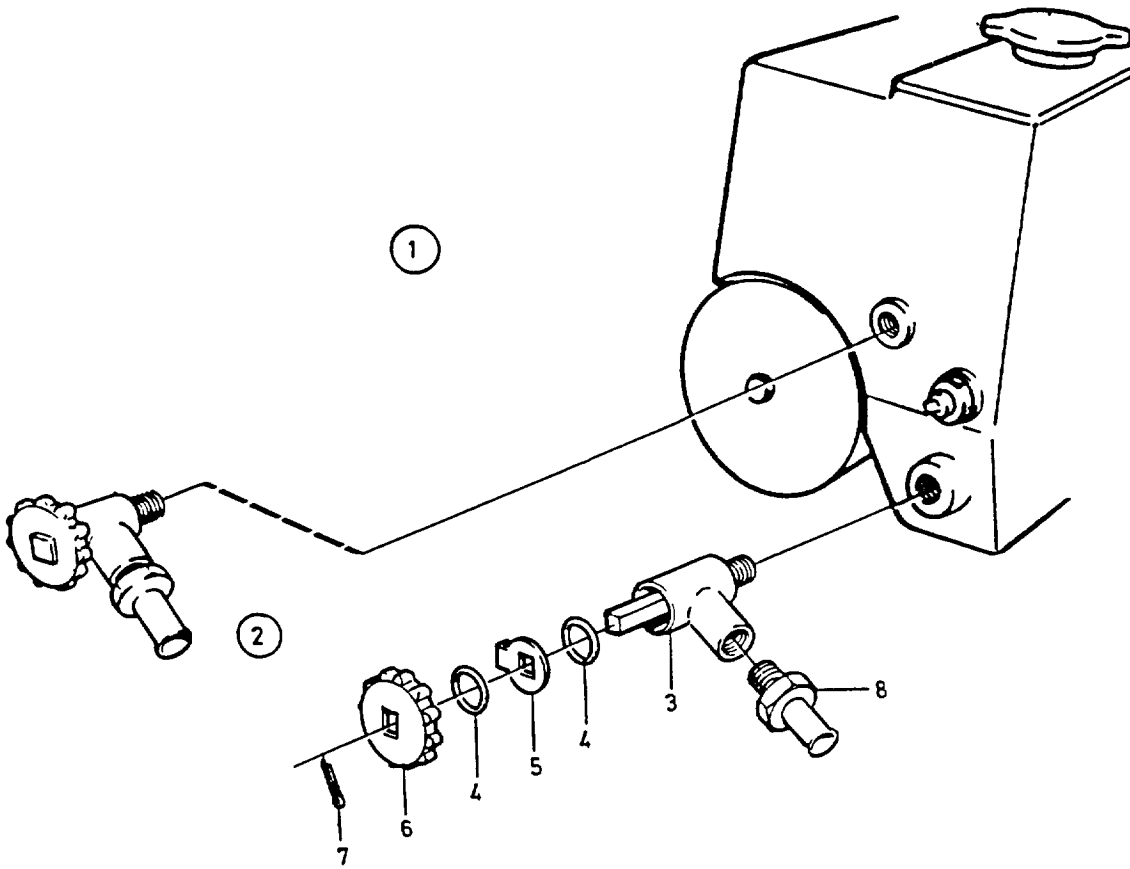
Sida Page		Grupp Group		Vattenkyld avgasljuddämpare med monteringsdetaljer MD40A,TMD40A,TMD40B,TMD40C, TAMD40A,TAMD40B		Water cooled exhaust silencer with installation components		Illustration 4393 1987-04		0350	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	842768-4	Ljuddämpare .....	Silencer.....	6			004
2	1	-	-	-		.Gavel .....	.Cover .....	8			0060
3	1	-	-	-	949000-4	.Klamma .....	.Clamp .....	0			0120
4	1	-	-	-	842766-8	.Slang .....	.Hose .....	3			0160
5	1	-	-	-		.Gavel .....	.Cover .....	8			0180
6	1	-	-	-	842767-6	.Konsol .....	.Bracket .....	6			0240
7	ERF	-	-	-	961675-6	Slangklamma.....	Hose clamp .....	0			0280
8	ERF	-	-	-	828729-4	Slang .....	Hose .....	2	(828303)		0320
9	1	-	-	-	843287-4	Rörkrök .....	Pipe bend .....	5			0360



4393



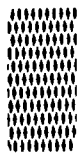
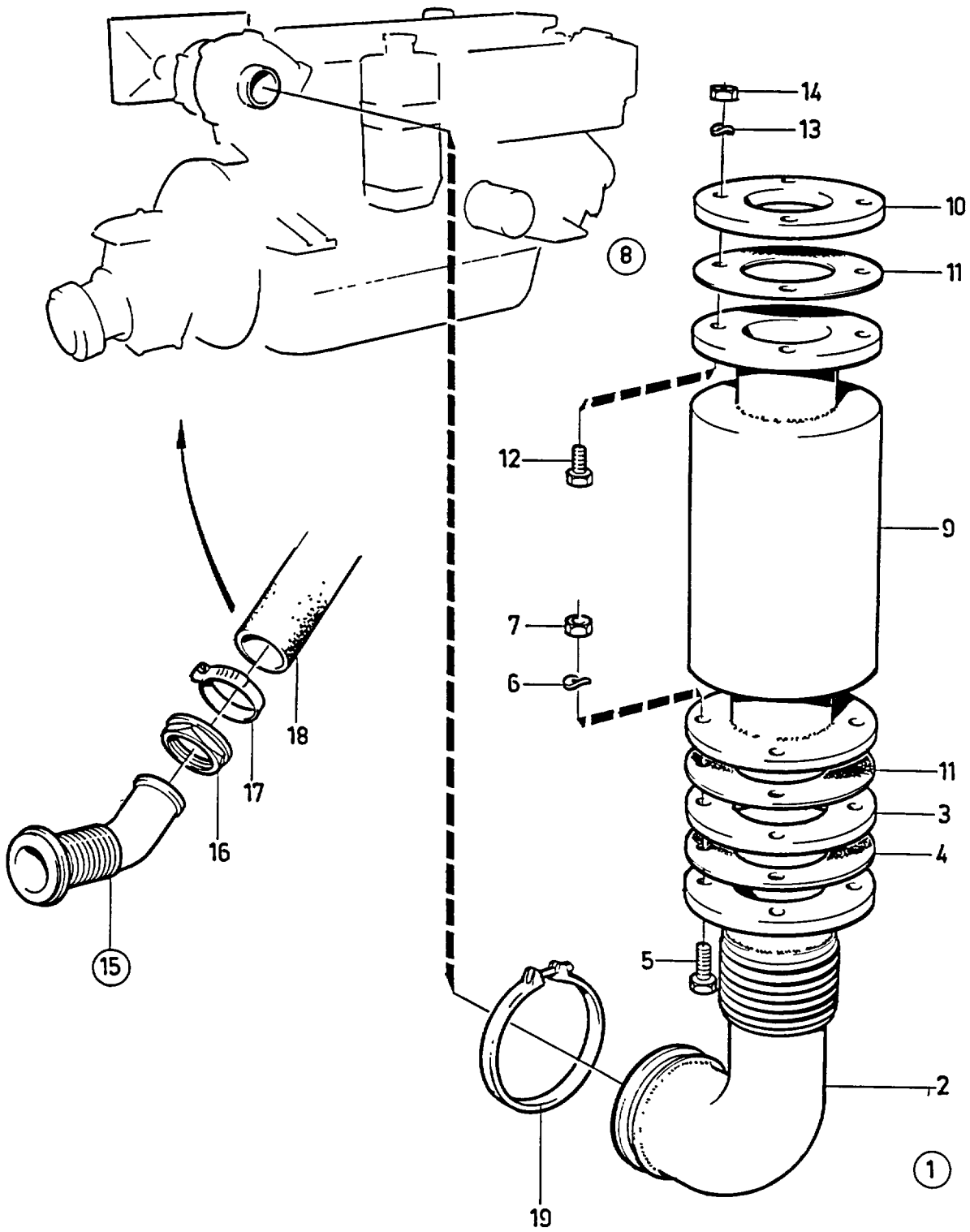
Sida Page		Grupp Group		Varmvattenuttag			Hot water outlet			Illustration	
22		9		GEM						8376 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	858575-4	Varmvattenuttag.. .....	Heater outlet.....	6			002
2	2	-	-	-	851777-3	..Kylvattenkran .....	..Cooling water cock ..	6			0040
3	2	-	-	-		..Kranhus .. .....	..Housing. ....	8			0060
4	4	-	-	-	955989-9	..O-ring.....	..O-ring .....	0			0080
5	2	-	-	-	851783-1	..Låsbricka...	..Washer.....	2			0100
6	2	-	-	-		..Handtag.. .....	..Handle... .....	8			0120
7	2	-	-	-	949791-8	..Saxpinne...	..Cotter pin. ....	0			0140
8	2	-	-	-	851779-9	..Nippel .....	..Nipple.....	4			0160



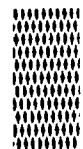
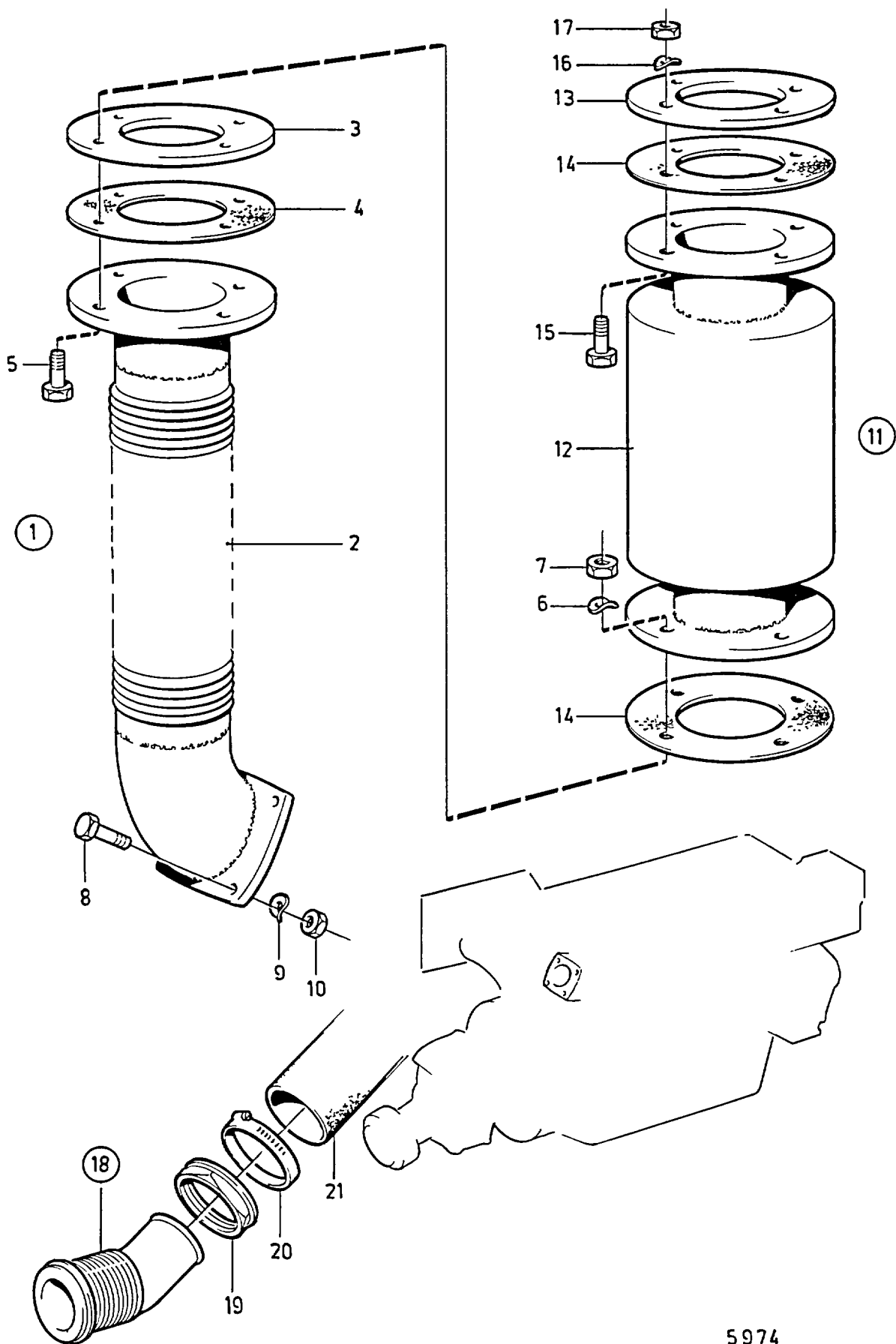
8376



Sida Page		Grupp Group		Torr avgasledning Dry exhaust line				Illustration	
24		9		TMD40A,TMD40B,TMD40C, TAMD40A,TAMD40B				4599 1987-04	
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
1	1	-	-	843305-4	Avgasledning .....	Exhaust line .....	6		002
2	1	-	-	842665-2	.Avgaskrok.....	.Exhaust bend.....	6		0046
3	1	-	-	843304-7	.Svetsfläns .....	.Welding flange .....	5		0060
4	1	-	-	843303-9	.Packning.....	.Gasket .....	3		0080
5	4	-	-	955366-0	.Skruv .....	.Screw .....	0		0100
6	4	-	-	941912-8	.Fjäderbricka..	.Washer .....	0		0120
7	4	-	-	955785-1	.Mutter .....	.Nut .....	0		0140
8	1	-	-	843313-8	Ljuddämpare .....	Silencer .....	6		0160
9	1	-	-	807704-2	.Ljuddämpare .....	.Silencer .....	6		0180
10	2	-	-	843304-7	.Svetsfläns .....	.Welding flange .....	5		0200
11	2	-	-	843303-9	.Packning. ....	.Gasket .....	3		0220
12	8	-	-	955591-3	.Skruv.....	.Screw .....	0		0240
13	8	-	-	941912-8	.Fjäderbricka ..	.Washer .....	0		0260
14	8	-	-	955829-7	.Mutter.....	.Nut.....	0		0280
15	1	-	-	828304-6	Bordgenomföring .....	Board connection .....	6		0300
16	1	-	-	836879-7	.Mutter.....	.Nut.....	5		0320
17	2	-	-	853548-6	.Slangklamma .....	.Hose clamp .....	0	(961668)	0340
18	ERF	-	-	944386-2	Slang .....	Hose .....	0		0360
19	1	-	-	842993-8	Klamma .....	Clamp .....	0	SE GRUPP 2B	0380



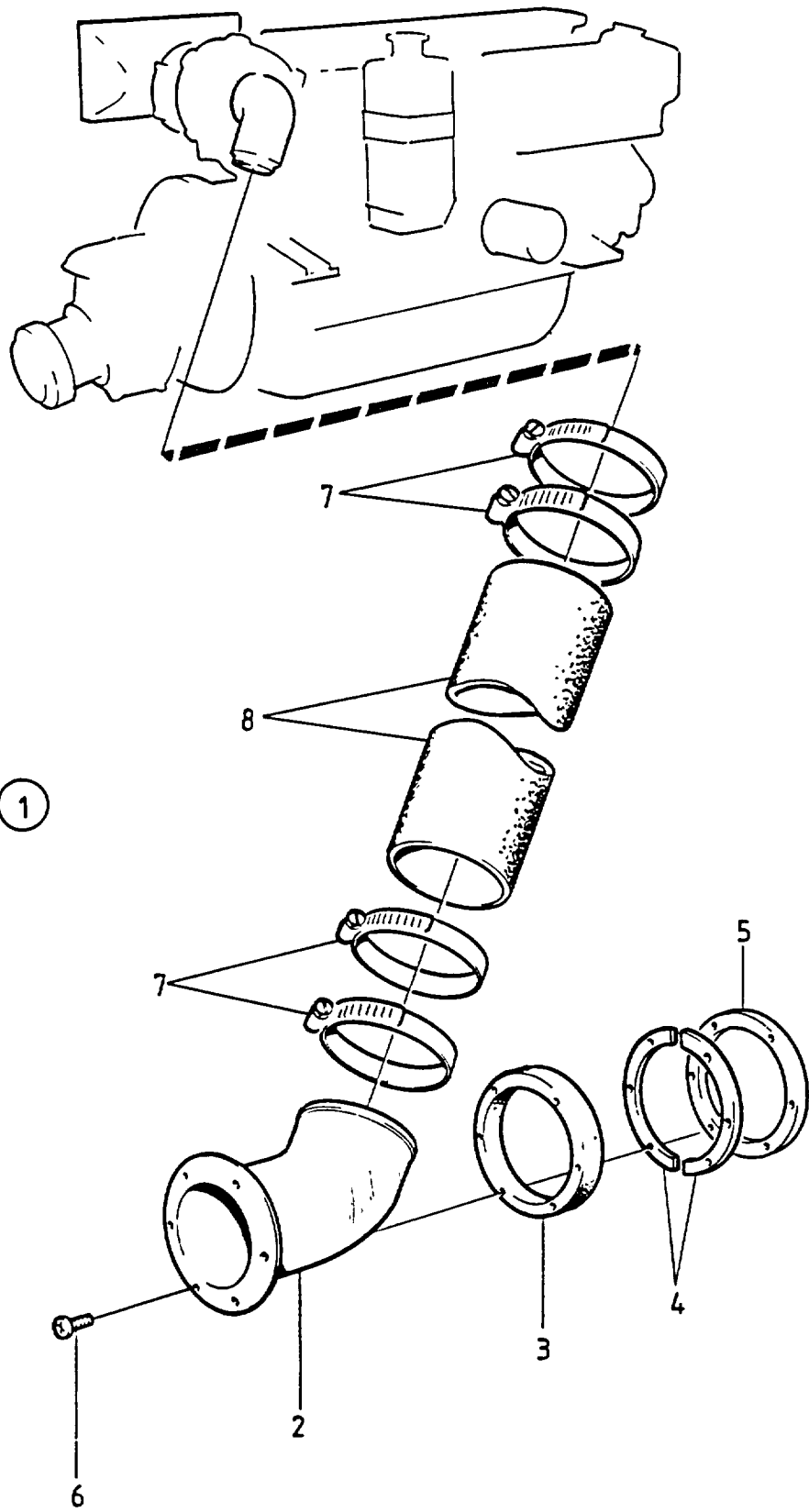
Sida Page		Grupp Group		Torr avgasledning Dry exhaust line			Illustration 5974 1987-04		0425		
26		9		MD40A							
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	844133-9	Avgasledning . . . . .	Exhaust line . . . . .	6			002
2	1	-	-	-		•Avgaskrök . . . . .	•Exhaust line . . . . .	8			0040
3	1	-	-	-	843304-7	•Svetsfläns . . . . .	•Welding flange . . . . .	5			0060
4	1	-	-	-	843303-9	•Packning . . . . .	•Gasket . . . . .	3			0080
5	4	-	-	-	955366-0	•Skruv . . . . .	•Screw . . . . .	0			0100
6	4	-	-	-	941912-8	•Fjädrande bricka . . . . .	•Resilient washer . . . . .	0			0120
7	4	-	-	-	955785-1	•Mutter . . . . .	•Nut . . . . .	0			0140
8	4	-	-	-	955321-5	•Skruv . . . . .	•Screw . . . . .	0			0160
9	4	-	-	-	941908-6	•Fjädrande bricka . . . . .	•Resilient washer . . . . .	0			0180
10	4	-	-	-	947340-6	•Mutter . . . . .	•Nut . . . . .	0			0200
11	1	-	-	-	843313-8	Ljuddämpare . . . . .	Silencer . . . . .	6			0220
12	1	-	-	-	807704-2	•Ljuddämpare . . . . .	•Silencer . . . . .	6			0
13	2	-	-	-	843304-7	•Svetsfläns . . . . .	•Welding flange . . . . .	5			0260
14	2	-	-	-	843303-9	•Packning . . . . .	•Gasket . . . . .	3			0280
15	8	-	-	-	955591-3	•Stoppskruv . . . . .	•Stop screw . . . . .	0			0300
16	8	-	-	-	941912-8	•Fjädrande bricka . . . . .	•Resilient washer . . . . .	0			0320
17	8	-	-	-	955829-7	•Mutter . . . . .	•Nut . . . . .	0			0340
18	1	-	-	-	828304-6	Bordgenomföring . . . . .	Board connection . . . . .	6			0
19	1	-	-	-	836879-7	•Mutter . . . . .	•Nut . . . . .	5			0380
20	2	-	-	-	853548-6	•Slangklamma . . . . .	•Hose clamp . . . . .	0	(961668)		0400
21	ERF	-	-	-	944386-2	Slang . . . . .	Hose . . . . .	0			0420





Sida Page		Grupp Group		Vattenkyld avgasledning Water cooled exhaust line				Illustration 4913 1987-04		0450	
28		9		TMD40A,TMD40B,TMD40C,TAMD40A, TAMD40B							
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	828295-6	Bordgenomföring .. . . . .	Bord connection .. . . . .	6			00.
2	1	-	-	-		.Avgasgenomföring . . . . .	.Exhaust grommet .. . . . .	8			0040
3	1	-	-	-	828293-1	.Kolvring .. . . . .	.Piston ring .. . . . .	5			0060
4	2	-	-	-		.Bricka .. . . . .	.Washer .. . . . .	5	10) TID UTF (828294)		0080
5	1	-	-	-	828412-7	.Bricka .. . . . .	.Washer .. . . . .	5	SEN UTF		0100
6	6	-	-	-	828410-1	.Skruv .. . . . .	.Screw .. . . . .	3			0120
7	4	-	-	-	961675-6	.Slangklamma .. . . . .	.Hose clamp .. . . . .	0			0140
8	ERF	-	-	-	828729-4	Slang .. . . . .	Hose .. . . . .	2	(828303)		0160

10. ERS AV 828412. Replaced by 828412.



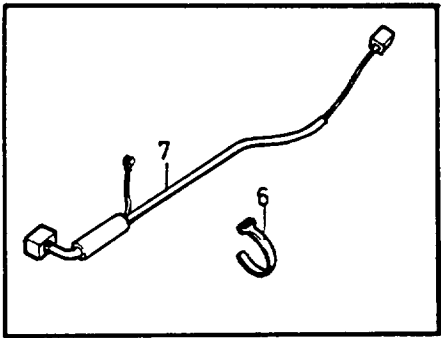
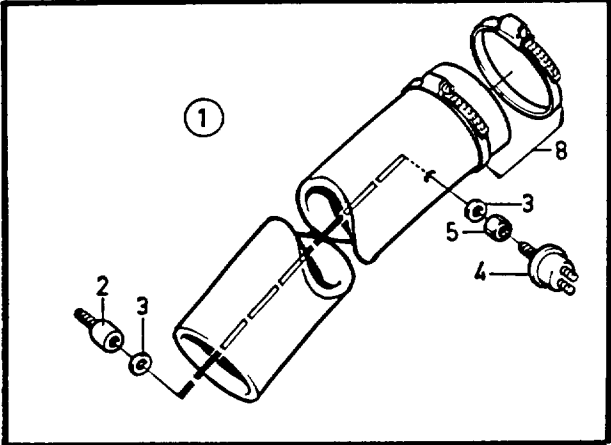
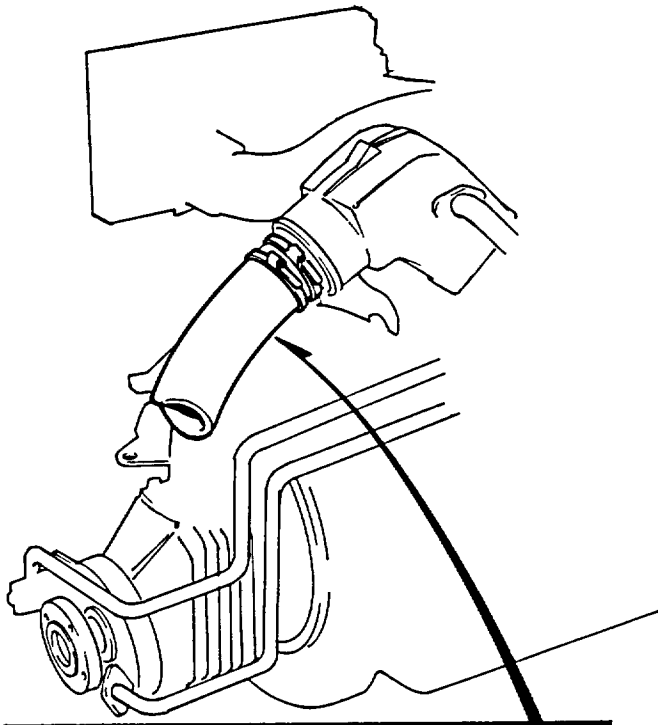
4913



Sida Page		Grupp Group		Avgastemperaturvakt		Thermo switch control		Illustration	
30		9		MD40A,TMD40A,TAMD40A				8435 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	Anmärkning Notes
1	1	-	-	-	828816-9	Avgastempvaksats .....	Thermo switch control. ....	B	
2	1	-	-	-	828817-7	•Känselkropp.....	•Bulb.....	S	
3	2	-	-	-	828776-5	•Bricka .....	•Washer.....	S	
4	1	-	-	-	828761,7	•Avgastempvakt.....	•Thermo switch control .....	S	
5	1	-	-	-	828750-0	•Mutter.....	•Nut .....	S	
6	3	-	-	-	948210-0	•Bandklämma .....	•Strip clamp.....	0	
7	1	-	-	-	828814-4	•Kabelstock .....	•Cable unit .....	S	
8	2	-	-	-		•Slangklämma.....	Hose clamp .....		
9	1	-	-	-		•Slang .....	Hose .....		
-	-	-	-	-		Kablar och kabelskor.....	Cables and terminals.....		SEGRUPP3

0461

002L  
0040  
0060  
0080  
0100  
0120  
0140  
0160  
0180  
0200



8435



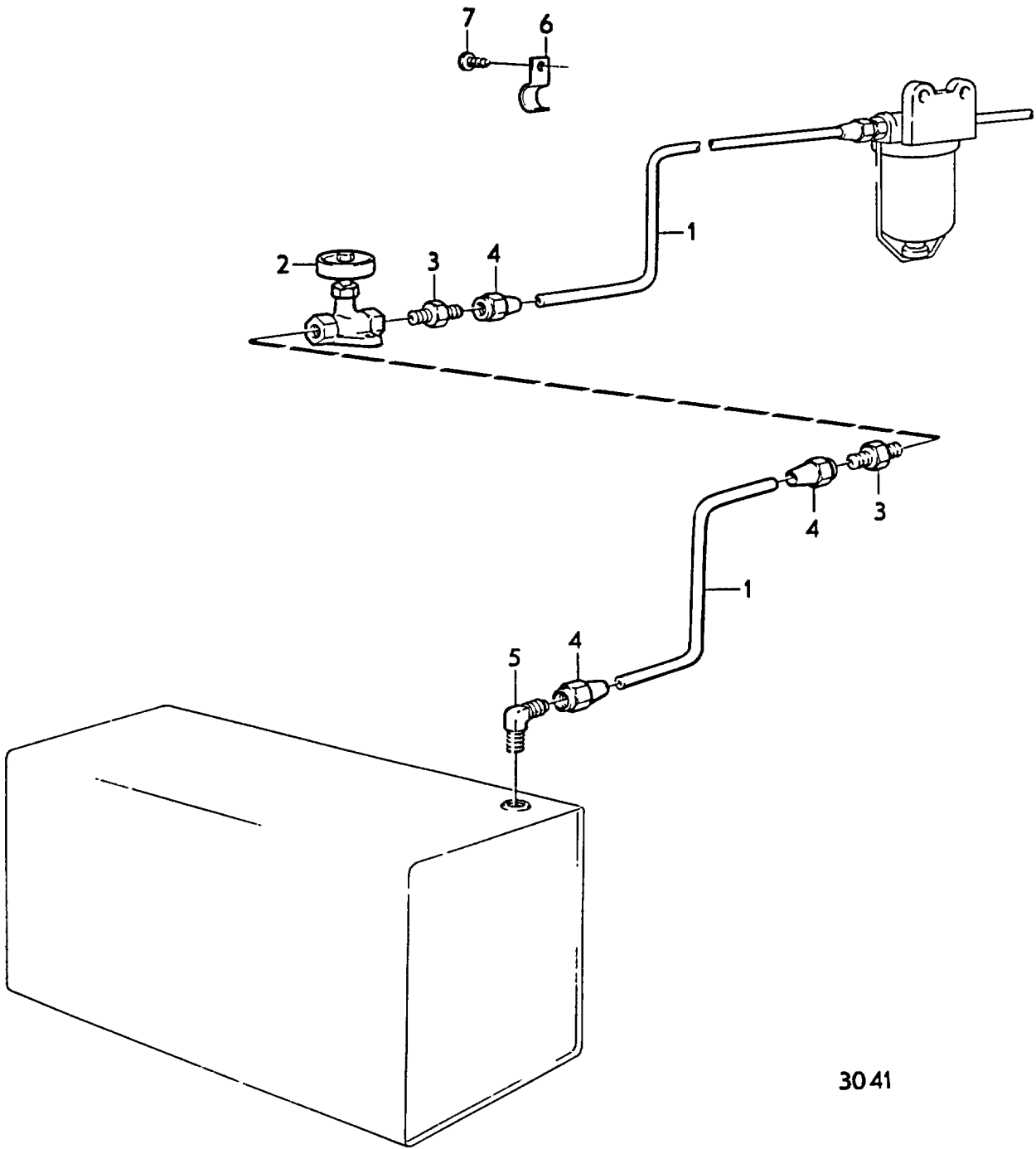
Publ. 4406

Reservdelskatalog  
Parts Catalogue

3-B11

**VOLVO  
PENTA**

Sida Page	Grupp Group	Anslutningsdetaljer Bränslefilter – bränsletank GEM		Connecting components Fuel filter – fuel tank		Illustration 3041 1987-04	0500				
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	ERF	-	-	-	954305-9	Kopparrör .....	Copper pipe .....	0		L=500MM	0021
2	1	-	-	-	824599-5	Kran .....	Cock .....	4			0040
3	2	-	-	-	954336-4	Nippel .....	Nipple .....	0			0060
4	3	-	-	-	954322-4	Rörkoppling .....	Pipe fitting .....	0			0080
5	1	-	-	-	954343-0	Förskruvning .....	Screw union .....	0			0100
6	ERF	-	-	-	951189-0	Klamma .....	Clamp .....	0			0120
7	ERF	-	-	-	955139-1	Skruv .....	Screw .....	0			0140

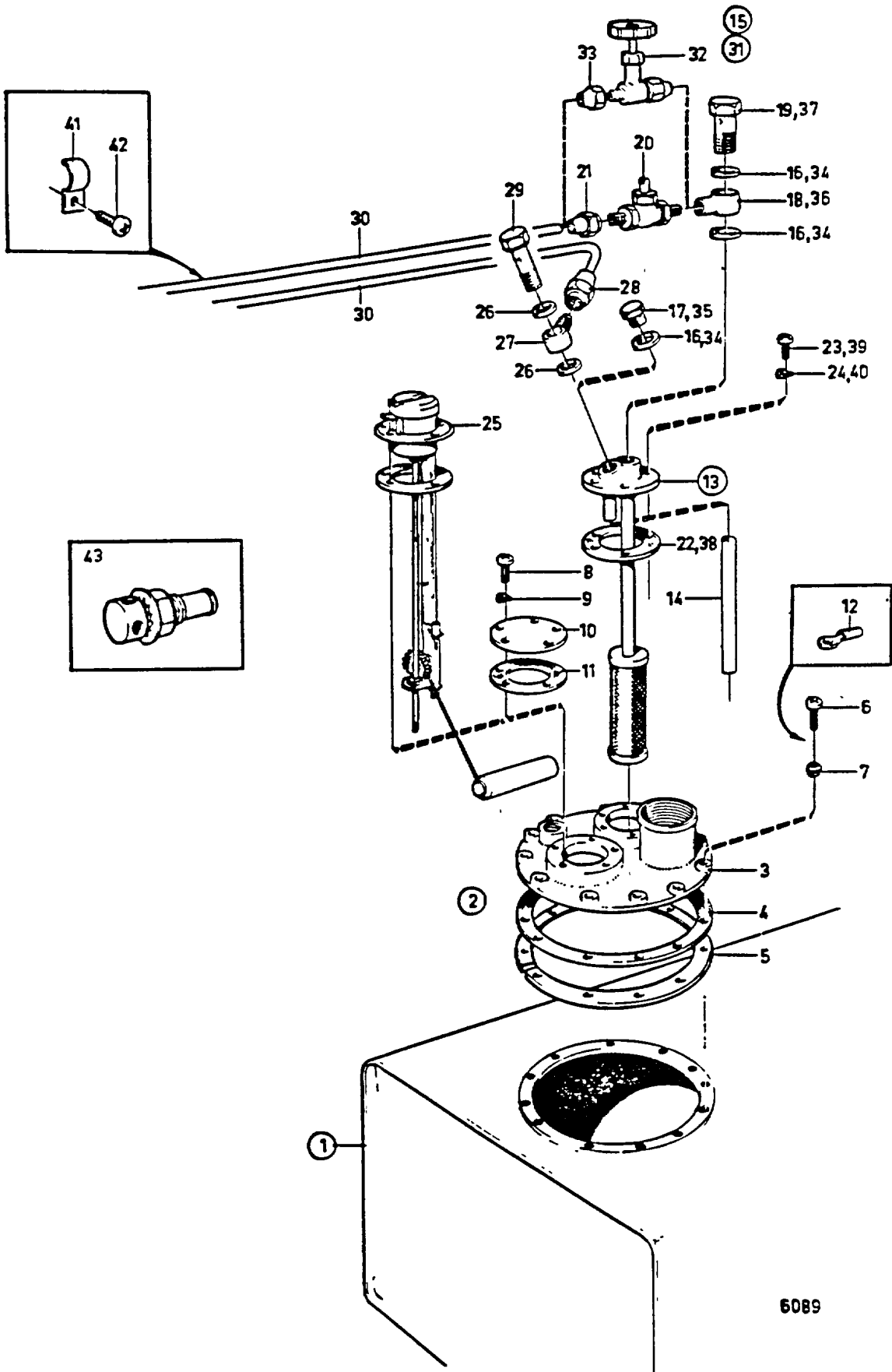


3041



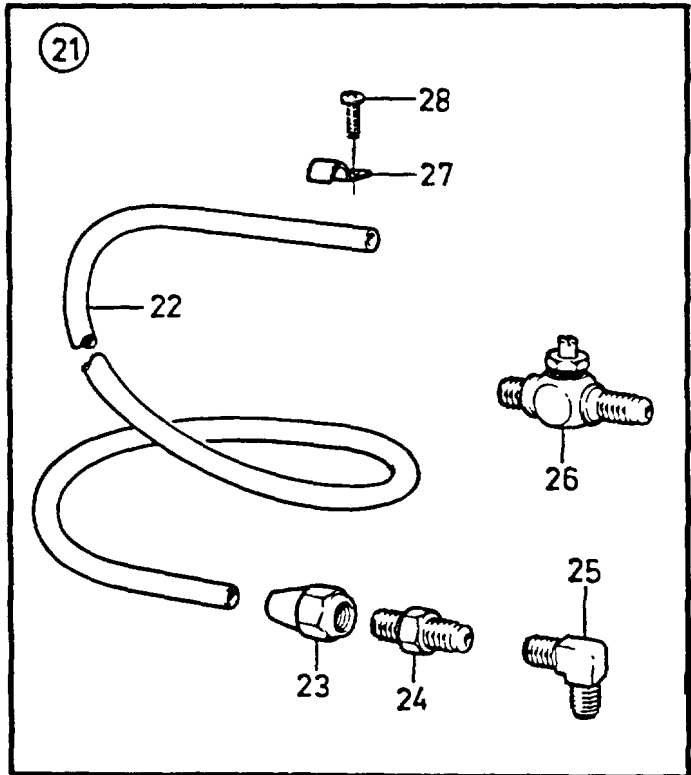
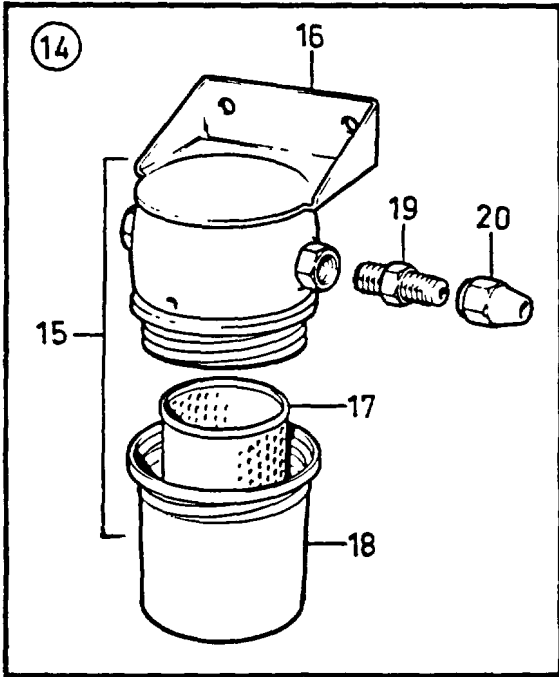
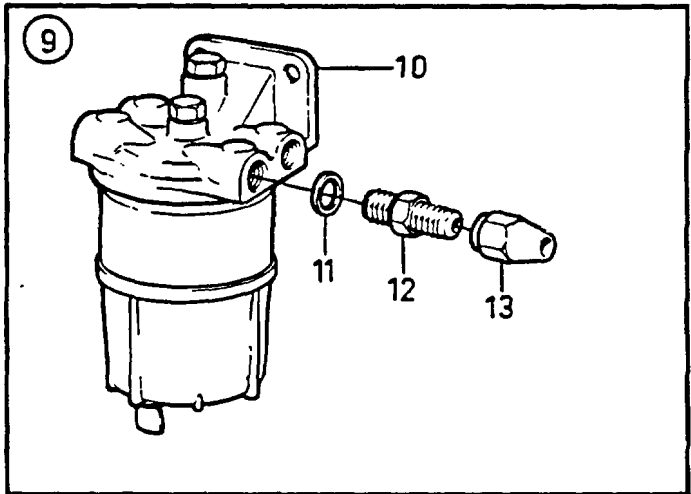
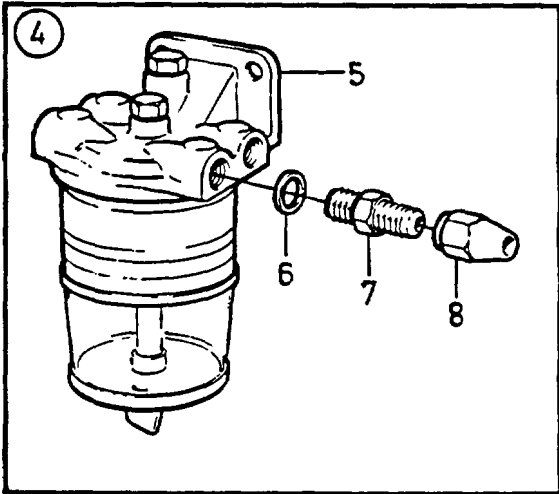
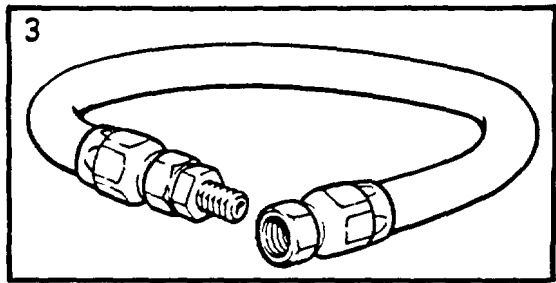
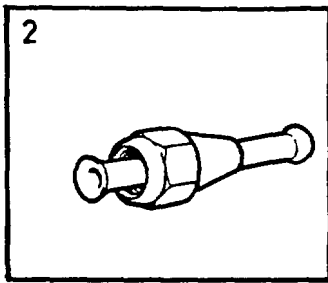
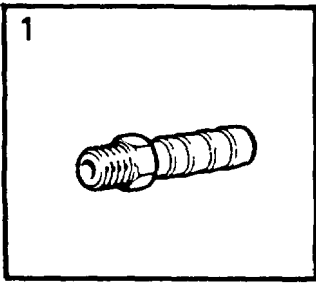
Sida Page	Grupp Group	Bränsletank och anslutningsdetaljer.	Fuel tank and connecting components.	Illustration 6089 1987-04	0510
34	9	GEM			

Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	828340-0	Tank . . . . .	Fuel tank . . . . .	6		40L	002L
2	1	-	-	-	828371-5	..Lock . . . . .	..Cover . . . . .	6			0040
3	1	-	-	-	833799-0	..Lock . . . . .	..Cover . . . . .	6			0050
4	1	-	-	-	833800-6	..Packning . . . . .	..Gasket . . . . .	2			0060
5	1	-	-	-		..Fläns . . . . .	..Flange . . . . .	8	212)		0080
6	12	-	-	-	956080-6	..Skruv . . . . .	..Screw . . . . .	0			0100
7	12	-	-	-	834481-4	..Packning . . . . .	..Gasket . . . . .	0			0120
8	5	-	-	-	956076-4	..Skruv . . . . .	..Screw . . . . .	0			0140
9	5	-	-	-	941905-2	..Fjädrande bricka . . . . .	..Resilient washer . . . . .	0			0160
10	1	-	-	-	833801-4	..Blindlock . . . . .	..Cover . . . . .	6			0180
11	1	-	-	-	89865-0	..Packning . . . . .	..Gasket . . . . .	2			0
12	1	-	-	-	881493-1	..Kabelsko . . . . .	..Cable terminal . . . . .			SE GRUPP 3	0
13	1	-	-	-	828341-8	..Sugrör . . . . .	..Suction pipe . . . . .	5		L=242MM	0240
	1	-	-	-	828372-3	..Sugrör . . . . .	..Suction pipe . . . . .	5		L=333MM	0260
	1	-	-	-	828373-1	..Sugrör . . . . .	..Suction pipe . . . . .	5		L=458MM	0280
14	ERF	-	-	-	941279-2	..Slang . . . . .	..Hose . . . . .	0			0300
15	1	-	-	-	828375-6	..Anslutningssats . . . . .	..Connecting kit . . . . .	3		5/16"	0
16	3	-	-	-	957178-7	..Packning . . . . .	..Gasket . . . . .	0			0
17	1	-	-	-	191830-9	..Propp . . . . .	..Plug . . . . .	0			0360
18	1	-	-	-	833857-6	..Nippel . . . . .	..Nipple . . . . .	5			0380
19	1	-	-	-	25167-8	..Hålskruv . . . . .	..Hollow screw . . . . .	4			0400
20	1	-	-	-	803684-0	..Kran . . . . .	..Cock . . . . .	5			0420
21	1	-	-	-	954322-4	..Överfallsmutter . . . . .	..Cap nut . . . . .	0			0440
22	1	-	-	-	89865-0	..Packning . . . . .	..Gasket . . . . .	2			0460
23	5	-	-	-	956076-4	..Skruv . . . . .	..Screw . . . . .	0		L=12MM	0480
	5	-	-	-	956080-6	..Skruv . . . . .	..Screw . . . . .	0		L=22MM	0500
24	5	-	-	-	941905-2	..Fjädrande bricka . . . . .	..Resilient washer . . . . .	0			0520
25	1	-	-	-		Tankmätare TID UTF . . . . .	Tank gauge TID UTF . . . . .			SE SIDA 42, 3-B21	0540
	1	-	-	-		Tankmätare SEN UTF . . . . .	Tank gauge SEN UTF . . . . .			SE SIDA 44, 3-B23	0541
26	2	-	-	-	957178-7	Packning . . . . .	Gasket . . . . .	0			0560
27	1	-	-	-	807060-9	Banjonippel . . . . .	Banjo nipple . . . . .	4			0580
28	1	-	-	-	807061-7	Mutter . . . . .	Nut . . . . .	0			0600
29	1	-	-	-	25167-8	Hålskruv . . . . .	Hollow screw . . . . .	4			0620
30	ERF	-	-	-	828227-9	Kopparrör . . . . .	Copper pipe . . . . .	0		5/16", L=3000MM	0640
	ERF	-	-	-	954307-5	Kopparrör . . . . .	Copper pipe . . . . .	0		3/8"	0660
	-	-	-	-		Bransleledningssats . . . . .	Fuel line kit . . . . .			SE SIDA 36, 3-B15	0680
31	1	-	-	-	828376-4	Anslutningssats . . . . .	Connecting kit . . . . .	3		3/8"	0700
32	1	-	-	-	841523-4	..Branslekran . . . . .	..Fuel cock . . . . .	5			0
33	3	-	-	-	954323-2	..Överfallsmutter . . . . .	..Cap nut . . . . .	0		3/8"	0
34	3	-	-	-	957178-7	..Packning . . . . .	..Gasket . . . . .	0			0760
35	1	-	-	-	191830-9	..Propp . . . . .	..Plug . . . . .	0			0780
36	1	-	-	-	191600-6	..Banjonippel . . . . .	..Banjo nipple . . . . .	5		3/8"	0800
37	1	-	-	-	25167-8	..Hålskruv . . . . .	..Hollow screw . . . . .	4			0820
38	1	-	-	-	89865-0	..Packning . . . . .	..Gasket . . . . .	2			0
39	5	-	-	-	956076-4	..Skruv . . . . .	..Screw . . . . .	0		L=12MM	0
	5	-	-	-	956080-6	..Skruv . . . . .	..Screw . . . . .	0		L=22MM	0880
40	5	-	-	-	941905-2	..Fjädrande bricka . . . . .	..Resilient washer . . . . .	0			0900
41	ERF	-	-	-	955139-0	Klammer . . . . .	Clamp . . . . .	0			0920
42	ERF	-	-	-	955139-1	Skruv . . . . .	Screw . . . . .	0			0940
43	1	-	-	-	1144037-7	Tankventil . . . . .	Tank valve . . . . .	3		5/8"	0960





Sida Page	Grupp Group	Branslefilter och anslutningsdetaljer			Fuel filter and connecting components			Illustration	0520		
36	9	GEM						6187			
								1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	855117-8	Nippel .....	Nipple .....	2		1/8"-27 NPTF	0020
	1	-	-	-	855207-7	Nippel .....	Nipple .....	2		1/4"-18 NPTF	0040
2	1	-	-	-	829744-2	Slanganslutning .....	Hose connection .....	2		5/16"	0060
	1	-	-	-	855129-3	Slanganslutning .....	Hose connection .....	2		5/16"	0070
3	1	-	-	-	831630-9	Bränsleslang, L=700MM ..	Fuel hose, L=700MM .....	2		1/8" NPTF-1/2" UNF	0080
	1	-	-	-	834899-7	Bränsleslang, L=700MM ..	Fuel hose, L=700MM .....	2		1/4" NPTF-5/8" UNF	0100
4	1	-	-	-	845109-8	Bränslefilter sats .....	Fuel filter kit .....	5		5/16", 3/8"	0120
5	1	-	-	-	821094-0	•Filter .....	•Filter .....	5			0140
6	2	-	-	-	18817-7	•Packning .....	•Gasket .....	0			0160
7	2	-	-	-	191397-9	•Nippel .....	•Nipple .....	0		5/16"	0180
	2	-	-	-	941438-4	•Nippel .....	•Nipple .....	0		3/8"	0
8	2	-	-	-	954322-4	•Overfallsmutter .....	•Cap nut .....	0		5/16"	0
	2	-	-	-	954323-2	•Overfallsmutter .....	•Cap nut .....	0		3/8"	0240
9	1	-	-	-	833972-3	Bränslefilter sats .....	Fuel filter kit .....	5		5/16", 3/8"	0260
10	1	-	-	-	833971-5	•Filter .....	•Filter .....	5			0280
	2	-	-	-	957176-1	•Packning .....	•Gasket .....	0			0300
12	2	-	-	-	191397-9	•Nippel .....	•Nipple .....	0		5/16"	0
	2	-	-	-	941438-4	•Nippel .....	•Nipple .....	0		3/8"	0
13	2	-	-	-	954322-4	•Overfallsmutter .....	•Cap nut .....	0		5/16"	0360
	2	-	-	-	954323-2	•Overfallsmutter .....	•Cap nut .....	0		3/8"	0380
14	1	-	-	-	841071-4	Bränslefilter sats .....	Fuel filter kit .....	5		5/16", 3/8"	0400
15	1	-	-	-	841054-0	•Bränslefilter .....	•Fuel filter .....	5			0420
16	1	-	-	-		•Hus .....	•Housing .....	8			0440
17	1	-	-	-	841162-1	•Filter .....	•Filter .....	2			0460
18	1	-	-	-		•Kåpa .....	•Casing .....	8			0480
19	2	-	-	-	190962-1	•Nippel .....	•Nipple .....	2		5/16"	0500
	2	-	-	-	954337-2	•Nippel .....	•Nipple .....	2		3/8"	052
20	2	-	-	-	954322-4	•Overfallsmutter .....	•Cap nut .....	0		5/16"	0540
	2	-	-	-	954323-2	•Overfallsmutter .....	•Cap nut .....	0		3/8"	0560
21	1	-	-	-	827912-7	Bränsleledningssats .....	Fuel line kit .....	5		5/16"	0580
22	1	-	-	-	943847-4	•Rör .....	•Pipe .....	0		5/16", L=5000MM	0600
23	3	-	-	-	954322-4	•Overfallsmutter .....	•Cap nut .....	0			0620
24	2	-	-	-	954336-4	•Nippel .....	•Nipple .....	0			0640
25	1	-	-	-	954343-0	•V-nippel .....	•V-nipple .....	1			0660
26	1	-	-	-	824599-5	•Kran .....	•Cock .....	5			0680
27	15	-	-	-	951189-0	•Klammer .....	•Clamp .....	0			0700
28	15	-	-	-	955139-1	•Skruv .....	•Screw .....	0			0720

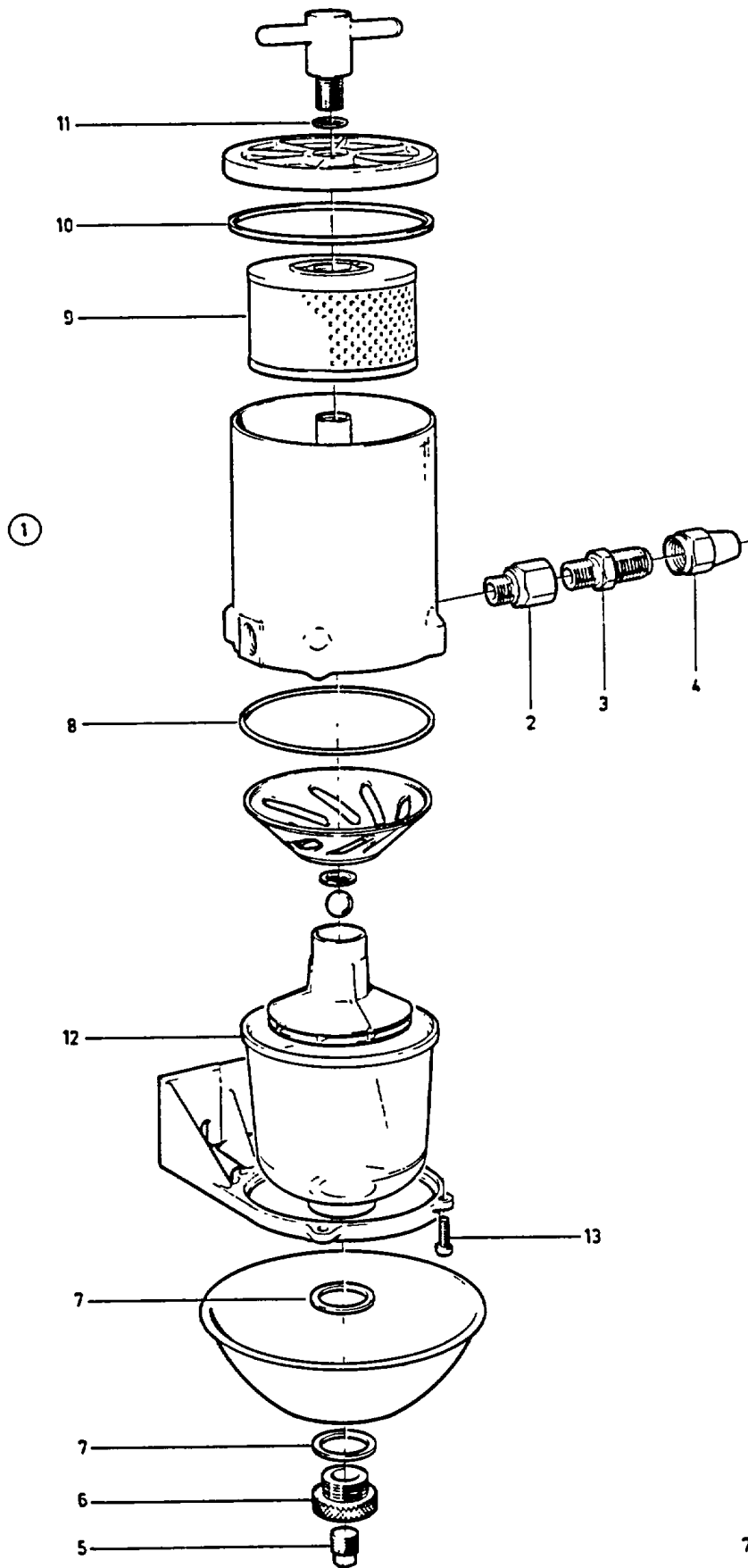


6187



Sida Page		Grupp Group		Bränslefilter		Fuel filter		Illustration	
38		9		GEM				7191 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	Anmärkning Notes
1	1	-	-	-	847155-9	Bränslerenare .....	Fuel filter...	5	
2	2	-	-	-	847334-0	•Nippel .....	•Nipple .....	3	002L
3	2	-	-	-	954337-2	•Rak nippel .....	•Nipple.. ..	0	0040
4	2	-	-	-	954323-2	•Overfallsmutter...	•Nipple.. ..	0	0060
5	1	-	-	-	838498-4	•Plugg .....	•Cap nut. ....	0	0080
6	1	-	-	-	838499-2	•Hållare .....	•Plug .....	3	0100
7	2	-	-	-	838500-7	•Packning .....	•Retainer .....	5	0120
8	1	-	-	-	838502-3	•O-ring .....	•Gasket .....	2	0140
9	1	-	-	-	828897-9	•Filterinsats .....	•O-ring .....	2	0160
10	1	-	-	-	838504-9	•Packning .....	•Filterelement .....	1	0180
11	1	-	-	-	838505-6	•O-ring .....	•Gasket .....	2	0200
12	1	-	-	-	838506-4	•Skål .....	•O-ring .....	2	20
13	4	-	-	-	950024-0	•Skruv .....	•Shell .....	3	40
							•Screw .....	0	0260

(838503)

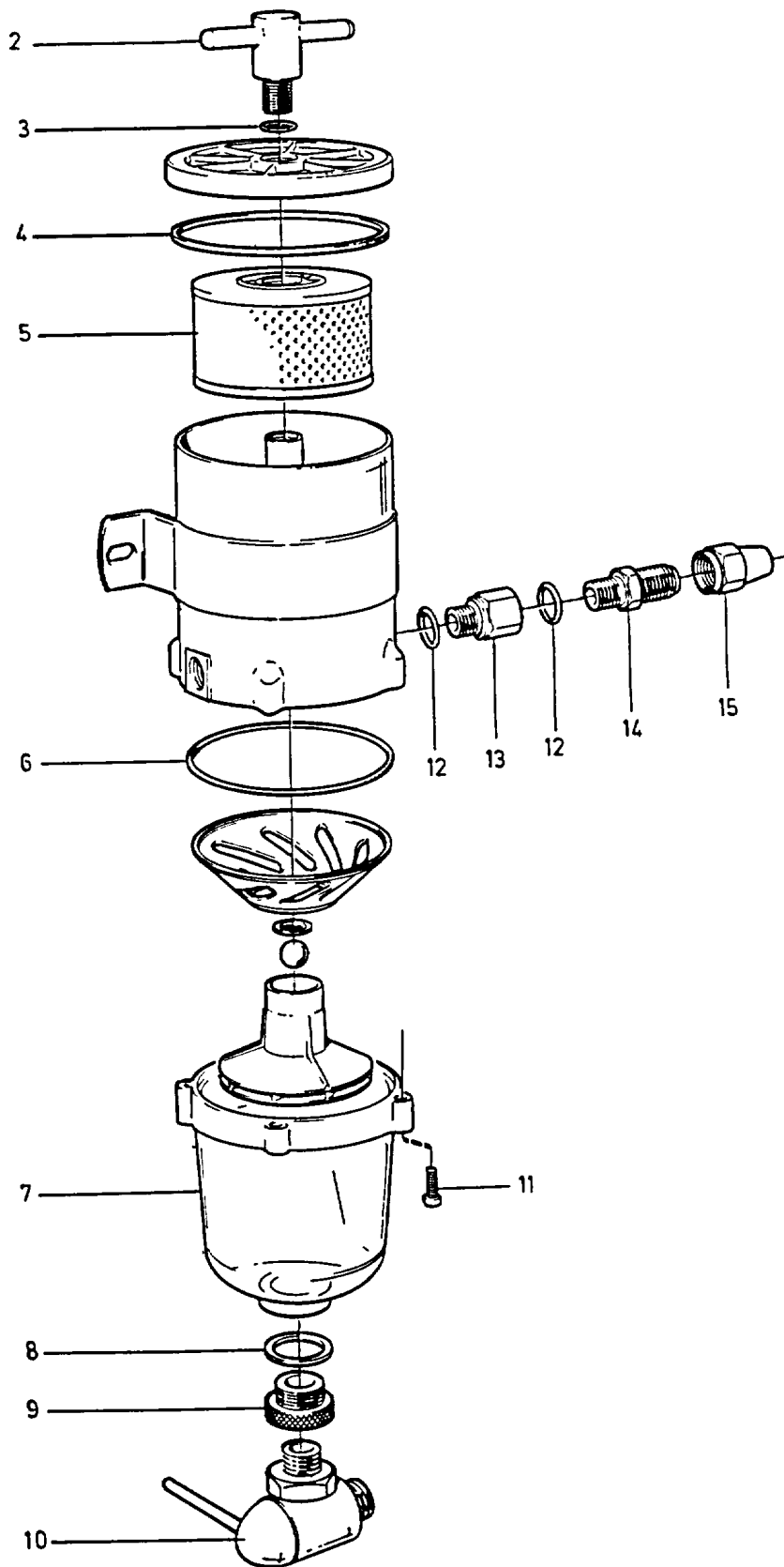


7191



Sida Page		Grupp Group		Branslefilter Fuel filter		Illustration 8461 1987-04		0540		
40		9		GEM						
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes
1	1	-	-	-	828958-9	Branslerenare .....	Fuel filter....	3		001
2	1	-	-	-		.Skruv .....	.Screw .....	8		004L
3	1	-	-	-		.Tätningring .....	.Seal ring .....	8		0060
4	1	-	-	-		.Tätningring .....	.Seal ring .....	8		0080
5	1	-	-	-	828897-9	.Filterinsats .....	.Filter insert.....	2		0100
6	1	-	-	-		.Tätningring .....	.Seal ring .....	8		0120
7	1	-	-	-		.Bottendel .....	.Lower part .....	8		0140
8	1	-	-	-		.Tätningring.....	.Seal ring .....	8		0160
9	1	-	-	-		.Mutter .....	.Nut .....	8		0180
10	1	-	-	-		.Kran .....	.Drain cock.....	8		0200
11	4	-	-	-		.Skruv .....	.Screw .....	8		0220
12	4	-	-	-	858601-8	.O-ring .....	.O-ring .....	2		40
13	2	-	-	-	828937-3	.Nippel .....	.Nipple .....	2		0260
14	2	-	-	-	828942-3	.Nippel .....	.Nipple .....	2		0280
15	2	-	-	-	954323-2	.Overfallsmutter .....	.Cap nut .....	2		0300

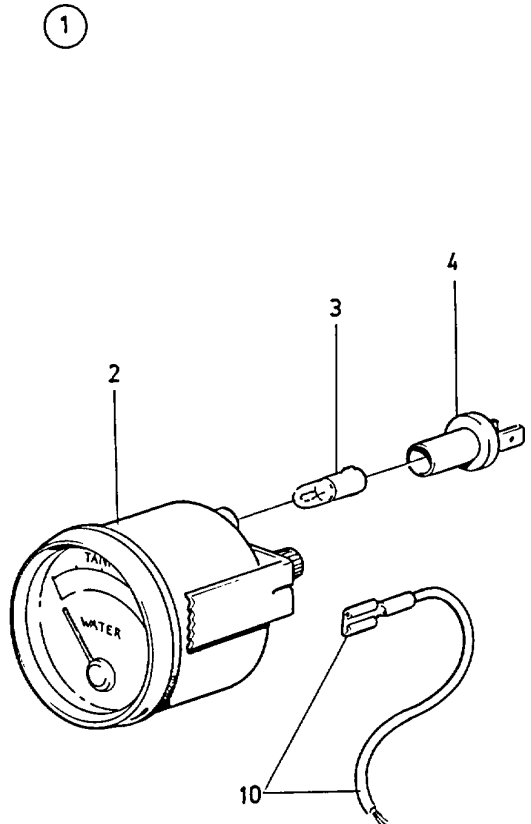
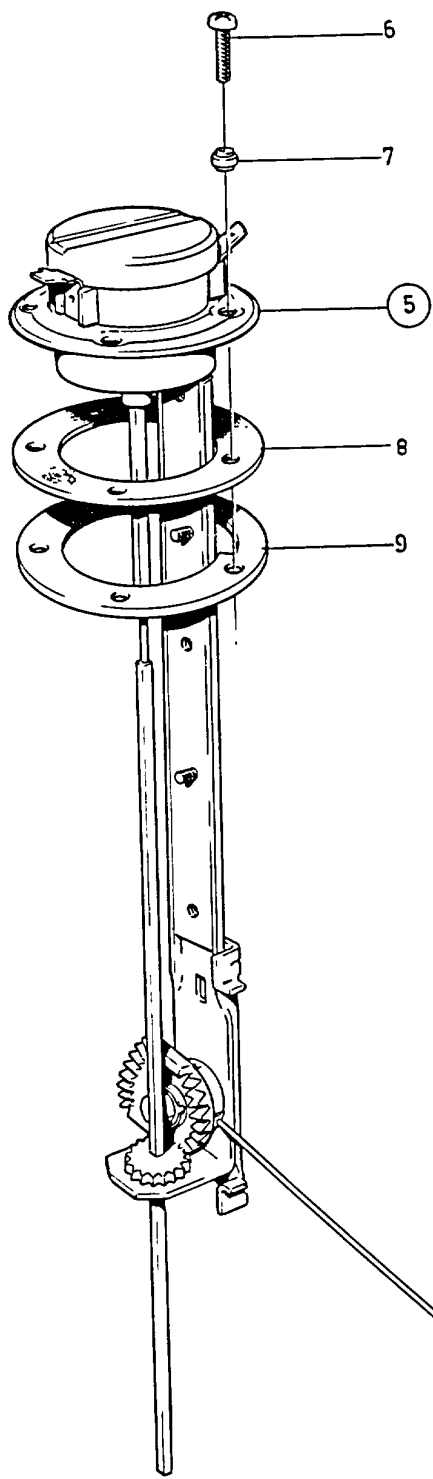
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Sida Page	Grupp Group	Tankmataresats for bransle och dricksvatten, TID UTF		Tank meter kit for fuel and drinking water, TID UTF		Illustration	0600				
42	9	MD40A,TMD40A,TMD40B,TMD40C,AQD40A, TAMD40A,TAMD40B,AQAD40A,AQAD40B				3949	1987-04				
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	834 399	834 400									
1	1	-	-	-	834399-8	Tankmatare .....	Tank gauge.....		6	12)	002
	-	1	-	-	834400-4	Tankmatare .....	Tank gauge.....		6	13)	004
2	1	-	-	-	834378-2	•Tankmatare.....	•Tank gauge.....		4		0060
	-	1	-	-	834380-8	•Tankmatare.....	•Tank gauge.....		4		0080
3	1	1	-	-	19923-2	•Glodlampa .....	•Lamp bulb.....		0		0100
4	1	1	-	-	808175-4	•Lamphållare .....	•Bulb holder .....		3		0120
5	1	-	-	-	837999-2	•Tankgivare .....	•Tank sensor.....		5		0140
	-	1	-	-	834389-9	•Givare .....	•Sensor .....		5		0160
6	4	4	-	-	956078-0	•Skruv .....	•Screw .....		0	L=16MM	0180
	1	1	-	-	956081-4	•Skruv .....	•Screw.....		0	L=25MM	0200
7	5	5	-	-	834481-4	•Packning .....	•Gasket .....		3		0220
8	1	1	-	-	89865-0	•Packning .....	•Gasket .....		3		0240
9	1	1	-	-	834480-6	•Flans .....	•Flange.....		5		0260
10	ERF	ERF	-	-		Kablar och kabelskor ..	Cables and cable ..			SE GRUPP3	0280
							terminals				0300

12. Förbransle. For fuel.

13. För dricksvatten. For drinking water.



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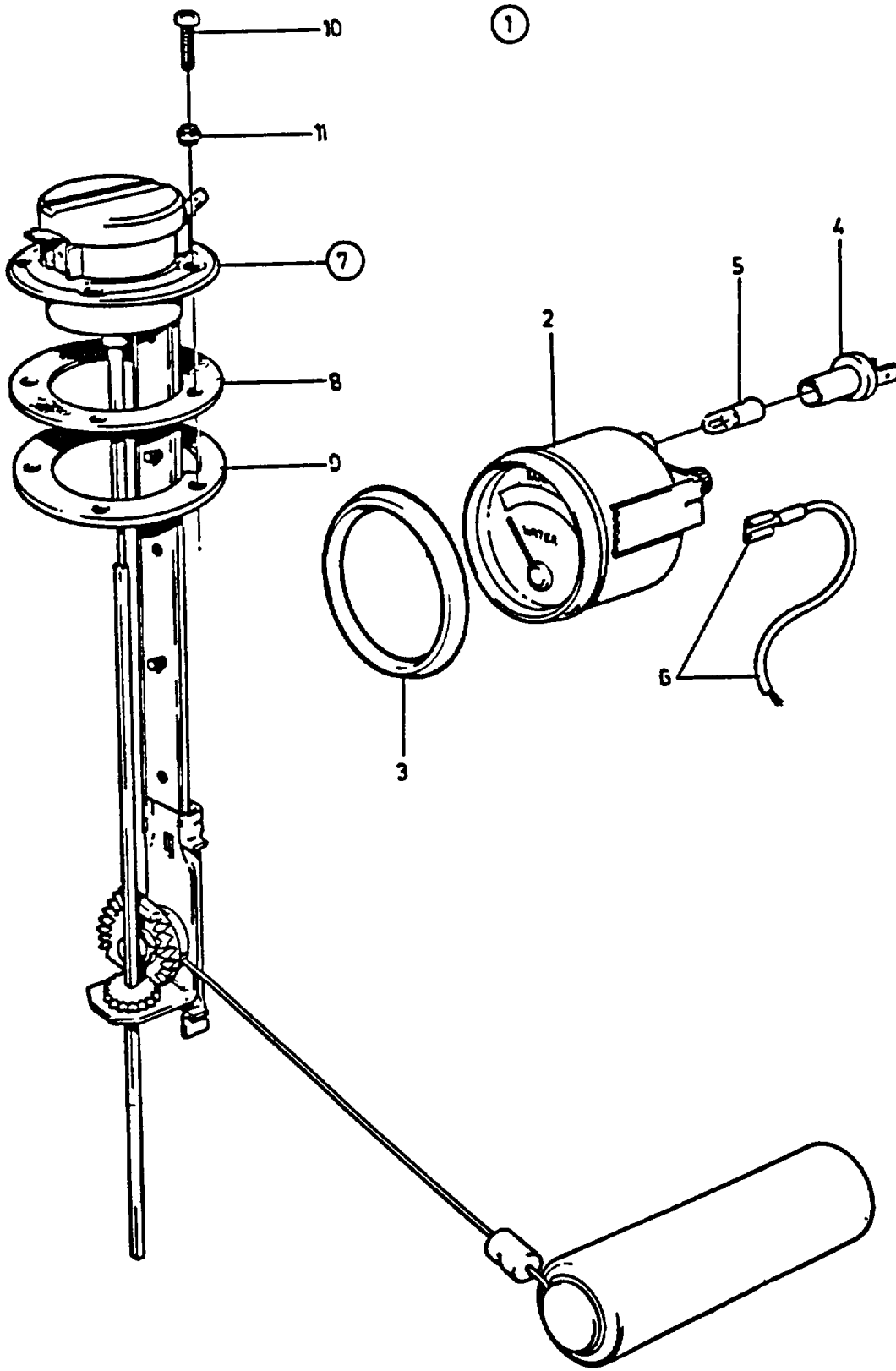
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3949

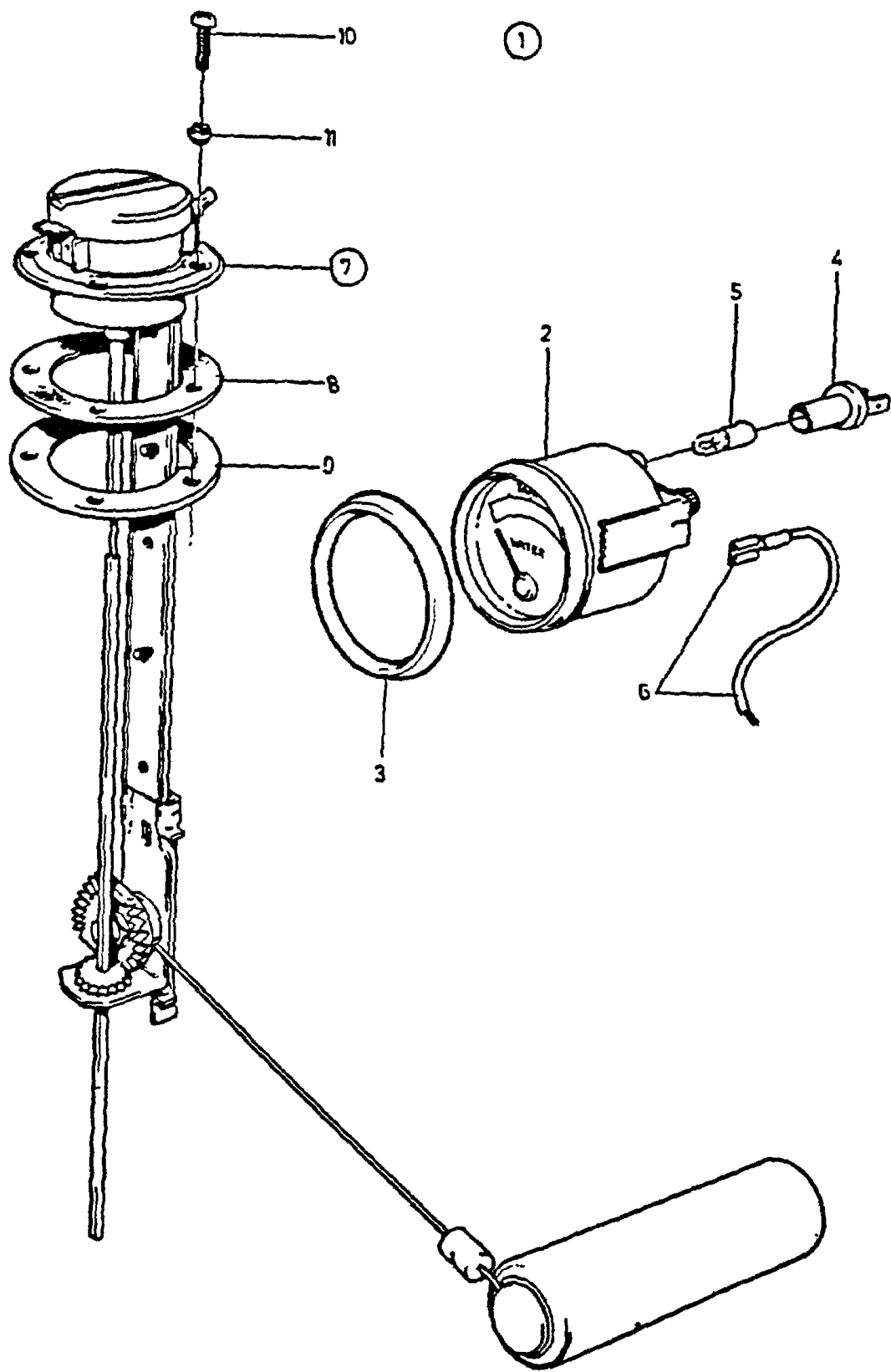




Sida Page		Grupp Group		Tankmätaresats for bränsle och dricksvatten SEN UTF GEM		Tank meter kit for fuel and drinking water SEN UTF		Illustration 6712 1987-04		0610	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	828 714	828 715	828 716	828 717							
1	1	-	-	-	828714-6	Bränslemätarsats .....	Fuel gauge kit.....	6		233)12V ERS AV 858879	002/ 002.
	-	-	-	-	828715-3	Bränslemätarsats .....	Fuel gauge kit.....	8		24V	0040
	-	1	-	-	828716-1	Vattenmätare .....	Water gauge .....	6		233)12V ERS AV 858881	0060 0061
	-	-	-	-	828717-9	Vattenmätare .....	Water gauge .....	8		24V	0080
2	1	-	-	-	828632-0	.Bränslemätare.....	.Fuel gauge .....	4			0100
	-	1	-	-	828633-8	.Tankmätare.....	.Tank gauge .....	4			0120
	-	-	-	-	828635-3	.Vattenmätare .....	.Water gauge .....	4			0140
	-	-	-	1	828636-1	.Vattentankmätare.....	.Water gauge .....	4			0160
3	1	1	1	1	828542-1	.Frontring .....	.Front ring .....	4			0180
4	1	1	1	1	808175-4	.Lamphållare .....	.Bulb holder .....	3			0
5	1	-	1	-	19923-2	.Glödlampa .....	.Bulb .....	2			0220
	-	1	-	1	182059-6	.Glödlampa .....	.Bulb .....	2			0240
6	ERF	ERF	ERF	ERF		.Kablar och kabelskor ..	.Cables and terminals .....			SE GRUPP 3	0260
7	1	1	-	-	837999-2	.Tankgivare .....	.Tank sensor .....	5			0280
	-	-	1	1	834389-9	.Givare .....	.Sensor .....	5			0300
8	1	1	1	1	89865-0	..Packning .....	..Gasket .....	3			0
9	1	1	1	1	834480-6	..Fläns .....	..Flange .....	5			0340
10	4	4	4	4	956078-0	..Skruv .....	..Screw .....	0		L=16MM	0360
	1	1	1	1	956081-4	..Ställskruv .....	..Screw .....	0		L=25MM	0380
11	5	5	5	5	834481-4	..Packning .....	..Gasket .....	3			0400



Sida Page	Grupp Group	Tankmatarsats for bransle och dricksvatten GEM			Tank meter kit for fuel and drinking water			Illustration 6712 1987-04	0615		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	858879-0	Branslematarsats....	Fuel gauge kit .....	6		234)12V	002f
	-	1	-	-	858881-6	Vattenmatarsats....	Water gauge kit .....	6		234)12V	003L
2	1	-	-	-	828632-0	..Branslemätare .....	..Fuel gauge .....	4			0040
	-	1	-	-	828635-3	..Vattenmätare .....	..Water gauge.. .....	4			0050
3	1	1	-	-	858643-0	..Frontring .....	..Front ring .....	4			0060
4	1	1	-	-	808175-4	..Lamphållare .....	..Bulb holder.....	3			0080
5	1	1	-	-	19923-2	..Glodlampa .....	..Bulb .....	2			0100
6	ERF	ERF	-	-		..Kablar och kabelskor ..	..Cables and terminals ...			SEGRUPP 3	0120
7	1	-	-	-	837999-2	..Tankgivare .....	..Tank sensor .....	5			0140
	-	1	-	-	834389-9	..Tankgivare....	..Tank sensor ... .....	5			0150
8	1	1	-	-	89865-0	..Packning .....	..Gasket .....	3			0160
9	1	1	-	-	834480-6	..Flans .....	..Flange .....	5			0200
10	4	4	-	-	956078-0	..Skruv .....	..Screw .....	0		L=16MM	0200
	1	1	-	-	956081-4	..Stallskruv .....	..Screw .....	0		L=25MM	0220
11	5	5	-	-	834481-4	..Packning...	..Gasket.. .....	3			0240



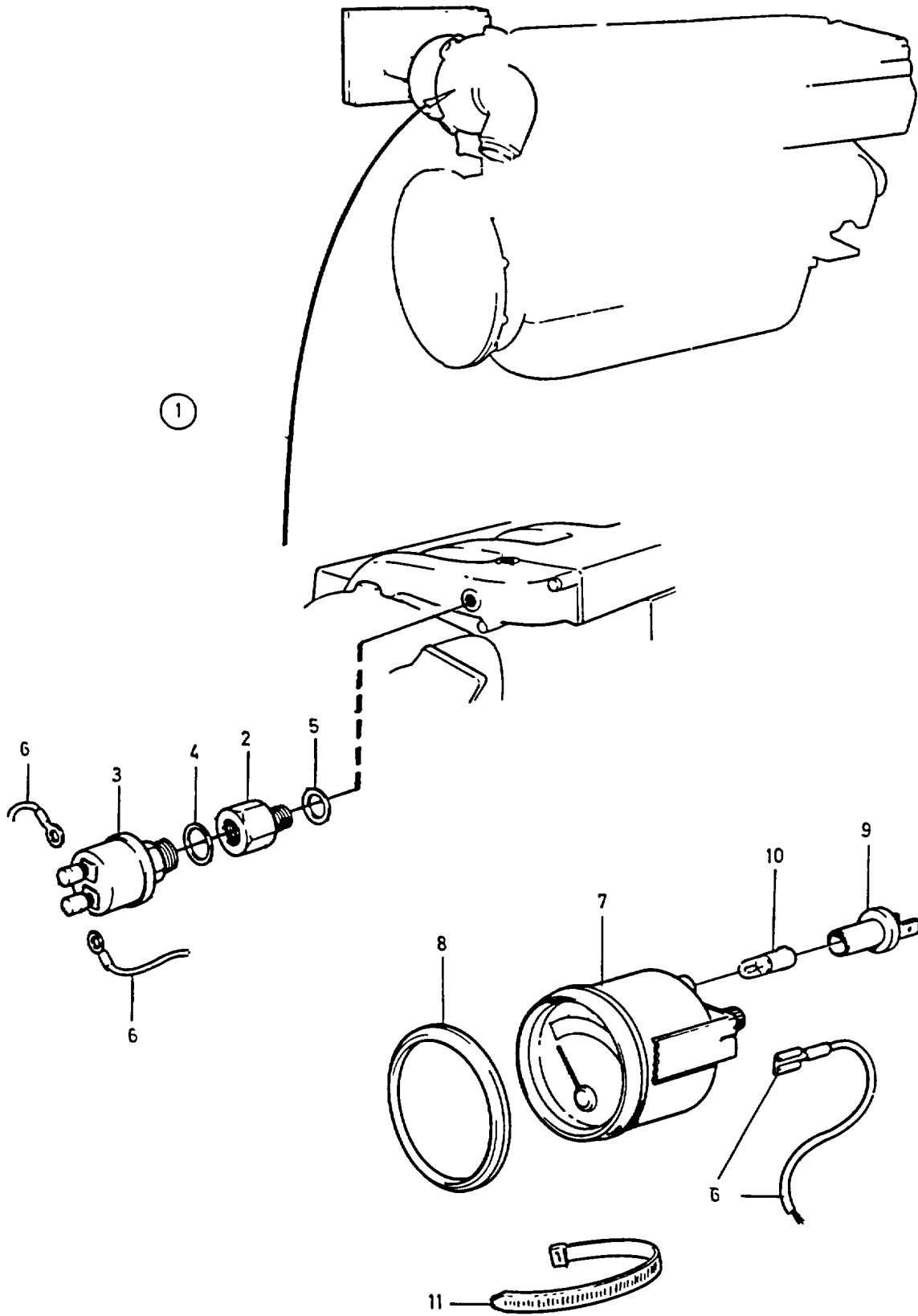
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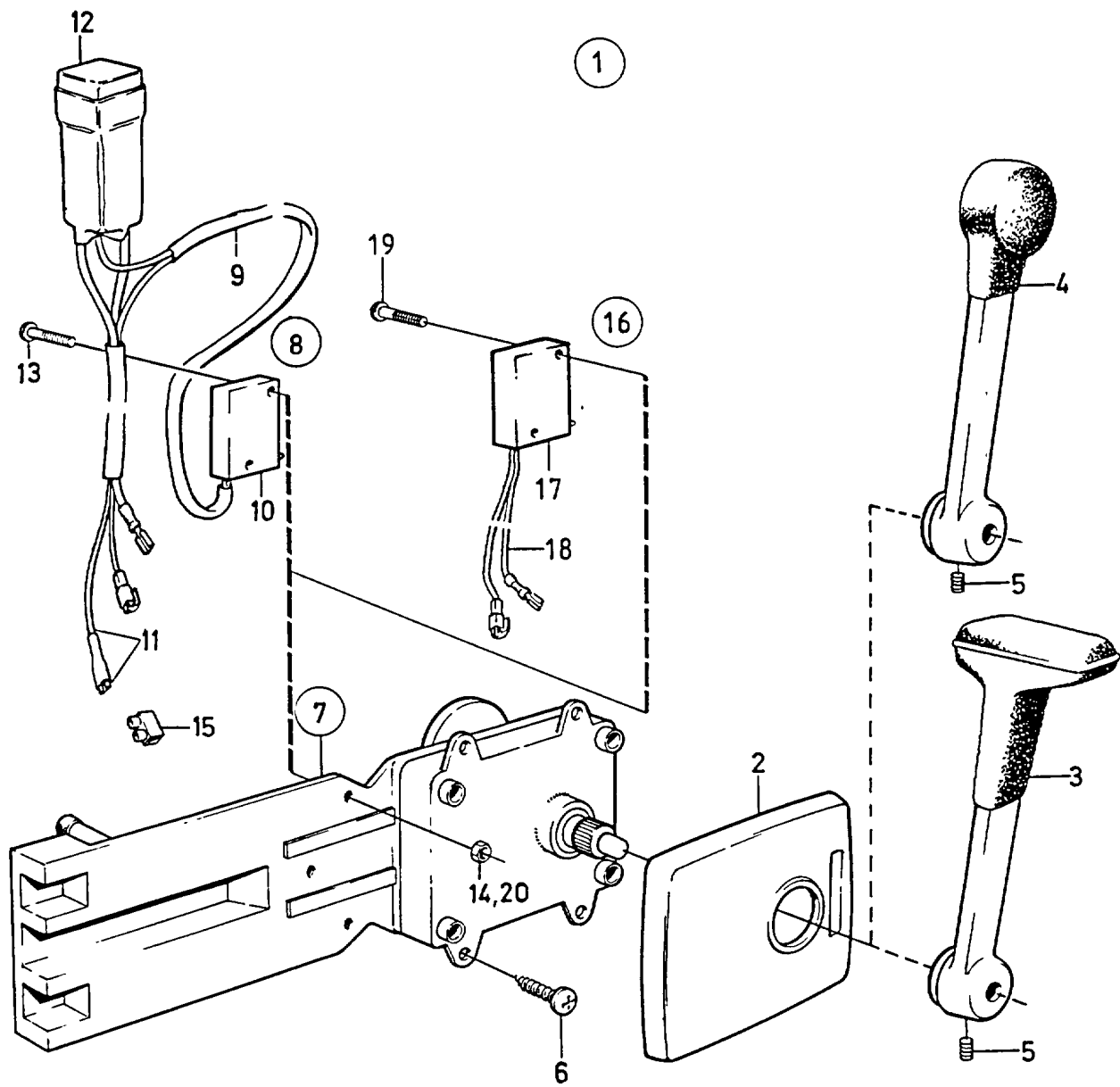
Sida Page		Grupp Group		Laddluftsmätarsats Charge pressure gauge kit			Illustration 8343 1987-04		0620		
48		9		TAMD40B,AQAD40B							
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	838331-7	Tryckmätarsats .....	Pressure gauge kit .....	4			002
2	1	-	-	-	838333-3	.Adapter .....	.Adepter .....	2			0040
3	1	-	-	-	837782-2	.Tryckgivare .....	.Pressure .....	4			0060
4	1	-	-	-	957181-1	.Packning .....	.Gasket .....	0			0080
5	1	-	-	-	957173-8	.Packning .....	.Gasket .....	0			0100
6	ERF	-	-	-		.Kablar och kabelskor .....	.Cables and terminals .....			SE GRUPP 3	0120
7	1	-	-	-	828625-4	.Laddluftsmätare .....	.Gauge .....	4			0140
8	1	-	-	-	828542-1	.Frontring .....	.Front ring .....	3			0160
9	1	-	-	-	808175-4	.Lamphållare .....	.Bulb holder .....	2			0180
10	1	-	-	-	19923-2	.Glödlampa .....	.Bulb .....	0	12V		0200
11	ERF	-	-	-	948210-0	.Bandklämma .....	.Strip clamp .....	0			70



Sida Page	Grupp Group	Reglage för sidomontering	Control for side installation	Illustration	0650
50	9	GEM		4806	
				1987-04	

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	839 515	839 516									
1	1	-	-	-	839515-4	Monteringssats .....	Mounting kit .....		8	ERSAV 851604	0020
	-	1	-	-	839516-2	Monteringssats .....	Mounting kit .....		8	14) ERS AV 851605	0040
2	1	1	-	-	839518-8	.Kåpa.....	.Casing..	S	5		0060
3	1	-	-	-	839520-4	.Spak.....	.Handle .....	S	3		0080
4	-	1	-	-	839521-2	.Spak.....	.Handle...	S	3	14)	0100
5	1	1	-	-	946786-1	.Låsskruv .....	.Lock screw .....	S	0	M5	0120
	1	1	-	-	839693-9	.Skruv .....	.Screw .....	S	2	M8	0140
6	4	4	-	-	955142-5	.Skruv .....	.Screw .....	S	0		0160
7	1	1	-	-	839469-4	Reglage .....	Control .....		8	60,61)	0180
	-	-	-	-		Det se sida 56, 3-C11....	Comp page 56, 3-C11 .....				0200
8	1	1	-	-	839641-8	Neutrallägeskontakt .....	Neutral switch .....		4	17)	0
9	1	1	-	-	839619-4	.Kabelsats .....	.Cable unit .....		6		0
10	1	1	-	-	850200-7	..Strömbrytare .....	..Switch .....		4		0260
11	ERF	ERF	-	-		..Kablar och kabelskor .....	..Cables and cable .....			SE GRUPP 3	0280
						terminals					0300
12	1	1	-	-	876037-3	.Rela .....	.Relay .....		3	(839367)	0320
13	2	2	-	-	946177-3	.Skruv .....	.Screw .....		0		0
14	2	2	-	-	947536-9	.Mutter .....	.Nut .....		0		0
15	1	1	-	-	182009-1	.Kopplingsstycke..	.Connector .....		8		0380
16	1	1	-	-	828414-3	Kontakt .....	Switch .....		4	16,17)	0400
	1	1	-	-	828378-0	Kontakt .....	Contact .....		4	16,18)	0420
17	1	1	-	-	850200-7	.Strömbrytare .....	.Switch .....		4		0440
18	ERF	ERF	-	-		..Kablar och kabelskor .....	..Cables and cable .....			SE GRUPP 3	0460
						terminals					0480
19	2	2	-	-	946177-3	.Skruv .....	.Screw .....		0		0500
20	2	2	-	-	947536-9	.Mutter .....	.Nut .....		0		0520

- 14. För segelbåt. For sailing boat.
- 16. D40. D40.
- 17. Manöverplats 1. Main station.
- 18. Manöverplats 2. Second station.
- 60. Top monterad ersatt av 851600. Top-mounted replaced by 851600.
- 61. Sidomonterad ersatt av 851601. Side-mounted replaced by 851601.



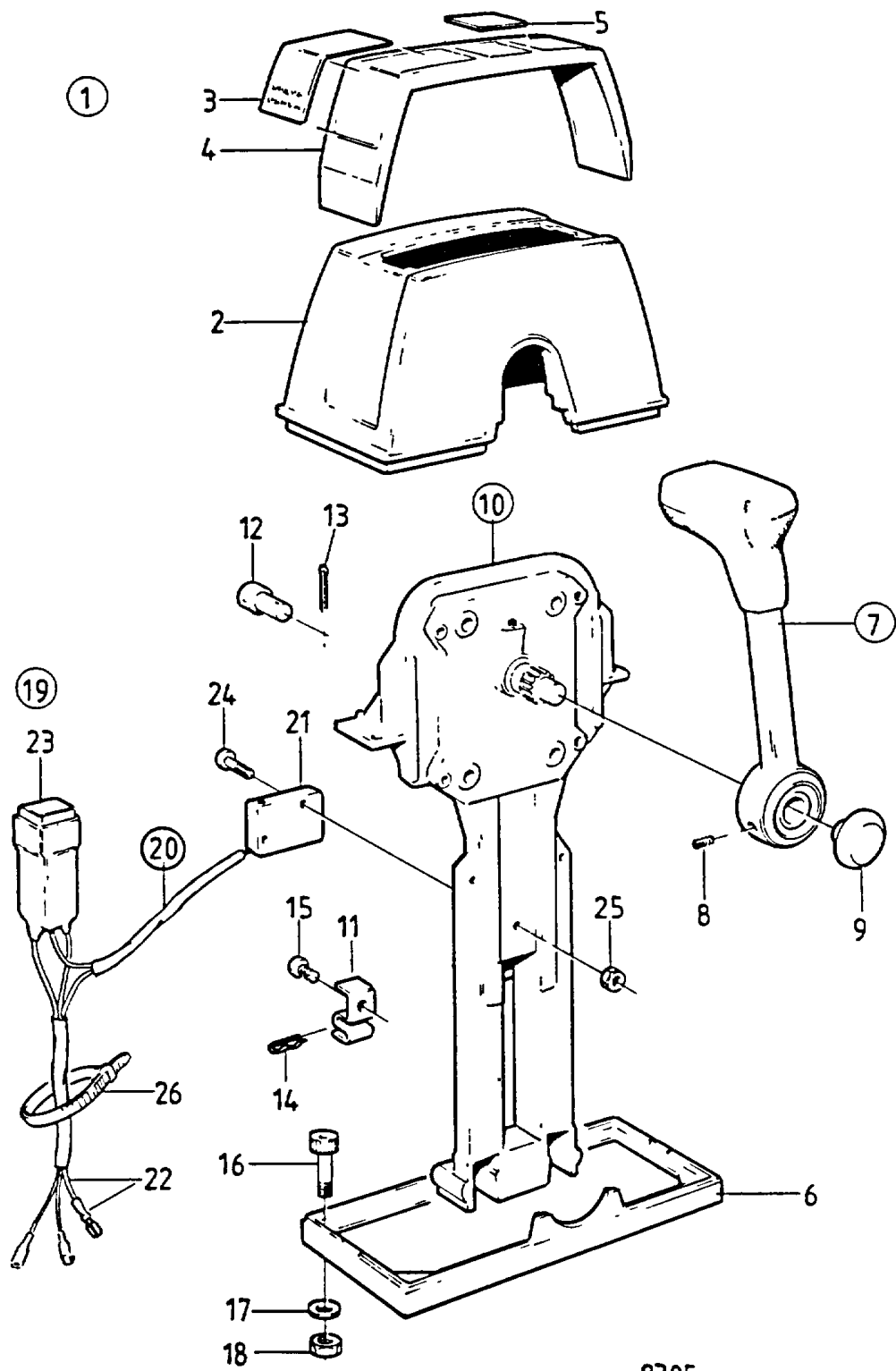
4806





Sida Page	Grupp Group	Reglage för toppmontering		Control for top installation		Illustration	0655			
52	9	GEM				8305 1987-04				
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	853 168	853 169								
1	1	-	-	853168-3	Monteringssats...	Mounting kit .....	2		SINGLE	002
	-	1	-	853169-1	Monteringssats .....	Mounting kit .....	2		TWIN	004
2	1	-	-	851886-2	.Kåpa .....	.Cover .....	8			0060
	-	1	-	851885-4	.Kåpa .....	.Cover .....	8			0080
3	1	-	-	851896-1	.Dekal .....	.Decal .....	8			0100
	-	1	-	851895-3	.Dekal .....	.Decal .....	8			0120
4	1	-	-	851892-0	.Tackskiva .....	.Cover disc .....	8			0140
	-	1	-	851891-2	.Tackskiva .....	.Cover disc .....	8			0160
5	1	-	-	851898-7	.Dekal .....	.Decal .....	8			0180
	-	1	-	851897-9	.Dekal .....	.Decal .....	8			0200
6	1	-	-	839474-4	..Platta .....	..Plate .....	4			020
	-	1	-	839479-3	..Platta .....	..Plate .....	4			0
7	1	2	-	852347-4	.Spak .....	.Handle .....	3			0260
8	1	1	-	963678-8	..Skruv .....	..Screw .....	0			0280
9	1	2	-	853004-0	.Tryckknapp .....	.Push button .....	2			0300
10	1	2	-	851600-7	Reglage .....	Control .....	5			0320
11	1	1	-	853423-2	.Hållare .....	.Retainer .....	4			0340
12	2	2	-	839638-4	.Tärning .....	.Cube .....	5			0
13	2	2	-	17253-6	.Saxpinne .....	.Cotter pin .....	1			0380
14	1	1	-	852924-0	.Clips .....	.Clips .....	4			0400
15	2	2	-	839664-0	Skruv .....	Screw .....	2			0420
16	4	4	-	947671-4	Insexskruv .....	In-hex screw .....	0			0440
17	4	4	-	960138-6	Bricka .....	Washer .....	0			0460
18	4	4	-	955780-2	Mutter .....	Nut .....	0			0480
19	1	2	-	839641-8	Neutrallageskontakt .....	Neutral switch .....	4			0500
20	1	1	-	839619-4	.Kabelsats .....	.Cable unit .....	6			0520
21	1	1	-	850200-7	..Strombrytare .....	..Switch .....	6			0540
22	ERF	ERF	-		..Kablar och kabelskor .....	..Cables and terminals .....			SEGRUPP 3	056
23	1	1	-	1501832-8	.Rela .....	.Relay .....	3			058
24	2	2	-	946177-3	.Skruv .....	.Screw .....	0			0600
25	2	2	-	947536-9	.Mutter .....	.Nut .....	0			0620
26	ERF	ERF	-	948210-0	.Bandklamma .....	.Strip clamp .....	0			0640

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100

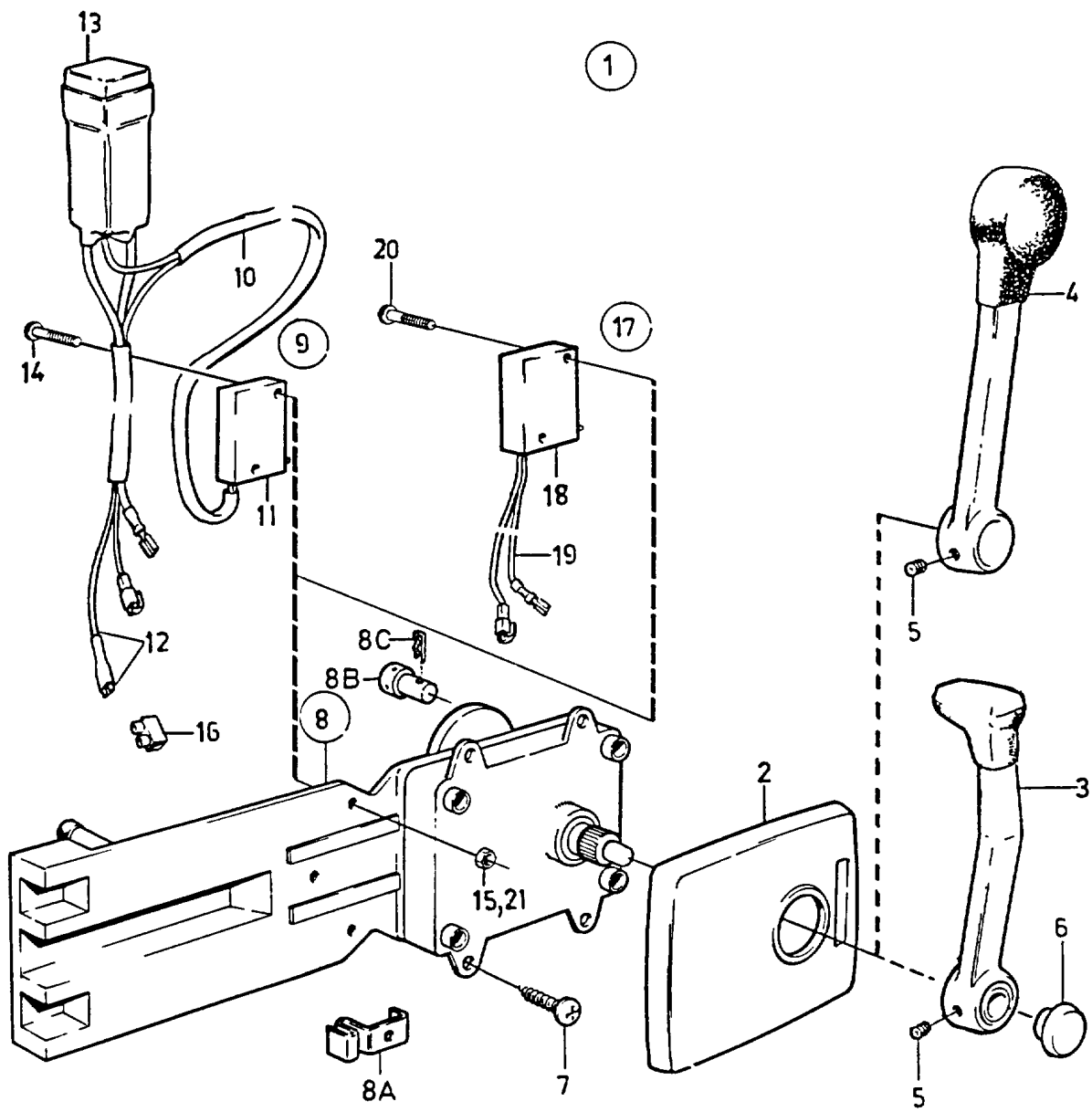


8305



Sida Page		Grupp Group		Reglage för sidomontering		Control for side installation		Illustration		
54		9		GEM				8302 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	853 102	851 605								
1	1	-	-	-	853102-2	Monteringssats.....	Mounting kit .....	1	224)	002
	-	1	-	-	851605-6	Monteringssats .....	Mounting kit .....	1	14)	0040
2	1	1	-	-	839518-8	.Kåpa.....	.Casing.....	5		0060
3	1	-	-	-	852348-2	.Spak .....	.Handle.....	3		0080
4	-	1	-	-	839521-2	.Spak.....	.Handle.....	3		0100
5	1	-	-	-	963678-8	.Skruv .....	.Screw .....	0		0120
	-	1	-	-	839693-9	.Skruv .....	.Screw .....	2		0140
6	1	-	-	-	853004-0	.Tryckknapp.....	.Push button ..	3		0160
7	4	4	-	-	955142-5	.Skruv .....	.Screw .....	0		0180
8	1	1	-	-	851601-5	Reglage .....	Control .....	4		0200
8a	1	1	-	-	853423-2	.Hållare.....	.Retainer.....	4		0200
8b	2	2	-	-	839638-4	.Tarning.....	.Cube.....	4		0200
8c	2	2	-	-	17253-6	.Saxpinne.....	.Cotter pin .....	2		0260
9	1	1	-	-	839641-8	Neutralageskontakt.	Neutral switch .....	4	17)	0280
10	1	1	-	-	839619-4	.Kabelsats .....	.Cable unit .....	4		0300
11	1	1	-	-		.Strömbrytare .....	.Switch .....	8		0320
12	ERF	ERF	-	-		.Kablar och kabelskor	.Cables and terminals...		SEGRUPP 3	0320
13	1	1	-	-	1501832-8	.Relä .....	.Relay.....	3		0320
14	2	2	-	-	946177-3	.Skruv .....	.Screw .....	0		0380
15	2	2	-	-	947536-9	.Mutter .....	.Nut .....	0		0400
16	1	1	-	-	182009-1	.Kopplingsstycke .....	.Connector .....	2		0420
17	1	1	-	-	828414-3	Kontakt .....	Contact .....	4	17)	0440
	1	1	-	-	828378-0	Kontakt .....	Contact .....	4	18)	0460
18	1	1	-	-	850200-7	.Strombrytare .....	.Switch .....	4		0480
19	ERF	ERF	-	-		.Kablar och kabelskor	.Cables and terminals		SEGRUPP 3	0500
20	2	2	-	-	946177-3	.Skruv .....	.Screw .....	0		0520
21	2	2	-	-	947536-9	.Mutter .....	.Nut .....	0		0540

- 14 . For segelbåt. For sailing boat.
- 17 . Manöverplats 1. Main station.
- 18 . Manöverplats 2. Second station.
- 224 . For motorbåt. For motor boat.

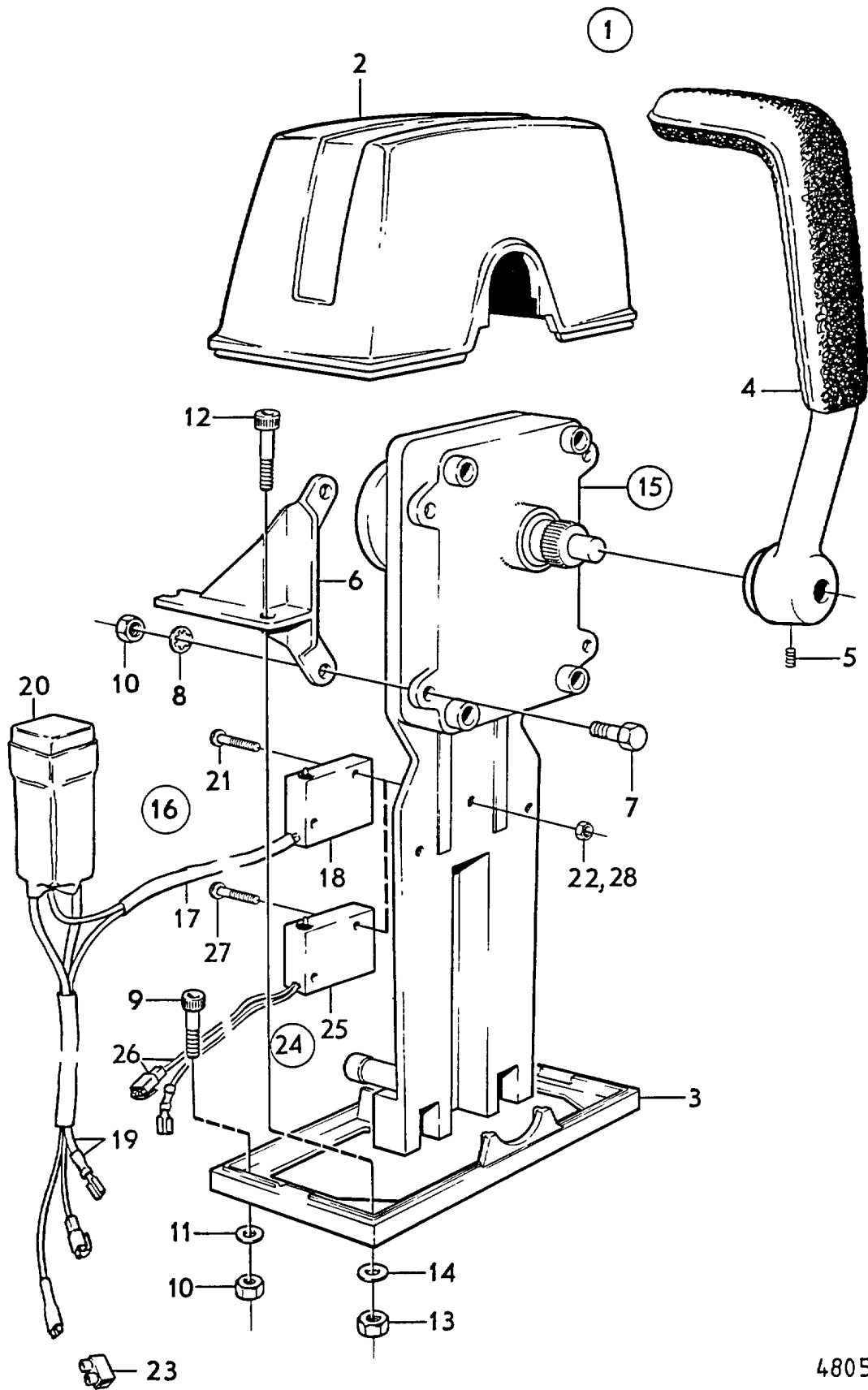


8302



Sida Page		Grupp Group		Reglage for toppmontering		Control for top installation		Illustration			
56		9		GEM				4805 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	839470-2	Monteringssats. ....	Mounting kit. ....	8		ERS AV 851602	002
	-	1	-	-	839471-0	Monteringssats. ....	Mounting kit. ....	8		ERS AV 851603	004L
2	1	-	-	-	839472-8	.Kåpa .....	.Casing .....	S	5		0060
	-	1	-	-	839477-7	.Kåpa .....	.Casing .....	S	5		0080
3	1	-	-	-	839474-4	.Platta .....	.Plate .....	S	5		0100
	-	1	-	-	839479-3	.Platta .....	.Plate .....	S	5		0120
4	1	2	-	-	839475-1	.Spak .....	.Handle .....	S	3		0140
5	1	2	-	-	946786-1	.Låsskruv ..	.Lock screw .....	S	0	M5	0160
	1	2	-	-	839693-9	.Skruv .....	.Screw ..	S	2	M8	0180
6	1	2	-	-	839480-1	.Konsol .....	.Bracket .....	S	6	MÄRKT-MARKED839480	0200
	1	2	-	-	839481-9	.Konsol .....	.Bracket .....	S	6	MÄRKT-MARKED839481	0220
7	4	8	-	-	955244-9	.Skruv .....	.Screw .....	S	0		0
8	4	8	-	-	955946-9	.Låsbricka ..	.Washer ..	S	0		U260
9	2	2	-	-	947671-4	.Insexskruv ..	.Hexagon screw .....	S	0		0280
10	6	10	-	-	955780-2	.Mutter ..	.Nut .....	S	0		0300
11	2	2	-	-	960138-6	.Bricka .....	.Washer .....	S	0		0320
12	2	4	-	-	947672-2	.Insexskruv ..	.Hexagon screw ..	S	0		0340
13	2	4	-	-	955781-0	.Mutter ..	.Nut .....	S	0		0
14	2	4	-	-	960139-4	.Bricka .....	.Washer .....	S	0		U380
15	1	2	-	-	839469-4	Reglage .....	Control ..	8		60,61)	0400
	-	-	-	-		.Det se sida 60, 3-C15..	.Comp page 60, 3-C15 ..				0420
16	1	2	-	-	839641-8	Neutrallageskontakt ..	Neutral switch ..	4		17)	0440
17	1	2	-	-	839619-4	.Kabelsats ..	.Cable unit ..	6			0460
18	1	2	-	-	850200-7	..Strombrytare ..	..Switch .....	4			0480
19	ERF	ERF	-	-		..Kablar och kabelskor ..	..Cables and cable ..			SE GRUPP 3	0500
						terminals					0520
20	1	2	-	-	876037-3	.Rela ..	.Relay ..	3			0540
21	2	4	-	-	946177-3	.Skruv ..	.Screw ..	0			05E
22	2	4	-	-	947536-9	.Mutter ..	.Nut .....	0			05E
23	1	2	-	-	182009-1	.Kopplingsstycke ..	.Connector ..	8			0600
24	1	2	-	-	828414-3	Kontakt ..	Switch .....	4		16,17)	0620
	1	2	-	-	828378-0	Kontakt ..	Contact .....	4		16,18)	0640
25	1	2	-	-	850200-7	.Strömbrytare ..	.Switch .....	4			0660
26	ERF	ERF	-	-		..Kablar och kabelskor ..	..Cables and cable ..			SE GRUPP 3	0680
						terminals					0700
27	2	4	-	-	946177-3	.Skruv ..	.Screw ..	0			0720
28	2	4	-	-	947536-9	.Mutter ..	.Nut .....	0			0740

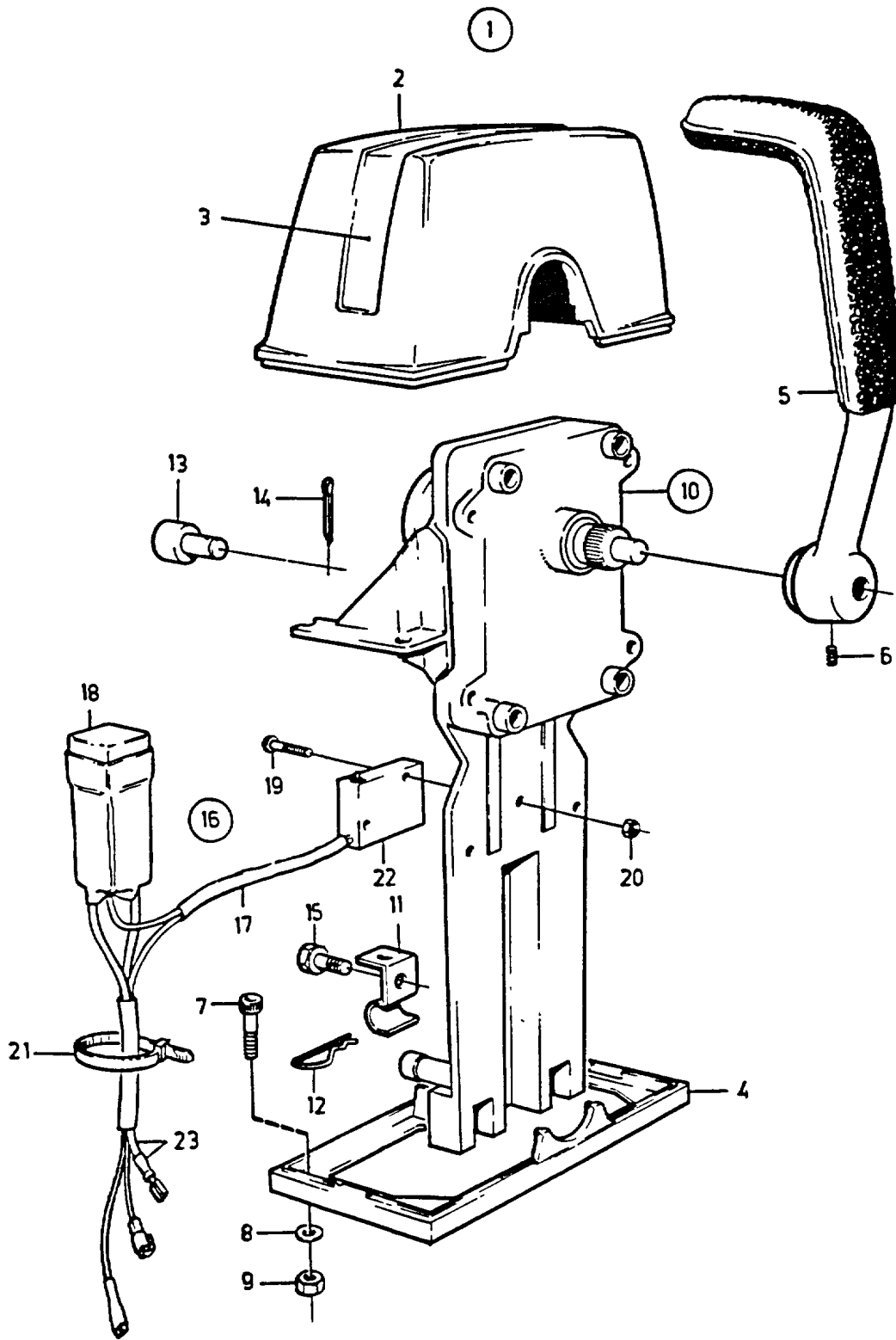
- 16. D40. D40.
- 17. Manöverplats 1. Main station.
- 18. Manöverplats 2. Second station.
- 60. Toppmonterad ersatt av 851600. Top-mounted replaced by 851600.
- 61. Sidomonterad ersatt av 851601. Side-mounted replaced by 851601.



4805



Sida Page		Grupp Group		Reglage för toppmontering Control for top installation		Illustration 7469 1987-04		0710			
58		9		GEM							
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	851 602	851 603									
1	1	-	-	-	851602-3	Monteringsatts...	Mounting kit..	8		SINGLE	07
	-	1	-	-	851603-1	Monteringsatts.	Mounting kit.....	8		TWIN	08
2	1	-	-	-	839472-8	.Kåpa...	.Casing.....	5			0060
	-	1	-	-	839477-7	.Kåpa.....	.Casing.....	5			0080
3	1	1	-	-	851004-2	.Dekal.....	.Decal.....	8			0100
4	1	-	-	-	839474-4	.Platta.....	.Plate.....	5			0120
	-	1	-	-	839479-3	.Platta.....	.Plate.....	5			0140
5	1	2	-	-	839475-1	.Spak.....	.Handle.....	3			0160
6	1	2	-	-	839693-9	.Skruv.....	.Screw.....	1			0180
7	4	4	-	-	947671-4	.Insexskruv.....	.In-hex screw.....	0			0200
8	4	4	-	-	960138-6	.Bricka.....	.Washer.....	0			0220
9	4	4	-	-	955780-2	.Mutter.....	.Nut.....	0			10
10	1	2	-	-	851600-7	Reglage.....	Control.....	5			0260
11	1	2	-	-	853423-2	.Hållare.....	.Retainer.....	4			0280
12	1	2	-	-	852924-0	.Clips.....	.Clips.....	4			0300
13	1	2	-	-	839638-4	.Tärning.....	.Cube.....	5			0320
14	1	2	-	-	17253-6	.Saxpinne.....	.Cotter pin.....	1			0340
15	1	2	-	-	839664-0	Skruv.....	Screw.....	4			30
16	1	2	-	-	839641-8	Neutrallägeskontakt.....	Neutral switch..	4			0380
17	1	2	-	-	839619-4	.Kabelsats.....	.Cable unit.....	6			0400
18	1	2	-	-	1501832-8	.Relä.....	.Relay.....	3			0420
19	2	4	-	-	946177-3	.Skruv.....	.Screw.....	0			0440
20	2	4	-	-	947536-9	.Mutter.....	.Nut.....	0			0460
21	ERF	ERF	-	-	948210-0	.Bandklämma.....	.Strip clamp.....	0			0480
22	1	2	-	-	850200-7	.Strombrytare.....	.Switch.....	5			0500
23	ERF	ERF	-	-		Kablar och kableskor.....	Cables and terminals.....			SE GRUPP 3	0520



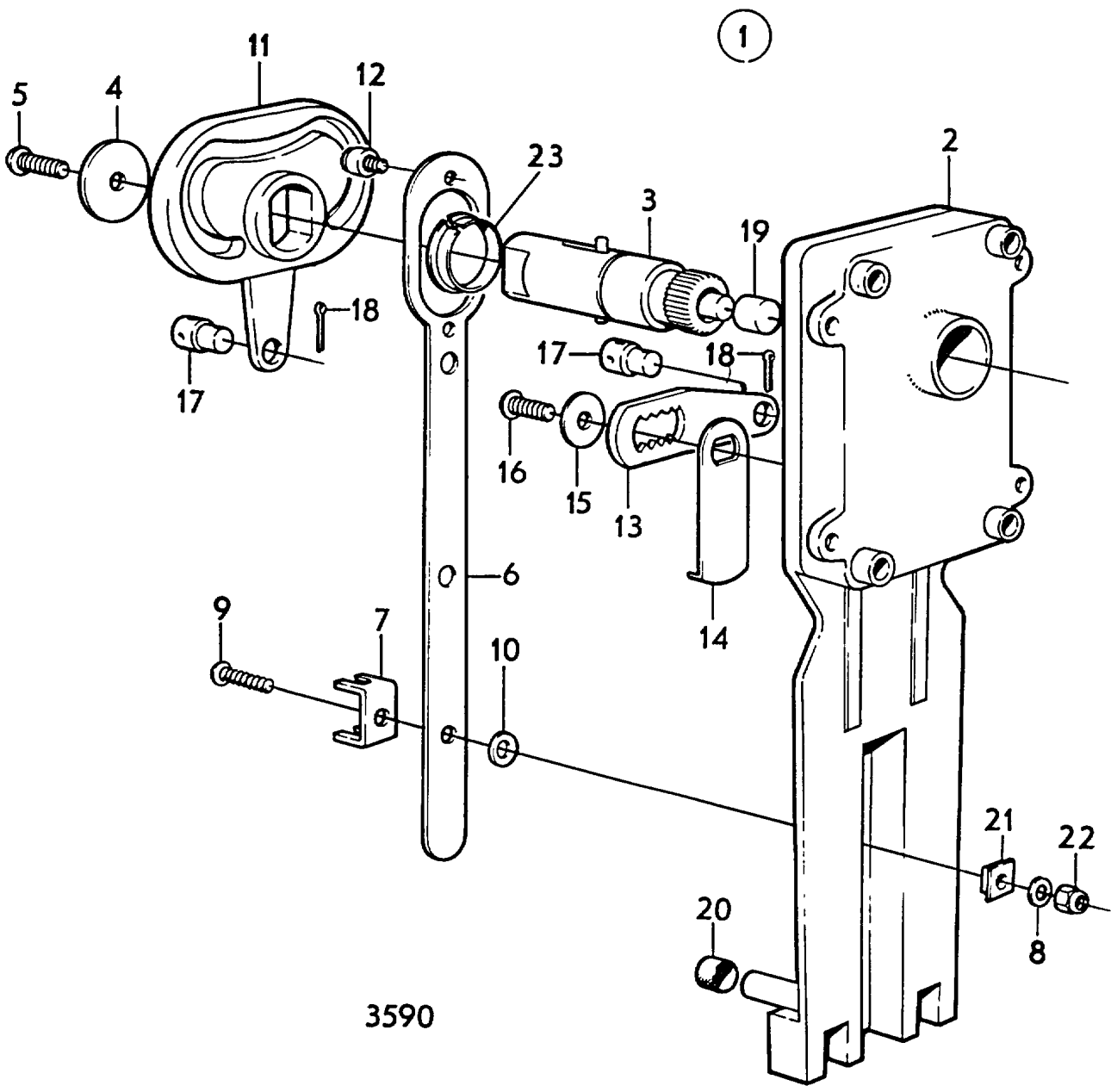
7469





Sida Page		Grupp Group		Reglagemekanism Control mechanism			Illustration 3590 1987-04		0750		
60		9		GEM							
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	839469-4	Reglage.....	Control.....	8		60,61)	0027
2	1	-	-	-		.Hus.....	.Housing.....	8			004L
3	1	-	-	-		.Axel.....	.Shaft.....	8			0060
4	1	-	-	-	839635-0	.Bricka.....	.Washer.....	8			0080
5	1	-	-	-	839637-6	.Skruv.....	.Screw.....	8			0100
6	1	-	-	-	839668-1	.Länk.....	.Link.....	8			0120
7	1	-	-	-	839700-2	.Hållare.....	.Retainer.....	4			0140
8	1	-	-	-	839667-3	.Bricka.....	.Washer.....	8			0160
9	1	-	-	-	839664-0	.Skruv.....	.Screw.....	4			0180
10	1	-	-	-	839665-7	.Bricka.....	.Washer.....	8			0200
11	1	-	-	-	839636-8	.Excenter.....	.Eccenter.....	4			0220
12	1	-	-	-	851713-8	.Styrrulle.....	.Steering roller.....	4		(839699)	0
13	1	-	-	-	839633-5	.Kopplingsarm.....	.Coupling arm.....	8			0260
14	1	-	-	-	839639-2	.Brytararm.....	.Breaker arm.....	8			0280
15	1	-	-	-	839635-0	.Bricka.....	.Washer.....	8			0300
16	1	-	-	-	839637-6	.Skruv.....	.Screw.....	8			0320
17	2	-	-	-	839638-4	.Tarning.....	.Cube.....	4			0340
18	2	-	-	-	17253-6	.Saxpinne.....	.Cotter.....	0			0
19	1	-	-	-	839632-7	.Knapp.....	.Botton.....	4			0380
20	1	-	-	-	839640-0	.Gummidämpare.....	.Rubber damper.....	4			0400
21	1	-	-	-	839666-5	.Bricka.....	.Washer.....	4			0420
22	1	-	-	-	963104-5	.Mutter.....	.Nut.....	0			0440
23	1	-	-	-	839701-0	.Bussning.....	.Bushing.....	8			0460

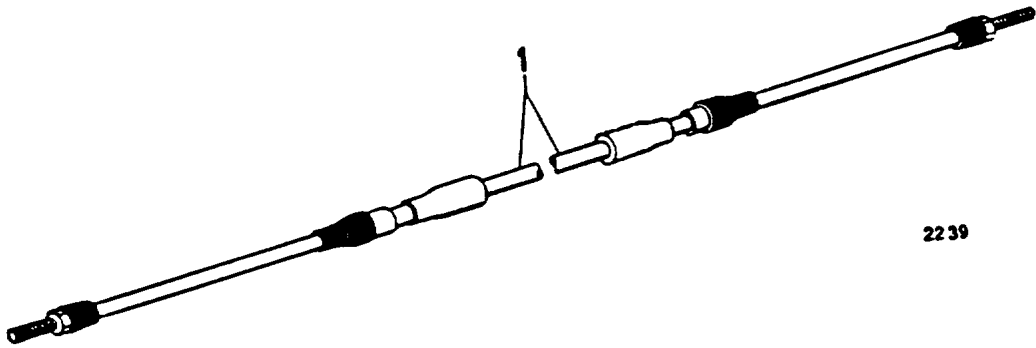
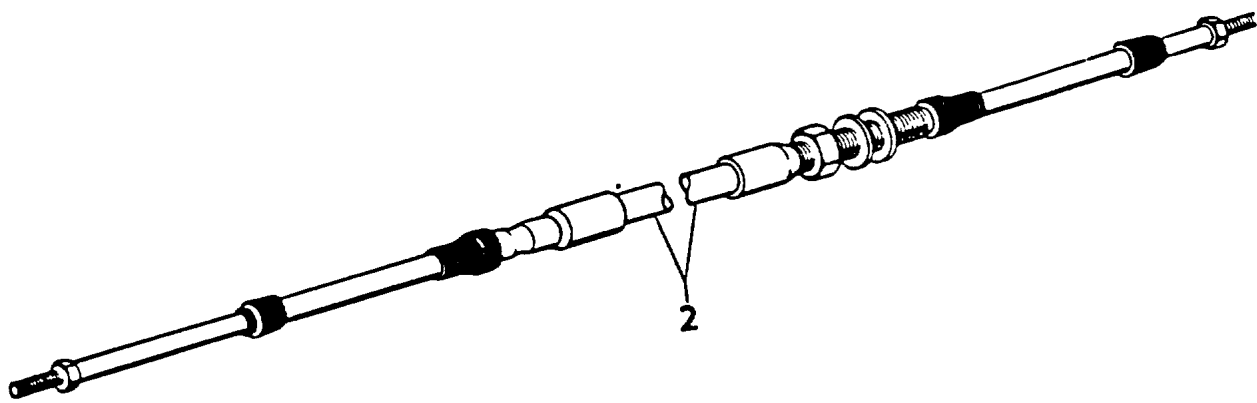
60 . Top monterad ersatt av 851600. Top-mounted replaced by 851600.  
61 . Sid monterad ersatt av 851601. Side-mounted replaced by 851601.



3590



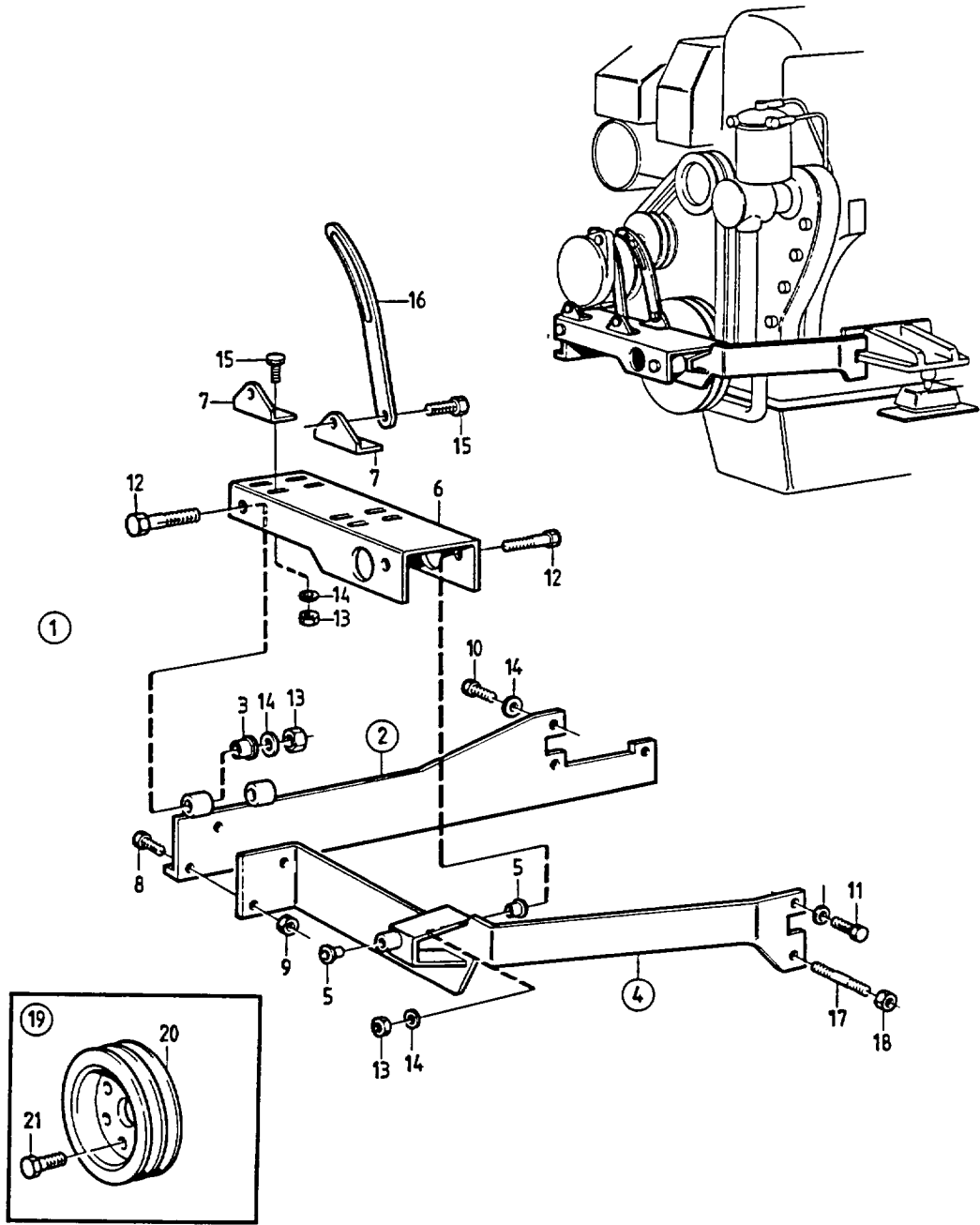
Sida Page		Grupp Group		Reglagekablar		Control cables		Illustration		
62		9		GEM				2239 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
1	-	-	-	-		Reglagekabel för växelmanövrering av aquamaticdrev, hydraulisk manövrerade backslag samt for varvtalsreglering.	Control cable for manoeuvring the aquamatic drive unit, the hydraulically operated reverse gear and also for the engine speed.			00 004 0060 0080 0100 0120 0140 0160 0180 0200 0220 0 0260 0280 0300 0320 0340 0 0380 0400 0420 0440 0460 0480 0500 0520 054 05 0600 0620 0640 0660 0680 0700 0720 0740 0 0800 0820 0840 0860 0900 0
	ERF	-	-	-	820254-1	.Reglagekabel	.Control cable	6	L=1800MM	
	ERF	-	-	-	820255-8	.Reglagekabel	.Control cable	6	L=2100MM	
	ERF	-	-	-	820257-4	.Reglagekabel	.Control cable	6	L=2700MM	
	ERF	-	-	-	820258-2	.Reglagekabel	.Control cable	6	L=3000MM	
	ERF	-	-	-	820259-0	.Reglagekabel	.Control cable	6	L=3300MM	
	ERF	-	-	-	804457-0	.Reglagekabel	.Control cable	6	L=3600MM	
	ERF	-	-	-	804458-8	.Reglagekabel	.Control cable	6	L=3900MM	
	ERF	-	-	-	804419-0	.Reglagekabel	.Control cable	6	L=4200MM	
	ERF	-	-	-	809997-0	.Reglagekabel	.Control cable	6	L=4500MM	
	ERF	-	-	-	804315-0	.Reglagekabel	.Control cable	6	L=4800MM	
	ERF	-	-	-	804364-8	.Reglagekabel	.Control cable	6	L=5100MM	
	ERF	-	-	-	804361-4	.Reglagekabel	.Control cable	6	L=5500MM	
	ERF	-	-	-	809998-8	.Reglagekabel	.Control cable	6	L=5900MM	
	ERF	-	-	-	813913-1	.Reglagekabel	.Control cable	6	L=6100MM	
	ERF	-	-	-	804440-6	.Reglagekabel	.Control cable	6	L=6400MM	
	ERF	-	-	-	820260-8	.Reglagekabel	.Control cable	6	L=6700MM	
	ERF	-	-	-	809999-6	.Reglagekabel	.Control cable	6	L=7000MM	
	ERF	-	-	-	820261-6	.Reglagekabel	.Control cable	6	L=7300MM	
	ERF	-	-	-	804316-8	.Reglagekabel	.Control cable	6	L=7500MM	
	ERF	-	-	-	813907-3	.Reglagekabel	.Control cable	6	L=7900MM	
	ERF	-	-	-	813908-1	.Reglagekabel	.Control cable	6	L=8500MM	
	ERF	-	-	-	814022-0	.Reglagekabel	.Control cable	6	L=8800MM	
	ERF	-	-	-	814023-8	.Reglagekabel	.Control cable	6	L=9500MM	
	ERF	-	-	-	827719-6	.Reglagekabel	.Control cable	6	L=11300MM	
	ERF	-	-	-	827720-4	.Reglagekabel	.Control cable	6	L=11600MM	
	ERF	-	-	-	827721-2	.Reglagekabel	.Control cable	6	L=11900MM	
	ERF	-	-	-	827722-0	.Reglagekabel	.Control cable	6	L=12200MM	
	ERF	-	-	-	827723-8	.Reglagekabel	.Control cable	6	L=12500MM	
	ERF	-	-	-	828050-5	.Reglagekabel	.Control cable	6	L=13100MM	
2	-	-	-	-		Reglagekabel for växelmanövrering av Volvo Penta reduktionsbackslag.	Control cable for manoeuvring Volvo Penta reduction reverse gear.			0740 0 0800 0820 0840 0860 0900 0
	ERF	-	-	-	820301-0	.Reglagekabel	.Control cable	8	L=2100MM	
	ERF	-	-	-	820303-6	.Reglagekabel	.Control cable	8	L=2700MM	
	ERF	-	-	-	820305-1	.Reglagekabel	.Control cable	8	L=3300MM	
	ERF	-	-	-	819786-5	.Reglagekabel	.Control cable	6	L=3900MM	
	ERF	-	-	-	819787-3	.Reglagekabel	.Control cable	6	L=4500MM	



2239



Sida Page		Grupp Group		Universalkonsol			General bracket			Illustration	
64		9		GEM						8374 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	858258-7	Universalkonsol....	Bracket .....	6			0026
2	1	-	-	-	858383-3	.Konsol .....	.Bracket.....	5			0040
3	2	-	-	-	463909-2	..Gummibussning..	..Rubber bushing...	2			0060
4	1	-	-	-	858382-5	.Konsol .....	.Bracket.....	5			0080
5	2	-	-	-	463909-2	..Gummibussning..	..Rubber bushing. ....	2			0100
6	1	-	-	-	858175-3	.Platta .....	.Plate .....	5			0120
7	4	-	-	-	858177-9	.Konsol .....	.Bracket ..	4			0140
8	2	-	-	-	946472-8	.Skruv.....	.Screw .....	0			0160
9	2	-	-	-	949279-4	.Flansmutter .....	.Flange nut ..	0			0180
10	3	-	-	-	955353-8	.Skruv.....	.Screw .....	0			0200
11	1	-	-	-	955345-4	.Skruv.....	.Screw .....	0			0
12	4	-	-	-	965179-5	.Skruv.....	.Screw .....	0			0
13	14	-	-	-	945408-3	.Mutter...	.Nut .....	0			0260
14	12	-	-	-	960141-0	.Bricka...	.Washer ..	0			0280
15	10	-	-	-	946173-2	.Skruv ..	.Screw .....	0			0300
16	2	-	-	-	845021-5	.Spannjärn...	.Tension iron..	4	(946150)		0320
17	1	-	-	-	924102-7	.Pinnskruv. ....	.Stud bolt. ....	0			0
18	1	-	-	-	945410-9	.Mutter.....	.Nut .....	0			0
19	ERF	-	-	-	858257-9	Remskivesats .....	Pulley kit .....	6			0380
20	1	-	-	-	838596-5	.Remskiva .....	.Pulley.....	5			0400
21	6	-	-	-	955301-7	.Skruv... ..	.Screw .....	0			0420



8374



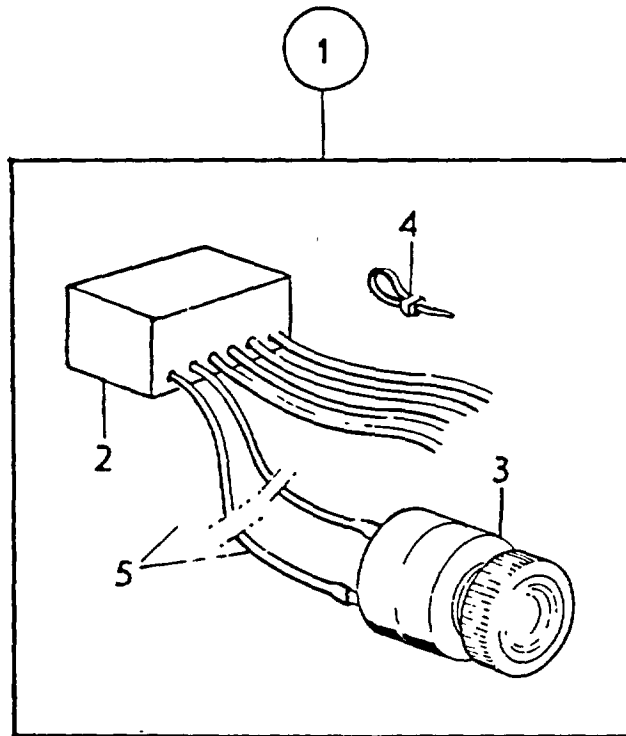
Publ. 4406

Reservdelskatalog  
Parts Catalogue

3-C21

**VOLVO  
PENTA**

Sida Page	Grupp Group	Larmenhet			Alarm unit			Illustration	1250		
66	9	GEM						3024 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	827 940	827 941									
1	1	-	-	-	827940-8	Larmsats .....	Alarm unit kit .....	6	12V		002L
	-	1	-	-	827941-6	Larmsats .....	Alarm unit kit .....	6	24V		0040
2	1	-	-	-	831625-9	.Temperaturvakt .....	.Thermoswitch control .....	5	12V		0060
	-	1	-	-	831627-5	.Temperaturvakt .....	.Thermoswitch control .....	5	24V		0080
3	1	1	-	-	827597-6	.Signalhorn .....	.Signal device .....	5			0100
4	2	2	-	-	948210-0	.Buntband .....	.Clamping band .....	5	(827353)		0120
5	ERF	ERF	-	-		.Kablar och kabelskor. ...	.Cables and cable. ....		SEGRUPP 3		0140
	-	-	-	-		Terminals .....	Terminals .....				0160



3024

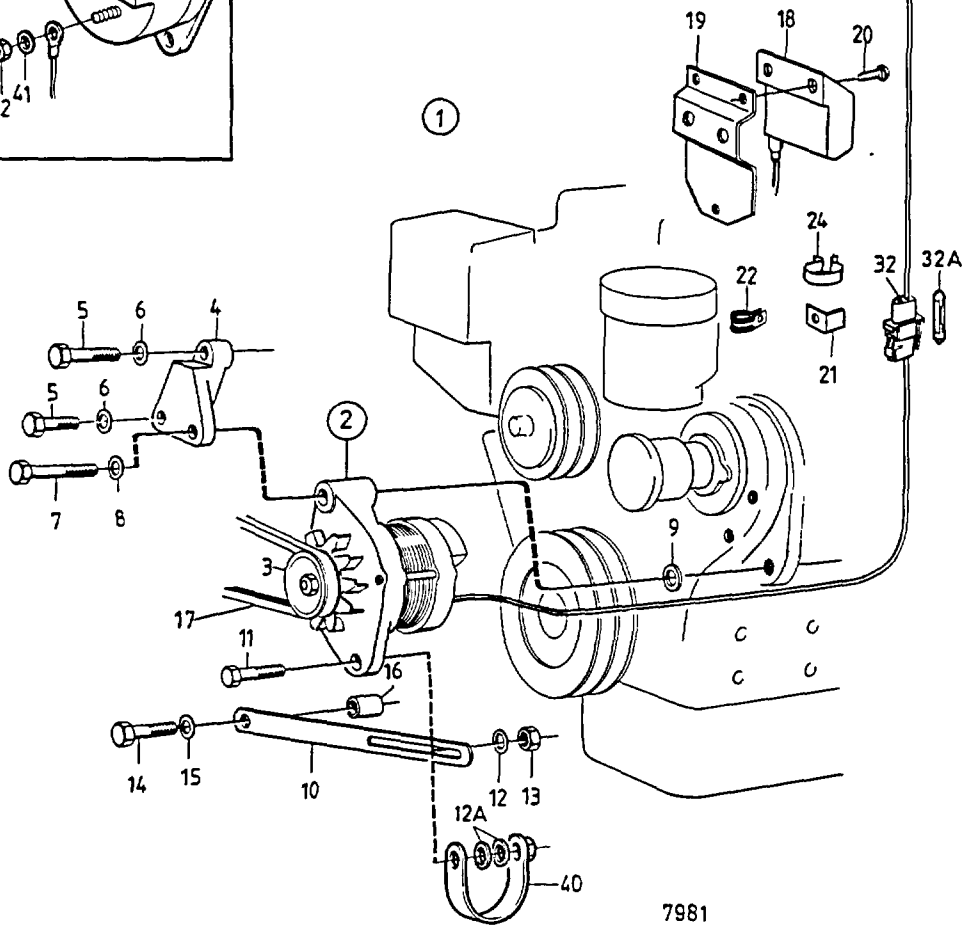
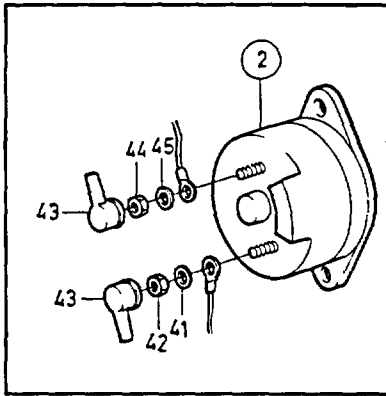
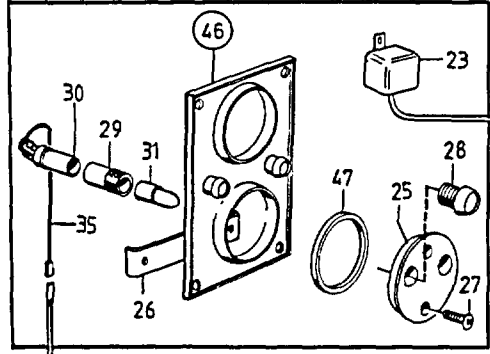
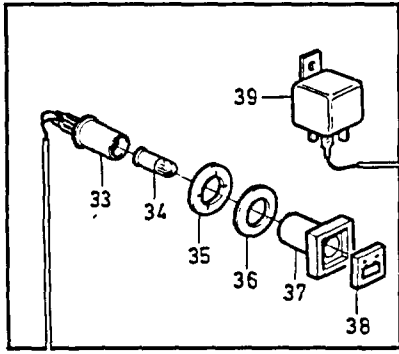




Sida Page	Grupp Group	Växelströmsgeneratorsats	Alternator kit	Illustration	1300
68	9	MD40A,TMD40A,TAMD40A,AQAD40A		7981	
				1987-04	

Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
	843 056	846 387	838 490	843 321							
1	1	-	-	-	843056-3	Generatorsats	Alternator kit	8		217)ERS AV 846387	00:
	-	1	-	-	846387-9	Generatorsats	Alternator kit	8		218)ERS.AV 838490	004:
	-	-	1	-	838490-1	Generatorsats	Alternator kit	6		218)	0060
	-	-	-	1	843321-1	Generatorsats	Alternator kit	6		24V,25A	0080
2	1	-	-	-	834610-8	.Generator	.Alternator	8		219)TID UTF	0100
	-	-	-	-		..Det se sida 74, 3-D05..	..Comp page 74, 3-D05..				0120
	1	-	-	-	834965-6	.Generator	.Alternator	8		220)MO-189756	0140
	-	-	-	-		..Det se sida 74, 3-D05	..Comp page 74, 3-D05				0160
	1	-	-	-	841380-9	.Generator	.Alternator	8		221)MO189757-	0180
	-	-	-	-		..Det se sida 74, 3-D05	..Comp page 74, 3-D05				0200
	1	-	-	-	841770-1	.Generator	.Alternator	8			0200
	-	-	-	-		..Det se sida 76, 3-D07	..Comp page 76, 3-D07				0200
	-	-	1	1	841765-1	.Generator	.Alternator	6		ERS AV 858838	0260
	-	-	-	-		..Detaljer	..Components			SE GRUPP 3	0280
	-	1	1	-	858838-6	Generator	Alternator	6			0290
	-	-	-	-		..Det. ej spec.	..Comps. not spec				0291
	-	-	-	1	827349-2	.Generator	.Alternator	8		ERS AV 847561	0300
	-	-	-	-		..Det se sida 80, 3-D11	..Comp page 80, 3-D11				0340
	-	-	-	1	847561-8	.Generator	.Alternator	6			0360
	-	-	-	-		..Det se sida 78, 3-D09	..Comp page 78, 3-D09				0380
3	-	1	1	-	841811-3	.Remskiva	.Pulley	5			0400
	-	-	-	1	820459-6	.Remskiva	.Pulley	5			0420
	1	-	-	-	834646-2	Remskiva	Pulley	5		L=90MM	0440
4	1	1	1	1	843057-1	.Konsol	.Bracket	6		L=60MM	0460
5	1	1	1	1	940129-0	.Skruv	.Screw	0			0480
	1	1	1	1	955302-5	.Skruv	.Screw	0			0500
6	2	2	2	2	941907-8	.Fjadrande bricka	.Resilient washer	0			052
7	1	1	1	1	955701-8	.Skruv	.Screw	0			054
8	1	1	1	1	955896-6	.Bricka	.Washer	0			0560
9	1	1	1	1	843054-8	.Bricka	.Washer	2			0580
10	1	1	1	1	843055-5	.Spannjärn	.Tension iron	6			0600
11	1	1	1	1	955298-5	.Skruv	.Screw	0			0620
12	1	1	-	-	191172-6	.Bricka	.Washer	0			0640
12a	-	-	2	-	941907-8	.Fjadrande bricka	.Resilient washer	0			0660
13	1	1	-	1	963106-0	.Mutter	.Nut	0			0680
14	1	1	1	1	940129-0	.Skruv	.Screw	0			0700
15	1	1	-	1	941907-8	.Fjadrande bricka	.Resilient washer	0			0
16	1	1	1	1	843075-3	.Hylsa	.Sleeve	4			0
17	1	1	1	1	958310-5	.Drivrem	.Drive belt	0			0760
18	-	-	-	1	823234-0	.Laddningsregulator	.Charging relay	4			0780
19	-	-	-	1	846220-2	.Konsol	.Bracket	6			0800
20	-	-	-	3	955138-3	.Skruv	.Screw	0			0820
21	-	-	-	1	844404-4	.Faste	.Attachment	6			0
22	-	-	-	1	942400-3	.Klamma	.Clamp	0			0
23	-	-	1	1	853545-2	.Relasats	.Relay kit	2		(876038)	0
24	-	-	-	1	943423-4	.Klammer	.Clamp	0			0880
25	1	1	-	1	843871-5	.Bricka	.Washer	6			0900
26	1	1	-	1	843872-3	.Bygel	.Brace	6			0920
27	2	2	-	2	944540-4	.Skruv	.Screw	0			0940
28	2	2	-	2	1140031-4	.Hylsa	.Sleeve	4		(827776)	0960
29	2	2	-	2	819350-0	.Lamphylsa	.Housing	4			0980
30	1	1	-	1	808175-4	.Lamphållare	.Bulb holder	3			1000

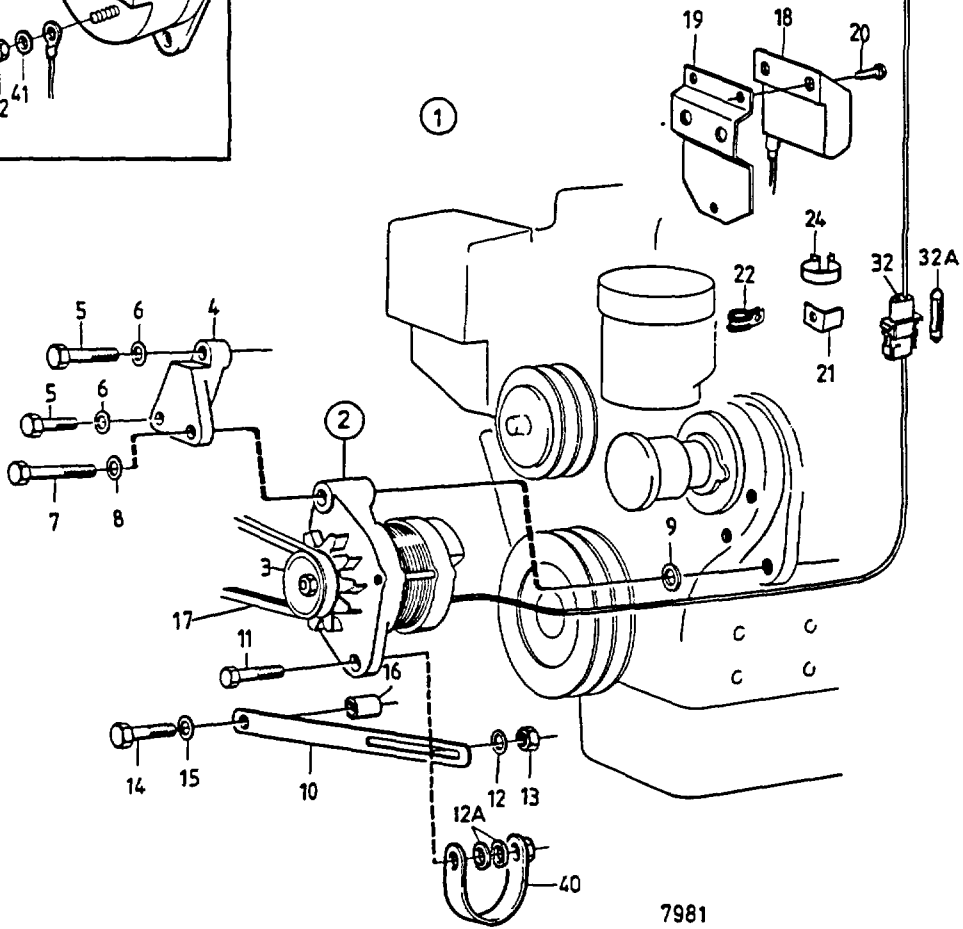
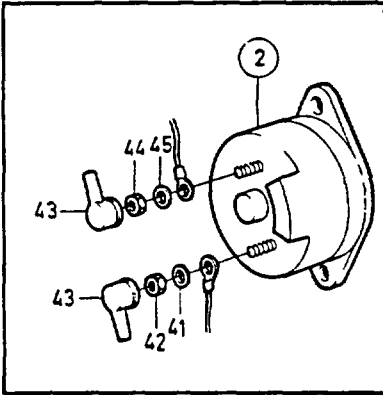
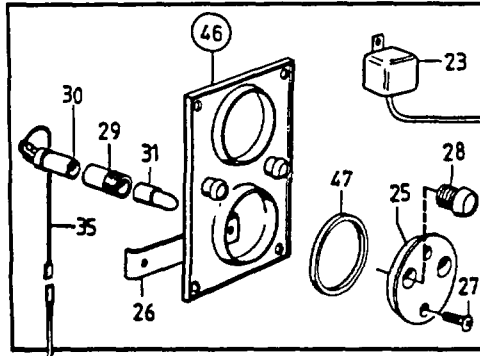
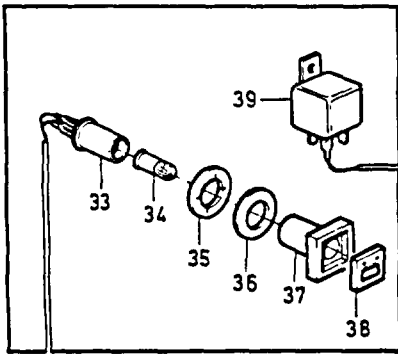
- 217 . 12v 35a. 12v 35a.
- 218 . 12v 50a. 12v 50a.
- 219 . Ersatt av generator 834965. Replaced by alternator 834965.
- 220 . Ersatt av generator 841380. Replaced by alternator 841380.
- 221 . Ersatt av generator 841770. Replaced by alternator 841770.
- 222 . Ingår i generator 841770. Included in alternator 841770.



7981



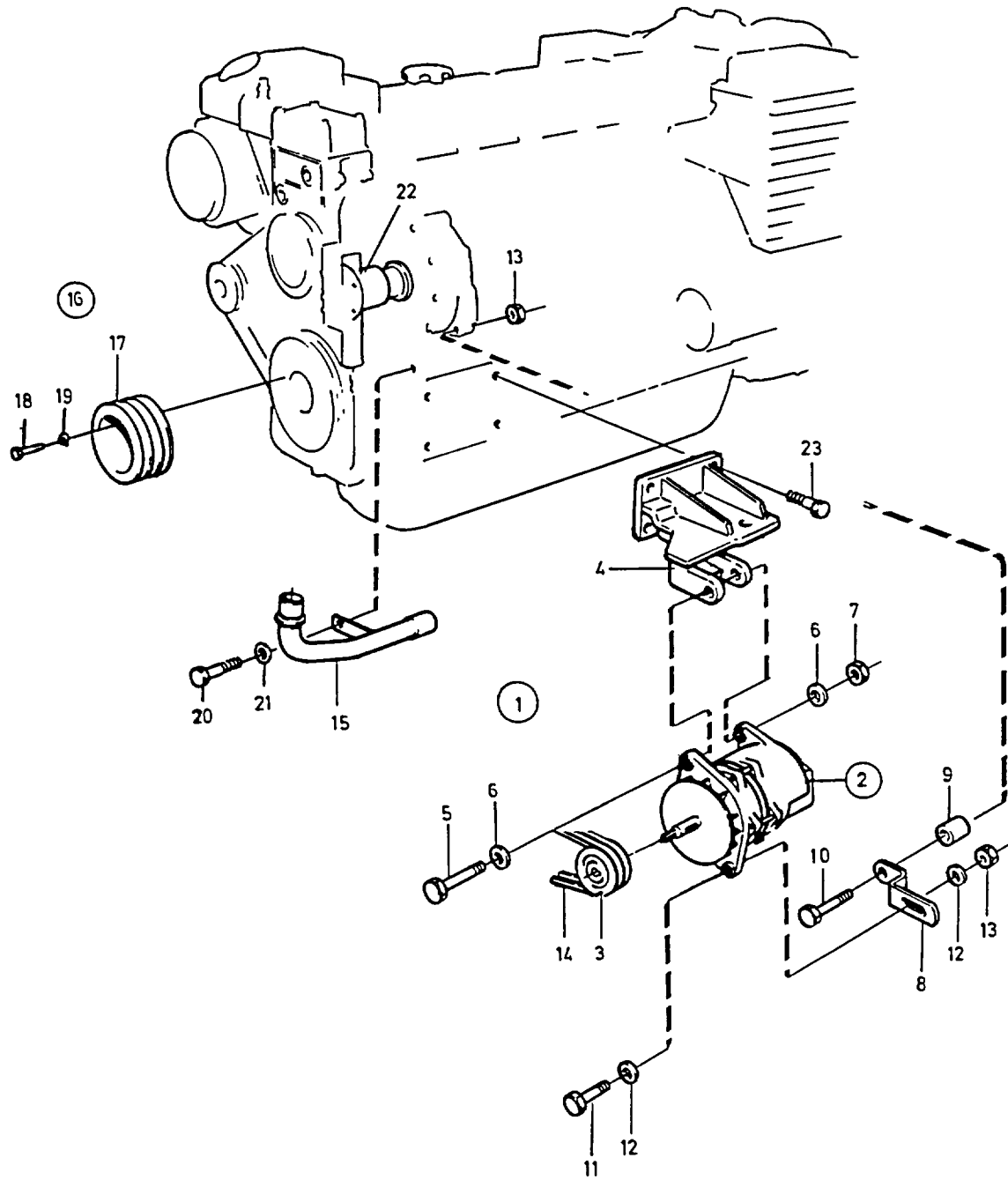
Sida Page		Grupp Group		Växelströmsgeneratorsats		Alternator kit		Illustration			
70		9		MD40A,TMD40A,TAMD40A,AQAD40A				7981 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	843 056	846 387	838 490	843 321							
31	1	1	-	-	19923-2	.Glödlampa .....	.Bulb. ....	0			102
	-	-	-	1	182059-6	.Glödlampa .....	.Bulb .....	0			1040
32	-	-	-	1	949161-4	.Sakringsdosa .....	.Fuse box .....	8	216)		1060
	-	-	-	1	966334-5	.Sakringshållare .....	.Fuse box .....	0			1080
32a	-	-	-	1	942545-5	.Säkring .....	.Fuse .....	0			1100
33	-	-	1	-	808175-4	.Lamphållare .....	.Bulb holder .....	3			1120
34	-	-	1	-	19923-2	.Glödlampa .....	.Bulb. ....	0			1140
35	-	-	1	-	967583-6	.Hållare .....	.Retainer.. ..	0			1160
36	-	-	1	-	829714-5	.Tätning .....	.Seal .....	2			1180
37	-	-	1	-	838455-4	.Hållare .....	.Retainer .....	4			1200
38	-	-	1	-	838457-0	.Symbolskiva .....	.Symbolic plate.....	4			20
39	-	-	1	-	853544-5	.Rela. ....	.Relay .....	2			40
40	-	-	1	-	466735-8	.Spannogla .....	.Tension eye.. ..	4			1260
41	-	1	1	-	941906-0	.Fjädrande bricka .....	.Resilient washer ..	0			1280
42	-	1	1	-	955781-0	.Mutter .....	.Nut .....	0			1300
43	-	-	2	-	842150-5	.Skyddshatt .....	.Cap .....	2			1320
44	-	1	1	-	955780-2	.Mutter .....	.Nut .....	0			40
45	-	1	1	-	941905-2	.Fjädrande bricka .....	.Resilient washer ...	0			30
46	1	-	-	1	843604-0	Instrumenttavla .....	Instrument panel ...	6			1380
	-	-	-	-		.Det se sida 86, 3-D17..	.Comp page 86, 3-D17...				1400
47	1	1	-	1	843603-2	Mellanring .....	Spacer ring.. ..	5			1420
48	ERF	ERF	ERF	ERF		Kablar och kabelskor ..	Cables and terminals .		SE GRUPP3		1440



7981



Sida Page	Grupp Group	Vaxelströmngeneratorsats				Alternator kit				Illustration	1302
72	9	TMD40C								8437 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	858 572	858 573									
1	1	-	-	-	858572-1	Generatorsats.....	Generator kit.....	6			00
	-	1	-	-	858573-9	Generatorsats.....	Generator kit.....	6			00
2	1	-	-	-	849748-9	.Generator.....	.Generator.....	6	24V,100A		0060
	-	-	-	-		Det. ej spec.....	Comp. not spec.....				0080
	-	1	-	-	849747-1	.Generator.....	.Generator.....	6	12V,130A		0100
	-	-	-	-		Det. ej spec.....	Comp. not spec.....				0120
3	1	1	-	-	858191-0	.Remskiva.....	.Pulley.....	5			0140
4	1	1	-	-	858627-3	.Konsol.....	.Bracket.....	6			0160
5	1	1	-	-	955358-7	.Skruv.....	.Screw.....	0			0180
6	2	2	-	-	955897-4	.Bricka..	.Washer.....	0			0200
7	1	1	-	-	955784-4	.Mutter.....	.Nut.....	0			0220
8	1	1	-	-	846831-6	.Spannjärn.....	.Tension iron.....	4			030
9	1	1	-	-	845988-5	.Hylsa.....	.Sleeve.....	4			0260
10	1	1	-	-	965188-6	.Skruv.....	.Screw.....	0			0280
11	2	2	-	-	955319-9	.Skruv.....	.Screw.....	0			0300
12	4	4	-	-	960143-6	.Bricka..	.Washer.....	0			0320
13	3	3	-	-	945409-1	.Mutter.....	.Nut.....	0			0340
14	1	1	-	-	958539-9	.Drivremssats..	.Drive belt kit.....	0			030
15	1	1	-	-	858240-5	.Kylvattenrör.....	.Cooling water pipe.....	5			0380
16	1	1	-	-	858257-9	.Remskivesats.....	.Pulley kit.....	6			0400
17	1	1	-	-	838596-5	..Remskiva.....	..Pulley.....	5			0420
18	6	6	-	-	955301-7	..Skruv..	..Screw..	0			0440
19	6	6	-	-	941907-8	Fjädrande bricka..	Resilient washer.....	0	SE GRUPP 2A		0460
20	1	1	-	-		Skruv.....	Screw.....		SE GRUPP 2A		0480
21	1	1	-	-		Bricka.....	Washer.....		SE GRUPP 2A		0500
22	1	1	-	-		Sjovattenpump...	Sea water pump.....		SE GRUPP 2B		0520
23	4	4	-	-		Skruv.....	Screw.....		SE GRUPP 2A		0540

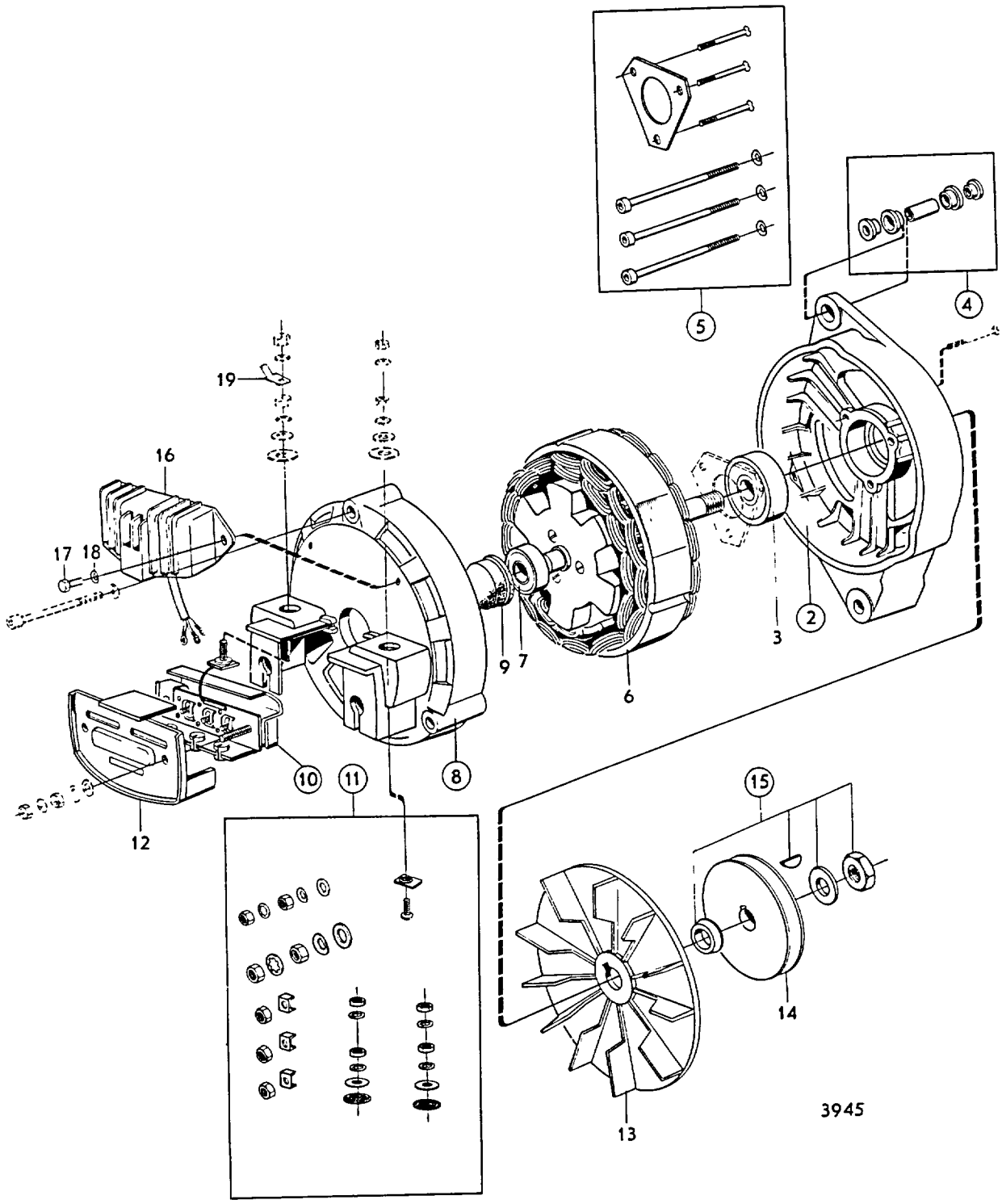


8437



Sida Page		Grupp Group		Växelsstromsgenerator		Alternator		Illustration		1310
74		9		GEM GEM				3945		
1987-04										
Pos Fig	Antal/Quantity			Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
	834 610	834 965	841 380							
1	1	-	-	834610-8	Växelströmgenerator	Alternator	8	14V,35A	0020	
	-	1	-	834965-6	Växelströmgenerator	Alternator	8	14V,35A	0040	
	-	-	1	841380-9	Växelströmgenerator	Alternator	8	14V,35A	0060	
2	1	1	1	831845-3	.Gavel	.Cover	5		0080	
3	1	1	1	181601-6	..Kullager	..Ball bearing	4		0100	
4	1	1	1	465033-9	..Styrning	..Guide	4		0120	
5	1	1	1	6211438-4	..Skrivsats	..Screw kit	5		0140	
6	1	1	1		.Rotor och stator	.Rotor and stator	8		0160	
7	1	1	1	181797-2	.Kullager	.Ball bearing	4		0180	
8	1	1	1	831847-9	.Gavel	.Cover	5		0200	
9	1	1	1	831848-7	..Plastkåpa	..Plastic cover	6		0220	
10	1	1	1	841575-4	.Diodsats	.Diode kit	3	18)	0	
11	1	1	1	831851-1	..Skrivsats	..Screw kit	5		0260	
12	1	1	1	831854-5	.Kåpa	.Casing	6		0280	
13	1	1	-		.Flakt	.Fan	8	253)	0300	
	1	1	1	831855-2	.Flakt	.Fan	4		0320	
14	1	1	1	834646-2	.Remskiva	.Pulley	5		0340	
15	1	1	1	831857-8	.Monteringssats	.Mounting kit	4	254)	0	
	1	-	-	834644-7	.Monteringssats	.Mounting kit	4	255)	0380	
16	1	1	1	841688-5	.Regulator	.Governor	4		0400	
17	2	2	2	955243-1	.Skruv	.Screw	0		0420	
18	2	2	2	941905-2	.Fjädrande bricka	.Resilient washer	0		0440	
19	2	2	1	829311-0	.Flatstift	.Flat pin	4		0460	

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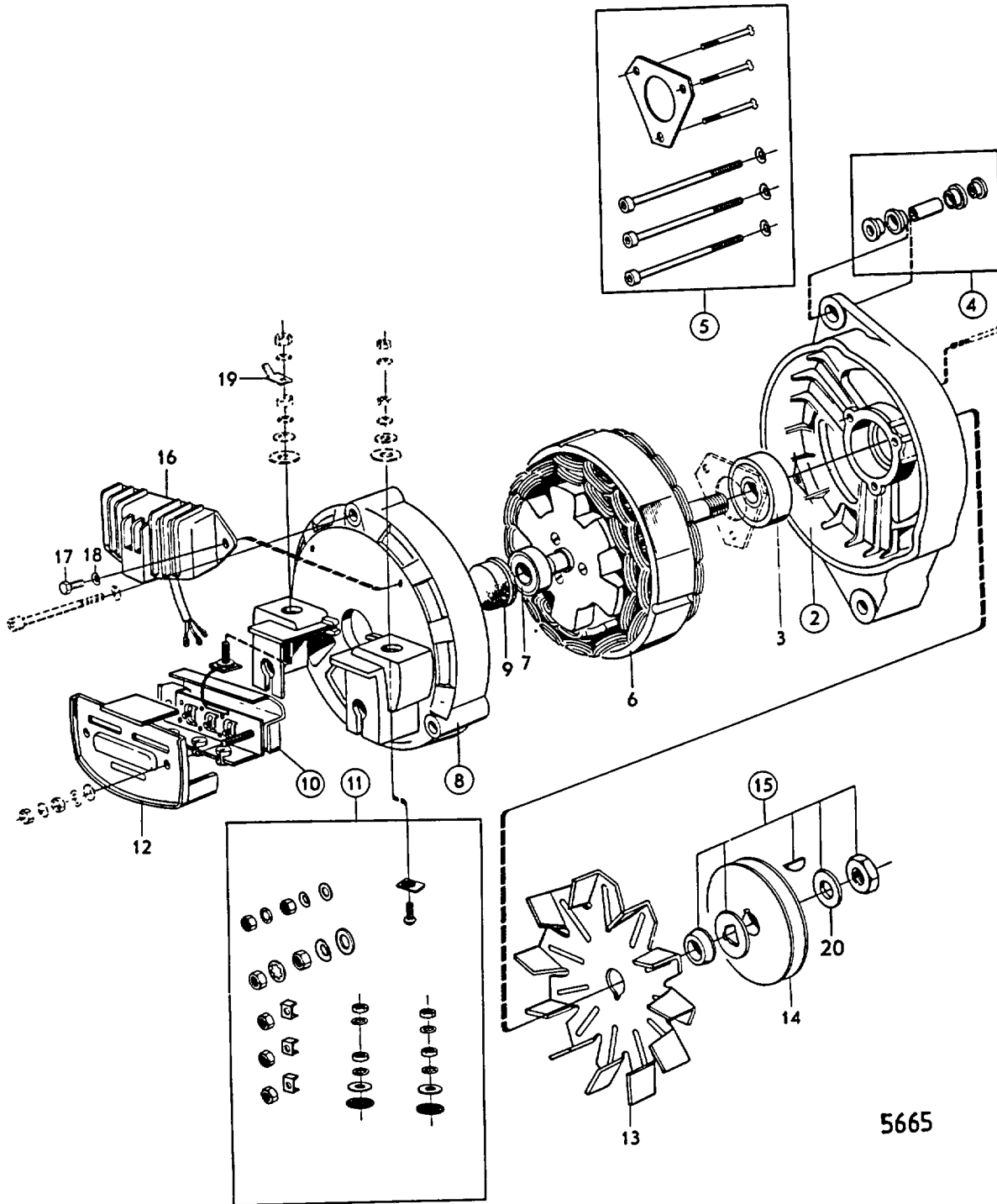
3945





Sida Page		Grupp Group		Växelströmgenerator		Alternator		Illustration		
76		9		GEM				5665 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	841 770									
1	1	-	-	-	841770-1	Växelströmgenerator .....	Alternator .....	8		14V,35A
2	1	-	-	-	831845-3	.Gavel .....	.Cover .....	5		
3	1	-	-	-	181601-6	..Kullager .....	..Ball bearing .....	4		
4	1	-	-	-	465033-9	..Styrning .....	..Guide .....	4		
5	1	-	-	-	6211438-4	..Skrivsats .....	..Screw kit .....	5		
6	1	-	-	-		.Rotor och stator .....	.Rotor and stator .....	8		
7	1	-	-	-	181797-2	.Kullager .....	.Ball bearing .....	4		
8	1	-	-	-	831847-9	.Gavel .....	.Cover .....	5		
9	1	-	-	-	831848-7	..Plastkåpa .....	..Plastic cover .....	6		
10	1	-	-	-	841575-4	.Diodsats .....	.Diode kit .....	3	18)	
11	1	-	-	-	831851-1	..Skrivsats .....	..Screw kit .....	5		
12	1	-	-	-	831854-5	.Kåpa .....	.Casing .....	6		
13	1	-	-	-	831855-2	.Flakt .....	.Fan .....	4		
14	1	-	-	-	834646-2	.Remskiva .....	.Pulley .....	5		
15	1	-	-	-	831857-8	.Monterings-sats .....	.Mounting kit .....	4		
16	1	-	-	-	841688-5	.Regulator .....	.Governor .....	4		
17	2	-	-	-	955243-1	.Skruv .....	.Screw .....	0		
18	2	-	-	-	941905-2	.Fjädrande bricka .....	.Resilient washer .....	0		
19	1	-	-	-	829311-0	.Flatstift .....	.Flat pin .....	4		
20	1	-	-	-	955899-0	.Bricka .....	.Washer .....	0		

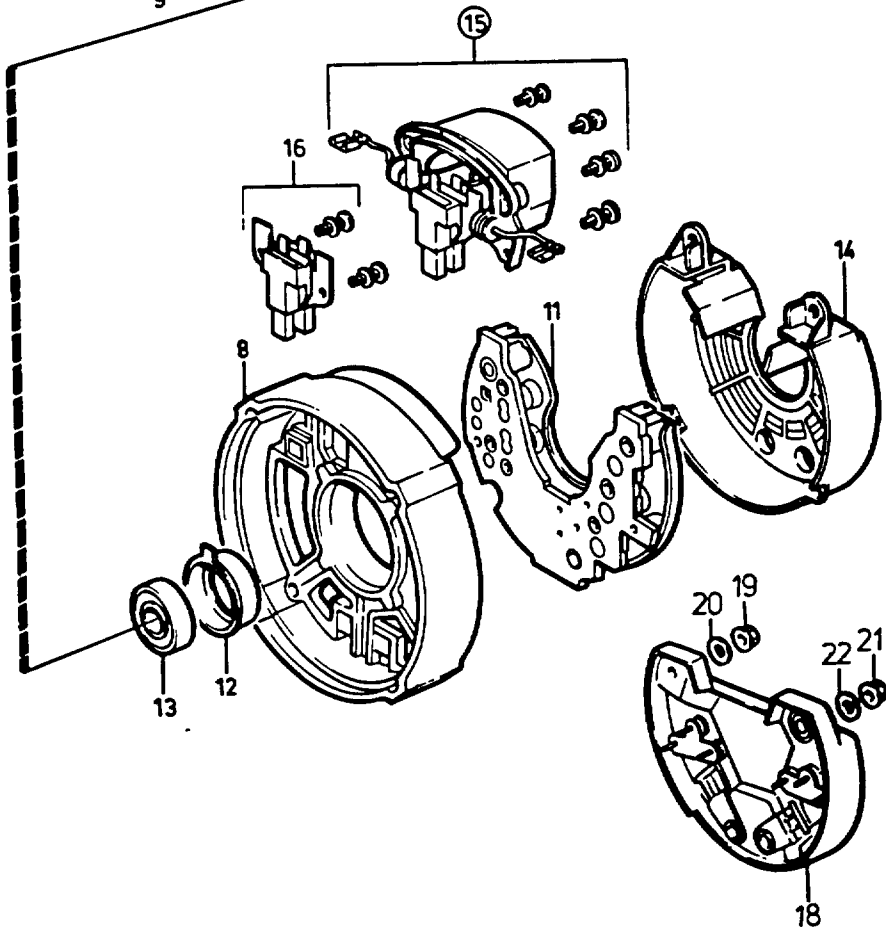
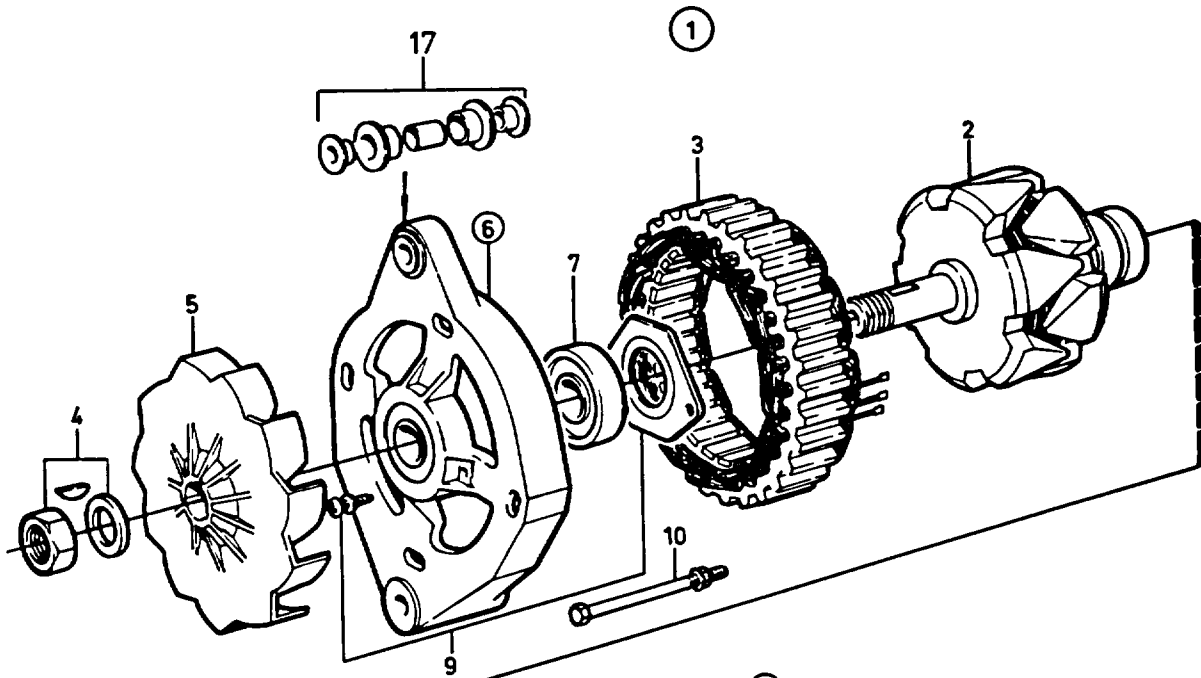
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5665



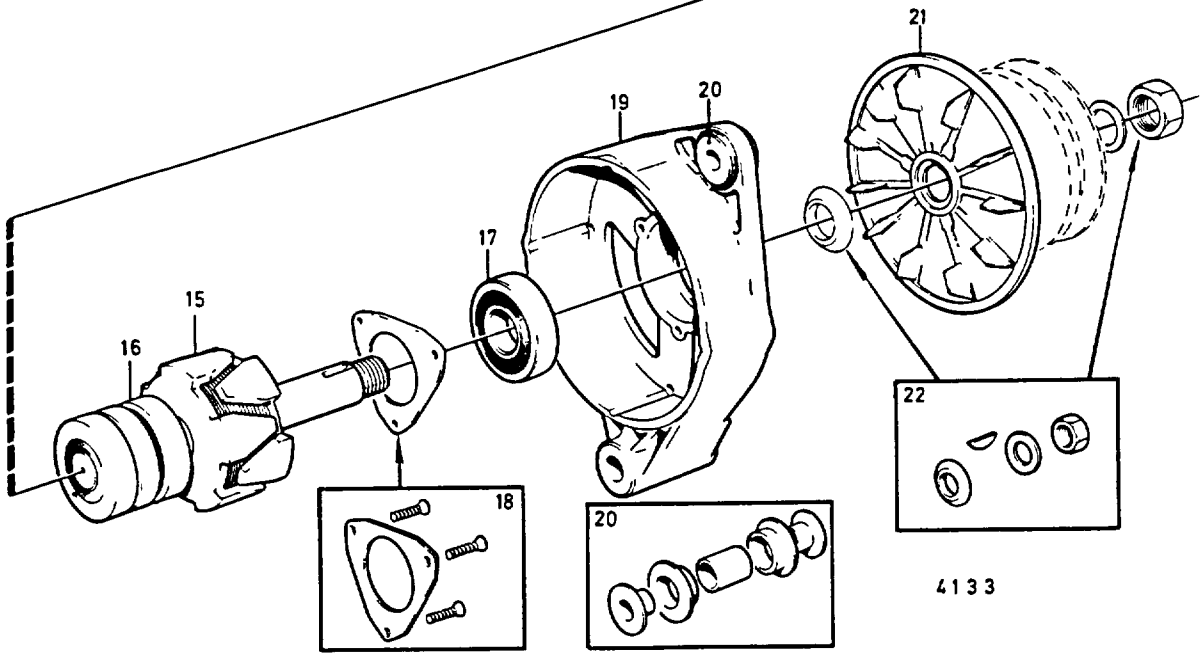
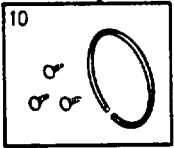
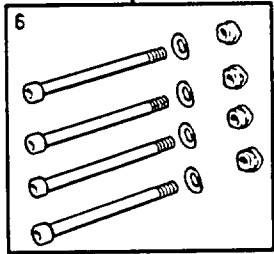
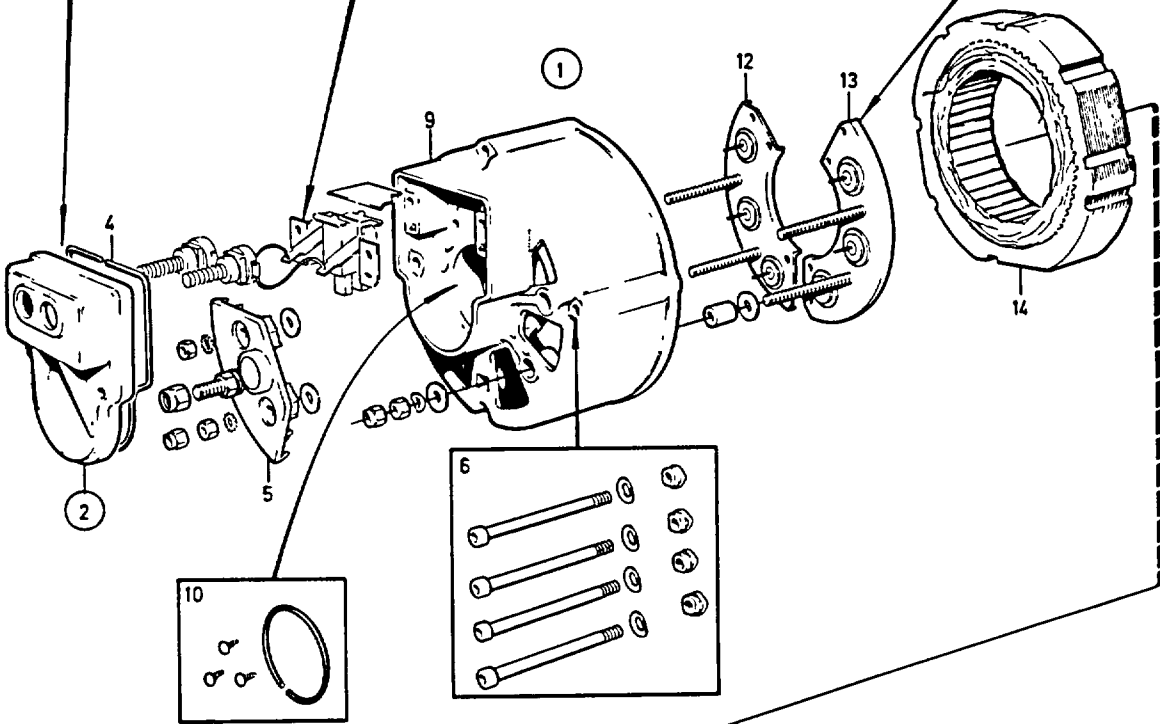
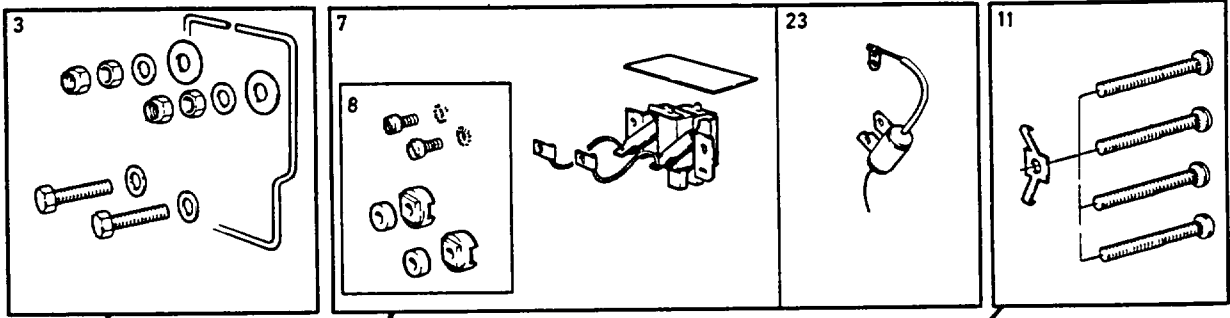
Sida Page		Grupp Group		Växelströmgenerator		Alternator		Illustration			
78		9		GEM GEM				7238 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
	847	561									
1	1	-	-	-	847561-8	Generator .. .. .	Generator .. .	6		28V,30A	002
2	1	-	-	-	838912-4	.Rotor. .... .	.Rotor.....	5			0046
3	1	-	-	-	848401-6	.Stator .. .	.Stator.....	5		(838913)	0060
4	1	-	-	-	838916-5	.Axelsats. .... .	.Shaft kit.. .. .	3			0080
5	1	-	-	-	838917-3	.Flakt .. .	.Fan.....	5			0100
6	1	-	-	-	838914-0	.Gavel .. .	.Cover.....	5			0120
7	1	-	-	-	848402-4	.Kullager .. .	.Ball bearing .. .	2		(838918)	0140
8	1	-	-	-	838915-7	.Gavel .. .	.Cover .. .	5			0160
9	1	-	-	-	840625-8	.Monteringssats.....	.Mounting kit.....	3			0180
10	1	-	-	-	840626-6	.Skruvsats .. .	.Screw kit... ..	5			0200
11	1	-	-	-	6212687-5	.Diodhållare .. .	.Diod holder... ..	5			0220
12	1	-	-	-	838919-9	.Hållare .. .	.Retainer.....	2			0
13	1	-	-	-	840630-8	.Kullager .. .	.Ball bearing .. .	2			0260
14	1	-	-	-	840631-6	.Gavel.....	.Cover.....	5			0280
15	1	-	-	-	847713-5	.Regulator .. .	.Governor.. ..	2			0300
16	1	-	-	-	840632-4	.Borsthållare .. .	.Brush holder .. .	1			0320
17	1	-	-	-	840634-0	.Styrning .. .	.Guide .. .	3			0340
18	1	-	-	-	840638-1	Laddningsfördelare .. .	Charging relay.....	3			0
19	1	-	-	-	955781-0	Mutter .. .	Nut.....	0	+		0380
20	1	-	-	-	949607-6	Bricka .. .	Washer.....	0			0400
21	1	-	-	-	955780-2	Mutter .. .	Nut .. .	0	-		0420
22	1	-	-	-	941905-2	Fjädrande bricka .. .	Resilient washer.....	0			0440



7238



Sida Page		Grupp Group		Vaxelströmgenerator		Alternator		Illustration		
80		9						1350 4133 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	Anmärkning Notes	
	827 349									
1	1	-	-	-	827349-2	Växelströmgenerator .....	Alternator .....		24V, 25A	002L
2	1	-	-	-	827559-6	.Lock .....	.Cover .....	6		0040
3	1	-	-	-	827560-4	..Monteringssats .....	..Mounting kit .....	5		0060
4	1	-	-	-	825531-7	...Packning .....	...Gasket .....	5		0080
5	1	-	-	-	825532-5	.Diodhållare .....	.Diode holder .....	5		0100
6	1	-	-	-	825566-3	.Monteringssats .....	.Mounting kit .....	4		0120
7	1	-	-	-	821723-4	.Kolborstsats .....	.Carbon brush set .....	4		0140
8	1	-	-	-	827558-8	..Skruvsats .....	..Screw kit .....	5		0160
9	1	-	-	-		.Hus .....	.Housing .....	8		0180
10	1	-	-	-	1560922-5	.Monteringssats .....	.Installation kit .....	5		0200
11	1	-	-	-	827562-0	.Skruvsats .....	.Screw kit .....	5		0
12	1	-	-	-	827563-8	.Diodplatta .....	.Diode plate .....	4		0260
13	1	-	-	-	1517037-6	.Diod .....	.Diode .....	4		0280
14	1	-	-	-		.Stator .....	.Stator .....	8		0300
15	1	-	-	-	827040-7	.Rotor .....	.Rotor .....	6		0320
16	1	-	-	-		..Lager .....	..Bearing .....	8		0
17	1	-	-	-	181875-6	.Kullager .....	.Ball bearing .....	2		0380
18	1	-	-	-	480655-0	.Reparationssats .....	.Repair kit .....	5		0400
19	1	-	-	-		.Gavellock .....	.End cover .....	8		0420
20	1	-	-	-	465033-9	.Styrning .....	.Steering .....	4		0440
21	1	-	-	-	820460-4	.Fläkt .....	.Fan .....	5		0460
22	1	-	-	-	1560928-2	.Monteringssats .....	.Mounting kit .....	4		
23	1	-	-	-	821725-9	.Kondensator .....	.Capacitor .....	4		



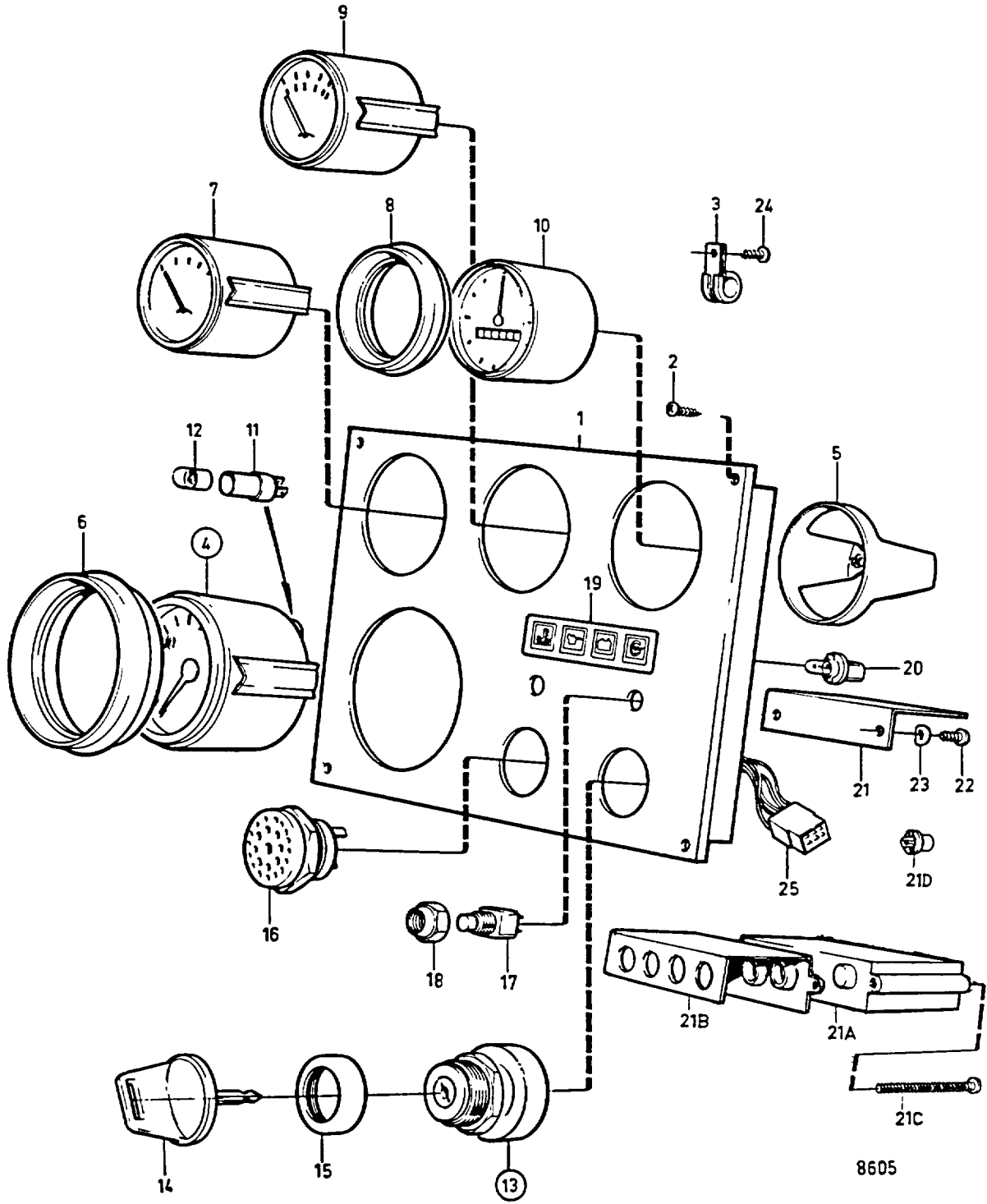
4133



Sida Page	Grupp Group	Instrumenttavla med monteringsdetaljer	Instrument panel and installation components	Illustration 8605 1987-04	1375
82	9	TMD40B,TMD40C,TAMD40B, AQAD40B			

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	828588-4	Instrumentplåt .....	Instrument panel.....		7		0021
2	4	-	-	-	828647-8	Skruv .....	Screw .....		0		0040
3	1	-	-	-	952629-4	Klammer .....	Clamp .....		0		0060
4	1	-	-	-	828601-5	Varvräknare.....	Tachometer .....		4	ERSAV85858	0080
	1	-	-	-	858558-0	Varvraknaresats..	Tachometer kit .....		4		0090
5	1	-	-	-	828558-7	•Fastring.....	•Attachment ring.....		5		0100
6	1	-	-	-	828559-5	Frontring .....	Front ring .....		5		0120
7	1	-	-	-	828612-2	Temperaturmätare .....	Temperature gauge.....		4		0140
8	3	-	-	-	828542-1	Frontring .....	Front ring .....		5		0160
9	1	-	-	-	828618-9	Oljetrycksmätare.....	Oil pressure gauge .....		4		0180
10	1	-	-	-	828628-8	Voltmeter .....	Voltmeter.....		4		0
11	4	-	-	-	808175-4	Lamphållare .....	Bulb holder.....		3		0
12	4	-	-	-	19923-2	Glödlampa .....	Bulb .....		0		0240
13	1	-	-	-	828778-1	Startlås .....	Ignition lock .....		4		0260
14	2	-	-	-	828676-7	•Nyckel .....	•Key .....		5	70)	0280
15	1	-	-	-	1581184-7	Rundmutter.....	Nut .....		3		0300
16	1	-	-	-	828587-6	Summer .....	Summer.....		4		0
17	1	-	-	-	828584-3	Tryckstrombrytare...	Switch .....		4	ALARM	0
	1	-	-	-	828585-0	Tryckstrombrytare...	Switch.....		4		0360
18	2	-	-	-	828586-8	Mutter .....	Nut .....		3		0380
19	1	-	-	-	828560-3	Skylt .....	Sign.....		5		0400
20	4	-	-	-	966326-1	Glödlampa .....	Bulb .....		0		0420
21	1	-	-	-	828605-6	Instrumentkort .....	Instrument card .....		3	236)	0440
21a	1	-	-	-	828783-1	Elektronikenhet .....	Electronic unit .....		3		0441
21b	1	-	-	-	828784-9	Reflektor .....	Reflector .....		3		0442
21c	2	-	-	-	941615-7	Skruv .....	Screw .....		0		0443
21d	4	-	-	-	19923-2	Glödlampa .....	Bulb .....		0		0444
22	2	-	-	-	941610-8	Skruv .....	Screw .....		0		046
23	2	-	-	-	941904-5	Bricka .....	Washer .....		0		048L
24	1	-	-	-	949947-6	Skruv .....	Screw .....		0	(966832)	0500
25	1	-	-	-	828646-0	Kabelsats.....	Cable unit .....		4		0520
	ERF	-	-	-		Kablar och kabelskor....	Cables and terminals.....			SE GRUPP 3	0540

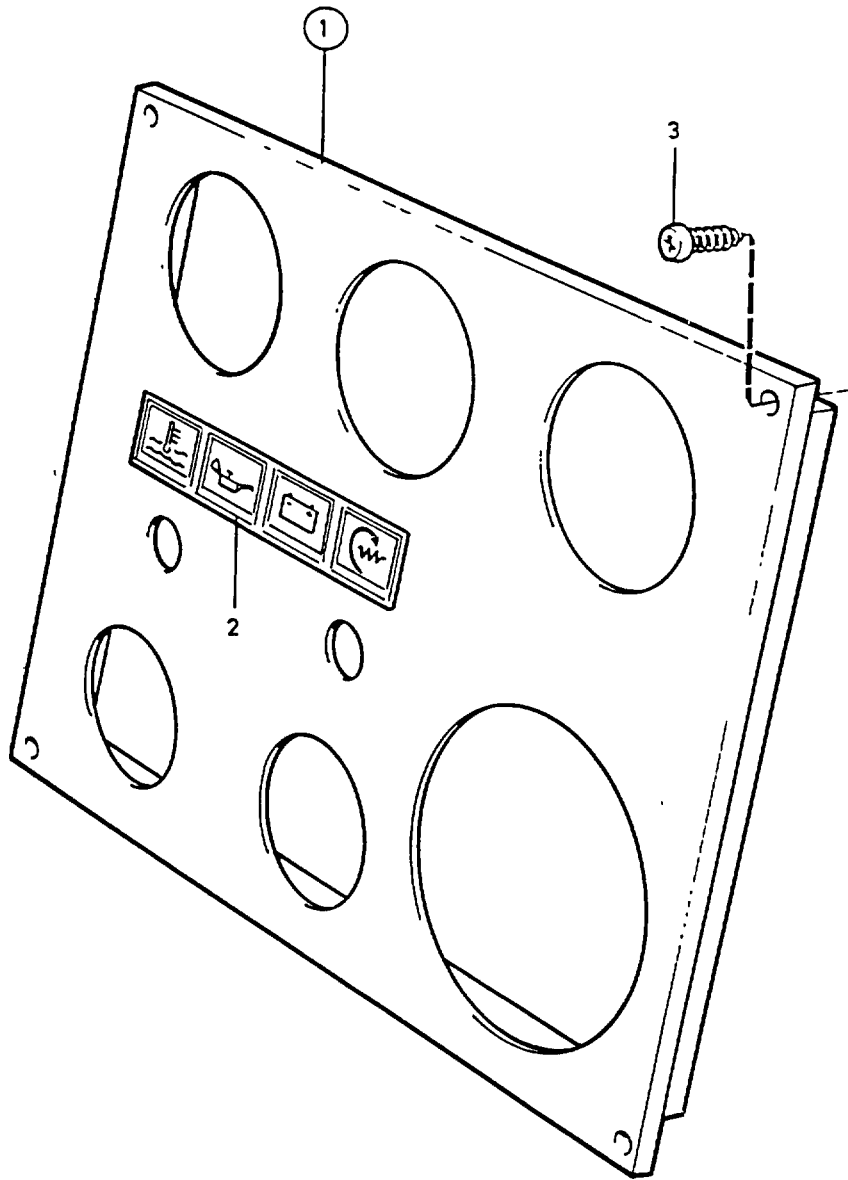
70 . Uppgiv nyckelkod vid beställning State key code when ordering.  
236 . Ersatt av 1st ELEKTRONIKENHET-828783, 1st REFLEKTOR-828784 2st SKRUV-941615 samt 4st GLÖDLAMPOR-19923. Replaced by 1pc electronic UNIT-828783, 1pc reflector-828784, 2pcs SCREW-941615 and 4pcs BULB-19923.





Sida Page		Grupp Group		Instrumenttavla			Instrument panel			Illustration	
84		9		GEM						8538 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	828 780	858 875									
1	1	-	-	-	828780-7	Instrumenttavla .....	Instrument panel .....	5		215,233) ERS AV 858875	002/ 004L
	-	-	-	-	858875-8	Instrumenttavla.....	Instrument panel.....	5		215,234)	0080
2	1	-	-	-	828560-3	.Symbolskiva .....	.Symbolic plate.....	5			0100
	-	1	-	-	828562-9	.Symbolskiva .....	.Symbolic plate.....	5			0120
3	4	4	-	-	828647-8	Skruv .....	Screw.....				0140

215 . Spegelvänd-för dubbelinstallation. Mirror-inverted,for twin installation.  
233 . Guldfärgad dekorstripe. Gold coloured decor stripe.  
234 . Vit dekorstripe. White coloured decor stripe.



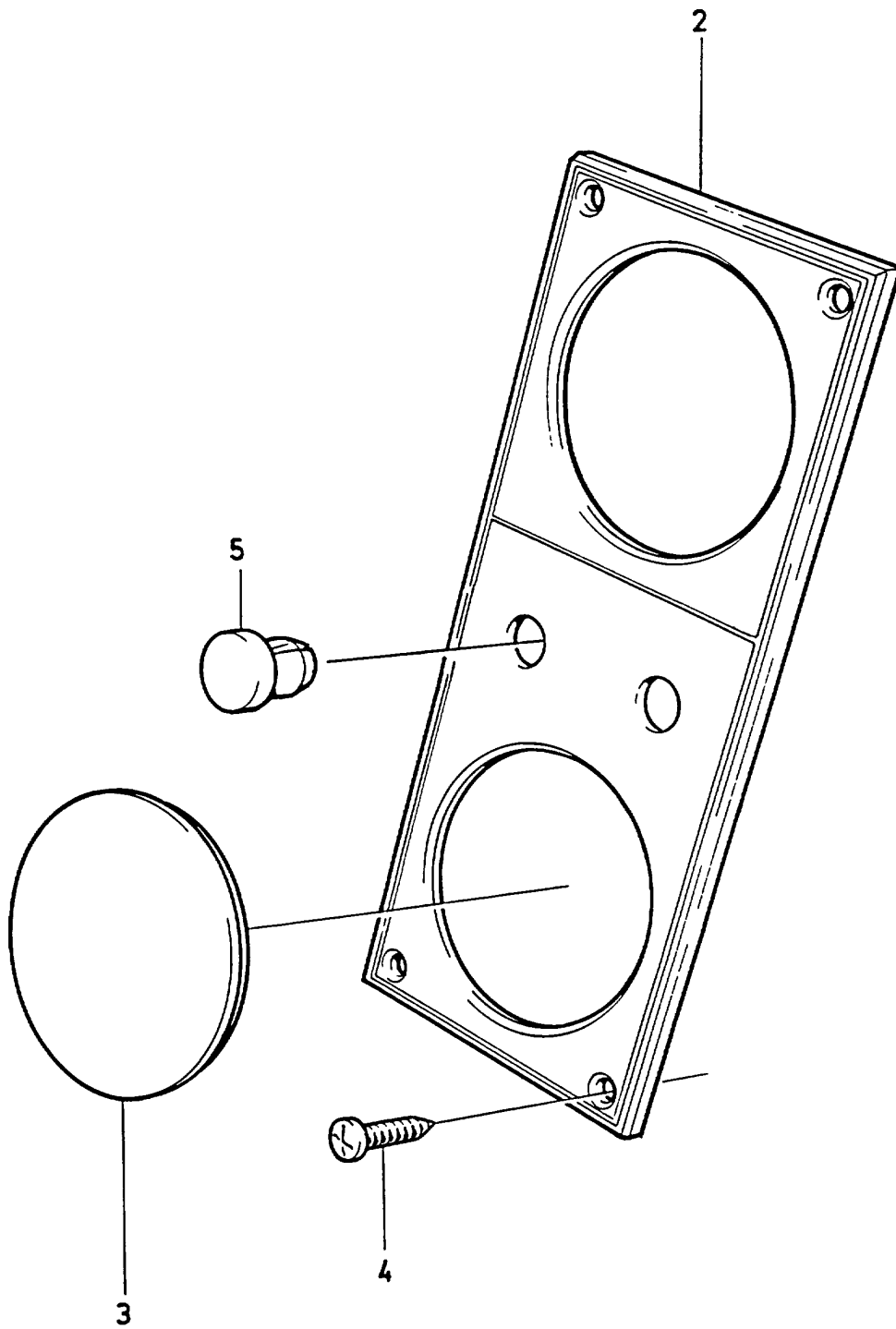
8538



Sida Page	Grupp Group	Extra instrumenttavla			Extra instrument panel			Illustration	1400		
86	9	GEM						5371 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	843604-0	Instrumenttavla.....	Instrument panel .....				00
2	1	-	-	-	837539-6	Instrumentplåt.....	Instrument plate .....		6		00-
3	1	-	-	-	842659-5	Tackbricka .....	Cover washer .....		5		0060
4	4	-	-	-	944540-4	Skruv .....	Screw .....		0		0080
5	2	-	-	-	845071-0	Propp .....	Plug .....		5		0100



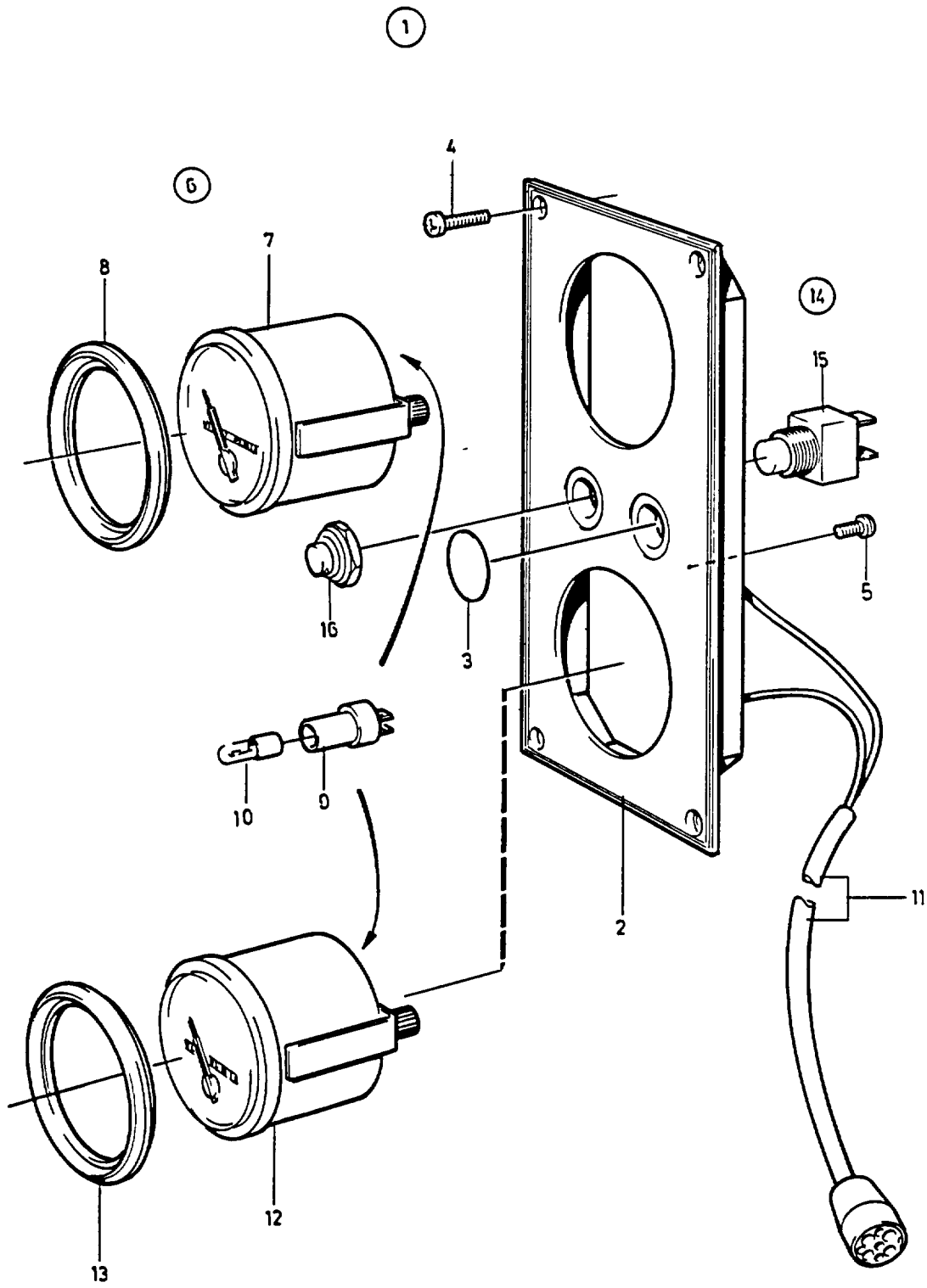
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5371

Sida Page		Grupp Group		Tilläggsstavla		Extra panel		Illustration		1420	
88		9		GEM				6709			
1987-04											
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	846 786	858 874	828 711	858 877							
1	1	-	-	-	846786-2	Instrumenttavla .....	Instrument panel.....	4	ERS AV 858874		00.
	-	1	-	-	858874-1	Instrumenttavla .....	Instrument panel.....	4			003.
2	1	-	-	-	828604-9	.Instrumentpanel .....	.Instrument panel.....	4			0040
	-	1	-	-	828650-2	.Instrumentpanel .....	.Instrument panel.....	8			0050
3	2	1	-	-	828607-2	.Täckskiva .....	.Disc .....	4			0060
4	4	4	-	-	828647-8	.Skruv .....	.Screw .....	0			0080
5	1	1	-	-	949947-6	.Skruv .....	.Screw .....	0	(966832)		0100
6	-	-	1	-	828711-2	Timräknarsats.....	Hour meter set .....	4	ERS AV 858877		0120
	-	-	-	1	858877-4	Timräknarsats.....	Hour meter kit.....	4			0130
7	-	-	1	1	828615-5	.Timräknare .....	.Hour meter.....	4			0140
8	-	-	1	-	828542-1	.Frontring .....	.Front ring.....	4	233)		0160
	-	-	-	1	858643-0	Frontring.....	Front ring .....	4	234)		70
9	-	-	1	1	808175-4	.Lamphållare .....	.Bulb holder.....	3			0180
10	-	-	1	1	19923-2	.Glodlampa .....	.Bulb .....	2	12V		0200
	-	-	1	1	182059-6	.Glodlampa .....	.Bulb .....	2	24V		0220
11	-	-	ERF	ERF		.Kablar och kabelskor .....	.Cables and terminals .....		SE GRUPP 3		0240
12	1	1	1	1		Instrument .....	Instrument .....				0260
13	1	1	1	-	828542-1	Frontring .....	Front ring .....	4	233)		30
	-	1	-	1	858643-0	Frontring .....	Front ring .....	4	234)		0290
14	1	1	1	1	828718-7	Strombrytare .....	Switch.....	4			0300
	1	1	1	1	828719-5	Tryckstrombrytare.....	Switch.....	4			0320
15	1	1	1	1	828584-3	.Tryckströmbrytare .....	.Switch.....	4	169) TILL/TO 828718		0340
	1	1	1	1	828585-0	.Tryckströmbrytare .....	.Switch.....	4	170) TILL/TO 828719		0360
16	1	1	1	1	828586-8	.Mutter .....	.Nut .....	4			0380

- 169 . Slutande vid tryck och återfjädrande. Closing during pressure and spring-loaded.  
 170 . Slutande-brytande. Closing-breaking.  
 233 . Guldfärgad dekorstripe. Gold coloured decor stripe.  
 234 . Vit dekorstripe. White coloured decor stripe.



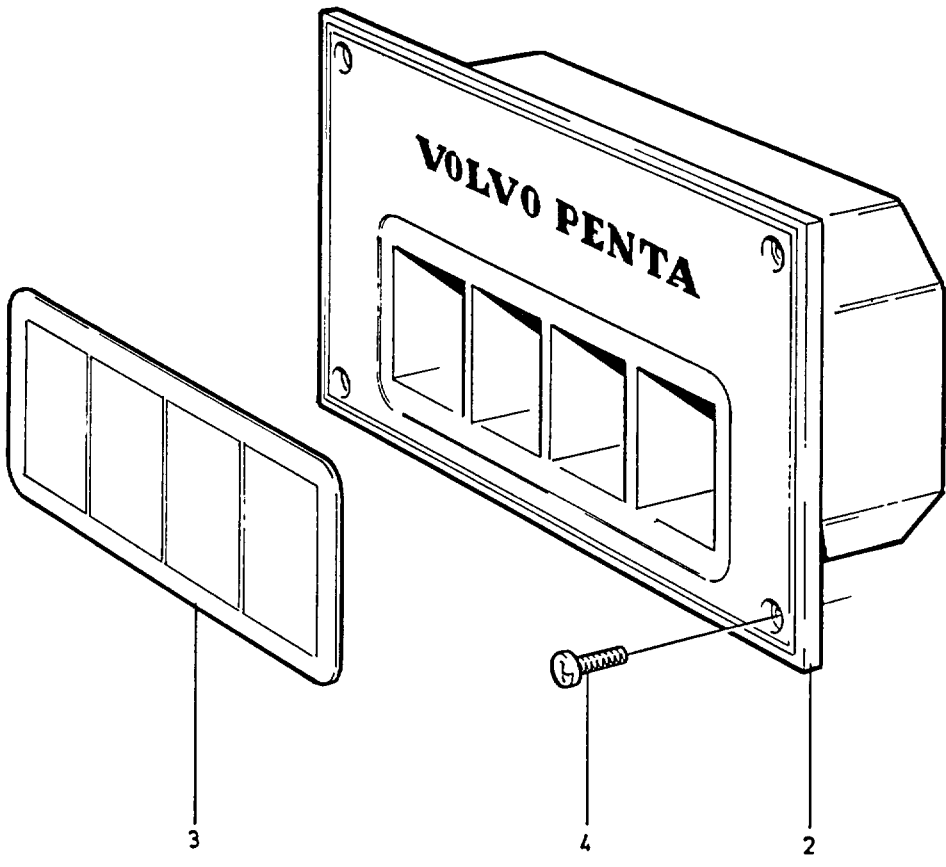
6709



Sida Page	Grupp Group	Larmtavla	Alarm panel				Illustration	1425			
90	9	GEM					6710 1987-04				
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	846 787	858 876									
1	1	-	-	-	846787-0	Instrumenttavla.....	Instrument panel.....	4		233)	001
-	-	-	-	-	858876-6	Instrumenttavla...	Instrument panel .....	4		ERS. AV 858876 234)	002 0030
2	1	1	-	-	828560-3	.Symbolskiva .....	.Panel .....	8			0040
3	1	-	-	-	858645-5	.Skylt.....	.Sign .....	5			0060
-	-	1	-	-	828647-8	.Skylt.....	.Sign .....	5			0070
4	4	4	-	-		.Skruv.....	.Screw .....	0			0080

233 . Guldfärgad dekorstripe. Gold coloured decor stripe.  
234 . Vit dekorstripe. White coloured decor stripe.

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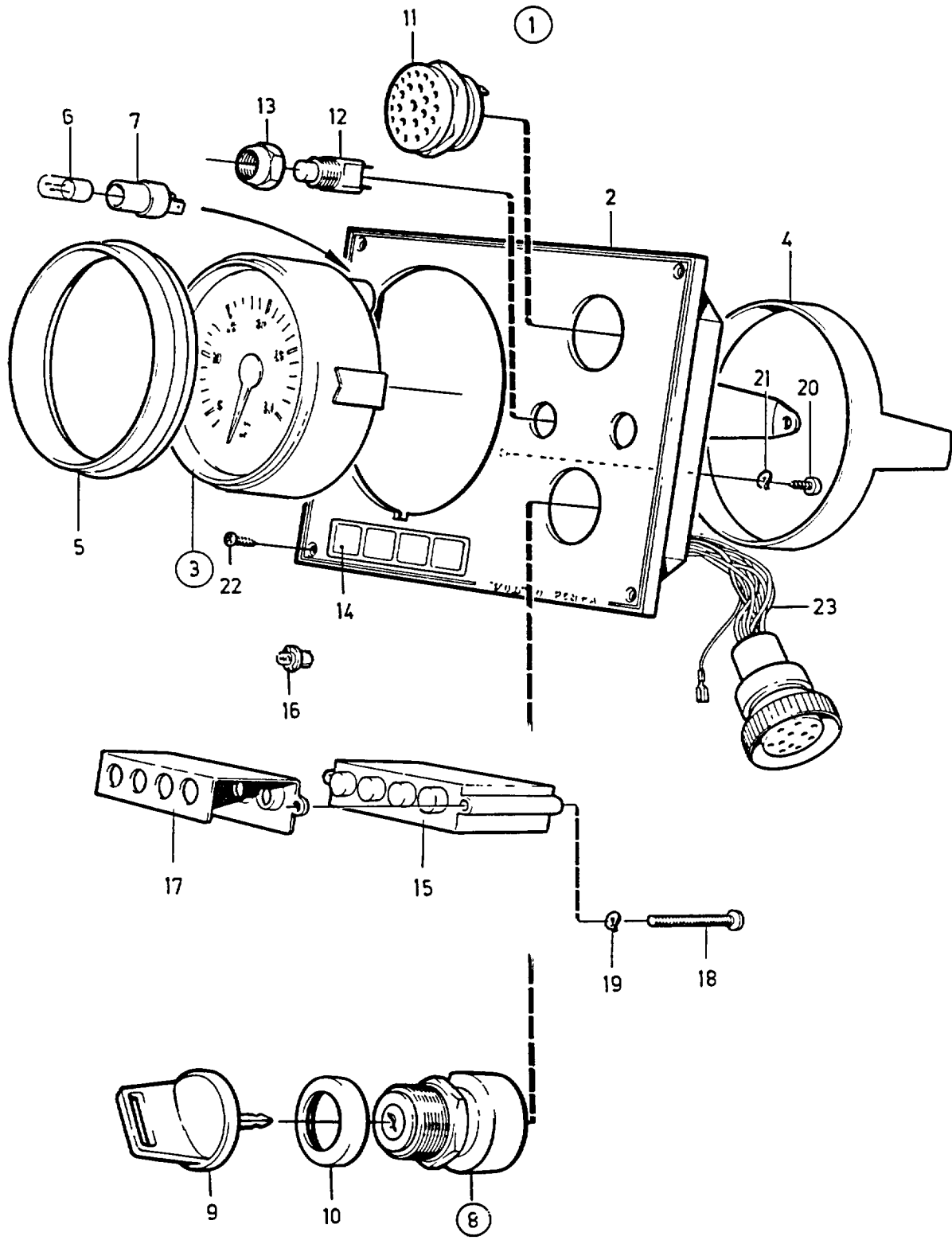
6710





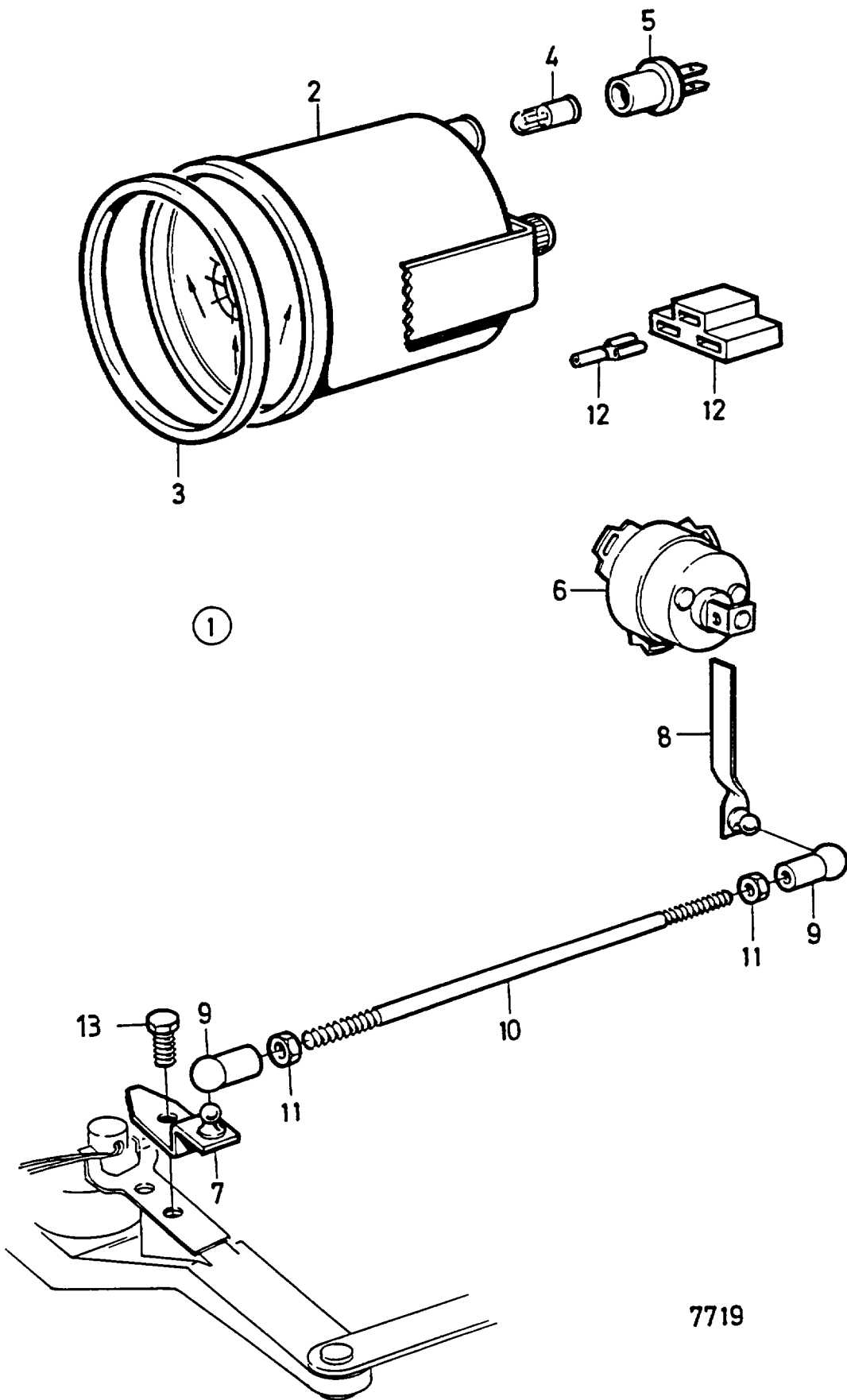
Sida Page	Grupp Group	Instrumenttavla flybridge	Instrument panel fly bridge	Illustration	1430						
92	9	GEM		7492	1987-04						
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	838 927										
1	1	-	-	-	838927-2	Instrumenttavla.....	Instrument panel .....	6		12V	002
2	1	-	-	-	828583-5	Instrumentpanel .....	Instrument panel .....	6			0040
3	1	-	-	-	828601-5	Varvraknare.....	Tachometer.....	4		ERSAV 858558	0060
4	1	-	-	-	858558-0	Varvräknaresats..	Tachometer kit .....				0070
4	1	-	-	-	828558-7	..Fastring .....	..Attachment ring .....	5			0080
5	1	-	-	-	828559-5	..Frontring .....	..Front ring .....	4			0100
6	1	-	-	-	19923-2	..Glödlampa .....	..Bulb .....	0			0120
7	1	-	-	-	808175-4	..Lamphållare .....	..Bulb holder .....	3			0140
8	1	-	-	-	828778-1	..Startlås.....	..Ignition lock.....	4			0160
9	2	-	-	-	828676-7	..Nyckel .....	..Key .....	5			0180
10	1	-	-	-	1581184-7	..Rundmutter .....	..Nut .....	3			0200
11	1	-	-	-	828587-6	..Larm .....	..Alarm .....	4			0240
12	1	-	-	-	828584-3	..Tryckströmbrytare .....	..Switch .....	4		ALARM	0260
13	2	-	-	-	828585-0	..Tryckströmbrytare .....	..Switch .....	4		BELYSNING/LIGHTING	0280
13	2	-	-	-	828586-8	..Mutter .....	..Nut .....	3			0300
14	1	-	-	-	828560-3	..Skylt .....	..Sign .....	5			0320
15	1	-	-	-	828783-1	..Elektronikenhet .....	..Electronic unit .....	6			0360
16	4	-	-	-	19923-2	..Glödlampa .....	..Bulb .....	0			0380
17	1	-	-	-	828784-9	..Reflektor .....	..Reflector .....	6			0400
18	2	-	-	-	941615-7	..Skruv .....	..Screw .....	0			0420
19	2	-	-	-	941904-5	..Bricka .....	..Washer .....	0			0440
20	1	-	-	-	949947-6	..Skruv .....	..Screw .....	0			0460
21	1	-	-	-	941904-5	..Bricka .....	..Washer .....	0			0480
22	4	-	-	-	828647-8	..Skruv .....	..Screw .....	0			0480
23	ERF	-	-	-		..Kablar och kabelskor .....	..Cables and terminals .....			SE GRUPP3	0480





Sida Page		Grupp Group		Roderindikatorsats drev 290 GEM		Rudder indicator kit drive unit 290		Illustration 7719 1987-04		1433	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	853 178	858 886									
1	1	-	-	-	853178-2	Roderindikatorsats .....	Rudder indicator kit .....	6		ERS AV 858886	002
	-	1	-	-	858886-5	Roderindikatorsats .....	Rudder indicator kit .....	6			0030
2	1	1	-	-	828698-1	.Roderindikator .....	.Rudder indicator .....	4			0040
3	1	-	-	-	828542-1	.Frontring .....	.Front ring .....	5	233)		0060
	-	1	-	-	858643-0	.Frontring .....	.Front ring .....	5	234)		0070
4	1	1	-	-	19923-2	.Glödlampa .....	.Bulb .....	0	12V		0080
5	1	1	-	-	808175-4	.Lamphållare .....	.Bulb holder .....	4			0100
6	1	1	-	-	837772-3	.Roderlägesgivare .....	.Rudder indicator .....	3			0120
7	1	1	-	-	853176-6	.Konsol .....	.Bracket .....	5			0140
8	1	1	-	-	853177-4	.Hävarm .....	.Lever .....	5			0160
9	1	1	-	-	946704-4	.Kulskål .....	.Ball race .....	0	213)		30
	1	1	-	-	946703-6	.Kulskål .....	.Ball race .....	0	214)		0
10	1	1	-	-	943549-6	.Reglerstång .....	.Control rod .....	0			0220
11	1	1	-	-	942836-8	.Mutter .....	.Nut .....	0	213)		0240
	1	1	-	-	955780-2	.Mutter .....	.Nut .....	0	214)		0260
12	ERF	ERF	-	-		.Kablar och kabelskor ..	.Cables and terminals...	0		SE GRUPP 3	0280
	1	1	-	-	940199-3	Skruv .....	Screw .....	0			0300

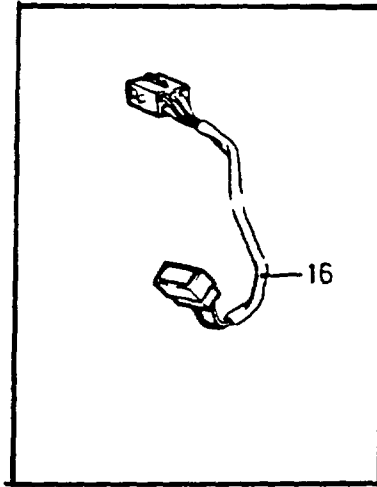
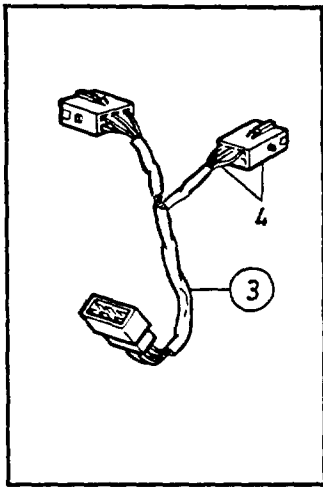
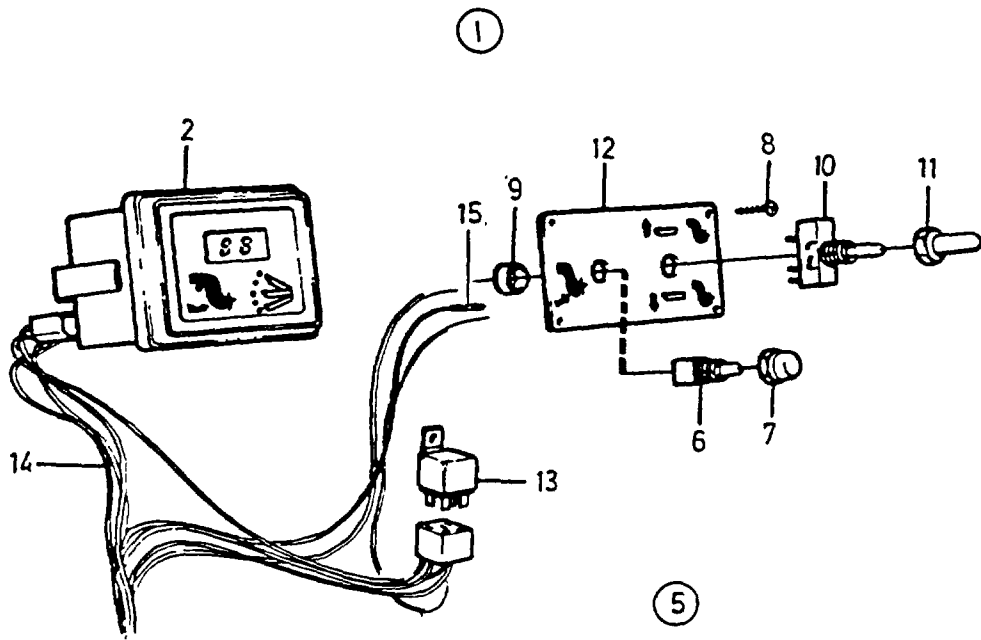
- 213 . Vänstergängad. Left hand threads.  
 214 . Höger gängad. Right hand threads.  
 233 . Guldfärgad dekorstripe. Gold coloured decor stripe.  
 234 . Vit dekorstripe. White coloured decor stripe.



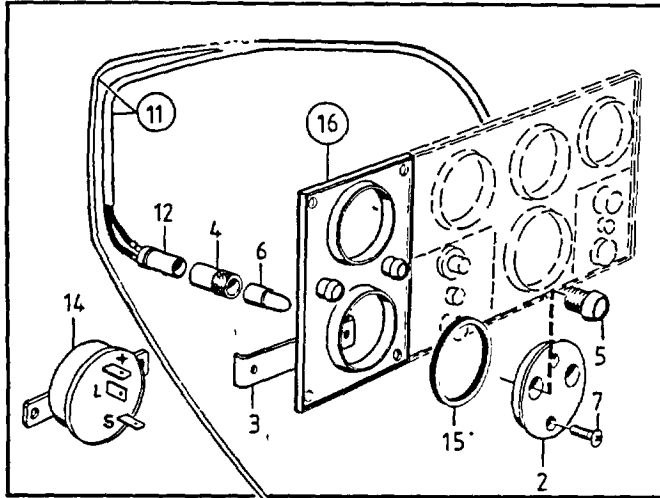
7719



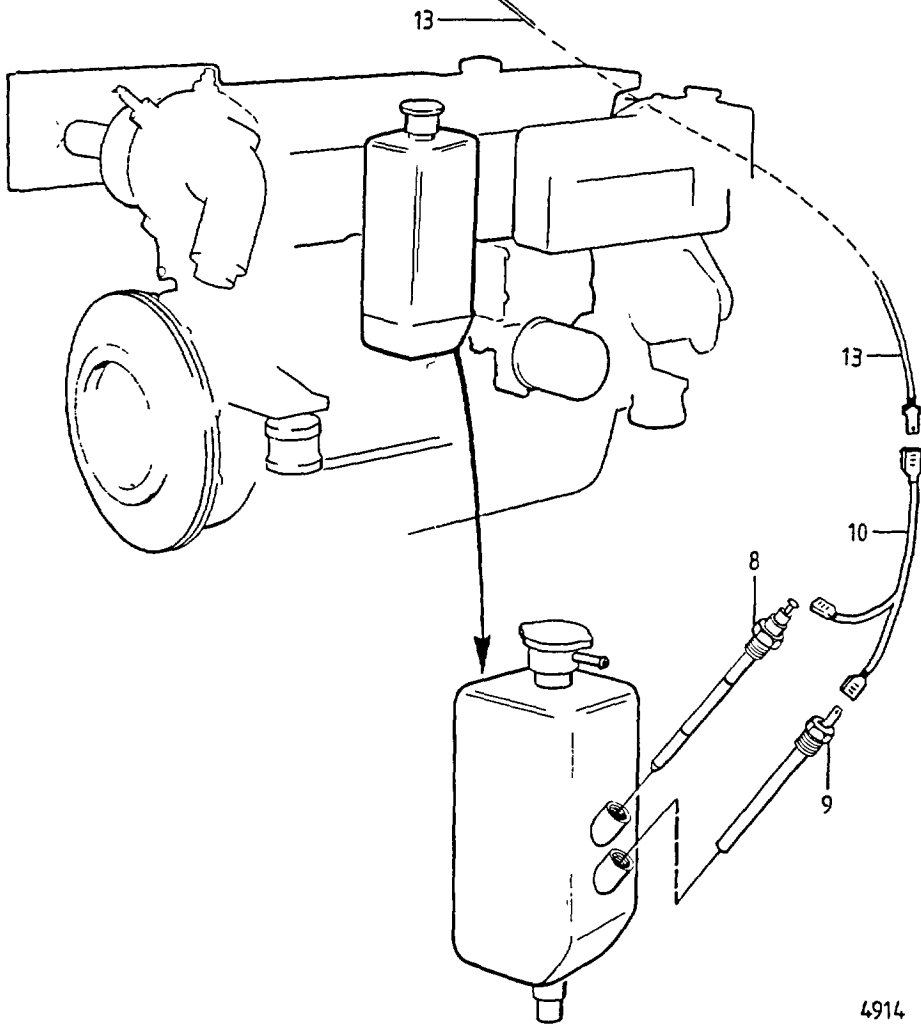
Sida Page		Grupp Group		Power trim panel flying bridge, DREV290 AQD40A,AQAD40A,AQAD40B			Power trim panel flying bridge,drive UNIT290			Illustration 8270 1987-04		1435
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes		
	853 067											
1	1	-	-	-	853067-7	Instrumenttavla pt .....	Instrument panel pt .....		5		0020	
2	1	-	-	-	828731-0	..Instrumenttavla.....	..Instrument panel.....		5		0040	
3	1	-	-	-		..Kabelstock.....	..Cable unit.....		8		0060	
4	ERF	-	-	-		..Kablar och kabelskor .....	..Cables and terminals.....			SE GRUPP3	0080	
5	1	-	-	-	853866-2	..Manövertavla .....	..Control panel ...		4		0100	
6	1	-	-	-	828584-3	..Tryckströmbrytare .....	..Switch .....		3		0120	
7	1	-	-	-	828586-8	..Mutter.....	..Nut .....		3		0140	
8	4	-	-	-	828647-8	..Skruv.....	..Screw .....		2		0160	
9	2	-	-	-	828740-1	..Distansbricka .....	..Spacer washer .....		2		0180	
10	1	-	-	-	828742-7	..Vippströmbrytare.....	..Toggle switch .....		3		0200	
11	1	-	-	-	828743-5	..Mutter .....	..Nut .....		3		0	
12	1	-	-	-		..Manöverpanel.....	..Panel.....		8		J	
13	1	-	-	-	853545-2	..Reläsats .....	..Relay kit.....		2		0260	
14	1	-	-	-		..Kabelstock.....	..Cable unit.....		8		0280	
15	ERF	-	-	-		..Kablar och..... kabelskor	..Cables and..... terminals			SE GRUPP3	0300	
16	ERF	-	-	-	853052-9	Forlangningskabel .....	Extension cable .....		5	L=3000MM	0320	



Sida Page	Grupp Group	Kylvattennivåalarm Cooling water level alarm		Illustration 4914	1450					
98	9	MD40A, TMD40A, AQD40A, TAMD40A, AQAD40A		1987-04						
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	843866-5	Kylvattennivåmätare ..	Coolant level gauge ..	8		12V	00;
2	1	-	-	843871-5	.Bricka ..	.Washer ..	5			004.
3	1	-	-	843872-3	.Bygel ..	.Clamp ..	5			0060
4	2	-	-	819350-0	.Lamphylsa ..	.Housing ..	4			0080
5	2	-	-	827766-7	.Konsol ..	.Bracket ..	3			0100
6	1	-	-	19923-2	.Glödlampa ..	.Lamp bulb ..	1			0120
7	2	-	-	944540-4	.Skruv ..	.Screw ..	0			0140
8	1	-	-	352390-9	.Nivåindikator ..	.Indicator ..	4			0160
9	1	-	-	843884-8	.Givare ..	.Sensor ..	5	26)		0180
10	1	-	-	843855-8	.Kabelstock ..	.Cable unit ..	6			0200
11	1	-	-	843854-1	.Kabelstock ..	.Cable unit ..	6			'0
12	1	-	-	808175-4	..Lamphållare ..	..Bulb holder ..	3			.0
13	ERF	-	-		..Kablar och kabelskor ..	..Cables and cable ..			SEGRUPP 3	0260
	-	-	-		terminals ..	terminals ..				0280
14	1	-	-	1501202-4	.Nivårelä ..	.Relay ..	3			0300
15	1	-	-	843603-2	Mellanring ..	Ring ..	5			0320
16	1	-	-	843604-0	Instrumenttavla ..	Instrument panel ..	6			'0
	-	-	-		.Det se sida 86, 3-D17 ..	.Comp page 86, 3-D17 ..				↘



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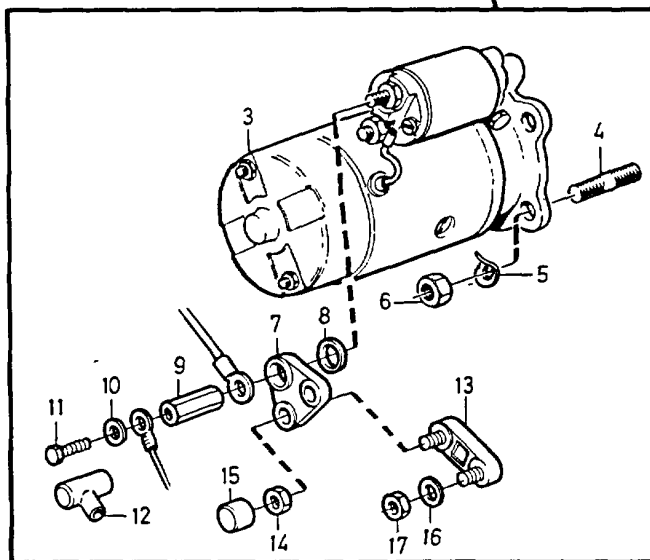
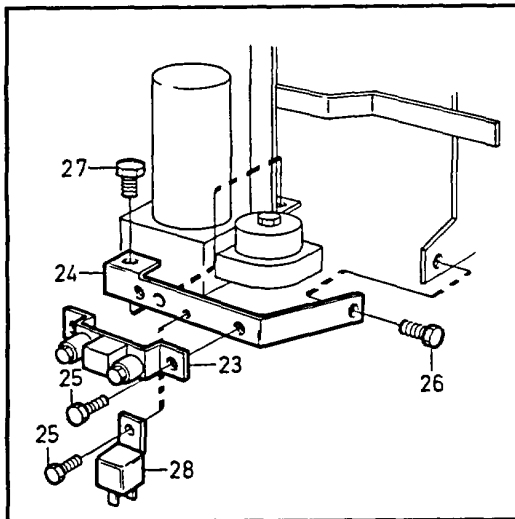
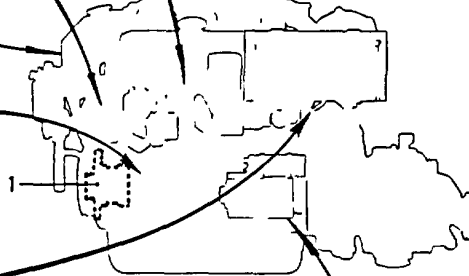
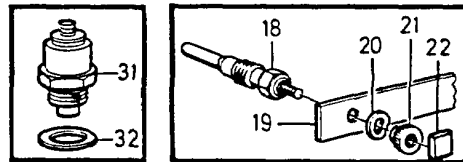
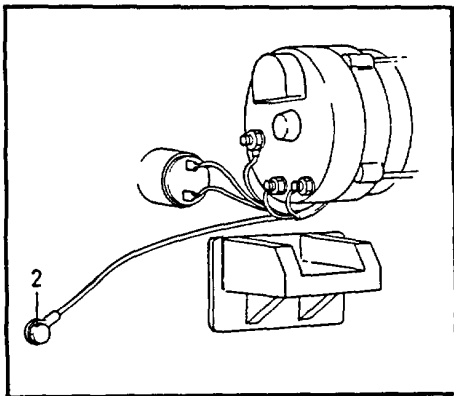
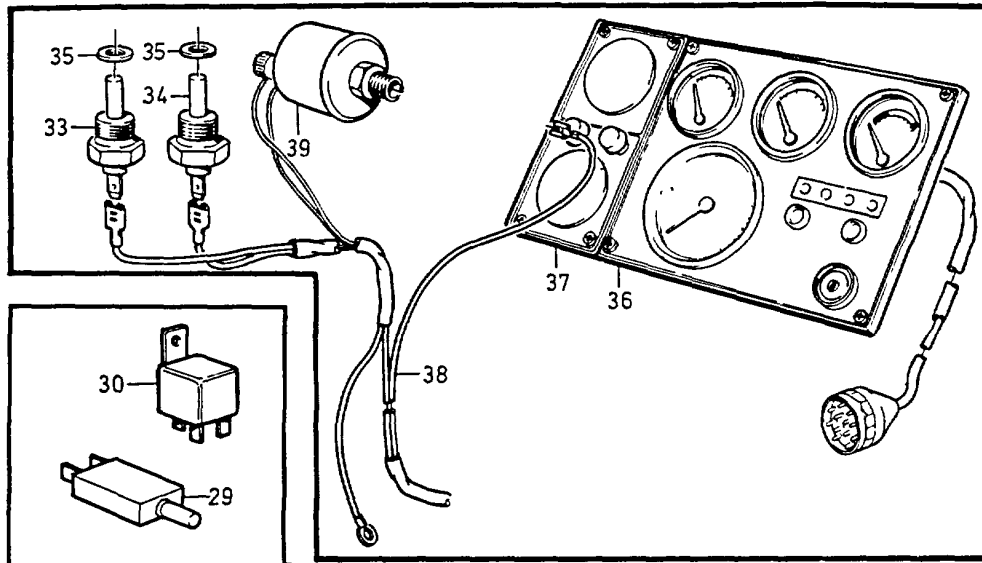




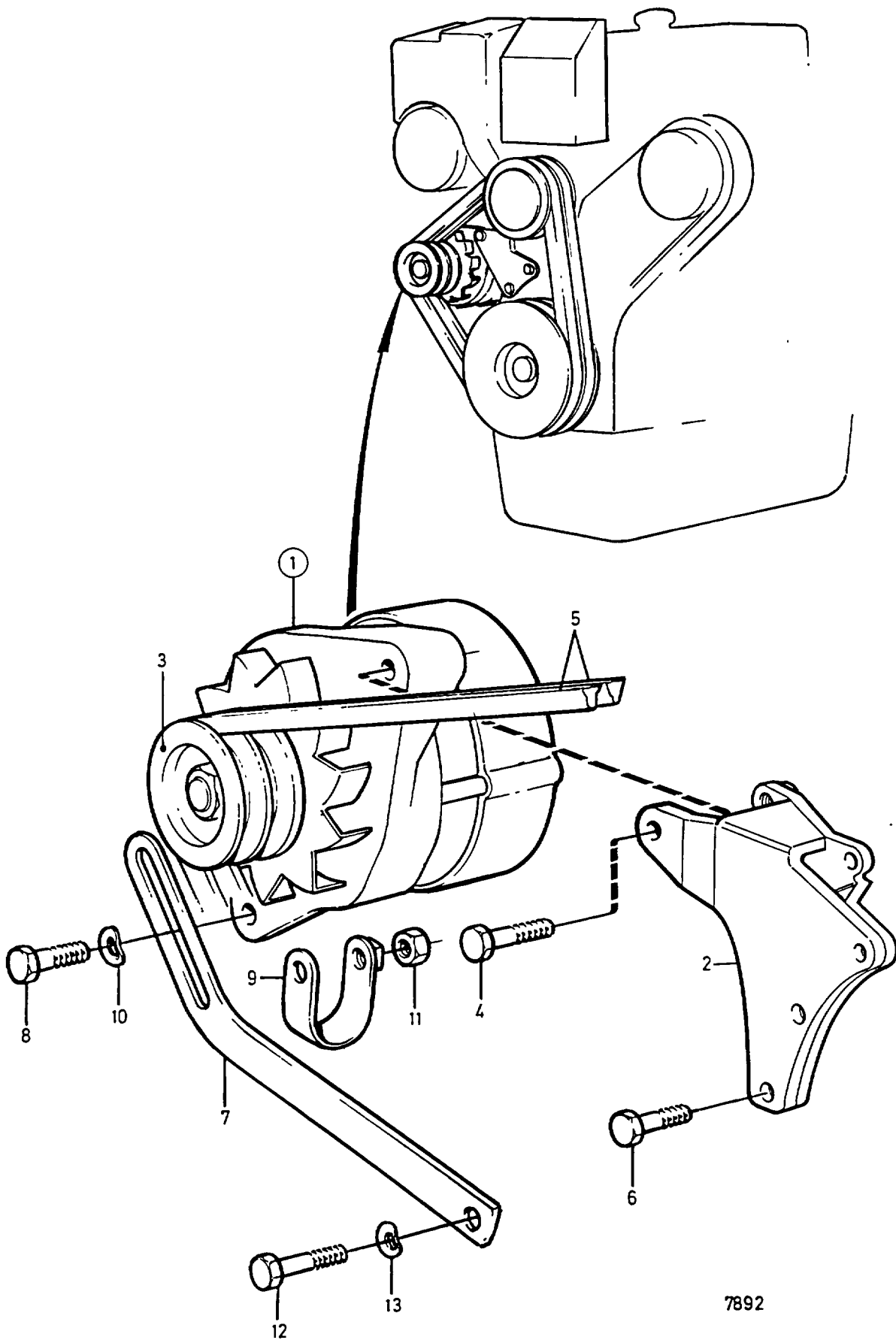
Sida Page		Grupp Group		Ombyggnadssats 24v		Custom built kit 24v		Illustration		
100		9		MD40A,TMD40A,TMD40B,TMD40C,AQD40A, TAMD40A,TAMD40B,AQAD40A,AQAD40B				7891 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
1	1	-	-	-		Generator .....	Alternator .....			SE SIDA 102,3-E09
2	1	-	-	-	955293-6	Skruv.....	Screw .....	0		
3	1	-	-	-	838987-6	Startmotor .....	Starter motor .....	7		
4	3	-	-	-	953067-6	.Detaljer.....	.Components... ..			SE GRUPP3
5	3	-	-	-	941908-6	Pinnskruv .....	Stud bolt.....	0		
6	3	-	-	-	955783-6	Fjädrande bricka .....	Resilient washer .....	0		
7	1	-	-	-	852986-9	Mutter .....	Nut .....	0		
8	1	-	-	-	852986-9	Stromskena .....	Contact strip .....	3	AQ	
9	1	-	-	-	829714-5	Tätning .....	Seal .....	2	AQ	
10	1	-	-	-	855314-1	Mutter .....	Nut .....	2	AQ	
11	1	-	-	-	941907-8	Fjädrande bricka .....	Resilient washer .....	0	AQ	
12	1	-	-	-	940199-3	Skruv .....	Screw .....	0	AQ	
13	1	-	-	-	855798-5	Skyddshylsa .....	Protecting sleeve .....	4	AQ	
14	1	-	-	-	853502-3	Sakring .....	Fuse .....	1	AQ	
15	1	-	-	-	853573-4	Sexkantmutter .....	Nut... ..	3	AQ	
16	1	-	-	-	853572-6	Skyddshatt .....	Cap .....	2	AQ	
17	1	-	-	-	941906-0	Fjädrande bricka .....	Resilient washer .....	0	AQ	
18	6	-	-	-	955781-0	Mutter .....	Nut.....	0	AQ	
19	1	-	-	-	838954-6	Glödstift .....	Glow plug .....	3		
20	6	-	-	-	1542296-7	Skena .....	Bar .....	4		
21	6	-	-	-	941905-2	Fjädrande bricka .....	Resilient washer .....	0		
22	6	-	-	-	955780-2	Mutter .....	Nut .....	0		
23	1	-	-	-	1542408-8	Skyddskåpa .....	Protecting cap .....	2		
24	1	-	-	-	838980-1	Forkopplingmotstånd .....	Series resistance.....	3		
25	3	-	-	-	858078-9	Konsol .....	Bracket .....	5		
26	1	-	-	-	955268-8	Skruv .....	Screw .....	0		
27	1	-	-	-	955318-1	Skruv .....	Screw .....	0		
28	1	-	-	-	955296-9	Skruv .....	Screw .....	0		
29	1	-	-	-	838955-3	Relä .....	Relay .....	2		
30	2	-	-	-	966689-2	Sakring .....	Fuse .....	0		
31	1	-	-	-	838955-3	Relä .....	Relay .....	2		
32	1	-	-	-	858058-1	Stoppmagnet .....	Stop solenoid .....	4		
33	1	-	-	-	243572-5	O-ring .....	O-ring .....	2		
34	1	-	-	-	843325-2	Temperaturgivare .....	Temperature sensor .....	2		
35	2	-	-	-	822858-7	Temperaturkontakt... ..	Temp contact .....	2		
36	1	-	-	-	957181-1	Packning .....	Gasket .....	1		
37	ERF	-	-	-	858036-7	Instr tavla .....	Instrument panel .....	6	SE GRUPP3	
38	1	-	-	-	843604-0	Instrumenttavla .....	Instrument panel .....		SE SIDA 86,3-D17	
39	1	-	-	-	858057-3	Kabelstock .....	Cable unit .....	6		
						Oljetrycksgivare... ..	Oil pressure sender .....		SE GRUPP3	

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Sida Page	Grupp Group	Generator med monteringsdetaljer			Alternator with installation components			Illustration	1470	
102	9	MD40A,TMD40A,TMD40B,TMD40C,AQD40A,TAMD40A,TAMD40B,AQAD40A,AQAD40B						7892 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit P S R	Anmärkning Notes	
1	1	-	-	-	845940-6	Vaxelströmgenerator ..	Alternator .....	6	ERSAV 849563	00
	-	-	-	-		.Detaljer... ..	.Components .....		SE GRUPP 3	004
	1	-	-	-	849563-2	Vaxelströmgenerator	Alternator.. ..	6		0050
	-	-	-	-		.Det.ej spec ... ..	.Comps.not spec.. ..			0051
2	1	-	-	-	858079-7	Konsol. ....	Bracket .....	5		0060
3	1	-	-	-		Remskiva .....	Pulley .....		SE GRUPP 2A	0080
4	1	-	-	-	955554-1	Skruv. ....	Screw .....	0		0100
5	ERF	-	-	-		Drivrem .....	Drive belt .....		SE GRUPP 2B	0120
6	2	-	-	-	965182-9	Skruv ..	Screw ..	0	L=80MM	0140
	1	-	-	-	100222-9	Skruv ...	Screw. .	0	L=85MM	0160
	1	-	-	-	965179-5	Skruv .....	Screw... ..	0	L=50MM	0180
7	1	-	-	-	845021-5	Spannjärn ..	Tension iron ..	5		0190
8	1	-	-	-	955298-5	Skruv .....	Screw .....	0		0220
9	1	-	-	-	466735-8	Spännögla ..	Tension eye ..	5		0240
10	1	-	-	-	191172-6	Bricka ..	Washer .....	0		0260
11	1	-	-	-	963106-0	Mutter. ....	Nut .....	0		0280
12	1	-	-	-	955036-9	Mutter .....	Nut .....	0		0300
13	1	-	-	-	941907-8	Fjädrande bricka .....	Resilient washer.....	0		0310



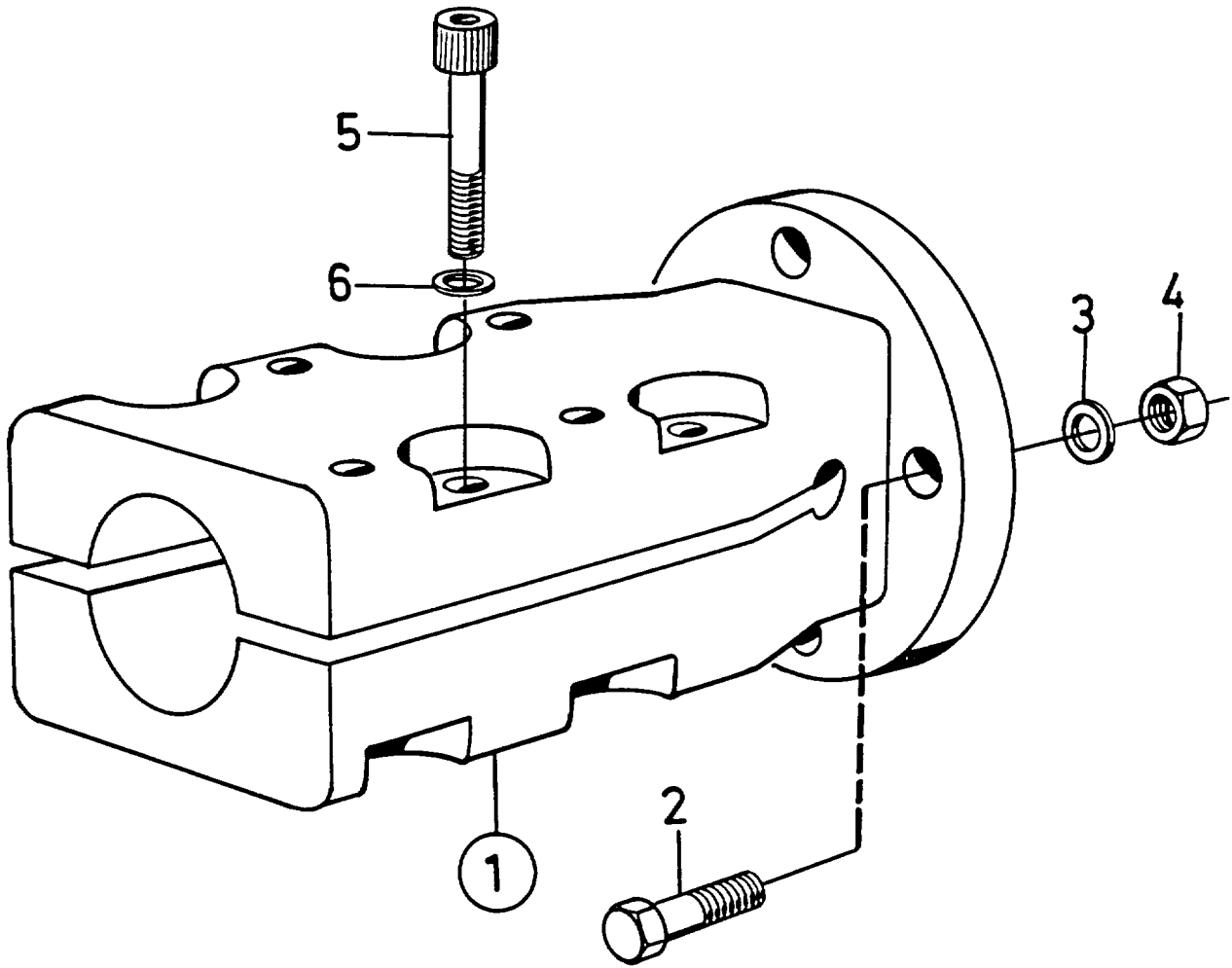
7892



Sida Page	Grupp Group	Klämkopplingsfläns 5"	Coupling flange 5"	Illustration 4623 1987-04	1600
104	9	GEM			

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	828 390	827 957	828 145	828 147							
1	1	-	-	-	828390-5	Klämkoppling .....	Coupling.....	6		27,227)	00
	-	1	-	-	827957-2	Klämkoppling .....	Coupling.....	6		28,227)	004
	-	-	1	-	828145-3	Klämkoppling .....	Coupling.....	6		31,228)	0060
	-	-	-	1	828147-9	Klämkoppling .....	Coupling.....	6		32,228)	0080
2	4	4	4	4	955693-7	•Skruv .....	•Screw .....	0		L=38MM	0100
	4	4	4	4	955691-1	•Skruv .....	•Screw .....	0		L=25MM	0120
3	4	4	4	4	941909-4	•Fjäderbricka .....	•Washer .....	0			0140
4	4	4	4	4	950375-6	•Mutter .....	•Nut .....	0			0160
5	8	8	8	8	948670-5	•Skruv .....	•Screw .....	0			0180
6	8	8	8	8	947345-5	•Bricka .....	•Washer .....	0			0200

- 27 . 30mm hål för propelleraxel. 30mm hole for propeller shaft.
- 28 . 35mm hål för propelleraxel. 35mm hole for propeller shaft.
- 31 . 40mm hål för propelleraxel. 40mm hole for propeller shaft.
- 32 . 45mm hål för propelleraxel. 45mm hole for propeller shaft.
- 227 . För backslag Borg warner For reverse gear Borg warner
- 228 . För backslag Borg warner och MS3. For reverse gear Borg warner and MS3.



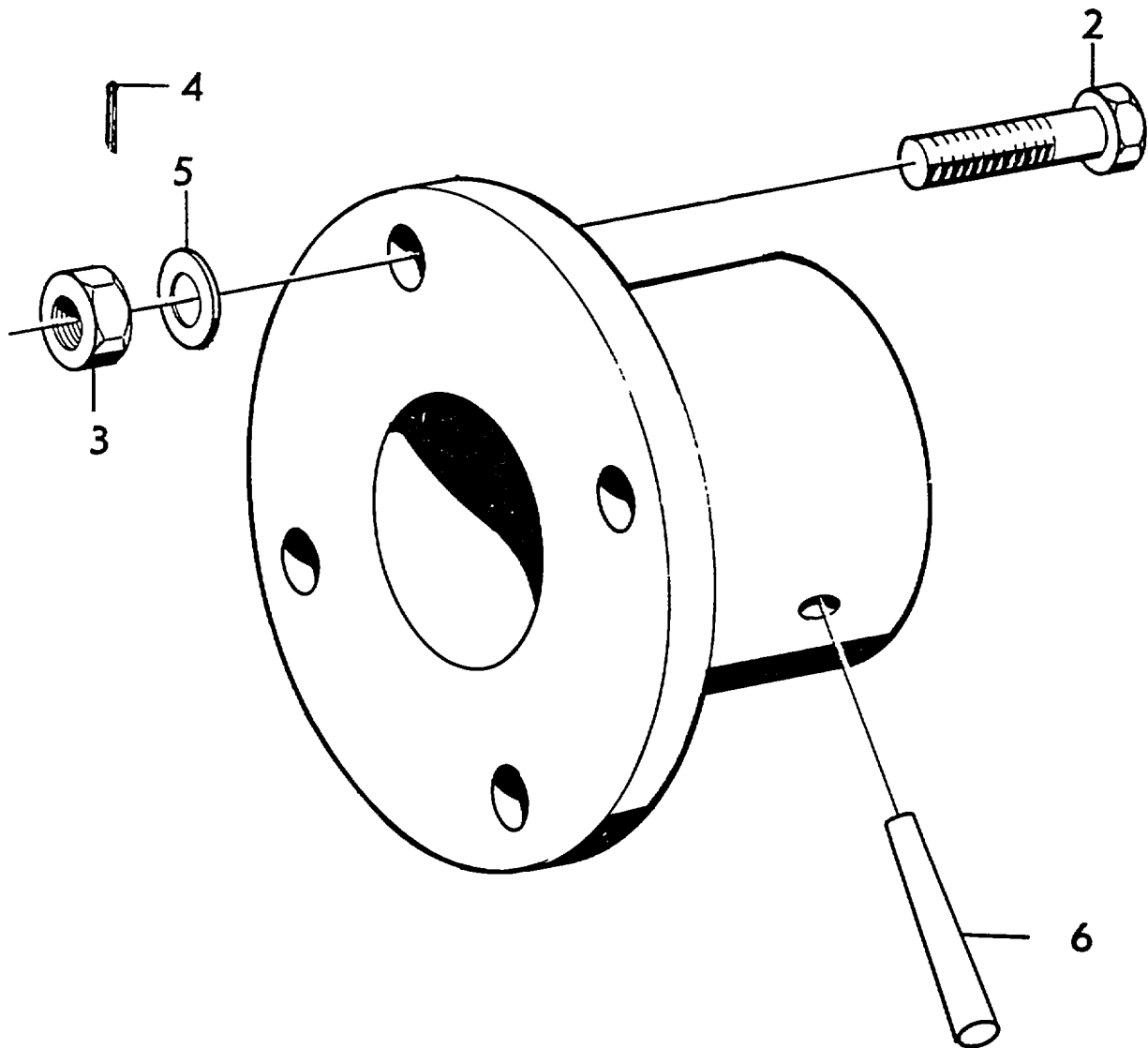
4623



Sida Page	Grupp Group	Propelleraxelfläns				Propeller shaft flange				Illustration 4624	1640
106	9	GEM								1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	828 388	829 279	829 281	819 105							
1	1	-	-	-	828388-9	Flans .....	Flange.....	6	28)		00'
	-	1	-	-	829279-9	Fläns .....	Flange .....	6	29)		00.
	-	-	1	-	829281-5	Fläns.....	Flange.....	6	32)		0060
	-	-	-	1	819105-8	Flans .....	Flange.....	6	34)		0080
2	4	4	4	4	955692-9	.Skruv.. ..	.Screw .....	0	L=32MM		0100
	-	4	4	4	955691-1	.Skruv.....	.Screw .....	0	L=25MM		0120
3	4	4	4	4	955883-4	.Mutter .....	.Nut .....	0			0140
4	4	4	4	4	907834-6	.Saxpinne ...	.Cotter pin.....	0			0160
5	4	4	4	4	941909-4	.Fjadrande bricka	.Resilient washer	0			0180
6	1	1	1	1	907617-5	.Pinne .....	.Pin .....	0			0200

- 28 . 35mm hål för propelleraxel. 35mm hole for propeller shaft.  
 29 . För reduktionsbackslag UTV 1,91:1. For reduction reverse gear ratio 1,91:1.  
 32 . 45mm hål för propelleraxel. 45mm hole for propeller shaft.  
 34 . BB115B spec 867160, 867180. BB115C. MD21A spec 867137. BB115B spec 867160, 867180, BB115C. MD21A spec 867137.

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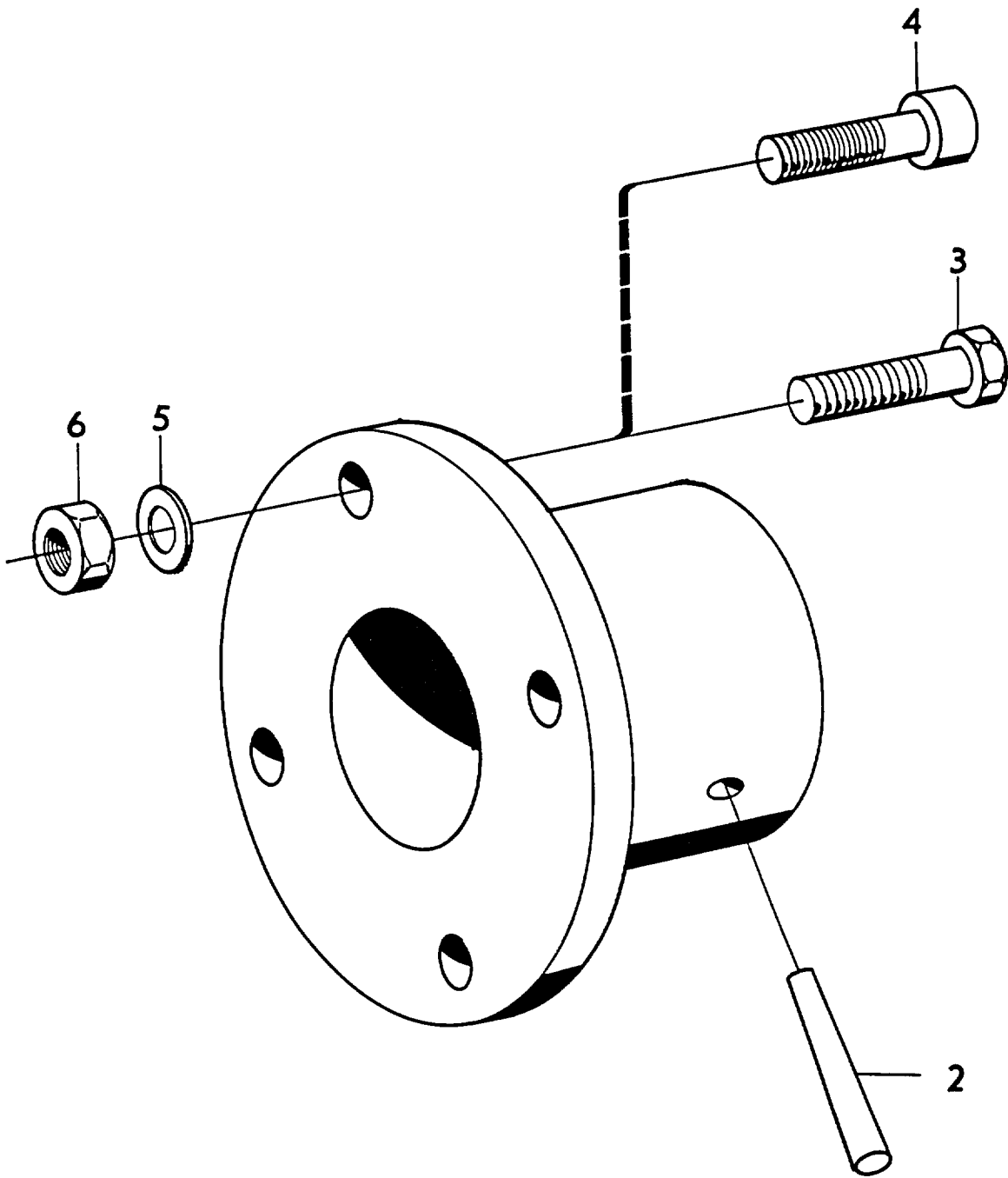
4624





Sida Page	Grupp Group	Propelleraxelflans			Propeller shaft flange			Illustration	1710		
108	9	GEM						3232 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	806383-6	Fläns.....	Flange.....	6	33)		0020
2	1	-	-	-	907599-5	•Pinne.....	•Pin.....	0			0040
3	4	-	-	-	955319-9	•Skruv.....	•Screw.....	0			0060
4	4	-	-	-	959239-5	•Skruv.....	•Screw.....	0			0080
5	4	-	-	-	941908-6	•Fjädrande bricka.....	•Resilient washer.....	0			0100
6	4	-	-	-	955783-6	•Mutter.....	•Nut.....	0			0120

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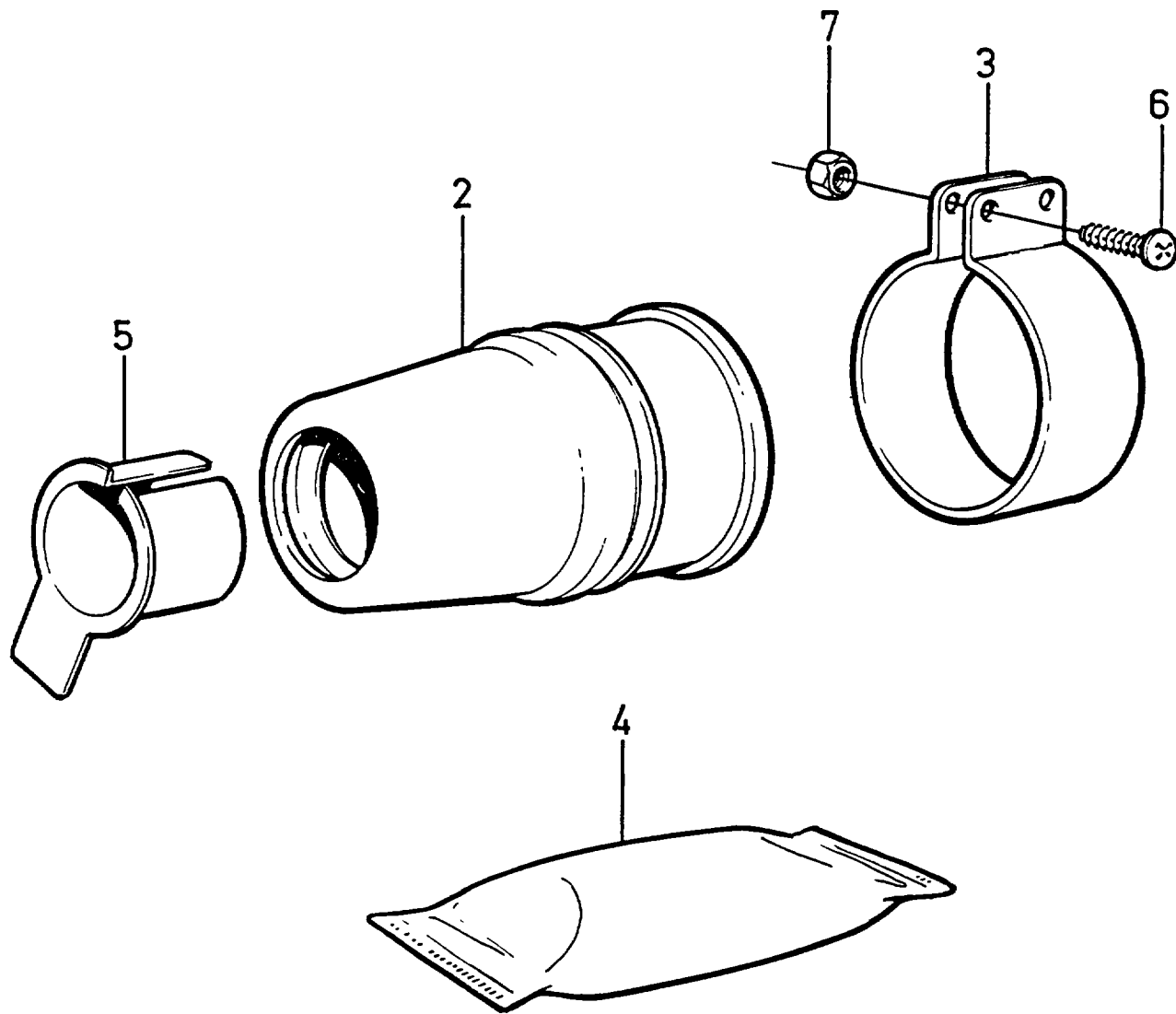


3232



Sida Page		Grupp Group		Propelleraxeltätning		Propeller shaft stuffing box		Illustration			
110		9		MD40A,TMD40A,TMD40B,TMD40C,TAMD40A,TAMD40B				6147 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
	828 254	828 422	828 526	828 527							
1	1	-	-	-	828254-3	Propelleraxeltätning . . .	Propeller shaft seal. . . . .	4		D=25 MM	0020
	-	1	-	-	828422-6	Propelleraxeltätning . . .	Propeller shaft seal. . . . .	4		D=30 MM	0040
	-	-	1	-	828526-4	Propelleraxeltätning . . .	Propeller shaft seal . . . .	4		D=35 MM	0060
	-	-	-	1	828527-2	Propelleraxeltätning . . .	Propeller shaft seal . . . .	4		D=40 MM	0080
2	1	1	1	1		.Tätningshylsa. . . . .	.Stuffing box.. . . . .	8			0100
3	1	-	-	-	828142-0	.Klamma. . . . .	.Clamp. . . . .	3			0120
	-	1	-	-	828418-4	.Klamma. . . . .	.Clamp. . . . .	3			0140
	-	-	-	1	828528-0	.Klamma. . . . .	.Clamp.. . . . .	3			0160
4	1	1	1	1	828250-1	.Fettkudde . . . . .	.Grease . . . . .	1			0180
5	1	1	1	1		.Monteringshylsa . . . . .	.Universal sleeve . . . . .	8			0200
6	2	2	2	2	949418-8	.Skruv. . . . .	.Screw . . . . .	8			20
7	2	2	2	2	966170-3	.Mutter. . . . .	.Nut. . . . .	0			0

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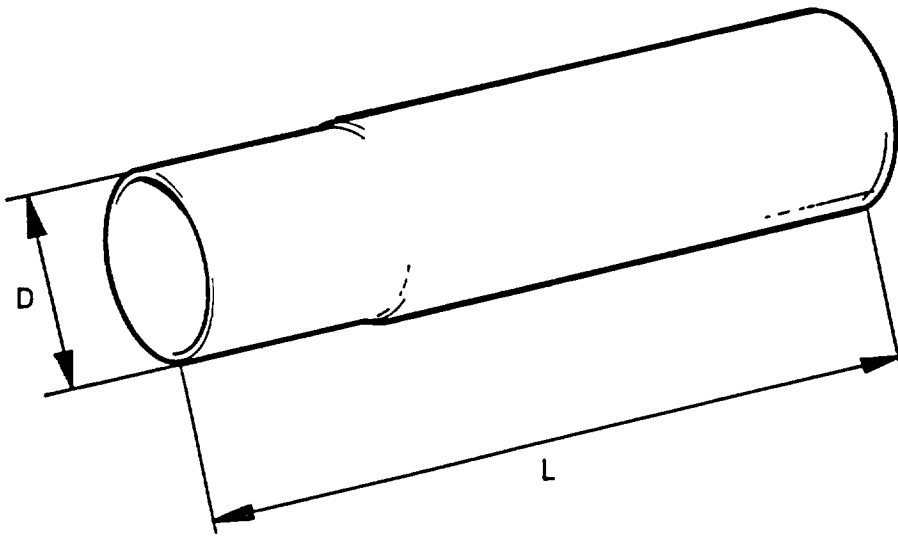
Publ. 4406

Reservdelskatalog  
Parts Catalogue

3-E19

**VOLVO  
PENTA**

Sida Page	Grupp Group	Propelleraxelhylsa			Propeller shaft sleeve			Illustration	1765	
112	9	GEM						8498		
								1987-04		
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	1140026-4	Hylsa... ..	Sleeve.....	4	D=25MM,L=1000MM	0020
	1	-	-	-	1140027-2	Hylsa... ..	Sleeve.....	4	D=25MM,L=1500MM	0040
	1	-	-	-	1140028-0	Hylsa... ..	Sleeve.....	4	D=30MM,L=1000MM	0060
	1	-	-	-	1140029-8	Hylsa... ..	Sleeve.....	4	D=30MM,L=1500MM	0080
	1	-	-	-	1140030-6	Hylsa... ..	Sleeve.....	4	D=35MM,L=750MM	0100
	1	-	-	-	1140031-4	Hylsa... ..	Sleeve.....	4	D=35MM,L=1000MM	0120
	1	-	-	-	1140032-2	Hylsa... ..	Sleeve.....	4	D=35MM,L=1500MM	0140

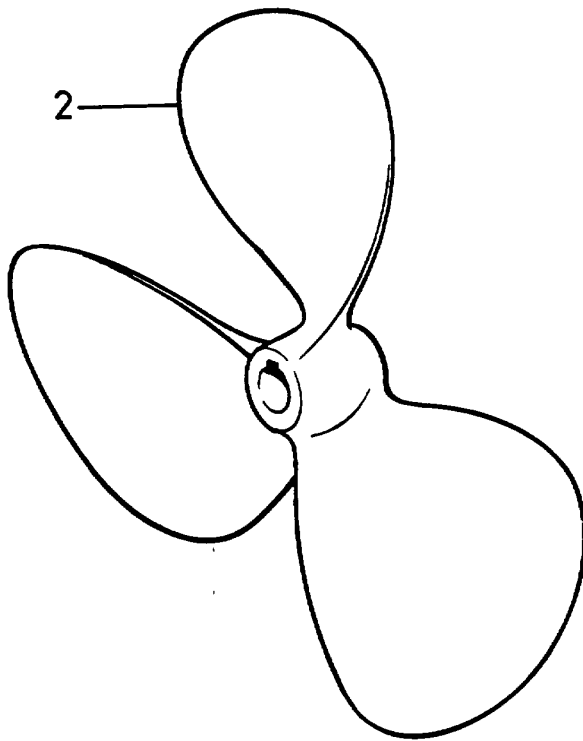
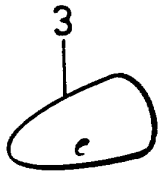
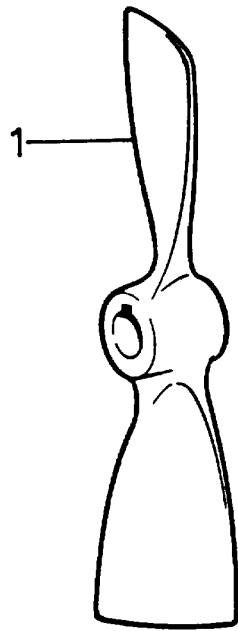


8678



Sida Page	Grupp Group	Propeller, brons zinkanoder		Propeller, bronze zinc anod		Illustration 6081 1987-04	1780	
114	9	GEM						
Pos Fig	Antal/Quantity			Artikel nr Part No	Benamning	Description	Sats Kit P S R	Anmärkning Notes
	LH	RH						
1	1	-	-	817461-7	Propeller	Propeller	8	13X10X25 0060
	1	-	-	817424-5	Propeller	Propeller	8	13X13X25 0080
	1	-	-	871507-0	Propeller	Propeller	8	14X9X25 0100
	1	-	-	816878-3	Propeller	Propeller	8	14X11X25 0120
	1	-	-	871509-6	Propeller	Propeller		15X9X25 0140
	1	-	-	871512-0	Propeller	Propeller		15X15X25 0180
	1	-	-	817126-6	Propeller	Propeller		16X13X25 0200
	1	-	-	871518-7	Propeller	Propeller	8	18X12X30 0220
	1	-	-	871502-1	Propeller	Propeller		18X13X35 0225
	1	-	-	871185-5	Propeller	Propeller		(871520)18X15X30 0240
2	1	-	-	871017-0	Propeller	Propeller		13X9X25 0
	1	-	-	871022-0	Propeller	Propeller		14X9X25 J
	1	-	-	871025-3	Propeller	Propeller		14X10X25 0380
	1	-	-	871618-5	Propeller	Propeller		(871034)14X13X25 0400
	1	-	-	871037-8	Propeller	Propeller	8	14X14X30 0440
	1	-	-	871043-6	Propeller	Propeller	8	15X10X30 0460
	1	-	-	871045-1	Propeller	Propeller	8	15X11X25 0
	1	-	-	871048-5	Propeller	Propeller	8	15X12X25 J
	1	-	-	871049-3	Propeller	Propeller	8	15X12X30 0540
	1	-	-	871051-9	Propeller	Propeller		15X13X25 0560
	1	-	-	871052-7	Propeller	Propeller	8	15X13X30 0580
	1	-	-	871620-1	Propeller	Propeller		(871055)15X14X25 0600
	1	-	-	871056-8	Propeller	Propeller	8	15X14X30 0620
	1	-	-	871069-1	Propeller	Propeller	8	16X9X30 0640
	1	-	-	871072-5	Propeller	Propeller	8	16X11X25 0660
	1	-	-	871075-8	Propeller	Propeller		16X12X25 0680
	1	-	-	871078-2	Propeller	Propeller	8	16X13X25 0720
	-	1	-	871210-1	Propeller	Propeller	8	16X13X30 0760
	1	-	-	871217-6	Propeller	Propeller		(871079)16X13X35 0780
	1	-	-	871218-4	Propeller	Propeller		(871086)16X15X35 0820
	1	-	-	871092-3	Propeller	Propeller	8	17X11X30 0840
	1	-	-	871219-2	Propeller	Propeller		(871107)17X11X35 0860
	1	-	-	871220-0	Propeller	Propeller		(871115)17X12X35 0905
	1	-	-	871109-5	Propeller	Propeller		17X13X25 0920
	1	-	-	871096-4	Propeller	Propeller	8	17X13X30 0940
	1	-	-	871090-7	Propeller	Propeller		17X13X35 0960
	1	-	-	871098-0	Propeller	Propeller	8	17X14X30 1020
	1	-	-	871222-6	Propeller	Propeller		(871099)17X14X35 5
	1	-	-	871102-0	Propeller	Propeller		17X15X35 J
	-	1	-	871116-0	Propeller	Propeller	8	17X15X35 1045
	1	-	-	871117-8	Propeller	Propeller	8	17X16X35 1046
	-	1	-	871335-6	Propeller	Propeller	8	19X12X35 1100
	1	-	-	871128-5	Propeller	Propeller	8	19X13X35 1120
	1	-	-	871149-1	Propeller	Propeller		19X13X40 0
	1	-	-	871228-3	Propeller	Propeller		(871150)19X15X40 J
	-	1	-	871213-5	Propeller	Propeller	8	19X15X40 1200
	1	-	-	871229-1	Propeller	Propeller		(871148)19X17X40 1240
	1	-	-	871162-4	Propeller	Propeller		21X13X35 1340
	1	-	-	871171-5	Propeller	Propeller		21X17X35 1380
	-	1	-	871188-9	Propeller	Propeller	8	23X13X40 1385
	1	-	-	871193-9	Propeller	Propeller		23X15X40 1400
	1	-	-	871190-5	Propeller	Propeller	8	23X15X45 1420
	1	-	-	871195-4	Propeller	Propeller	8	23X17X35 1440
3	1	1	-	833913-7	Zinkanod	Zinc anode	1 (65)	1600
	1	1	-	833913-7	Zinkanod	Zinc anode	1 (66)	1620
	1	1	-	833915-2	Zinkanod	Zinc anode	1 (67)	1640
	1	1	-	828140-4	Zinkanod	Zinc anode	1 (68)	1660

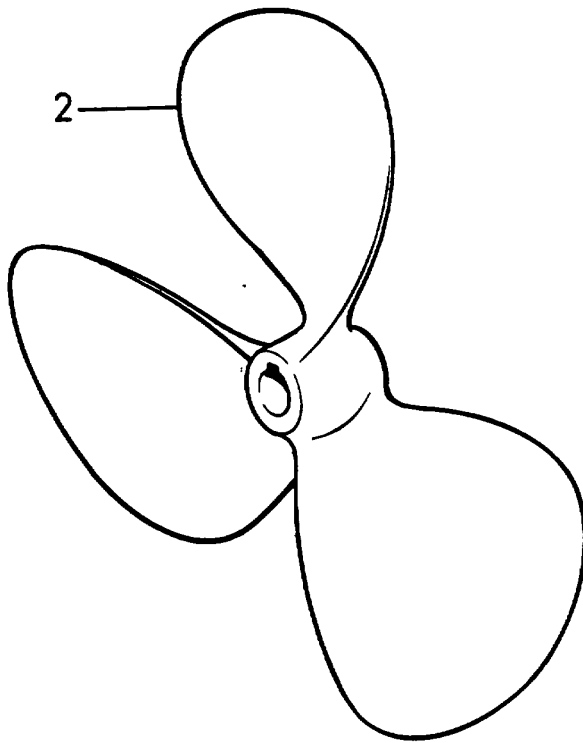
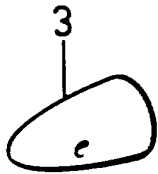
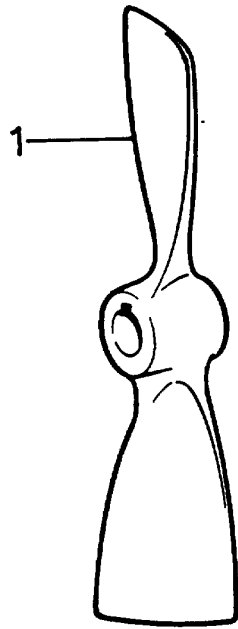
- 65. För axel diam. 25mm. For shaft diam. 25mm.
- 66. För axel diam. 30mm. For shaft diam. 30mm.
- 67. För axel diam. 35mm. For shaft diam. 35mm.
- 68. För axel diam. 40mm. For shaft diam. 40mm.





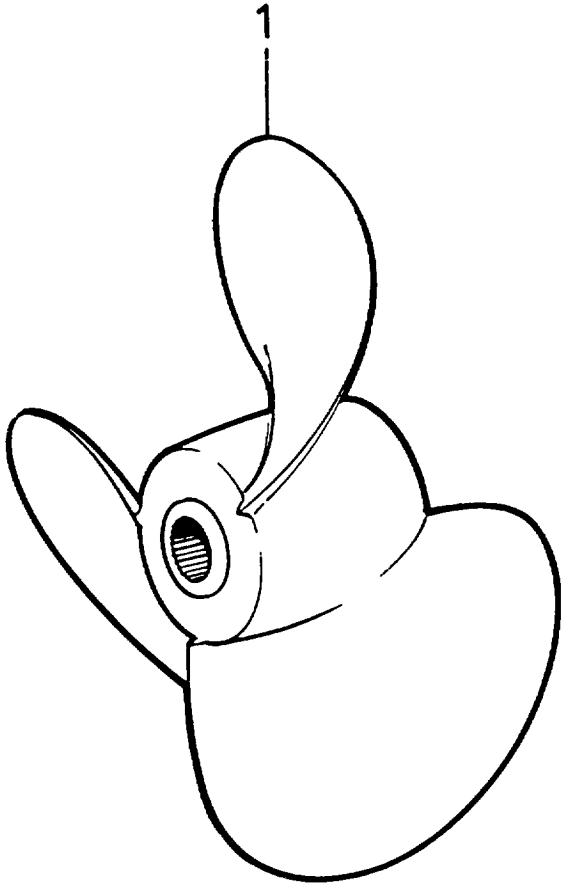
Sida Page	Grupp Group	Propeller, brons zinkanoder GEM		Propeller, bronze zinc anod		Illustration 6081 1987-04	1780				
116	9										
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	LH	RH									
	1	1	-	-	828140-4	Zinkanod	Zincanode	.	1	69)	1680

111  
112  
113  
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118  
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120



Sida Page	Grupp Group	Propeller, AQ				Propeller, AQ				Illustration	
118	9	GEM								6082 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
	LH	RH									
1	1	-	-	-	813279-7	Propeller	Propeller			14X10	002
	-	1	-	-	813280-5	Propeller	Propeller			14X10	004
	1	-	-	-	897626-8	Propeller	Propeller			14X11	0060
	1	-	-	-	813282-1	Propeller	Propeller			14X12	0080
	1	-	-	-	813284-7	Propeller	Propeller			14X13	0120
	-	1	-	-	813285-4	Propeller	Propeller			14X13	0140
	-	1	-	-	813286-2	Propeller	Propeller			14X14	0160
	-	1	-	-	813287-0	Propeller	Propeller			14X14	0180
	-	1	-	-	814626-8	Propeller	Propeller			197) 14X15	0200
	-	1	-	-	814631-8	Propeller	Propeller			197) 14X15	0220
	-	1	-	-	813291-2	Propeller	Propeller	8		14X16	0260
	-	1	-	-	814627-6	Propeller	Propeller			197) 14X17	0300
	-	1	-	-	814632-6	Propeller	Propeller			197) 14X17	0300
	-	1	-	-	813364-7	Propeller	Propeller	8		14X18	0320
	-	1	-	-	813365-4	Propeller	Propeller	8		14X18	0340
	-	1	-	-	814628-4	Propeller	Propeller			197) 14X19	0360
	-	1	-	-	814633-4	Propeller	Propeller			197) 14X19	0380
	-	1	-	-	850781-6	Propeller	Propeller	8		198) 14X19	0400
	-	1	-	-	813304-3	Propeller	Propeller			14X20	0420
	-	1	-	-	813368-8	Propeller	Propeller			14X20	0440
	-	1	-	-	814629-2	Propeller	Propeller			197) 14X21	0460
	-	1	-	-	814634-2	Propeller	Propeller			197) 14X21	0480
	-	1	-	-	850782-4	Propeller	Propeller			198) 14X21	0500
	-	1	-	-	851138-8	Propeller	Propeller			6,197) 14X21	0520
	-	1	-	-	851139-6	Propeller	Propeller			6,197) 14X21	0540
	-	1	-	-	839569-1	Propeller	Propeller			197) 14X23	0560
	-	1	-	-	839570-9	Propeller	Propeller			197) 14X23	0580
	-	1	-	-	851141-2	Propeller	Propeller			6,197) 14X23	0660
	-	1	-	-	851142-0	Propeller	Propeller			6,197) 14X23	0680
	-	1	-	-	813296-1	Propeller	Propeller			15X11	0740
	-	1	-	-	813297-9	Propeller	Propeller			15X11	0760
	-	1	-	-	813316-7	Propeller	Propeller			15X13	0800
	-	1	-	-	813317-5	Propeller	Propeller			15X13	0820
	-	1	-	-	813345-6	Propeller	Propeller			15X14	0860
	-	1	-	-	814611-0	Propeller	Propeller			197) 15X15	0880
	-	1	-	-	814615-1	Propeller	Propeller			197) 15X15	0900
	-	1	-	-	814612-8	Propeller	Propeller			197) 15X17	0960
	-	1	-	-	814616-9	Propeller	Propeller			197) 15X17	0980
	-	1	-	-	851124-8	Propeller	Propeller			6,197) 15X17	1000
	-	1	-	-	851125-5	Propeller	Propeller			6,197) 15X17	1020
	-	1	-	-	850864-0	Propeller	Propeller			6,197) 15X19	1040
	-	1	-	-	850865-7	Propeller	Propeller			6,197) 15X19	1060
	-	1	-	-	850866-5	Propeller	Propeller			6,197) 15X21	1080
	-	1	-	-	850867-3	Propeller	Propeller			6,197) 15X21	1100
	-	1	-	-	851035-6	Propeller	Propeller			6,197) 16X13	1160
	-	1	-	-	851036-4	Propeller	Propeller			6,197) 16X13	1200
	-	1	-	-	851037-2	Propeller	Propeller			6,197) 16X15	1240
	-	1	-	-	851038-0	Propeller	Propeller			6,197) 16X15	1260
	-	1	-	-	832606-8	Propeller	Propeller	8		16X16	1280
	-	1	-	-	851039-8	Propeller	Propeller			6,197) 16X17	1320
	-	1	-	-	851040-6	Propeller	Propeller			6,197) 16X17	1340
	-	1	-	-	852493-6	Propeller	Propeller	8		6,198) 16X17	1380
	-	1	-	-	852612-1	Propeller	Propeller			6,197) 16X19	1400
	-	1	-	-	852613-9	Propeller	Propeller			6,197) 16X19	1420
	-	1	-	-	852633-7	Propeller	Propeller			6,197) 16X21	1440
	-	1	-	-	852634-5	Propeller	Propeller			6,197) 16X21	1460
	-	1	-	-	852490-2	Propeller	Propeller			6,197) 16X23	1500
	-	1	-	-	852491-0	Propeller	Propeller			6,197) 16X23	1520

6. Långt nav. Long hub.  
197. HIGH SPEED. HIGH SPEED.  
198. CUP, HIGH SPEED. CUP, HIGH SPEED.



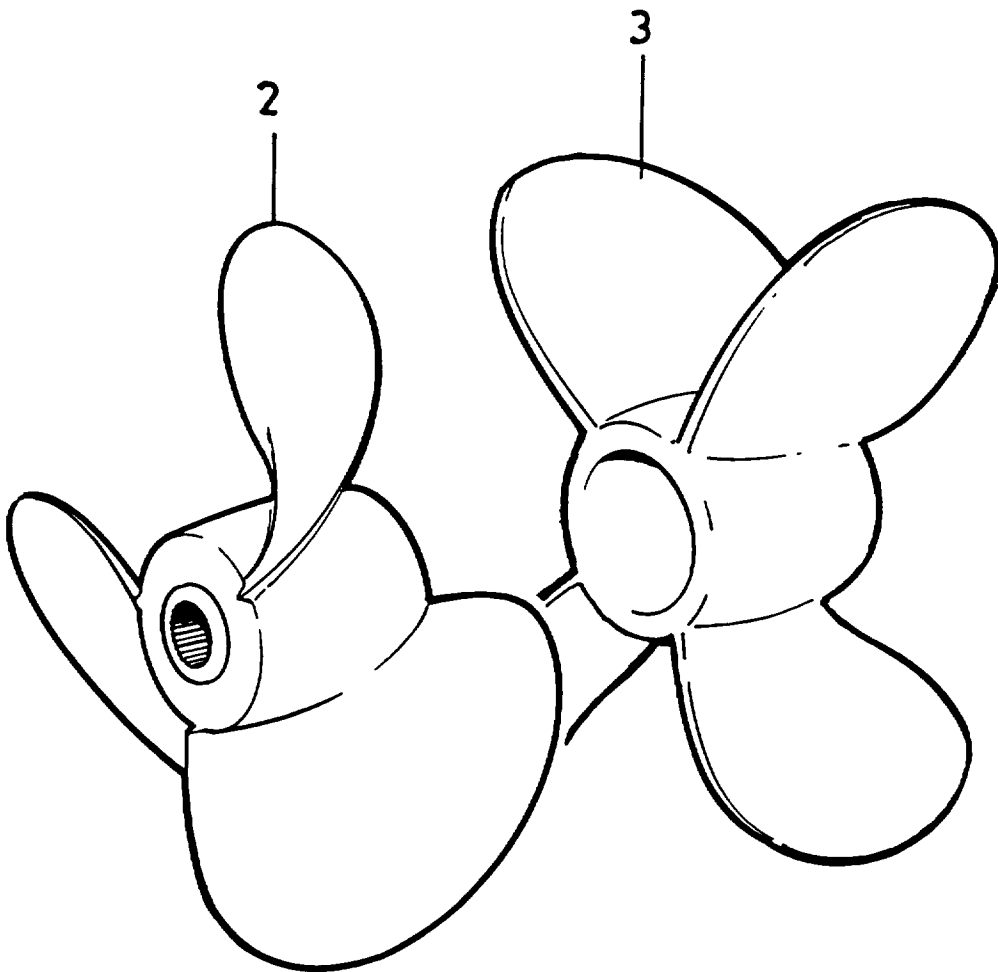
6082



Sida Page	Grupp Group	Propeller, Duoprop		Propeller, Duoprop		Illustration	1786				
120	9	GEM				7081 1987-04					
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	852681-6	Propellersats .....	Propeller kit .....			71)	002'
2	1	-	-	-	852247-6	.Propeller,3 blad .....	.Propeller,3 blades .....				004,
3	1	-	-	-	852249-2	.Propeller,4 blad .....	.Propeller,4 blades .....				0060
	1	-	-	-	852682-4	Propellersats .....	Propeller kit .....			72)	0080
	1	-	-	-	852243-5	.Propeller,3 blad .....	.Propeller,3 blades .....				0100
	1	-	-	-	852245-0	.Propeller,4 blad .....	.Propeller,4 blades .....				0120
	1	-	-	-	852683-2	Propellersats .....	Propeller kit .....			73)	0140
	1	-	-	-	852239-3	.Propeller,3 blad .....	.Propeller,3 blades .....				0160
	1	-	-	-	852241-9	.Propeller,4 blad .....	.Propeller,4 blades .....				0180
	1	-	-	-	852684-0	Propellersats .....	Propeller kit .....			74)	0200
	1	-	-	-	852235-1	.Propeller,3 blad .....	.Propeller,3 blades .....				20
	1	-	-	-	852237-7	.Propeller,4 blad .....	.Propeller,4 blades .....				40
	1	-	-	-	852685-7	Propellersats .....	Propeller kit .....			75)	0260
	1	-	-	-	852231-0	.Propeller,3 blad .....	.Propeller,3 blades .....				0280
	1	-	-	-	852233-6	.Propeller,4 blad .....	.Propeller,4 blades .....				0300
	1	-	-	-	852680-8	Propellersats .....	Propeller kit .....			76)	0320
	1	-	-	-	852251-8	.Propeller,3 blad .....	.Propeller 3 blades .....				340
	1	-	-	-	852253-4	.Propeller,4 blad .....	.Propeller,4 blades .....				30
	1	-	-	-	852679-0	Propellersats .....	Propeller kit .....			77)	0380
	1	-	-	-	852259-1	.Propeller,3 blad .....	.Propeller,3 blades .....				0400
	1	-	-	-	852261-7	.Propeller,4 blad .....	.Propeller,4 blades .....				0420
	1	-	-	-	852678-2	Propellersats .....	Propeller kit .....			78)	0440
	1	-	-	-	852263-3	.Propeller,3 blad .....	.Propeller,3 blades .....				0460
	1	-	-	-	852265-8	.Propeller,4 blad .....	.Propeller,4 blades .....				0480
	1	-	-	-	852677-4	Propellersats .....	Propeller kit .....			79)	0500
	1	-	-	-	852267-4	.Propeller,3 blad .....	.Propeller,3 blades .....				0520
	1	-	-	-	852269-0	.Propeller,4 blad .....	.Propeller,4 blades .....				0540
	1	-	-	-	852676-6	Propellersats .....	Propeller kit .....			80)	0560
	1	-	-	-	852271-6	.Propeller,3 blad .....	.Propeller,3 blades .....				058
	1	-	-	-	852273-2	.Propeller,4 blad .....	.Propeller,4 blades .....				060

71. Typnr A1, Färgmärkning=ljusblå. Type No A1, Colour marked=light blue.  
 72. Typnr A2, Färgmärkning=gul. Type No A2, Colour marked=yellow.  
 73. Typnr A3, Färgmärkning=rod. Type No A3, Colour marked=red.  
 74. Typnr A4, Färgmärkning=mörkgrön. Type No A4, Colour marked=dark green.  
 75. Typnr A5, Färgmärkning=ljusbrun. Type No A5, Colour marked=light brown.  
 76. Typnr A6, Färgmärkning=orange. Type No A6, Colour marked=orange.  
 77. Typnr A7, Färgmärkning=ljusgrön. Type No A7, Colour marked=light green.  
 78. Typnr A8, Färgmärkning=mörklila. Type No A8, Colour marked=purple.  
 79. Typnr A9, Färgmärkning=mörkblå. Type No A9, Colour marked=dark blue.  
 80. Typnr A10, Färgmärkning=mörkbrun. Type No A10, Colour marked=dark brown.

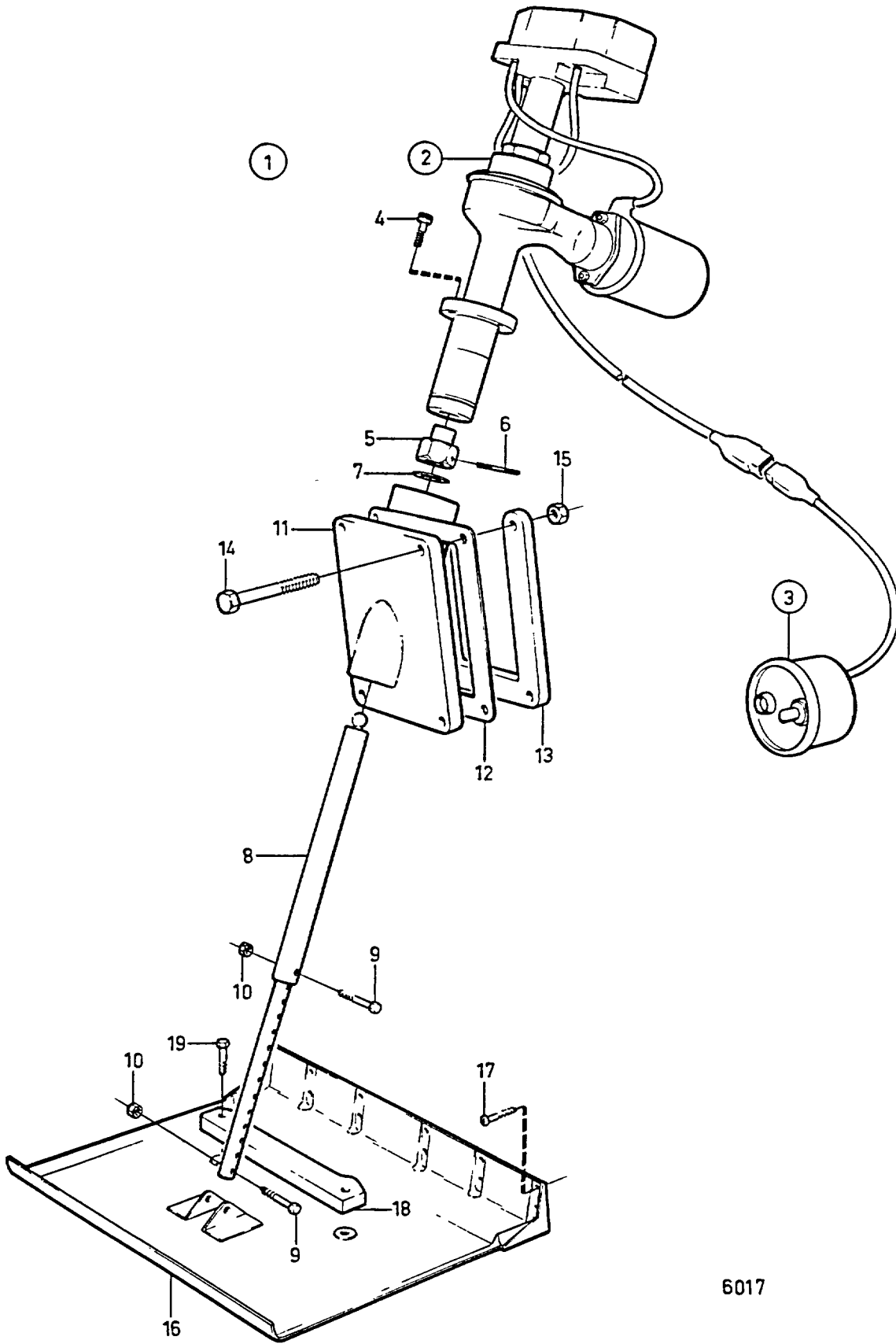
①



7081



Sida Page	Grupp Group	Trimplan	Trim tabs	Illustration	1800						
122	9	GEM		6017 1987-04							
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	851 350										
1	1	-	-	-	851350-9	Trimplan .....	Trim tab .....	8			0020
2	1	-	-	-	850957-2	.Elmekanisk lyft..... ..Det se sida 124, 3-F07 .....	.Electro-mech lift..... ..Comp page 124, 3-F07 .....	7		ERS AV 853520	0040
	-	-	-	-							0060
	1	-	-	-	853520-5	.Elmekanisk lyft..... ..Det se sida 124, 3-F07 .....	.Electro-mech lift..... ..Comp page 124, 3-F07 .....	7			0065
	-	-	-	-							0066
3	1	-	-	-	850375-7	.Instrumenttavla..... ..Det se sida 126, 3-F09 .....	.Instrument panel..... ..Comp page 126, 3-F09 .....	6			0080
	-	-	-	-							0100
4	4	-	-	-	956568-0	.Skruv .....	.Screw .....	0			0120
5	2	-	-	-	827267-6	.Kulled.....	.Ball joint.....	5			0140
6	2	-	-	-	943793-0	.Rörpinne.....	.Pin .....	0			0160
7	2	-	-	-	827268-4	.Låsring .....	.Circlip .....	3			0180
8	2	-	-	-	827544-8	.Tryckstång.....	.Push rod.....	6			0200
9	2	-	-	-	963559-0	.Skruv .....	.Screw .....	0			0220
10	2	-	-	-	966170-3	.Mutter .....	.Nut .....	0			0240
11	2	-	-	-	827264-3	.Trimplanhus .....	.Trim tab housing .....	6			0260
12	2	-	-	-	827269-2	.Packning.....	.Gasket .....	2			0280
13	2	-	-	-	827265-0	.Flans .....	.Flange .....	6			0300
14	12	-	-	-	191844-0	.Skruv .....	.Screw .....	0			0320
15	12	-	-	-	950364-0	.Mutter .....	.Nut .....	0			0340
16	2	-	-	-	827324-5	.Trimplan.....	.Trim tab.....	6			0360
17	24	-	-	-	943790-6	.Skruv .....	.Screw .....	0			0380
18	2	-	-	-	832598-7	.Zinkelektrod .....	.Zinc electrode.....	1			0400
19	4	-	-	-	940171-2	.Skruv .....	.Screw .....	0			0420



6017

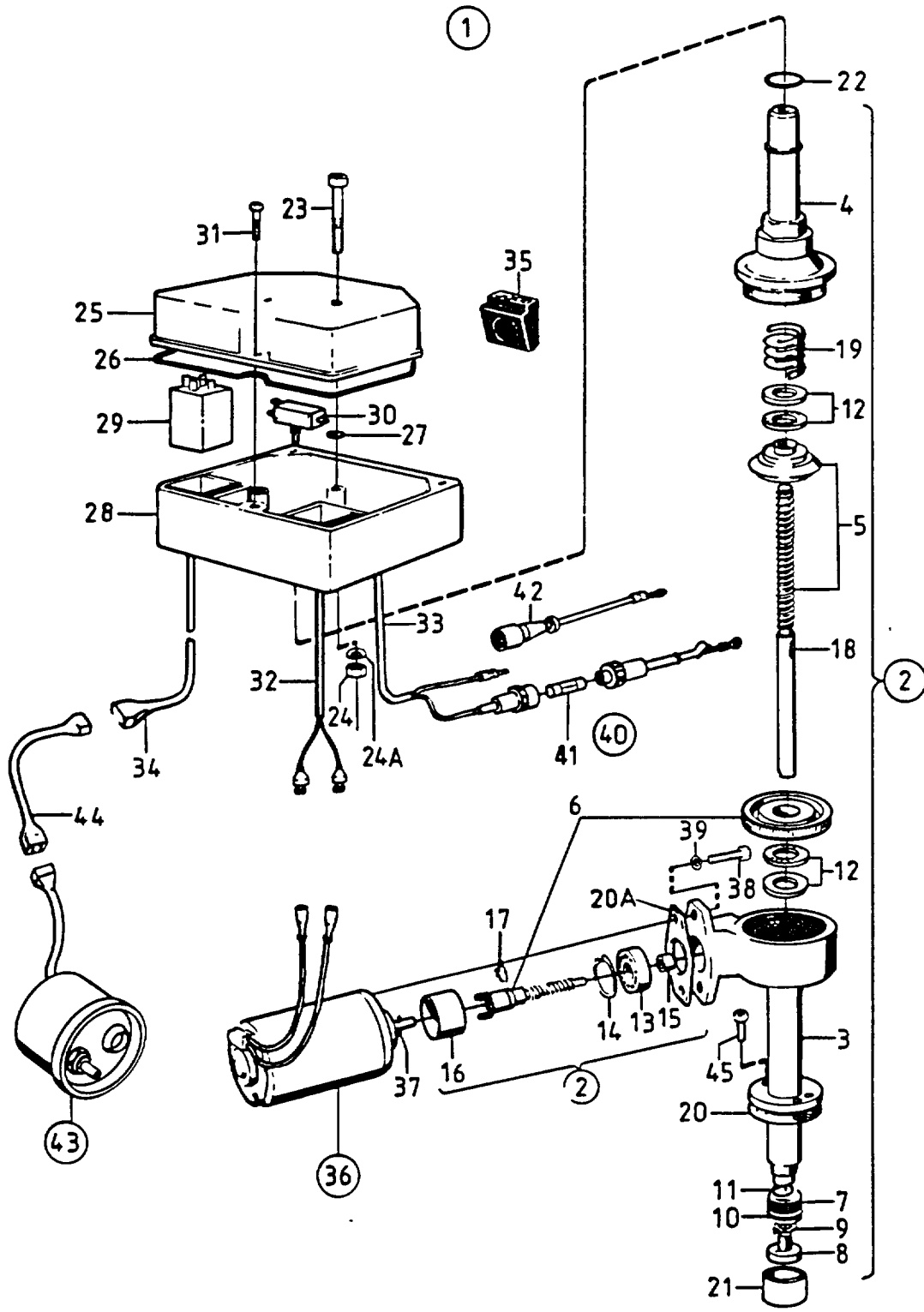




Sida Page	Grupp Group	Mekanisk lyftanordning AQ drev 280 AQAD40A, AQAD40B	Mechanical lift device AQ drive unit 280	Illustration 5372 1987-04	2000
124	9				

Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	850 957	853 520								
1	1	-	-	850957-2	El-mekanisk lyft.	El-mechanical lift .....		7	ERS AV 853520	0020
	-	1	-	853520-5	El-mekanisk lyft.	El-mechanical lift .....		7	12V	0030
2	1	1	-	839433-0	Lyftanordning	Lifting device .....		6		0040
3	1	1	-	897658-1	Lagerhus	Bearing housing .....		6		0060
4	1	1	-	839403-3	Overdel	Upper sect .....		6		0080
5	1	1	-	875351-9	Skruvstång	Screw spindle set .....		5		0100
6	1	1	-	875352-7	Snackhjulssats	Worm screw set .....		5		0120
7	1	1	-	897664-9	Tätningmutter	Seal nut .....		3		0140
8	1	1	-	814219-2	Tryckplatta	Pressure plate .....		4		0160
9	1	1	-	814218-4	Bricka	Washer .....		3		0180
10	1	1	-	925060-6	O-ring	O-ring .....	S	0		0200
11	1	1	-	955977-4	Gummiring	Ring .....	S	0		0
12	2	2	-	19280-7	Kullager	Ball bearing .....		2		0240
13	1	1	-	181424-3	Kullager	Ball bearing .....		2		0260
14	1	1	-	914515-2	Låsring	Lock ring .....		0		0280
15	1	1	-	897667-2	Bussning	Bushing .....		3		0300
16	1	1	-	897762-1	Styrring	Guide ring .....		3		0320
17	1	1	-	914446-0	Låsring	Lock ring .....		0		0
18	1	1	-	909838-5	Kil	Key .....		0		0360
19	1	1	-	897666-4	Fjäder	Spring .....		4		0380
20	1	1	-	814304-2	Packning	Gasket .....		2		0400
20a	1	1	-	851480-4	Packning	Gasket .....		2	SEN UTF	0410
21	1	1	-	832153-1	Stödring	Guide ring .....		3		0420
22	1	1	-	955995-6	Packning	Gasket .....		0		0440
23	2	2	-	959327-8	Skruv	Screw .....		0		0460
24	2	2	-	940092-0	Mutter	Nut .....		0		0480
24a	2	2	-	941905-2	Bricka	Washer .....		0		0500
25	1	1	-	839330-8	Lock	Cover .....		6		0520
26	1	1	-	946438-9	O-ring	O ring .....		0		054C
27	2	2	-	852088-4	O-ring	O-ring .....		2		0560
28	1	1	-	839331-6	Relahus	Relay housing .....		6		0580
29	2	2	-	853518-9	Relasats	Relay kit .....		1		0600
	2	2	-	876039-9	Reläsats	Relä sats .....		2		0610
30	1	1	-	850710-5	Strombrytare	Switch .....		3		0620
31	3	3	-	955119-3	Skruv	Scren .....		0		0640
32	1	1	-	850896-2	Kabelstock	Cable unit .....		6		0660
33	1	1	-	850955-6	Kabelstock	Cable unit .....		6		0680
34	1	1	-	850717-0	Kabelstock	Cable unit .....		6		0700
35	2	2	-	850714-7	Kabelklamma	Cable clamp .....		4		0
36	1	1	-	850834-3	Motor	Engine .....		5		0740
37	1	1	-	944596-6	Stift	Pin .....		0		0760
38	2	2	-	956061-6	Skruv	Screw .....		0		0800
39	2	2	-	941904-5	Bricka	Washer .....		0		0820
	1	1	-	851126-3	Reparationssats	Repair kit .....		2		0830
40	1	1	-	850984-6	Hängsårkring	In-line fuse .....		3	TID UTF, USA	0
	1	1	-	850970-5	Sårkring	Fuse .....		3	SEN UTF, USA	0860
41	1	1	-	851120-6	Sårkring	Fuse .....		1	TID UTF, 30A	0880
	1	1	-	850965-5	Sårkring	Fuse .....		1	SEN UTF, 20A	0900
42	1	1	-	851002-6	Kabel	Cable .....		4	EXCL USA	0920
43	1	1	-	850375-7	Instrumenttavla	Instrument panel .....		6		0940
	-	-	-		Det se sida 126, 3-F09	Comp page 126, 3-F09 ..				0960
44	ERF	ERF	-	839177-3	Förlängningskabel	Extension cable .....		8	63) L=1250MM	0980
	ERF	ERF	-	839178-1	Förlängningskabel	Extension cable .....		6	L=2500MM	1000
	ERF	ERF	-	839179-9	Förlängningskabel	Extension cable .....		8	64) L=5000MM	1020
	ERF	ERF	-	839180-7	Förlängningskabel	Extension cable .....		6	L=7000MM	1040
45	2	2	-	956568-0	Skruv	Screw .....			SE GRUPP 4A	1060

63. ERS AV 839178. Replaced by 839178.  
64. ERS AV 839180. Replaced by 839180.

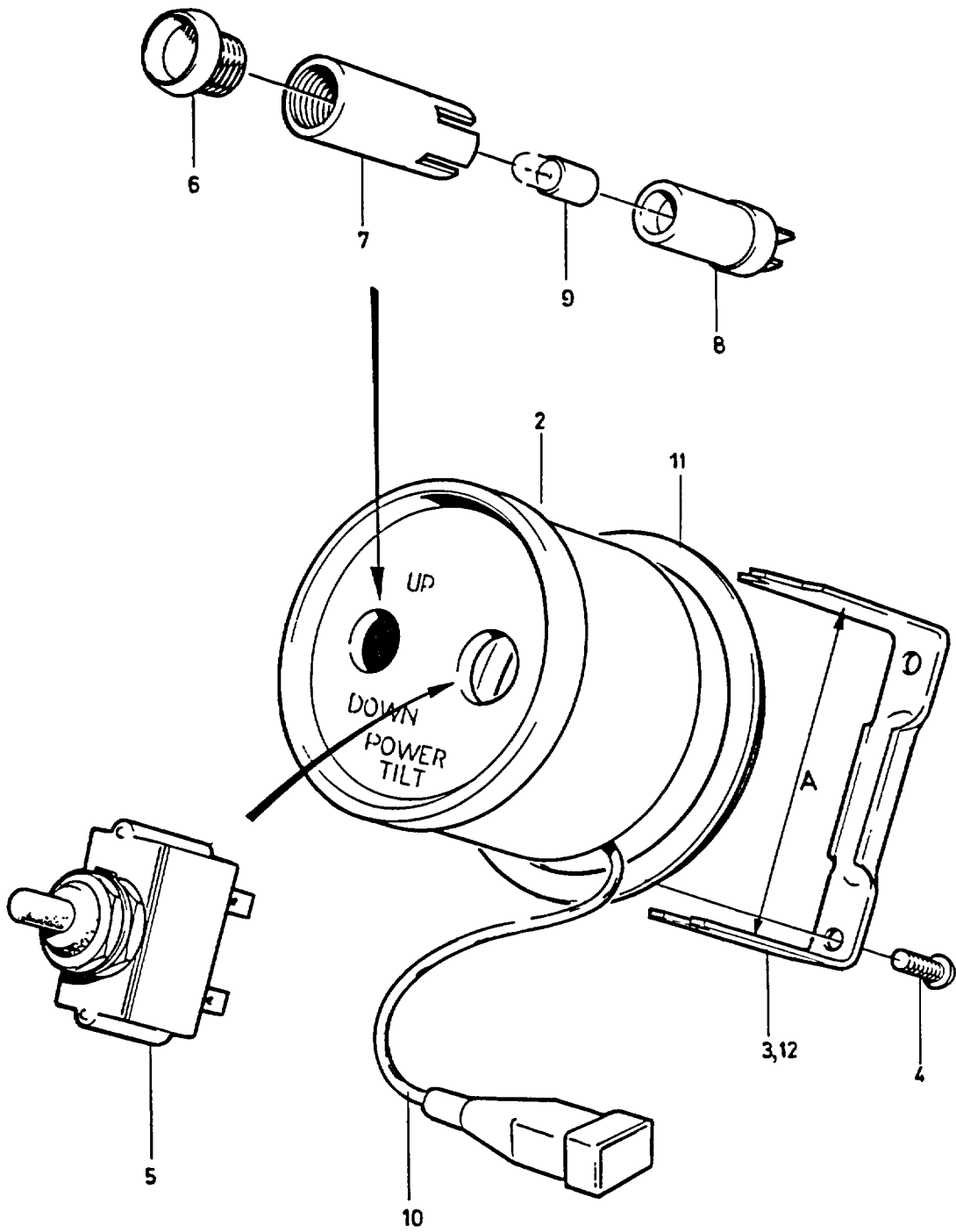


5372



Sida Page		Grupp Group		Instrumenttavla				Instrument panel			Illustration		2100
126		9									4656		
											1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes			
	850 375	850 376											
1	1	-	-	-	850375-7	Instrumenttavla... . . . .	Instrument panel. . . . .			12V	0020		
	-	1	-	-	850376-5	Instrumenttavla..... . . . .	Instrument panel... . . . .			24V	0040		
2	1	1	-	-		.Tavla .....	.Panel .....	8			0060		
3	1	1	-	-	850372-4	.Bygel .....	.Brace .....	5	A=60MM		0080		
4	2	2	-	-	944201-3	.Skruv .....	.Screw .....	0			0100		
5	1	1	-	-	814322-4	.Strömbrytare .....	.Switch .....	3			0120		
6	1	1	-	-	827766-7	.Konsol .....	.Bracket .....	4			0140		
7	1	1	-	-	819350-0	.Lamphylsa. . . . .	.Housing.....	4			0160		
8	1	1	-	-	808175-4	.Lamphållare . . . . .	.Bulb holder.....	4			0180		
9	1	-	-	-	19923-2	.Glödlampa . . . . .	.Lamp bulb.....	1	12V		0200		
	-	1	-	-	182059-6	.Lampa . . . . .	.Bulb.....	1	24V		0200		
10	1	1	-	-	839426-4	.Kabel .....	.Cable.....	6			J		
	-	-	-	-		..Kablar och kabelskor ..	..Cables and cable terminals		SEGRUPP3		0260		
11	1	1	-	-	843603-2	Mellanring .....	Ring .....	5	ALT		0300		
12	1	1	-	-	843602-4	Fästbygel .....	Attachment clamp.....	4	ALTA=65MM		0320		

1



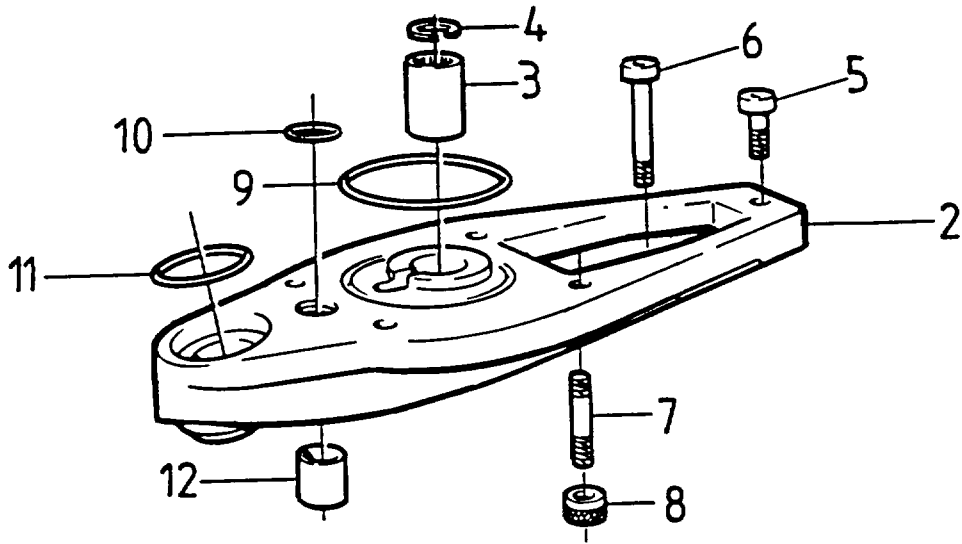
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**VOLVO**  
**PENTA**

Sida Page		Grupp Group		Förlängningssats			Extension set			Illustration		2250
128		9		AQD40A,AQAD40A,AQAD40B						8306		
										1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes		
	839 548											
1	1	-	-	-	839548-5	Förlängningssats .....	Extension kit.....	6		L=1"	0020	
2	1	-	-	-		.Mellandel .....	.Adapter.....	8			0040	
3	1	-	-	-	814135-0	.Hylsa.....	.Sleeve .....	4			0060	
4	1	-	-	-	914508-7	.Spårring.....	.Retaining ring.....	0			0080	
5	1	-	-	-	941873-2	.Skruv .....	.Screw .....	0			0100	
6	2	-	-	-	959448-2	.Skruv .....	.Screw .....	0			0120	
7	4	-	-	-	943762-5	.Pinnskruv .....	.Stud bolt.....	0			0140	
8	4	-	-	-	832939-3	.Mutter .....	.Nut .....	2			0160	
9	1	-	-	-	925256-0	.O-ring .....	.O-ring .....	0			0180	
10	1	-	-	-	125017-4	.O-ring .....	.O-ring .....	0			0200	
11	1	-	-	-	941820-3	.O-ring .....	.O-ring .....	0			1	
12	1	-	-	-	897823-1	.Rör .....	.Pipe .....	4			J	



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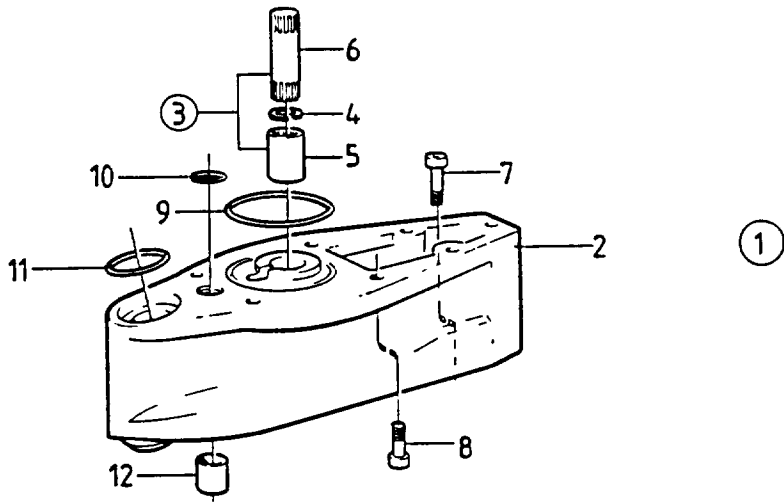
Reservdelskatalog  
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**VOLVO  
PENTA**

Sida Page		Grupp Group		Förlängningssats Extension set				Illustration 8307 1987-04		2260
130		9		AOD40A,AQAD40A,AQAD40B						
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	814318-2	Förlängningssats ... ..	Extension kit.....	6	L=4"	002
2	1	-	-	-		.Mellandel.....	.Adapter.....	8		004L
3	1	-	-	-	875183-6	.Splineshylsa .....	.Spline sleeve .....	4		0060
4	1	-	-	-	914508-7	..Spärring .....	..Retaining ring.....	0		0080
5	1	-	-	-	875183-6	..Hylsa.....	..Sleeve.....	8	(897368)	0100
6	1	-	-	-	814321-6	.Axel.....	.Shaft.....	5		0120
7	3	-	-	-	941809-6	.Skruv.....	.Screw.....	0		0140
8	4	-	-	-	941810-4	.Skruv.....	.Screw.....	0		0160
9	1	-	-	-	925256-0	.O-ring.....	.O-ring.....	0		0180
10	1	-	-	-	125017-4	.O-ring.....	.O-ring.....	0		0200
11	1	-	-	-	941820-3	.O-ring.....	.O-ring.....	0		'0
12	1	-	-	-	897823-1	.Rör.....	.Pipe.....	4		J

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8307

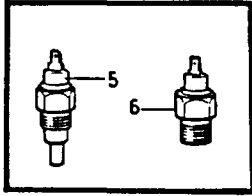
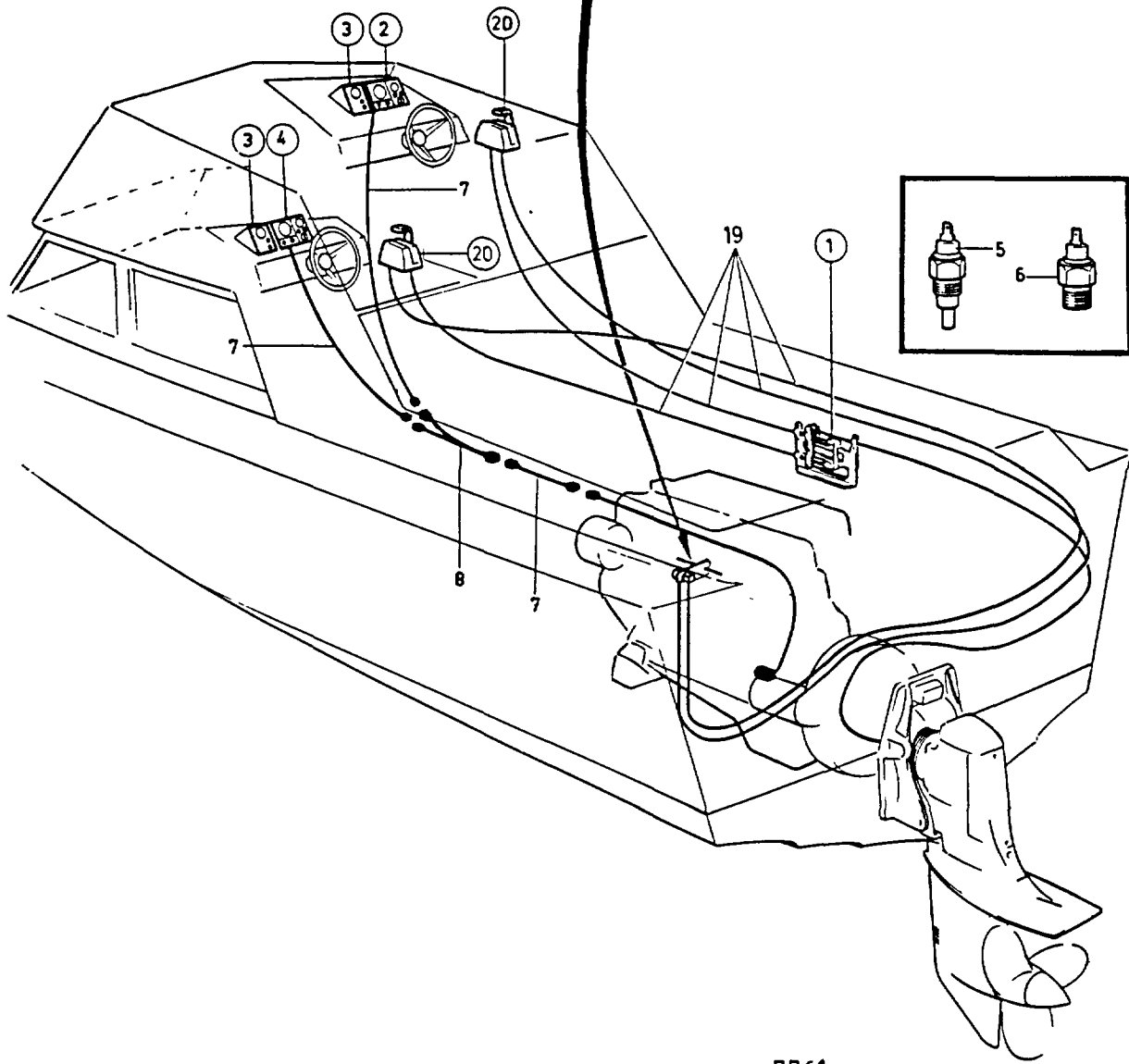
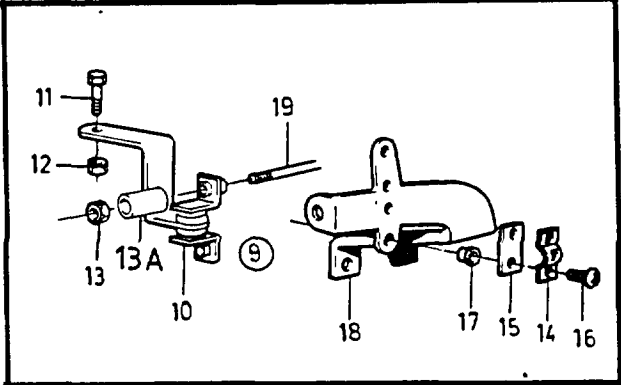




Sida Page	Grupp Group	Flying bridge, senare utförande Enkel motorinstallation		Flying bridge, late production Single engine installation		Illustration	2400				
132	9	GEM				7761					
						1987-04					
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	828164-4	Samplingsdon	Collection unit	6			0020
	-	-	-	-		.Det se sida 136, 3-F19.....	.Comp page 136, 3-F19.....				0040
2	1	-	-	-	843327-8	Instrumenttavla	Instrument panel	6	49)		0120
	-	-	-	-		.Det se sida 138, 3-F21 . . .	.Comp page 138, 3-F21 . . .				0140
3	1	-	-	-		Instrumenttavla	Instrument panel			SE SIDA 126, 3-F09	0160
4	1	-	-	-		instrumenttavla	instrument panel			SE GRUPP 3	0220
5	1	-	-	-		Temperaturgivare	Temperature sender			SE GRUPP 3	0240
6	1	-	-	-		Oljetrycksgivare	Oil pressure sender			SE GRUPP 3	0280
7	ERF	-	-	-		Kabelstock	Cable unit			SE GRUPP 3	0300
8	1	-	-	-		Kabelstock	Cable unit			SE GRUPP 3	0320
9	1	-	-	-	843551-3	Reglage	Control	6			0320
10	1	-	-	-	844035-6	.Reglagearm	.Control arm	6			0320
11	1	-	-	-	955270-4	.Skruv	.Screw	0			0560
12	1	-	-	-	946035-3	.Låsmutter	.Lock nut	0			0580
13	4	-	-	-	955844-6	.Mutter	.Nut	0			0600
13a	2	-	-	-	841035-9	.Distanshylsa	.Spacer sleeve	4			0610
14	1	-	-	-	819067-0	.Bygel	.Brace	4			0620
15	1	-	-	-	819068-8	.Bricka	.Washer	4			0620
16	2	-	-	-	956079-8	.Skruv	.Screw	0			0660
17	2	-	-	-	843108-2	.Bussning	.Bushing	3			0680
18	1	-	-	-	842996-1	Konsol	Bracket			SE GRUPP 2D	0700
19	ERF	-	-	-		Reglagekabel	Control cable			SE SIDA 62, 3-C17	0720
20	ERF	-	-	-		Reglage	Control			SE SIDA 50, 3-C05 SE SIDA 56, 3-C11	0740 0760

45. För lyftanordning. For lift device.

49. AQD40, TMD40, MD40 A QD40, TMD40, MD40.



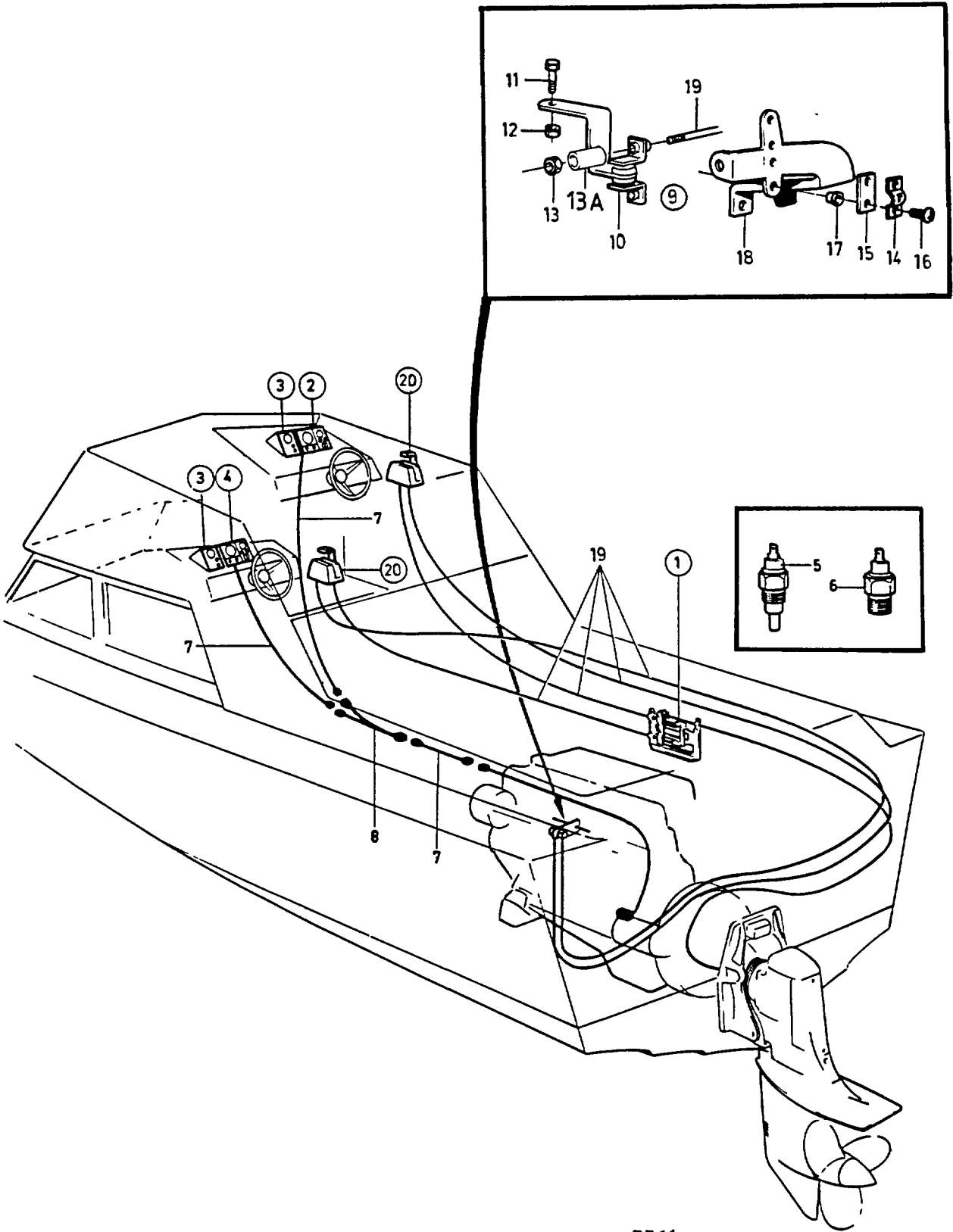
7761



Sida Page	Grupp Group	Flying bridge, senare utförande Dubbel motorinstallation GEM	Flying bridge late production twin engine installation	Illustration 7761 1987-04	2450						
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	2	-	-	-	828164-4	Samplingsdon .....	Collection unit .....	6			0020
	-	-	-	-		.Det se sida 136, 3-F19	.Comp page 136, 3-F19 .....				0040
2	2	-	-	-	843327-8	Instrumenttavla .....	Instrument panel .....	6	49)		0120
	-	-	-	-		.Det se sida 138, 3-F21 .....	.Comp page 138, 3-F21 .....				0140
3	2	-	-	-		Instrumenttavla .....	Instrument panel .....			SE SIDA 126, 3-F09	0160
4	2	-	-	-		instrumenttavla .....	instrument panel .....			SE GRUPP 3	0220
5	2	-	-	-		Temperaturgivare .....	Temperature sensor .....			SE GRUPP 3	0240
6	2	-	-	-		Oljetrycksgivare .....	Oil pressure sensor .....			SE GRUPP 3	0280
7	ERF	-	-	-		Kabelstock .....	Cable unit .....			SE GRUPP 3	0300
8	2	-	-	-		Kabelstock .....	Cable unit .....			SE GRUPP 3	0320
9	2	-	-	-	843551-3	Reglage .....	Control .....	6			0320
10	1	-	-	-	844035-6	.Reglagearm .....	.Control arm .....	6			0
11	1	-	-	-	955270-4	.Skruv .....	.Screw .....	0			0560
12	1	-	-	-	946035-3	.Låsmutter .....	.Lock nut .....	0			0580
13	4	-	-	-	955844-6	.Mutter .....	.Nut .....	0			0600
13a	2	-	-	-	841035-9	.Distanshylsa .....	.Spacer sleeve .....	4			0610
14	1	-	-	-	819067-0	.Bygel .....	.Brace .....	4			0620
15	1	-	-	-	819068-8	.Bricka .....	.Washer .....	4			0
16	2	-	-	-	956079-8	.Skruv .....	.Screw .....	0			0660
17	2	-	-	-	843108-2	.Bussning .....	.Bushing .....	3			0680
18	2	-	-	-	842996-1	Konsol .....	Bracket .....			SE GRUPP 2D	0700
19	ERF	-	-	-		Reglagekabel .....	Control cable .....			SE SIDA 62, 3-C17	0720
20	ERF	-	-	-		Reglage .....	Control .....			SE SIDA 50, 3-C05 SE SIDA 56, 3-C11	0740 0760

45. For lyftanordning. For lift device.

49. AQD40, TMD40, MD40 AQD40, TMD40, MD40.



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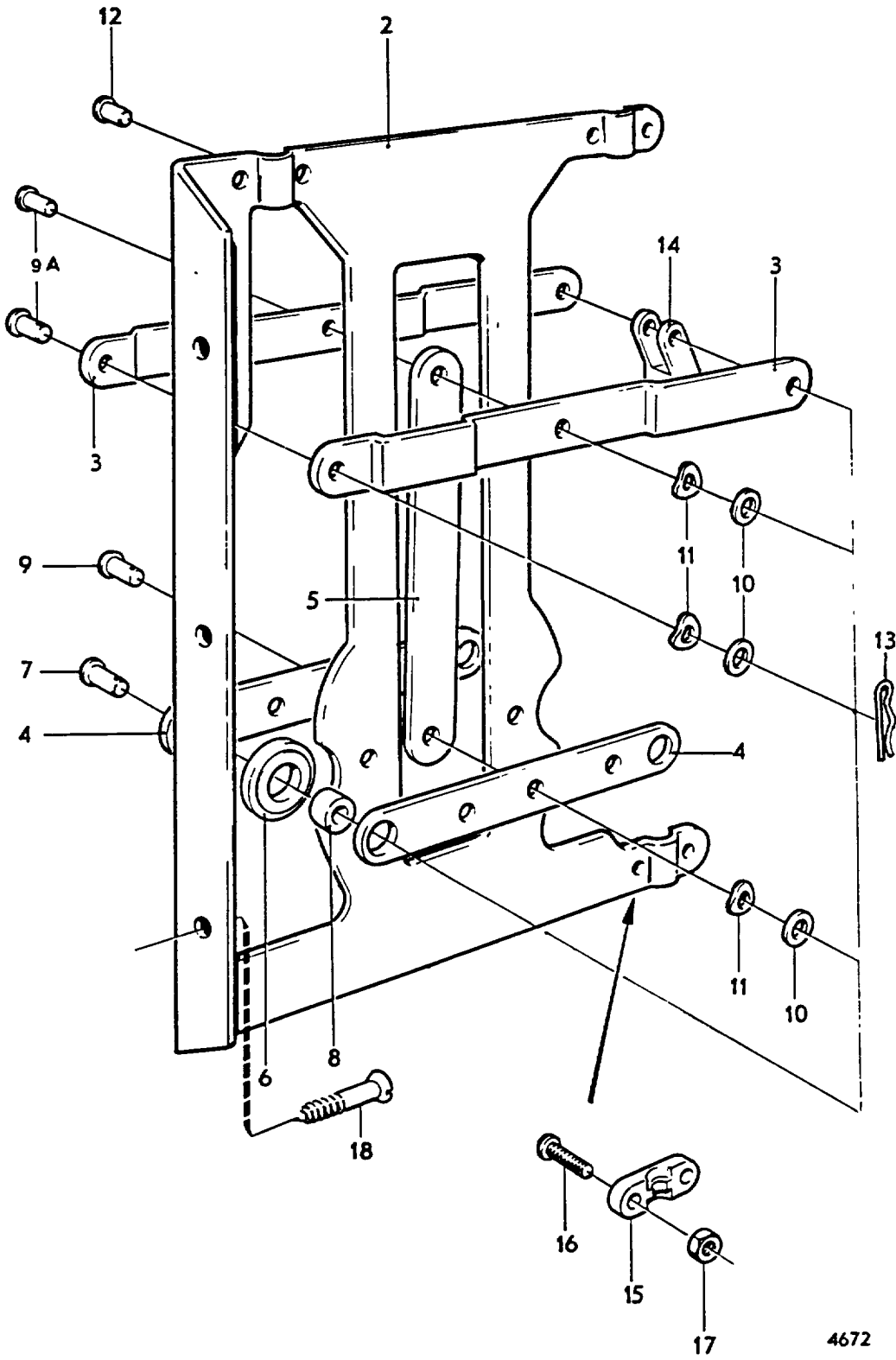
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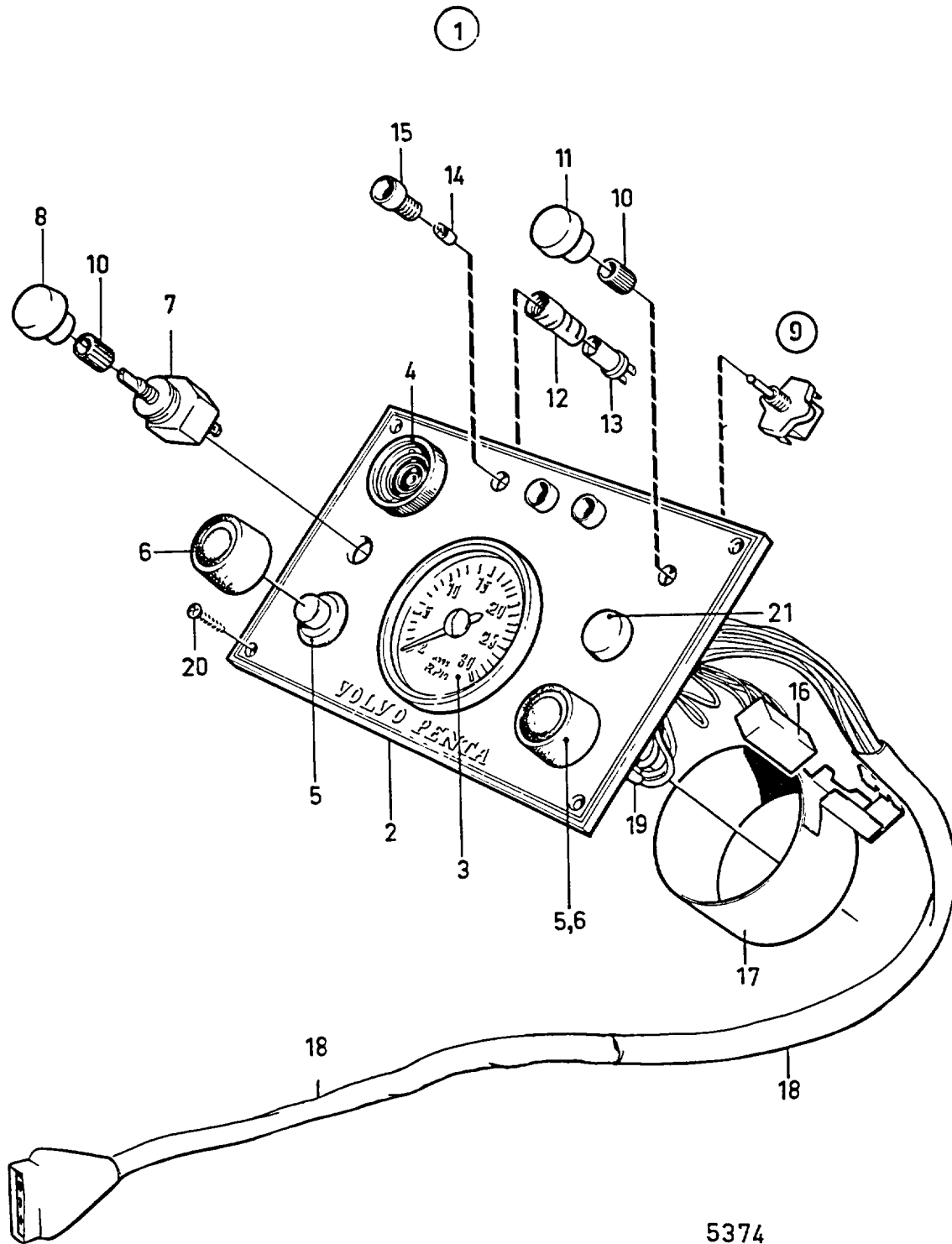
**VOLVO  
PENTA**

Sida Page	Grupp Group	DS enhet	DS unit	Illustration	2550						
136	9	GEM		4672 1987-04							
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	828164-4	Samlingsdon .....	Collection unit .....				007
2	1	-	-	-		.Hus .....	.Housing .....		8		004
3	2	-	-	-		.Håvarm .....	.Lever .....		8		0060
4	2	-	-	-		.Håvarm .....	.Lever .....		8		0080
5	1	-	-	-		.Håvarm .....	.Lever .....		8		0100
6	2	-	-	-	828180-0	.Bricka .....	.Washer .....		3		0120
7	2	-	-	-	828183-4	.Bult .....	.Bolt .....		3		0140
8	2	-	-	-	828178-4	.Bussning .....	.Bushing .....		4		0160
9	1	-	-	-	850358-3	.Bult .....	.Bolt .....		3	L=9MM	0180
9a	2	-	-	-	828177-6	.Saxpinnebult .....	.Clevis pin .....		3	L=12MM	0200
10	3	-	-	-	940191-0	.Bricka .....	.Washer .....		0		0220
11	3	-	-	-	61544-3	.Bricka .....	.Washer .....		0		30
12	1	-	-	-	828182-6	.Bult .....	.Bolt .....		3		0260
13	6	-	-	-	664822-4	.Fjäder .....	.Spring .....		1	(907824)	0280
14	3	-	-	-	850452-4	.Gaffel .....	.Yoke .....		4		0300
15	3	-	-	-	850361-7	.Kabelfaste .....	.Cable attachment .....		4		0320
16	6	-	-	-	956078-0	.Skruv .....	.Screw .....		0		0340
17	6	-	-	-	955780-2	.Mutter .....	.Nut .....		0		30
18	3	-	-	-	905448-7	.Skruv .....	.Screw .....		0	TID UTF (905447)	380

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Sida Page		Grupp Group		Instrumenttavla Instrument panel			Illustration 2700				
138		9		MD40A,TMD40A,AQD40A,TAMD40A AQAD40A			5374 1987-04				
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	843327-8	Instrumenttavla.....	Instrument panel.....				0020
2	1	-	-	-	837540-4	.Panel .....	.Panel .....	6			0040
3	1	-	-	-	842872-4	.Varvraknare .....	.Tachometer .....	4			0060
4	1	-	-	-	827597-6	.Signaldon .....	.Signal device .....	3			0080
5	2	-	-	-	843684-2	.Strombrytare .....	.Switch .....	3	(240975)		0100
6	2	-	-	-	837533-9	.Gummihatt .....	.Rubber cap. ....	3			0120
7	1	-	-	-	842918-5	.Reostat .....	.Relay .....	4			0140
8	1	-	-	-	842921-9	.Knopp .....	.Bolt .....	4			0160
9	1	-	-	-	875819-5	.Strombrytare .....	.Switch .....	3			0180
10	2	-	-	-	843002-7	.Mutter .....	.Nut .....	4			0200
11	1	-	-	-	837726-9	.Hatt .....	.Knob .....	4			0220
12	3	-	-	-	819350-0	.Lamphylsa .....	.Housing .....	4			0
13	4	-	-	-	808175-4	.Lamphållare .....	.Bulb holder .....	4			0260
14	4	-	-	-	19923-2	.Glodlampa .....	.Lamp bulb .....	1			0280
15	3	-	-	-	827766-7	.Konsol .....	.Bracket .....	4			0300
16	1	-	-	-	837674-1	.Larmenhet .....	.Alarm unit .....	4			0320
17	1	-	-	-	837860-6	.Kabelaste .....	.Cable attachment .....	6			0340
18	1	-	-	-	842662-9	.Kabelstock .....	.Cable unit .....	6			0
19	ERF	-	-	-		.Kablar och kabelskor .....	.Cable and cable .....		SE GRUPP3		0400
20	4	-	-	-	944540-4	.Skruv .....	.Screw .....	0			0420
21	1	-	-	-	845071-0	.Propp .....	.Plug .....	4			0440



5374





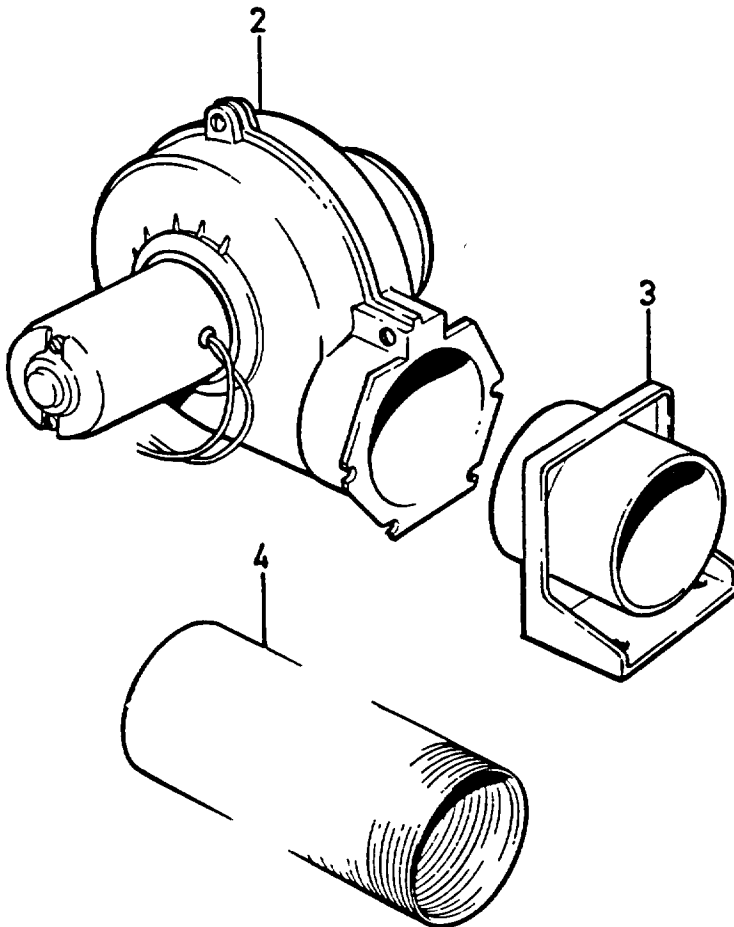
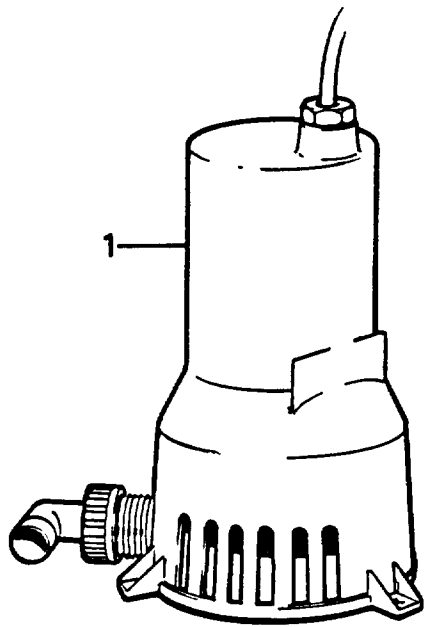
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**VOLVO  
PENTA**

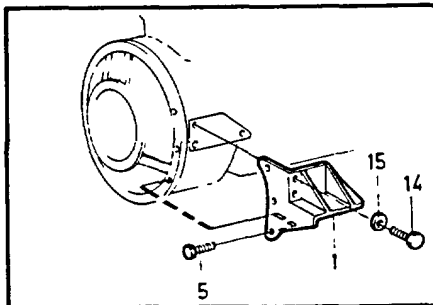
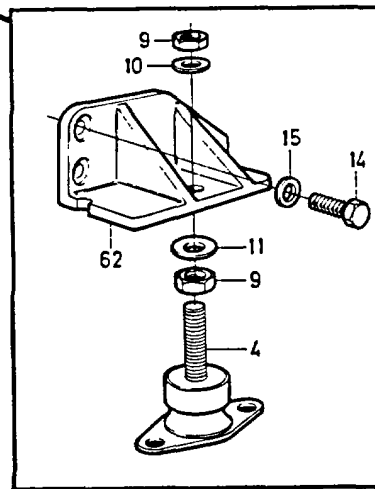
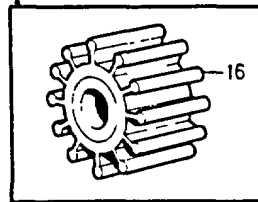
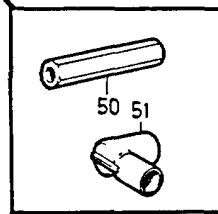
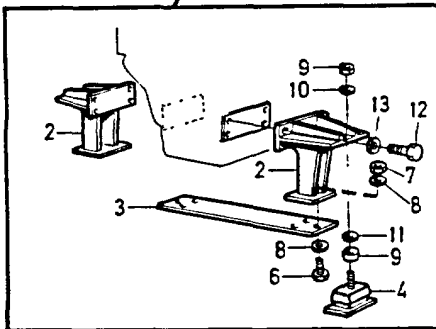
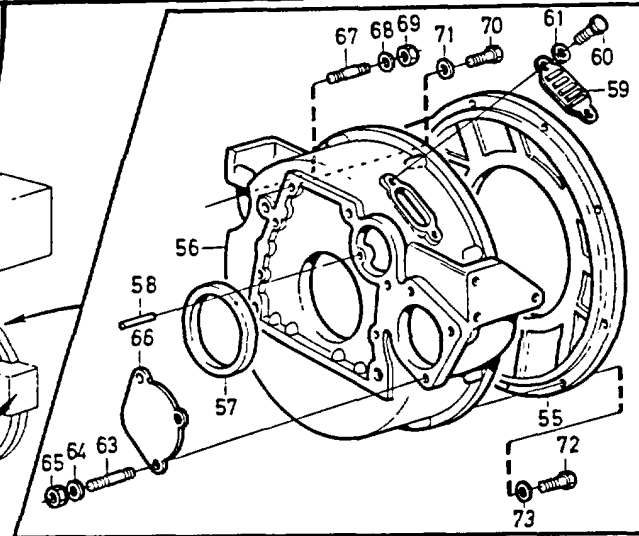
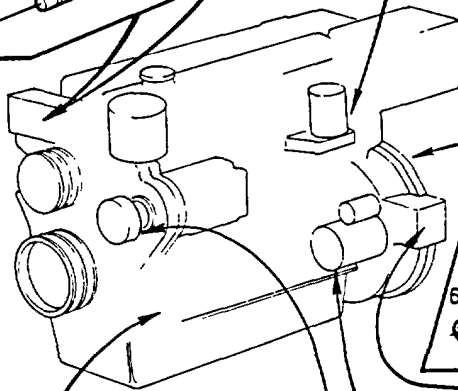
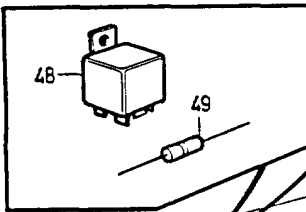
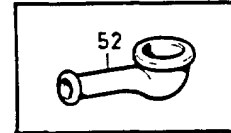
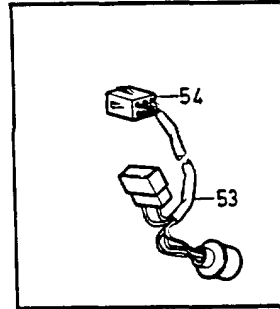
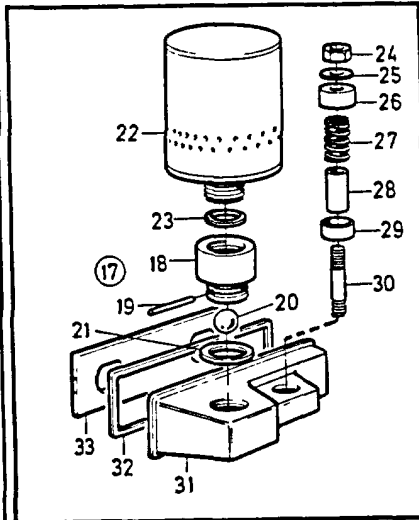
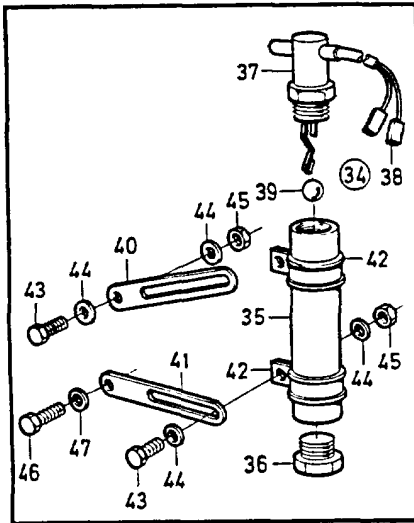
Sida Page	Grupp Group	Motorrummsflakt lanspump GEM			Engine room fan bilge pump			Illustration 6088 1987-04	2710		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	ERF	-	-	-	828212-1	Läns pump.....	Bilge pump .....	8	12V		005C
	ERF	-	-	-	828763-3	Läns pump.....	Bilge pump .....	4	12V		0055
2	ERF	-	-	-	1142000-7	Fläkt .....	Fan.....	8	12V		0100
	-	-	-	-	828797-1	Fläkt. ....	Fan.....	4	12V		0105
3	ERF	-	-	-	1142003-1	Fläns för fläkt, .....	Flange for fan .....	8			0200
4	ERF	-	-	-	828807-8	Slang för fläkt .....	Hose for fan .....	4	(828492) L=5000MM		0300



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Sida Page	Grupp Group	Livbåtsmotorsats	Life boat engine kit	Illustration	2720
142	9	TAMD40A,TAMD40B		7898	
				1987-04	

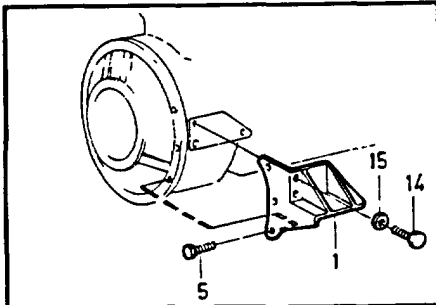
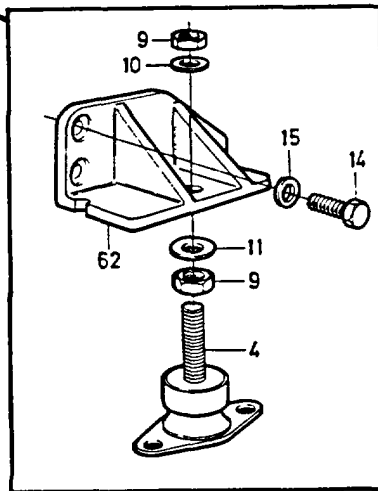
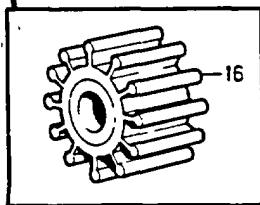
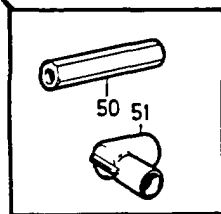
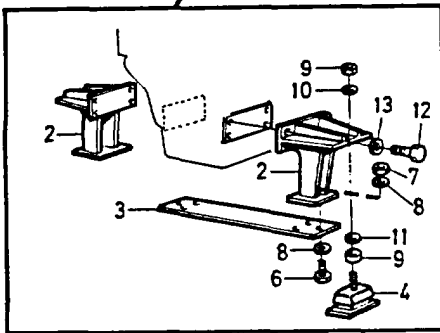
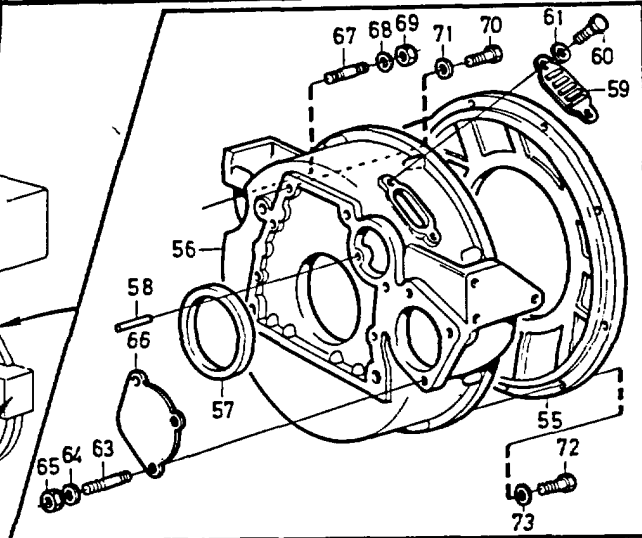
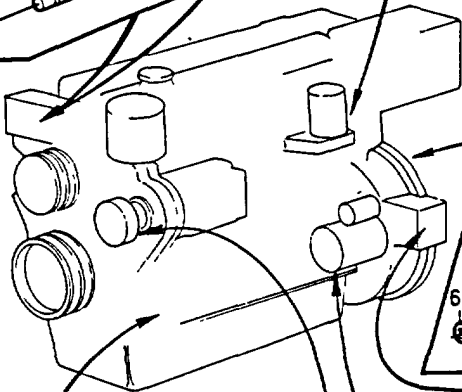
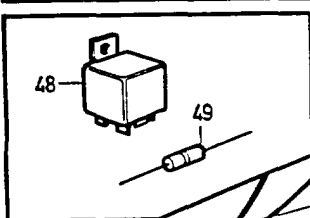
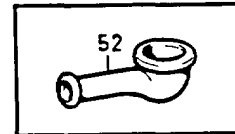
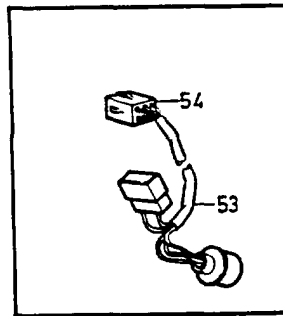
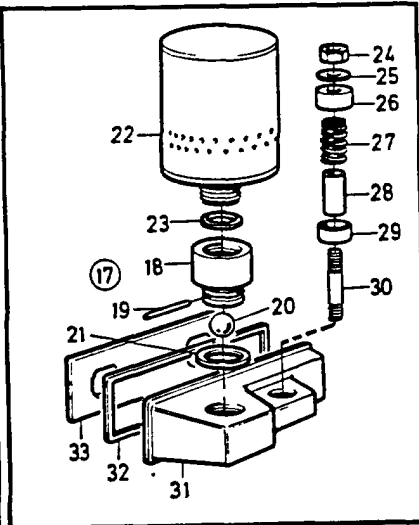
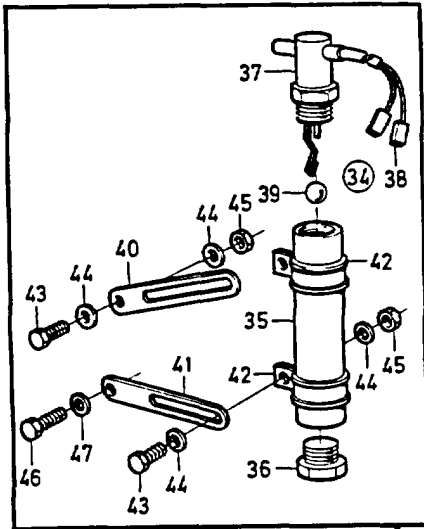
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	858157-1	Konsol	Bracket	5			002C
2	2	-	-	-	858158-9	Konsol	Bracket	5			0040
3	1	-	-	-	858159-7	Konsol	Bracket	5			0060
4	4	-	-	-	858160-5	Gummikudde	Rubber block	4			0080
5	3	-	-	-	965185-2	Skruv	Screw	0			0100
6	6	-	-	-	955342-1	Skruv	Screw	0			0120
7	6	-	-	-	955784-4	Mutter	Nut	0			0140
8	12	-	-	-	955897-4	Bricka	Washer	0			0160
9	8	-	-	-	955805-7	Mutter	Nut	0			0180
10	4	-	-	-	941912-8	Fjädrande bricka	Resilient washer	0			0200
11	4	-	-	-	191940-6	Bricka	Washer	0			0200
12	8	-	-	-	955340-5	Skruv	Screw	0			0260
13	8	-	-	-	940280-1	Fjädrande bricka	Resilient washer	0			0280
14	6	-	-	-	955341-3	Skruv	Screw	0			0300
15	6	-	-	-	940143-1	Låsbricka	Washer	0			0320
16	1	-	-	-	858248-8	Impeller	Impeller	2			0320
17	1	-	-	-	858256-1	Backventil	Cheke valve	4			0340
18	1	-	-	-	858235-5	Backventil	Cheke valve	5			0380
19	1	-	-	-	951971-1	Rörpinne	Pin	0			0400
20	1	-	-	-	181501-8	Stålkula	Steel ball	2			0420
21	1	-	-	-	843449-0	Packning	Gasket	2			0440
22	ERF	-	-	-		Luftfilter	Filter			SE GRUPP 2A	0460
23	1	-	-	-	843449-0	Packning	Gasket	2			0480
24	1	-	-	-		Mutter	Nut			SE GRUPP 2A	0500
25	1	-	-	-		Tätningssring	Seal ring			SE GRUPP 2A	0520
26	1	-	-	-		Kåpa	Casing			SE GRUPP 2A	0540
27	1	-	-	-		Fjäder	Spring			SE GRUPP 2A	0560
28	1	-	-	-	834678-5	Distans	Spacer	4			0580
29	1	-	-	-		Ventiltallrik	Valve disc			SE GRUPP 2A	0600
30	1	-	-	-		Pinnskruv	Stud bolt			SE GRUPP 2A	0620
31	1	-	-	-		Hus	Housing			SE GRUPP 2A	0640
32	1	-	-	-		Tätning	Rubber seal			SE GRUPP 2A	0660
33	1	-	-	-		Stankplåt	Splash shield			SE GRUPP 2A	0680
34	1	-	-	-	858255-3	Lutningsvakt	Tilt switch	8			0700
35	1	-	-	-	858169-6	Hylsa	Sleeve	4			0720
36	1	-	-	-	914392-6	Propp	Plug	0			0740
37	1	-	-	-	858454-2	Brytare	Breaker	4			0800
38	ERF	-	-	-		Kablar och kablarskor	Cables and terminals			SE GRUPP 3	0820
39	2	-	-	-	181332-8	Stålkula	Steel ball	2			0840
40	1	-	-	-	965537-4	Konsol	Bracket	0			0860
41	1	-	-	-	965534-1	Konsol	Bracket	0			0880
42	2	-	-	-	952635-1	Klamma	Clamp	0			0900
43	3	-	-	-	955271-2	Skruv	Screw	0			0920
44	6	-	-	-	955892-5	Bricka	Washer	0			0940
45	3	-	-	-	955781-0	Mutter	Nut	0			0960
46	1	-	-	-	955268-8	Skruv	Screw	0		SE GRUPP 3	0980
47	1	-	-	-	955892-5	Bricka	Washer	0		SE GRUPP 3	1000
48	1	-	-	-	837878-8	Relä	Relay	4			1020
49	1	-	-	-	1518870-9	Diod	Diode	4			1040
50	1	-	-	-	855330-7	Mutter	Nut	4			1060
51	1	-	-	-	855798-5	Skyddshylsa	Protecting sleeve	2			1080
52	10	-	-	-	76614-7	Gummikrage	Rubber collar	2			1100
53	1	-	-	-		Kabelsats	Cable kit	8			1120
54	ERF	-	-	-		Kablar och kablarskor	Cables and terminals			SE GRUPP 3	1140
55	1	-	-	-	858165-4	Lock	Cover	7			1160
56	1	-	-	-	858164-7	Svänghjulskåpa	Flywheel casing	7			1180
57	1	-	-	-	1542204-1	Tätningssring	Seal ring	2			1200
58	1	-	-	-	404069-7	Installationsvisare	Indicator	2			1220
59	1	-	-	-	407092-6	Lock	Cover	5			1240
60	2	-	-	-	955269-6	Skruv	Screw	0			1260
61	2	-	-	-	941906-0	Fjädrande bricka	Resilient washer	0			1260
62	1	-	-	-	829515-6	Konsol	Bracket	5			1260



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Sida Page	Grupp Group	Livbåtsmotorsats Life boat engine kit			Illustration 7898 1987-04	2720					
144	9	TAMD40A,TAMD40B									
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
63	3	-	-	-	953070-0	Pinnskruv .....	Stud bolt.....	0			128
64	3	-	-	-	941908-6	Fjädrande bricka .....	Resilient washer.....	0			1300
65	3	-	-	-	955786-9	Mutter.....	Nut.....	0			1320
66	ERF	-	-	-	423081-9	Fläns .....	Flange.....	5			1340
67	3	-	-	-	953067-6	Pinnskruv .....	Stud bolt.....	0			1360
68	3	-	-	-	941908-6	Fjädrande bricka .....	Resilient washer.....	0			1380
69	3	-	-	-	955783-6	Mutter.....	Nut.....	0			1400
70	6	-	-	-	955320-7	Skruv.....	Screw.....	0	L=40MM		1420
	2	-	-	-	955321-5	Skruv.....	Screw.....	0	L=45MM		1440
71	8	-	-	-	941908-6	Fjädrande bricka .....	Resilient washer.....	0			1460
72	11	-	-	-	955319-9	Skruv.....	Screw.....	0			1480
73	11	-	-	-	941908-6	Fjädrande bricka .....	Resilient washer.....	0			1500



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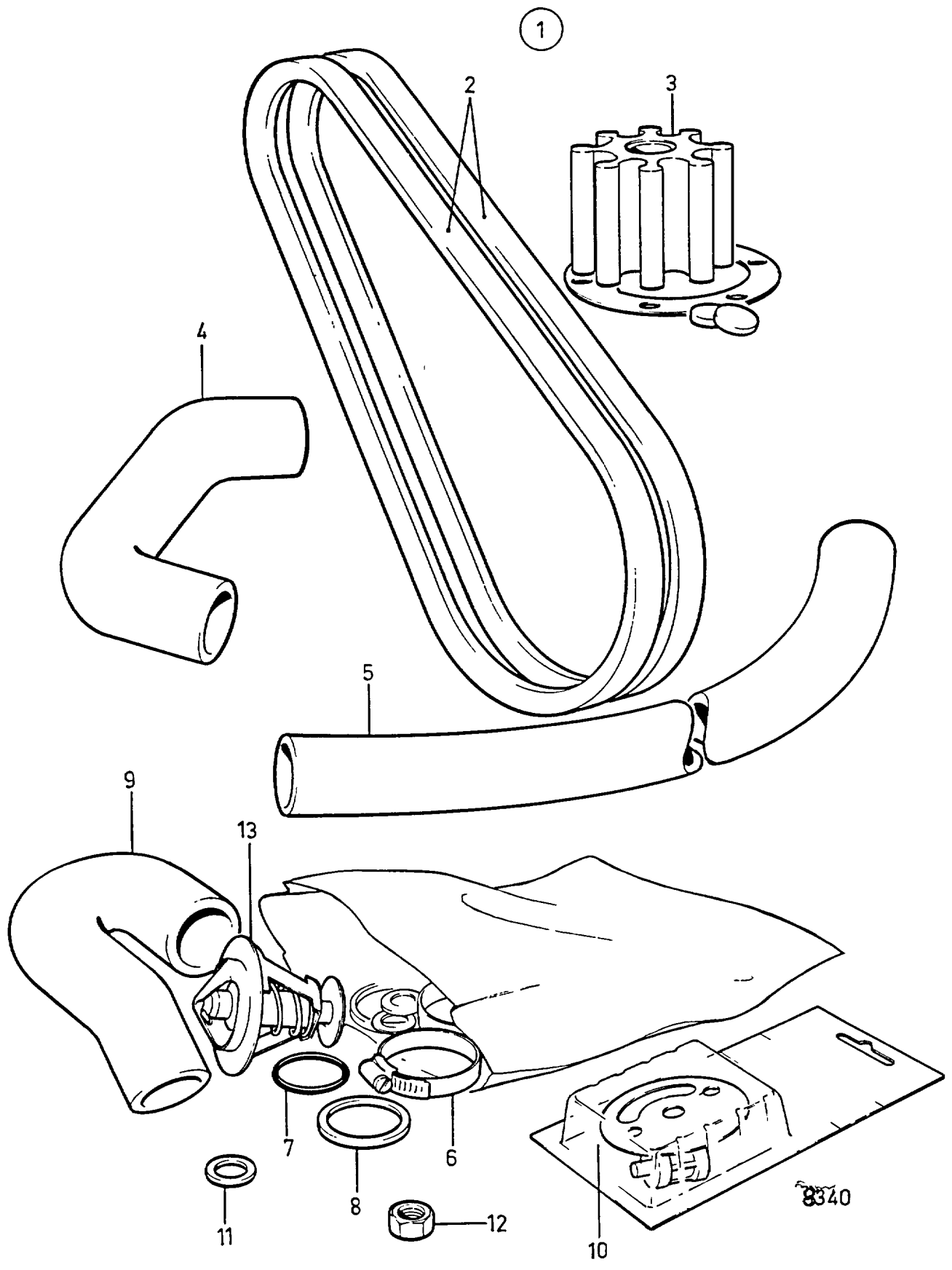
3-G05

**VOLVO  
PENTA**

Sida Page		Grupp Group		Ombordsats			On board kit			Illustration		2745
146		9		MD40A,TMD40A,AQD40A						6340 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes		
	875	702										
1	1	-	-	-	875702-3	Ombordsats .....	On board kit.....		1	ERS.AV 858632	0020	
2	1	-	-	-	958359-2	.Drivremssats... ..	.Drive belt kit.....			L=2X1100MM	0040	
3	1	-	-	-	875593-6	.Impellersats.....	.Impeller kit.....				0060	
4	1	-	-	-	842907-8	.Slang .....	.Hose .....				0080	
5	ERF	-	-	-	944386-2	.Slang .....	.Hose .....			L=1000MM	0100	
6	4	-	-	-	943475-4	.Slangklamma .....	.Hose clamp.....				0120	
7	3	-	-	-	925061-4	.O-ring .....	.O-ring .....				0140	
	-	-	-	-	949658-9	O-ring .....	O-ring .....			(925061)	0145	
8	4	-	-	-	858986-3	.Tätningring .....	.Seal ring .....			(842744)	0160	
	2	-	-	-	842913-6	.Tätningring .....	.Seal ring .....				0180	
9	1	-	-	-	843438-3	.Kylvattenslang .....	.Cooling water hose .....				0	
10	1	-	-	-	273663-5	.Reparationssats .....	.Repair kit .....			58)	J	
11	20	-	-	-	957171-2	.Packning .....	.Gasket .....				0240	
	10	-	-	-	11994-1	.Packning .....	.Gasket .....				0260	
	5	-	-	-	48588-8	.Bricka .....	.Washer .....				0280	
12	2	-	-	-	955782-8	.Mutter .....	.Nut .....			59)	0300	
13	1	-	-	-	875788-2	.Termostat .....	.Thermostat .....			70°	0000	

58. För matarpump. For fuel feed pump.

59. För insprutare. For fuel injector.



8340





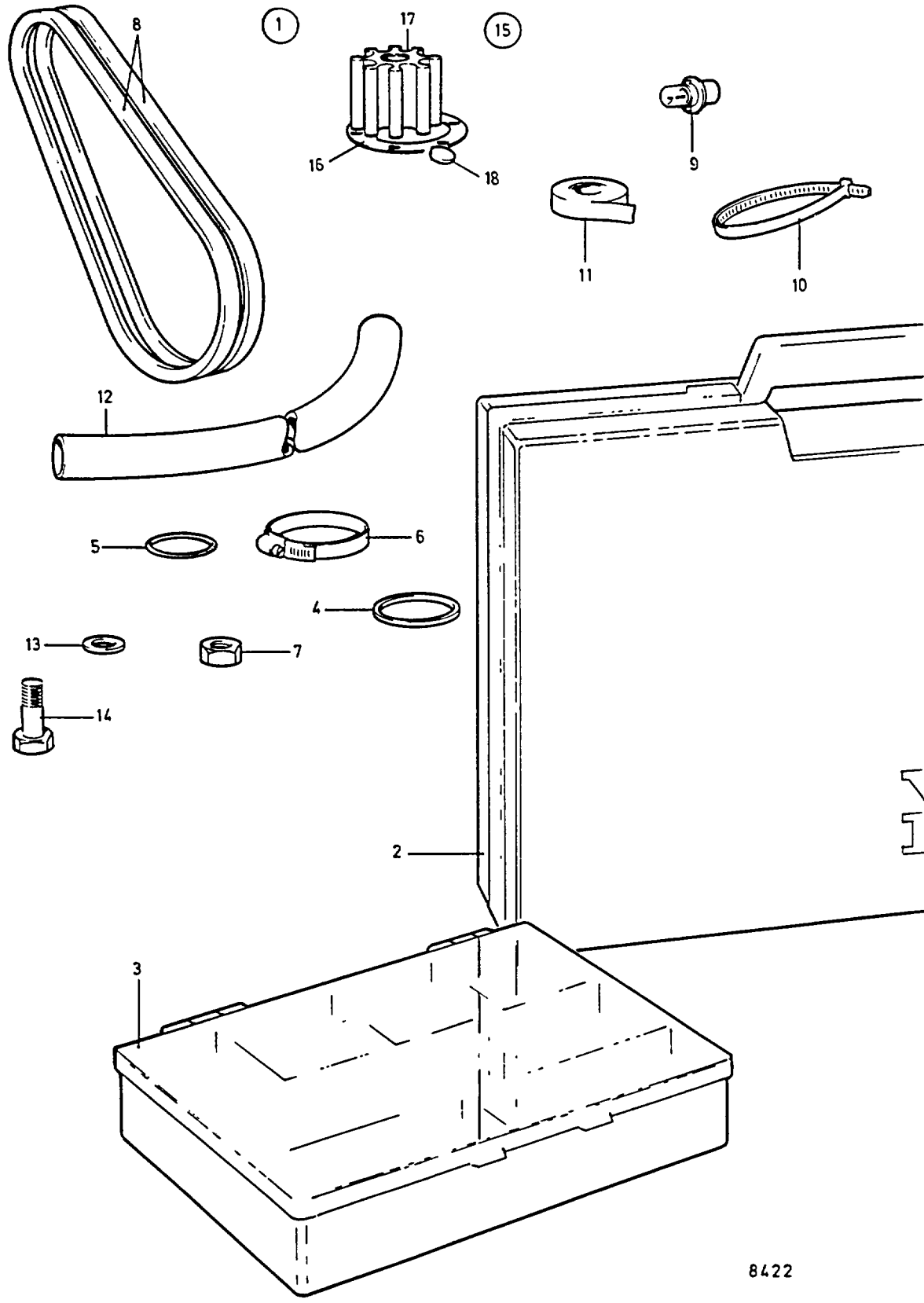
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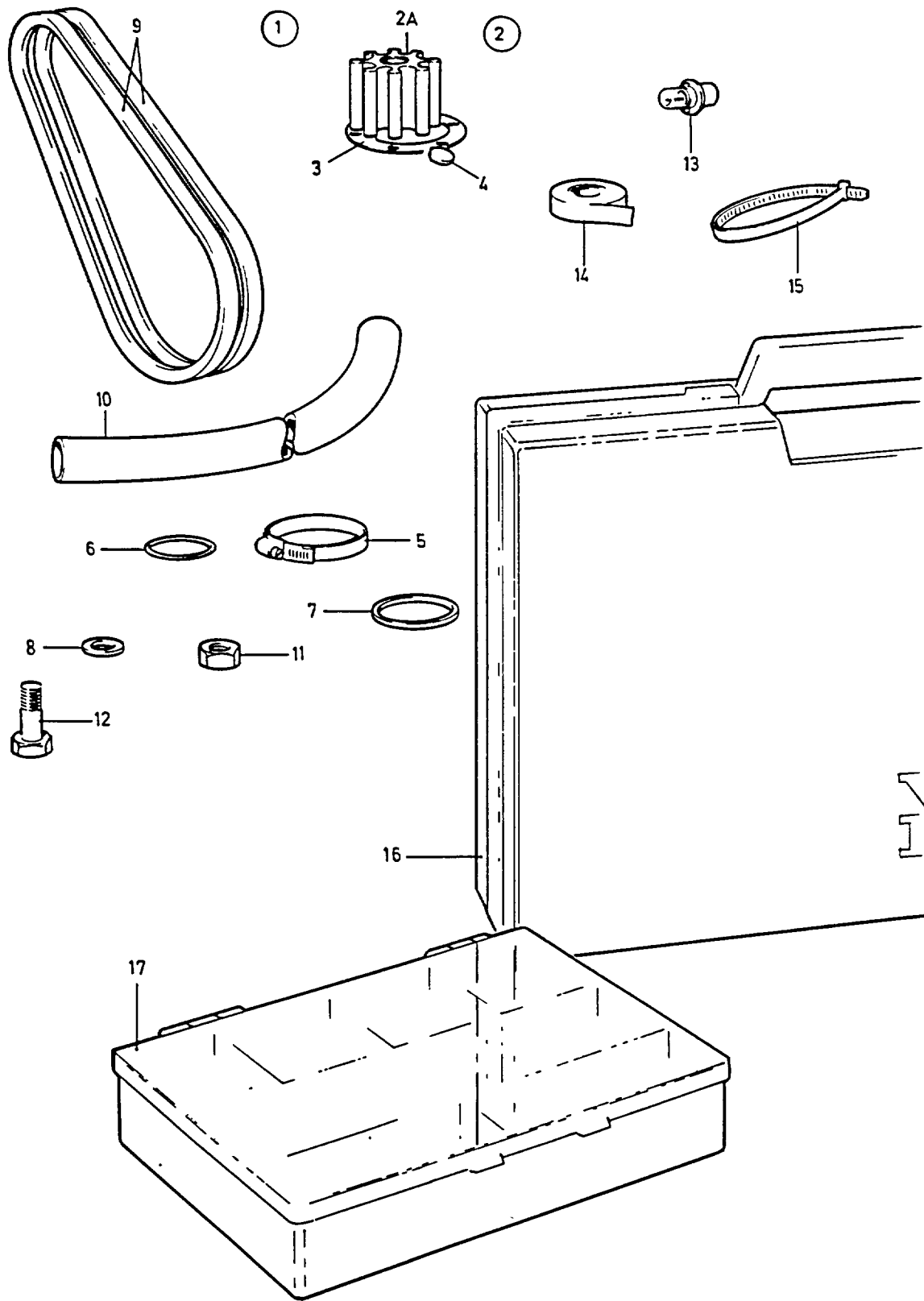
3-G07

**VOLVO  
PENTA**

Sida Page	Grupp Group	Ombordssats			On board kit			Illustration	2747	
148	9	AQAD40,TAMD40						8422 1987-04		
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	Anmärkning Notes	
1	1	-	-	-	858633-1	Ombordsats ..	Inboard kit.....			0020
2	1	-	-	-	858631-5	.Väska ..	.Bag.....			0040
3	1	-	-	-	858284-3	.Låda ..	.Box.....			0060
4	2	-	-	-	845354-0	.Tatningsring ..	.Seal ring ..			0080
5	3	-	-	-	949658-9	.O-ring ..	.O-ring.....			0100
6	4	-	-	-	943476-2	.Slangklamma ..	.Hose clamp..			0120
7	2	-	-	-	955782-8	.Mutter ..	.Nut.....			0140
8	1	-	-	-	958359-2	.Drivremssats ..	.Drive belt kit ..		L=2X1100MM	0160
9	4	-	-	-	19923-2	.Glödlampa ..	.Bulb.....			0180
10	10	-	-	-	948210-0	.Bandklämma..	.Strip clamp ..			0200
11	1	-	-	-	858283-5	.Elektrotejp ..	.Electrical tape ..			0200
12	ERF	-	-	-	952974-4	.Kylarslang ..	.Radiator hose ..		L=400MM	J
13	10	-	-	-	11994-1	.Packning ..	.Gasket ..			0260
	20	-	-	-	957171-2	.Packning.....	.Gasket ..			0280
14	5	-	-	-	963554-1	.Skruv ..	.Screw ..			0300
15	1	-	-	-	875660-3	.Impellersats.....	.Impeller kit ..			0310
16	1	-	-	-	825728-9	..Packning ..	..Gasket ..			0320
	1	-	-	-	846111-3	..Packning..	..Gasket..			J
17	1	-	-	-	825942-6	..Impeller.....	..Impeller ..		ERSAV875660	0360
18	1	-	-	-	848154-1	..Splinstatning ..	..Spline seal.....		TIDUTF	0380



Sida Page		Grupp Group		Ombordssats		On board kit		Illustration	
150		9		GEM				8421 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	Anmärkning Notes
1	1	-	-	-	858632-3	Ombordsats . . . . .	Inboard kit . . . . .		
2	1	-	-	-	875593-6	Impellersats . . . . .	Impeller kit . . . . .		
2a	1	-	-	-	825941-8	Impeller . . . . .	Impeller . . . . .		ERSAV 875593
3	1	-	-	-	808275-2	Packning . . . . .	Gasket . . . . .		L=2X1100MM
4	2	-	-	-	827019-1	Bricka . . . . .	Washer . . . . .		L=500MM
5	4	-	-	-	943474-7	Slangklamma . . . . .	Hose clamp . . . . .		
	2	-	-	-	943476-2	Slangklamma . . . . .	Hose clamp . . . . .		
6	3	-	-	-	949658-9	O-ring . . . . .	O-ring . . . . .		
7	4	-	-	-	858986-3	Tätningring . . . . .	Seal ring . . . . .		(842744)
	2	-	-	-	842913-6	Tätningring . . . . .	Seal ring . . . . .		
8	20	-	-	-	957171-2	Packning . . . . .	Gasket . . . . .		
	10	-	-	-	11994-1	Packning . . . . .	Gasket . . . . .		
9	1	-	-	-	958359-2	Drivremssats . . . . .	Drive belt kit . . . . .		
10	ERF	-	-	-	944386-2	Slang . . . . .	Hose . . . . .		
11	2	-	-	-	955782-8	Mutter . . . . .	Nut . . . . .		59)
12	6	-	-	-	841963-2	Skruv . . . . .	Screw . . . . .		
13	4	-	-	-	19923-2	Glodlampa . . . . .	Bulb . . . . .		
14	1	-	-	-	858283-5	Elektrotejp . . . . .	Electrical tape . . . . .		
15	10	-	-	-	948210-0	Bandklamma . . . . .	Strip clamp . . . . .		
16	1	-	-	-	858631-5	Vaska . . . . .	Bag . . . . .		
17	1	-	-	-	858284-3	Låda . . . . .	Box . . . . .		



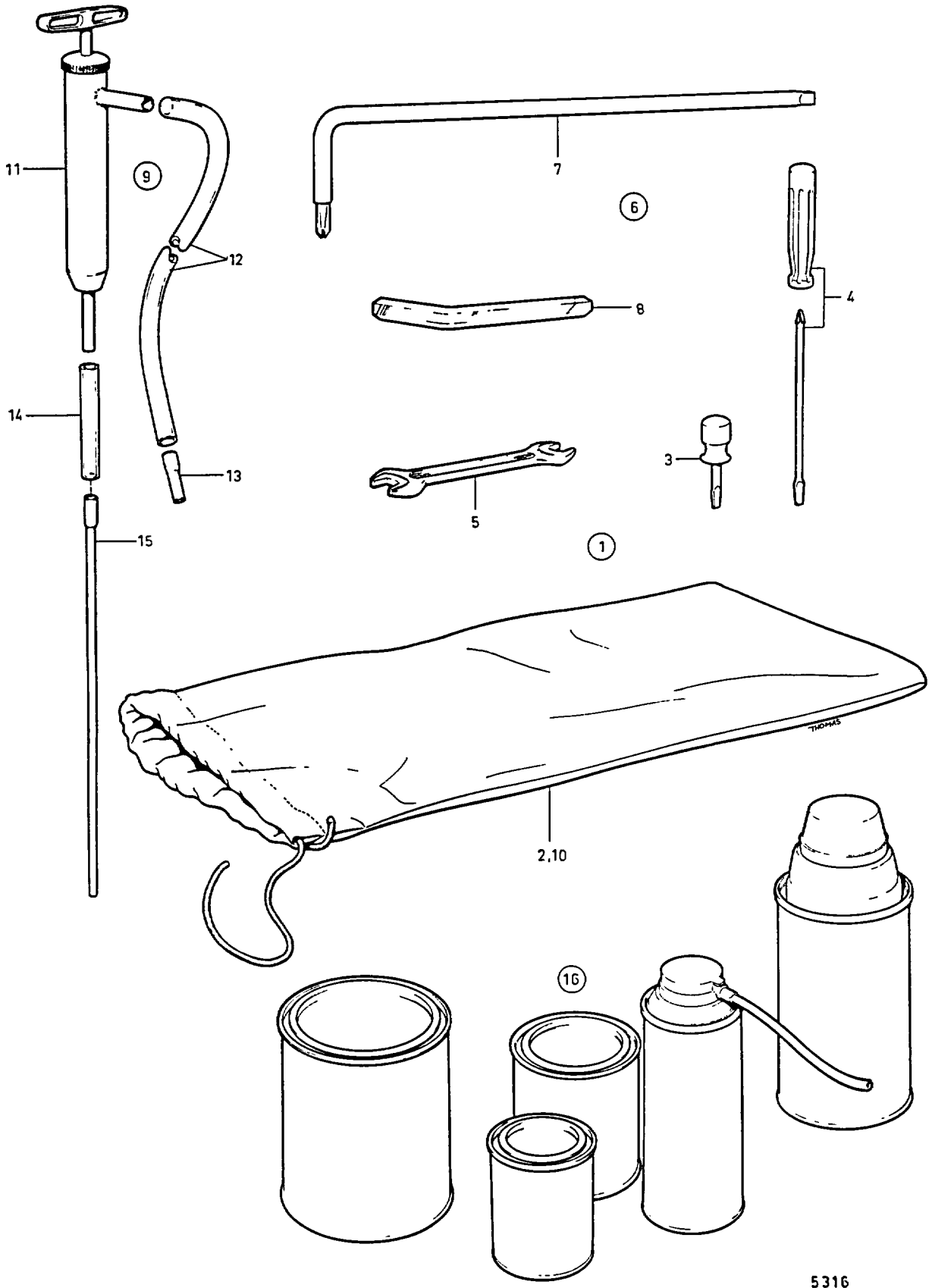
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**VOLVO  
PENTA**

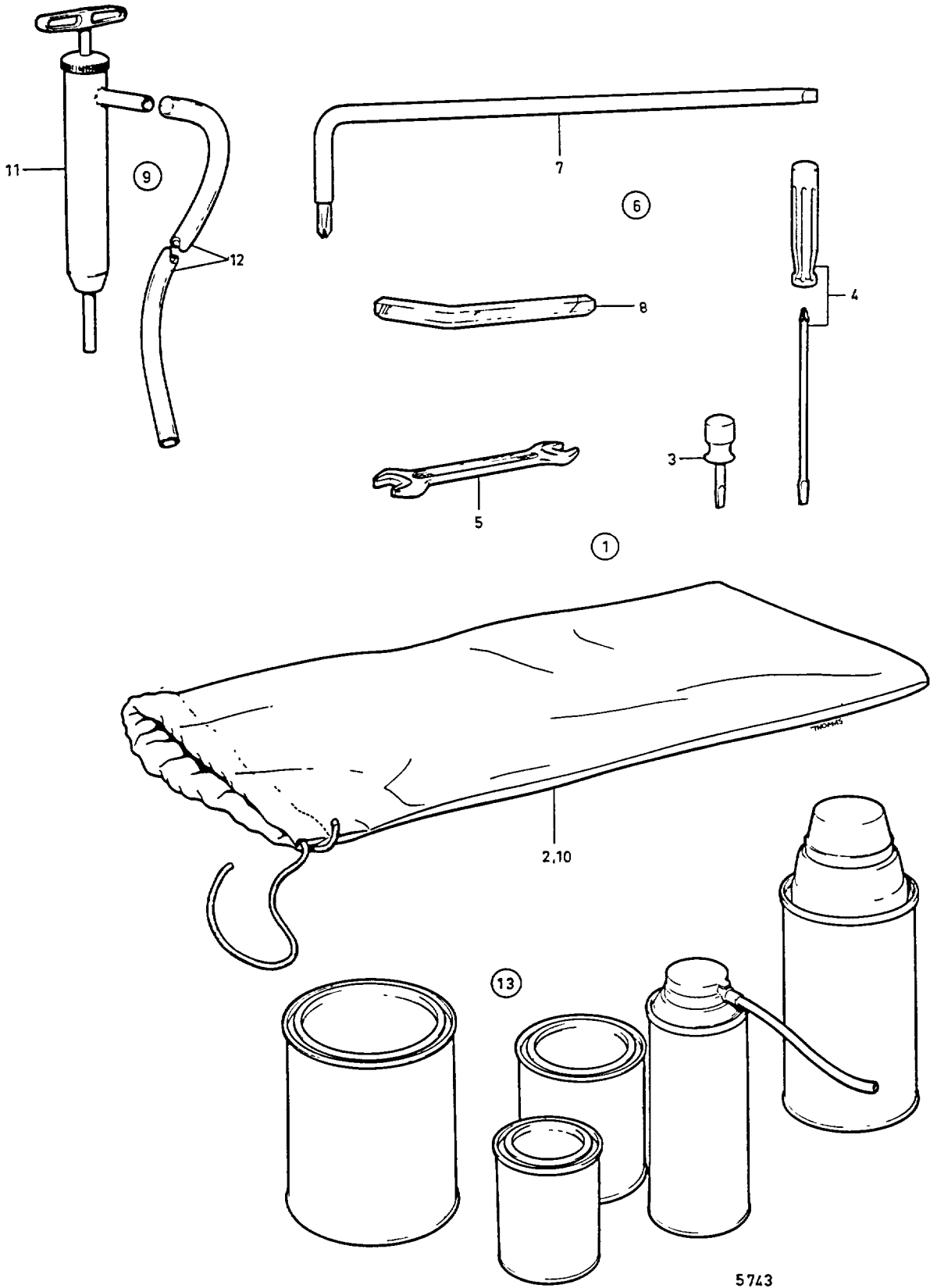
Sida Page	Grupp Group	Verkytgssats			Set of tools			Illustration	2800		
152	9	MD40A,TMD40A,TMD40B,TMD40C, AOD40A						5316 1987-04			
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	844636-1	Verkytgssats .....	Tool kit.....	6			0020
2	1	-	-	-	844642-9	•Verkytgspåse.....	•Tool bag.....	5			0040
3	1	-	-	-	841044-1	•Skruvmejsel .....	•Screw driver.....	5			0060
4	1	-	-	-	963929-5	•Skruvmejsel .....	•Screw driver.....	5			0080
5	1	-	-	-	843929-1	•Fast nyckel .....	•Open end wrench .....	5	8-10MM		0100
	1	-	-	-	210056-8	•Fast nyckel .....	•Open end wrench .....	5	11-12MM		0120
	1	-	-	-	841252-0	•Fast nyckel .....	•Open end wrench .....	5	13-16MM		0140
	1	-	-	-	962053-5	•Fast nyckel .....	•Open end wrench .....	5	13-17MM		0160
	1	-	-	-	962060-0	•Fast nyckel.....	•Open end wrench .....	5	14-17MM		0180
	1	-	-	-	962054-3	•Fast nyckel .....	•Open end wrench .....	5	19-22MM		0200
6	1	-	-	-	841045-8	Verkytgssats.....	Tool kit .....	6			0200
7	1	-	-	-	834980-5	•Skruvmejsel .....	•Screw driver.....	5			0200
8	1	-	-	-	914675-4	•Insexnyckel .....	•Allen key.....	5	1/4"		0260
	1	-	-	-	914677-0	•Insexnyckel.....	•Allen key.....	5	3/8"		0280
9	1	-	-	-	875117-4	Oljelånpump .....	Oil bilge pump.....	5			0300
10	1	-	-	-	809863-4	•Verkytgspåse.....	•Tool bag.....	8			0320
11	1	-	-	-		•Oljelånpump .....	•Oil bilge pump .....	8			0340
12	1	-	-	-	806282-0	•Slang .....	•Hose .....	3	L=1000MM		0380
13	ERF	-	-	-	841046-6	•Slang .....	•Hose .....	3			0380
14	ERF	-	-	-	941405-3	•Slang .....	•Hose .....	0	L=100MM		0400
15	ERF	-	-	-	835964-8	•Slang .....	•Hose .....	3	L=711MM		0420
16	ERF	-	-	-		Kemikalier .....	Chemicals.....		SE SIDA 158, 3-G17		0430



5316



Sida Page	Grupp Group	Verktygssats			Set of tools	Illustration	2850				
154	9	TAMD40A,TAMD40B,AQAD40A,AQAD40B				5743 1987-04					
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	1	-	-	-	844636-1	Verktygssats.....	Tool kit.....	6			0020
2	1	-	-	-	844642-9	.Verktygspåse.....	.Tool bag.....	5			0040
3	1	-	-	-	841044-1	.Skruvmejsel.....	.Screw driver.....	5			0060
4	1	-	-	-	963929-5	.Skruvmejsel.....	.Screw driver.....	5			0080
5	1	-	-	-	843929-1	.Fast nyckel.....	.Open end wrench.....	5	8-10MM		0100
	1	-	-	-	210056-8	.Fast nyckel.....	.Open end wrench.....	5	11-12MM		0120
	1	-	-	-	841252-0	.Fast nyckel.....	.Open end wrench.....	5	13-16MM		0140
	1	-	-	-	962053-5	.Fast nyckel.....	.Open end wrench.....	5	13-17MM		0160
	1	-	-	-	962060-0	.Fast nyckel.....	.Open end wrench.....	5	14-17MM		0180
	1	-	-	-	962054-3	.Fast nyckel.....	.Open end wrench.....	5	19-22MM		0200
6	1	-	-	-	841045-8	Verktygssats.....	Tool kit.....	6			0220
7	1	-	-	-	834980-5	.Skruvmejsel.....	.Screw driver.....	5			0
8	1	-	-	-	914675-4	.Insexnyckel.....	.Allen key.....	5	1/4"		0260
	1	-	-	-	914677-0	.Insexnyckel.....	.Allen key.....	5	3/8"		0280
9	1	-	-	-	875117-4	Oljelänsypump..	Oil bilge pump.....	5			0300
10	1	-	-	-	844642-9	.Verktygspåse.....	.Tool bag.....	4			0320
11	1	-	-	-		.Oljelänsypump..	.Oil bilge pump.....	8			0340
12	1	-	-	-	806282-0	.Slang.....	.Hose.....	3	L=1000MM		0
13	ERF	-	-	-		Kemikalier.....	Chemicals.....		SE SIDA 158, 3-G17		0400

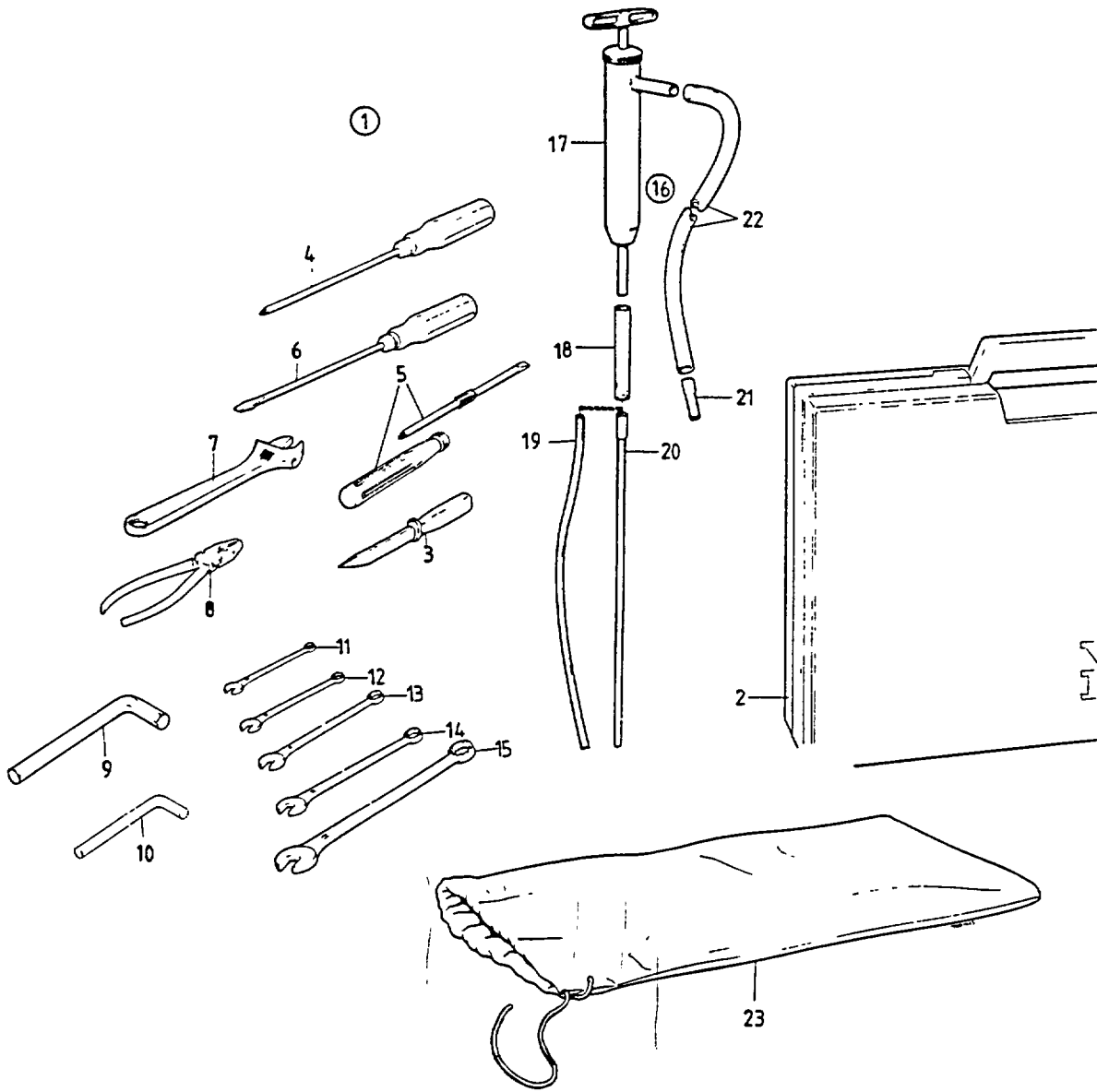


5743





Sida Page		Grupp Group		Verktygssats			Set of tools			Illustration	
156		9		GEM						8274 1987-04	
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	858										
1	1	-	-	-	858282-7	Verktygssats . . . . .	Tool kit.....	6			0020
2	1	-	-	-	858281-9	.Verktygsväska . . . . .	.Tool bag . . . . .	5			0040
3	1	-	-	-	858280-1	.Slidkniv . . . . .	.Sheath knife . . . . .	5			0060
4	1	-	-	-	962183-0	.Skruvmejsel . . . . .	.Screw driver.....	5			0080
5	1	-	-	-	963929-5	.Skruvmejsel . . . . .	.Screw driver.....	5			0100
6	1	-	-	-	804771-4	.Skruvmejsel . . . . .	.Screw driver . . . . .	5			0120
7	1	-	-	-	755-9	.Skiftnyckel . . . . .	.Spanner . . . . .	5			0140
8	1	-	-	-	858279-3	.Kombinationstång.....	.Plier . . . . .	5			0160
9	1	-	-	-	914005-4	.Insexnyckel . . . . .	.Allen key . . . . .	5			0180
10	1	-	-	-	914002-1	.Sexkantnyckel.....	.Wrench . . . . .	5			0200
11	1	-	-	-	858274-4	.Blocknyckel . . . . .	.Bubble key . . . . .	5	8MM		0220
12	1	-	-	-	858275-1	.Blocknyckel . . . . .	.Bubble key . . . . .	5	10MM		0240
13	1	-	-	-	858276-9	.Blocknyckel . . . . .	.Bubble key . . . . .	5	13MM		0260
14	1	-	-	-	858277-7	.Blocknyckel . . . . .	.Bubble key . . . . .	5	17MM		0280
15	1	-	-	-	858278-5	.Blocknyckel . . . . .	.Bubble key . . . . .	5	1/2"		0300
16	1	-	-	-	875117-4	.Oljelänsypump.. . . . .	.Oil bilge pump.....	5			0320
17	1	-	-	-		.Oljelänsypump .. . . . .	.Oil bilge pump . . . . .	8			0340
18	ERF	-	-	-		.Slang . . . . .	.Hose . . . . .	8			0360
19	1	-	-	-	841527-5	.Plaströr.....	.Pipe.....	3	L=1000MM		0380
20	1	-	-	-	835964-8	.Rör . . . . .	.Pipe . . . . .	3	L=711MM		0400
21	1	-	-	-	841046-6	.Slang . . . . .	.Hose . . . . .	3			0420
22	1	-	-	-	806282-0	.Slang . . . . .	.Hose . . . . .	3			0440
23	1	-	-	-	844642-9	.Verktygsväska . . . . .	.Tool bag . . . . .	5			0460

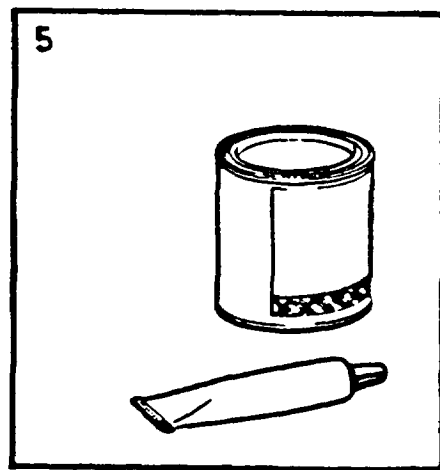
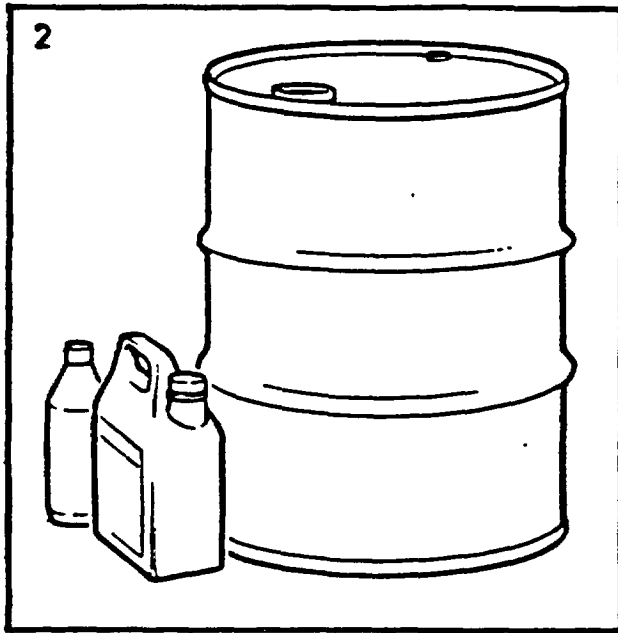
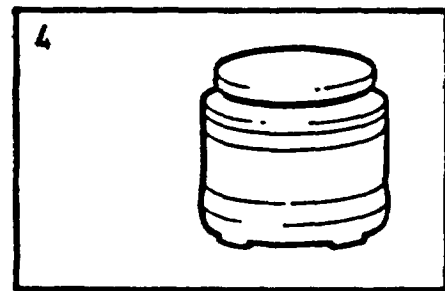
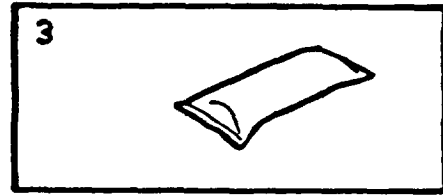
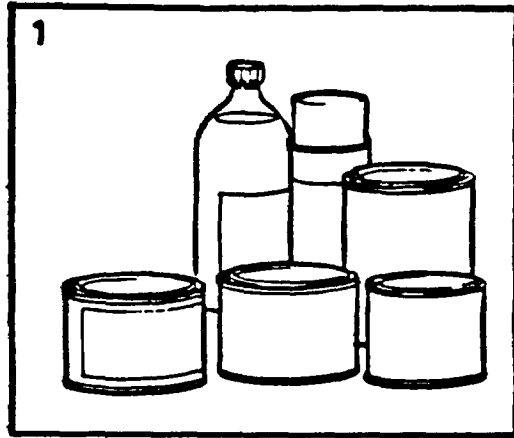


8274



Sida Page	Grupp Group	Kemikalier Chemicals		Illustration 3000						
158	9	GEM		8188 1987-04						
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
1	ERF	-	-	-	3551916-4	Färg .....	Paint .....		200) 310GR SPRAY	0020
	ERF	-	-	-	832619-1	Grundfärg .....	Primer .....		0,9L VIT	0040
	ERF	-	-	-	804304-4	Färg .....	Paint .....		0,125L VIT	0060
	ERF	-	-	-	832592-0	Färg .....	Paint .....		0,7L VIT	0080
	ERF	-	-	-	3576547-8	Färg .....	Paint .....		310GR SPRAY VIT	0100
	ERF	-	-	-	855204-4	Färg .....	Paint .....		0,5L GRÅ	0140
	ERF	-	-	-	3551913-1	Färg .....	Paint .....		310GR SPRAY LJUSGRÅ	0160
	ERF	-	-	-	3551921-4	Färg .....	Paint .....		310GR SPRAY GRÅ	0180
	ERF	-	-	-	832576-3	Färg .....	Paint .....		0,125L GRÅBLÅ	0200
	ERF	-	-	-	832594-6	Färg .....	Paint .....		0,7L GRÅBLÅ	0220
	ERF	-	-	-	281077-8	Färg .....	Paint .....		0,4L SPRAY GRÅBLÅ	0240
	ERF	-	-	-	3551914-9	Färg .....	Paint .....		310GR SPRAY MORKBLÅ	0
	ERF	-	-	-	3551917-2	Färg .....	Paint .....		310GR SPRAY ORANGE	0280
	ERF	-	-	-	827501-8	Motorfärg .....	Engine paint .....		0,25L SPRAY ROD	0300
	ERF	-	-	-	837176-7	Motorfärg .....	Engine paint .....		0,25L GRÖN	0320
	ERF	-	-	-	837124-7	Motorfärg .....	Engine paint .....		1,0L GRÖN	0340
	ERF	-	-	-	3574764-1	Färg .....	Paint .....		310GR SPRAY SVART	0360
	ERF	-	-	-	282907-5	Färg .....	Paint .....		0,4L SPRAY SVART	0
	ERF	-	-	-	852903-4	Antibeväx. färg .....	Anti-fouling paint .....		0,5L	0380
	ERF	-	-	-	827502-6	Klarlack .....	Clear varnish .....		0,25L	0400
	ERF	-	-	-	1128827-1	Avfettningsmedel .....	Degreasing agent .....	8	1L SPRAY	0420
2	ERF	-	-	-	1141523-9	Kylarvatska .....	Anti-freeze coolant .....		1,0L	0440
	ERF	-	-	-	1141524-7	Kylarvatska .....	Anti-freeze coolant .....		5,0L	0460
	ERF	-	-	-	1141525-4	Kylarvatska .....	Anti-freeze coolant .....		200,0L	0480
	ERF	-	-	-	1141501-5	Olja .....	Oil .....		201) 1,0L	0500
	-	-	-	-	-	-	-		ERS AV 1141543	0501
	-	-	-	-	1141543-7	Olja .....	Oil .....		223) 1,0L	0510
	ERF	-	-	-	1141507-2	Olja .....	Oil .....		201) 5,0L	0520
	-	-	-	-	-	-	-		ERS AV 1141539	0521
	-	-	-	-	1141539-5	Olja .....	Oil .....		223) 4,0L	0530
	ERF	-	-	-	1141514-8	Olja .....	Oil .....		201) 25L	0540
	-	-	-	-	-	-	-		ERS AV 1141532	0541
	-	-	-	-	1141532-0	Olja .....	Oil .....		223) 20L	0550
	ERF	-	-	-	1141504-9	Olja .....	Oil .....		201) 200L FAT	0560
	-	-	-	-	-	-	-		ERS AV 1141542	0561
	-	-	-	-	1141542-9	Olja .....	Oil .....		223) 208L FAT	0570
	ERF	-	-	-	1141502-3	Olja .....	Oil .....		202) 1,0L	0580
	ERF	-	-	-	1141506-4	Olja .....	Oil .....		202) 5,0L	0600
	-	-	-	-	-	-	-		ERS AV 1141530	061
	-	-	-	-	1141530-4	Olja .....	Oil .....		202) 4,0L	0610
	-	-	-	-	1141515-5	Olja .....	Oil .....		202) 25L	0620
	ERF	-	-	-	1141505-6	Olja .....	Oil .....		202) 200L FAT	0640
	ERF	-	-	-	3551924-8	Olja .....	Oil .....		203) 1,0L	0660
	ERF	-	-	-	281404-4	Universalolja .....	Universal oil .....		ERS AV 1381053	0680
	-	-	-	-	-	-	-			0685
	ERF	-	-	-	1381053-6	Universalolja .....	Universal oil .....		0,15L SPRAY	0700
	ERF	-	-	-	1161036-7	Allround-spray .....	Allround-spray .....		204) 1,0L	0720
	ERF	-	-	-	1141510-6	Konserveringsolja .....	Inhibiting oil .....		0,4L SPRAY	0740
	ERF	-	-	-	1161038-3	Rostskyddsmedel .....	Rustproofing agent .....	8	0,5L	0750
	ERF	-	-	-	1129709-0	Rostskyddsmedel .....	Rustproofing fluid .....		ERS AV 1141526	0751
	-	-	-	-	-	-	-		0,5L	0755
	ERF	-	-	-	1141526-2	Rostskyddsmedel .....	Rustproofing fluid .....		EP90	0760
	ERF	-	-	-	3551925-5	Växelhusolja .....	Gearbox oil .....		205) 40GR	0780
3	ERF	-	-	-	828250-1	Fett .....	Grease .....			

- 200 . Primer för aluminium, gråblå. Primer for aluminium, grey-blue.
- 201 . 10W40, bensin. 10W40, petrol.
- 202 . 20W30, diesel. 20W30, diesel.
- 203 . För tvåtaktsmotorer. For two-stroke engines.
- 204 . För kylmantel. For cooling jacket.
- 205 . Fast, saltvattenbeständig. Solid, salt water resistant.
- 223 . 10W30, bensin. 10W30, petrol.

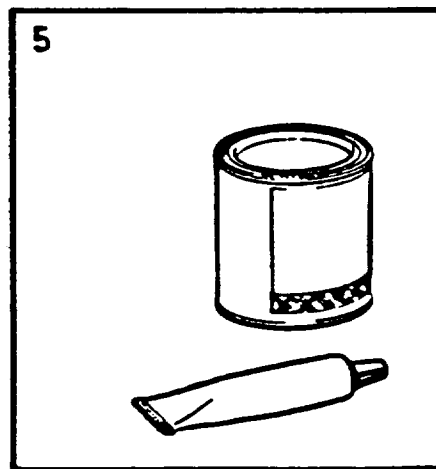
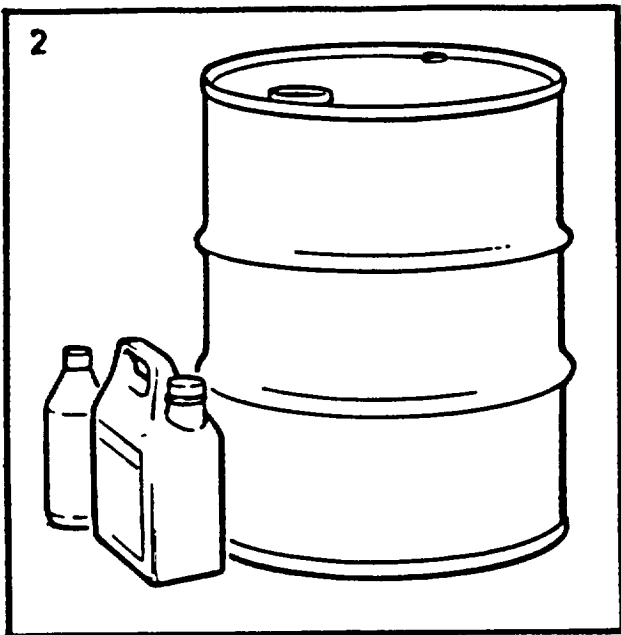
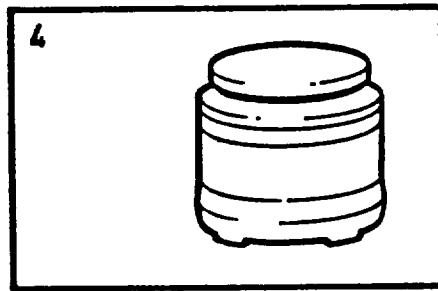
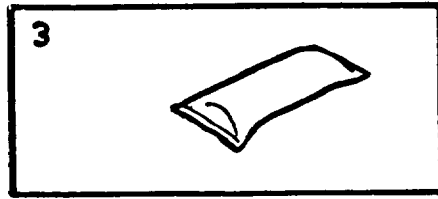
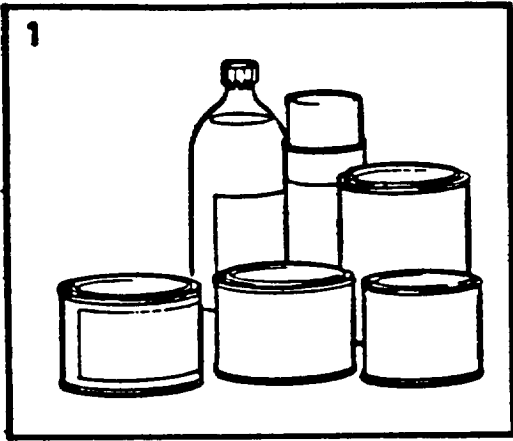


8188



Sida Page	Grupp Group	Kemikalier Chemicals			Illustration	3000				
160	9	GEM			8188					
					1987-04					
Pos Fig	. Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
4	ERF	-	-	-	1141509-8	Fett.....	Grease.....		206) 500GR	0800
	ERF	-	-	-	3551927-1	Fett.....	Grease.....		207) 250GR	0820
	ERF	-	-	-	3574692-4	Fett.....	Grease.....		208) 115GR	0840
5	ERF	-	-	-	814355-4	Lim.....	Glue.....	8	ARALDIT STD	0860
	ERF	-	-	-	850747-7	Lim.....	Glue.....		TUB STD	0880
	ERF	-	-	-	851310-3	Lim.....	Glue.....		0,94L	0900
	ERF	-	-	-	841261-1	Tätningmedel.....	Sealing agent.....			0920
	ERF	-	-	-	1161231-4	Tätningmedel.....	Sealing agent.....		0,3L	0930

206 . För propelleraxel. For propeller shaft.  
207 . För reglage. For controls.  
208 . För rostskydd. For rust protection.



# **VOLVO PENTA**

Originaldelar · Genuine Parts  
Originalteile · Pièces d'origine



0001	Innehållsfor-teckning	Index	Grupp Group	Sida Page
	1987-04		10a	1
J20				
0040				
0060	Reparationssatser		Sida	Koord
0080				
100	Reparationssatser.....	MD40A,TMD40A,TMD40B,TMD40C .....	2	3-H03
20		AQD40A,AQAD40A,AQAD40B		
40		TAMD40A,TAMD40B		
0160	Reparationssatser.....	MD40A,TMD40A,TMD40B,TMD40C ..	5	3-H06
0180		AQD40A, AQAD40A,AQAD40B		
0200		TAMD40A,TAMD40B		
0220	Reparationssatser AQDREV 280,290 ..	AQD40A,AQAD40A,AQAD40B .....	7	3-H08
0240	Reparationssatser duopropdrev ..		8	3-H09
0260	Reparationssatser Backslag MS3, MS3B, MS3C.....	MD40A,TMD40A,TMD40B,TMD40C, .	9	3-H10
0280		TAMD40A		
2000				
20^				
2i				
20b	Repair kits		Page	Grid
2080				
2100	Repair kits .....	MD40A,TMD40A,TMD40B,TMD40C	2	3-H03
2120		AQD40A,AQAD40A,AQAD40B		
21^		TAMD40A,TAMD40B		
2	Repair kits .....	MD40A,TMD40A,TMD40B,TMD40C ..	5	3-H06
21		AQD40A, AQAD40A,AQAD40B		
2200		TAMD40A,TAMD40B		
2220	Repair kits AQ drive unit 280,290 ..	AQD40A,AQAD40A,AQAD40B ..	7	3-H08
2240	Repair kits duoprop drive unit ..		8	3-H09
2260	Repair kits Reverse gear MS3, MS3B, MS3C ..	MD40A,TMD40A,TMD40B,TMD40C, .	9	3-H10
2280		TAMD40A		



Sida Page	Grupp Group	Reparationssatser Repair kits		Illustration						
2	10a	MD40A,TMD40A,TMD40B,TMD40C,AQD40A AQAD40A,AQAD40B,TAMD40A,TAMD40B		1987-04						
Pos Fig	Antal/Quantity			Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	6	-	-	875722-1	Cylinderfodersats	Cylinder liner kit			(875707)	0020
	6	-	-	875651-2	.Tätningringsats.	.Seal ring kit			(275595)	0040
	6	-	-	275350-7	.Kolvringsats	.Piston ring kit			(275326)	0060
	6	-	-		.Kolv	.Piston	8			0080
	6	-	-	1542160-5	.Kolvbult	.Gudgeon pin				0100
	12	-	-	914519-4	.Låsring	.Lock ring				0120
										0140
	6	-	-	875651-2	Tätningringsats	Seal ring kit				0160
	24	-	-		.Tätningring	.Seal ring	8			0180
										0200
	6	-	-	275350-7	Kolvringsats	Piston ring kit	8	(275326)		0220
	6	-	-		.Oljering	.Oil ring	8			0240
	12	-	-		.Kompressionsring	.Compression ring	8			0260
	6	-	-	270111-8	Vevlagersats	Big-end bearing kit			STDD	0280
	6	-	-	270112-6	Vevlagersats	Big-end bearing kit			UD 0,25MM	0300
	6	-	-	270113-4	Vevlagersats	Big-end bearing kit			UD 0,50MM	0320
	6	-	-	270114-2	Vevlagersats	Big-end bearing kit			UD 0,75MM	0340
	7	-	-	270467-4	Ramlagersats	Main bearing set			13)STDD (270460)	0360
	7	-	-	270468-2	Ramlagersats	Main bearing set			13)UD 0,25MM(270461)	0400
	7	-	-	270469-0	Ramlagersats	Main bearing set			13)UD 0,50MM(270462)	0440
	7	-	-	270470-8	Ramlagersats	Main bearing kit			13)UD 0,75MM(270463)	0460
										0480
	1	-	-	270464-1	Tryckbricksats	Thrust washer kit			STDD	0500
	1	-	-	270465-8	Tryckbricksats	Thrust washer kit			OD 0,1MM	0520
	1	-	-	270466-6	Tryckbricksats	Thrust washer kit			OD 0,2MM	0540
										0560
	1	-	-	275569-2	Reservdelssats	Spare parts kit	1			0580
					oljepump	oil pump				0600
	1	-	-		.Axel med kuggjul	.Shaft with gear	8			0620
	1	-	-		.Kuggjul	.Gear	8			0640
	2	-	-	470234-6	.Bussning	.Bushing			(940359)	0660
	1	-	-	910115-5	.Kil	.Key				0680
	1	-	-	424133-7	.Axialbricka	.Washer				0700
										0720
	1	-	-	875626-4	Reparationssats	Repair kit	1			0740
					irkulationspump	circulating pump				0760
	1	-	-	1660609-7	.Kullager	.Ball bearing			(181670)	0780
	1	-	-	70913-9	.Avkastare	.Slinger				0800
	1	-	-	1545283-2	.Tätningring	.Seal ring			(1542833) MO 31380-	0820
	1	-	-		.Axel	.Shaft	8			0840
	1	-	-	421306-2	.Slitring	.Wear ring				0860
	1	-	-	181538-0	.Kullager	.Ball bearing				0880
	1	-	-	914462-7	.Låsring	.Lock ring				0900
	4	-	-	941907-8	.Bricka	.Washer				0920
										0940
	1	-	-	875759-3	Reparationssats	Repair kit	1	D40		0960
					sjovattenpump	sea water pump				0980
	1	-	-		.Kam	.Cam	8			1000
	1	-	-		.Kam	.Cam	8			1020
	1	-	-		.Axel	.Shaft	8			1040
	6	-	-	940102-7	.Skruv	.Screw				1060
	2	-	-	827247-8	.Tätningring	.Seal ring				1080
	1	-	-	960166-7	.O-ring	.O ring				1100
	2	-	-		.Kullager	.Ball bearing	8			1120
	1	-	-	914523-6	.Låsring	.Lock ring				1140
	1	-	-	808285-1	.Skruv	.Screw				1160
	1	-	-	801566-1	.Skruv	.Screw				1180
	1	-	-		.Lock	.Cover	8			1200

1500

Illustration		Reparationssatser				Repair kits		Grupp Group	Sida Page
1987-04		MD40A,TMD40A,TMD40B,TMD40C,AQD40A,AQAD40A,AQAD40B,TAMD40A,TAMD40B						10a	3
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	Anmärkning Notes
20	1	-	-	-		.Bricka	.Washer	8	
1240									
1260	1	-	-	-	875712-2	Reparationssats, sjuvattenpump	Repair kit, sea water pump	8	AD40, MO-33190
1280									
1300	1	-	-	-	825727-1	.Lock	.Cover		
1320	1	-	-	-	846114-7	.Kam	.Cam		
1340	1	-	-	-	826230-5	.Slitbricka	.Wear plate		
1360	1	-	-	-	826229-7	.Stift	.Pin		
1380	1	-	-	-	826234-7	.Avkastare	.Deflector		
1400	1	-	-	-	846113-9	.Bricka	.Washer	8	
14"	1	-	-	-		.Axel	.Shaft	8	
14	1	-	-	-	914533-5	.Låsring	.Lock ring		
1460	1	-	-	-	846110-5	.Distansbricka	.Spacer washer		
1480	2	-	-	-	1526189-4	.Kullager	.Ball bearing		(181648)
1500	1	-	-	-	838523-9	Tatning	Seal		
1520	1	-	-	-	838524-7	Bricka	Washer		
152"	1	-	-	-	838525-4	Bricka	Washer		
15	1	-	-	-	825730-5	.Skruv	.Screw		
1580	5	-	-	-	955269-6	.Skruv	.Screw		
1600									
1620	1	-	-	-	875769-2	Reparationssats, sjuvattenpump	Repair kit, sea water pump	1	AD40, MO33191-
1640									
1660	1	-	-	-	825727-1	.Lock	.Cover		
1680	1	-	-	-	825730-5	.Skruv	.Screw		
1700	1	-	-	-	826229-7	.Pinne	.Pin		
1720	1	-	-	-	826230-5	.Slitbricka	.Wear washer		
*740	1	-	-	-	826234-7	.Avkastare	.Slinger		
50	1	-	-	-	838523-9	Tatning	Seal		
80	1	-	-	-	838524-7	.Bricka	.Washer		
1800	1	-	-	-	838525-4	.Bricka	.Washer		
1820	1	-	-	-	846110-5	.Distansbricka	.Spacer washer		
1840	1	-	-	-		.Axel	.Shaft	8	
1860	1	-	-	-	846114-7	.Kam	.Cam		
1880	1	-	-	-	914533-5	.Spårring	.Circlip		
1900	5	-	-	-	963554-1	.Skruv	.Screw		
1920	2	-	-	-	1526189-4	.Kullager	.Ball bearing		
1940									
19	1	-	-	-	875646-2	Packningssats ansl. turbokompressor	Gasket kit, conn. turbo compressor	1	
19.	1	-	-	-					
2000	1	-	-	-	843009-2	.Packning	.Gasket		
2020	1	-	-	-	842943-3	.Packning	.Gasket		
2040	2	-	-	-	18671-8	.Bricka	.Washer		
2060	1	-	-	-	949656-3	.Packning	.Gasket		(191058)
20"	1	-	-	-	845829-1	.Packning	.Gasket		(844002)
21.	4	-	-	-	957173-8	.Packning	.Gasket		
2120	2	-	-	-	948610-1	.O-ring	.O-ring		
2140	1	-	-	-	842645-4	.Packning	.Gasket		
2160	1	-	-	-	842913-6	.Tatningsring	.Seal ring		
2180	1	-	-	-	845353-2	.Packning	.Packing		
2200									
2220	1	-	-	-	875632-2	Reparationssats, turbokompressor	Repair kit, turbo compressor	1	
2240									
2260	2	-	-	-	838562-7	.Bussning	.Bushing		
2280	4	-	-	-	845042-1	.Låsring	.Lock ring		
00	4	-	-	-	845045-4	.Kolring	.Piston ring		
120	1	-	-	-	838568-4	.Axiallager	.Bearing		
2340	1	-	-	-	845047-0	.Oljeavvisare	.Oil deflector		
2360	1	-	-	-	845824-2	.O-ring	.O-ring		
2380	1	-	-	-	838426-5	.O-ring	.O-ring		
2400	4	-	-	-	845829-1	.Skruv	.Screw		
2420	4	-	-	-	838568-4	.Bricka	.Washer		
2440	1	-	-	-	848711-8	.Mutter	.Nut		
2460	6	-	-	-	838570-0	.Skruv	.Screw		



Sida Page	Grupp Group	Reparationssatser Repair kits		Illustration	1500						
4	10a	MD40A,TMD40A,TMD40B,TMD40C,AQD40A,AQAD40A,AQAD40B,TAMD40A,TAMD40B		1987-04							
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
	3	-	-	-	845825-9	•Spännsegment .....	•Clip plate . . . . .				2480
	3	-	-	-	845826-7	•Spännsegment . . . . .	•Clip plate.. . . . .				2500
	6	-	-	-	844006-7	•Mutter . . . . .	•Nut.....				2520
	6	-	-	-	844007-5	•Skruv . . . . .	•Screw.....		8		2540
	6	-	-	-	844008-3	•Fjädrande bricka . . . . .	•Resilient washer.. . . .				2560

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Illustration		Reparationssatser				Repair kits			Grupp Group	Sida Page
1987-04		MD40A,TMD40A,TMD40B,TMD40C,AQD40A,AQAD40A,AQAD40B,TAMD40A,TAMD40B							10a	5
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
020	1	-	-	-	875633-0	Packningssats	Gasket kit	8	ERSAV 875662	
040	-	-	-	-		totning	decarbonizing			
0060	1	-	-	-	875662-9	Packningssats	Gasket kit	1		
0080						totning	decarbonizing			
0100	1	-	-	-	859155-4	Packning	Gasket		(858503)	
0140	6	-	-	-	1306630-3	Ventiltätning	Seal		(419702)	
0160	1	-	-	-	1542287-6	Packning	Gasket			
0180	1	-	-	-	940096-1	Packning	Gasket			
0220	4	-	-	-	469846-0	Tätningring	Sealing ring		(424342)	
0240	14	-	-	-	957171-2	Packning	Gasket			
0260	6	-	-	-	1542157-1	Bricka	Washer			
02	6	-	-	-	1542159-7	Bricka	Washer			
0300	6	-	-	-	1542158-9	Bricka	Washer			
0320	6	-	-	-	1542123-3	Packning	Gasket		14) (1542177)	
0340	1	-	-	-	925065-5	Gummiring	Ring			
0360	1	-	-	-	843042-3	Packning	Gasket			
0380	6	-	-	-	1542289-2	Packning	Gasket			
04	1	-	-	-	1542187-8	Packning	Gasket			
0420	6	-	-	-	925067-1	Gummiring	Ring			
0440	2	-	-	-	949658-9	O-ring	O-ring		(925061)	
0480	1	-	-	-	858986-3	Tätningring	Sealing ring		(842744)	
0520	2	-	-	-	949658-9	O-ring	O-ring		(925061)	
0560	1	-	-	-	842986-2	Packning	Gasket			
0580	1	-	-	-	947621-9	Packning	Gasket			
0600	1	-	-	-	844084-4	Packning	Gasket		MO2201-	
0620										
0640	1	-	-	-	875634-8	Packningssats	Gasket kit	1		
0660						tillagg helrenovering	reconditioning			
0680	2	-	-	-	18839-1	Packning	Gasket			
0700	8	-	-	-	11994-1	Bricka	Washer			
0720	2	-	-	-	957175-3	Packning	Gasket		(955174)	
0740	1	-	-	-	968971-2	O-ring	O-ring		(947314)	
0780	1	-	-	-	957173-8	Packning	Gasket			
0800	1	-	-	-	18677-5	Packning	Gasket			
0840	1	-	-	-	1542229-8	Packning	Gasket			
0860	1	-	-	-	968971-2	O-ring	O-ring		(947314)	
0880	1	-	-	-	949658-9	O-ring	O-ring		(925061)	
09	1	-	-	-	1542219-9	Packning	Gasket			
095	1	-	-	-	859038-2	Packning	Gasket		(842990)	
0960	1	-	-	-	1542318-9	Tätningring	Sealing ring			
1040	1	-	-	-	859032-5	Packning	Gasket		(1542247)	
1060	1	-	-	-	842928-4	Packning	Gasket			
1080	1	-	-	-	18818-5	Packning	Gasket			
1100	1	-	-	-	829487-8	Packning	Gasket			
1120	1	-	-	-	829488-6	Packning	Gasket			
1160	1	-	-	-	1542204-1	Tätningring	Sealing ring			
1220	1	-	-	-	469482-4	Packningssats	Ring		(424346)	
1240	2	-	-	-	1542385-8	Tätningring	Ring			
1260	6	-	-	-	955981-6	O-ring	Rubber ring			
1280	1	-	-	-	925060-6	O-ring	O-ring			
1300	1	-	-	-	960156-8	O-ring	Rubber ring			
1320	4	-	-	-	469483-2	Tätningring	Sealing ring		(422581)	
1340	2	-	-	-	925065-5	Gummiring	Ring			
1360	1	-	-	-	947627-6	Packning	Gasket			
1380	2	-	-	-	469483-2	Tätningring	Sealing ring		(422581)	
400	2	-	-	-	859086-1	Tätningring	Sealing ring		(842586)	
1420	2	-	-	-	948981-6	O-ring	O-ring			
1440	1	-	-	-	842597-7	Packning	Gasket			
1460	1	-	-	-	463392-1	Packning	Gasket			
1480	3	-	-	-	1542052-4	Packning	Gasket			



Sida Page	Grupp Group	Reparationssatser Repair kits		Illustration						
6	10a	MD40A,TMD40A,TMD40B,TMD40C,AQD40A,AQAD40A,AQAD40B,TAMD40A,TAMD40B		1987-04						
Pos Fig	Antal/Quantity			Artikelnr Part No	Benamning	Description	Sats Kit	B P S R	Anmärkning Notes	
6	-	-	-	469846-0	.Tatningsring . . . . .	.Sealring . . . . .			(424342)	1500
1	-	-	-	421158-7	.Tätningring.....	.Ring . . . . .				1520
1	-	-	-	843449-0	.Packning . . . . .	.Gasket . . . . .				1560
1	-	-	-	842724-7	.Tätning . . . . .	.Seal . . . . .				1580
1	-	-	-	803068-6	.Tätning... . . . .	.Sealing . . . . .				1620
2	-	-	-	842695-9	.Gummidamask . . . . .	.Rubber hose . . . . .				1660
2	-	-	-	925062-2	.O-ring . . . . .	.O-ring . . . . .				1700
1	-	-	-	842669-4	.Packning . . . . .	.Gasket . . . . .				1720
2	-	-	-	416033-9	.Tätningring . . . . .	.Seal ring . . . . .			(418361)	1760
4	-	-	-	925063-0	.Gummiring . . . . .	.Ring . . . . .				1780
2	-	-	-	957181-1	.Packning.....	.Gasket . . . . .				1800
1	-	-	-	925059-8	.O-ring . . . . .	.Rubber ring.....				1860
2	-	-	-	957184-5	.Packning . . . . .	.Gasket . . . . .				1880
2	-	-	-	925094-5	.O-ring . . . . .	.O ring . . . . .				1900
1	-	-	-	955983-2	.O ring.....	.Rubber ring . . . . .				1920
1	-	-	-	957181-1	.Packning . . . . .	.Gasket . . . . .				1940
1	-	-	-	842913-6	.Tätningring . . . . .	.Seal ring . . . . .				1980
1	-	-	-	844084-4	.Packning . . . . .	.Gasket . . . . .				2000
1	-	-	-	845301-1	.Packning . . . . .	.Gasket . . . . .				2020
2	-	-	-	838979-3	.Packning . . . . .	.Seal . . . . .			(845334)	2040
1	-	-	-	845353-2	.Packning . . . . .	.Gasket . . . . .				2060
1	-	-	-	859047-3	.Packning . . . . .	.Gasket . . . . .			(845585)	2080
4	-	-	-	925067-1	.O-ring . . . . .	.O-ring . . . . .				2100

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Illustration	Reparationssatser	Repair kits	Grupp Group	Sida Page
1987-04	AQDREV 280,290 AQD40A,AQAD40A,AQAD40B	AQ drive unit 280,290	10a	7

Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes
	875									
20	1	-	-	-	875192-7	Packningssats	Gasket kit		1	
J60	2	-	-	-	17253-6	.Saxpinne	.Cotter pin			
J080	2	-	-	-	181620-6	.Tätningssring	.Seal ring			
J100	1	-	-	-	941338-6	.Låstråd	.Lock wire			L=300MM
J120	2	-	-	-	804261-6	.Packning	.Gasket			
J140	2	-	-	-	897426-3	.Tätningssring	.Seal ring			
J160	1	-	-	-	897682-1	.Packning	.Gasket			
J180	2	-	-	-	125017-4	.O-ring	.Seal ring			
J220	1	-	-	-	925093-7	.O-ring	.O ring			
J260	3	-	-	-	925256-0	.O-ring	.Rubber ring			
J30"	2	-	-	-	925258-6	.Gummiring	.Pist ring			
J3.	1	-	-	-	925259-4	.O-ring	.Rubber ring			
J360	1	-	-	-	942615-6	.Tätningssring	.Seal ring			
J380	1	-	-	-	941820-3	.O-ring	.O ring			
J400	1	-	-	-	958838-5	.O-ring	.O-ring			(941866)
J440	1	-	-	-	951924-0	.Spannstift	.Pin			
J48"	1	-	-	-	956000-4	.Gummiring	.Ring			
J5	1	-	-	-	814168-1	.Packning	.Gasket			
J520	1	-	-	-	804344-0	.Packning	.Gasket			
J540	1	-	-	-	814356-2	.Tätning	.Sealing			
J580	1	-	-	-	814359-6	.V-ring	.V-ring			
J600	2	-	-	-	925261-0	.Gummiring	.Gasket			
J620	1	-	-	-	191573-5	.Låsbricka	.Lock washer			
J640	1	-	-	-	814165-7	.Bricka	.Washer			
J660	1	-	-	-	907023-6	.Låsbricka	.Washer			
J680	1	-	-	-	907025-1	.Låsbricka	.Washer			
J700	1	-	-	-	839253-2	.Tätningssring	.Seal ring			
J720	1	-	-	-	955989-9	.O ring	.Ring			
J40	1	-	-	-	804261-6	.Packning	.Gasket			
J760	1	-	-	-	832669-6	.Packning	.Gasket			
J780	1	-	-	-	832191-1	.Packning	.Gasket			
J800	4	-	-	-	925055-6	.O-ring	.Rubber ring			
J840	1	-	-	-	839195-5	.V-ring	.V-ring			
J860	1	-	-	-	955974-1	.O-ring	.O-ring			



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Illustration		Reparationssatser				Repair kits				Grupp	Sida
		Backslag MS3, MS3B, MS3C				Reverse gear MS3, MS3B, MS3C				10a	9
1987-04		MD40A, TMD40A, TMD40B, TMD40C, TAMD40A									
Pos Fig	Antal/Quantity				Artikel nr Part No	Benämning	Description	Sats Kit	B P S R	Anmärkning Notes	
120	1	-	-	-	875628-0	Packningsatts .	Gasket kit. ....				
J40	1	-	-	-	832669-6	.Packning .....	.Gasket .....				
0060	1	-	-	-	839253-2	.Tätningring .....	.Seal ring. ....				
0080	1	-	-	-	897682-1	.Packning .....	.Gasket .....				
0100	1	-	-	-	125018-2	.O-ring .. .. .	.O-ring . . . . .				
0120	1	-	-	-	925069-7	.Gummiring. . . . .	.Ring .....				
0140	1	-	-	-	925092-9	.Gummiring. . . . .	.Ring. . . . .				
0160	1	-	-	-	925093-7	.O-ring .. .. .	.O ring .....				
0180	1	-	-	-	925095-2	.Gummiring .....	.Seal .. . . . .				
0200	2	-	-	-	851531-4	.Packning .....	.Gasket ... . .				
0220	1	-	-	-	925258-6	.O-ring .....	.O-ring .....				
02	2	-	-	-	925263-6	.O-ring .....	.O ring .. . . .				
0260	1	-	-	-	958838-5	.O-ring .....	.O-ring .. . . .		(941866)		
0280	4	-	-	-	942353-4	.O-ring .....	.O ring .. . . .				
0300	1	-	-	-	955974-1	.Packning .....	.Ring .. . . . .				
0320	1	-	-	-	955989-9	.O-ring .....	.Ring. . . . .				
0340	1	-	-	-	956000-4	.Gummiring .....	.Ring .. . . . .				
03	1	-	-	-	957173-8	.Packning .....	.Gasket. . . . .		MS3,MS3B		
0300	1	-	-	-	957175-3	.Packning .....	.Gasket .....		MS3C		
0380	1	-	-	-	958879-9	.Tätningring .....	.Seal ring .. . . .				
0400	3	-	-	-	925267-7	.O-ring .. .. .	.O-ring .. . . .				
0420	1	-	-	-	958880-7	.Tätningring .....	.Seal ring .....				
0440	4	-	-	-	960169-1	.O-ring .. .. .	.O-ring . . . . .				
0460	1	-	-	-	957175-3	.Packning .....	.Gasket .....				
0480	1	-	-	-	925063-0	.O-ring .... . . .	.O-ring .. . . .				
0500	1	-	-	-	925096-0	.O-ring .. . . . .	.O-ring .. . . .				
0520	3	-	-	-	925256-0	.O-ring .. . . . .	.O-ring .. . . .				
0540	1	-	-	-	925257-8	.O-ring .. . . . .	.O-ring .. . . .				
0560	1	-	-	-	944530-5	.V-ring .. . . . .	.V-ring .. . . .				
0580	1	-	-	-	853757-3	.Tätningring .. . . .	.Seal ring .....		(959026)		



# **VOLVO PENTA**

Originaldelar · Genuine Parts  
Originalteile · Pièces d'origine

1987-04				Nummerregister				Numerical register				Grupp	Sida		
1987-04				Nummerregister				Numerical register				Group	Page		
1987-04				Nummerregister				Numerical register				10b	1		
Artikel nr	Gr	Sida	Koord.	Artikel nr	Gr	Sida	Koord.	Artikel nr	Gr	Sida	Koord.	Artikel nr	Gr	Sida	Koord.
Part No	Gr	Page	Grid	Part No	Gr	Page	Grid	Part No	Gr	Page	Grid	Part No	Gr	Page	Grid
755-9	9	156	3-G15	18839-1	2c	50	1-H17	74033-2	2c	2	1-F17	181105-8	4a	34	2-B11
11010-6	2b	32	1-E09	10a	5	3-H06	10a	5	3-H06	2c	4	1-F19	4a	38	2-B15
11013-0	4a	26	2-B03	19280-7	9	124	3-F07	2c	6	1-F21	4a	42	2-B19		
	4a	30	2-B07	19923-2	3	4	1-J05	2c	10	1-G01	4a	52	2-C05		
	4a	34	2-B11		3	10	1-J11	2c	14	1-G05	4a	54	2-C07		
	4a	36	2-B13		3	30	1-K07	2c	2	1-F17	181301-3	4b	8	2-D09	
	4a	42	2-B19		3	32	1-K09	2c	6	1-F21	4b	14	2-D15		
	4a	52	2-C05		9	42	3-B21	2c	10	1-G01	4b	20	2-D21		
	4a	54	2-C07		9	44	3-B23	2c	14	1-G05	181302-1	4b	8	2-D09	
11044-5	4c	40	2-G17		9	46	3-C01	2c	2	1-F17	4b	14	2-D15		
11072-6	4c	22	2-F23		9	48	3-C03	2c	6	1-F21	4b	20	2-D21		
	4c	26	2-G03		9	70	3-D01	2c	10	1-G01	181303-9	4b	2	2-D03	
	4c	40	2-G17		9	82	3-D13	2c	14	1-G05	4b	8	2-D09		
11426-4	3	36	1-K13		9	88	3-D19	76614-7	3	40	1-K17	4b	14	2-D15	
11994-1	2c	2	1-F17		9	92	3-D23	9	142	3-G01	181304-7	4b	2	2-D03	
	2c	6	1-F21		9	94	3-E01	81374-1	4c	40	2-G17	4b	8	2-D09	
	2c	10	1-G01		9	98	3-E05	81375-8	4c	40	2-G17	4b	14	2-D15	
	2c	14	1-G05		9	126	3-F09	81376-6	4c	40	2-G17	181332-8	9	142	3-G01
	9	146	3-G05		9	138	3-F21	82745-1	2b	2	1-D03	181359-1	4b	2	2-D03
	9	148	3-G07		9	148	3-G07	2b	4	1-D05	4b	8	2-D09		
	9	150	3-G09		9	150	3-G09	2b	6	1-D07	4b	14	2-D15		
	10a	5	3-H06	25167-8	2b	38	1-E15	2b	20	1-D21	4b	20	2-D21		
16291-7	2b	20	1-D21		2b	42	1-E19	2b	22	1-D23	4c	8	2-F09		
	2b	28	1-E05		2b	46	1-E23	2b	54	1-F07	4c	12	2-F13		
	2b	30	1-E07		9	34	3-B13	2b	56	1-F09	4c	30	2-G07		
17253-6	4c	14	2-F15	25261-9	2c	24	1-G15	2b	58	1-F11	181366-6	4c	22	2-F23	
	4c	18	2-F19		2c	28	1-G19	4a	6	2-A07	4c	26	2-G03		
	4c	20	2-F21		2c	36	1-H03	4a	14	2-A15	181424-3	9	124	3-F07	
	4c	32	2-G09		2c	42	1-H09	4b	4	2-D05	181501-8	9	142	3-G01	
	4c	36	2-G13	25464-9	2c	26	1-G17	4b	10	2-D11	181538-0	2b	28	1-E05	
	4c	38	2-G15		2c	28	1-G19	4b	16	2-D17	2b	30	1-E07		
	9	52	3-C07		2c	38	1-H05	4b	4	2-D05	10a	2	3-H03		
	9	54	3-C09		2c	44	1-H11	4b	10	2-D11	181601-6	3	18	1-J19	
	9	58	3-C13	25534-9	2c	18	1-G09	4b	16	2-D17	3	22	1-J23		
	9	60	3-C15		2c	20	1-G11	(84600)	2b	10	1-D11	9	74	3-D05	
	10a	7	3-H08	25703-0	2c	26	1-G17	86287-0	3	28	1-K05	9	76	3-D07	
	10a	8	3-H09		2c	30	1-G21	87654-0	4b	2	2-D03	181620-6	4c	14	2-F15
(17276)	4a	2	2-A03		2c	38	1-H05	4b	8	2-D09	4c	18	2-F19		
	4a	6	2-A07		2c	44	1-H11	4b	14	2-D15	4c	32	2-G09		
	4b	4	2-D05		2c	50	1-H17	4b	2	2-D03	4c	36	2-G13		
	4b	10	2-D11	26411-9	4b	2	2-D03	87655-7	4b	8	2-D09	10a	7	3-H08	
	4b	18	2-D19		4b	8	2-D09	4b	14	2-D15	10a	8	3-H09		
	4b	24	2-E01		4b	14	2-D15	87698-7	4a	44	2-B21	(181648)	2b	32	1-E09
	4c	14	2-F15		4b	20	2-D21	89865-0	9	34	3-B13	10a	3	3-H04	
	4c	32	2-G09		4c	8	2-F09	9	42	3-B21	(181670)	2b	28	1-E05	
	6	20	2-H21		4c	12	2-F13	9	44	3-B23	2b	30	1-E07		
17276-7	4c	18	2-F19		4c	30	2-G07	9	46	3-C01	10a	2	3-H03		
	4c	36	2-G13	42980-3	4b	20	2-D21	94026-2	3	2	1-J03	181797-2	3	18	1-J19
17378-1	2a	8	1-B09		4c	22	2-F23	3	8	1-J09	3	22	1-J23		
	2a	12	1-B13		4c	26	2-G03	100222-9	3	16	1-J17	9	74	3-D05	
	2a	16	1-B17		4c	40	2-G17	9	102	3-E09	9	76	3-D07		
18671-8	2a	8	1-B09	42981-1	4b	20	2-D21	118123-9	2a	34	1-C11	181875-6	9	80	3-D11
	2a	12	1-B13		4c	22	2-F23	9	2	3-A05	(182008)	3	36	1-K13	
	2b	38	1-E15		4c	26	2-G03	121563-1	2c	4	1-F19	182009-1	9	50	3-C05
	2b	42	1-E19		4c	40	2-G17	121565-6	2a	34	1-C11	9	54	3-C09	
	2b	46	1-E23	42109-3	3	28	1-K05	125017-4	4c	14	2-F15	9	56	3-C11	
	10a	3	3-H04	48588-8	2c	4	1-F19	4c	18	2-F19	182010-9	3	36	1-K13	
18677-5	2b	38	1-E15		2c	6	1-F21	4c	32	2-G09	182059-6	3	32	1-K09	
	2b	42	1-E19		2c	10	1-G01	4c	36	2-G13	9	44	3-B23		
	10a	5	3-H06		2c	14	1-G05	9	128	3-F11	9	70	3-D01		
18817-7	9	36	3-B15		9	146	3-G05	9	130	3-F13	9	88	3-D19		
18818-5	2a	34	1-C11	60309-2	4c	8	2-F09	10a	7	3-H08	9	126	3-F09		
	10a	5	3-H06		4c	12	2-F13	10a	8	3-H09	4b	2	2-D03		
18836-7	2c	52	1-H19		4c	30	2-G07	125018-2	4b	4	2-D05	4b	8	2-D09	
18839-1	2c	2	1-F17	61544-3	9	136	3-F19	4b	10	2-D11	4b	14	2-D15		
	2c	6	1-F21	70913-9	2b	28	1-E05	10a	9	3-H10	4b	22	2-D23		
	2c	10	1-G01		2b	30	1-E07	181105-8	4a	26	2-B03	4c	6	2-F07	
	2c	14	1-G05		10a	2	3-H03	4a	28	2-B05	4c	10	2-F11		



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183247-6	4c	28	2-G05	191487-8	2b	42	1-E19	243520-4	2c	40	1-H07	244417-2	2c	50	1-H17
183272-4	4c	40	2-G17		2b	46	1-E23	243521-2	2c	24	1-G15	244418-0	2c	50	1-H17
183327-6	4b	16	2-D17	191573-5	10a	7	3-H08		2c	30	1-G21	244419-8	2c	50	1-H17
	4b	22	2-D23		10a	8	3-H09		2c	36	1-H03	244420-6	2c	50	1-H17
183328-4	4b	16	2-D17	191600-6	9	34	3-B13		2c	40	1-H07	244421-4	2c	50	1-H17
	4b	22	2-D23	191830-9	9	34	3-B13	243527-9	2c	22	1-G13	244422-2	2c	50	1-H17
183374-8	4c	22	2-F23	191840-8	4b	2	2-D03		2c	28	1-G19	244423-0	2c	50	1-H17
	4c	26	2-G03		4b	8	2-D09		2c	34	1-H01	(244424)	2c	46	1-H13
	4c	40	2-G17		4b	14	2-D15		2c	40	1-H07	244425-5	2c	24	1-G15
183390-4	4c	22	2-F23	191844-0	4a	24	2-B01		2c	46	1-H13		2c	30	1-G21
	4c	26	2-G03		4a	28	2-B05	243530-3	2c	22	1-G13		2c	36	1-H03
183391-2	4c	14	2-F15		4a	32	2-B09		2c	28	1-G19		2c	42	1-H09
	4c	18	2-F19		4a	36	2-B13		2c	34	1-H01		2c	48	1-H15
	4c	32	2-G09		4a	42	2-B19		2c	40	1-H07	244449-5	2c	30	1-G21
	4c	36	2-G13		4a	58	2-C11		2c	46	1-H13		2c	48	1-H15
183497-7	4c	22	2-F23		9	122	3-F05	243531-1	2c	22	1-G13	244688-8	2c	22	1-G13
	4c	26	2-G03	191873-9	2a	18	1-B19		2c	28	1-G19		2c	28	1-G19
183668-3	4b	2	2-D03		2a	20	1-B21		2c	34	1-H01		2c	34	1-H01
	4b	4	2-D05	191940-6	2a	42	1-C19		2c	40	1-H07		2c	40	1-H07
	4b	8	2-D09		2a	44	1-C21	243534-5	2c	22	1-G13		2c	46	1-H13
	4b	10	2-D11		2a	46	1-C23		2c	28	1-G19	244691-2	2c	22	1-G13
	4b	14	2-D15		4a	46	2-B23		2c	34	1-H01		2c	28	1-G19
	4b	16	2-D17		4a	52	2-C05		2c	40	1-H07		2c	34	1-H01
	4b	22	2-D23		4a	54	2-C07	243535-2	2c	46	1-H13		2c	46	1-H13
	4c	6	2-F07		9	142	3-G01	(243543)	2c	22	1-G13	244789-4	2c	54	1-H21
	4c	10	2-F11	191992-7	2b	38	1-E15		2c	46	1-H13	244790-2	2c	54	1-H21
	4c	28	2-G05		2b	42	1-E19	243545-1	2c	22	1-G13	244791-0	2c	54	1-H21
(183729)	4b	2	2-D03		2b	46	1-E23		2c	28	1-G19	244793-6	2c	54	1-H21
	4b	8	2-D09	192134-5	2b	2	1-D03		2c	34	1-H01	244794-4	2c	54	1-H21
	4b	14	2-D15		2b	14	1-D15		2c	40	1-H07	244795-1	2c	56	1-H23
	4b	20	2-D21		2b	34	1-E11	243555-0	2c	22	1-G13	244797-7	2c	54	1-H21
	4c	6	2-F07		2b	38	1-E15		2c	28	1-G19	244799-3	2c	54	1-H21
	4c	10	2-F11		2b	42	1-E19		2c	34	1-H01	244800-9	2c	54	1-H21
	4c	28	2-G05		2b	46	1-E23	(243558)	2c	40	1-H07	244803-3	2c	54	1-H21
(183840)	4b	2	2-D03		2b	54	1-F07		2c	22	1-G13	244804-1	2c	54	1-H21
183859-8	4c	40	2-G17		4a	52	2-C05	243559-2	2c	46	1-H13	244805-8	2c	54	1-H21
184165-9	4b	2	2-D03	192154-3	2b	18	1-D19		2c	22	1-G13	244806-6	2c	54	1-H21
184649-2	4b	20	2-D21	192358-0	2b	38	1-E15		2c	28	1-G19	244807-4	2c	54	1-H21
184654-2	4c	40	2-G17		2b	42	1-E19		2c	34	1-H01	244813-2	2c	56	1-H23
184682-3	4c	40	2-G17	192426-5	2a	30	1-C07		2c	40	1-H07	244931-2	2c	22	1-G13
184683-1	4c	40	2-G17		2a	32	1-C09		2c	46	1-H13		2c	28	1-G19
184689-8	4c	40	2-G17		2b	56	1-F09	243560-0	2c	22	1-G13	245730-7	2c	46	1-H13
184690-6	4c	40	2-G17		2b	58	1-F11		2c	28	1-G19	270111-8	2a	18	1-B19
184691-4	4c	40	2-G17	192451-3	4a	20	2-A21		2c	34	1-H01		2a	20	1-B21
184700-3	6	30	2-I07		4a	22	2-A23		2c	40	1-H07		10a	2	3-H03
185501-4	3	34	1-K11	192662-5	4c	14	2-F15		2c	46	1-H13	270112-6	2a	18	1-B19
185506-3	3	34	1-K11		4c	20	2-F21	(243561)	2c	22	1-G13		2a	20	1-B21
185507-1	3	34	1-K11		4c	32	2-G09		2c	46	1-H13		10a	2	3-H03
185509-7	3	34	1-K11		4c	38	2-G15	(243562)	2c	22	1-G13	270113-4	2a	18	1-B19
190128-9	3	36	1-K13	210056-8	9	152	3-G11		2c	46	1-H13		2a	20	1-B21
190878-9	4a	26	2-B03		9	154	3-G13	243567-5	2c	24	1-G15		10a	2	3-H03
	4a	28	2-B05	(233321)	2c	22	1-G13		2c	30	1-G21	270114-2	2a	18	1-B19
	4a	34	2-B11		2c	46	1-H13		2c	38	1-H05		2a	20	1-B21
	4a	36	2-B13	(238426)	2c	50	1-H17		2c	42	1-H09		10a	2	3-H03
	4a	60	2-C13	238951-8	2c	30	1-G21	243572-5	2c	24	1-G15	(270460)	10a	2	3-H03
190962-1	9	36	3-B15	240090-1	2c	46	1-H13		2c	36	1-H03	270460-9	2a	18	1-B19
190990-2	2c	50	1-H17	(240975)	9	138	3-F21		2c	42	1-H09		2a	20	1-B21
191026-4	2a	10	1-B11	241315-1	3	30	1-K07		9	100	3-E07	(270461)	2a	18	1-B19
	2a	14	1-B15	241383-9	3	30	1-K07	243700-2	3	6	1-J07		2a	20	1-B21
	2a	16	1-B17	243463-7	2c	20	1-G11		3	12	1-J13		10a	2	3-H03
(191058)	10a	3	3-H04	(243464)	2c	20	1-G11	243786-1	2c	24	1-G15	(270462)	10a	2	3-H03
191157-7	2b	38	1-E15	243506-3	2c	22	1-G13		2c	30	1-G21	270462-5	2a	18	1-B19
	2b	42	1-E19		2c	28	1-G19		2c	48	1-H15		2a	20	1-B21
191172-6	3	16	1-J17		2c	34	1-H01	243851-3	2c	26	1-G17	(270463)	2a	18	1-B19
	9	68	3-C23		2c	40	1-H07		2c	30	1-G21		2a	20	1-B21
	9	102	3-E09	243520-4	2c	24	1-G15	(244116)	2c	50	1-H17		10a	2	3-H03
191397-9	9	36	3-B15		2c	30	1-G21	244415-6	2c	46	1-H13	270464-1	2a	18	1-B19
191487-8	2b	38	1-E15		2c	36	1-H03	244416-4	2c	50	1-H17		2a	20	1-B21

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Part No	Gr	Page	Grid	Part No	Gr	Page	Grid	Part No	Gr	Page	Grid	Part No	Gr	Page	Grid
270464-1	10a	2	3-H03	415311-0	2a	26	1-C03	460181-1	2a	24	1-C01	800475-6	2b	20	1-D21
270465-8	2a	18	1-B19		2a	28	1-C05	463392-1	2c	2	1-F17		4a	8	2-A09
	2a	20	1-B21	416033-9	2b	18	1-D19		2c	6	1-F21		4b	6	2-D07
	10a	2	3-H03		2b	22	1-D23		2c	10	1-G01		4b	12	2-D13
270466-6	2a	18	1-B19		2b	24	1-E01		2c	14	1-G05		4b	18	2-D19
	2a	20	1-B21		9	8	3-A11		10a	5	3-H06		9	6	3-A09
	10a	2	3-H03		10a	6	3-H07	463505-8	2b	36	1-E13	(800476)	2b	26	1-E03
270467-4	2a	18	1-B19	418213-5	2b	28	1-E05		2b	40	1-E17		2b	34	1-E11
	2a	20	1-B21		2b	30	1-E07		2b	44	1-E21	801566-1	10a	2	3-H03
	10a	2	3-H03		9	6	3-A09		2b	46	1-E23	803068-6	2b	4	1-D05
270468-2	2a	18	1-B19	(418214)	2b	28	1-E05	463905-0	2a	8	1-B09		10a	6	3-H07
	2a	20	1-B21		2b	30	1-E07		2a	12	1-B13	803684-0	9	34	3-B13
	10a	2	3-H03	418286-1	2a	22	1-B23		2a	16	1-B17	803921-6	4a	2	2-A03
270469-0	2a	18	1-B19		2a	24	1-C01	463908-4	2b	36	1-E13		4a	6	2-A07
	2a	20	1-B21	418297-8	2a	22	1-B23		2b	40	1-E17		4a	10	2-A11
	10a	2	3-H03		2a	24	1-C01		2b	44	1-E21		4a	12	2-A13
270470-8	2a	18	1-B19	418298-6	2a	22	1-B23	463909-2	9	64	3-C19		4a	14	2-A15
	2a	20	1-B21		2a	24	1-C01	464541-2	6	26	2-I03		4a	16	2-A17
	10a	2	3-H03	418301-8	2a	22	1-B23		6	30	2-I07		4a	34	2-B11
273663-5	2c	2	1-F17		2a	24	1-C01	465033-9	3	18	1-J19	(804107)	4a	46	2-B23
	2c	6	1-F21	(418361)	2b	18	1-D19		3	18	1-J19		2b	22	1-D23
	2c	10	1-G01		10a	6	3-H07		3	22	1-J23		2b	24	1-E01
	2c	14	1-G05	418445-3	2b	18	1-D19		9	74	3-D05		4b	22	2-D23
	9	146	3-G05		2b	28	1-E05		9	76	3-D07		9	8	3-A11
273881-3	6	38	2-I15		2b	30	1-E07		9	80	3-D11	804107-1	4a	8	2-A09
273905-0	6	28	2-I05	418771-2	2b	28	1-E05	466328-2	2b	38	1-E15		4b	4	2-D05
	6	38	2-I15		2b	30	1-E07		2b	42	1-E19		4b	10	2-D11
(275326)	2a	18	1-B19		9	6	3-A09		2b	46	1-E23		4b	18	2-D19
	2a	20	1-B21	419643-2	2a	22	1-B23	466735-8	3	16	1-J17	804261-6	10a	7	3-H08
	10a	2	3-H03		2a	24	1-C01		9	70	3-D01		10a	8	3-H09
275350-7	2a	18	1-B19	419653-1	2a	22	1-B23		9	102	3-E09	804262-4	4a	26	2-B03
	2a	20	1-B21		2a	24	1-C01	466761-4	2c	4	1-F19		4a	28	2-B05
	10a	2	3-H03		2a	30	1-C07		2c	6	1-F21		4a	34	2-B11
275569-2	2a	38	1-C15		2a	32	1-C09		2c	10	1-G01		4a	36	2-B13
	10a	2	3-H03	(419702)	10a	5	3-H06		2c	16	1-G07		4a	42	2-B19
(275595)	2a	18	1-B19	419702-6	2a	22	1-B23	468087-2	2a	40	1-C17		4a	52	2-C05
	2a	20	1-B21		2a	24	1-C01	468684-6	4a	14	2-A15		4a	54	2-C07
	10a	2	3-H03	420043-2	2a	38	1-C15		4a	16	2-A17	804269-9	4a	24	2-B01
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281404-4	9	158	3-G17		2a	20	1-B21	469482-4	2a	34	1-C11		4a	32	2-B09
282907-5	9	158	3-G17	420292-5	2a	30	1-C07		10a	5	3-H06		4a	36	2-B13
335146-7	3	36	1-K13		2a	32	1-C09	469483-2	2a	40	1-C17		4a	58	2-C11
352390-9	9	98	3-E05	421076-1	2a	26	1-C03		10a	5	3-H06		4c	8	2-F09
354842-7	3	14	1-J15		2a	28	1-C05	469846-0	2a	8	1-B09		4c	12	2-F13
365287-2	2b	20	1-D21	421158-7	2a	8	1-B09		2a	12	1-B13		4c	30	2-G07
	2b	28	1-E05		2a	12	1-B13		2a	16	1-B17	804304-4	9	158	3-G17
	2b	30	1-E07		2a	16	1-B17		2a	30	1-C07	804312-7	4b	4	2-D05
396033-3	4a	2	2-A03		10a	6	3-H07		2a	32	1-C09		4b	10	2-D11
400870-2	4b	4	2-D05	421306-2	2b	28	1-E05		10a	5	3-H06		4b	18	2-D19
400871-0	4b	4	2-D05		2b	30	1-E07		10a	6	3-H07		4b	24	2-E01
401146-6	2a	38	1-C15		10a	2	3-H03	470234-6	2a	38	1-C15		4c	14	2-F15
403483-1	2a	34	1-C11	(422581)	2a	40	1-C17		10a	2	3-H03		4c	18	2-F19
	9	2	3-A05		10a	5	3-H06	471034-9	2a	40	1-C17		4c	32	2-G09
404069-7	2a	8	1-B09	423067-8	2a	40	1-C17	471085-1	2a	40	1-C17		4c	36	2-G13
	2a	12	1-B13	423081-9	9	144	3-G03	471115-6	2a	34	1-C11		6	20	2-H21
	2a	16	1-B17	424133-7	2a	38	1-C15	480655-0	9	80	3-D11	804315-0	9	62	3-C17
	9	142	3-G01		10a	2	3-H03	664822-4	9	136	3-F19	804316-8	9	62	3-C17
407092-6	2a	8	1-B09	424288-9	2c	4	1-F19	673580-7	3	40	1-K17	804344-0	10a	7	3-H08
	2a	12	1-B13	(424342)	2a	8	1-B09	673792-8	2b	36	1-E13		10a	8	3-H09
	2a	16	1-B17		2a	12	1-B13		2b	40	1-E17	804361-4	9	62	3-C17
	9	142	3-G01		2a	16	1-B17		2b	44	1-E21	804364-8	9	62	3-C17
411139-9	2a	22	1-B23		2a	30	1-C07		2b	46	1-E23	804419-0	9	62	3-C17
	2a	24	1-C01		2a	32	1-C09	(800475)	2b	22	1-D23	804435-6	6	44	2-I21
415311-0	2a	8	1-B09		10a	5	3-H06		2b	24	1-E01	804440-6	9	62	3-C17
	2a	12	1-B13		10a	6	3-H07		2b	26	1-E03	804457-0	9	62	3-C17
	2a	16	1-B17	(424346)	2a	34	1-C11		2b	34	1-E11	804458-8	9	62	3-C17
	2a	18	1-B19		10a	5	3-H06		4b	22	2-D23	804533-8	4a	2	2-A03
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806282-0	9	152	3-G11		4c	20	2-F21		4a	28	2-B05		4c	8	2-F09
	9	154	3-G13		4c	32	2-G09		4a	32	2-B09		4c	12	2-F13
	9	156	3-G15		4c	38	2-G15		4a	36	2-B13		4c	30	2-G07
806383-6	9	108	3-E15	813967-7	4a	24	2-B01		4a	58	2-C11	814611-0	9	118	3-F01
806624-3	4a	24	2-B01		4a	28	2-B05	814359-6	10a	7	3-H08	814612-8	9	118	3-F01
	4a	28	2-B05		4a	32	2-B09		10a	8	3-H09	814615-1	9	118	3-F01
	4a	32	2-B09		4a	36	2-B13	814386-9	4c	14	2-F15	814616-9	9	118	3-F01
	4a	36	2-B13		4a	42	2-B19		4c	18	2-F19	814626-8	9	118	3-F01
	4a	42	2-B19		4a	58	2-C11		4c	32	2-G09	814627-6	9	118	3-F01
	4a	58	2-C11	813970-1	4b	2	2-D03		4c	36	2-G13	814628-4	9	118	3-F01
807060-9	9	34	3-B13		4b	8	2-D09	814388-5	4c	14	2-F15	814629-2	9	118	3-F01
807061-7	9	34	3-B13		4b	14	2-D15		4c	32	2-G09	814631-8	9	118	3-F01
807182-1	2b	6	1-D07		4b	20	2-D21	814389-3	4c	14	2-F15	814632-6	9	118	3-F01
807183-9	9	10	3-A13		4c	8	2-F09		4c	32	2-G09	814633-4	9	118	3-F01
807184-7	6	26	2-I03		4c	12	2-F13	814390-1	4c	14	2-F15	814634-2	9	118	3-F01
807186-2	3	16	1-J17		4c	30	2-G07		4c	18	2-F19	814640-9	4a	24	2-B01
	6	26	2-I03	814022-0	9	62	3-C17		4c	32	2-G09		4a	28	2-B05
	6	30	2-I07	814023-8	9	62	3-C17		4c	36	2-G13		4a	32	2-B09
807704-2	9	24	3-B03	814135-0	9	128	3-F11	814391-9	4c	14	2-F15		4a	36	2-B13
	9	26	3-B05	(814138)	6	2	2-H03		4c	18	2-F19		4a	58	2-C11
808175-4	3	4	1-J05	814152-5	6	4	2-H05		4c	32	2-G09	814643-3	4b	2	2-D03
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	3	30	1-K07		6	44	2-I21	814392-7	4c	14	2-F15		4b	14	2-D15
	3	32	1-K09	814164-0	4c	22	2-F23		4c	18	2-F19		4b	20	2-D21
	9	42	3-B21		4c	26	2-G03		4c	32	2-G09		4c	6	2-F07
	9	44	3-B23	814165-7	4c	22	2-F23		4c	36	2-G13		4c	10	2-F11
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	9	70	3-D01	814168-1	10a	7	3-H08		4c	36	2-G13		4c	30	2-G07
	9	82	3-D13		10a	8	3-H09	814394-3	4c	14	2-F15	816878-3	9	114	3-E21
	9	88	3-D19	814179-8	4b	6	2-D07		4c	32	2-G09	817126-6	9	114	3-E21
	9	92	3-D23		4b	12	2-D13	814395-0	4c	14	2-F15	817424-5	9	114	3-E21
	9	94	3-E01		4b	18	2-D19		4c	32	2-G09	817461-7	9	114	3-E21
	9	98	3-E05		4b	22	2-D23	814396-8	4c	14	2-F15	818147-1	3	26	1-K03
	9	126	3-F09		4c	6	2-F07		4c	18	2-F19	818157-0	3	26	1-K03
	9	138	3-F21		4c	10	2-F11		4c	32	2-G09	818162-0	3	26	1-K03
808275-2	2b	32	1-E09		4c	28	2-G05		4c	36	2-G13	818470-7	2d	2	1-I03
	9	150	3-G09	814184-8	4b	4	2-D05	814397-6	4c	14	2-F15		2d	4	1-I05
808285-1	2b	32	1-E09		4b	10	2-D11		4c	32	2-G09	818478-0	2d	2	1-I03
	10a	2	3-H03		4b	16	2-D17	814398-4	4c	14	2-F15		2d	4	1-I05
809863-4	9	152	3-G11		4b	22	2-D23		4c	32	2-G09	(819054)	2c	4	1-F19
809997-0	9	62	3-C17		4c	8	2-F09	814399-2	4c	14	2-F15	819067-0	2d	2	1-I03
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813279-7	9	118	3-F01	814218-4	9	124	3-F07		4c	36	2-G13		4a	6	2-A07
813280-5	9	118	3-F01	814219-2	9	124	3-F07	814419-8	4c	14	2-F15		4b	4	2-D05
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813284-7	9	118	3-F01		4a	32	2-B09		4c	32	2-G09		4b	16	2-D17
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813286-2	9	118	3-F01	814304-2	9	124	3-F07	(814421)	4c	14	2-F15		6	20	2-H21
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813296-1	9	118	3-F01	814322-4	4a	18	2-A19		4c	32	2-G09	819068-8	2d	2	1-I03
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813304-3	9	118	3-F01		9	126	3-F09	814434-7	4c	14	2-F15		4a	2	2-A03
813316-7	9	118	3-F01	814332-3	4c	14	2-F15		4c	32	2-G09		4a	6	2-A07
813317-5	9	118	3-F01		4c	18	2-F19	814473-5	4a	54	2-C07		4b	4	2-D05
813345-6	9	118	3-F01		4c	32	2-G09	814482-6	4c	22	2-F23		4b	10	2-D11
813364-7	9	118	3-F01		4c	36	2-G13		4c	26	2-G03		4b	16	2-D17
813365-4	9	118	3-F01	814355-4	9	160	3-G19		4c	40	2-G17		4b	24	2-E01
813368-8	9	118	3-F01	814356-2	4c	14	2-F15	814601-1	4c	8	2-F09		6	20	2-H21
813674-9	4a	2	2-A03		4c	18	2-F19		4c	10	2-F11		9	132	3-F15
	4a	6	2-A07		4c	32	2-G09		4c	30	2-G07		9	134	3-F17
813907-3	9	62	3-C17		4c	36	2-G13	814603-7	4b	4	2-D05	819105-8	4a	10	2-A11
813908-1	9	62	3-C17		10a	7	3-H08		4b	10	2-D11		9	106	3-E13
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	9	126	3-F09	827324-5	9	122	3-F05	828373-1	9	34	3-B13	828612-2	3	32	1-K09
	9	138	3-F21	827349-2	9	68	3-C23	828375-6	9	34	3-B13	9	82	3-D13	
819786-5	9	62	3-C17		9	80	3-D11	828376-4	9	34	3-B13	828613-0	3	32	1-K09
819787-3	9	62	3-C17	(827353)	9	66	3-C21	828378-0	9	50	3-C05	828615-5	9	88	3-D19
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820257-4	9	62	3-C17	827544-8	9	122	3-F05	828388-9	9	106	3-E13	828619-7	3	32	1-K09
820258-2	9	62	3-C17	827558-8	9	80	3-D11	828390-5	9	104	3-E11	828625-4	9	48	3-C03
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820260-8	9	62	3-C17	827560-4	9	80	3-D11	828412-7	9	28	3-B07		9	82	3-D13
820261-6	9	62	3-C17	827562-0	9	80	3-D11	828414-3	9	50	3-C05	828630-4	3	32	1-K09
820301-0	9	62	3-C17	827563-8	9	80	3-D11		9	54	3-C09	828632-0	9	44	3-B23
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820305-1	9	62	3-C17		9	66	3-C21	828418-4	9	110	3-E17	828633-8	9	44	3-B23
820459-6	9	68	3-C23		9	138	3-F21	828422-6	9	110	3-E17	828635-3	9	44	3-B23
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821053-6	3	40	1-K17	827721-2	9	62	3-C17	828526-4	9	110	3-E17	828646-0	3	32	1-K09
821094-0	9	36	3-B15	827722-0	9	62	3-C17	828527-2	9	110	3-E17		9	82	3-D13
821723-4	9	80	3-D11	827723-8	9	62	3-C17	828528-0	9	110	3-E17	828647-8	3	32	1-K09
821725-9	9	80	3-D11	827766-7	3	30	1-K07	828534-8	9	12	3-A15		4a	44	2-B21
822858-7	3	4	1-J05		9	98	3-E05	828539-7	9	12	3-A15		9	82	3-D13
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824205-9	2b	54	1-F07	827912-7	9	36	3-B15		9	88	3-D19		9	96	3-E03
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824522-7	4a	8	2-A09	827957-2	9	104	3-E11		9	82	3-D13		9	82	3-D13
824599-5	9	32	3-B11	828050-5	9	62	3-C17		9	92	3-D23		9	92	3-D23
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(824991)	2a	18	1-B19	828140-4	9	114	3-E21		9	82	3-D13	828698-1	9	94	3-E01
	2a	20	1-B21		9	116	3-E23		9	92	3-D23	828711-2	9	88	3-D19
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825727-1	2b	32	1-E09	828155-2	6	40	2-I17		9	90	3-D21	828717-9	9	44	3-B23
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826229-7	2b	32	1-E09	828212-1	9	140	3-F23		9	96	3-E03	828740-1	4a	44	2-B21
	10a	3	3-H04	828227-9	9	34	3-B13	828585-0	3	32	1-K09		9	96	3-E03
826230-5	2b	32	1-E09	828239-4	9	16	3-A19		9	82	3-D13	828742-7	4a	44	2-B21
	10a	3	3-H04		9	18	3-A21		9	88	3-D19		9	96	3-E03
826234-7	2b	32	1-E09	828240-2	9	16	3-A19		9	92	3-D23	828743-5	4a	44	2-B21
	10a	3	3-H04	828244-4	9	16	3-A19	828586-8	3	32	1-K09		9	96	3-E03
826341-0	4c	14	2-F15		9	18	3-A21		4a	44	2-B21	828750-0	9	30	3-B09
	4c	32	2-G09	828245-1	9	16	3-A19		9	82	3-D13	828761-7	9	30	3-B09
826937-5	4a	8	2-A09	828250-1	9	110	3-E17		9	88	3-D19	828763-3	9	140	3-F23
826964-9	3	26	1-K03		9	158	3-G17		9	92	3-D23	828776-5	9	30	3-B09
826986-2	3	26	1-K03	828254-3	9	110	3-E17		9	96	3-E03	828778-1	3	32	1-K09
827019-1	9	150	3-G09	828264-2	9	12	3-A15	828587-6	3	32	1-K09		9	82	3-D13
827040-7	9	80	3-D11	828293-1	9	28	3-B07		9	82	3-D13		9	92	3-D23
827151-2	3	4	1-J05	828295-6	9	28	3-B07		9	92	3-D23	828780-7	9	84	3-D15
	3	10	1-J11	(828303)	9	20	3-A23	828588-4	3	32	1-K09	828783-1	3	32	1-K09
827247-8	2b	32	1-E09		9	28	3-B07		9	82	3-D13		9	82	3-D13
	10a	2	3-H03	828304-6	9	24	3-B03	828601-5	3	32	1-K09		9	97	3-D23
827264-3	9	122	3-F05		9	26	3-B05		9	82	3-D13	828794-9	3	32	1-K09
827265-0	9	122	3-F05	828340-0	9	34	3-B13		9	92	3-D23		9	82	3-D13
827267-6	9	122	3-F05	828341-8	9	34	3-B13	828604-9	9	88	3-D19		9	92	3-D23



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Artikel nr Part No	Gr Gr	Sida Page	Koord. Grid	Artikel nr Part No	Gr Gr	Sida Page	Koord. Grid	Artikel nr Part No	Gr Gr	Sida Page	Koord. Grid	Artikel nr Part No	Gr Gr	Sida Page	Koord. Grid
828797-1	9	140	3-F23	829311-0	3	38	1-K15	(829571)	3	2	1-J03	832534-2	4c	32	2-G09
828803-7	3	32	1-K09		9	74	3-D05		3	8	1-J09		4c	36	2-G13
828807-8	9	140	3-F23		9	76	3-D07	829572-7	2a	34	1-C11	832548-2	4c	22	2-F23
828814-4	9	30	3-B09	829368-0	2b	38	1-E15	829577-6	2a	34	1-C11		4c	26	2-G03
828816-9	9	30	3-B09		2b	42	1-E19	829579-2	2a	34	1-C11	832555-7	4c	22	2-F23
828817-7	9	30	3-B09		2b	50	1-F03	829580-0	2a	34	1-C11		4c	26	2-G03
828818-5	3	32	1-K09		2b	56	1-F09	829583-4	2c	2	1-F17	832565-6	4a	24	2-B01
828826-8	3	40	1-K17		2b	58	1-F11		2c	22	1-G13		4a	30	2-B07
828831-8	4a	4	2-A05	829433-2	2b	2	1-D03	829707-9	3	28	1-K05		4a	32	2-B09
828854-0	6	10	2-H11		2b	6	1-D07	829714-5	3	6	1-J07		4a	38	2-B15
	6	14	2-H15	829457-1	4a	2	2-A03		3	12	1-J13		4a	58	2-C11
828857-3	6	10	2-H11	829458-9	4a	2	2-A03		9	70	3-D01	832570-6	4c	8	2-F09
	6	14	2-H15	829459-7	4a	2	2-A03		9	100	3-E07		4c	12	2-F13
828863-1	6	14	2-H15	829460-5	2a	18	1-B19	829744-2	9	36	3-B15		4c	30	2-G07
828864-9	6	14	2-H15		2a	20	1-B21	829892-9	2a	42	1-C19	832573-0	4c	6	2-F07
828865-6	6	14	2-H15	829462-1	2a	18	1-B19		2a	44	1-C21	832576-3	9	158	3-G17
828866-4	6	2	2-H03		2a	20	1-B21		2a	46	1-C23	832592-0	9	158	3-G17
	6	14	2-H15	(829465)	2a	34	1-C11		4a	46	2-B23	832594-6	9	158	3-G17
	6	24	2-I01	829467-0	2a	8	1-B09		4a	54	2-C07	832598-7	4a	24	2-B01
	6	32	2-I09		2a	12	1-B13	829976-0	2a	42	1-C19		4a	28	2-B05
828867-2	6	14	2-H15		2a	16	1-B17		2a	44	1-C21		4a	32	2-B09
828868-0	6	14	2-H15	829487-8	2a	8	1-B09		2a	46	1-C23		4a	36	2-B13
828869-8	6	14	2-H15		2a	12	1-B13		4a	46	2-B23		4a	58	2-C11
828874-8	6	14	2-H15		2a	16	1-B17		4a	54	2-C07		9	122	3-F05
828886-2	6	14	2-H15		10a	5	3-H06	830449-5	4a	30	2-B07	832606-8	9	118	3-F01
828887-0	6	14	2-H15	829488-6	2a	8	1-B09		4a	38	2-B15	832608-4	4a	24	2-B01
828888-8	6	14	2-H15		2a	12	1-B13	831606-9	6	42	2-I19		4a	28	2-B05
828889-6	6	14	2-H15		2a	16	1-B17	831625-9	9	66	3-C21		4a	32	2-B09
828897-9	9	38	3-B17		4a	26	2-B03	831627-5	9	66	3-C21		4a	36	2-B13
	9	40	3-B19		4a	28	2-B05	831630-9	9	36	3-B15		4a	58	2-C11
828913-4	6	4	2-H05		4a	34	2-B11	831845-3	3	18	1-J19	832619-1	9	158	3-G17
	6	8	2-H09		4a	36	2-B13		3	22	1-J23	832624-1	4c	22	2-F23
828924-1	6	12	2-H13		4a	46	2-B23		9	74	3-D05		4c	26	2-G03
	6	16	2-H17		4a	52	2-C05		9	76	3-D07	832644-9	4b	2	2-D03
828937-3	9	40	3-B19		10a	5	3-H06	(831846)	3	22	1-J23		4b	8	2-D09
828942-3	9	40	3-B19	829489-4	2a	8	1-B09	831847-9	3	18	1-J19		4b	14	2-D15
828943-1	6	2	2-H03		2a	12	1-B13		3	22	1-J23		4b	20	2-D21
	6	6	2-H07		2a	16	1-B17		9	74	3-D05		4c	6	2-F07
	6	10	2-H11		4a	46	2-B23		9	76	3-D07		4c	10	2-F11
	6	14	2-H15	829491-0	2a	34	1-C11	831848-7	3	18	1-J19		4c	28	2-G05
	6	34	2-I11	829492-8	2a	34	1-C11		3	22	1-J23	832667-0	4b	2	2-D03
828958-9	9	40	3-B19	829513-1	9	16	3-A19		9	74	3-D05		4b	8	2-D09
829012-4	3	26	1-K03		9	18	3-A21		9	76	3-D07		4b	14	2-D15
829017-3	3	26	1-K03	829515-6	2a	42	1-C19	(831850)	3	22	1-J23		4b	20	2-D21
829023-1	3	26	1-K03		2a	44	1-C21	831851-1	3	18	1-J19		4c	6	2-F07
829024-9	3	26	1-K03		2a	46	1-C23		3	22	1-J23		4c	10	2-F11
829031-4	3	26	1-K03		4a	46	2-B23		9	74	3-D05		4c	28	2-G05
829053-8	4a	6	2-A07		4a	56	2-C09		9	76	3-D07	(832668)	4b	2	2-D03
829070-2	2d	2	1-I03		9	142	3-G01	(831853)	3	22	1-J23		4b	8	2-D09
	2d	4	1-I05	829516-4	2a	42	1-C19	831854-5	3	18	1-J19		4b	14	2-D15
829146-0	2b	60	1-F13		2a	44	1-C21		3	22	1-J23		4b	20	2-D21
	2c	4	1-F19		2a	46	1-C23		9	74	3-D05	832669-6	4b	2	2-D03
	2c	6	1-F21		4a	46	2-B23		9	76	3-D07		4b	8	2-D09
	2c	10	1-G01		4a	56	2-C09	831855-2	3	22	1-J23		4b	14	2-D15
	2c	14	1-G05	829517-2	2a	42	1-C19		9	74	3-D05		4b	20	2-D21
829169-2	3	30	1-K07		2a	44	1-C21		9	76	3-D07		4c	6	2-F07
829200-5	3	40	1-K17		2a	46	1-C23	831857-8	3	22	1-J23		4c	10	2-F11
829205-4	2b	18	1-D19	829523-0	2a	26	1-C03		9	74	3-D05		4c	28	2-G05
829241-9	2d	2	1-I03		2a	28	1-C05		9	76	3-D07		10a	7	3-H08
	2d	4	1-I05	829527-1	3	2	1-J03	831966-7	3	40	1-K17		10a	8	3-H09
829259-1	4a	2	2-A03		3	8	1-J09	832153-1	9	124	3-F07		10a	9	3-H10
	4a	6	2-A07		3	26	1-K03	832191-1	4c	22	2-F23	832674-6	4c	6	2-F07
829260-9	4a	2	2-A03	829567-7	2a	42	1-C19		4c	26	2-G03		4c	10	2-F11
	4a	6	2-A07		2a	44	1-C21		10a	7	3-H08		4c	28	2-G05
829279-9	9	106	3-E13		2a	46	1-C23		10a	8	3-H09	832675-3	4b	2	2-D03
829281-5	9	106	3-E13		4a	46	2-B23	832476-6	6	42	2-I19		4b	8	2-D09
829311-0	3	18	1-J19		4a	52	2-C05	832534-2	4c	14	2-F15		4b	16	2-D17
	3	22	1-J23		4a	54	2-C07		4c	18	2-F19		4b	22	2-D23

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832675-3	4c	6	2-F07	834708-0	4a	6	2-A07	837860-6	3	30	1-K07	838406-7	2c	28	1-G19
	4c	10	2-F11	834709-8	4a	2	2-A03		9	138	3-F21		2c	36	1-H03
	4c	28	2-G05		4a	6	2-A07	837878-8	9	142	3-G01		2c	42	1-H09
832682-9	4c	14	2-F15	834799-9	3	26	1-K03	837895-2	3	30	1-K07	838407-5	2c	26	1-G17
	4c	32	2-G09	834803-9	3	26	1-K03	837999-2	9	42	3-B21		2c	30	1-G21
832716-5	4c	8	2-F09	834805-4	3	26	1-K03		9	44	3-B23		2c	38	1-H05
832725-6	4c	22	2-F23	834806-2	3	26	1-K03		9	46	3-C01		2c	42	1-H09
	4c	26	2-G03	834835-1	3	18	1-J19	838304-4	2b	22	1-D23	838408-3	2c	26	1-G17
832820-5	4a	28	2-B05		3	22	1-J23		4a	14	2-A15	(838412)	2c	28	1-G19
	4a	36	2-B13	834843-5	3	26	1-K03	838307-7	6	30	2-I07		2c	36	1-H03
(832846)	4a	34	2-B11	834844-3	3	26	1-K03	838310-1	6	30	2-I07		2c	42	1-H09
832846-0	4a	30	2-B07	834845-0	3	26	1-K03		6	38	2-I15	838414-1	2c	22	1-G13
	4a	38	2-B15	834846-8	3	26	1-K03	838311-9	6	26	2-I03		2c	34	1-H01
	4c	14	2-F15	834847-6	3	26	1-K03		6	30	2-I07		2c	40	1-H07
	4c	32	2-G09	834848-4	3	26	1-K03		9	10	3-A13	838415-8	2c	30	1-G21
832939-3	9	128	3-F11	834849-2	3	26	1-K03	838312-7	6	30	2-I07	838421-6	4a	54	2-C07
833799-0	9	34	3-B13	834850-0	3	26	1-K03	838315-0	9	14	3-A17	838422-4	4a	54	2-C07
833800-6	9	34	3-B13	834851-8	3	26	1-K03	838331-7	9	48	3-C03	838423-2	4a	54	2-C07
833801-4	9	34	3-B13	834852-6	3	26	1-K03	838333-3	9	48	3-C03	838424-0	4a	54	2-C07
833857-6	9	34	3-B13	834853-4	3	26	1-K03	838334-1	2c	34	1-H01	838426-5	2b	50	1-F03
833913-7	9	114	3-E21	834854-2	3	26	1-K03		2c	40	1-H07		2b	52	1-F05
833915-2	9	114	3-E21	834899-7	9	36	3-B15	838335-8	2c	22	1-G13		10a	3	3-H04
833927-7	3	4	1-J05	834920-1	3	2	1-J03		2c	34	1-H01	838429-9	2b	22	1-D23
	3	10	1-J11		3	8	1-J09		2c	40	1-H07		2b	24	1-E01
833971-5	9	36	3-B15	834964-9	3	2	1-J03	(838337)	2c	28	1-G19		9	8	3-A11
833972-3	9	36	3-B15		3	8	1-J09		2c	34	1-H01	838440-6	9	16	3-A19
(834021)	4b	4	2-D05		3	16	1-J17	838338-2	2c	34	1-H01	838442-2	2c	22	1-G13
	4b	10	2-D11		3	22	1-J23		2c	40	1-H07		2c	28	1-G19
	4b	16	2-D17	834965-6	9	68	3-C23	838339-0	2c	30	1-G21		2c	34	1-H01
834378-2	9	42	3-B21		9	74	3-D05		2c	38	1-H05		2c	40	1-H07
834380-8	9	42	3-B21	834980-5	9	152	3-G11		2c	42	1-H09	838443-0	2c	30	1-G21
834383-2	3	4	1-J05		9	154	3-G13	838340-8	2c	38	1-H05		2c	40	1-H07
	3	10	1-J11	835059-7	6	40	2-I17		2c	42	1-H09	838444-8	2c	40	1-H07
834389-9	9	42	3-B21	(835596)	3	2	1-J03	838341-6	2c	24	1-G15	838449-7	2c	30	1-G21
	9	44	3-B23	(835693)	6	2	2-H03		2c	30	1-G21	838450-5	2c	30	1-G21
	9	46	3-C01	835964-8	9	152	3-G11		2c	38	1-H05	838451-3	2c	24	1-G15
834399-8	3	6	1-J07		9	156	3-G15	838342-4	2c	24	1-G15		2c	32	1-G23
	3	12	1-J13	836268-3	2b	18	1-D19		2c	30	1-G21	838452-1	2c	28	1-G19
	9	42	3-B21	836759-1	9	16	3-A19		2c	38	1-H05	838453-9	2c	22	1-G13
834400-4	3	6	1-J07		9	18	3-A21		2c	38	1-H09	838454-7	2c	24	1-G15
	3	12	1-J13	836846-6	9	16	3-A19	838343-2	2c	38	1-H05	838455-4	9	70	3-D01
	9	42	3-B21	836847-4	9	16	3-A19		2c	44	1-H11	838456-2	2b	60	1-F13
834401-2	3	4	1-J05	836848-2	9	16	3-A19	838345-7	2c	22	1-G13	838457-0	9	70	3-D01
	3	10	1-J11	836876-3	9	16	3-A19		2c	32	1-G23	838459-6	2c	34	1-H01
834480-6	9	42	3-B21		9	18	3-A21		2c	34	1-H01	838460-4	2c	34	1-H01
	9	44	3-B23	836879-7	9	16	3-A19		2c	40	1-H07	838461-2	2c	36	1-H03
	9	46	3-C01		9	18	3-A21	838346-5	2c	34	1-H01	838463-8	2c	36	1-H03
834481-4	9	34	3-B13		9	24	3-B03		2c	40	1-H07	838464-6	2c	36	1-H03
	9	42	3-B21		9	26	3-B05	838347-3	2c	38	1-H05	838465-3	2c	34	1-H01
	9	44	3-B23	837124-7	9	158	3-G17		2c	42	1-H09	838472-9	2c	2	1-F17
	9	46	3-C01	837176-7	9	158	3-G17		2c	42	1-H09		2c	6	1-F21
834610-8	9	68	3-C23	837374-8	3	30	1-K07	838348-1	2c	36	1-H03		2c	10	1-G01
	9	74	3-D05	837533-9	3	30	1-K07		2c	42	1-H09		2c	14	1-G05
834625-6	3	2	1-J03		9	138	3-F21	838349-9	2c	36	1-H03		2c	18	1-G09
	3	8	1-J09	837539-6	9	86	3-D17		2c	42	1-H09	838474-5	4a	54	2-C07
	3	16	1-J17	837540-4	9	138	3-F21	838350-7	2c	38	1-H05	838475-2	4a	54	2-C07
834629-8	3	4	1-J05	837674-1	9	138	3-F21		2c	44	1-H11	838479-4	4a	54	2-C07
	3	10	1-J11	837723-6	3	30	1-K07	838402-6	2c	22	1-G13	838481-0	2b	14	1-D15
834644-7	3	18	1-J19	837726-9	9	138	3-F21		2c	28	1-G19	838482-8	6	30	2-I07
	9	74	3-D05	837735-0	2c	52	1-H19		2c	34	1-H01	838488-5	4a	54	2-C07
834646-2	9	68	3-C23	837757-4	3	30	1-K07		2c	40	1-H07	838489-3	4a	54	2-C07
	9	74	3-D05	837759-0	3	30	1-K07		2c	46	1-H13	838490-1	9	68	3-C23
	9	76	3-D07	837772-3	3	4	1-J05	838404-2	2c	38	1-H05	838497-6	2c	14	1-G05
834678-5	9	142	3-G01		3	10	1-J11		2c	44	1-H11		2c	34	1-H01
834707-2	4a	2	2-A03		9	94	3-E01	(838405)	2c	28	1-G19		4a	46	2-B23
	4a	6	2-A07	837782-2	9	48	3-C03		2c	36	1-H03		4a	48	2-C01
	4a	2	2-A03	837859-8	3	30	1-K07		2c	42	1-H09		4a	50	2-C03
834708-0	4a	2	2-A03					838406-7	2c	24	1-G15	838498-4	9	38	3-B17





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838499-2	9	38	3-B17	838926-4	3	32	1-K09	839013-0	4b	2	2-D03	839333-2	4c	12	2-F13
838500-7	9	38	3-B17	838927-2	9	92	3-D23		4b	10	2-D11		4c	30	2-G07
838502-3	9	38	3-B17	838928-0	2b	20	1-D21		4b	16	2-D17	839334-0	4b	2	2-D03
(838503)	9	38	3-B17		2b	22	1-D23		4b	22	2-D23		4b	8	2-D09
838504-9	9	38	3-B17		2b	24	1-E01		4c	6	2-F07		4b	14	2-D15
838505-6	9	38	3-B17		2b	26	1-E03		4c	10	2-F11		4b	20	2-D21
838506-4	9	38	3-B17		2b	34	1-E11		4c	28	2-G05		4c	8	2-F09
838513-0	4a	-2	2-B19		4a	8	2-A09	839026-2	4c	6	2-F07		4c	12	2-F13
838518-9	3	2	1-J03		4b	6	2-D07		4c	10	2-F11		4c	30	2-G07
	3	8	1-J09		4b	12	2-D13		4c	28	2-G05	839351-4	4b	6	2-D07
838522-1	2b	10	1-D11		4b	18	2-D19	839027-0	4b	2	2-D03		4b	12	2-D13
	2b	14	1-D15		4b	22	2-D23		4b	8	2-D09		4b	18	2-D19
	2b	32	1-E09		9	6	3-A09		4b	14	2-D15		4b	20	2-D21
838523-9	2b	32	1-E09		9	8	3-A11		4b	20	2-D21		4c	8	2-F09
	10a	3	3-H04	838929-8	2b	20	1-D21		4c	6	2-F07		4c	12	2-F13
838524-7	2b	32	1-E09		2b	22	1-D23		4c	10	2-F11		4c	30	2-G07
	10a	3	3-H04		2b	24	1-E01		4c	28	2-G05	839354-8	4c	24	2-G01
838525-4	2b	32	1-E09		2b	26	1-E03	839028-8	4c	6	2-F07		4c	26	2-G03
	10a	3	3-H04		2b	34	1-E11		4c	10	2-F11	(839367)	9	50	3-C05
838535-3	2b	42	1-E19		4a	8	2-A09		4c	28	2-G05	839389-4	4c	22	2-F23
	2b	46	1-E23		4b	4	2-D05	839091-6	4a	26	2-B03		4c	26	2-G03
838539-5	3	14	1-J15		4b	10	2-D11		4a	30	2-B07	839390-2	4c	2	2-F03
838541-1	9	16	3-A19		4b	18	2-D19		4a	34	2-B11		4c	22	2-F23
838547-8	2b	26	1-E03		4b	22	2-D23		4a	38	2-B15	839400-9	4c	2	2-F03
838554-4	2b	10	1-D11		9	6	3-A09		4a	40	2-B17	839403-3	9	124	3-F07
	4a	46	2-B23		9	8	3-A11		4a	58	2-C11	839423-1	4c	22	2-F23
	4a	54	2-C07	838934-8	4a	54	2-C07	839136-9	4c	8	2-F09		4c	26	2-G03
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838558-5	2b	10	1-D11	838954-6	3	2	1-J03	839178-1	9	124	3-F07		4a	36	2-B13
	2b	14	1-D15		9	100	3-E07	839179-9	9	124	3-F07		4a	42	2-B19
838559-3	2b	12	1-D13	838955-3	3	6	1-J07	839180-7	3	4	1-J05		4a	52	2-C05
	2b	16	1-D17		3	12	1-J13		3	10	1-J11	839426-4	9	126	3-F09
838560-1	2b	10	1-D11		3	14	1-J15		9	124	3-F07	839433-0	9	124	3-F07
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	2b	52	1-F05	838968-6	2a	40	1-C17		4a	28	2-B05		4a	28	2-B05
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838568-4	2b	50	1-F03		2b	34	1-E11		4a	58	2-C11	839449-6	4c	2	2-F03
	2b	52	1-F05	838969-4	2a	40	1-C17		10a	7	3-H08		4c	6	2-F07
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838580-9	9	14	3-A17	838970-2	2b	6	1-D07		4b	22	2-D23	839470-2	9	56	3-C11
838582-5	9	14	3-A17	838971-0	2b	6	1-D07		4c	6	2-F07	839471-0	9	56	3-C11
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	2b	24	1-E01		2b	14	1-D15		4c	28	2-G05		9	58	3-C13
	9	8	3-A11		9	10	3-A13		10a	7	3-H08	839474-4	9	52	3-C07
838593-2	2c	18	1-G09		9	14	3-A17		10a	8	3-H09		9	56	3-C11
	2c	20	1-G11	838979-3	2b	26	1-E03		10a	9	3-H10		9	58	3-C13
838594-0	2c	18	1-G09		10a	6	3-H07	839328-2	3	38	1-K15	839475-1	9	56	3-C11
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	9	72	3-D03		3	12	1-J13	839331-6	9	124	3-F07	839477-7	9	56	3-C11
838775-5	2a	30	1-C07		9	100	3-E07	839332-4	4b	2	2-D03		9	58	3-C13
	2a	32	1-C09	838981-9	2a	8	1-B09		4b	8	2-D09	839479-3	9	52	3-C07
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838914-0	9	78	3-D09	838987-6	3	2	1-J03		4c	8	2-F09	839480-1	9	56	3-C11
838915-7	9	78	3-D09		3	8	1-J09		4c	12	2-F13	839481-9	9	56	3-C11
838916-5	9	78	3-D09		3	28	1-K05		4c	30	2-G07	839482-7	4a	54	2-C07
838917-3	9	78	3-D09		9	100	3-E07	839333-2	4b	2	2-D03	839492-6	6	42	2-I19
(838918)	9	78	3-D09	838992-6	2a	22	1-B23		4b	8	2-D09	839504-8	4b	4	2-D05
838919-9	9	78	3-D09		2a	24	1-C01		4b	14	2-D15		4b	10	2-D11
838926-4	3	4	1-J05	838997-5	2a	26	1-C03		4b	20	2-D21		4b	16	2-D17
	3	10	1-J11		2a	28	1-C05		4c	8	2-F09		4b	22	2-D23

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	4c	30	2-G07		9	58	3-C13	841688-5	3	18	1-J19		10a	5	3-H06
839505-5	4b	4	2-D05	839696-2	4c	8	2-F09		3	22	1-J23	842602-5	2b	34	1-E11
	4b	10	2-D11	839697-0	4a	32	2-B09		9	74	3-D05	842608-2	2b	18	1-D19
	4b	16	2-D17	839698-8	4a	32	2-B09		9	76	3-D07	842611-6	3	16	1-J17
	4b	22	2-D23	(839699)	9	60	3-C15	841693-5	2b	32	1-E09	842614-0	2b	4	1-D05
	4c	8	2-F09	839700-2	9	60	3-C15	841765-1	3	2	1-J03		2b	6	1-D07
	4c	12	2-F13	839701-0	9	60	3-C15		3	8	1-J09		2b	12	1-D13
	4c	30	2-G07	839724-2	6	40	2-I17		3	16	1-J17		2b	16	1-D17
839512-1	6	42	2-I19	839725-9	6	40	2-I17		3	20	1-J21	842615-7	2b	36	1-E13
839515-4	9	50	3-C05	839727-5	6	40	2-I17		9	68	3-C23		2b	40	1-E17
839516-2	9	50	3-C05	840345-3	3	4	1-J05	841768-5	3	2	1-J03		2b	44	1-E21
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	9	54	3-C09	840620-9	3	20	1-J21		3	16	1-J17	842639-7	2b	40	1-E17
839520-4	9	50	3-C05	840621-7	3	20	1-J21		3	22	1-J23		2b	44	1-E21
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	9	54	3-C09	840624-1	3	20	1-J21		9	76	3-D07	842643-9	2b	56	1-F09
839523-8	6	42	2-I19	840625-8	3	20	1-J21	841811-3	9	68	3-C23		2b	58	1-F11
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839532-9	6	42	2-I19	840626-6	3	20	1-J21	841893-1	2a	18	1-B19		2b	58	1-F11
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839548-5	9	128	3-F11	840631-6	3	20	1-J21	841954-1	4a	20	2-A21	842665-2	9	24	3-B03
839569-1	9	118	3-F01		9	78	3-D09		4a	22	2-A23	842667-8	2b	18	1-D19
839570-9	9	118	3-F01	840632-4	3	20	1-J21	841963-2	9	150	3-G09	842669-4	2b	18	1-D19
839576-6	6	4	2-H05		3	24	1-K01	842090-3	3	34	1-K11		10a	6	3-H07
	6	8	2-H09		9	78	3-D09	842091-1	3	34	1-K11	842680-1	2b	36	1-E13
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839577-4	6	4	2-H05	840634-0	3	20	1-J21	842093-7	3	34	1-K11		2b	44	1-E21
	6	8	2-H09		3	24	1-K01	842150-5	9	70	3-D01		2b	46	1-E23
	6	24	2-I01		9	78	3-D09	842240-4	4a	2	2-A03	842683-5	2b	18	1-D19
839589-9	4c	6	2-F07	840638-1	3	20	1-J21		4a	6	2-A07	842687-6	2b	18	1-D19
839592-3	4a	32	2-B09		9	78	3-D09		4a	8	2-A09	842693-4	2b	18	1-D19
839617-8	6	2	2-H03	841035-9	9	132	3-F15	842241-2	4a	8	2-A09	842695-9	2b	18	1-D19
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839619-4	9	50	3-C05	841044-1	9	152	3-G11	842243-8	4a	8	2-A09	842697-5	2b	4	1-D05
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	9	54	3-C09	841045-8	9	152	3-G11		4a	6	2-A07		2b	10	1-D11
	9	56	3-C11		9	154	3-G13	842350-1	2a	26	1-C03		2b	14	1-D15
	9	58	3-C13	841046-6	9	152	3-G11		2a	28	1-C05	842699-1	2b	38	1-E15
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839636-8	9	60	3-C15	841136-5	4a	54	2-C07		3	16	1-J17	842722-1	2b	2	1-D03
839637-6	9	60	3-C15	841162-1	9	36	3-B15		4a	46	2-B23	842723-9	2b	2	1-D03
839638-4	9	52	3-C07	841178-7	3	2	1-J03		4a	56	2-C09	842724-7	2b	2	1-D03
	9	54	3-C09		3	8	1-J09		6	26	2-I03		10a	6	3-H07
	9	58	3-C13		4a	18	2-A19		6	30	2-I07	842742-9	2b	2	1-D03
	9	60	3-C15		4a	22	2-A23	842466-5	9	18	3-A21	842743-7	2b	2	1-D03
839639-2	9	60	3-C15	(841234)	3	40	1-K17	842569-6	2b	54	1-F07	(842744)	2b	2	1-D03
839640-0	9	60	3-C15	841252-0	9	152	3-G11		2b	56	1-F09		9	146	3-G05
839641-8	9	50	3-C05		9	154	3-G13		2b	58	1-F11		9	150	3-G09
	9	52	3-C07	841261-1	9	160	3-G19		2b	60	1-F13		10a	5	3-H06
	9	54	3-C09	841378-3	3	2	1-J03	(842584)	2a	40	1-C17	842766-8	9	20	3-A23
	9	56	3-C11		3	8	1-J09	842584-5	2a	40	1-C17	842767-6	9	20	3-A23
	9	58	3-C13		3	16	1-J17	(842586)	10a	5	3-H06	842768-4	9	20	3-A23
839664-0	9	52	3-C07		3	22	1-J23	842586-0	2a	40	1-C17	842843-5	2b	2	1-D03
	9	58	3-C13	841380-9	9	68	3-C23	(842589)	2a	40	1-C17		2b	6	1-D07
	9	60	3-C15		9	74	3-D05		2b	2	1-D03		2b	32	1-E09
839665-7	9	60	3-C15	(841381)	3	22	1-J23		2b	6	1-D07	842871-6	4a	34	2-B11
839666-5	9	60	3-C15	841523-4	9	34	3-B13		2b	22	1-D23	842872-4	3	30	1-K07
839667-3	9	60	3-C15	841527-5	9	156	3-G15		2b	34	1-E11		9	138	3-F21
839668-1	9	60	3-C15	841575-4	3	18	1-J19	842589-4	2a	40	1-C17	842905-2	2b	4	1-D05
839693-9	9	50	3-C05		3	22	1-J23	842590-2	2b	34	1-E11	842906-0	2b	2	1-D03



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	9	146	3-G05		2a	16	1-B17		9	134	3-F17	843314-6	2a	18	1-B19	
842908-6	2b	2	1-D03	842982-1	2b	2	1-D03	843109-0	2d	2	1-I03		2a	20	1-B21	
842911-0	2b	2	1-D03	842986-2	2b	38	1-E15		2d	4	1-I05	843321-1	9	68	3-C23	
	2b	4	1-D05		2b	42	1-E19	843113-2	9	4	3-A07	843323-7	2a	42	1-C19	
	2b	6	1-D07		2b	46	1-E23	843114-0	9	4	3-A07		2a	46	1-C23	
842912-8	2b	2	1-D03		10a	5	3-H06	843122-3	2a	42	1-C19		4a	52	2-C05	
	4a	10	2-A11	842988-8	2a	26	1-C03		2a	44	1-C21	843325-2	3	4	1-J05	
842913-6	2b	2	1-D03		2a	28	1-C05	843140-5	3	2	1-J03		9	100	3-E07	
	2b	4	1-D05	(842990)	10a	5	3-H06		3	8	1-J09	843327-8	9	132	3-F15	
	4a	2	2-A03	842993-8	2b	56	1-F09		3	8	1-J09		9	134	3-F17	
	4a	10	2-A11		2b	58	1-F11	843141-3	3	4	1-J05		9	138	3-F21	
	4a	12	2-A13		2b	60	1-F13		3	10	1-J11	843333-6	2b	4	1-D05	
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	9	146	3-G05		2c	22	1-G13		3	8	1-J09		4a	10	2-A11	
	9	150	3-G09	842995-3	2a	8	1-B09	843166-0	2c	26	1-G17	843357-5	9	18	3-A21	
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	10a	6	3-H07		2a	16	1-B17	843214-8	3	4	1-J05	843359-1	9	18	3-A21	
842915-1	3	2	1-J03	842996-1	2d	2	1-I03		3	10	1-J11	843360-9	9	18	3-A21	
	3	8	1-J09		2d	4	1-I05	843217-1	2b	56	1-F09	843361-7	9	18	3-A21	
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842938-3	2b	38	1-E15		2b	46	1-E23		4a	42	2-B19		2a	16	1-B17	
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	4a	32	2-B09		10a	5	3-H06	843269-2	4a	2	2-A03		3	30	1-K07	
	4a	36	2-B13	843054-8	9	68	3-C23	843270-0	4a	2	2-A03	843533-1	2a	34	1-C11	
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	2b	14	1-D15	843062-1	2b	2	1-D03		2b	42	1-E19		9	98	3-E05	
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	2b	56	1-F09	843085-2	3	34	1-K11		2a	46	1-C23		4a	32	2-B09	
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	2b	60	1-F13		2a	28	1-C05	843299-9	2a	42	1-C19		4a	42	2-B19	
842966-4	2b	18	1-D19	843104-1	2d	2	1-I03		2a	46	1-C23		4a	58	2-C11	
842972-2	2a	8	1-B09		2d	4	1-I05		4a	52	2-C05	843668-5	2c	2	1-F17	
	2a	12	1-B13	843105-8	2d	2	1-I03	843303-9	9	24	3-B03	843684-2	3	30	1-K07	
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	842975-5	2a	8	1-B09		2d	4	1-I05	843313-8	9	24	3-B03		2b	46	1-E23

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	9	98	3-E05	844146-1	2c	22	1-G13		2c	46	1-H13		2c	36	1-H03
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	2b	46	1-E23	844147-9	2c	22	1-G13		2c	40	1-H07		2c	36	1-H03
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	2a	12	1-B13		2c	34	1-H01	844166-9	2c	22	1-G13	844188-3	2c	24	1-G15
	2a	16	1-B17		2c	40	1-H07		2c	28	1-G19		2c	32	1-G23
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	2c	20	1-G11		2c	40	1-H07	(844168)	2c	22	1-G13	844190-9	2c	24	1-G15
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	2b	52	1-F05	(844151)	2c	40	1-H07	(844169)	2c	22	1-G13		2c	52	1-H19
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(844002)	2b	50	1-F03	844152-9	2c	22	1-G13	844171-9	2c	22	1-G13		2c	42	1-H09
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844006-7	2b	50	1-F03		2c	34	1-H01		2c	34	1-H01		2c	32	1-G23
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	10a	4	3-H05	(844153)	2c	22	1-G13		2c	46	1-H13		2c	42	1-H09
844007-5	2b	50	1-F03		2c	46	1-H13	(844173)	2c	22	1-G13	844193-3	2c	24	1-G15
	2b	52	1-F05	844154-5	2c	22	1-G13		2c	28	1-G19		2c	32	1-G23
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	10a	4	3-H05		2c	40	1-H07	844175-0	2c	22	1-G13	844194-1	2c	24	1-G15
844010-9	2b	50	1-F03	844155-2	2c	22	1-G13		2c	28	1-G19		2c	32	1-G23
844014-1	9	4	3-A07		2c	28	1-G19		2c	34	1-H01		2c	36	1-H03
844015-8	9	4	3-A07		2c	34	1-H01		2c	40	1-H07		2c	42	1-H09
844016-6	9	4	3-A07		2c	40	1-H07	844176-8	2c	22	1-G13	844195-8	2c	24	1-G15
844017-4	9	4	3-A07	844156-0	2c	22	1-G13		2c	34	1-H01		2c	32	1-G23
844018-2	9	4	3-A07		2c	28	1-G19		2c	40	1-H07		2c	36	1-H03
844019-0	9	4	3-A07		2c	34	1-H01	844178-4	2c	24	1-G15		2c	42	1-H09
844020-8	9	4	3-A07		2c	40	1-H07		2c	28	1-G19		2c	48	1-H15
844021-6	9	4	3-A07		2c	46	1-H13		2c	36	1-H03	844196-6	2c	24	1-G15
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844036-4	2b	38	1-E15		2c	40	1-H07		2c	36	1-H03	844197-4	2c	24	1-G15
	2b	42	1-E19	844159-4	2c	22	1-G13		2c	40	1-H07		2c	32	1-G23
	2b	46	1-E23		2c	34	1-H01		2c	46	1-H13		2c	36	1-H03
844051-3	2a	8	1-B09		2c	46	1-H13	844180-0	2c	24	1-G15		2c	42	1-H09
	2a	12	1-B13	844160-2	2c	22	1-G13		2c	36	1-H03	844198-2	2c	24	1-G15
	2a	16	1-B17		2c	28	1-G19		2c	40	1-H07		2c	32	1-G23
844084-4	2b	26	1-E03		2c	34	1-H01	(844181)	2c	36	1-H03		2c	36	1-H03
	2b	36	1-E13		2c	40	1-H07		2c	40	1-H07		2c	42	1-H09
	2b	54	1-F07	844161-0	2c	22	1-G13	844181-8	2c	24	1-G15	844199-0	2c	24	1-G15
	2b	60	1-F13		2c	28	1-G19		2c	30	1-G21		2c	32	1-G23
	10a	5	3-H06		2c	34	1-H01	844182-6	2c	24	1-G15		2c	36	1-H03
	10a	6	3-H07		2c	40	1-H07		2c	30	1-G21		2c	42	1-H09
844091-9	2b	54	1-F07		2c	46	1-H13		2c	36	1-H03	844200-6	2c	24	1-G15
844093-5	2b	54	1-F07	844162-8	2c	22	1-G13		2c	42	1-H09		2c	32	1-G23
844122-2	2b	18	1-D19		2c	28	1-G19	844183-4	2c	30	1-G21		2c	36	1-H03



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	2c	48	1-H15	844222-0	2c	26	1-G17	844246-9	2c	2	1-F17	844422-6	2b	28	1-E05
844201-4	2c	24	1-G15		2c	30	1-G21		2c	22	1-G13		2b	30	1-E07
	2c	32	1-G23		2c	38	1-H05	844249-3	2b	36	1-E13	844425-9	4a	10	2-A11
	2c	36	1-H03	844223-8	2c	26	1-G17		2b	54	1-F07	844426-7	4a	10	2-A11
	2c	42	1-H09		2c	30	1-G21	844257-6	4a	2	2-A03	844427-5	4a	10	2-A11
844202-2	2c	24	1-G15		2c	38	1-H05	844258-4	4a	2	2-A03	844519-9	4a	26	2-B03
	2c	32	1-G23		2c	42	1-H09		4a	10	2-A11		4a	28	2-B05
	2c	36	1-H03		2c	50	1-H17	844271-7	2b	18	1-D19		4a	34	2-B11
	2c	42	1-H09	844224-6	2c	26	1-G17	844278-2	3	40	1-K17		4a	36	2-B13
844203-0	2c	24	1-G15		2c	30	1-G21		9	4	3-A07		4a	42	2-B19
	2c	32	1-G23		2c	38	1-H05	844279-0	3	40	1-K17		4a	52	2-C05
	2c	36	1-H03		2c	42	1-H09		9	4	3-A07	844578-5	3	34	1-K11
	2c	42	1-H09	844225-3	2c	26	1-G17	(844280)	3	40	1-K17	844593-4	2b	36	1-E13
844204-8	2c	24	1-G15		2c	30	1-G21	844280-8	3	38	1-K15		2b	40	1-E17
	2c	32	1-G23		2c	38	1-H05		9	4	3-A07		2b	44	1-E21
	2c	36	1-H03		2c	42	1-H09	844293-1	2c	26	1-G17		2b	46	1-E23
	2c	42	1-H09	844226-1	2c	26	1-G17		2c	28	1-G19	844624-7	2b	18	1-D19
844205-5	2c	24	1-G15		2c	30	1-G21		2c	34	1-H01	844636-1	9	152	3-G11
	2c	32	1-G23		2c	38	1-H05		2c	38	1-H05		9	154	3-G13
	2c	36	1-H03		2c	42	1-H09		2c	40	1-H07	844642-9	9	152	3-G11
	2c	42	1-H09	844227-9	2c	26	1-G17		2c	44	1-H11		9	154	3-G13
	2c	48	1-H15		2c	38	1-H05	844294-9	2c	54	1-H21		9	156	3-G15
844206-3	2c	24	1-G15	844228-7	2c	26	1-G17	844295-6	2c	54	1-H21	844651-0	2c	22	1-G13
	2c	32	1-G23		2c	30	1-G21	844296-4	2c	54	1-H21	844652-8	2c	44	1-H11
	2c	36	1-H03		2c	38	1-H05	844297-2	2c	54	1-H21	844785-6	2c	2	1-F17
	2c	42	1-H09		2c	42	1-H09	844298-0	2c	54	1-H21		2c	46	1-H13
844207-1	2c	24	1-G15	844229-5	2c	26	1-G17	(844299)	2c	54	1-H21	844786-4	2b	56	1-F09
	2c	32	1-G23		2c	30	1-G21	(844300)	2c	54	1-H21		2b	58	1-F11
	2c	36	1-H03		2c	38	1-H05	(844301)	2c	54	1-H21	844787-2	2c	2	1-F17
	2c	42	1-H09		2c	42	1-H09	(844302)	2c	54	1-H21	844788-0	2c	4	1-F19
844208-9	2c	24	1-G15	844230-3	2c	26	1-G17	844303-8	2c	54	1-H21	844828-4	3	4	1-J05
	2c	36	1-H03		2c	30	1-G21	(844304)	2c	54	1-H21		3	10	1-J11
844209-7	2c	24	1-G15		2c	38	1-H05	(844305)	2c	54	1-H21	844869-8	3	4	1-J05
	2c	32	1-G23		2c	42	1-H09	844308-7	2c	54	1-H21		3	10	1-J11
844210-5	2c	24	1-G15		2c	52	1-H19	(844311)	2c	54	1-H21	844888-8	2b	26	1-E03
	2c	32	1-G23	844231-1	2c	26	1-G17	(844312)	2c	54	1-H21	844892-0	3	4	1-J05
	2c	36	1-H03	(844232)	2c	26	1-G17	(844313)	2c	54	1-H21		3	10	1-J11
844211-3	2c	24	1-G15	844233-7	2c	26	1-G17	(844315)	2c	54	1-H21	844902-7	9	18	3-A21
844212-1	2c	24	1-G15		2c	38	1-H05	844316-0	2c	54	1-H21	844903-5	9	18	3-A21
	2c	32	1-G23	844235-2	2c	24	1-G15	(844318)	2c	54	1-H21	844904-3	9	18	3-A21
	2c	36	1-H03		2c	26	1-G17	(844320)	2c	54	1-H21	844909-2	2a	34	1-C11
	2c	42	1-H09		2c	30	1-G21	(844323)	2c	54	1-H21	844936-5	2b	22	1-D23
844213-9	2c	24	1-G15		2c	38	1-H05	(844324)	2c	54	1-H21		2b	24	1-E01
	2c	30	1-G21		2c	42	1-H09	(844325)	2c	54	1-H21		9	8	3-A11
	2c	38	1-H05		2c	44	1-H11	(844327)	2c	56	1-H23	844971-2	2b	10	1-D11
	2c	42	1-H09		2c	50	1-H17	844328-5	2c	56	1-H23		2b	14	1-D15
844214-7	2c	24	1-G15	844237-8	2c	4	1-F19	(844329)	2c	56	1-H23		2b	32	1-E09
	2c	30	1-G21		2c	6	1-F21	(844330)	2c	56	1-H23	845021-5	3	16	1-J17
	2c	38	1-H05		2c	10	1-G01	844332-7	2c	56	1-H23		9	64	3-C19
	2c	42	1-H09		2c	14	1-G05	(844335)	2c	56	1-H23		9	102	3-E09
	2c	48	1-H15		2c	26	1-G17	844336-8	2c	56	1-H23	845033-0	2b	38	1-E15
844215-4	2c	24	1-G15		2c	30	1-G21	844337-6	2c	56	1-H23		2b	42	1-E19
	2c	30	1-G21		2c	38	1-H05	844338-4	2c	56	1-H23	845042-1	2b	50	1-F03
	2c	38	1-H05		2c	44	1-H11	844339-2	2c	56	1-H23		2b	52	1-F05
	2c	42	1-H09		2c	50	1-H17	844340-0	2c	56	1-H23		10a	3	3-H04
	2c	48	1-H15	844238-6	2c	26	1-G17	(844342)	2c	54	1-H21	845045-4	2b	50	1-F03
844216-2	2c	24	1-G15		2c	30	1-G21	(844343)	2c	54	1-H21		2b	52	1-F05
844217-0	2c	24	1-G15		2c	38	1-H05	844359-0	4a	2	2-A03		10a	3	3-H04
	2c	30	1-G21	844239-4	2c	26	1-G17		4a	6	2-A07	845047-0	2b	50	1-F03
	2c	38	1-H05		2c	38	1-H05	(844363)	2c	24	1-G15		2b	52	1-F05
	2c	42	1-H09	844240-2	2c	26	1-G17	(844368)	2c	42	1-H09		10a	3	3-H04
844218-8	2c	24	1-G15		2c	32	1-G23	844368-1	2c	24	1-G15	845049-6	2b	50	1-F03
844219-6	2c	24	1-G15		2c	38	1-H05		2c	28	1-G19		2b	52	1-F05
844220-4	2c	24	1-G15		2c	44	1-H11		2c	36	1-H03	845050-4	2b	50	1-F03
	2c	30	1-G21		2c	48	1-H15	844377-2	2b	36	1-E13		2b	52	1-F05
	2c	38	1-H05		2c	52	1-H19	844404-4	9	68	3-C23	845071-0	9	86	3-D17
	2c	42	1-H09	844245-1	2c	2	1-F17	844416-8	2b	18	1-D19		9	138	3-F21

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845104-9	2a	34	1-C11		2b	14	1-D15	(845585)	2b	26	1-E03	845770-7	2c	36	1-H03
845109-8	9	36	3-B15		9	14	3-A17		10a	6	3-H07	845771-5	2c	36	1-H03
845137-9	2b	22	1-D23	845344-1	3	4	1-J05	845587-5	2b	18	1-D19	845777-2	2c	30	1-G21
	2b	24	1-E01		3	10	1-J11	845588-3	9	2	3-A05		2c	42	1-H09
	9	6	3-A09	845347-4	2a	34	1-C11	845646-9	2c	4	1-F19	845784-8	2c	26	1-G17
845138-7	2b	22	1-D23	(845349)	2a	40	1-C17		2c	6	1-F21		2c	32	1-G23
	2b	24	1-E01		2b	10	1-D11		2c	10	1-G01		2c	38	1-H05
	9	6	3-A09		2b	14	1-D15		2c	14	1-G05	845785-5	2c	26	1-G17
845194-0	2a	26	1-C03		2b	34	1-E11	845647-7	2c	2	1-F17		2c	30	1-G21
845195-7	2b	10	1-D11	845349-0	2a	40	1-C17		2c	6	1-F21		2c	38	1-H05
	2b	14	1-D15	845350-8	2b	34	1-E11		2c	10	1-G01		2c	42	1-H09
845198-1	2b	22	1-D23	845352-4	2b	34	1-E11		2c	14	1-G05	845791-3	2b	4	1-D05
	2b	24	1-E01	845353-2	2b	26	1-E03	845704-6	2b	26	1-E03		4a	2	2-A03
	9	8	3-A11		2b	60	1-F13	845714-5	4a	10	2-A11		4a	10	2-A11
845256-7	2a	34	1-C11		10a	3	3-H04		4a	12	2-A13	845792-1	4a	10	2-A11
845261-7	2b	56	1-F09		10a	6	3-H07	845715-2	4a	10	2-A11		4a	12	2-A13
	2b	58	1-F11	845354-0	2b	10	1-D11		4a	12	2-A13		4a	14	2-A15
	2b	60	1-F13		2b	14	1-D15	845716-0	4a	10	2-A11		4a	16	2-A17
	9	6	3-A09		2b	16	1-D17		4a	12	2-A13		4a	46	2-B23
845277-3	2b	20	1-D21		2b	26	1-E03	(845722)	2c	28	1-G19	845819-2	2b	2	1-D03
	2b	28	1-E05		4a	46	2-B23	845726-9	2c	22	1-G13	845820-0	2b	2	1-D03
	2b	30	1-E07		4a	52	2-C05		2c	28	1-G19	845821-8	2b	2	1-D03
845280-7	2c	6	1-F21		4a	54	2-C07		2c	34	1-H01		9	6	3-A09
	2c	28	1-G19		9	10	3-A13		2c	40	1-H07	845823-4	2b	52	1-F05
845281-5	2c	6	1-F21		9	14	3-A17	845729-3	2c	22	1-G13	845824-2	2b	50	1-F03
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845284-9	2b	22	1-D23	845355-7	2b	10	1-D11		2c	34	1-H01		10a	3	3-H04
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	9	8	3-A11	(845356)	2b	10	1-D11	845730-1	2c	22	1-G13		2b	52	1-F05
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845286-4	2b	24	1-E01	845357-3	2b	10	1-D11	845737-6	2c	22	1-G13		10a	4	3-H05
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	2b	24	1-E01		4a	54	2-C07		2c	34	1-H01	845828-3	2b	52	1-F05
	9	8	3-A11		9	14	3-A17	845738-4	2c	22	1-G13	845829-1	2b	50	1-F03
845294-8	2b	46	1-E23	845358-1	2b	26	1-E03		2c	22	1-G13		2b	52	1-F05
	2b	52	1-F05	845359-9	2b	26	1-E03		2c	28	1-G19		10a	3	3-H04
	2b	60	1-F13	845373-0	2b	22	1-D23		2c	34	1-H01	845831-7	2b	50	1-F03
845297-1	2b	26	1-E03		2b	24	1-E01		2c	40	1-H07		2b	52	1-F05
845299-7	2b	10	1-D11		9	8	3-A11		2c	46	1-H13	845832-5	2b	52	1-F05
	2b	14	1-D15	845374-8	2b	24	1-E01	845746-7	2c	30	1-G21	845841-6	4a	14	2-A15
845300-3	2b	24	1-E01		9	8	3-A11	845750-9	2c	24	1-G15		4a	16	2-A17
845301-1	2b	22	1-D23	845385-4	2b	26	1-E03		2c	30	1-G21		4a	46	2-B23
	2b	24	1-E01	845408-4	2b	56	1-F09		2c	38	1-H05	845842-4	4a	14	2-A15
	9	8	3-A11		2b	58	1-F11		2c	42	1-H09		4a	16	2-A17
845317-7	10a	6	3-H07		2b	60	1-F13	845751-7	2c	24	1-G15		4a	46	2-B23
	2b	10	1-D11	845413-4	2b	46	1-E23		2c	30	1-G21	845848-1	4a	6	2-A07
	2b	14	1-D15	845443-1	2b	14	1-D15		2c	38	1-H05	845852-3	2b	22	1-D23
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	9	14	3-A17	845451-4	3	4	1-J05	845753-3	2c	30	1-G21		9	8	3-A11
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(845327)	2b	14	1-D15	845453-0	2b	60	1-F13		2c	42	1-H09	845858-0	2b	60	1-F13
845327-6	9	14	3-A17	845527-1	2b	2	1-D03	845755-8	2c	36	1-H03	845859-8	2b	60	1-F13
845328-4	2b	10	1-D11		2b	4	1-D05		2c	42	1-H09	845879-6	2b	22	1-D23
	2b	14	1-D15		2b	60	1-F13	845757-4	2c	36	1-H03		2b	24	1-E01
	9	10	3-A13		4a	2	2-A03	845758-2	2c	36	1-H03		9	8	3-A11
	9	14	3-A17		4a	10	2-A11	845759-0	2c	36	1-H03	845940-6	3	2	1-J03
(845329)	2b	10	1-D11		4a	14	2-A15	845760-8	2c	36	1-H03		3	8	1-J09
	2b	14	1-D15		4a	16	2-A17	845761-6	2c	36	1-H03		3	16	1-J17
	9	14	3-A17		9	6	3-A09	845762-4	2c	36	1-H03		3	24	1-K01
(845334)	10a	6	3-H07	845528-9	2b	60	1-F13	845763-2	2c	36	1-H03		9	102	3-E09
845334-2	2b	26	1-E03		4a	14	2-A15	845764-0	2c	36	1-H03	845960-4	9	14	3-A17
845336-7	2b	26	1-E03		4a	16	2-A17	845765-7	2c	36	1-H03	845961-2	2b	10	1-D11
(845337)	9	14	3-A17	845557-8	9	2	3-A05	845766-5	2c	36	1-H03		2b	16	1-D17
845337-5	2b	10	1-D11	845582-6	2b	26	1-E03	845767-3	2c	36	1-H03		4a	46	2-B23
	2b	14	1-D15	845583-4	2b	26	1-E03	845768-1	2c	36	1-H03		4a	54	2-C07



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845988-5	9	72	3-D03	846815-9	2c	40	1-H07	848711-8	2b	52	1-F05	850433-4	4b	2	2-D03
845999-2	2b	10	1-D11	846831-6	9	72	3-D03		10a	3	3-H04		4b	8	2-D09
	2b	14	1-D15	846855-5	2c	10	1-G01	849563-2	3	2	1-J03		4b	14	2-D15
846060-2	3	14	1-J15		2c	34	1-H01		3	8	1-J09		4b	20	2-D21
846110-5	2b	32	1-E09	846868-8	2b	6	1-D07		3	16	1-J17	850452-4	9	136	3-F19
	10a	3	3-H04		2b	22	1-D23		9	102	3-E09	850460-7	4c	2	2-F03
846111-3	2b	32	1-E09	(846944)	2b	6	1-D07	849747-1	9	72	3-D03		4c	6	2-F07
	9	148	3-G07	846945-4	2c	54	1-H21	849748-9	9	72	3-D03	850471-4	4b	4	2-D05
846112-1	2b	32	1-E09	846947-0	2c	54	1-H21	849958-4	3	14	1-J15		4b	10	2-D11
846113-9	2b	32	1-E09	(846948)	2c	54	1-H21		3	38	1-K15		4b	16	2-D17
	10a	3	3-H04	(846950)	2c	54	1-H21	(850004)	4a	32	2-B09		4b	22	2-D23
846114-7	2b	32	1-E09	(846952)	2c	54	1-H21		4a	36	2-B13	850472-2	4b	4	2-D05
	10a	3	3-H04	846954-6	2c	54	1-H21	(850012)	4c	22	2-F23	850473-0	4b	4	2-D05
846115-4	2b	32	1-E09	(846956)	2c	54	1-H21	850200-7	9	50	3-C05	850474-8	4b	4	2-D05
846162-6	9	14	3-A17	846957-9	2c	56	1-H23		9	52	3-C07	850478-9	4a	60	2-C13
846214-5	2b	38	1-E15	846958-7	2c	56	1-H23		9	54	3-C09		6	2	2-H03
	2b	42	1-E19	(846959)	2c	56	1-H23		9	56	3-C11		6	6	2-H07
846215-2	2b	46	1-E23	846960-3	2c	54	1-H21		9	58	3-C13		6	22	2-H23
	9	6	3-A09	846961-1	2c	54	1-H21	850221-3	6	42	2-I19	850479-7	6	2	2-H03
846216-0	9	6	3-A09	846963-7	2c	54	1-H21	(850243)	4b	2	2-D03	850488-8	4a	26	2-B03
846220-2	9	68	3-C23	(846964)	2c	54	1-H21		4b	8	2-D09		4a	30	2-B07
846240-0	2b	22	1-D23	(846965)	2c	54	1-H21		4b	14	2-D15		4a	34	2-B11
	2b	24	1-E01	846966-0	2c	54	1-H21	850269-2	4b	4	2-D05		4a	38	2-B15
	9	8	3-A11	(846968)	2c	54	1-H21	850270-0	4b	4	2-D05		4a	58	2-C11
846268-1	9	6	3-A09	(846969)	2c	54	1-H21	850272-6	4b	2	2-D03		6	4	2-H05
846269-9	9	6	3-A09	846970-2	2c	54	1-H21	850275-9	4b	4	2-D05		6	6	2-H07
846270-7	9	6	3-A09	846975-1	2c	56	1-H23		4b	10	2-D11		6	24	2-I01
846273-1	3	34	1-K11	(846977)	2c	56	1-H23		4b	16	2-D17	850489-6	4a	60	2-C13
846339-0	2b	4	1-D05	(846978)	2c	56	1-H23		4b	22	2-D23		6	4	2-H05
	2b	6	1-D07	846980-1	2c	56	1-H23	850276-7	4b	4	2-D05		6	6	2-H07
846345-7	3	34	1-K11	847002-3	9	14	3-A17		4b	10	2-D11		6	24	2-I01
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846387-9	9	68	3-C23	847017-1	2b	12	1-D13		4b	22	2-D23		4a	28	2-B05
846471-1	2c	2	1-F17		2b	16	1-D17	850304-7	4c	26	2-G03		4a	32	2-B09
	2c	34	1-H01	847018-9	2b	10	1-D11		4c	42	2-G19		4a	36	2-B13
846484-4	2b	10	1-D11		2b	14	1-D15	850350-0	4b	4	2-D05		4a	58	2-C11
846573-4	2b	18	1-D19		9	14	3-A17		4b	10	2-D11		6	2	2-H03
846584-1	2b	18	1-D19		9	14	3-A17		4b	16	2-D17		6	6	2-H07
846611-2	3	40	1-K17	847038-7	2a	34	1-C11		4b	24	2-E01		6	24	2-I01
846612-0	3	14	1-J15	(847040)	3	14	1-J15	850354-2	4c	2	2-F03	(850673)	6	4	2-H05
	3	40	1-K17	847040-3	3	38	1-K15	850358-3	9	136	3-F19	850674-3	6	24	2-I01
846613-8	3	40	1-K17	847041-1	3	38	1-K15	850361-7	9	136	3-F19	850697-4	4a	32	2-B09
846615-3	3	40	1-K17	847105-4	2b	6	1-D07	850372-4	4a	18	2-A19	850710-5	9	124	3-F07
846639-3	3	14	1-J15	847106-2	9	14	3-A17		4a	22	2-A23	850714-7	9	124	3-F07
	3	34	1-K11	847107-0	2b	6	1-D07		9	126	3-F09	850717-0	9	124	3-F07
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	3	40	1-K17	847155-9	9	38	3-B17		9	122	3-F05		4a	30	2-B07
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846650-0	3	4	1-J05	847709-3	3	24	1-K01		4b	10	2-D11	850742-8	4b	4	2-D05
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	3	32	1-K09	847712-7	3	24	1-K01		4a	30	2-B07	850771-7	4a	60	2-C13
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846736-7	3	14	1-J15		9	78	3-D09		4a	36	2-B13		6	10	2-H11
846762-3	3	14	1-J15	848154-1	2b	32	1-E09		4a	38	2-B15		6	14	2-H15
846763-1	3	14	1-J15		9	148	3-G07		4a	60	2-C13		6	22	2-H23
846786-2	9	88	3-D19	848367-9	3	8	1-J09		6	20	2-H21	850775-8	6	4	2-H05
846787-0	9	90	3-D21	848401-6	9	78	3-D09	850422-7	4b	2	2-D03		6	8	2-H09
846791-2	3	2	1-J03	848402-4	3	20	1-J21		4b	8	2-D09		6	24	2-I01
	3	14	1-J15		9	78	3-D09		4b	14	2-D15	850776-6	6	4	2-H05
846815-9	2c	14	1-G05	848711-8	2b	50	1-F03		4b	20	2-D21		6	8	2-H09

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850778-2	4a	60	2-C13	850888-9	4c	22	2-F23	850989-5	4a	18	2-A19	851042-2	4a	18	2-A19
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	6	14	2-H15		4c	26	2-G03		9	124	3-F07		4a	38	2-B15
	6	22	2-H23	850896-2	9	124	3-F07	851004-2	9	58	3-C13	851056-2	6	6	2-H07
850781-6	9	118	3-F01	850902-8	4a	30	2-B07	851016-6	6	6	2-H07		6	10	2-H11
850782-4	9	118	3-F01		4a	38	2-B15		6	10	2-H11		6	34	2-H11
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	6	32	2-I09		6	2	2-H03		6	10	2-H11	851142-0	9	118	3-F01
850833-5	4b	4	2-D05	850960-6	4a	60	2-C13		6	34	2-I11	851143-8	4b	10	2-D11
850834-3	9	124	3-F07		6	2	2-H03	851035-6	9	118	3-F01	851144-6	4b	8	2-D09
850836-8	4a	18	2-A19		6	22	2-H23	851036-4	9	118	3-F01	851145-3	4b	8	2-D09
850864-0	9	118	3-F01	850961-4	6	6	2-H07	851037-2	9	118	3-F01	851147-9	6	6	2-H07
850865-7	9	118	3-F01	850965-5	9	124	3-F07	851038-0	9	118	3-F01		6	10	2-H11
850866-5	9	118	3-F01	850970-5	9	124	3-F07	851039-8	9	118	3-F01		6	14	2-H15





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	4a	38	2-B15	851397-0	4a	30	2-B07	851679-1	4b	16	2-D17	852007-4	4b	18	2-D19
851261-8	4c	24	2-G01		4a	38	2-B15	851697-3	4b	14	2-D15		4b	22	2-D23
	4c	26	2-G03	851400-2	4c	2	2-F03	851699-9	4b	16	2-D17	852026-4	4a	18	2-A19
(851262)	4a	28	2-B05	851402-8	4c	18	2-F19	851713-8	9	60	3-C15		4a	22	2-A23
	4a	58	2-C11		4c	36	2-G13	851715-3	4b	14	2-D15	852031-4	6	18	2-H19
851262-6	4a	24	2-B01	851403-6	4c	18	2-F19	851720-3	4b	14	2-D15	852032-2	6	18	2-H19
	4a	32	2-B09		4c	36	2-G13	851730-2	4b	18	2-D19	852035-5	6	6	2-H07
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	4a	32	2-B09		10a	8	3-H09	851743-5	6	18	2-H19		6	34	2-I11
	4a	36	2-B13	851407-7	4c	40	2-G17		6	20	2-H21	852046-2	4c	14	2-F15
	4c	6	2-F07		10a	8	3-H09	851744-3	6	18	2-H19		4c	32	2-G09
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	4c	10	2-F11		4c	36	2-G13	851766-6	4a	26	2-B03	852088-4	9	124	3-F07
	4c	28	2-G05	851422-6	4c	18	2-F19		4a	34	2-B11	852102-3	4a	12	2-A13
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	4a	58	2-C11		4c	36	2-G13		4c	36	2-G13	852148-6	6	26	2-I03
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	4b	10	2-D11		4c	36	2-G13		4c	26	2-G03		4a	50	2-C03
	4b	16	2-D17	851430-9	4a	40	2-B17	(851771)	4a	18	2-A19		4c	2	2-F03
	4b	22	2-D23	851432-5	4a	40	2-B17		4a	22	2-A23	852174-2	4c	40	2-G17
	4c	6	2-F07	851434-1	4a	40	2-B17	851777-3	9	22	3-B01	852181-7	4c	40	2-G17
	4c	10	2-F11	851452-3	4c	22	2-F23	851779-9	9	22	3-B01	852183-3	4c	40	2-G17
	4c	28	2-G05		4c	26	2-G03	851783-1	9	22	3-B01	852184-1	4b	16	2-D17
851307-9	4a	30	2-B07	851454-9	6	22	2-H23	851786-4	4b	18	2-D19		4b	22	2-D23
	4a	38	2-B15	851480-4	9	124	3-F07		4b	22	2-D23	852191-6	4a	22	2-A23
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	4a	38	2-B15		4b	16	2-D17		4a	22	2-A23	852193-2	4c	4	2-F05
851310-3	9	160	3-G19		4b	22	2-D23	851871-4	4a	18	2-A19		4c	40	2-G17
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	4a	38	2-B15		4b	16	2-D17	851875-5	4c	2	2-F03	852196-5	4c	40	2-G17
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851367-3	6	22	2-H23	851601-5	9	54	3-C09	851940-7	6	20	2-H21	852348-2	9	54	3-C09
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851369-9	6	22	2-H23	851603-1	9	58	3-C13	851942-3	6	20	2-H21		4b	10	2-D11
851382-2	6	22	2-H23	851605-6	9	54	3-C09	851943-1	6	20	2-H21		4b	16	2-D17
851385-5	4a	60	2-C13	851673-4	4b	14	2-D15	851997-7	6	20	2-H21		4b	22	2-D23
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	4a	32	2-B09		9	96	3-E03	858274-4	9	156	3-G15	858877-4	9	88	3-D19
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	4a	40	2-B17	855117-8	9	36	3-B15	858276-9	9	156	3-G15	858881-6	9	46	3-C01
	4a	58	2-C11	855129-3	9	36	3-B15	858277-7	9	156	3-G15	858886-5	9	94	3-E01
(853497)	4a	24	2-B01	855195-4	6	32	2-I09	858278-5	9	156	3-G15	858905-3	2c	54	1-H21
	4a	28	2-B05	855204-4	9	158	3-G17	858279-3	9	156	3-G15	858906-1	2c	54	1-H21
	4a	32	2-B09	855207-7	9	36	3-B15	858280-1	9	156	3-G15	858907-9	2c	36	1-H03
	4a	36	2-B13	855270-5	6	30	2-I07	858281-9	9	156	3-G15		2c	40	1-H07
	4a	40	2-B17	855281-2	3	40	1-K17	858282-7	9	156	3-G15	858908-7	2c	54	1-H21
	4a	58	2-C11	855314-1	3	6	1-J07	858283-5	3	38	1-K15	858936-8	3	26	1-K03
853502-3	3	6	1-J07		3	12	1-J13		9	148	3-G07	858946-7	3	26	1-K03
	3	12	1-J13		9	100	3-E07		9	150	3-G09	858986-3	2b	2	1-D03
	9	100	3-E07	855330-7	9	142	3-G01	858284-3	9	148	3-G07		9	146	3-G05
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853520-5	4a	60	2-C13		2a	20	1-B21	858382-5	9	64	3-C19		10a	5	3-H06
	9	122	3-F05	855544-3	6	38	2-I15	858383-3	9	64	3-C19	858996-2	2a	30	1-C07
	9	124	3-F07	855574-0	6	38	2-I15	858454-2	9	142	3-G01		2a	32	1-C09
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853542-9	4b	2	2-D03	855798-5	3	6	1-J07	858471-6	2b	24	1-E01		9	2	3-A05
	4b	8	2-D09		3	12	1-J13		4a	14	2-A15		10a	5	3-H06
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	4c	10	2-F11	858036-7	3	4	1-J05		2a	32	1-C09	859047-3	2b	26	1-E03
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853545-2	4a	44	2-B21		9	100	3-E07	858542-4	9	10	3-A13	859155-4	2a	30	1-C07
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	9	96	3-E03	858038-3	2b	24	1-E01	858558-0	3	32	1-K09		10a	5	3-H06
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	4a	30	2-B07		4a	6	2-A07		9	92	3-D23	870980-0	3	6	1-J07
	4a	34	2-B11		4a	16	2-A17	858572-1	9	72	3-D03		3	12	1-J13
	4a	38	2-B15		4a	46	2-B23	858573-9	9	72	3-D03	871017-0	9	114	3-E21
	4a	42	2-B19	858057-3	3	4	1-J05	858575-4	9	22	3-B01	871022-0	9	114	3-E21
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	9	26	3-B05		3	12	1-J13	858627-3	9	72	3-D03	871045-1	9	114	3-E21
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	4c	10	2-F11	858079-7	3	16	1-J17		9	150	3-G09	871049-3	9	114	3-E21
	4c	28	2-G05		9	102	3-E09	858632-3	9	150	3-G09	871051-9	9	114	3-E21
853572-6	3	2	1-J03	858081-3	2b	10	1-D11	858633-1	9	148	3-G07	871052-7	9	114	3-E21
	3	8	1-J09		2b	14	1-D15	858643-0	9	46	3-C01	(871055)	9	114	3-E21
	9	100	3-E07		9	14	3-A17		9	88	3-D19	871056-8	9	114	3-E21
853573-4	3	2	1-J03	858092-0	2c	14	1-G05		9	94	3-E01	871069-1	9	114	3-E21
	3	8	1-J09	858098-7	2c	22	1-G13	858645-5	9	90	3-D21	871072-5	9	114	3-E21
	9	100	3-E07		2c	46	1-H13	858686-9	3	28	1-K05	871075-8	9	114	3-E21
853584-1	4c	40	2-G17	858157-1	9	142	3-G01	858687-7	3	28	1-K05	871078-2	9	114	3-E21
853589-0	6	32	2-I03	858158-9	9	142	3-G01	858688-5	3	28	1-K05	(871079)	9	114	3-E21
853708-6	4a	40	2-B17	858159-7	9	142	3-G01	858689-3	3	28	1-K05	(871086)	9	114	3-E21
853709-4	4a	40	2-B17	858160-5	9	142	3-G01	858691-9	3	28	1-K05	871090-7	9	114	3-E21
853757-3	4b	16	2-D17	858164-7	9	142	3-G01	858692-7	3	28	1-K05	871092-3	9	114	3-E21
	4b	22	2-D23	858165-4	9	142	3-G01	858693-5	3	28	1-K05	871096-4	9	114	3-E21
	10a	9	3-H10	858169-6	9	142	3-G01	858695-0	3	28	1-K05	871098-0	9	114	3-E21
853863-9	4a	24	2-B01	858175-3	9	64	3-C19	858696-8	3	28	1-K05	(871099)	9	114	3-E21
	4a	28	2-B05	858177-9	9	64	3-C19	858697-6	3	28	1-K05	871102-0	9	114	3-E21
	4a	32	2-B09	858191-0	9	72	3-D03	858833-7	2b	22	1-D23	(871107)	9	114	3-E21
	4a	36	2-B13	858212-4	2c	14	1-G05		2b	24	1-E01	871109-5	9	114	3-E21
	4a	40	2-B17	858235-5	9	142	3-G01		9	8	3-A11	(871115)	9	114	3-E21
	4a	58	2-C11	858240-5	9	72	3-D03	858838-6	3	2	1-J03	871116-0	9	114	3-E21
853864-7	4a	24	2-B01	858245-4	2a	40	1-C17		3	8	1-J09	871117-8	9	114	3-E21
	4a	28	2-B05	858248-8	9	142	3-G01		3	16	1-J17	871128-5	9	114	3-E21
	4a	32	2-B09	858255-3	9	142	3-G01		9	68	3-C23	(871148)	9	114	3-E21
	4a	36	2-B13	858256-1	9	142	3-G01	858840-2	3	20	1-J21	871149-1	9	114	3-E21
	4a	40	2-B17	858257-9	9	64	3-C19	858874-1	9	88	3-D19	(871150)	9	114	3-E21

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871171-5	9	114	3-E21		10a	3	3-H04	876037-3	9	50	3-C05		4c	10	2-F11
871185-5	9	114	3-E21	875633-0	10a	5	3-H06		9	56	3-C11		4c	28	2-G05
871188-9	9	114	3-E21	875634-8	10a	5	3-H06	(876038)	9	68	3-C23	897387-7	4c	22	2-F23
871190-5	9	114	3-E21	875635-5	4a	32	2-B09	876039-9	9	124	3-F07		4c	26	2-G03
871193-9	9	114	3-E21	875646-2	10a	3	3-H04	876040-7	4a	18	2-A19		4c	40	2-G17
871195-4	9	114	3-E21	875651-2	2a	18	1-B19		4a	22	2-A23	897426-3	4c	22	2-F23
871210-1	9	114	3-E21		2a	20	1-B21	876069-6	2a	8	1-B09		4c	26	2-G03
871213-5	9	114	3-E21		10a	2	3-H03		2a	12	1-B13		10a	7	3-H08
871217-6	9	114	3-E21	875660-3	2b	32	1-E09		2a	16	1-B17		10a	8	3-H09
871218-4	9	114	3-E21		9	148	3-G07	881348-7	3	2	1-J03	897447-9	4c	14	2-F15
871219-2	9	114	3-E21	875662-9	10a	5	3-H06	881483-2	3	38	1-K15		4c	18	2-F19
871220-0	9	114	3-E21	875672-8	4a	24	2-B01	881484-0	3	38	1-K15		4c	32	2-G09
871222-6	9	114	3-E21		4a	32	2-B09	881485-7	3	38	1-K15		4c	36	2-G13
871228-3	9	114	3-E21		4a	58	2-C11	881486-5	3	38	1-K15	897448-7	4c	14	2-F15
871229-1	9	114	3-E21	875674-4	4a	28	2-B05	881487-3	3	38	1-K15		4c	20	2-F21
871335-6	9	114	3-E21		4a	36	2-B13	881488-1	3	38	1-K15		4c	32	2-G09
871502-1	9	114	3-E21	875702-3	9	146	3-G05	881489-9	3	38	1-K15		4c	38	2-G15
871507-0	9	114	3-E21	(875707)	2a	18	1-B19	881491-5	3	38	1-K15	897457-8	4c	14	2-F15
871509-6	9	114	3-E21		2a	20	1-B21	881492-3	3	36	1-K13		4c	32	2-G09
871512-0	9	114	3-E21		10a	2	3-H03	881493-1	3	36	1-K13	897511-2	4c	14	2-F15
871518-7	9	114	3-E21	875712-2	2b	32	1-E09		9	34	3-B13		4c	18	2-F19
(871520)	9	114	3-E21		10a	3	3-H04	881494-9	3	36	1-K13		4c	32	2-G09
871618-5	9	114	3-E21	875722-1	2a	18	1-B19	881495-6	3	36	1-K13		4c	36	2-G13
871620-1	9	114	3-E21		2a	20	1-B21	881496-4	3	36	1-K13	(897599)	4a	24	2-B01
875117-4	9	152	3-G11		10a	2	3-H03	881497-2	3	36	1-K13		4a	30	2-B07
	9	154	3-G13	875738-7	9	12	3-A15	881498-0	3	36	1-K13		4a	34	2-B11
	9	156	3-G15	875741-1	4c	4	2-F05	(881500)	3	36	1-K13		4a	38	2-B15
875183-6	4c	24	2-G01		10a	8	3-H09	(881501)	3	36	1-K13		4a	58	2-C11
	9	130	3-F13	875759-3	2b	32	1-E09	881502-9	3	36	1-K13	897626-8	9	118	3-F01
875192-7	4c	2	2-F03		10a	2	3-H03	881505-2	3	38	1-K15	897644-1	4c	14	2-F15
	10a	7	3-H08	875769-2	2b	32	1-E09	881506-0	3	36	1-K13		4c	18	2-F19
(875256)	4c	8	2-F09		10a	3	3-H04	881508-6	3	36	1-K13		4c	32	2-G09
	4c	12	2-F13	875772-6	4a	60	2-C13	881509-4	3	38	1-K15		4c	36	2-G13
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875351-9	9	124	3-F07		6	6	2-H07	881516-9	3	36	1-K13	897664-9	9	124	3-F07
875352-7	9	124	3-F07		6	24	2-I01	881517-7	3	38	1-K15	897666-4	9	124	3-F07
875361-8	4c	16	2-F17	875787-4	2b	18	1-D19	881518-5	3	38	1-K15	897667-2	9	124	3-F07
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	4c	14	2-F15		2b	24	1-E01	897029-5	6	44	2-I21		4b	12	2-D13
	4c	32	2-G09		9	8	3-A11	897030-3	6	44	2-I21		4b	18	2-D19
875425-1	4b	2	2-D03	875788-2	2b	18	1-D19	897244-0	4a	24	2-B01		4b	20	2-D21
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	4b	22	2-D23		9	8	3-A11		4a	36	2-B13		4c	28	2-G05
	4c	6	2-F07		9	146	3-G05		4a	58	2-C11		10a	7	3-H08
	4c	10	2-F11	875815-3	4c	22	2-F23	897308-3	4b	2	2-D03		10a	8	3-H09
	4c	28	2-G05		4c	26	2-G03		4b	8	2-D09		10a	9	3-H10
875523-3	4c	22	2-F23	875819-5	9	138	3-F21		4b	14	2-D15	897696-1	4c	14	2-F15
875524-1	4c	22	2-F23	875821-1	4c	40	2-G17		4b	20	2-D21		4c	18	2-F19
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875593-6	2b	32	1-E09		4c	12	2-F13		4b	20	2-D21		4c	10	2-F11
	9	146	3-G05		4c	30	2-G07		4c	8	2-F09		4c	28	2-G05
	9	150	3-G09	875828-6	4a	32	2-B09		4c	12	2-F13	897711-8	4b	4	2-D05
875626-4	2b	28	1-E05		4a	36	2-B13		4c	30	2-G07		4b	10	2-D11
	2b	30	1-E07		4a	58	2-C11	897313-3	4c	8	2-F09		4b	16	2-D17
	10a	2	3-H03	875845-0	4a	40	2-B17		4c	12	2-F13		4b	22	2-D23
875628-0	4b	6	2-D07	875847-6	4a	40	2-B17		4c	30	2-G07		4c	8	2-F09
	4b	12	2-D13	875848-4	4a	24	2-B01	897367-9	4c	22	2-F23		4c	12	2-F13
	4b	18	2-D19		4a	28	2-B05	(897368)	9	130	3-F13		4c	30	2-G07
	4b	24	2-E01		4a	42	2-B19	897385-1	4b	2	2-D03	897722-5	4c	14	2-F15
	10a	9	3-H10	875850-0	2a	8	1-B09		4b	8	2-D09		4c	32	2-G09
875632-2	2b	50	1-F03		2a	12	1-B13		4b	14	2-D15	897726-6	4a	24	2-B01



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	4a	32	2-B09		4c	12	2-F13		6	6	2-H07	924075-5	2a	8	1-B09
	4a	36	2-B13		4c	30	2-G07		6	24	2-I01		2a	12	1-B13
	4a	58	2-C11	899751-2	3	36	1-K13	914392-6	9	142	3-G01		2a	16	1-B17
897744-9	4a	24	2-B01	(905447)	9	136	3-F19	914446-0	9	124	3-F07	924079-7	2b	54	1-F07
	4a	28	2-B05	905448-7	9	136	3-F19	914448-6	6	42	2-I19	924102-7	9	64	3-C19
	4a	32	2-B09	906633-3	4c	22	2-F23	914449-4	2a	8	1-B09	925050-7	4a	40	2-B17
	4a	36	2-B13		4c	26	2-G03		2a	12	1-B13	925051-5	3	14	1-J15
	4a	58	2-C11		4c	40	2-G17		2a	16	1-B17	925053-1	4a	42	2-B19
897745-6	4a	24	2-B01	906635-8	4c	22	2-F23		2a	30	1-C07	925055-6	4a	28	2-B05
	4a	26	2-B03		4c	26	2-G03		2a	32	1-C09		4a	32	2-B09
	4a	28	2-B05	907023-6	4c	22	2-F23	914450-2	6	42	2-I19		4a	36	2-B13
	4a	30	2-B07		4c	26	2-G03	914456-9	2a	22	1-B23		4a	58	2-C11
	4a	32	2-B09		4c	40	2-G17		2a	24	1-C01		10a	7	3-H08
	4a	34	2-B11		10a	7	3-H08	914462-7	2b	28	1-E05		10a	8	3-H09
	4a	36	2-B13		10a	8	3-H09		2b	30	1-E07	925056-4	10a	8	3-H09
	4a	38	2-B15	907025-1	4c	22	2-F23		4a	26	2-B03	925059-8	3	2	1-J03
	4a	40	2-B17		4c	26	2-G03		4a	28	2-B05		3	8	1-J09
	4a	58	2-C11		10a	7	3-H08		4a	34	2-B11		10a	6	3-H07
	4a	60	2-C13		10a	8	3-H09		4a	36	2-B13	925060-6	2a	34	1-C11
897762-1	9	124	3-F07	907132-5	9	6	3-A09		4a	42	2-B19		9	2	3-A05
897772-0	4b	2	2-D03	907599-5	9	108	3-E15		4a	52	2-C05		9	124	3-F07
	4b	8	2-D09	907617-5	9	106	3-E13		4a	54	2-C07		10a	5	3-H06
	4b	14	2-D15	(907824)	9	136	3-F19		10a	2	3-H03	(925061)	2b	2	1-D03
	4b	22	2-D23	907834-6	4a	2	2-A03	914474-2	4c	22	2-F23		2b	6	1-D07
	4c	6	2-F07		4a	6	2-A07		4c	26	2-G03		2b	20	1-D21
	4c	10	2-F11		4b	4	2-D05	914506-1	2a	34	1-C11		4a	12	2-A13
	4c	28	2-G05		4b	10	2-D11	914508-7	4c	24	2-G01		9	146	3-G05
897774-6	4c	6	2-F07		4b	18	2-D19		9	128	3-F11		10a	5	3-H06
	4c	10	2-F11		4b	24	2-E01		9	130	3-F13	925061-4	4a	10	2-A11
	4c	28	2-G05		4c	14	2-F15		9	124	3-F07		9	146	3-G05
897776-1	4c	6	2-F07		4c	32	2-G09	914515-2	9	124	3-F07	925062-2	2b	18	1-D19
	4c	10	2-F11		6	20	2-H21	914519-4	2a	18	1-B19		10a	6	3-H07
	4c	28	2-G05		9	106	3-E13		10a	2	3-H03	925063-0	2b	18	1-D19
897798-5	4a	24	2-B01	907849-4	6	44	2-I21	914523-6	2b	32	1-E09		4a	24	2-B01
	4a	28	2-B05	907856-9	4a	60	2-C13		10a	2	3-H03		4a	30	2-B07
	4a	32	2-B09		6	2	2-H03	914533-5	2b	32	1-E09		4a	34	2-B11
	4a	36	2-B13		6	4	2-H05		4a	26	2-B03		4a	38	2-B15
	4a	58	2-C11		6	8	2-H09		4a	28	2-B05		4a	58	2-C11
897816-5	4b	4	2-D05		6	22	2-H23		4a	34	2-B11		4b	16	2-D17
	4b	10	2-D11		6	24	2-I01		4a	36	2-B13		4b	22	2-D23
	4b	16	2-D17		6	30	2-I07		4a	42	2-B19		10a	6	3-H07
	4b	22	2-D23	907861-9	4a	40	2-B17		4a	52	2-C05		10a	9	3-H10
	4c	8	2-F09	907872-6	6	34	2-I11		4a	54	2-C07	925065-5	2a	40	1-C17
	4c	12	2-F13	909838-5	9	124	3-F07		10a	3	3-H04		2b	4	1-D05
	4c	30	2-G07	910115-5	2a	38	1-C15	914538-4	4b	2	2-D03		2b	6	1-D07
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	9	130	3-F13	910116-3	2a	22	1-B23		4b	16	2-D17		2b	16	1-D17
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	4a	30	2-B07	910118-9	2a	18	1-B19		4c	6	2-F07	925067-1	2b	4	1-D05
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	4a	38	2-B15	913158-2	4a	40	2-B17		4c	28	2-G05		2b	12	1-D13
	4a	60	2-C13		4a	60	2-C13	914540-0	4b	10	2-D11		2b	16	1-D17
897829-8	4c	14	2-F15		6	2	2-H03	914675-4	9	152	3-G11		2b	18	1-D19
	4c	18	2-F19		6	4	2-H05		9	154	3-G13		2b	22	1-D23
	4c	32	2-G09		6	8	2-H09	914677-0	9	152	3-G11		2b	24	1-E01
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	4c	28	2-G05	941832-8	4c	22	2-F23		2c	52	1-H19		4a	16	2-A17				
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941912-8	2a	42	1-C19		4c	14	2-F15	943790-6	9	122	3-F05
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	9	26	3-B05	943218-8	4c	8	2-F09		4b	20	2-D21
	9	142	3-G01		4c	12	2-F13		4c	8	2-F09
941914-4	6	22	2-H23		4c	30	2-G07		4c	10	2-F11
942000-1	4b	16	2-D17	943366-5	2b	18	1-D19		4c	14	2-F15
	4b	22	2-D23		2b	60	1-F13		4c	18	2-F19
942336-9	4a	40	2-B17	(943368)	2b	18	1-D19		4c	28	2-G05
	4a	54	2-C07	943423-4	9	68	3-C23		4c	32	2-G09
	4a	60	2-C13	943426-7	4a	26	2-B03		4c	36	2-G13
	6	2	2-H03		4a	28	2-B05	943867-2	4b	2	2-D03
	6	6	2-H07		4a	34	2-B11		4b	8	2-D09
	6	22	2-H23		4a	36	2-B13		4b	14	2-D15
942353-4	4b	4	2-D05		4a	60	2-C13		4b	20	2-D21
	4b	10	2-D11	943469-7	2b	60	1-F13		4c	8	2-F09
	10a	9	3-H10	943470-5	6	26	2-I03		4c	10	2-F11
942385-6	2a	34	1-C11	943471-3	9	4	3-A07		4c	14	2-F15
	9	2	3-A05	943472-1	2b	18	1-D19		4c	18	2-F19
942400-3	2c	4	1-F19	943473-9	2a	34	1-C11		4c	28	2-G05
	2c	8	1-F23		4a	10	2-A11		4c	32	2-G09
	2c	12	1-G03		4a	12	2-A13		4c	38	2-G15
	2c	16	1-G07		2b	38	1-E15	943868-0	4b	2	2-D03
	9	68	3-C23	943474-7	2b	42	1-E19		4b	8	2-D09
942429-2	3	38	1-K15		2b	46	1-E23		4b	14	2-D15
942490-4	3	2	1-J03		9	150	3-G09		4b	20	2-D21
	3	8	1-J09	943475-4	2b	2	1-D03		4c	8	2-F09
942545-5	9	70	3-D01		2b	4	1-D05		4c	10	2-F11
942551-3	6	12	2-H13		2b	22	1-D23		4c	14	2-F15
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942598-4	4c	6	2-F07		4a	10	2-A11		4c	32	2-G09
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	4c	28	2-G05		4a	16	2-A17	943869-8	4b	20	2-D21
942615-6	10a	7	3-H08		4a	46	2-B23		4c	8	2-F09
	10a	8	3-H09		9	146	3-G05		4c	10	2-F11
942659-4	3	36	1-K13	943476-2	4a	10	2-A11		4c	28	2-G05
942660-2	3	36	1-K13		4a	12	2-A13	943870-6	4b	2	2-D03
942661-0	3	36	1-K13		4a	14	2-A15		4b	8	2-D09
942662-8	3	36	1-K13		4a	16	2-A17		4b	14	2-D15
942670-1	3	14	1-J15		4a	30	2-B07		4b	20	2-D21
942806-1	2b	18	1-D19		4a	38	2-B15		4c	8	2-F09
	2b	38	1-E15		4a	46	2-B23		4c	10	2-F11
	2b	42	1-E19		9	10	3-A13		4c	28	2-G05
	2b	46	1-E23		9	148	3-G07	943871-4	4b	2	2-D03
942836-8	9	94	3-E01		9	150	3-G09		4b	8	2-D09
942871-5	4b	4	2-D05	943477-0	2b	10	1-D11		4b	16	2-D17
	4b	10	2-D11		2b	16	1-D17		4b	22	2-D23
	4b	16	2-D17	943479-6	9	16	3-A19		4c	6	2-F07
	4b	22	2-D23	943480-4	2b	36	1-E13		4c	10	2-F11
	4c	8	2-F09	943483-8	2b	56	1-F09		4c	28	2-G05
	4c	12	2-F13		2b	58	1-F11	943872-2	4b	2	2-D03
	4c	30	2-G07		4a	24	2-B01		4b	10	2-D11
942888-9	3	38	1-K15		4a	28	2-B05		4b	16	2-D17
942927-5	4a	10	2-A11		4a	32	2-B09		4b	22	2-D23
	4a	12	2-A13		4a	36	2-B13		4c	6	2-F07
943152-9	4a	24	2-B01		4a	42	2-B19		4c	10	2-F11





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946035-3	9	134	3-F17	947314-1	2c	2	1-F17	948338-9	4c	40	2-G17	949658-9	9	150	3-G09
946036-1	2b	36	1-E13		2c	6	1-F21	948343-9	2a	34	1-C11		10a	5	3-H06
	2b	40	1-E17		2c	10	1-G01	948407-2	4c	22	2-F23	949666-2	4a	44	2-B21
	2b	44	1-E21		2c	14	1-G05		4c	26	2-G03	949791-8	9	22	3-B01
(946150)	9	64	3-C19	947340-6	9	26	3-B05	948610-1	2b	38	1-E15	949850-2	2b	14	1-D15
946152-6	6	30	2-I07	947345-5	9	104	3-E11		2b	42	1-E19		4a	52	2-C05
946173-2	9	64	3-C19	947536-9	9	50	3-C05		2b	46	1-E23	949918-7	2b	34	1-E11
946177-3	9	50	3-C05		9	52	3-C07		2b	56	1-F09		9	10	3-A13
	9	52	3-C07		9	54	3-C09		2b	58	1-F11	949947-6	3	32	1-K09
	9	54	3-C09		9	56	3-C11		2b	60	1-F13		9	82	3-D13
	9	56	3-C11		9	58	3-C13		10a	3	3-H04		9	88	3-D19
	9	58	3-C13	947620-1	2c	22	1-G13	948670-5	9	104	3-E11		9	92	3-D23
946179-9	4b	2	2-D03		2c	28	1-G19	948823-0	6	6	2-H07	949988-0	3	34	1-K11
	4b	8	2-D09		2c	34	1-H01		6	10	2-H11	950013-3	3	2	1-J03
	4b	14	2-D15		2c	36	1-H03		6	34	2-I11		3	8	1-J09
	4b	20	2-D21		2c	40	1-H07	948854-5	3	40	1-K17		4a	18	2-A19
	4c	8	2-F09		2c	46	1-H13	948981-6	2b	34	1-E11		4a	22	2-A23
	4c	10	2-F11	947621-9	2a	8	1-B09		10a	5	3-H06	950020-8	2c	4	1-F19
	4c	28	2-G05		10a	5	3-H06	948995-6	3	40	1-K17	950021-6	4a	2	2-A03
946329-0	4b	2	2-D03	947627-6	2a	8	1-B09	949000-4	6	26	2-I03		4a	6	2-A07
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946330-8	2b	22	1-D23		2a	40	1-C17	949070-7	4b	4	2-D05	950022-4	4b	10	2-D11
	2b	24	1-E01		10a	5	3-H06	949071-5	4b	2	2-D03	950024-0	9	38	3-B17
	9	8	3-A11	947671-4	9	52	3-C07		4b	8	2-D09	950046-3	4a	18	2-A19
946402-5	2a	30	1-C07		9	56	3-C11		4b	14	2-D15		4a	22	2-A23
	2a	32	1-C09		9	58	3-C13	949072-3	4b	2	2-D03	950161-0	4a	22	2-A23
946438-9	9	124	3-F07	947672-2	9	56	3-C11		4b	8	2-D09	950352-5	4a	24	2-B01
946440-5	2a	34	1-C11	947827-2	2b	4	1-D05		4b	14	2-D15		4a	30	2-B07
	9	2	3-A05		2b	6	1-D07	949073-1	4b	2	2-D03		4a	34	2-B11
946470-2	2a	38	1-C15		3	14	1-J15		4b	8	2-D09		4a	38	2-B15
946472-8	4b	20	2-D21	947848-8	3	40	1-K17		4b	14	2-D15		4a	58	2-C11
	9	64	3-C19	947855-3	4b	4	2-D05	949074-9	4b	2	2-D03	950363-2	2d	2	1-I03
946541-0	4a	42	2-B19		4b	10	2-D11		4b	8	2-D09		2d	4	1-I05
946544-4	2a	40	1-C17		4b	16	2-D17		4b	14	2-D15		6	44	2-I21
946577-4	4b	4	2-D05		4b	22	2-D23	949155-6	6	44	2-I21	950364-0	4a	24	2-B01
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	4b	24	2-E01		2a	14	1-B15	949181-2	3	40	1-K17		4a	32	2-B09
946671-5	4b	4	2-D05		2a	16	1-B17	949187-9	2a	34	1-C11		4a	38	2-B15
	4b	10	2-D11		2b	10	1-D11	949204-2	3	38	1-K15		4a	58	2-C11
	4b	16	2-D17		2b	14	1-D15	949210-9	3	38	1-K15		9	122	3-F05
	4b	22	2-D23		2b	22	1-D23	949279-4	9	64	3-C19	950375-6	9	104	3-E11
946672-3	4c	18	2-F19		2b	24	1-E01	949315-6	4a	10	2-A11	950386-3	6	4	2-H05
	4c	36	2-G13		2b	60	1-F13		4a	12	2-A13		6	8	2-H09
946703-6	9	94	3-E01		9	8	3-A11		4a	14	2-A15		6	22	2-H23
946704-4	9	94	3-E01	947941-1	3	28	1-K05		4a	16	2-A17		6	44	2-I21
946730-9	2b	4	1-D05	948187-0	2a	34	1-C11		4a	46	2-B23	950614-8	2a	38	1-C15
	4a	2	2-A03	948209-2	10a	8	3-H09		9	10	3-A13	950885-4	4a	40	2-B17
	9	6	3-A09	948210-0	2b	60	1-F13	949368-5	4a	40	2-B17	951077-7	4b	2	2-D03
946780-4	2b	54	1-F07		3	14	1-J15	949371-9	3	38	1-K15		4b	8	2-D09
	2b	56	1-F09		3	36	1-K13	949404-8	3	36	1-K13		4b	14	2-D15
	2b	58	1-F11		4a	22	2-A23	949418-8	9	110	3-E17		4b	20	2-D21
	2b	60	1-F13		6	30	2-I07	949591-2	3	36	1-K13		4c	8	2-F09
946786-1	9	50	3-C05		9	30	3-B09	949597-9	3	40	1-K17		4c	12	2-F13
	9	56	3-C11		9	48	3-C03	949607-6	3	20	1-J21		4c	30	2-G07
947061-8	2b	38	1-E15		9	52	3-C07		4a	44	2-B21	951189-0	9	32	3-B11
	2b	42	1-E19		9	58	3-C13		6	34	2-I11		9	34	3-B13
	2b	46	1-E23		9	66	3-C21		9	78	3-D09		9	36	3-B15
947084-0	4b	20	2-D21		9	148	3-G07	949608-4	6	36	2-I13	951739-2	6	10	2-H11
947281-2	2b	56	1-F09		9	150	3-G09	949656-3	10a	3	3-H04		6	14	2-H15
	2b	58	1-F11	948230-8	4b	2	2-D03	949658-9	2b	2	1-D03		6	44	2-I21
	2b	60	1-F13		4b	8	2-D09		2b	4	1-D05	951741-8	6	22	2-H23
947282-0	9	6	3-A09		4b	16	2-D17		2b	6	1-D07	951924-0	4b	4	2-D05
	9	12	3-A15		4b	22	2-D23		2b	20	1-D21		4b	10	2-D11
(947314)	10a	5	3-H06		4c	6	2-F07		4a	2	2-A03		4b	16	2-D17
947314-1	2b	2	1-D03		4c	10	2-F11		4a	10	2-A11		4b	22	2-D23
	2b	6	1-D07		4c	28	2-G05		4a	12	2-A13		4c	8	2-F09
	2b	10	1-D11	948291-0	3	38	1-K15		9	146	3-G05		4c	12	2-F13
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	10a	8	3-H09		9	100	3-E07		2a	14	1-B15		2b	6	1-D07
951940-6	2b	22	1-D23		9	144	3-G03		2a	16	1-B17		2b	10	1-D11
	2b	24	1-E01	953070-0	9	144	3-G03	955083-1	2a	8	1-B09		2b	12	1-D13
	4b	2	2-D03	953081-7	4a	2	2-A03		2a	12	1-B13		2b	14	1-D15
	4b	8	2-D09		4a	6	2-A07		2a	16	1-B17		2b	16	1-D17
	4b	14	2-D15	953449-6	4c	22	2-F23		2a	22	1-B23		2b	18	1-D19
	4b	22	2-D23		4c	26	2-G03		2a	24	1-C01		2b	26	1-E03
	4c	6	2-F07	954305-9	9	32	3-B11	955092-2	2c	46	1-H13		2b	28	1-E05
	4c	10	2-F11	954307-5	9	34	3-B13	955095-5	2b	36	1-E13		2b	30	1-E07
	4c	28	2-G05	954320-8	4a	44	2-B21		2b	54	1-F07		2b	54	1-F07
	9	8	3-A11	954322-4	9	32	3-B11	955119-3	3	14	1-J15		4a	2	2-A03
951947-1	6	20	2-H21		9	34	3-B13		9	124	3-F07		4a	10	2-A11
951971-1	9	142	3-G01		9	36	3-B15	955138-3	3	2	1-J03		4a	46	2-B23
952077-6	2a	10	1-B11	954323-2	2c	4	1-F19		3	8	1-J09		4a	56	2-C09
	2a	14	1-B15		2c	6	1-F21		9	68	3-C23		9	6	3-A09
	2a	16	1-B17		2c	10	1-G01	955139-1	9	32	3-B11		9	142	3-G01
	2a	40	1-C17		2c	14	1-G05		9	34	3-B13	955273-8	4b	4	2-D05
	2b	28	1-E05		9	34	3-B13		9	36	3-B15		4b	10	2-D11
	2b	30	1-E07		9	36	3-B15	955140-9	3	2	1-J03		4b	16	2-D17
	9	8	3-A11		9	38	3-B17		3	8	1-J09		4b	24	2-E01
952628-6	3	4	1-J05		9	40	3-B19	955142-5	9	50	3-C05		6	30	2-I07
	3	10	1-J11	954336-4	9	32	3-B11		9	54	3-C09	955274-6	2d	2	1-I03
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952629-4	3	32	1-K09	954337-2	2b	60	1-F13	955224-1	2c	26	1-G17	955275-3	2b	12	1-D13
	9	82	3-D13		2c	4	1-F19	955243-1	3	18	1-J19		2b	16	1-D17
952632-8	2b	38	1-E15		2c	6	1-F21		3	22	1-J23		2b	60	1-F13
	2b	42	1-E19		2c	10	1-G01		6	20	2-H21		9	10	3-A13
	2b	46	1-E23		2c	14	1-G05		9	74	3-D05	955276-1	2b	4	1-D05
952635-1	2b	2	1-D03		9	36	3-B15		9	76	3-D07		2b	6	1-D07
	2b	6	1-D07		9	38	3-B17	955244-9	9	56	3-C11		4b	4	2-D05
	4a	26	2-B03	954343-0	9	32	3-B11	955246-4	4b	4	2-D05	955278-7	4b	10	2-D11
	4a	30	2-B07		9	36	3-B15		4b	16	2-D17	955293-6	2a	34	1-C11
	4a	34	2-B11	954443-8	3	34	1-K11		4b	24	2-E01		2b	2	1-D03
	4a	38	2-B15	954444-6	3	34	1-K11	955268-8	2a	26	1-C03		2b	10	1-D11
	4a	40	2-B17	954445-3	3	34	1-K11		2a	28	1-C05		2b	14	1-D15
	4a	60	2-C13	954446-1	3	34	1-K11		2a	34	1-C11		3	4	1-J05
	9	142	3-G01	954447-9	3	34	1-K11		2b	24	1-E01		3	10	1-J11
952639-3	9	10	3-A13	954448-7	3	34	1-K11		3	6	1-J07		6	26	2-I03
952641-9	2b	10	1-D11	954449-5	3	34	1-K11		3	12	1-J13		6	30	2-I07
	2b	12	1-D13	954450-3	3	34	1-K11		3	14	1-J15		9	2	3-A05
	2b	14	1-D15	954451-1	3	34	1-K11		9	100	3-E07		9	100	3-E07
	2b	16	1-D17	954452-9	3	34	1-K11	955269-6	9	142	3-G01	955294-4	2a	34	1-C11
	2b	24	1-E01	954453-7	3	34	1-K11		2a	8	1-B09		2b	26	1-E03
	4a	46	2-B23	954455-2	3	34	1-K11		2a	12	1-B13		2b	36	1-E13
	4a	56	2-C09	954456-0	3	34	1-K11		2a	16	1-B17	955295-1	2a	18	1-B19
952969-4	2b	18	1-D19	954458-6	3	34	1-K11		2a	34	1-C11		2a	20	1-B21
952972-8	4a	10	2-A11	954461-0	3	34	1-K11		2b	2	1-D03		2a	22	1-B23
	9	12	3-A15	954463-6	3	34	1-K11		2b	6	1-D07		2a	24	1-C01
952973-6	4a	34	2-B11	954464-4	3	34	1-K11		2b	38	1-E15		2a	26	1-C03
952974-4	2b	10	1-D11	954465-1	3	34	1-K11		2b	42	1-E19		2a	28	1-C05
	2b	14	1-D15	954467-7	3	34	1-K11		2b	46	1-E23		2a	34	1-C11
	2b	16	1-D17	954469-3	3	34	1-K11		9	142	3-G01		2b	2	1-D03
	2b	26	1-E03	954471-9	3	34	1-K11	955270-4	10a	3	3-H04		2b	4	1-D05
	9	148	3-G07	954485-9	3	34	1-K11		2b	2	1-D03		2b	6	1-D07
(952976)	2b	24	1-E01	954500-5	3	34	1-K11		2b	4	1-D05		2b	10	1-D11
	4a	14	2-A15	954502-1	3	34	1-K11		2d	2	1-I03		2b	14	1-D15
952983-5	4a	16	2-A17	954505-4	3	38	1-K15		2d	4	1-I05		2b	22	1-D23
953046-0	2b	36	1-E13	954506-2	3	38	1-K15		4a	10	2-A11		2b	24	1-E01
	2c	2	1-F17	955036-9	9	102	3-E09		4a	12	2-A13		2b	26	1-E03
	2c	6	1-F21	955074-0	2b	54	1-F07		4b	4	2-D05		2b	28	1-E05
	2c	10	1-G01		2b	56	1-F09		4b	10	2-D11		2b	30	1-E07
	2c	14	1-G05		2b	58	1-F11		4b	18	2-D19		2c	2	1-F17
953063-5	2b	38	1-E15		2b	60	1-F13		4b	22	2-D23		2c	6	1-F21
	2b	42	1-E19	(955081)	2a	30	1-C07		9	132	3-F15		2c	10	1-G01
	2b	46	1-E23		2a	32	1-C09		9	134	3-F17		2c	14	1-G05
	2b	50	1-F03	955082-3	2a	8	1-B09	955271-2	2a	40	1-C17		4a	2	2-A03
953067-6	3	2	1-J03		2a	10	1-B11		2b	2	1-D03		4a	6	2-A07



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	6	30	2-I07		2b	56	1-F09		4a	14	2-A15		9	142	3-G01
	9	8	3-A11		2b	58	1-F11		4a	16	2-A17	955342-1	2a	42	1-C19
955296-9	3	6	1-J07		2b	60	1-F13		4a	26	2-B03		2a	44	1-C21
	3	12	1-J13		9	2	3-A05		4a	28	2-B05		2a	46	1-C23
	4a	44	2-B21	955304-1	2a	22	1-B23		4a	34	2-B11		4a	4	2-A05
	9	100	3-E07		2a	24	1-C01		4a	36	2-B13		9	142	3-G01
955297-7	2a	34	1-C11		2a	26	1-C03		4a	42	2-B19	955344-7	2a	22	1-B23
	2b	24	1-E01		2a	28	1-C05		4a	46	2-B23		2a	24	1-C01
	2b	34	1-E11		2b	18	1-D19		4a	52	2-C05	955345-4	9	64	3-C19
	2b	38	1-E15		2b	26	1-E03		4a	54	2-C07	955347-0	2a	22	1-B23
	2b	42	1-E19		2b	60	1-F13		6	26	2-I03		2a	24	1-C01
	2b	46	1-E23	955305-8	2b	4	1-D05		9	72	3-D03	955353-8	9	64	3-C19
	2b	60	1-F13		2b	6	1-D07		9	108	3-E15	955358-7	9	72	3-D03
	4b	4	2-D05		2b	12	1-D13		9	144	3-G03	955361-1	2b	38	1-E15
955298-5	2a	26	1-C03		2b	14	1-D15	955320-7	2a	8	1-B09		2b	42	1-E19
	2a	28	1-C05		3	2	1-J03		2a	12	1-B13		2b	46	1-E23
	2b	28	1-E05		3	8	1-J09		2a	16	1-B17	955366-0	9	24	3-B03
	2b	30	1-E07	955306-6	2a	26	1-C03		4a	40	2-B17		9	26	3-B05
	3	16	1-J17		2a	28	1-C05		9	144	3-G03	955515-2	6	30	2-I07
	6	26	2-I03		2a	40	1-C17	955321-5	2a	8	1-B09	955525-1	4a	30	2-B07
	6	30	2-I07		2b	4	1-D05		2a	12	1-B13		4a	38	2-B15
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	9	102	3-E09		2b	18	1-D19		2a	42	1-C19	955535-0	4a	54	2-C07
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	2a	26	1-C03		3	16	1-J17		2b	38	1-E15		4a	30	2-B07
	2a	28	1-C05	955307-4	2a	26	1-C03		2b	42	1-E19		4a	34	2-B11
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	2a	38	1-C15		2c	16	1-G07		2a	16	1-B17		4a	6	2-A07
	2b	4	1-D05		3	4	1-J05		2b	18	1-D19	955549-1	4a	54	2-C07
	2b	10	1-D11		3	10	1-J11		6	34	2-I11	955554-1	3	16	1-J17
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	2b	60	1-F13		2b	24	1-E01		2b	56	1-F09	955655-6	6	40	2-I17
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	2b	26	1-E03	955318-1	2b	18	1-D19		2b	54	1-F07	955692-9	9	106	3-E13
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	2b	4	1-D05		2d	2	1-I03		2b	54	1-F07	955700-0	3	16	1-J17
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	2b	18	1-D19		3	6	1-J07		2b	58	1-F11		9	68	3-C23
	2b	54	1-F07		3	12	1-J13		9	6	3-A09	955779-4	6	20	2-H21
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	9	68	3-C23		9	100	3-E07	955340-5	9	142	3-G01		9	52	3-C07
955303-3	2a	8	1-B09	955319-9	2a	8	1-B09	955341-3	2a	42	1-C19		9	56	3-C11
	2a	12	1-B13		2a	12	1-B13		2a	44	1-C21		9	58	3-C13
	2a	34	1-C11		2a	16	1-B17		2a	46	1-C23		9	70	3-D01
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	9	136	3-F19		2a	44	1-C21		4a	14	2-A15	955981-6	2a	10	1-B11
955781-0	2b	4	1-D05		2a	46	1-C23		4a	16	2-A17		2a	14	1-B15
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	2b	10	1-D11		4a	52	2-C05		4a	38	2-B15		10a	5	3-H06
	2b	12	1-D13		4a	54	2-C07		4a	46	2-B23	955983-2	4a	8	2-A09
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	2c	8	1-F23		4c	26	2-G03	955895-8	2b	38	1-E15		4b	14	2-D15
	2c	12	1-G03	955826-3	4a	22	2-A23		2b	42	1-E19		4b	20	2-D21
	2c	16	1-G07	955829-7	9	24	3-B03		2b	46	1-E23		4c	6	2-F07
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	2c	52	1-H19		2d	4	1-I05		6	16	2-H17		10a	9	3-H10
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	4b	4	2-D05	955857-8	2d	2	1-I03		2b	38	1-E15		4c	28	2-G05
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	6	6	2-H07	955866-9	6	44	2-I21		4a	54	2-C07	956057-4	2c	22	1-G13
	6	10	2-H11	955883-4	9	106	3-E13	955904-8	6	22	2-H23		2c	28	1-G19
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	9	70	3-D01		2b	6	1-D07		6	6	2-H07	956060-8	6	42	2-I19
	9	78	3-D09		2b	10	1-D11		6	24	2-I01	956061-6	9	124	3-F07
	9	100	3-E07		2b	12	1-D13	(955919)	2c	30	1-G21	956076-4	9	34	3-B13
	9	142	3-G01		2b	14	1-D15		2c	50	1-H17	956078-0	3	28	1-K05
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	2c	6	1-F21		2c	26	1-G17	(955923)	2c	46	1-H13		9	44	3-B23
	2c	10	1-G01		2c	30	1-G21	955945-1	6	20	2-H21		9	46	3-C01
	2c	14	1-G05		2c	40	1-H07	955946-9	6	20	2-H21		9	136	3-F19
	4a	44	2-B21		2c	50	1-H17		9	56	3-C11	956079-8	2d	2	1-I03
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	9	150	3-G09		4b	4	2-D05		4b	16	2-D17		9	134	3-F17
955783-6	3	2	1-J03		4b	10	2-D11		4b	24	2-E01	956080-6	9	34	3-B13
	3	6	1-J07		4b	18	2-D19	955949-3	3	4	1-J05	956081-4	9	42	3-B21
	3	8	1-J09		4b	24	2-E01		3	10	1-J11		9	44	3-B23
	3	12	1-J13		9	10	3-A13		3	14	1-J15		9	46	3-C01
	4a	2	2-A03		9	142	3-G01		6	40	2-I17	956092-1	2c	4	1-F19
	4a	6	2-A07	955893-3	4a	24	2-B01		2d	2	1-I03		2c	8	1-F23
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	9	108	3-E15		4a	34	2-B11	(955972)	2a	34	1-C11		2c	16	1-G07
	9	144	3-G03		4a	38	2-B15	955974-1	4b	6	2-D07		2c	22	1-G13
955784-4	2c	24	1-G15		4a	58	2-C11		4b	12	2-D13		2c	30	1-G21
	2c	28	1-G19	(955894)	3	14	1-J15		4b	18	2-D19		2c	34	1-H01
	2c	36	1-H03	955894-1	2a	22	1-B23		4b	20	2-D21		2c	40	1-H07
	2c	40	1-H07		2a	24	1-C01		4c	8	2-F09		2c	50	1-H17
	2c	46	1-H13		2b	14	1-D15		4c	12	2-F13	956093-9	4a	10	2-A11
	9	72	3-D03		2c	2	1-F17		4c	24	2-G01	956094-7	3	4	1-J05
	9	142	3-G01		2c	6	1-F21		4c	26	2-G03		3	10	1-J11
955785-1	9	24	3-B03		2c	10	1-G01		4c	30	2-G07		4a	44	2-B21
	9	26	3-B05		2c	14	1-G05		4c	40	2-G17	956169-7	2c	22	1-G13
955786-9	9	144	3-G03		2d	2	1-I03		10a	7	3-H08		2c	28	1-G19
955791-9	3	28	1-K05		2d	4	1-I05		10a	8	3-H09	956375-0	4a	54	2-C07



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	6	4	2-H05		4a	2	2-A03	959422-7	4c	22	2-F23		2a	12	1-B13
	6	8	2-H09		4a	6	2-A07	959437-5	6	32	2-I09		2a	40	1-C17
	6	22	2-H23		10a	6	3-H07	959438-3	4a	24	2-B01	961664-0	6	30	2-I07
	6	24	2-I01	958207-3	3	40	1-K17		4a	28	2-B05	961666-5	2b	20	1-D21
956568-0	4a	24	2-B01	958208-1	3	40	1-K17		4a	32	2-B09		2b	28	1-E05
	4a	32	2-B09	958210-7	3	40	1-K17		4a	36	2-B13		2b	30	1-E07
	4a	58	2-C11	958212-3	3	40	1-K17		4a	58	2-C11	(961668)	4a	24	2-B01
	9	122	3-F05	958213-1	3	40	1-K17	959439-1	4c	22	2-F23		4a	30	2-B07
	9	124	3-F07	958226-3	6	30	2-I07	959440-9	4c	22	2-F23		4a	34	2-B11
956585-4	4b	2	2-D03	958235-4	3	36	1-K13		4c	26	2-G03		4a	38	2-B15
	4b	8	2-D09	958247-9	4a	40	2-B17	959448-2	9	128	3-F11		4a	42	2-B19
	4b	14	2-D15	958310-5	9	68	3-C23	959967-1	4a	24	2-B01		4a	58	2-C11
	4b	20	2-D21	(958317)	6	26	2-I03		4a	28	2-B05		9	6	3-A09
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	4c	28	2-G05		3	16	1-J17		4a	58	2-C11		9	26	3-B05
956924-5	3	36	1-K13		9	146	3-G05	960137-8	6	20	2-H21	*961669-9	2b	24	1-E01
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956928-6	3	36	1-K13		9	150	3-G09		9	56	3-C11		9	16	3-A19
956956-7	3	38	1-K15	958539-9	9	72	3-D03		9	58	3-C13		9	18	3-A21
956958-3	3	38	1-K15	958838-5	4b	4	2-D05	960139-4	9	56	3-C11	961670-7	2b	4	1-D05
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956984-9	4a	2	2-A03		4c	30	2-G07	960142-8	4a	32	2-B09		2b	60	1-F13
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957031-8	6	30	2-I07		10a	8	3-H09	960145-1	6	40	2-I17		4a	16	2-A17
957171-2	2c	2	1-F17		10a	9	3-H10	960148-5	2a	42	1-C19		4a	24	2-B01
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957176-1	9	36	3-B15		2b	44	1-E21		4b	8	2-D09	961800-0	3	34	1-K11
957178-7	9	34	3-B13		2b	48	1-F01		4b	14	2-D15	962053-5	9	152	3-G11
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	9	48	3-C03	959241-1	4a	4	2-A05	960630-2	2a	8	1-B09	962183-0	9	156	3-G15
	9	100	3-E07		4a	40	2-B17		2a	12	1-B13	963104-5	2c	24	1-G15
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964142-4	3	34	1-K11	968057-0	4c	40	2-G17	1272428-2	6	28	2-I05		2a	12	1-B13
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	2c	6	1-F21	(1542162)	2c	4	1-F19	(1542222)	2a	22	1-B23	1542315-5	2a	18	1-B19
	2c	10	1-G01	(1542163)	2c	4	1-F19		2a	24	1-C01		2a	20	1-B21
	2c	16	1-G07	(1542164)	2c	4	1-F19	1542223-1	2a	22	1-B23	1542316-3	2a	30	1-C07
1542111-8	2c	4	1-F19	(1542165)	2c	4	1-F19		2a	24	1-C01		2a	32	1-C09
	2c	6	1-F21	(1542166)	2c	4	1-F19		2a	26	1-C03	1542318-9	2a	26	1-C03
	2c	10	1-G01	1542167-0	2c	2	1-F17		2a	28	1-C05		2a	28	1-C05
	2c	14	1-G05		2c	6	1-F21	(1542228)	2a	18	1-B19		10a	5	3-H06
1542112-6	2c	4	1-F19		2c	10	1-G01		2a	20	1-B21	(1542319)	3	2	1-J03
	2c	6	1-F21		2c	14	1-G05	1542229-8	2b	28	1-E05		3	8	1-J09
	2c	10	1-G01	1542170-4	2c	2	1-F17		2b	30	1-E07	1542320-5	2a	8	1-B09
	2c	14	1-G05		2c	6	1-F21		10a	5	3-H06		2a	12	1-B13
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	2c	6	1-F21		2b	56	1-F09	1542263-7	2a	8	1-B09		2c	10	1-G01
	2c	10	1-G01		2b	58	1-F11		2a	12	1-B13		2c	16	1-G07
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	2a	20	1-B21		10a	5	3-H06		2a	20	1-B21		10a	2	3-H03
	10a	2	3-H03	1542221-5	2a	22	1-B23		2a	26	1-C03	1544149-6	2a	26	1-C03

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# **VOLVO PENTA**

Originaldelar · Genuine Parts  
Originalteile · Pièces d'origine

MONARK BOAT COMPANY

WORKBOAT DIVISION

OWNER'S/OPERATOR'S MANUAL

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## SECTION 1 - INTRODUCTION

MonArk Boat Company would like to take this opportunity to thank you for purchasing your boat from us. We welcome you to the MonArk family of commercial boat owners and congratulate you on your choice.

This manual has been written to cover basic operations and maintenance. We urge all users to read it carefully; boats and equipment, although made by the same manufacturer, change from year to year.

The organization of the manual by sections is as follows:

1. INTRODUCTION
2. WARRANTY POLICY
3. PUTTING YOUR NEW BOAT IN SERVICE - IT IS ESSENTIAL THAT YOU READ THIS SECTION IMMEDIATELY TO PREVENT VOIDING YOUR WARRANTIES.
4. OPERATION
  - 4.1 START-UP
  - 4.2 NORMAL RUNNING
  - 4.3 SHUTDOWN
  - 4.4 SPECIAL CONDITIONS
    - 4.4.1 TRAILERING
    - 4.4.2 TOWING
    - 4.4.3 BEING TOWED
    - 4.4.4 HAULING
    - 4.4.5 WINTERIZING
5. EMERGENCY PROCEDURES
  - 5.1 GROUNDING
  - 5.2 LEAKS
  - 5.3 FIREFIGHTING
6. GENERAL MAINTENANCE
  - 6.1 PERIODIC CHECKS
  - 6.2 PREVENTATIVE MAINTENANCE
  - 6.3 CORRECTIVE MAINTENANCE
  - 6.4 PAINTING

7. SPECIFICATIONS

- 7.1 GENERAL CHARACTERISTICS
- 7.2 LIST OF MACHINERY
- 7.3 TEST DATA

Throughout the manual you will encounter warnings, cautions and notes. They appear as shown below:

**WARNING**

**A warning covers anything which could result in bodily injury.**

**CAUTION**

**A caution covers anything which could result in damage to equipment.**

**NOTE**

**A note is highlighted information.**

We wish you good seas and hope you prosper as you use your MonArk commercial boat.

## SECTION 3 - FIRST USE

### 3.0 PUTTING YOUR NEW BOAT IN SERVICE

Your new boat and its equipment have been thoroughly tested. This section covers what to do and check before the boat goes into the water and before any system is put on line to ensure a satisfactory start-up.

### 3.1 UPON ARRIVAL

Check your boat carefully. If anything seems wrong to you, contact our Customer Service Department (see Section 2 - Warranty).

### 3.2 PREPARING TO LAUNCH YOUR BOAT

Board your boat and familiarize yourself with its arrangement and systems. Look over the gauge panel, electrical panel and control systems. Sit at the helm and learn where the stop buttons (it may be in the keyed ignition) and, if so equipped on diesels, emergency stop buttons are located. Locate your electrical system master switch. Know where the bilge pump switches are and identify their breakers on the electrical panel. Locate, check the indicators and be sure of how to operate your fire extinguishers. If you purchased a special installed system, make sure you know how to trigger it. All electrical switches should be in the OFF position.

Next look in seat boxes and other stowage areas to locate life jackets, anchors, lines, boat hooks, and other equipment stowed on board. If you elected to provide your own safety equipment, now is the time to stow it securely on the boat.

Lift your engine cover and other deck closures to ensure that the bilges are free of water, and allow any gasoline fumes to escape. The drain plug for your boat should be in the seat box under the helmsman's seat. It was purposefully left out of the drain to allow rainwater to drain during shipment. **INSTALL THE DRAIN PLUG NOW.**

If your boat is equipped with valves between water tight compartments, they will be located under the deck closures.

Shut the bulkhead closure valves and secure the deck closures to restore the watertight integrity of your vessel.

**CAUTION**

**CHECK TO SEE THAT THE MASTER POWER SWITCH OR SWITCHES ARE IN THE "OFF" POSITION.**

**NOTE**

**VAPOR ALARMS, IF INSTALLED, WILL NOT BE WORKING SINCE THE BATTERIES ARE DISCONNECTED.**

After checking the bilges in the engine compartment to ensure there are no fumes, locate the batteries and hook up the battery cables. Nothing should run since the master switch is off.

If you have a power tilt outboard or outdrive installation, you should now turn the Master Power SWITCH to one of the power-on positions and ensure that they are in the FULL-UP position. In any event, make sure that there is sufficient water for your boat. Launching in shallow water can harm lower units, shafts, propellers, and rudder assemblies.

Turn the Master Power Switch to the OFF position.

Read through equipment manuals and familiarize yourself with the operation of each piece such as radio, depth finder, radar, etc.

3.3 LAUNCHING YOUR BOAT

**CAUTION**

**CHECK YOUR WATER DEPTH**

**CAUTION**

**MAKE SURE DRAIN PLUG IS SNUG IN PLACE.**

Make fast a line to your bow bitt or cleat and station a line handler near a bollard to prevent your boat from getting away from you. The larger the boat, the more lines and line handlers you should have in place.

### 3.3.1 TRAILERED BOATS

#### **CAUTION**

##### **ENSURE THAT BALL SIZE IS CORRECT FOR HITCH.**

Once you are sure that the ball size is correct for the hitch, back the trailer to the ramp edge. Remove trailering straps and light bar, if installed.

Back the trailer into the water sufficiently to float boat free, if possible. Pay out winch cable until it goes slack and disconnect it from the bow eye. The line handlers should pull the boat to the pier, make check for water. **DO NOT PULL THE TRAILER OUT UNTIL YOU ARE SURE THAT NO WATER IS ENTERING THE BOAT.**

If the boat does not float free and cannot easily be worked free by pulling on the lines, go to Section 3.4 and 4.4.1.

### 3.3.2 CRANE LAUNCHING

#### **WARNING**

##### **DO NOT RIDGE BOAT INTO WATER**

#### **CAUTION**

##### **USE LIFTING EYES - NOT BITTS**

Your boat is equipped with lifting eyes (See drawing in Section 7.1) use them, not the bitts. Check the test data sheet in Section 7.3 to give the crane operator the weight of the boat. He will need to provide the proper shackles and cables for the lift. Ensure that the cable arrangement is such that it does not impact railings, house top or parts of your boat.

#### **CAUTION**

##### **PLACE SLINGS AT-FRAMES**

If you are using slings for a crane lift or travel lift, be sure that they are placed at a frame.



SLINGS SHOULD BE COVERED WITH FIRE HOSE or other suitable material to prevent the wire rope from cutting into your aluminum hull.

During this initial lift, make note of where you put the slings. It is easy when the boat is on shore to determine that you are at a frame and clear of shafts or other underwater appertenances (transducers etc.). It is not so clear when you're in the water going to take the boat out and put it on a cradle.

Whether lifting eyes or slings were used, leave them in place while you board the boat and check for leaks.

### 3.4 WATERBORNE CHECKS

- a) Put bilge pump switches in AUTO position.
- b) Check engine room hull fittings for leaks to hull
- c) Open all valves at overboard suctions and discharges
- d) Check all systems for leaks at joints
- e) Check shaft stuffing boxes (a few drops is normal)
- f) Check rudder stuffing boxes (a few drops is normal)
- g) Check at outdrive seal

#### **WARNING**

#### **OPEN DECK CLOSURES SLOWLY**

- h) Open deck closures slowly, escaping air might mean that water is entering the hull and the closure might spring open
- i) Secure all deck closures

### 3.5 CUSTOMER ADDED EQUIPMENT

#### **CAUTION**

#### **DO NOT GROUND ELECTRICAL EQUIPMENT TO THE HULL**

#### **CAUTION**

#### **ISOLATE DISSIMILAR METALS**

Electrolytic corrosion can eat a hole in your boat. Anodes have been placed on your hull to help prevent this, but electrical grounding or dissimilar metals

forming galvanic cells will overwhelm that protection. Electrical grounds should be led to ground terminals at the switchboard or at the battery. Even certain aluminum alloys will act as dissimilar metals in a seawater environment. Marine grade aluminum and stainless will react, but not as much as other metals. A copy of an activity chart is included at Table 1. Attachments to the boat should be made using marine grade stainless steel fasteners. Metals other than marine grade aluminum should be isolated using neoprene or non conductive bedding compound. If in doubt, check with our Customer Service Department.

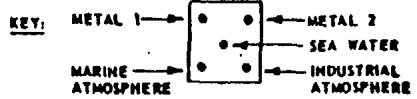
#### **CAUTION**

Mercury or mercury based compounds will result in severe corrosion of this aluminum hull. Mercury in bilge water in a proportion as small as one part per million, will result in extreme corrosion. Do not paint this hull with either mercury or copper based paints. Keep mercury filled instruments, such as thermometers, off the boat. Be certain that no item brought onboard or used for repair or painting contain mercury or mercuric compounds.

**GUIDE-TO USE  
OF  
JOINED STRUCTURAL METALS AND ALLOYS  
AND  
PROTECTIVE SYSTEMS-  
FOR SERVICE IN  
SEA WATER, MARINE ATMOSPHERE AND INDUSTRIAL ATMOSPHERE**

		ACTIVE (ANODIC) → NOBLE (LESS ACTIVE-CATHODIC) ←																			
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
ACTIVE (ANODIC)	A	MAGNESIUM	1 G	1 2 C C	1 3 C C	1 4 I I	1 4 I I	1 5 I I	1 6 I I	1 6 I I	1 7 I I	1 8 I I	1 9 I I	1 9 I I	1 9 I I	1 9 I I	1 9 I I	1 10 I I	1 11 I I	1 12 I I	1 13 I I
	B	ZINC, ZINC COATING	2 G	2 3 C C	2 4 C C	2 4 C C	2 5 I I	2 6 I I	2 6 I I	2 7 I I	2 8 I I	2 9 I I	2 9 I I	2 9 I I	2 9 I I	2 9 I I	2 9 I I	2 10 I I	2 11 I I	2 12 I I	2 13 I I
	C	CADMIUM BERYLLIUM	3 G	3 4 C C	3 4 C C	3 5 I I	3 6 I I	3 6 I I	3 7 I I	3 8 I I	3 9 I I	3 9 I I	3 9 I I	3 9 I I	3 9 I I	3 9 I I	3 9 I I	3 10 I I	3 11 I I	3 12 I I	3 13 I I
	D	ALUMINUM - M <sub>n</sub> ALUMINUM - Z <sub>n</sub>	4 G	4 C C	4 5 I I	4 5 I I	4 6 I I	4 7 I I	4 8 I I	4 9 I I	4 9 I I	4 9 I I	4 9 I I	4 9 I I	4 9 I I	4 9 I I	4 9 I I	4 10 I I	4 11 I I	4 12 I I	4 13 I I
	E	ALUMINUM - C <sub>u</sub>	4 G	4 5 I I	4 6 I I	4 6 I I	4 7 I I	4 8 I I	4 9 I I	4 9 I I	4 9 I I	4 9 I I	4 9 I I	4 9 I I	4 9 I I	4 9 I I	4 9 I I	4 10 I I	4 11 I I	4 12 I I	4 13 I I
	F	STEELS - CARBON LOW ALLOY	5 G	5 6 I C	5 6 I C	5 7 I I	5 8 I I	5 9 I I	5 9 I I	5 9 I I	5 9 I I	5 9 I I	5 9 I I	5 9 I I	5 9 I I	5 9 I I	5 9 I I	5 10 I I	5 11 I I	5 12 I I	5 13 I I
	G	LEAD	6 G	6 C C	6 C C	6 7 C C	6 8 C C	6 9 C C	6 9 C C	6 9 C C	6 9 C C	6 9 C C	6 9 C C	6 9 C C	6 9 C C	6 9 C C	6 9 C C	6 10 I C	6 11 C C	6 12 C C	6 13 C C
	H	TIN TIN-Pb INDIUM	6 G	6 7 I I	6 8 I C	6 9 C C	6 9 C C	6 9 C C	6 9 C C	6 9 C C	6 9 C C	6 9 C C	6 9 C C	6 9 C C	6 9 C C	6 9 C C	6 9 C C	6 10 C C	6 11 C C	6 12 C C	6 13 C C
	I	ST. STEELS - MARTENSITIC FERRITIC	7 G	7 8 I C	7 9 I I	7 9 I I	7 9 I I	7 9 I I	7 9 I I	7 9 I I	7 9 I I	7 9 I I	7 9 I I	7 9 I I	7 9 I I	7 9 I I	7 9 I I	7 10 I I	7 11 I I	7 12 I I	7 13 I I
	J	CHROMIUM MOLYBDENUM TUNGSTEN	8 G	8 C C	8 9 C C	8 9 C C	8 9 C C	8 9 C C	8 9 C C	8 9 C C	8 9 C C	8 9 C C	8 9 C C	8 9 C C	8 9 C C	8 9 C C	8 9 C C	8 10 C C	8 11 C C	8 12 C C	8 13 C C
K	ST. STEELS - AUST. PH. SUPER STRENGTH, HEAT RESISTANT	9 G	9 9 I I	9 9 I I	9 9 I I	9 9 I I	9 9 I I	9 9 I I	9 9 I I	9 9 I I	9 9 I I	9 9 I I	9 9 I I	9 9 I I	9 9 I I	9 9 I I	9 10 C C	9 11 C C	9 12 C C	9 13 C C	
L	BRASS - Pb BRONZE	9 G	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 10 I C	9 11 C C	9 12 C C	9 13 C C	
M	BRASS - Low C <sub>u</sub> BRONZE - Low C <sub>u</sub>	9 G	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 10 C C	9 11 C C	9 12 C C	9 13 C C	
N	BRASS - High C <sub>u</sub> BRONZE - High C <sub>u</sub>	9 G	9 9 I C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 10 I C	9 11 C C	9 12 C C	9 13 C C	
O	COPPER - High Ni MONEL	9 G	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 10 C C	9 11 C C	9 12 C C	9 13 C C	
P	NICKEL COBALT	9 G	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 9 C C	9 10 C C	9 11 C C	9 12 C C	9 13 C C	
Q	TITANIUM	10 G	10 6	10 11 C C	10 12 C C	10 13 C C	10 13 C C	10 13 C C	10 13 C C	10 13 C C	10 13 C C	10 13 C C	10 13 C C	10 13 C C	10 13 C C	10 13 C C	10 13 C C	10 13 C C	10 13 C C	10 13 C C	
R	SILVER	11 G	11 6	11 12 C C	11 13 C C	11 13 C C	11 13 C C	11 13 C C	11 13 C C	11 13 C C	11 13 C C	11 13 C C	11 13 C C	11 13 C C	11 13 C C	11 13 C C	11 13 C C	11 13 C C	11 13 C C	11 13 C C	
S	PALLADIUM RHODIUM GOLD PLATINUM	12 G	12 6	12 C C	12 C C	12 C C	12 C C	12 C C	12 C C	12 C C	12 C C	12 C C	12 C C	12 C C	12 C C	12 C C	12 C C	12 C C	12 C C	12 C C	
T	GRAPHITE	13 G	13 6	13 6	13 6	13 6	13 6	13 6	13 6	13 6	13 6	13 6	13 6	13 6	13 6	13 6	13 6	13 6	13 6	13 6	

INFORMATION ON THIS CHART IS PRESENTED FOR EQUAL EXPOSED AREAS OF EACH METAL COMPRISING THE COUPLE.



NUMERICAL NOTATIONS REFER TO SURFACE TREATING AND FINISHING SYSTEMS, LISTED IN APPENDIX A FOR EACH METAL GROUP, FOR AMELIORATING CORROSION OF JOINED METALS. THE SYSTEMS ARE ARRANGED IN APPENDIX A IN DECREASING ORDER OF EFFECTIVENESS. AN OPTIMUM SYSTEM IS PRESENTED IN EACH CASE, FOR USE WITH JOINED SIMILAR OR DIFFERENT METALS INTENDED FOR SERVICE IN SEVERE ENVIRONMENT. ALTERNATIVE SYSTEMS ARE GIVEN FOR USE IN SERVICE SITUATIONS THAT PRECLUDE THE MAXIMUM PROTECTIVE SYSTEM, OR FOR Milder ENVIRONMENT SERVICE APPLICATIONS.

LETTER NOTATIONS, C OR I, SIGNIFY COMPATIBILITY OR INCOMPATIBILITY OF JOINED METALS IN THE SPECIFIC ENVIRONMENT. OCCASIONALLY, C OR I, IS NOT CLEARLY RESOLVABLE AND IN SUCH BORDERLINE CASES I IS INDICATED. FURTHER, C INDICATES NEGLIGIBLE GALVANIC INTERACTION BETWEEN BARE, DISSIMILAR METALS WHEN JOINED AND SUBJECTED TO THE SPECIFIC ENVIRONMENT; AND I SIGNIFIES SIGNIFICANT GALVANIC CORROSION OF BARE, DISSIMILAR METALS WHEN JOINED AND SUBJECTED TO THE SPECIFIC ENVIRONMENT.

**G:** SIGNIFIES COMPATIBILITY OF SAME-METAL COUPLE, BARE, IN SEA WATER, MARINE ATMOSPHERE, OR INDUSTRIAL ATMOSPHERE.

TABLE 1

## SECTION 4 - OPERATION

### 4.0. OPERATION

This section covers normal operation of your boat.

Emergency operation is in a separate section.

Observe the following precautions:

- ☆ DO NOT SMOKE WHILE FUELING
- ☆ DO NOT SMOKE WHILE CHECKING BATTERIES
- ☆ DO NOT ALLOW BATTERY ELECTROLYTE TO CONTACT SKIN OR EYES (ACID)
- ☆ DO NOT INSPECT COOLANT WHILE ENGINE IS RUNNING
- ☆ DO NOT ALLOW COOLANT TO CONTACT SKIN OR EYES (ALKALI)
- ☆ REMOVE FILLER CAP SLOWLY TO RELIEVE PRESSURE

### 4.1 START-UP

The following subsections discuss initial checks, fueling and routine starting of the engines and equipment.

#### 4.1.1 INITIAL CHECKS

##### **WARNING**

**READ ALL EQUIPMENT MANUALS PROVIDED BEFORE ATTEMPTING TO PUT ANY EQUIPMENT ON LINE**

- a) Check open all valves.

##### **CAUTION**

- b) Check all pump casings for vents and vent pump to ensure that the fluid to be pumped will provide lubrication for the impeller or gears in the pump.
- c) Check electrolyte level in batteries.
- d) Turn on the Master Power Switch and check each electrical circuit by energizing it at the fuse or breaker board, if applicable, switching on the equipment at the control panel, and then deenergizing the circuit before checking the next one.
- e) During the electrical system checks above, note that the horn emits a loud clear sound, and all lights burn brightly.

- f) Perform initial startup checks in accordance with your engine manual. In general, check: engine oil level, gear oil level, coolant level, hydraulic reservoir level and belt tension as applicable.
- g) If a generator is installed, perform initial startup checks in accordance with the manual.

#### 4.1.2 FUELING

##### **WARNING**

**DO NOT SMOKE, OPERATE ELECTRICS OR PRODUCE HEAT DURING FUELING**

##### **CAUTION**

##### **CHECK MANUAL FOR PROPER FUEL**

- a) Portable fuel tanks should be fueled off the boat if possible. This will prevent spilled fuel or fumes from getting into the bilges.
- b) Your fuel pipe cover key has been attached to the steering wheel. Use that key to open fuel fittings, it is designed to be non-sparking.
- c) Determine the amount of fuel required by using the calibrated stick, if supplied, or by estimate from the gauges. It is good practice to fill the tanks only to 98%. This will prevent overflow from vents or fill pipe (the U.S. Coast Guard must be notified of any fuel spill). In addition, the fuel is stored in tanks below deck and is often cooler than the air. It will expand in your tanks such that a 100% full tank might overflow.
- d) Allow air to circulate after fueling.

#### 4.1.3 STARTING THE ENGINES

- a) Vent and prime fuel systems in accordance with the engine manual.
- b) Check engine oil, gear oil, coolant and hydraulic reservoir levels in accordance with your manual.
- c) Check for fumes.

- d) Turn on main power switches.
- e) Lower outboard or outdrive.
- f) Check that gearshift is in neutral.
- g) Start engine in accordance with the procedure in the manual.
- h) Observe oil pressure gauges and voltmeters for normal readings (see manual).
- i) Check to ensure all water, fuel, lubricating oil and exhaust cooling water is flowing where applicable.
- j) Observe exhaust overboard to ensure that exhaust cooling water is flowing where applicable.
- k) Observe temperature gauges for normal readings.
- l) Start up generators in the same manner as main engines.
- m) Apply loads to generator one at a time in accordance with the manual. In general, it is better to apply a few small loads before switching on a large load such as an air conditioner.
- n) Light off any additional equipment such as radar, depth finder, etc. before leaving the dock. This will prevent your attention from being divided as you get underway.
- o) Make ready an anchor with the end of the anchor line secured around a bitt or cleat.

#### 4.2 NORMAL OPERATION

- a) Bring the engines to idle and shift to the ahead position for a moment and back to neutral. Observe that the gear shifts and the boat goes in the ahead direction.
- b) Repeat a) going astern.

#### **CAUTION**

#### **MANEUVER AT IDLE SPEED**

- c) Cast off lines and move away from the dock by shoving off.

- d) If you have twin engines, use your shifters to maneuver into the channel at idle. A problem at low speeds can be controlled easier than at high speeds.
- e) Secure all lines and equipment to prevent tripping.
- f) Routinely check all gauges for normal readings as given in the manuals, and check overboard exhaust discharges for water.
- g) Routinely check the engine compartment to ensure no leakage from fuel, oil, water or exhaust lines.
- h) If passengers are being carried, instruct them in the location and use of lifesaving equipment as required by the U.S. Coast Guard.

#### 4.3 SHUTDOWN

##### **CAUTION**

##### **DO NOT USE THE EMERGENCY SHUTDOWN SYSTEM FOR OTHER THAN EMERGENCY**

- a) Diesels equipped with an emergency shut down system should not be shut down that way EXCEPT in an emergency. Use of this system can cause oil to be sucked past the oil seals and into the blower housing.
- b) With the gear in neutral, bring the engines to idle and allow them to run for a short period before shutdown. It is not necessary to race an engine before shutdown and in some cases manufacturers caution against it.
- c) You need only turn the key or push the STOP buttons to shutdown the main engines.
- d) Remove the load from the generator, if installed, before shutdown. Check your manual, shutdown should be by button at the electrical control panel.
- e) Before leaving the boat turn the master power switches to the OFF position. Do not do this step if the boat is at anchor since the anchor light cannot be energized. Ensure that all other circuits are off.

- f) Ensure that the bilge pump switch is in the AUTOMATIC position before leaving the boat. This position connects the bilge pumps directly to the batteries and the master switch has no effect.

#### 4.4 SPECIAL CONDITIONS

This section covers special operations not considered emergencies. Emergency procedures are covered in Section 5.

##### 4.4.1 TRAILERING

- a) There will be times when you will need to use engine power assist to get the boat off the trailer. Observe the following precautions:
  - ☆ Ensure that the boat is free from the trailer bunks in way of the water pickups or you will overheat your engine.
  - ☆ Backdown slowly to prevent water from building up and coming over the transom.
  - ☆ Block the wheels on the tow vehicle and if possible, the trailer.
  - ☆ Watch that you do not overcome the blocking and tow vehicle braking system.
- b) As you take the boat off the trailer, note how far into the water the trailer should be to make putting the boat back on easier.
- c) Trailer equipped with bunks and keel guide rollers present a need to beware of two possibilities.
  - 1) Bunks can cover water pickups as you put the boat on/the trailer. Do no power onto the trailer if you can avoid it.
  - 2) Guide rollers are not intended to support the weight of the boat. They are there to help align the boat as it is put on the trailer and to prevent the keel from impacting cross-members. DO NOT ADJUST THEM TO CARRY LOAD. They should be just slightly higher than the cross-members.
- d) It is best practice to ease the boat onto a submerged trailer using lines. Then pull it up to the bow rest using the launch.



## **CAUTION**

### **DO NOT OVERLOAD WINCH CABLE**

- e) If you have a remote control on an electric winch, use it. **DO NOT STAND BEHIND THE WINCH.** If a cable parts, the energy stored in the taught cable will cause it to flail back with amazing force. In addition, it is wise to remain clear of the path of the towing vehicle just in case it slips towards the water.

#### 4.4.2 TOWING

## **WARNING**

**TREMENDOUS ENERGY IS STORED IN A LINE OR CABLE BEING USED TOWING. SEVERE PERSONAL INJURY CAN RESULT FOR BEING IN WAY OF A PARTING TOW LINE.**

- a) If your boat is equipped with a special towing bitt or post, use it. They are specially designed to withstand loads imposed during towing operations.

## **CAUTION**

### **PAY OUT TOW LINE SLOWLY TO KEEP IT OUT OF YOUR PROPELLER**

- b) Always ensure that the tow line is free to run across the guide railing from side to side. Passing it through a chock or between stanchions makes it difficult to maneuver and may cause damage to the stanchions.
- c) Always ensure that sufficient line has been payed out to take care of the fact that you can stop using power but the towed boat can't. **DO NOT TOW ALL THE WAY TO A PIER.**

## **CAUTION**

### **TOW AT SLOW SPEED**

- d) If your boat is not equipped with a special tow bitt, use the two after most bitts or cleats. Make a bridle by tying a loop in a piece of line that is at least three times as long as the boat is wide. Make fast to the bitts or cleats and tie the tow line to the eye. **KEEP LINES CLEAR OF PROPELLER** and observe paragraph (c) above.

#### 4.4.3 BEING TOWED

##### OBSERVE WARNING AND CAUTIONS IN 4.4.2

- a) Pass the tow line through the bow chock and make up to the bow bitt or cleat. DO NOT SECURE IN A MANNER THAT WILL NOT ALLOW EASY REMOVAL.
- b) Be ready to cast off tow line if conditions appear that towing should be stopped.
- c) Discuss a signaling system with the towing vessel to ensure communication of intentions.
- d) Check your engine and gear manuals to determine safe towing speeds and distances.
- e) If so equipped, use your shift locks and inform towing vessel that slow speed must be used.
- f) Make ready your anchor and anchor line, and make fast to an after bitt or cleat. It is the only method of stopping your boat quickly.

#### 4.4.4 HAULING

- a) Basically hauling your boat only requires reversing the procedures of Section 3.3. Special attention must be paid to the placement of slings. OBSERVE THE WARNING AND CAUTIONS OF 3.3.
- b) Cradles or blocking should be arranged in a manner that structure is used to bear loads.

Load bearing points must be at the keel and at frames. DO NOT PLACE BLOCKS BETWEEN FRAMES ON PLATING.

- c) All possible weight should be removed before lift is made. All fuel and water tanks should be pumped down. Bilges should be free of water.
- d) Remove the drain plug and stow it under the helmsman's seat. This will prevent rainwater buildup. If the boat rests down by the bow, special provisions should be made to remove rainwater.
- e) Disconnect battery cables once the boat is secured.
- f) Follow Sections 3.2 and 3.3 when launching boat.

#### 4.4.5 WINTERIZING

### **CAUTION**

#### **WATER EXPANDS AS IT FREEZES**

- a) Drain down all systems that will not be protected by anti-freeze.
- b) A special anti-freeze/anti-bacterial additive for fresh water tanks is available at most marine suppliers.
- c) Fuel stabilizer should be added to fuel tanks if the boat is in layup.
- d) Main engines, generators and all other equipment should be winterized in accordance with their manuals.
- e) Provisions should be made to keep bilges free of water. Ice forming in the bilge pump casing can crack the pump.
- f) If possible, a heat source should be kept on the boat to prevent condensation from collecting in insulation, switch panels and other places in the boat.
- g) If the boat is to be kept in the water, prevent ice from building up around the boat and dimpling in the side plates.
- h) If the boat is in dry storage, main engines, generators and other equipment should be prepared in accordance with their manuals.

## SECTION 5 - EMERGENCY PROCEDURES

### 5. EMERGENCY PROCEDURES

This section deals with damage control procedures to prevent a controllable situation from further endangering personnel or the vessel.

#### 5.1 GROUNDING

- a) Grounding can occur underway or sitting dead in the water at pier side. Since grounding while underway can cause more damage and be more life threatening because you are at sea, this section will assume grounding occurs under power.

#### **CAUTION**

**STOP ENGINES  
STOP GENERATORS  
INSPECT HULL**

- b) IF LEAKS ARE OBSERVED, GO DIRECTLY TO Section 5.2
- c) Grounding while going ahead can cause propeller blades to bend or break off. In some rare cases, a broken blade has penetrated the hull. The same can happen going astern but there is the additional danger of bent blades contacting the shaft strut.
- d) Propeller shafts can be bent or broken in grounding, stopping engines immediately can prevent overspeed of the engine. If the shaft breaks inside the boat, there is danger that it will pull out leaving an open hole at the stuffing box.
- e) Shaft stuffing boxes should be examined for leaks.
- f) Rudders can be bent in a grounding. They also can penetrate the hull, break shafts or have leaking stuffing boxes.
- g) Outboards and outdrives are usually protected by slip clutches to prevent total loss of motive power. Should damage result from groundings, consult your manual. The area around the outdrive should be inspected.
- h) Anywhere a penetration has been made in the hull (shaft logs, rudder logs, transducers,

etc.) should be examined carefully as a likely spot for a leak to occur.

- i) A passing small boat may be able to assist by carrying out your anchor so that you can pull yourself free. If the other boat operator elects to attempt a tow, see Sections 4.4.2 and 4.4.3.
- j) Continue to inspect the hull as you pull free, being hard aground may be preferable while you control leaks spotted as you get into deeper water.
- k) If it is not possible to pull free, start your engines one at a time. Observe for leaks. Observe cooling water flow out exhausts. Inspect for unusual noise or vibration. Check your gauges. A rapidly rising temperature gauge may indicate a water pick up is plugged.
- l) Rotate shafts slowly one at a time (to take the boat in the opposite direction it was going before the grounding). Observe for leaks around shaft stuffing boxes. Listen for rubbing or other unusual noise.
- m) Turn the helm to ensure rudders move freely.
- n) Slowly apply power one engine at a time and observe for noise, vibration or indication of overheating.
- o) Work free, continuing to observe for conditions which might arise as the hull works its way to clear water.

## 5.2 LEAKS

Leaks occur in various degrees of potential danger to the vessel. Some drips from fittings are easily corrected while a hole caused by striking a submerged object may be difficult to control. The following sections provide basic leak control techniques.

### 5.2.1 HOSE LEAKS

- a) If a leak occurs at a hose clamp, tighten the clamp slowly until the leak stops. Do not overtighten or the clamp might break. In addition, hose which has aged may have softened. Tightening the clamp may cause the end to splay out and the leak to worsen. A second hose clamp may be needed to stop the leak.

- b) If a hose ruptures and no replacement hose of that size is aboard, a number of quick fixes are possible.
- ☆ Wrap with cloth, and tape, clamp or wire in place.
  - ☆ Wrap with rubber sheet and secure.
  - ☆ Slip a piece of hose with the same inside diameter as the outside diameter of the ruptured hose over the leak and clamp in place.
  - ☆ Split a larger hose, wrap it around the leak and clamp in place.
  - ☆ Wrap repeatedly with tape.
  - ☆ If there is sufficient slack, cut off the ruptured end and refit the hose.

### 5.2.2 THROUGH HULL FITTINGS

- a) If hull fitting carries away and leaves a hole through which water is pouring, see HULL LEAKS.
- b) If a valve is leaking around the stem or at a bolted flange, attempt to snug up the packing gland or the flange bolts. If this fails to cure the leak it will probably be necessary to replace the stem packing or flange gasket. A leak on the system side flange can be repaired by shutting the valve and draining the system. If not, the repair will need to be done with the boat out of the water. NEVER LOOSEN THE PACKING GLAND WHILE THE BOAT IS IN THE WATER.

#### **WARNING**

#### **ADJUST SHAFT GLAND WITH ENGINE SHUTDOWN AND GEAR IN NEUTRAL.**

- c) The stuffing boxes for the main propulsion shafts and rudder shafts should have a few drops per minute as normal leakage to lubricate the packing. If leakage exceeds 6 drops per minute, it will be necessary to turn the packing nut slightly to stop the leak. Some glands have two studs on them. The nuts should be advanced evenly. Make adjustment slowly and watch results before turning any farther. Rotate the shaft by hand to see that it turns freely.

### 5.2.3 HULL LEAKS

- a) Put bilge pumps on line immediately.

- b) Put on life jackets.
- c) Wood cones of various sizes have been carried on commercial vessels for leak control. If these are onboard, they can be used singly or in combination to plug leaks from through hull fittings or from impacting a submerged object. They work best when inserted from the outside, but that is not always practicable.
- d) Rags, seat cushions or canvas can be stuffed into odd shaped holes. A piece of plywood or metal or a drink cooler can be placed over the soft materials, and wood or metal shoring can fix that in place. Shoring is a length of wood or metal which can be wedged between the patch and some part of the boat to combat the pressure of the water.
- e) On most boats, the bilge pumps are electrically operated. The batteries should be elevated if possible to retain power for the pumps.
- f) If there is any chance of flooding the batteries or switchboard, and there is a radio aboard, get your call for assistance on the air early.
- g) Even the largest of our boats have watertight compartments which, if the bulkhead valves and deck closures have been shut tightly, will retard the sinking of the vessel. Some smaller craft have level flotation foam and will not sink. In any event, act quickly and get all lifesaving equipment (life jackets, rafts, flares, etc.) out where they can be used. DO NOT leave any tied down or in a compartment.
- h) After the leak has been controlled, proceed at slow speed to the nearest safe refuge. It may be necessary to stop occasionally to allow the bilge pumps to dewater the hull.

### 5.3 FIREFIGHTING

#### **WARNING**

- ☆ **DO NOT USE WATER ON LIQUID OR ELECTRICAL FIRES**
- ☆ **BURNING PLASTICS EMIT TOXIC FUMES**

#### **NOTE**

**In order to stop fire you must remove at least one of the following: (a) the combustible**

(b) oxygen, (c) heat.

- a) Turn off all electrical systems, especially ventilation systems, and close air vents.
- b) If your boat is equipped with a salt water pump for fire or washdown use, it can be used on fires involving wood, paper, cloth or plastics. The aim is to cool the combustibles to a temperature at which they will not burn. It is not necessary to use a hard stream, a fine spray is usually better. In addition to giving maximum cooling, a fine spray doesn't break up combustibles which could spread the fire. Use a boat hook to break up combustibles while continuing to apply water. **USE BILGE PUMPS TO DEWATER HULL DURING FIRE FIGHTING.**
- c) Carbon dioxide (CO<sub>2</sub>) extinguishers cool and smother the fire. They are useful against liquid and electrical fires. It comes out as a solid and turns to a gas as it picks up heat. The gas is heavy and replaces the air (oxygen) where it lays. They are not very good in open spaces where wind will blow away the CO<sub>2</sub> and allow oxygen to get to the fire. **CO<sub>2</sub> CAN NOT ONLY SMOTHER THE FIRE, IT CAN SMOTHER YOU DO NOT STAY IN THE COMPARTMENT.** These are usually portable bottles which have a pin to pull or a handle lock that is released before leaving the control panel vicinity.
- d) Dry powder extinguishers are rated for class A, B and C fires: in other words, solid, liquid and electrical fires. This chemical smothers the fire and must be applied directly at the fire. It does not remove heat. Do not allow air to blow it away. Do not disrupt it using water or mechanical means. They are released the same as the CO<sub>2</sub> bottles.
- e) HALON systems are very effective on all classes of fires and have three major advantages over other extinguishing systems. First, it is somewhat quicker in putting out the fire. Second, it does not wet down equipment or leave a residue. And, third, occupants of a compartment can take some time to evacuate. Of itself, it is non-toxic, but left in contact with heat it has a tendency to break down and become hazardous to your health. Since there is little danger of suffocating personnel, this system is often an automatic system. If yours is not, trip the system release before leaving the control panel vicinity.
- f) The cause of the fire must be isolated before any



machinery is started or electrical equipment is brought on line.

- g) Break out lifesaving gear.
- h) Inspect hull and systems for damage. Leaks should be handled as discussed in Section 5.2.

## SECTION 6 - MAINTENANCE

### 6. GENERAL MAINTENANCE

This section covers hull and machinery maintenance.

#### 6.1 PERIODIC CHECKS

Perform periodic checks in accordance with Table 2. The items are arranged such that the table can be reproduced and used as a check list. Item numbers have been assigned to assist in programming your checks. The meaning of each letter follows:

E = each use  
D = daily  
W = weekly  
M = monthly  
Q = quarterly  
R = as required by the manual

#### 6.2 PREVENTATIVE MAINTENANCE

a) Preventative maintenance generally refers to the application of lubricants, removal of corrosion, tightening of fittings, etc. It is maintenance performed to prevent equipment failure. By defining it this way, we include certain corrective maintenance procedures which will stop a small problem from becoming a big problem. As an example; if during checking belt tightness a worn bearing is observed, replace the bearing before it fails. Murphy's law says that the bearing will fail no less than a mile from shore.

b) Preventive maintenance on machinery is covered in the equipment manuals.

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c) A trailer will benefit from six basic preventive maintenance tasks: (1) a fresh water washdown after submersion in salt, brackish or polluted water, (2) grease "bearing buddies" after each use to push out water, (3) a few drops of oil on winch and trailer jack shafts each week, (4) repack bearings quarterly, (5) top off brake system hydraulic oil quarterly, (6) adjust brakes quarterly.

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d) Zincs on the hull, shafts and rudders, as applicable, should be replaced everytime the vessel is hauled for recoating or when the zincs appear

ITEM	✓	EQUIPMENT	CHECK
E1		Seawater pumps	Runs and pumps each startup
E2		Trailer lights	Operational each use
E3		Anchor shackle pins	Tightness - each use
D1		Main engines	Oil, coolant & hydraulics
D2		Propulsion gears	Oil level
D3		Generators	Oil & coolant
D4		Drive belts	Tightness
DS		Bilge pumps	Runs and pumps
D6		Horn	Sounds loudly
D7		Navigation lights	Burn brightly
D8		Fire extinguishers	Gauge shows full
W1		Hoses	Condition
W2		Hose clamps	Tightness
W3		Packing glands	Less than 6 drops/minute
W4		Batteries	Electrolyte level
W5		Flares	Condition
M1		Valves	Cycle shut & open easily
M2		Fire extinguishers	General condition
M3		Life jackets	Condition
M4		Life jacket emerg. lights	Burn brightly
M5		Life jacket whistles	Condition
M6		Life ring strobe lights	Burn brightly
M7		Strobe light tethers	Condition
M8		Life rafts	Condition
Q1		Electrical terminals	Tight and corrosion free
Q2		Electrical insulation	Intact
Q3		Anchor line	Condition
Q4		Winch cables	Condition
R1		Main engine condition	As required in manual
R2		Propulsion gear condition	As required in manual
R3		Outdrive lubricant	As required in manual
R4		Generators (electrical & Mech.)	As required in manual

TABLE 2

PERIODIC CHECKS

to be 50% of their original size. Certain outdrives also have zincs. The 50% guideline should be used for them as well (see the manual for locations).

- e) Drive belts should be checked for wear and cracking during the daily tightness check. Where drive belts are used in sets of belts, replace the set to prevent under-tension of the older belts. Uneven tensions in the set will result in more rapid wear out of the set.
- f) Hoses should be checked with the equipment served in operation. Suction hoses are provided with means to prevent collapse of the hose. They should be checked to be sure that they are staying round, and replaced when they appear to be flattening. Hose clamps should be replaced when they appear worn at the threads.
- g) Packing glands should be tightened in accordance with Section 5.2.2.
- h) Batteries should have distilled water added whenever the electrolyte level falls below the indicated full mark. They should never get to the point where the plates are not covered. Batteries should be kept fully charged to prevent plate deterioration, and in the winter, a charged battery will not freeze and crack as readily as a discharged battery.
- i) Life jackets should never be stowed in a wet condition. If they have been used or if condensation has dampened them, they should be thoroughly air dried before restowing.
- j) Corrosion should be cleaned from electrical connection whenever noticed, but at least yearly. Any wires on which age has caused cracking or deterioration of insulation should be replaced.
- k) Winch cables corrode from within. The quarterly check performed in 6.1 should include twisting the cable slightly to be able to view the interior. It should be checked at several places along its length. Corrosion and strand breakage mean a weakened cable. The cable can be tested by pulling it to 1.5 times the greatest load it will be used for. Deteriorated cable or cable that fails under test should be replaced to prevent possible personal injury or equipment damage.
- l) Propeller nuts should be checked tight every time

the boat is hauled.

- m) Steering systems should be inspected for chaffing and wear. Oil or grease should be applied to lubrication points, and hydraulic steering reservoirs should be kept full. This maintenance should be performed twice a year.

### 6.3 CORRECTIVE MAINTENANCE

- a) Corrective maintenance (repair) of machinery and other equipment should be accomplished by competent mechanics. Basic repairs are covered in the equipment manuals. Our Customer Service Department keeps a file on service centers in various areas for equipment that we normally install on your vessels. They will be pleased to give you that information. This does not constitute a recommendation or endorsement by MonArk.
- b) Replacement parts are often available through MonArk on a component level. As an example, bilge pumps are often standard inventory items available through Customer Service, but internal parts would not be.
- c) Parts of the hulls such as dive ladders, windows, hatches, canvas or other parts which are exclusively of MonArk design are available through Customer Service.
- d) Some parts of our hulls are made of 6061 alloy aluminum, but most are alloy 5086. When in doubt, use alloy 5086 aluminum plate or shapes and alloy 5356 welding wire.

#### **CAUTION**

##### **DETERMINE WHY A FUSE OR CIRCUIT BREAKER GOES BEFORE ATTEMPTING REPLACEMENT OF RESET**

- e) Fuses and circuit breakers have been sized to protect equipment and wiring. Always try to determine the cause of the interruption before reenergizing the circuit. NEVER PUT IN A LARGER FUSE OR CIRCUIT BREAKER.
- f) Trailer lights, dome lights, cargo lights, etc. should have burnt out bulbs replaced with identical bulbs. Trying to make them brighter by upgrading bulb wattage can cause the lens to melt. THIS CAN CREATE A POTENTIAL FIRE SITUATION.

- g) Navigation lights must always have exact replacement bulbs and lenses. They are designed to give proper levels of illumination. Not using exact replacements can create a SAFETY HAZARD and under some circumstances be a violation of the law.

#### 6.4 PAINING

Because environmental conditions (salt water vs. fresh water, open slip vs covered, etc.) have such a great effect on the rate of deterioration of coatings, the decision, of when to repaint, is left up to the owner.

#### **CAUTION**

**DO NOT PAINT THIS HULL WITH EITHER MERCURY OR COPPER COATINGS  
SEVERE CORROSION WILL RESULT.**

The coating systems used on your boat is given in Section 7. If this systems is not available, check with the manufacturers to determine that the systems are compatible. The new coating systems are far better than the paints of yesterday, but they are complex compounds that may do strange things when mixed.

## SECTION 7 - SPECIFICATIONS

### 7. SPECIFICATIONS

Throughout the preceding sections, the manual has addressed boats in general. The following sections will deal specifically with your boat.

#### **CAUTION**

#### **DO NOT OVERLOAD DAVIT**

If you purchased a davit with your boat, remember that the davit may be able to lift more than the boat can provide a platform for. Swinging an overloaded davit outboard can cause flooding or capsize. An object in water appears to weigh less. As soon as it clears the water it can pull the boat over and result in flooding.

### 7.1 GENERAL CHARACTERISTICS

If you purchased a standard vessel in the MonArk line, you will find picture, sketch and general characteristics sheet attached. It may not be exactly the same as your boat, but it is generally the same. If your boat was a custom design, you will find a Profile and General Arrangement drawing attached, not to scale. Your length, beam and draft are given on this drawing.

### 7.2 LIST OF MACHINERY

Following the drawing, there is a listing of the major components of your boat. This should aid you in obtaining spare parts. If, during the life of the boat, you change any equipment, change the list. Enter the new information and draw a line through the old. This will be invaluable if the label plate becomes illegible.

### 7.3 TEST DATA

A copy of the test forms used during the testing program on your boat have-been attached. These contain the actual weight, speed and performance characteristics of your boat, if the unit is supplied with power.

INSTALLATION INSTRUCTIONS



HYDRAULIC OUTBOARD  
STEERING  
For Outboard  
Powered Vessels



*Before you do it your way,  
please try it our way.*



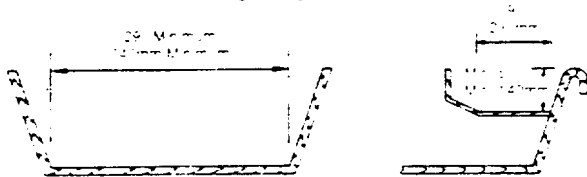
The SEASTAR OUTBOARD STEERER has been designed for normal pleasure and fishing craft where standard engine mountings and propellers are utilized. For racing-type installations with surfacing chopper, or cleaver propellers, and for highly-jacked engines, or where engine trim tabs are removed, consult the factory for information on the recommended systems.

Before proceeding with the installation, read these instructions thoroughly. Teleflex cannot accept responsibility for installations where instructions have not been followed, where substitute parts have been used, or where modifications have been made to our products.

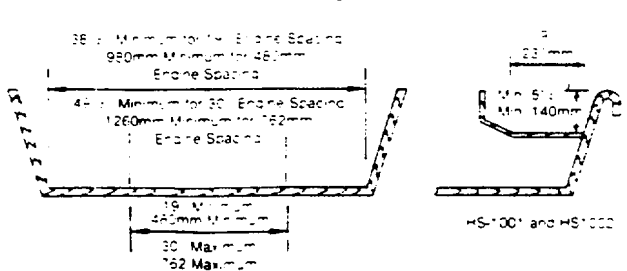
Before attempting installation, ensure that the splashwell of your boat has the following minimum motor well dimensions.

**MINIMUM MOTOR WELL DIMENSIONS**

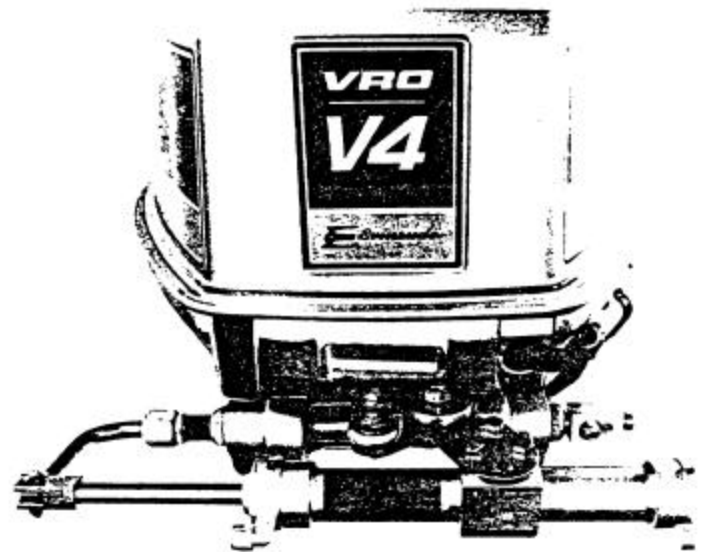
**Single-Engine**



**Twin-Engine**



NOTE TRANSOM WALL THICKNESS MUST NOT EXCEED 2 3/8"



**CAUTIONS:**

Use only SEASTAR hydraulic hose supplied in kit form. Hoses are ordered to length for your particular installation. Substitute hoses or tubing will affect safety and performance.

Use only SEASTAR outboard hydraulic fluid or Texaco aircraft oil HO-15.

Lightly lubricate all bolts, nuts, and threaded parts prior to usage.

Also, lubricate all moving parts with good quality marine grease.

Do not remove protective caps from helm pump, cylinder, and hose fittings until connection of hose to helm pump and cylinder is called for in the instructions. Contamination introduced into the steering system may cause steering malfunction. Cleanliness is of utmost importance.

For twin-engine applications, a SEASTAR Outboard tie-bar kit is required. Do not attempt to substitute other tie bars.

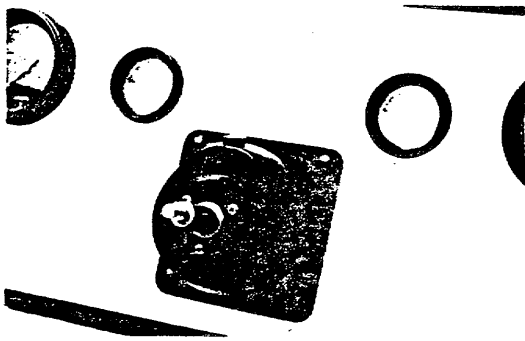
Then follow the illustrated installation steps **in order**.

### STEP 1/MOUNTING THE HELM PUMP

- Mount the helm pump with the filler hole in its uppermost position.
- Determine desired mounting position for helm pump on dashboard. Ensure that steering wheel will not later interfere with other functional equipment. Use the cover bezel as a template and mark the holes. Cut a  $1\frac{1}{2}$ " hole for the pump and drill the mounting holes with a  $\frac{9}{32}$ " drill then mount the helm with the bolts provided.

#### NOTE:

- Before proceeding with Step 2, install elbow fittings to helm pump. Elbow fittings are supplied with helm straight fittings are available, part no. HF5528. always use a quality soft pipe sealant such as Loctite P.S.T. or equivalent on pipe threads. Do not use tape sealers.



### STEP 2/INSTALLING HYDRAULIC HOSE

- Make certain that protective caps are on hose fittings
- Route hydraulic hose from behind dashboard area, along side of gunnel or builder-installed tube, to splashwell area. Use shortest convenient path. ensuring that minimum bend radius of 2 inches is not exceeded.

**NOTE: IN REPLACEMENT INSTALLATIONS. YOU MAY FIND IT EASIER TO ATTACH HYDRAULIC HOSES TO MECHANICAL CABLES OR EXISTING HOSES WITH BLACK TAPE THEN PULLING NEW HOSE THROUGH WITH OLD CABLE OR HOSE.**

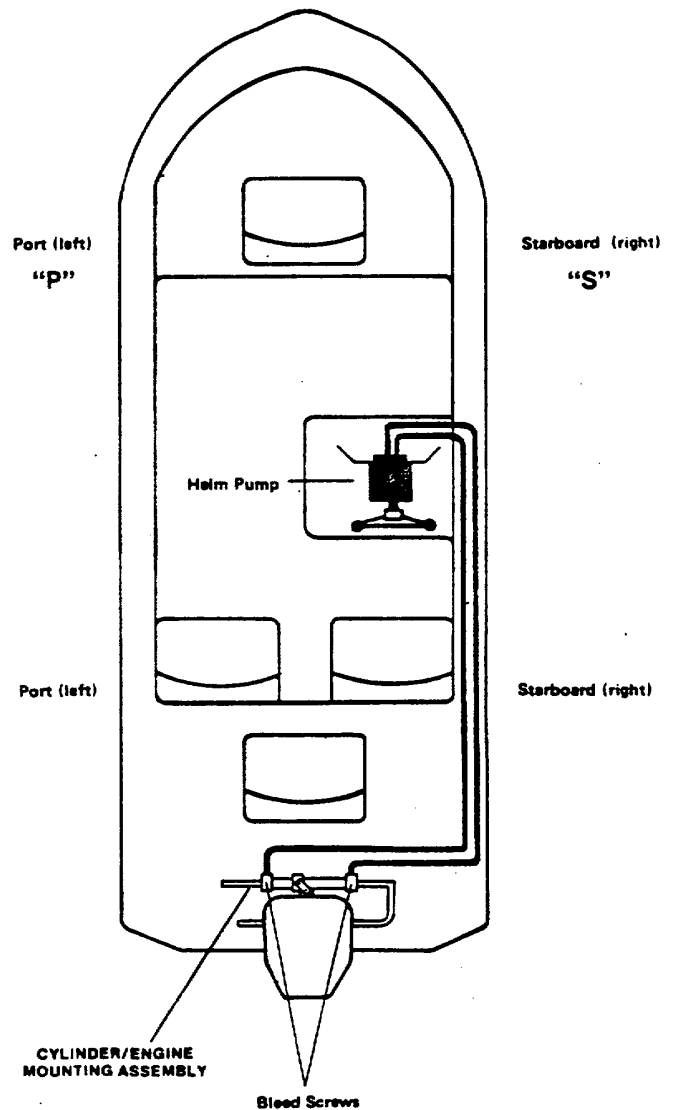
- Ensure that hydraulic hose is protected against chafing and is secured wherever possible. Do not allow hydraulic hose to hang free in an area where it could constitute a safety hazard.

#### WARNING:

This steering system is not recommended for use on boats where horsepower exceeds U.S. or other coast guard ratings. This cylinder is suitable for certain engines only. Install and maintain in accordance with Teleflex instructions. Use approved oils only. Do not use brake fluid. Failure to comply with the above may result in loss of steering, causing property damage and/or personal injury.

### STEP 3/HYDRAULIC HOSE CONNECTION

- Note from diagram below that starboard (right) helm pump fitting connects via hydraulic hose to port (left) cylinder fitting, and port (left) helm pump fitting connects via hydraulic hose to starboard (right) cylinder fitting.
- Swivel nuts on hydraulic hose fittings are color-coded to ensure correct connection. Fittings on one hose are gold: fittings on second hose are silver.
- Remove protective caps from fittings so you can see color codes, and connect hoses to helm pump and cylinder starboard to port, and port to starboard.
- Start hose nuts by hand. After several turns, firmly tighten with  $\frac{5}{8}$ " wrench. Do not over-tighten (maximum 140 inch/pounds if you are using a torque wrench).



## STEP 4/ FILLING AND BLEEDING THE SYSTEM.

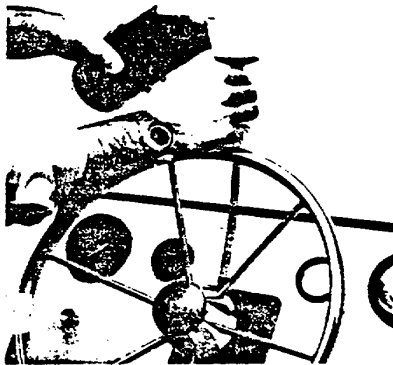
- This procedure requires two people. Do not attempt filling and bleeding alone, since it would be difficult for one person to remove all the air from the system. Failure to remove all the air will result in spongy, unresponsive steering.

**NOTE:** Using the funnel only, fill the helm pump with SEASTAR outboard hydraulic fluid. When the helm pump is full of oil, screw the threaded end of filler tube into the filler hole and insert the tunnel into opposite end of filler tube.

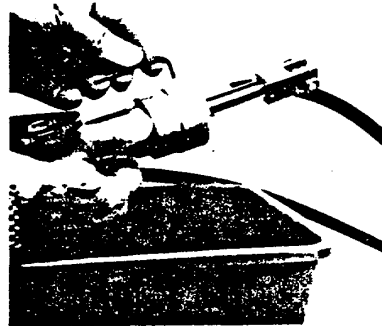


**CAUTION:** During the entire bleeding procedure, oil must always be visible in funnel or filter tube. Do not allow the oil level to disappear into the helm pump as this may introduce more air into the system, wasting fluid and making bleeding more difficult.

- The second person is now required at the splashwell area, equipped with a clean rag, pan, and the Allen wrench.



- Carefully fill the tunnel with oil

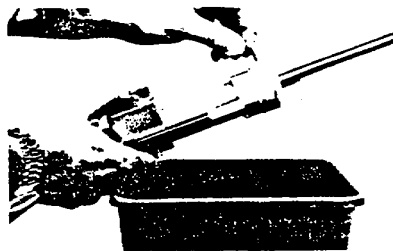


- Tilt the cylinder so that the bleed screw on the starboard (right) side is higher than the port (left) side and open starboard (right) bleed screw (approximately 5 turns).

- Turn steering wheel slowly to port (left) side (1 turn per 15 seconds - turning the steering wheel fast will cause air and oil to mix, requiring several hours of separation).
- When air-free oil appears from bleed screws, close bleed screw.

### CAUTION:

Ensure that the steering wheel is securely mounted to helm with washer and nut, before attempting wheel turning. Tighten nut to 150 IN/LBS (17 Nm). Do not exceed 200 IN/LBS (22 Nm).



- Tilt cylinder so that the bleed screw on the port (left) side is higher than the starboard (right) side and open port (left) bleed screw (approximately 5 turns).
- Turn steering wheel slowly to starboard (right) side (1 turn per 15 seconds).
- When air-free oil appears from bleed screw, close bleed screw.
- Turn the steering wheel back and forth slowly. Do not apply pressure when resistance is felt at each hard-over position. Stop the back and forth movement by turning steering wheel all the way to port (left).

- Repeat bleeding the system as above. Starboard side first - followed by port side. Only a slight amount of air should appear this time.

The following step calls for removal of excess oil in funnel and filter tube. Do not add more oil to funnel than necessary.

- Open port (left) bleed screw.
- Turn steering wheel to starboard (right) side until oil just disappears from sight in filler tube
- Close port (left) bleed screw.

A slight movement of the steering wheel should now cause movement of the cylinder rod, indicating that the steering system is properly bled. If at this time or anytime in the future, the response from steering wheel to cylinder rod is not immediate, re-bleed the system.

- Remove funnel and filler tube from helm pump, and screw vent can onto filler hole.

- Ensure at all times that fluid level in helm pump is at its correct level. If any metal is visible through the filler hole, add SEASTAR hydraulic fluid. Use only SEASTAR outboard hydraulic fluid or Texaco aircraft oil HO-15.

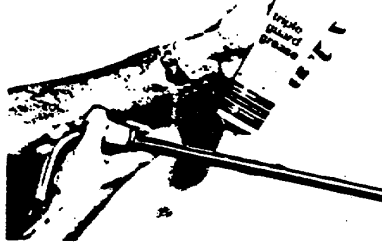
### WARNING:

**Check for leaks. Unchecked leaks will lower the fluid level in the helm pump to such a point that spongy, unresponsive steering will result, and in time could cause total loss of steering.**

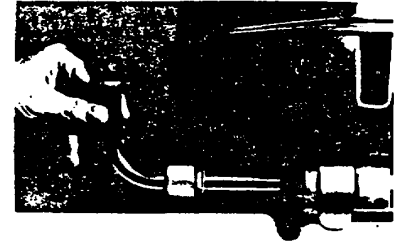
## STEP 5/CYLINDER CONNECTION



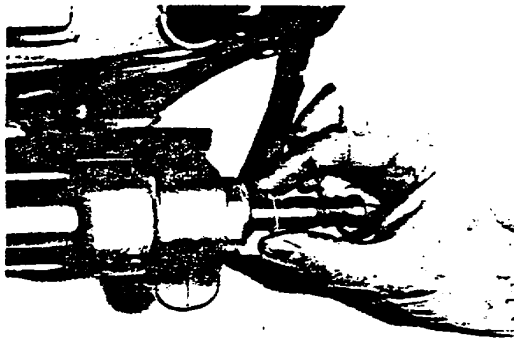
Place the nylon washer on the support rod. For Mercury/Mariner inline engines 80 through 140 HP) place the one inch spacer bushing on the rod before putting on the washer.



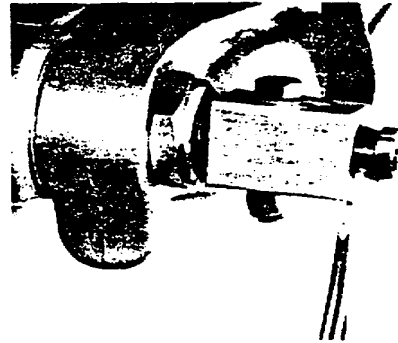
**VERY IMPORTANT.** Grease the support rod thoroughly with a good waterproof and anti-corrosive grease such as OMC triple guard equivalent.



Insert the support rod into the tilt tube from starboard side.



Place a nylon washer on the protruding end of the support rod then bolt on the support rod collar and tighten loosely.



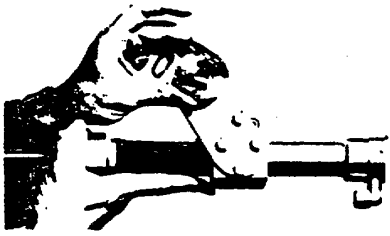
Remove free play in the support rod by prying the end with a screwdriver while tightening the nut and bolt firmly. A helper is needed for this step. For dual engine installations refer at this point to instructions included with tie-bar kit.

## CONNECT THIS CYLINDER KIT ONLY TO OUTBOARD MOTORS LISTED ON THE FOLLOWING ENGINE APPLICATION GUIDE

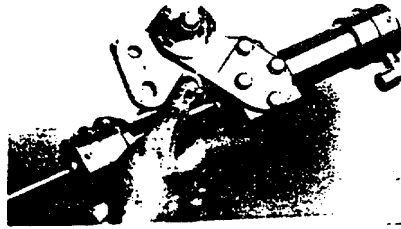
OUTBOARDS ENGINE MFG.	MODEL YEAR	HORSE POWER	CYLINDER PIN	TIE BAR KIT
Chrysler	1983 - To Date	85 and up	HC 5301	HO 5013
Johnson-Evinrude	1977 - To Date	70 and up	HC 5301	HO 5013
Mercury	1978 - 1979	150 and up	HC 5302	N/A
Mercury/Mariner	1980 - 1981	V-6 Eng. only -	HC 5301	HO 5011
Mercury/Mariner	1982 - 1984	V-6 Eng. only	HC 5301	HO 5012
Mercury/Mariner	1980 - 1983	In-Line Eng. Only	HC 5301	HO 5013
Mercury/Mariner	1984 - To Date	90 - 115	HC 5303	HO 5014
Mercury/Mariner	1985 - To Date	V-6 Eng.(exc. 3.4)	HC 5303	HO 5014
Yamaha	1983 - To Date	115 and up	HC 5301	HO 5012
OMC Seadrive	Refer to order guide			

## STEP 6/MOUNTING THE CYLINDER ASSEMBLY

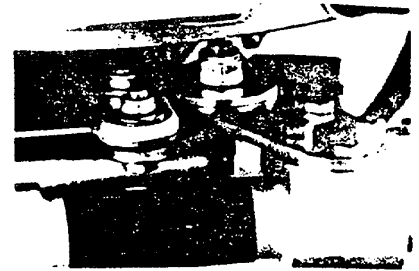
FOR ALL ENGINES EXCEPT MERCURY/MARINER V6



For all engines except Mercury/Mariner V6 insert the brass washer bushing on top of the pre-assembled cylinder plate.



Bolt the connecting plate to the underside of the cylinder plate. Note the instructions on the connecting plate to ensure correct orientation. Tighten securely.



Bolt the connecting plate to the bottom of the tiller arm using washers top and bolts. Seat the bolts completely and tighten nuts securely.

FOR MERCURY/MARINER V6 ENGINES (EXCEPT 300 HP)



For all Mercury/Mariner V6 engines insert the brass washer bushing on the underside of the cylinder plate.



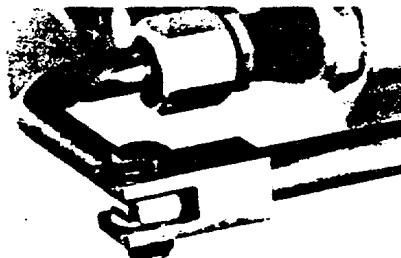
Bolt the connecting plate to the top of the cylinder plate.

Bolt the connecting plate to the top of the tiller arm. Use both washers on the topside to provide maximum clearance below.



Seat the bolts completely and tighten the nuts securely. It may be necessary to do this in two steps because of clearance. In each case run the bolt through the tiller arm first, then tighten the nut. Keep the wrench on the bolt head to prevent it from backing off.

## STEP 7/CONNECTING THE CYLINDER TO THE SUPPORT ROD.



Make sure to include the nylon spacers as shown. Tighten the nut and bolt secure-but do not overtighten.

MANUFACTURED BY



1650 W. 2nd AVE VANCOUVER B.C. CANADA V6J4H4 • (604) 736-2831 • TELEX 04-5088

## Morse Controls

### Instruction Sheet

#### Model MT-2 Control

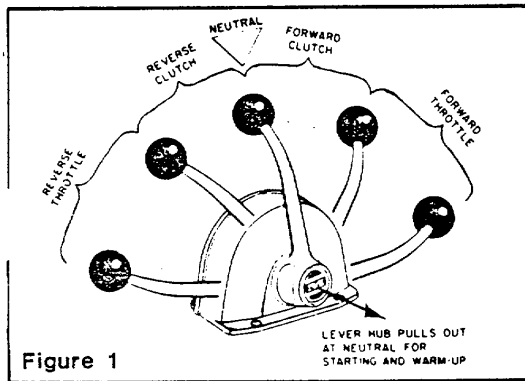
Use with Morse Connection Kits  
and  
Type 33C "Red-Jaket" Cables

#### Introduction

These instructions, when used with the appropriate Throttle Connection Kit and Clutch Connection Kit instructions, provide all the necessary information for installing, adjusting and operating a Single or Twin Morse Model MT-2 single lever control system.

The Model MT-2 provides complete single lever control of both light clutch and throttle operation in precise sequence for safe, one hand engine control, as shown below (figure 1).

Full neutral throttle is provided for starting and warm-up by pulling out the hand lever hub when the control is in neutral position. This locks the control in neutral allowing full throttle range when lever is moved forward. When the lever is returned to neutral, the hub automatically snaps inward for single lever operation.



#### Equipment Required

The following components are required to make a remote control installation for one engine:

1. Model "MT-2" control head
2. Clutch Connection Kit
3. Throttle Connection Kit
4. Two Morse 33C "Red Jacket" push pull cables
5. Optional-Neutral Safety Switch Kit P/N A067925.  
This kit is to provide start-in-gear protection to meet USCG requirements 33CFR Part 183, Subpart L.
6. Shift Travel Adapter Kit (P/N A304900) for longer shift travel in Mercury I/O's since 1983.

#### Locate Control Head

When determining the position of the control head, consider the following:

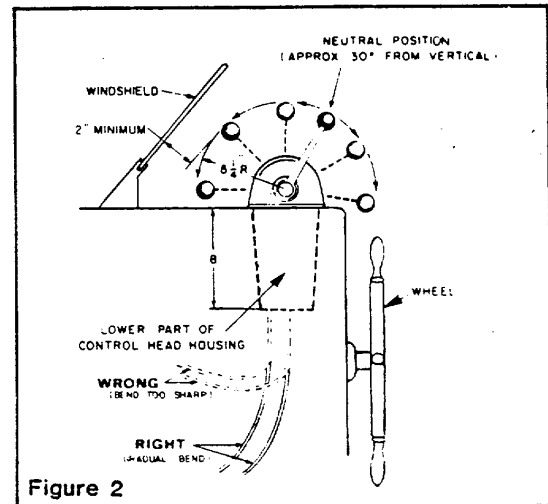
- (a) Allow clearance for full forward and ample reverse movement of the control hand lever. (Figure 2).
- (b) The bottom of the control head housing should not interfere with the steering gear or other components inside the wheelbox.

- (c) The area below the control head housing should allow an unobstructed path for running the control cables to the engine. (See Figure 2).

After location of the control head is determined, use the template provided and cut and drill the mounting holes required.

#### NOTE

**Do not mount Control Head at this time.**



#### 2. Connect Clutch Cable to Control Head

1. Open control head by removing screw (1) and (20).
2. Remove screw (30) and lockwashers (9) and rotate retainer plate and link (27) to uncover the clutch lever.
3. Place jam nut (35) into pocket of terminal (26) then screw terminal onto cable rod until 1/8" of rod is through terminal. Hold terminal securely to prevent it from turning and tighten cable nut against terminal.
4. Lubricate terminal and place in proper hole in clutch lever as shown in Figure 3.
5. Mount Neutral Safety Switch at this time if required. Follow instructions with switch kit. Replace retainer plate screws and lockwashers.

**MORSE  
CONTROLS**

21 Clinton Street  
Hudson, Ohio 44238  
(213) 353-6461

INCOM INTERNATIONAL INC  
INCOM

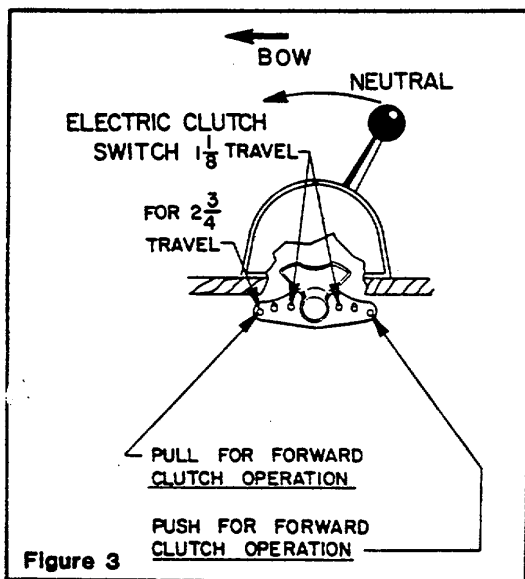
### CAUTION

The clutch lever has two sets of terminal holes on each end (See Clutch Lever Drawing). Use the inner hole for 1-1/8" travel (required for electric switch). Use the outer hole for 2-3/4" travel (standard required by most transmissions).

6. Securely fasten clutch cable to housing (13) using cable clamp (25) and screws (31).

### CAUTION

Be sure key on the underside of cable clamp is seated in the groove of cable hub.



### 3. Connect Throttle Cable to Control Head

### IMPORTANT

Be sure the control head is correctly assembled for PUSH-TO-OPEN or PULL-TO-OPEN throttle operation as required (see Figure 4). If necessary, modify as follows:

- (a) Remove screws (30) and lockwashers (9) from retainer plate (27). Also remove screw (18), shoulder bushing (29), collar (24) and stopnut (23) from swivel bracket (28).
- (b) Rotate retainer plate 180° so V-point is Down for Pull or Up for Push. Then replace screws (30) and lockwashers (9). Insert screw, shoulder bushing and swivel bracket into retainer plate link (27) hole and housing slot. Replace collar and stopnut.
- (c) Move hand lever from neutral and loosen setscrew (19). Return hand lever to neutral and remove from control.
- (d) Press spring-loaded throttle lever toward outside of housing until pin (15) is clear of keyway. Rotate throttle lever 180° until pin snaps back into keyway. Replace control hand lever and tighten setscrew.

1. Screw throttle terminal (4) onto cable rod until 1/8" of the rod shows through terminal. Hold terminal securely to prevent it from turning and tighten cable nut against terminal.
2. Apply lubricant and place terminal (4), flatwasher (24), and retaining ring (3) on throttle arm (5).
3. Securely fasten throttle cable to swivel bracket (28), using cable clamp (25) and screws (31). Be sure key on underside of cable clamp is seated in groove of cable hub.
4. Control should appear as shown in Figure 4 for proper throttle operation.
5. Reassemble control head.

### 4. Install Control Cables

1. Run the two cables into the cutout, down through the column and to the engine.

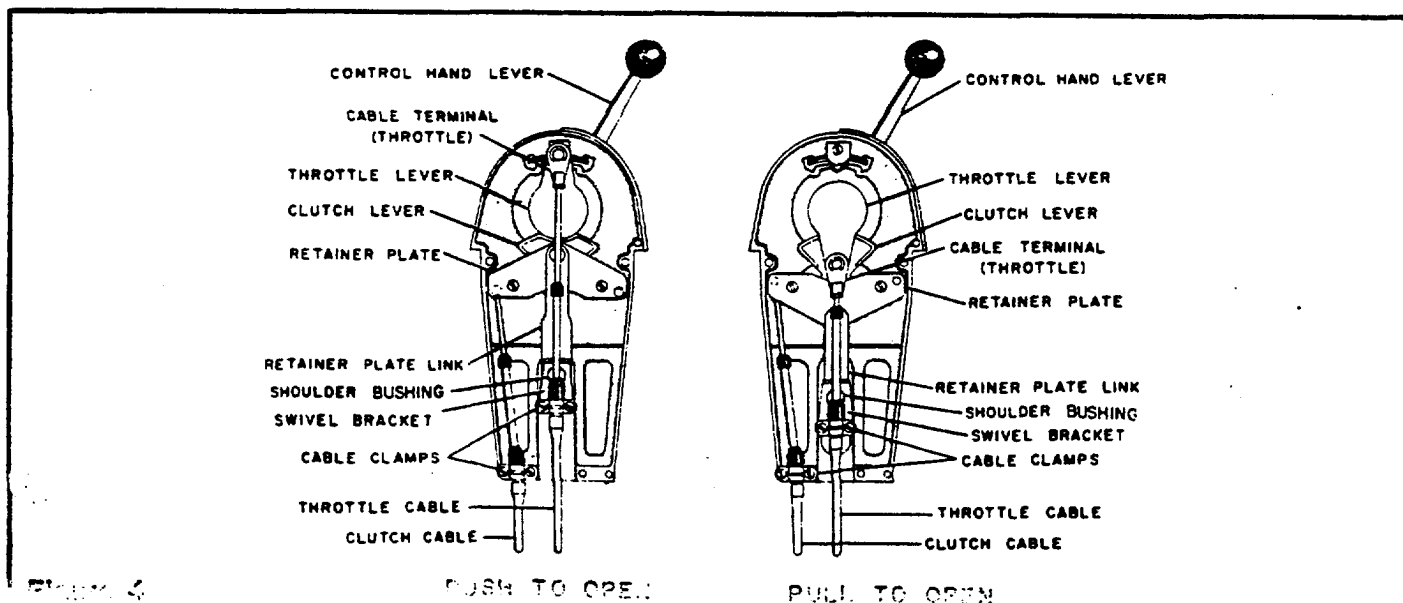
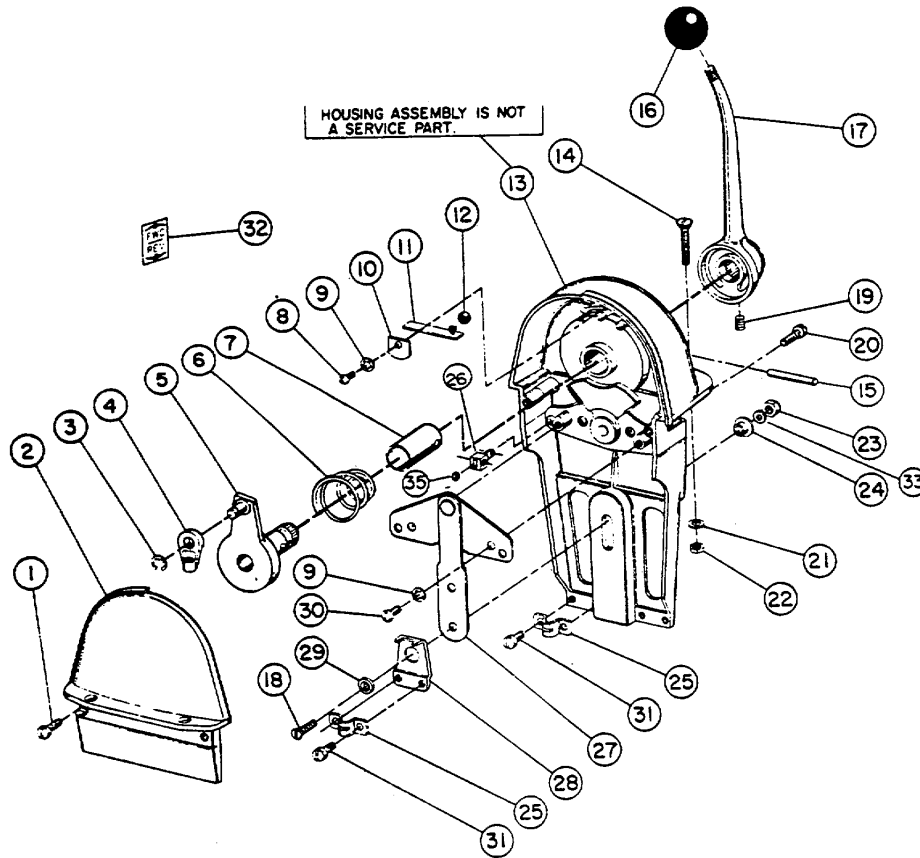


Figure 4

PUSH TO OPEN

PULL TO OPEN



Item No.	Description	MT-2 Single	MT-2 Twin	Part No.
1	Screw, Mach. Slot Fil. Hd No. 109-24 x 5/8 Lg.	1		A50112-062
2	Plate, Side Chrome	1		D32898-2
3	Retaining Ring, 5/16 Nom. Type E	1	2	A51304-135
4	Cable Terminal, Throttle	1	2	A300646
5	Arm Assembly, Throttle	1	2	A67954
6	Spring, Conical	1	2	A32790
7	Bearing, Throttle Arm	1	2	A32788
8	Screw, Mach. Slot. Rd. Hd No. 10-24 x 5/16 Lg	1	2	A50145-022
9	Lockwasher, No. 10 Int. Tooth	3	6	A50803-061
10	Clip, Ball Spring	1	2	A32785
11	Spring, Ball	4	8	A32792
12	Ball 3/8 Dia.	1	2	A51600-005
13	Housing Assembly Chrome	1	2	
14	Screw, Mach. Slot, Oval Hd No. 10-24 x 1-1/2 Lg.	4	4	A50127-110
15	Pin	4	4	A51015-900
16	Ball, Knob, Red	1	2	A35232
17	Lever Control, Hand	1	2	D32778-2

Item No.	Description	MT-2 Single	MT-2 Twin	Part No.
18	Screw, Flat Hd. Mach 1/4-28x1" Lg	1	2	A50120-586
19	Setscrew, Cup Pt. 5/16-18x1/2 Lg	1	2	A50414-003
20	Screw, Mach. Slot, Fil. Hd No. 10-24 x 1 Lg	1	2	A50112-086
21	Washer, Flat NO. 10	4	4	A50800-802
22	Nut, Hex. No. 10-32	4	4	A50900-068
23	Nut, Elastic Stop Hex 1/4-28	1	2	A50908-061
24	Collar	1	2	A32963
25	Clamp Cable	2	4	A32010
26	Cable Terminal, Clutch	1	2	B304919
27	Linkage Assembly	1	2	A67951
28	Bracket, Swivel	1	2	A32011
29	Shoulder Bushing	1	2	A48676
30	Screw, Mach, Slot, Rd. Hd No. 10-24 x 5/16 Lg.	4	8	A50145-030
31	Screw, Fil. Hd No. 10-24 x 5-16 Lg.	2	4	A50112-022
32	Decal, Forward-Reverse	1	2	A38853
33	Flat Washer, Special	1	2	A32194
34	Flat Washer	1	2	A50800-843
35	Jam Nut	1	2	A32029

### BEST AVAILABLE COPY

Cables should run straight downward or in a gradual curve well below the bottom of the control head housing before bending. Throttle cable requires free, back-and-forth swing clearance below the housing. (See Figure 2).

#### WARNING

The cables should NOT be bent SHARPLY in ANY DIRECTION close to the bottom of the control. Sharp bends produce excess

- The cables should be run as straight as possible, avoiding any sharp bends. Make no bends in the cable of less than 8" radius.
- Cables should be supported by using cable hangers or by running them through straight sections of conduit for extremely long runs.

#### 5. Mount Control Head

- Place control head in position and fasten in place with screw (14), washer (15) and nut (18).



## BEST AVAILABLE COPY

2. Operate control hand lever to check for adequate clearance. If additional clearance is required at full forward proceed as follows:
  - (a) Set control hand lever either side of neutral. Loosen setscrew (19) with a 5/32" Allen wrench and remove control hand lever from shaft.
  - (b) Replace control hand lever on shaft to provide desired clearance and tighten setscrew.
3. Apply forward and reverse decal (32) to the control head adjacent to neutral position of control hand lever.

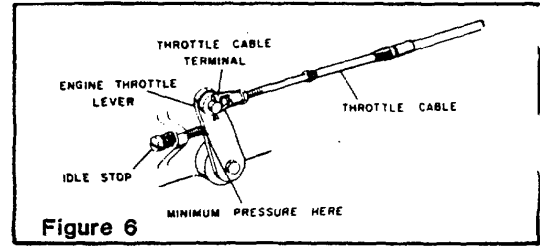


Figure 6

**NOTE: Before stripping of protective backing paper from decal, clean the control surface thoroughly.**

### 6. Connect Clutch and Throttle Cables to Engine

1. Follow the procedure outlined in the Throttle and Clutch Connection Kit Installation Instructions supplied with each kit.

### 7. Final Adjustment

1. Operate the control hand lever several times. The engine clutch lever and the control clutch arm (14) **MUST** coincide at forward, neutral and reverse detent positions.
2. The engine clutch lever position must be determined only by the control cable and should not be jammed against forward or reverse stops. Adjust the shift cable terminal (at the clutch end first) until detents are properly synchronized.
3. Operate the control hand lever through the complete operating range. The carburetor throttle lever should rest lightly against its idle stop when the control hand lever is at neutral. At neutral detent, pull out hand lever hub and move thru forward range. Return to neutral and hand lever should snap back in place. Excessive pressure of the carburetor throttle lever against its idle stop will prevent the control hand lever from moving freely in and out at the neutral detent. To remedy this, adjust the engine throttle cable terminal so the control cable will move the engine throttle lever against its idle stop with minimum pressure. (See Figure 6).

**CAUTION**  
**THROTTLE CABLE MUST BE DISCONNECTED FROM MOTOR BEFORE MAKING MOTOR IDLE ADJUSTMENTS.** Adjustment of the motor idle while the throttle cable is still connected to motor, may cause a jamming action against the idle stop. As a result, control may not function properly.

4. The carburetor throttle arm should be at full travel position when the control hand lever is at full forward throttle. In reverse, only limited movement of the carburetor throttle arm is available. When the throttle cable is correctly adjusted, the engine speed will remain at idle while the control is shifted, and will increase only when the hand lever is moved beyond the (UNREADABLE TEXT)

### NOTE

Throttle cable requires free back-and-forth swing clearance two to three feet below the control head housing for smooth operation.

Figure 6

5. Tighten all cable supports.
6. Check all screws, nuts, cable connections and cable terminal for tightness.
7. Water test the boat. The control hand lever should operate freely with light hand pressure. Any stiffness or binding in the operation of the hand lever can usually be traced to:
  - (a) Excess number of bends in cable runs.
  - (b) Sharp bend in the cables too close to control head.
  - (c) Bends smaller than the recommended minimum radius of 8".
  - (d) Tight or misaligned engine linkage.
  - (e) Cable compressed too tightly by cable supports.
  - (f) Engine clutch lever jamming its limit stops at forward and/or reverse.

### 8. Operation

1. Adjust the engine for smooth idle, as recommended by the manufacturer.
2. For starting or warm-up, place the control in neutral detent position and pull out the hand lever nub to disengage the shift mechanism allowing the lever to be moved forward or backward to advance the throttle. When warm-up is completed, return the lever to neutral detent. The hand lever will automatically snap into the operating range. (If lever does not engage into operating range when returned to neutral, check for excessive pressure of the engine throttle lever against its idle stop).
3. When operating the "MT-2" control, shift crisply out of neutral into forward or reverse, but do not shift too quickly from forward into reverse. Stay in the neutral or idle position until the boat has lost most of its headway before completing the shift to reverse.

### 9. Maintenance

1. **CORROSION PROTECTION**  
For maximum protection, especially in salt water areas, wipe metallic parts, such as screw heads, cable sleeves, etc., with oil or light grease. Chrome plated hand lever and covers should be washed with fresh water and waxed regularly.
2. **MECHANICAL PERFORMANCE**
  - (a) Periodically check control mechanism for loose fastenings and signs of wear or moving parts, particularly the cable terminals. Lubricate moving parts with a good quality marine grease.
  - (b) Periodically examine cables and engine connections for signs of physical damage. (UNREADABLE TEXT)

## RITCHIE NAVIGATION

### HELMSMAN COMPASS UNIT

#### GENERAL

The Helmsman series was first manufactured by Ritchie in March, 1981. The series consist of the following models.:

- HB-70 Bracket Mount - Open Face Dial
- HB-71 Bracket Mount - Direct Reading Dial
- HF-72 Flush Mount - Open Face Dial
- HF-73 Flush Mount - Direct Reading Dial
- HD-74 Deck Mount - Open Face Dial
- HD-75 Deck Mount - Direct Reading Dial
- HV-77 Bulkhead Mount - Direct Reading Dial

All models are equipped with 45" lubber lines, night lighting, built-in compensators and are fully gumballed.

#### TROUBLESHOOTING

There are usually two problem areas to be concerned with when a Helmsman is brought in for repair: A bubble or dial sticking.

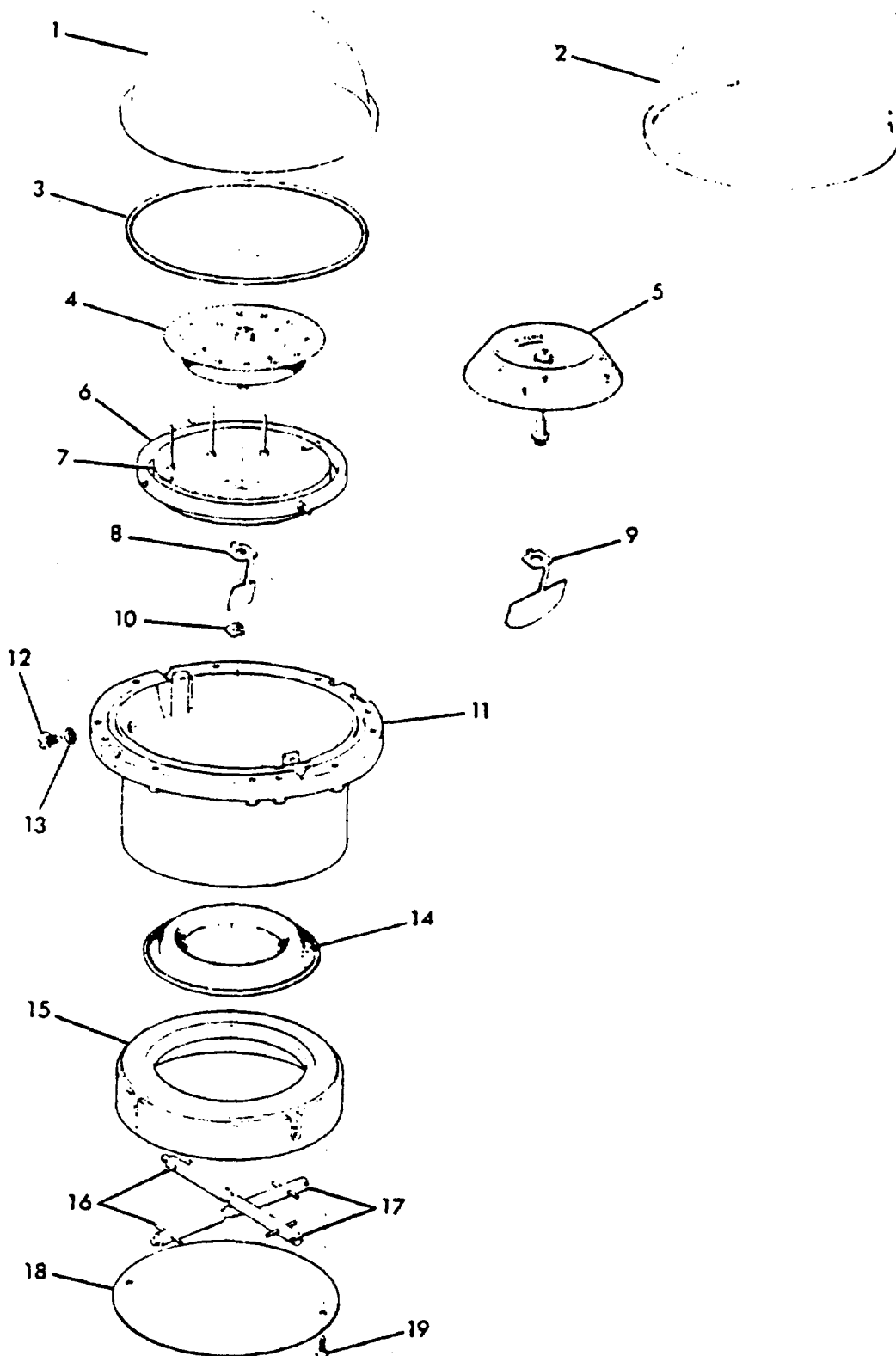
1. Bubble in fluid: This will probably be the most common problem you will encounter. It can be caused by a cracked dome, ruptured diaphragm, defective "O" ring, cover screws not "bottomed" properly or fluid not vacuumed sufficiently. Caution: If watertesting to ascertain point of leakage, do not apply more than one pound of air pressure or the diaphragm may be ruptured.
- 2 Dial sticking: It is good practice to check the pivot and jewel condition before the compass is disassembled because with fluid to dampen the card action, any defect will be easier to see. Allow the dial to completely settle, observe the heading and then deflect the dial two or three degrees with a original position. Failure to do so indicates a defective pivot or jewel, and the entire dial assembly should be replaced (P/N 13J1X or 13J2X).
- 3 Discoloration: If the fluid is discolored, the unit should be disassembled and all parts cleaned with fresh compass oil. The dial assembly must be either cleaned or replaced. Be sure to replace both the "O" ring and diaphragm as contamination in one of these parts caused the discoloration originally.

Disassembly: The exploded views that accompany these instructions simplify disassembly. Care should be taken not to disturb the compensators so that any adjustment will remain the same when the unit is returned to the customer.

#### NOTES

**When reassembling the compass, be sure the self tapping cover screws and diaphragm retaining screws are completely "bottomed". On all models except the HIV-77. when replacing the diaphragm retainer, which also contains the compensators, be sure the compensators are positioned properly. One slotted rod end should be pointing aft and the remaining slotted end should point to starboard. Also, on all models except the HV-77, be sure to replace the two sunshade retaining nuts under the cover. These nuts arc rectangular in shape and must be mounted with the long side down.**

# HELMSMAN COMPASS UNIT



## HELMSMAN COMPASS UNIT

KEY NO.	PART NUMBER	PART NAME	DESCRIPTION	QUAN.
1	13D1	Dome, Models HB-70, 71; HF-72, 73; HD-74, 75		1
2	13D2	Dome, Model HV-77 only		1
3	13D1G1	O-Ring, Dome		1
4	13J1X	Dial Assembly (Open Face) Models HB-70, HF-72, HD-74		1
5	13J2X	Dial Assembly (Direct Reading) Models HB-71. HF-73, HO-75. HV 77		1
6	13H1X	Gimbal Ring Assembly		1
7	13K1X	Lubber Line Pan Assembly		1
8	13H1Z1	Tab, Balance (For Open Face Dial Assembly)		1
9	13H1Z2	Tab, Balance (For Direct Reading Dial Assembly)		1
10	9H1Z1U1	Retainer. Balance Tab		1
11	13C1	Bowl		1
12	1C1B1	Screw, Fill Plug		1
13	4C2R1G1	O-Ring, Fill Plug Screw		1
14	13N1	Diaphragm		1
15	13N1U1	Retainer, Diaphragm		1
16	13G1J1	Magnet, Compensator, Models HB 70. HF 72, HD 74		4
	13G1J2	Magnet. Compensator. Models HB-71, HF-73. HD-75		4
17	13G1P1	Rod, Compensator, Models HB-70, HF-72, HD-74		2
	13G1P2	Rod, Compensator, Models HB-71, H-73, HD-75		2
18	13G1L1	Cover, Compensator		1
19	13E1B1	Screw, Compensator Cover		2

## RECHARGING

Have your extinguisher recharged immediately after any use. Partial discharge may cause the extinguisher to leak. Fire extinguishers require special equipment and trained personnel to properly repair or refill them. For your safety and professional competency have this extinguisher serviced by your authorized Amerex Distributor.

## IMPORTANT NOTICE TO BOAT OWNERS

If you are going to hang this extinguisher in your boat, be sure to read the nameplate carefully. Near the words "Underwriters Laboratories, Inc." the nameplate says if it is Coast Guard approved and, if so what bracket you must hang it in. Marine approval is valid only when the correct matching bracket is used, a substitute is illegal. Make certain your extinguisher and bracket meet Coast Guard regulations.

Distributed by:

## TYPES OF FIRES

LETTER SYMBOL      PICTURE SYMBOL

### TYPES OF FIRES

**A** FOR WOOD PAPER CLOTH TRASH AND OTHER ORDINARY MATERIALS



**B** FOR GASOLINE, GREASE, OIL PAINT AND OTHER FLAMMABLE LIQUIDS



**C** FOR LIVE ELECTRICAL EQUIPMENT.



Use your extinguisher only on the types of fires designated by the letters and symbols shown above and on the nameplate. Red sloth means Do Not Use On That Type Fire.

This extinguisher has been manufactured and tested in accordance with the applicable standards of Underwriters Laboratories, Inc. (UL). It also complies with industry standards as presented in the National Fire Protection Association Pamphlet No. 10 "Standard For Portable Fire Extinguishers" Standard NFPA 10 may be obtained from the National Fire Protection Assoc. Batterymarch Park, Quincy, MA 02269.

## INSPECTION

This extinguisher should be inspected monthly for any possible damage, corrosion, leakage or obstructions in the discharge outlet.

Check the plastic seal wire to be sure that it is intact. Check for any dents or damage. Clean the unit so the instructions on the label are clearly visible.

Carbon Dioxide extinguishers should be weighed (full weight is indicated on the nameplate).

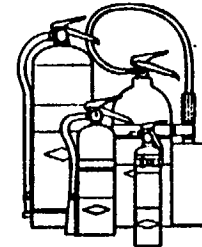
For extinguishers with pressure gauges (stored Pressure Water, AFFF, Dry Chemical or Halon 1211) check the needle indicator - It should be in the green area and pointing straight up. If it is full and the extinguisher should be weighed (full weight is indicated on the nameplate).

**NOTE: Changes in temperature may cause the indicator on a gauge dial to vary on stored pressure type extinguishers. The green area is the "charged zone" when the temperature is cold the indicator may read on the low side of the green and if the temperature is hot it may be high in the green. The true reading may be checked by placing the extinguisher in a normal room temperature of 70 F. for several hours.**

AN INSPECTION TAG HAS BEEN MADE PART OF THIS OWNER'S MANUAL. PLEASE HANG IT ON THE UNIT AND RECORD YOUR MONTHLY INSPECTIONS.



## OWNER'S MANUAL for AMEREX HAND PORTABLE FIRE EXTINGUISHERS



**IMPORTANT THIS MANUAL CONTAINS INFORMATION ON THE TYPES OF FIRES YOU MAY ENCOUNTER. THE CAPABILITIES OF THIS EXTINGUISHER. HOW TO USE THE EXTINGUISHER. WHERE TO INSTALL IT. HOW TO INSPECT AND MAINTAIN IT.**

**PLEASE REVIEW THE NAMEPLATE AND THIS MANUAL WITH EVERYONE WHO MIGHT EVER NEED TO USE THIS EXTINGUISHER.**

**AMEREX CORP.  
TRUSSVILLE, ALABAMA 35173**

Printed in U.S.A.      P/N 00914

## INTRODUCTION

This fire extinguisher has been manufactured by Amorex to heavy duty. Industrial application specifications, designed with dependable fire fighting capabilities, long life and ease of servicing as the prime objectives. Constant quality control and modern manufacturing facilities assure you of the best value for your fire fighting dollar. Amorex Pride In Its workmanship is reflected In its guarantee to repair or replace any extinguisher which evidences any defect for a full five years. (For warranty restrictions please see your Amorex distributor.)

## IMPORTANT

Stored pressure Water and AFFF extinguishers are shipped empty from the factory. The unit must be filled and pressurized before being placed into service.

### CAUTION

**Do not use Water or AFFF extinguishers as protection against cooking grease fires or water base flammable liquid fires such as Alcohols or Keytones (Acetone, MEK). Use may be ineffective or result in spreading the fire.**

Dry Chemical, Halon 1211 and Carbon Dioxide extinguishers are shipped factory charged. Do not test your extinguisher since even a small amount of discharge could cause it to slowly lose the rest of its charge, rendering it useless in case of a fire.

### CAUTION

**Use of dry chemical agent extinguishers on fires involving delicate electronic equipment or aircraft is not recommended. It may successfully extinguish the fire but may damage the equipment beyond repair.**

## INSTALLATION

Hang your extinguisher in an accessible location with the top 3 1/2 to 5 feet above the floor and near a doorway. Do not hang it where you would have to walk through a possible fire to reach it.

Do not hang it on an extremely hot or cold location (the nameplate on the extinguisher tells you the exact temperatures it can withstand). Never throw it in a fire as it could explode.

Keep it out of the reach of small children.

## IN CASE OF A FIRE

1. Have everyone evacuate the area immediately.
2. Call the fire department even if the fire appears to be small. The fire dept phone number should be posted at each phone.
3. Use your extinguisher properly, according to the instructions on the nameplate and in this manual. A large fire should be fought by professionals. Be prepared to leave the area if the fire cannot be immediately controlled.

## REMEMBER

Extinguishers are a first aid appliance. Discharge times for the various types are listed below. Evacuate the area if the fire appears to be out of control.

## DISCHARGE TIMES

Stored Pressure Water, AFFF- 45 - 65 seconds  
 Dry Chemical (2 1/2 lb - 20lb ) 10 - 30 seconds.  
 Halon 1211 (2 1/2, lb. 20 lb.) 10 - 23 seconds  
 Carbon Dioxide ( 5lb. - 20 lb.) 10 - 19 seconds

## HOW TO USE

1. HOLD THE EXTINGUISHER UPRIGHT AND PULL THE RING PIN SNAPPING THE PLASTIC SEAL.
2. STAND BACK 8 TO 10 FEET FROM THE FIRE AND AIM AT THE BASE OF THE FIRE NEAREST YOU
3. KEEPING THE EXTINGUISHER UPRIGHT. SQUEEZE THE HANDLES TOGETHER TO DISCHARGE AND SWEEP FROM SIDE TO SIDE. MOVE CLOSER AS THE FIRE IS EXTINGUISHED. BUT NOT SO CLOSE AS TO SCATTER THE BURNING MATERIAL.
4. WHEN THE FIRE IS OUT, WATCH FOR RE-IGNITION.
5. EVACUATE AND VENTILATE THE AREA IMMEDIATELY AFTER USE. THE FUMES AND SMOKE FROM ANY FIRE MAY BE HAZARDOUS AND CAN BE DEADLY.

THESE OPERATING INSTRUCTIONS. WHICH ARE ALSO ON THE EXTINGUISHER NAMEPLATE. DIRECT YOU IN THE PROPER USE OF THIS UNIT.

- (1) HOLD UPRIGHT PULL RING PIN (to snap safety seal)
- (2) START BACK 10 FEET AIM AT BASE OF FIRE



- (3) SQUEEZE LEVER SWEEP SIDE TO SIDE



Attach To Extinguisher

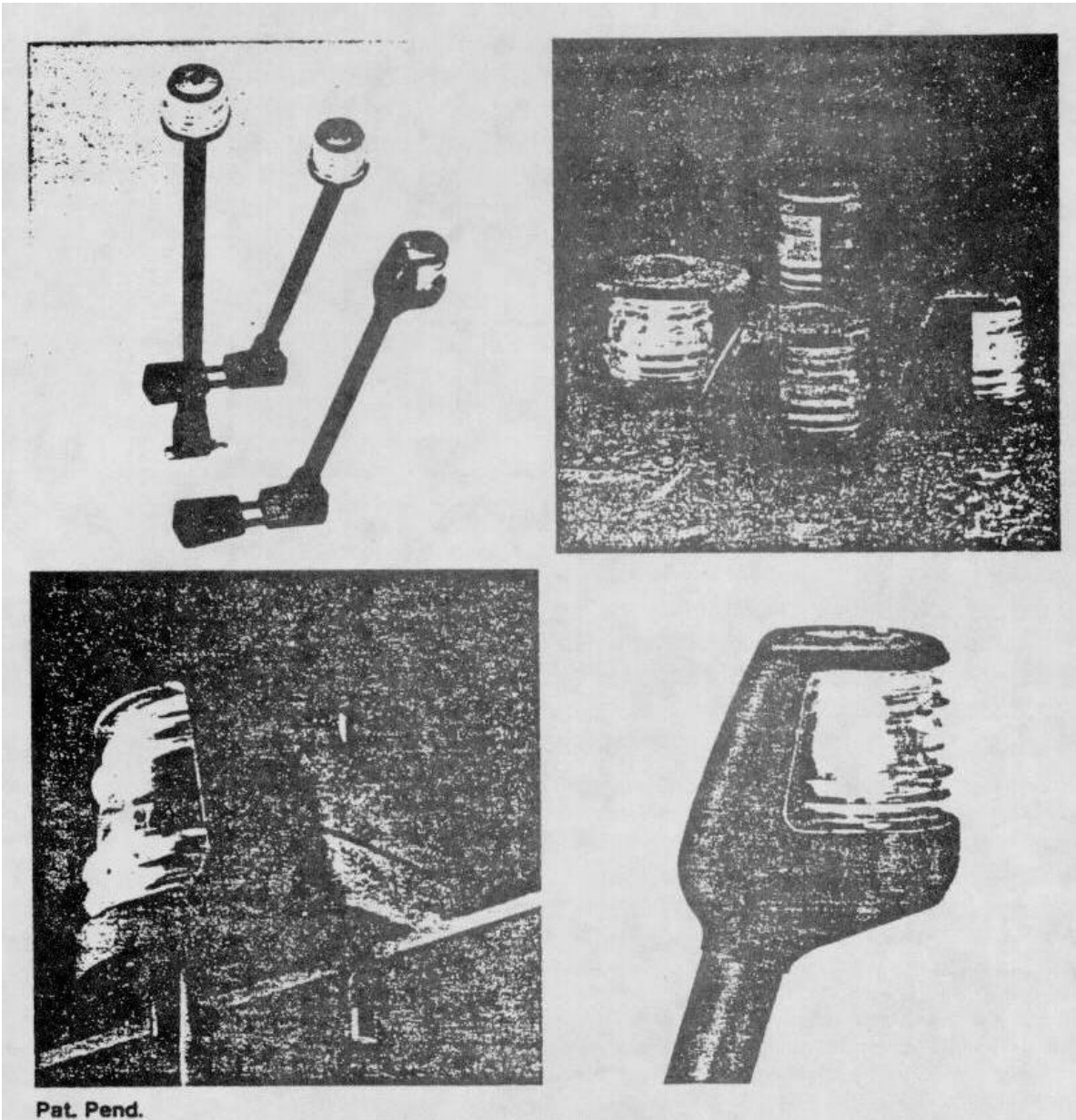
Cut Along Dotted Line

**IMPORTANT INSPECTION RECORD FASTEN TO EXTINGUISHER BEFORE INSTALLATION DO NOT REMOVE FOLLOW INSPECTION INSTRUCTIONS IN MANUAL AND ON EXTINGUISHER.**

DATE	INSPECTED BY

**HAVE EXTINGUISHER PROFESSIONALLY MAINTAINED AND RECHARGED IMMEDIATELY AFTER ANY USE.**

## The New Powerboat Lights



### AQUA SIGNAL 20

For the safety conscious boater,  
critical technician,  
fastidious designer  
and rock bottom cost controller

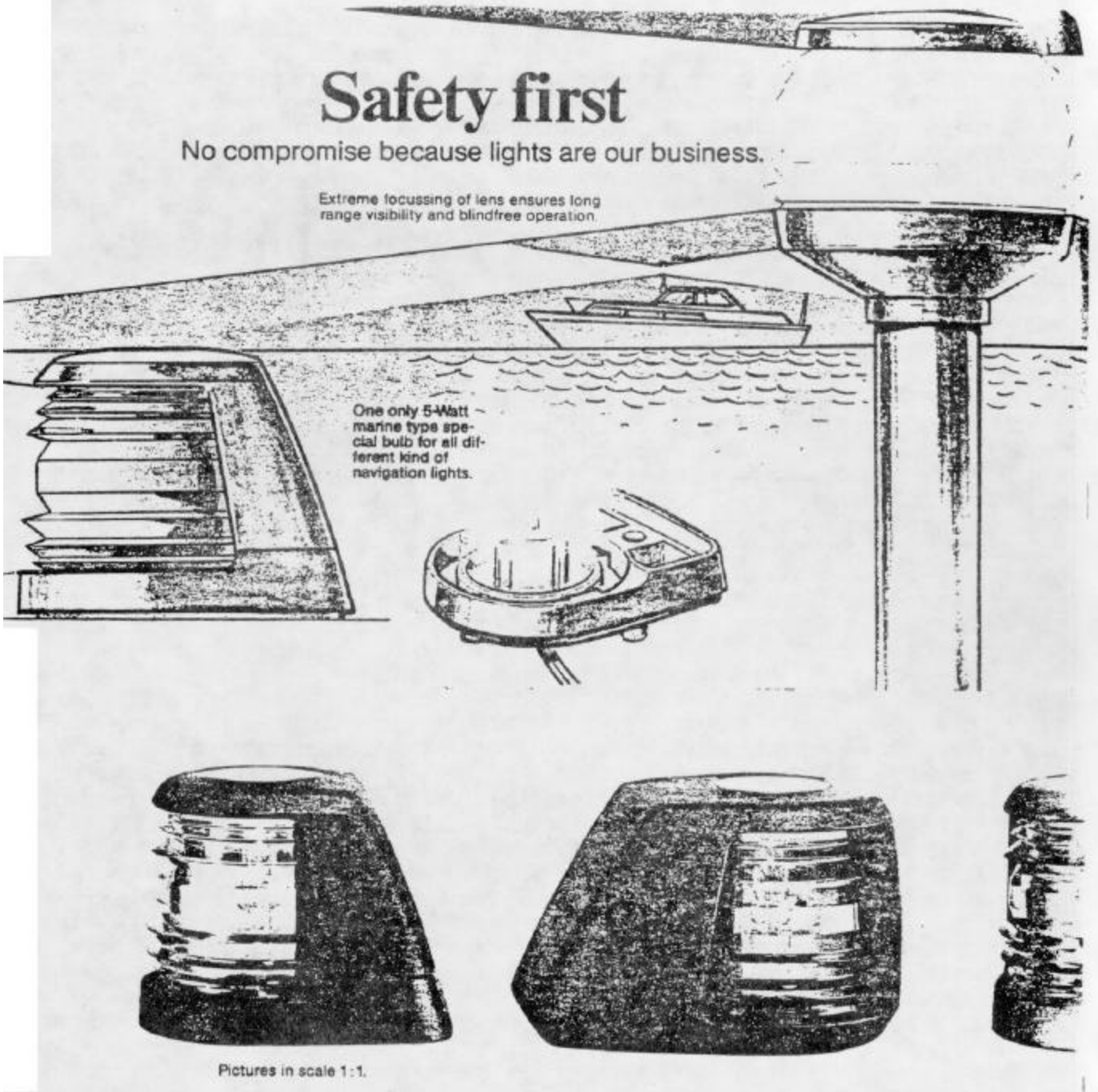
**AQUA<sup>®</sup>  
SIGNAL**

# Safety first

No compromise because lights are our business.

Extreme focussing of lens ensures long range visibility and blindfree operation.

One only 5-Watt marine type special bulb for all different kind of navigation lights.



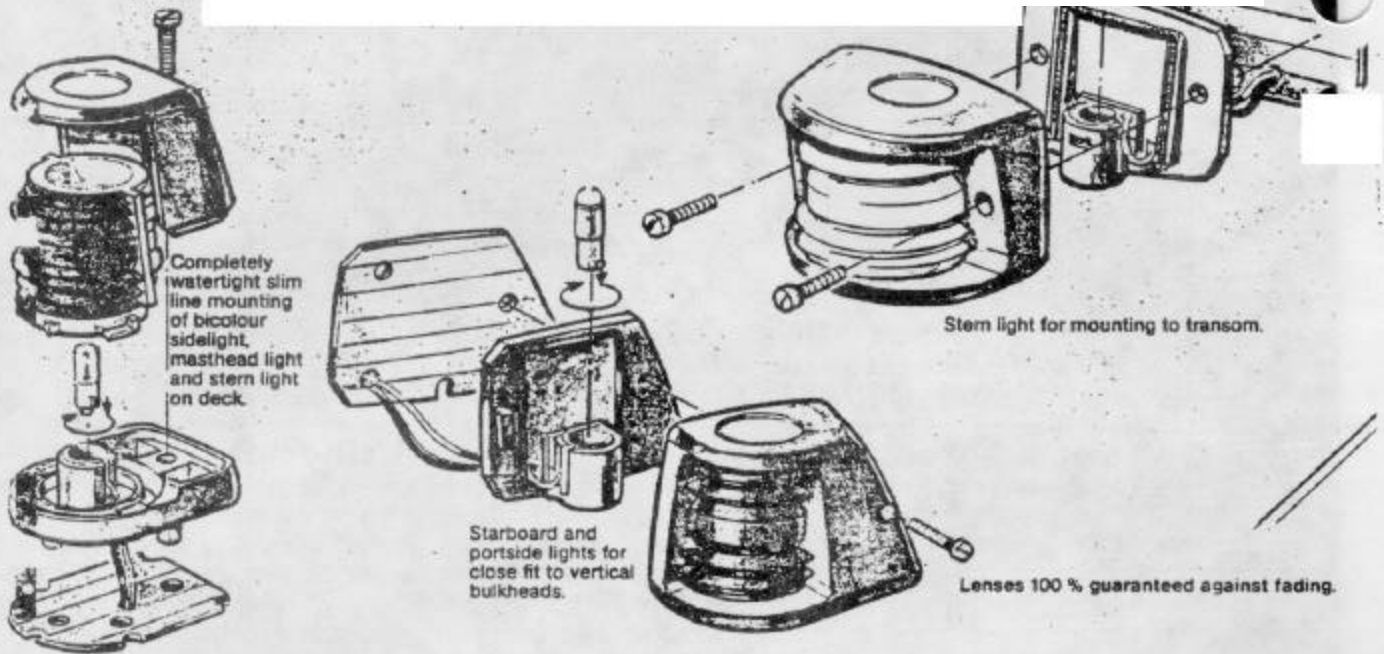
The concept of the new powerboat navigation lights series 20 to minimize electrical consumption and yet to achieve maximum light output has been put into reality.

The vital components, bulb and fresnel lens have been computer planned and long time bench tested.

One type of bulb only is being utilized for all different kind of navigation lights. We've done away with the old system of supplying different wattage bulbs for different visibilities. The new lenses cover the whole range. The age old problem of stray light, that blinds the operator, we've also solved at the same time. The light is concentrated into the direction where it is supposed to be, where it can be seen by others and not to illuminate the deck or the ocean.



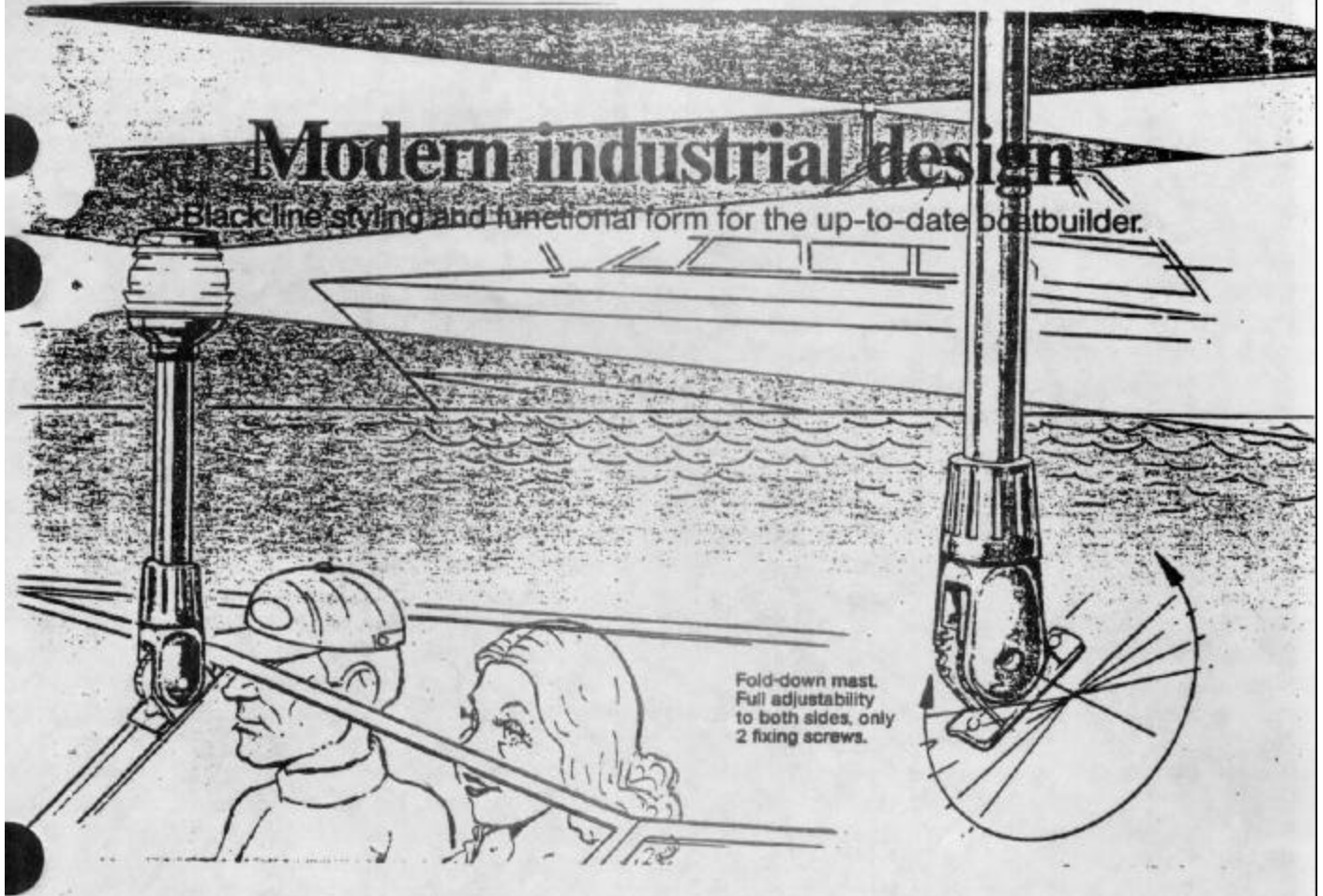
**Quality - no coincidence-**  
Perfect modular design guarantees lasting top quality



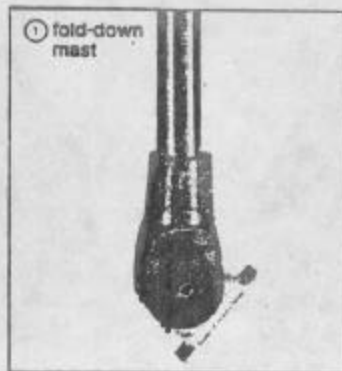
Only a few, but very precise components create a product of superior quality so far unknown to the industry. Only the know how of AQUA SIGNAL, the world's largest manufacturer of navigation lights could come up with such a solution. Lanterns mounted on deck, where they are permanently exposed to water have been designed particularly with this problem in mind. When mounted, these fixtures are absolutely watertight, ventilation takes place through the cable hole leading to the inside of the boat. All parts are of marine polycarbonate with a special addition of glassfibre for max. mechanical stability. The lens is also made of polycarbonate with a no fade guarantee. All plastics used are of the marine type, that means UV-stabilized, non-magnetic, corrosionproof and non-inflammable.

# Modern industrial design

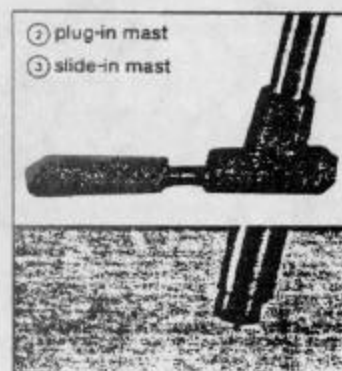
Black line styling and functional form for the up-to-date boatbuilder.



Fold-down mast.  
Full adjustability  
to both sides, only  
2 fixing screws.



① fold-down  
mast



② plug-in mast  
③ slide-in mast

Navigation lights are no longer simple pieces of lighting equipment, but precision optical instruments. Because of blinding and other unwanted side effects of highly polished surfaces AQUA SIGNAL consequently uses black line styling also on series 20. No more worry with chrome plating peeling off the fixtures.

Scope of delivery:

(1) Fold down mast with allround light.

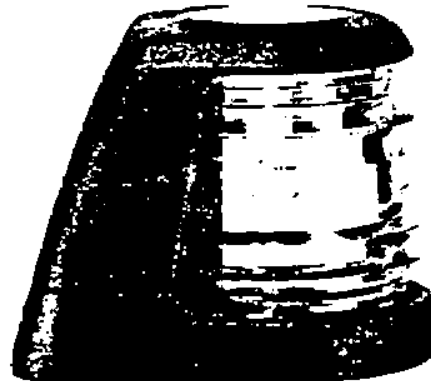
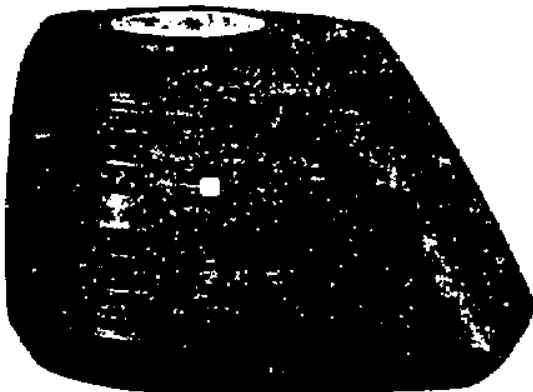
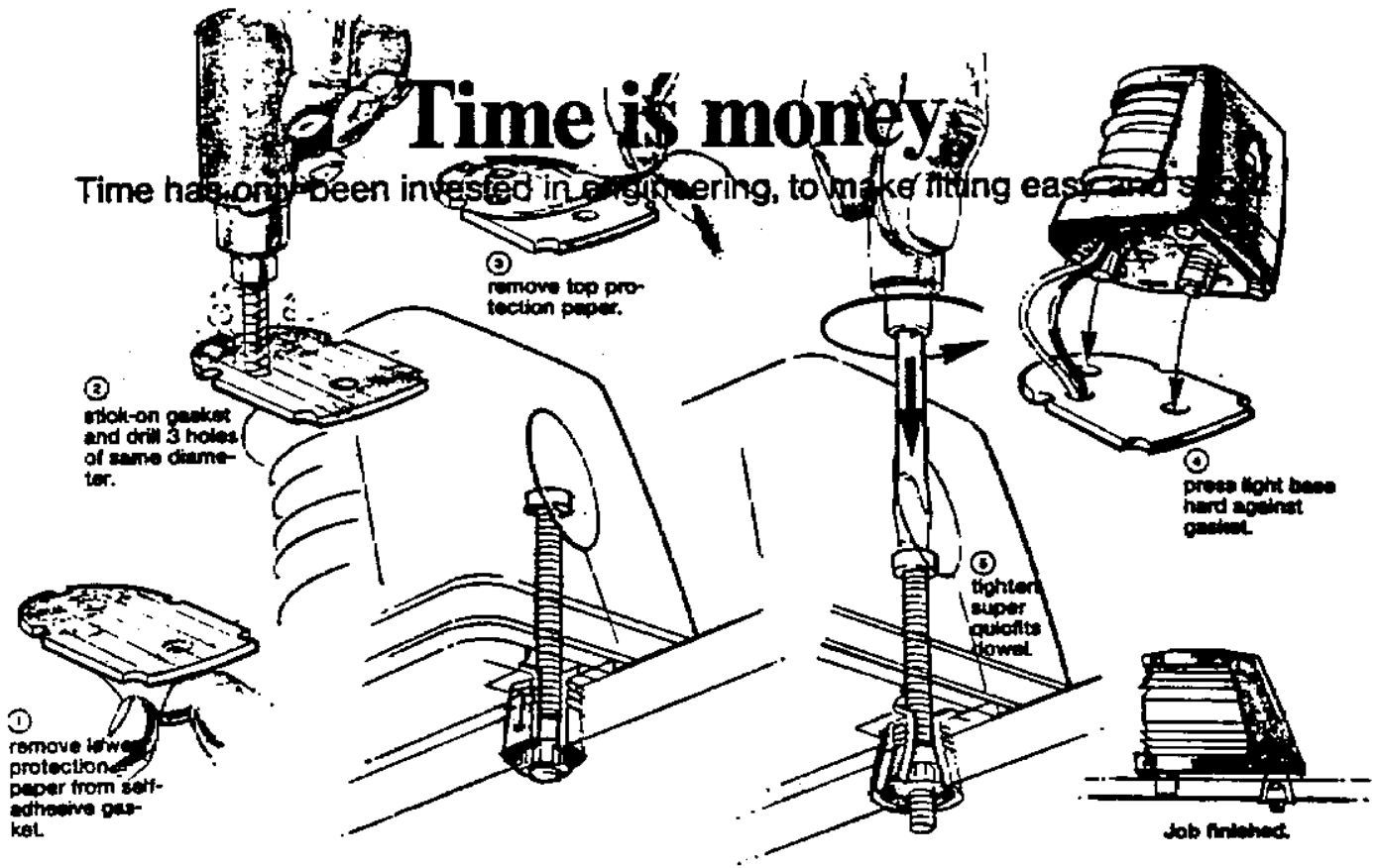
(2) Easy to fit plug-in mast with 15° tilt. Is tucked away during day time and plugged-in at night, a rubber cover prevents water entering the terminals.

Delivery with: Allround white light, Bicolour side light, Masthead light, Stern light

(3) Slide-in type with a 15° tilt, height may be adjusted according to requirements. Delivery with: Allround white light.

# Time is money

Time has only been invested in engineering, to make fitting easy, and so



This is an important factor for cost controlling. What good is a rock bottom low lantern price when longer fitting time eats away all the savings? For series 20 AQUA SIGNAL has developed a new fixing system, that will save the boatbuilder or consumer a lot of time.








This is all that needs to be done:










- stick on self-adhesive gasket
- drill 3 holes of same diameter
- push light on gasket, tighten set screw.

No need to dismantle the lights at any of these stages, bulbs and wires are fitted.  
Navigation lights on mast are also easy to fit

**AQUA SIGNAL 20**

The power boat navigation lights for each and every purpose.

Item No.		Minimum visibility	Dimensions HxBxD	Item No. spare bulbs	Item No. replacement lenses
	Starboard	<b>33571-001</b>	1 nm 2" x 3" x 1,4" 53 x 77 x 36 mm	904-00384	9-3571-008
	Port	<b>33572-001</b>	1 nm 2" x 3" x 1,4" 53 x 77 x 36 mm	904-00384	9-3572-011
	Bicolour side	<b>33575-001</b>	1 nm 2" x 2" x 2,5" 51 x 49 x 63 mm	904-00384	9-3575-002
	Masthead	<b>33574-001</b>	2 nm 2" x 2" x 2,5" 51 x 49 x 63 mm	904-00384	9-3574-014
	Stern - horizontal -	<b>33576-001</b>	2 nm 2" x 2" x 2,5" 51 x 49 x 63 mm	904-00384	9-3576-002
	Stern - transom -	<b>33573-001</b>	2 nm 2,3" x 3" x 1,5" 59 x 75 x 38 mm	904-00384	9-3573-009
	Allround white with pedestal mount	<b>33570-030</b>	2 nm 4" x Ø 2,4" 102 x Ø 60 mm	904-00384	8-3570-003

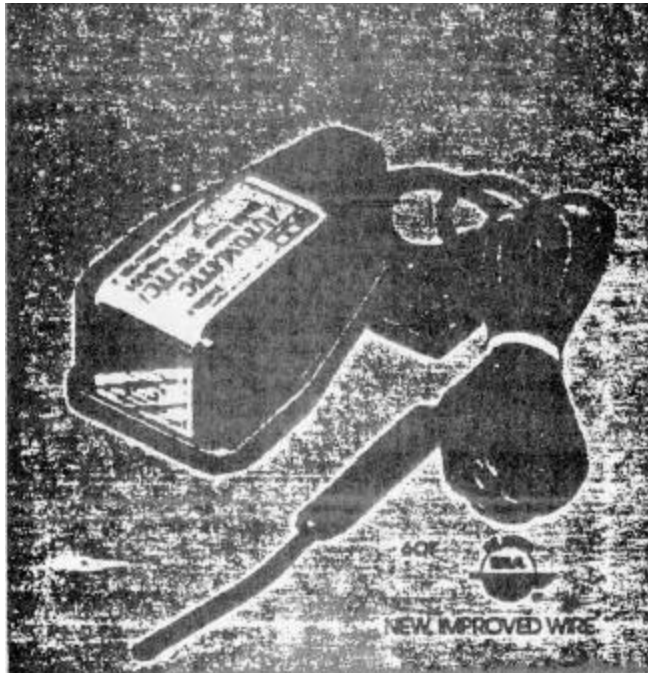
Item No.	Adjustable fold down	Plug-in	Slide-in
Technical data see above.			
	14"/356 mm <b>33570-001</b>	42"/1066 mm <b>33570-016</b>	24"/ 610 mm <b>33570-022</b>
	18"/457 mm <b>33570-002</b>	48"/1219 mm <b>33570-017</b>	
		54"/1372 mm <b>33570-018</b>	
	14"/356 mm <b>33570-005</b>	42"/1066 mm <b>33570-010</b>	24"/ 610 mm <b>33570-020</b>
	18"/457 mm <b>33570-006</b>	48"/1219 mm <b>33570-011</b>	
		54"/1372 mm <b>33570-012</b>	
	14"/356 mm <b>33575-003</b>	6"/ 152 mm <b>33575-011</b>	
	18"/457 mm <b>33575-004</b>		
		6"/ 152 mm <b>33575-010</b>	
	14"/356 mm <b>33574-003</b>	48"/1219 mm <b>33574-010</b>	48"/1219 mm <b>33574-020</b>
	18"/457 mm <b>33574-004</b>		
		6"/ 152 mm <b>33576-010</b>	24"/ 610 mm <b>33576-020</b>

Quoted heights are in a vertical line from top to deck when mounted.



**BROWNING MARINE INC**  
 33W 480 Fabyan Parkway Suite 105  
 West Chicago Illinois U.S.A. 60185  
 (312) 232-6425 TWX 9102303110

aqua signal AHLEMANN + SCHLATTER GMBH. + CO. KG.  
 Manufacturers of Marine Lighting and Electronics  
 P.O. Box 44 85 40 · D-2800 Bremen 44 · W.-Germany  
 Telephone: +49 421 66011 Telex: 44 0228 as



**MAYFAIR**

**BILGE PUMP SWITCHES  
AND KITS**

**601 AUTOMATIC BILGE PUMP SWITCH**

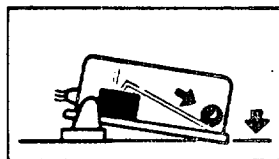
NOW includes an In-line fuse holder

Make any electric bilge pump operate entirely automatically with the 001 Switch installation takes only minutes with easy to follow illustrated instruction, The extraordinary reliability of the 601 Switch is due to a difference you can actually hear. A time proven micro-switch is ultrasonically sealed inside the thermoplastic housing and activates your bilge pump with a solid audible clicking sound. As water exceeds safe limits the Pump is turned on by a rolling stainless steel bearing that changes pressure on the micro-switch Rapid on/off cycling is prevented by a built-in differential of 1-5/8 inches It won't turn on until the water level is 2 inches deep. but stays on until the bilge is evacuated.

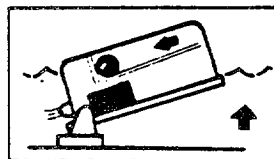
#601 AUTOMATIC SWITCH for 6-VDC to 32-VDC



BETTER BECAUSE ...



POSITIVE ON OFF  
ACTION MICRO-SWITCH



ABSOLUTELY NO  
MERCURY TO SLOSH

BEST AVAILABLE COPY

Symptom	Possible Cause	Cure
<b>Reduced Flow</b>	<b>Plugged strainer</b>	Clean outside of strainer and clean debris from around impeller.
	<b>Discharge line plugged with trash</b>	Clean out hose by back-flushing.
	<b>Polarity reversed</b>	Turn pump ON. Remove pump from strainer base and make certain that impeller rotation matches arrow direction.
	<b>Low battery voltage</b>	Check battery condition and charge if necessary.
	<b>Kinked discharge hose</b>	If hose is kinked because of sharp bend, convert to Rule #80 hose which will not kink at bends—or put in copper plumbing fitting to take the bend.
	<b>Airbound</b>	Trying to pump the bilge too low may cause the pump to gulp air. This can be cured by mounting the automatic switch at a higher level (1/4" to 1/2" higher than the pump base should be sufficient).
<b>No water pumped</b>	<b>Wire connections</b>	Make sure no wire connections are corroded through. Visual check is not enough—a slight pull on each wire will tell if the wires are still joined. Check to be sure no wire joints are hanging down into the water.

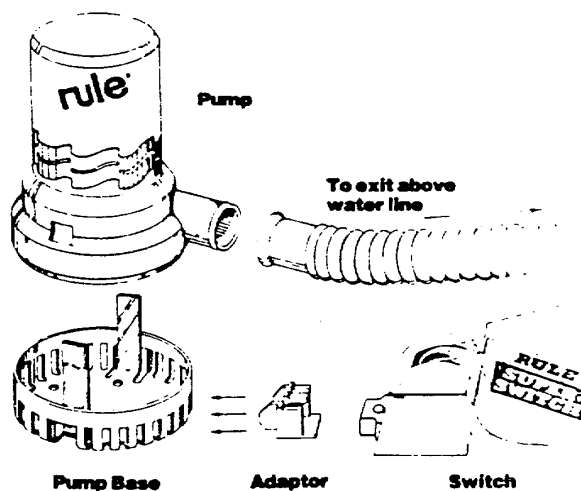
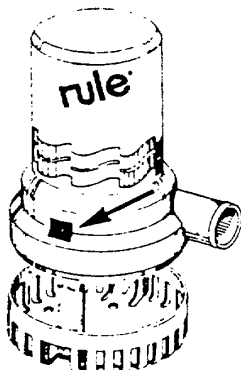
...in step 9. If fuse is correct and it still blows, check impeller through inlet door to be sure it is not jammed or stuck on debris.

	<b>Float switch failure</b>	Lift end of float switch up—if pump runs, switch is OK. If pump does not run, turn Manual switch—if pump runs, automatic switch has failed.
<b>Pump won't shut off</b>	<b>Something under float</b>	Clean under the float to make sure debris is not holding the float up.
	<b>Stuck float</b>	Check to see that float is loose and not gummy or galled.
	<b>Switch mounted too low</b>	If the pump is full of air and the automatic switch has not reached the OFF position, then the switch may be mounted too low for the pump. It should be reinstalled to a higher level; the pump base.
<b>Wires overheated, Melted insulation</b>	<b>Combination of jammed impeller and wrong size fuse.</b>	Be sure impeller is clean and free to rotate. Reset fuse to proper size (rewire the pump in step 9). Rewire and/or switch.
<b>Repeated blown fuse</b>	<b>Fuse size Jammed impeller</b>	Be sure the fuse is the correct size. Check impeller to be sure that it is not jammed by fish and debris.

**INSTRUCTIONS**

**STEP 1**

Remove the strainer from the bottom of the pump by depressing the lock tabs on the side of the pump.



**STEP 2** Determine the desired location for the pump. Usually (if only one pump is used) it is located where the water is deepest in the bilge with the boat at rest.

**STEP 3** Position the strainer so that the pump nozzle will be in position to connect with the hose.

**STEP 4** Fasten the strainer in position.  
**A.** On wood — fasten down with stainless steel screws provided.  
**B.** On fiberglass or metal — fasten with screws or fiberglass a wooden block in place and then fasten the strainer to this block.

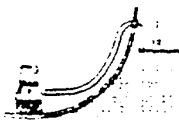
**STEP 5** Mount the pump on the strainer, listening for the two lock-tabs to "snap" into place. (The pump may be reversed on these tabs if desired.)

**STEP 6** Attach 1 1/2" I.D. hose to the discharge nozzle and fasten with a stainless steel clamp. The use of Rule #80 flexible hose will allow you to make right angle bends without kinking the hose. If your pump is replacing a competitive model with smaller diameter hose which is hard to replace, you may use Rule adaptor model #69 to adapt to the smaller hose.  
**Note:** Restricting the flow from a Rule pump with smaller hose DOES NOT DAMAGE the pump. It only reduces the flow slightly.

**STEP 7** **Sailboat Installations**  
 For sailboat installations, place the thru-hull fitting high in the stern at a level where continued submergence of the fitting will not take place. In some cases, it may be easier to discharge into the drain hose below the galley sink.

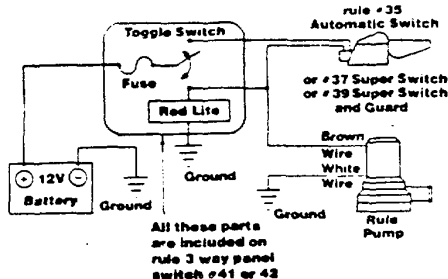
**Power Boat Installations**  
 Install a full size thru-hull fitting to handle the high quantity flow of the Rule pump. Rule Model #60 thru-hull is the correct size. Locate the thru-hull fitting at least 12" above the water line to prevent water from coming back into the hull when the pump is off.

**Note:** The safety standards of the American Boat and Yacht Council state that no check valves shall be used in the discharge line.



**Wiring for Automatic Operation**

The **automatic system** assures that the vessel is always pumped out, even when unattended. In addition, it extends the life of the pump and your battery by automatically shutting the pump off when the water has been pumped out. The automatic system can also provide for manual control of the pump by installing a rule# Panel Switch (Models #41, 42 and 45). These switches have a "fail-safe" feature which automatically returns the switch to the "off" position, preventing the pump from being inadvertently left on.



**STEP 8** **Wiring**  
 In order to prevent electrolysis and corroded wire connections, it is essential that all wire ends and terminals be sealed with rule# Heavy Duty Marine Sealant and located above the highest possible water level by fastening with insulated staples or plastic straps.

When installing your pump, 16 gauge wire should be used. However, if your installation is over 20' from the battery source, the wire size should be increased to 14 gauge. A wire which is too small causes undesirable heat in the wires and results in a voltage drop and lower performance of the pump.

**STEP 9** **Fusing**  
 To protect your electrical wiring and automatic switch from possible overload install a fuse in the positive (+) lead to the battery. The fuse should be sized according to the following chart:

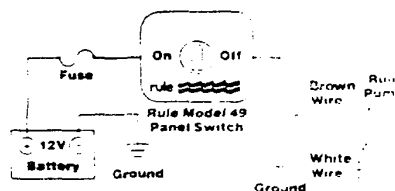
PUMP	1500-12 volt	2000-12 volt	2000-24 32 volt
FUSE	7.5 amp	15 amp	7.5 amp

If using a panel switch with a fuse holder, check to see the proper fuse is being used. You may wish to install rule# Panel Switch with a built-in fuse holder (Models #42.)

**STEP 10** Follow one of the two wiring diagrams

**Wiring for Manual Operation**

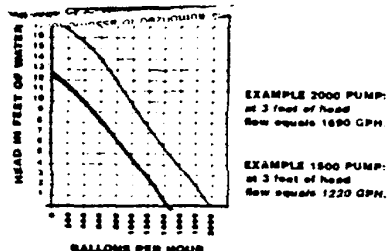
The **manual system** is the simplest system but it only provides ON-OFF control of the pump. Pumps are often left ON longer than needed with this system.



**STEP 11**  
 Polarity is important. If it is not correct, the pump will rotate **backwards**. Water will still come out the discharge nozzle but the flow will be **very much reduced**. On the rule# 1500/2000 pump, the correct polarity will be obtained when the **BROWN** wire of the pump is connected to the POS or + side of the battery. The way to verify that the direction of rotation (and thus the polarity) is correct is to look into the inlet hole on the bottom of the pump while the pump is running and see if the impeller rotates in the direction of the arrow molded into the bottom.

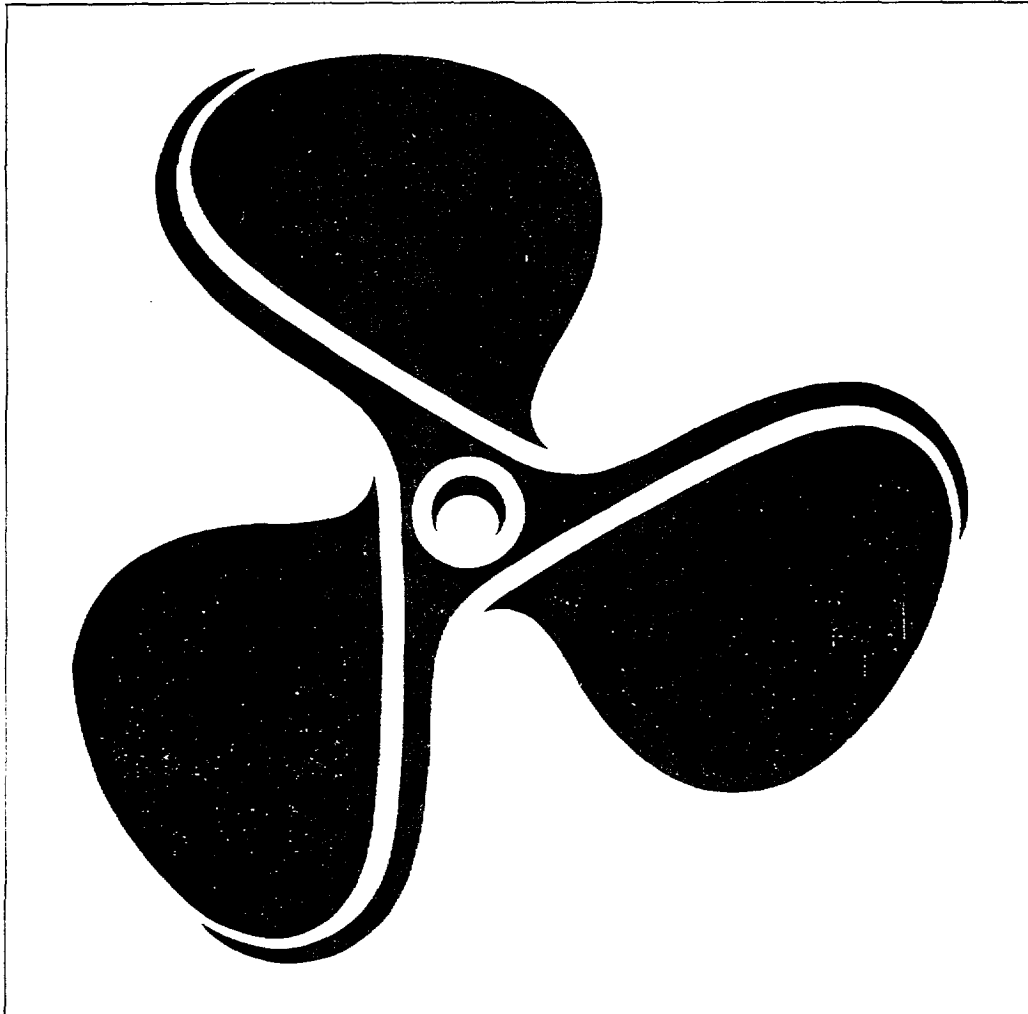
**Storage**  
 The pump may be left in the bilge all winter without damage. Even if pump is frozen, no damage will occur. Do not try to turn pump if pump is embedded in ice.

**Performance Data**



*Marine  
diesel-fuel  
filter/water  
separators*

*Installation,  
operation,  
parts and  
service  
data*



**RACCOR®**




Tested to Coast Guard requirements

Racor Industries Inc P.O. Box 3208 Modesto CA 95353 USA (2095 521-7860 Telex: 359-408)



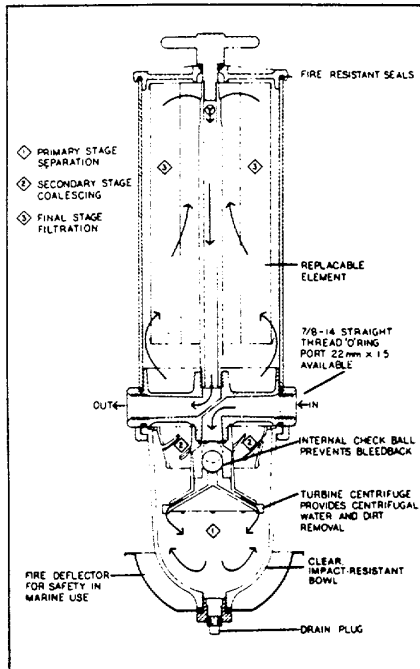
**Marine U.L. listed/U.S. Coast Guard accepted.**

Racor units have passed rugged U.L. Fire and Thermal shock tests, and Racor has the only Marine -  Listed and U.S. Coast Guard accepted Fuel Filter/Water Separators with a see-thru bowl or metal bowl option.

There is a Racor Fuel Filter Water Separator for every marine diesel engine application, including multiple units that can be serviced during continuous operation.

**8 features to save you time and money**

1. Single Unit Tri-functional Design
2. Internal Check Valve System
3. Turbine Centrifuge
4. See-Through Bowl
5. Coalescing
6. Long Life Replaceable Element
7. High Quality Construction
8. Spin-on Handle and Easily Removable Cartridge
9. Exclusive Flame Guard (Pat. Pending)



**marine diesel-fuel filter/water separators**

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All products manufactured or distributed by Racor Industries are subject to the following, and only the following, LIMITED EXPRESS WARRANTIES, and no other:

For a period of one(1)year from and after the date of purchase of a new Racor Industries' product. Racor Industries warrants and guarantees only to the original purchaser-user that such a product shall be free from defects of materials and workmanship in the manufacturing process. The warranty period for pumps and motors is specifically limited to ninety (90) days from date of purchase. A product claimed to be defective must be returned to the place of purchase. Racor Industries, at its sole option, shall replace the defective product with a comparable new product or repair the defective product. This express warranty shall be inapplicable to any product not properly installed and properly used by the purchaser-user or to any product damaged or impaired by external forces. THIS IS THE EXTENT OF WARRANTIES AVAILABLE ON THIS PRODUCT. RACOR INDUSTRIES SHALL HAVE NO LIABILITY WHATSOEVER FOR CONSEQUENTIAL DAMAGES FLOWING FROM THE USE OF ANY DEFECTIVE PRODUCT OR BY REASON OF THE FAILURE OF ANY PRODUCT. RACOR INDUSTRIES SPECIFICALLY DISCLAIMS AND DISAVOWS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ALL WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE (EXCEPT FOR THOSE WHICH APPLY TO PRODUCT OR PART THEREOF THAT IS USED OR BOUGHT FOR USE PRIMARILY FOR PERSONAL, FAMILY, OR HOUSEHOLD PURPOSES), WARRANTIES OF DESCRIPTION, WARRANTIES OF MERCHANTABILITY, TRADE USAGE OR WARRANTIES OF TRADE USAGE.

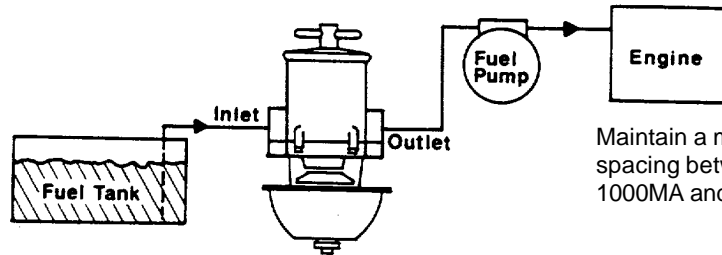
The policy of Racor Industries, Inc. is one of continual improvement in design and manufacturing to insure still finer products; therefore, specifications and equipment are subject to change without notice. Product information published herein, while correct at the time of publication, is subject to change.

**Installation**  
Below Filter Fuel Storage  
Application

1. Remove vacuum side filters in fuel line between fuel tank and fuel pump. Cast-in head or non-removable housing should be adapted with the Racor Spin-On By-Pass (Part NO. 11548). Otherwise, service leave in place. All secondary or pressure side filters located between the pump and engine should be serviced and left in place.
2. Mount Racor Filter/Separator vertically on the vacuum side of the fuel pump or transfer

3. Position unit between the horizontal planes of the bottom of the fuel tank or day tank and pump inlet for minimum restriction to the pump. (See Figure 1).
4. Install fuel line from tank to inlet side of the Racor unit using plated steel fittings and maximum fuel line size available in order to reduce restriction. Any fuel by-pass or return lines returning to suction section of filter which are removed must be routed into inlet

5. Install fuel line from the outlet of the Racor unit to the inlet of the transfer or fuel pump, again using plated steel fittings.
6. Remove lid and prime the system by pouring clean fuel into filter cylinder until full. Replace lid and hand-tighten the T-handle. Carefully clean any accumulation of diesel fuel from the metal deflector bowl.
7. Start engine and test system. (See Troubleshooting Section.)



Maintain a minimum of 5-1/8" vertical spacing between mounting clamps on 1000MA and 1000MAM.

Figure 1

**Installation**  
Above Filter Fuel Storage  
Application

1. Follow Steps 1 and 2 for Below Filter Storage Application.
2. Position unit between fuel tank and fuel pump inlet for minimum restriction to the

3. Follow Steps 4 and 5 for Below Filter Fuel Storage Application.
4. On a 500Ma, 900MA, 1000MA, 73/1000A or 77/1000MA unit, a valve must be installed on the inlet side of the filter system. This valve is necessary when changing elements. (See Figure 2 and Accessories Section.)

5. On a 75/900MA, 75/1000MA, or 79/1000MA unit, a pipe tee with a compound vacuum/pressure gauge must be installed on the outlet side of the filter system. (See Figure 3 and Accessories Section.)
6. Follow Steps 6 and 7 for Below Filter Fuel Storage Application.

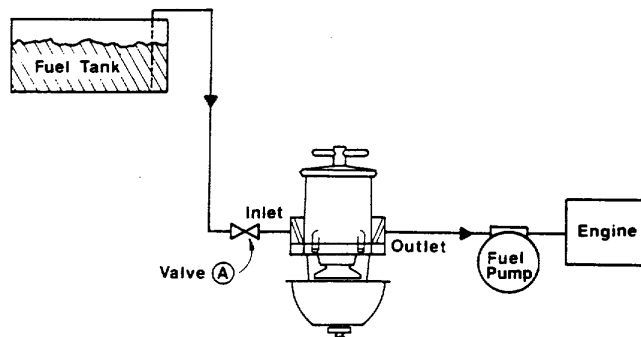


Figure 2

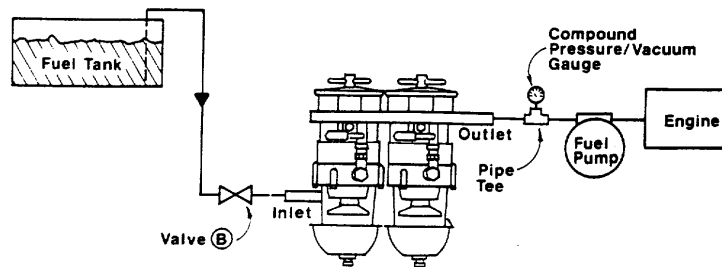


Figure 3

## Service

Elements should be changed at 8 to 15 inches of vacuum (inHg). (See Accessories Section for Gauges.) Measurement should be made between the Racor unit and the fuel pump.

On '75/ and '79/ Series models with valving, all valves are in the open position for normal operation. For continuous operation, one unit may be shut down while under power to change element. During the element change, reduce fuel flow rate to 6 gpm for 79 model or to 3 gpm for 75 model. Below Filter Fuel Storage Application

1. Shut off engine. Remove lid.
2. Inspect gaskets. Replace only if necessary with Racor Marine Gaskets.
3. Remove element.
4. Insert Racor replacement element over center return tube with turning motion. (See Parts Diagram for correct element number.)
5. Top off by pouring clean diesel fuel into filter cylinder until full.
6. Lubricate lid gasket and T-handle O-ring. Replace lid and hand-tighten T-handle. Carefully clean any accumulation of diesel fuel from the metal deflector bowl. The bowl must be drained before water or contaminants reach the bottom of the centrifuge assembly.

**CAUTION: To insure safety, use only plated steel fittings and genuine Racor replacement elements and parts.**

## Above Filter Fuel Storage Application

When replacing element(s) on a 500MA, 900MA, 1000MA, 73/1000MA or 77/1000MA with the engine not in operation.

1. Turn valve "A" off. (See Figure 2.)
2. Remove lid and T-handle. Inspect gaskets. Replace only if necessary with Racor Marine Gaskets.
3. Remove element(s) by means of bail.
4. Insert Racor replacement element over center return tube with turning motion. (See Parts Diagram for correct element number.)
5. Top off by pouring clean diesel fuel into filter cylinder until full.
6. Lubricate lid gasket and T-handle O-ring. Replace lid and hand-tighten T-handle. Carefully clean any diesel fuel from the metal deflector bowl.
7. Open valve "A" and inspect for leaks.

When replacing one filter while another is in service on a 75/900MA, 75/1000MA, or 79/1000MA with the engine in operation:

1. Check outlet gauge. If gauge reads 4 or more inches of vacuum (inHg) close the outlet valve of the unit to be serviced, (See Figure 3.)
2. Follow Steps 2-6 for Above Ground Fuel Storage Application.
3. If outlet gauge reads less than 2 inches of vacuum or reads pressure, slowly close valve "B" until outlet gauge reads 2-4 inches of vacuum.
4. Close the outlet valve of the unit to be serviced.
5. Follow steps 2-7 for Above Ground Fuel Storage Application.

## Maintenance and Troubleshooting Procedures

**New Elements**-Normal vacuum reading can be 1 to 5 inHg at full governed RPM, depending on the hose I.D., length, elbows, pump efficiency, and height of lift from tank. Idle RPM should be near "O" reading with clean element where pump capacity is dictated by engine RPM. If vacuum reading does not return to 1 to 5 inHg after element change, check for the following:

1. collapsed fuel lines
2. tank shut-off valves closed
3. plugged fuel lines

If the inlet to the Racor Filter/Separator is plugged, disconnect inlet line, open drain petcock, and blow out with compressed air. In case of severe stoppages, remove bowl and centrifuge unit and clean with compressed air.

If air bubbles are rising from centrifuge action in the clear bowl, the air leak is between inlet side of the Racor system and tank. Check for:

1. loose fittings
2. pin holes in lines
3. cracked tank stand pipe
4. out of fuel condition
5. O-ring not seating
6. improper flare angles on hose fittings.

If no bubbles are noted in bowl and air suction is still evident, examine outlet side of the Racor system to fuel pump. Check for:

1. loose fittings
2. pin holes in line
3. O-ring not seating
4. improper flare angles on hose fittings
5. fuel pump seats
6. bleed-off fitting on top of Cummins fuel pump
7. top gaskets on Racor Filter/Separator

\*(For example, a 37° flared female hose fitting pulled up tightly to a 45° male fitting sometimes causes a hair line crack, resulting in air suction.)

If Racor Filter/Separator is sucking air at bowl drain fitting gasket or T-handle and top, and cannot be stopped by wetting gasket with fuel and hand tightening only, replace gasket.

**NOTE: Methanol, ethanol and alcohol based additives will cause damage to non-metal parts in the Racor unit and the entire engine system. When use of an additive is determined to be necessary, use only genuine RACOR DIESEL FUEL ADDITIVES. RACOR DIESEL FUEL ADDITIVES provide preventive maintenance protection all year long, help cold weather starts, protect against damaging foulants, extend element life and maximize the efficiency of fuel filters and water separators.**

**Bleed Back** - If fuel in the filter/separator bleeds back to the tank an air leak or check valve seating problem is indicated. To inspect check valve seat, remove bowl ring, bowl and turbine centrifuge, turning counter-clockwise. (See parts diagram for identification of parts.)

Inspect check ball and seat. Clean or replace seat and check ball and lubricate seat and reinstall centrifuge hand tight. Replace bowl ring gasket and reinstall bowl and ring. Fill unit with fuel.






Read and follow the Installation instructions carefully to insure proper performance of your Racor filter/separator.



## Optional Accessories

**Racor**  
**Part No. Description**  
1606B Vacuum Gauge Kit (includes 0 to 15 inHg gauge and fittings necessary for installation)

18-1104	Compound Pressure/Vacuum Gauge
11619	Manual Valve-1" NPT (See Fig. 2)
18351	Manual Valve-1" NPT (See Fig. 3)
18099	Pipe Tee-1" x 1" x 1" NPT (See Fig. 3)

### RACOR FITTINGS CHART

FITTING	RACOR PART NO.	UNIT USAGE	T1	T2
<b>Straight Thread w/O-Ring 90° Elbow Male JIC37°</b> 	9010-4-4 9010-6-4 9010-6-6 9010-10-8 9010-10-10	200 500 500 900/1000 & RD-3 900/1000 & RD-3	7/16-20-w/O-Ring 9/16-18-w/O-Ring 9/16-18-w/O-Ring 7/8-14-w/O-Ring 7/8-14-w/O-Ring	7/16-20 7/16-20 9/16-18 3/4-16 7/8-14
<b>Straight Thread w/O Ring Male JIC37°</b> 	9020-4-4 9020-6-4 9020-6-6 9020-10-6 9020-10-8 9020-10-10	200 500 500 900/1000 & RD-3 900/1000 & RD-3 900/1000 & RD-3	7/16-20-w/O-Ring 9/16-18-w/O-Ring 9/16-18-w/O-Ring 7/8-14-w/O-Ring 8/8-14-w/O-Ring 7/8-14-w/O-Ring	7/16-20 7/16-20 9/16-18 9/16-18 3/4-16 7/8-14
<b>Straight Thread w/O-Ring Female Pipe</b> 	9040-4-4 9040-6-4 9040-6-6 9040-10-4 9040-10-6 9040-10-8 9040-10-8DT 9040-10-12	200 500 500 900/1000 & RD-3 900/1000 & RD-3 900/1000 & RD-3 900/1000 900/1000 & RD-3	7/16-20-w/O-Ring 9/16-18-w/O-Ring 9/16-18-w/O-Ring 7/8-14-w/O-Ring 7/8-14-w/O-Ring 7/8-14-w/O-Ring 7/8-14-w/O-Ring 7/8-14-w/O-Ring	1/4-18 Pipe Thd. 1/4-18 Pipe Thd. 3/8-18 Pipe Thd. 1/4-18 Pipe Thd. 3/8-18 Pipe Thd. 1/2-14 Pipe Thd. 1/2-14 Pipe Thd. 3/4-14 Pipe Thd.
<b>Progressive Barb Hose Fitting</b> 	9010-HF-4-5/6 9010-HF-6-5/6	200FG 500FG	7/16-20-w/O-Ring 9/16-18-w/o-Ring	5/16 (8mm) Hose and 3/8 (10mm) Hose
<b>Progressive Barb Hose Fitting</b> 	9020-HF-4-5/6 9020-HF-6-5/6	200FG 500FG	7/16-20-w/O-Ring 9/16-18-w/O-Ring	5/16 (8mm) Hose and 3/8 (10mm) Hose

FITTING	RACOR PART NO.	UNIT USE	HOSE SIZE:		THREAD	
			SAE 100R5 **	TYPICAL		
<b>Straight Thread w/O-Ring 90° Elbow Barbed Hose Fitting</b> 	9010 HF-10-6	1000 FG 900 FG	#6(5/16" ID)	#6(3/8" ID)	7/8"-14	3/8"-7/8"
	9010 HF-10-8	1000 FG 900 FG	#8(13/32" ID)	#8(1/2" ID)	7/8"-14	3/8"-7/8"
	9010 HF-10-10	1000 FG 900 FG	#10(1/2" ID)	#10(5/8" ID)	7/8"-14	7/16"-1"
	9010 HF-10-12	1000 FG 900 FG	#12(5/8" ID)	#12(3/4" ID)	7/8"-14	1/2"-1 1/8"
<b>Straight Thread w/O-Ring Straight Barbed Hose Fitting</b> 	9020 HF-10-6	1000FG 900FG	#6(5/16" ID)	#6(3/8" ID)	7/8"-14	3/8"-7/8"
	9020 HF-10-8	1000FG 900 FG	#8(13/32" ID)	#8(1/2" ID)	7/8"-14	3/8"-7/8"
	9020 HF-10-10	1000 FG 900 FG	#10(1/2" ID)	#10(5/8" ID)	7/8"-14	7/16"-1"
	9020 HF-10-12	1000 FG 900 FG	#12(5/8" ID)	#12(3/4" ID)	7/8"-14	1/2"-1 1/8"

\* Racor recommends using 9040 fittings for customers' existing pipe that does not match Racor's 37° JIC fitting.

★ For use with UL Listed hose only. Other fittings and adaptors available upon request.

\*\* Hydraulic Hoses which meet or exceed SAE 100RS Test Requirements.

T1 — Unit Port Side

T2 — Fuel Line Side

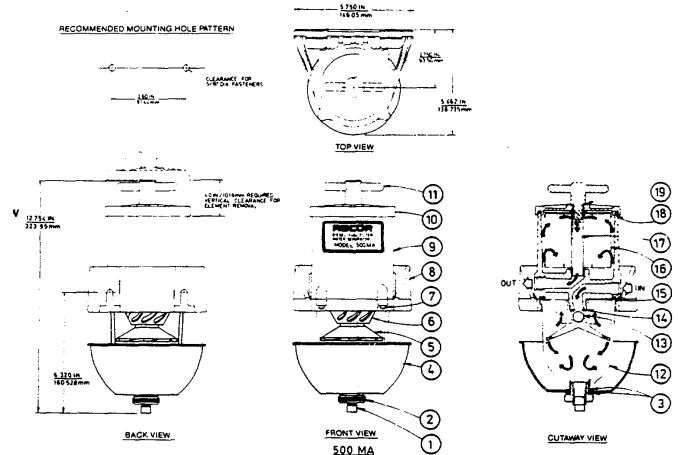
## Parts Diagram

### Model 500MA

Height: 12.754" (323.95 mm)  
 Width: 5.750" (146.05 mm)  
 Depth: 5.462" (138.735 mm)  
 Maximum Flow Rate: 1.05 gpm (4 lpm)  
 Weight: 3.64 lbs. (1.65 kg)

### Parts List

Item	Part No.	Quantity	Description
1	11816	1	Plug-1/4" Pipe
2	11040	1	Fitting-Bowl Drain
3	11041	2	Bowl Drain Gasket
4	15104	1	Bowl-Deflector
5	15013D	1	Turbine Centrifuge
6	15012C	1	Conical Baffle
7	15081	4	Bowl Retainer Screw
8	15090	1	Ring/Bracket
9	15082	1	Body
10	15078	1	Lid
11	11888	1	T-Handle
12	15014A	1	Clear Bowl
13	15011	1	Check Ball
14	15010C	1	Check Ball Gasket
15	15009	1	Bowl-O-Ring
16	2010SM	1	Element -
17	15079	1	Return Tube
18	15005	1	Lid Gasket
19	11350	1	O-Ring



Port threads are NOT suitable for pipe fittings. See fittings chart, page 5, for appropriate fittings.

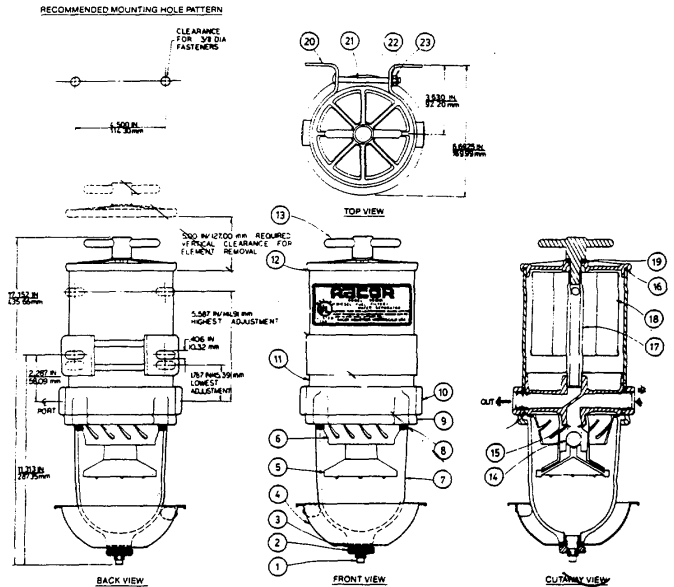
## Parts Diagram

### Model 900MA

Height: 17.152" (435.66 mm)  
 Width: 6.125" (155.575 mm)  
 Depth: 6.6925" (169.99 mm)  
 Max. Flow Rate: 1.59 gpm (6 lpm)  
 Weight: 6.15 lbs. (2.79 kg)

### Parts List

Item	Part No	Quantity	Description
1	11816	1	Plug-1/4" Pipe
2	11040	1	Fitting-Bowl Drain
3	11041	2	Gasket-Bowl Drain
4	11868	1	Deflector-Heat Assm.
5	11026C	1	Turbine Centrifuge
6	11025C	1	Conical Baffle
7	11031A	1	Bowl-Clear
8	11542	4	Capscrew-Filister Hd.
9	11037A	1	Retaining Ring-Bowl
10	110238	1	Base
11	19002	1	Outer Cylinder
12	110058	1	Lid
13	11888	1	T-Handle
14	11027	1	Check Ball-3/8" Dia.
15	11028B	1	Gasket-Check Ball
16	11007	3	Gasket-Nitrile, 5"
17	19001	1	Return Tube
18	2040SM	1	Element
19	11350	1	O-Ring
20	11815	1	Clamp-Bracket
21	11838	2	Bolt-Carriage, 5/16"
22	12049	2	Washer-Flat, 5/16"
23	11841	2	Nut-Lock, 5/16"



Port threads are NOT suitable for pipe fittings. See fittings chart, page 5, for appropriate fittings.

## Specifications

MODEL NO.	500mA	9001A	1000MA	75-9001MA	73-1000MA(1) 75-1000MA(2)	77-1000MA(3) 79-1000MA(4)
<b>MAXIMUM FLOW RATE</b>						
gpm	1.05	1.59	3.16	3.16	632(1) 316/6.32(2)	9.48(3) 6.32/9.48(4)
lpm	4	6	12	12	24(1) 12/24(0)	36(3) 24/36(4)
<b>CLEAN VACUUM DROP</b>						
inHg	1.25	1.5	3.0	2.0	3.5(1) 5.0(2)	3.5(3) 5.0(4)
kgs./sq. cm	.043	.052	.104	.069	121(1) 173(2)	121(3) .173(4)
<b>WORKING VACUUM</b>						
inHg	28.5	28.5	28.5	28.5	28.5	28.5
kgs./sq. cm.	.984	.984	.984	.984	.984	.984
<b>PROOF PRESSURE</b>						
psi	50	100	100	100	100	100
bars	3.45	6.90	6.90	6.90	6.90	6.90
<b>ELEMENT MODEL NO.</b>	2010SM	2040SM	2020SM	2040SM	2020SM	2020SM
<b>ELEMENT MATERIAL</b>	RESIN IMPREGNATED CELLULOSE					
<b>ELEMENT REMOVAL CLEARANCE</b>						
in.	4.0	5.0	10.0	10.0	10.0	10.0
mm	101.6	127.0	254.0	254.0	254.0	254.0
<b>TEMPERATURE RATINGS</b>						
F°	-50/225	-50/225	-50/225	-50/225	-50/225	-50/225
C°	-46/107	-46/107	-46/107	-46/107	-46/107	-46/107
<b>PORT SIZE</b>						
In	9/16"-18UNF	7/8"-14 UNF	7/8"-14 UNF	3/4" NPT.	3/4" NPT.	3/4" NPT.
mm	14mm x 1.5	22mm x 1.5	22mm x 1.5			
<b>HEIGHT</b>						
In	12.754	17.152	22.152	17.152	22.152	22.152
mm	323.95	435.66	562.66	435.66	562.66	562.66
<b>WIDTH</b>						
in.	5.750	6.125	6.125	16.25	16.25	22.50
mm	146.05	155.575	155.575	412.75	412.75	571.50
<b>DEPTH</b>						
in	5.462	6.6925	6.6925	10.125	9.125(1) 10.125(2)	9.125(3) 10.125(4)
mm	138.735	169.99	169.99	257.175	231.775(1) 257.175(2)	231.775(3) 257.175(4)
<b>TOP TO <math>\bar{I}</math> OF INLET</b>						
in	6.00	8.126	13.063	36.25	11.625(1) 8.625(2)	11.625(3) 8.625(4)
mm	152.40	206.40	331.0	92.075	295.275(1) 219.075(2)	295.275(3) 219.075(4)
<b>TOP TO <math>\bar{I}</math> OF OUTLET</b>						
in.	5.75	8.126	13.063	10.875	15.875(1) 15.875(2)	15.875(3) 15.875(4)
mm	146.05	206.40	331.80	276.225	403.225(1) 403.225(2)	403.225(3) 403.225(4)
<b>WEIGHT</b>						
lbs	3.64	6.15	10.15	23	25	32
kg	1.651	2.79	4.60	10.43	11.34	14.51
<b>SEALS</b>	BUNAN N					
<b>VALVES</b>				BALL TYPE	NONE (1) BALL TYPE (2)	NONE (3) BALL TYPE (4)

**CAUTION: ALCOHOLS AND ACIDS WILL HAVE A DETRIMENTAL EFFECT ON CLEAR BOWL & MOLDED PARTS**

\*Specifications shown are the result of tests conducted at the optimum flow rate for each unit (equal to 1/2 the maximum flow rate).

### Simplified Flow Rate Formula For Medium Range Diesel Engines.

Hp x 006 = Approximate gpm pump flow rate  
(This formula in an approximate flow rate)

FOOTNOTES: (1) Model 73-1000MA wo/Shut-Off Valves (3) Model 77-100MA wo/Shut-Off Valves  
(2) Model 75-1000MA w/Shut-Off Valves (4) Model 79-1000MA w/Shut-Off Valves

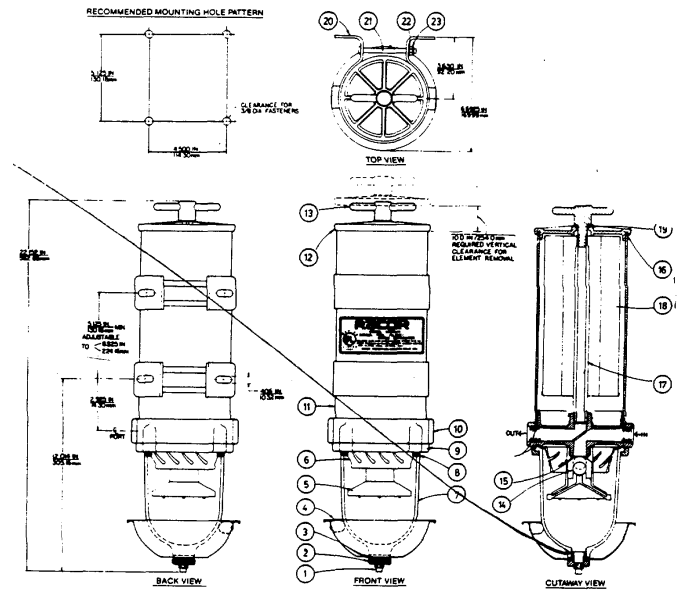
For the name of the Racor distributor nearest you, call 1-800/344-3286.

In Alaska, California and Hawaii, call 1-209/521-7860. Telex: 359-408.

### Model 1000MA

Height: 22.152" (562.66 mm)  
 Width: 6.125" (155.575 mm)  
 Depth: - 6.25" (169.99 mm)  
 Max. Flow Rate: 3: 16 gpm (12 lpm)  
 Weight: 10.15 lbs. (. kg)

### Parts Diagram



### Parts List

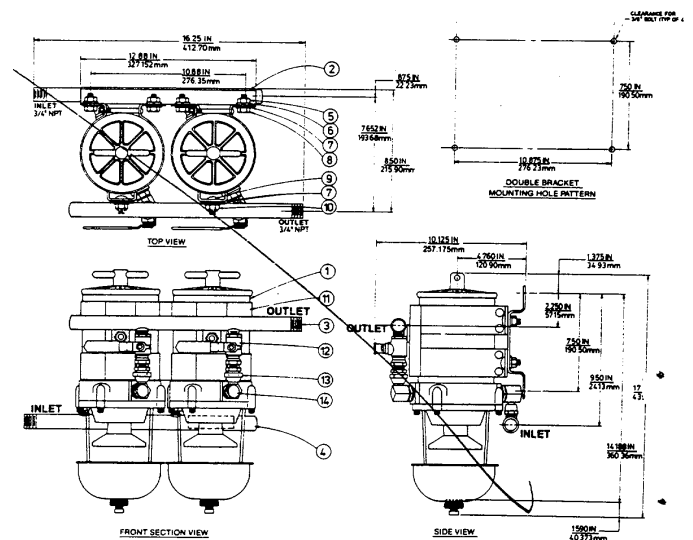
Item	Part No.	Quantity	Description
1	11816	1	Plug-1/4" Pipe
2	11040	1	Fitting-Bowl Drain
3	11041	2	Gasket-Bowl Drain
4	11868	1	Deflector-Heat Assm.
5	11026C	1	Turbine Centrifuge
6	11025C	1	Conical Baffle
7	11031A	1	Bowl-Clear
8	11542	4	Capscrew-Filister Hd.
9	11037A	1	Retaining Ring-Bowl
10	11023B	1	Base
11	11021	1	Outer Cylinder
12	11005B	1	Lid
13	11888	1	T-Handle
14	11027	1	Check Ball-3/4" Dia.
15	11028B	1	Gasket-Check Ball
16	11007	3	Gasket-Nitrile, 5"
17	11008	1	Return Tube
18	2020SM	1	Element
19	11350	1	O-Ring
20	11815	2	Clamp-Bracket
21	11838	4	Bolt-Carriage, 5/16"
22	12049	4	Washer-Flat, 5/16"
23	11841	4	Nut-Lock, 5/16"

Port threads are NOT suitable for pipe fittings. See fittings chart, page 5, for appropriate fittings.

### Model 75/900MA

Height: 17.152" (435.66 mm)  
 Width: 16.25" (412.70 mm)  
 Depth: 10.125" (257.175 mm)  
 Max. Flow Rate: 3.16 gpm (12 lpm)  
 Weight: 23 lbs. (10.43 kg)

### Parts Diagram



### Parts List

Item	Part No	Quantity	Description
1	900MA	2	Filter Separator
2	11900	1	Double Bracket
3	11903	1	Double Manifold Outlet
4	11892	1	Double Manifold Inlet
5	11079	8	3/8" Hex-Nut
6	11102	8	3/8" Washer-Lock
7	11080	20	3/8" Washer-Flat
8	11078	8	3/8" Hex-Bolt
9	11898	2	3/8" Carriage-Bolt
10	11901	2	3/8" Hex-Nut, Self-Lock
11	11897	2	Clamp-Bracket Assembly
12	11073	2	1/2" Ball Valve
13	11074	2	1/2" NPT x 1k" NPSM Fitting
14	11072	4	Elbow Fitting

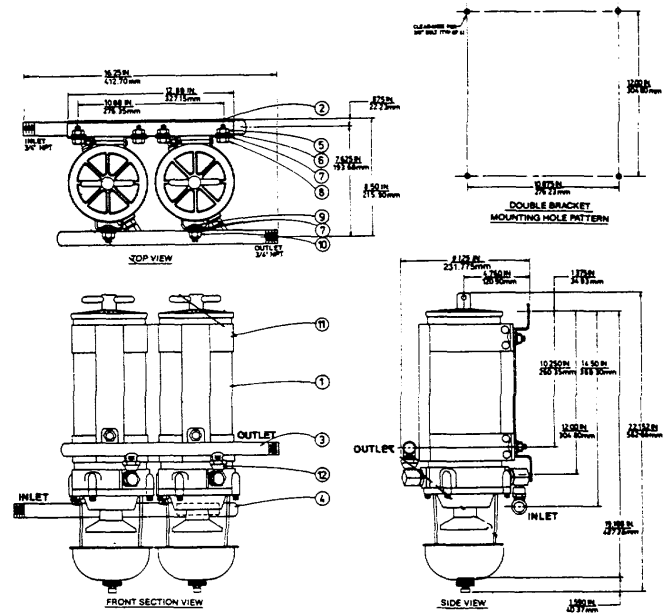
**Model 73/1000MA**

Height: 22.152" (562-.66 mm)  
 Width: 16.25" (412.70 mm)  
 Depth: 9.125" (231.775 mm).  
 Max. Flow Rate: 6.32" gpm (24 mm)  
 Weight: 25 lbs. (11.4 kg)

**Parts Diagram**

**Parts List**

Item	Part No.	Quantity	Description
1	1000MA	2	Filter Separator
2	11899	1	Double Bracket
3	11923	1	Double Manifold Outlet
4	11892	1	Double Manifold Inlet
5	11079	8	3/8" Hex-Nut
6	11102	8	3/8" Washer-Lock
7	11080	20	3/8" Washer-Flat
8	11078	8	3/8" Hex-Bolt
9	11898	2	3/8" Carriage Bolt
10	11901	2	3/8" Hex-Nut, Self-Lock
11	11895	2	Clamp-Bracket Assembly
12	11072	4	Elbow Fitting



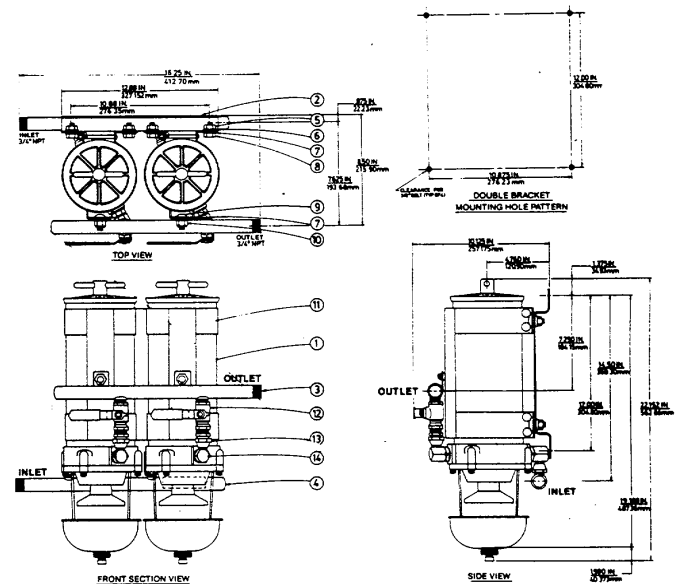
**Model 75/1000 MA**

Weight: 22.152" (562.66 mm)  
 Width: 16.25" (412.70 mm)  
 Depth: 10.125" (257.175 mm)  
 Max. Flow Rate: 3.16/6.32 gpm (12/24 lpm)  
 Weight: 25 lbs. (11.4 kg)

**Parts Diagram**

**Parts List**

Item	Part No.	Quantity	Description
1	1000MA	2	Filter Separator
2	11899	1	Double Bracket
3	11923	1	Double Manifold Outlet
4	11892	1	Double Manifold Inlet
5	11079	8	3/8" Hex-Nut
6	11102	8	3/8" Washer-Lock
7	11080	20	3/8" Washer-Flat
8	11078	8	3/8" Hex-Bolt
9	11898	2	3/8" Carriage-Bolt
10	11901	2	3/8" Hex-Nut, Self-Lock
11	11895	2	Clamp-Bracket Assembly
12	11073	2	"1/2" Ball Valve
13	11074	2	"1/2" NPT x 1/2" NPSM Fitting
14	11072	4	Elbow Fitting





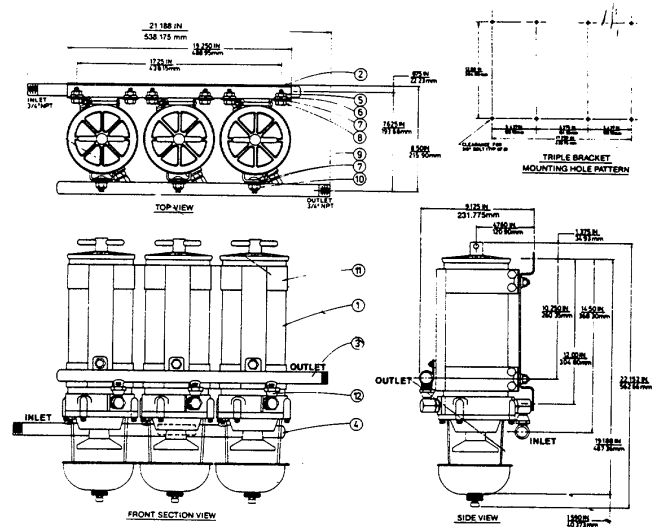
**Model 77/1000 MA**

Height:	22.152" (562.66 mm)
Width:	21.188" (538.175mm)
Depth:	9.125" (231.75mm)
Max. Flow Rate:	9.48 gpm (36-lpm)
Weight: 32 lbs.	(14.5 kg)

**Parts List**

Item	Part No.	Quantity	Description
1	1000MA	3	Filter Separator
2	11843	1	Triple Bracket
3	11902	1	Triple Manifold Outlet
4	11893	1	Triple Manifold Inlet
5	11079	12	3/8" Hex-Nut
6	11102	12	3/8" Washer-Lock
7	11080	30	3/8" Washer-Flat
8	11078	12	3/8" Hex-Bolt
9	11898	3	3/8" Carriage-Bolt
10	11901	3	3/8" Hex-Nut, Self-Lock
11	11895	3	Clamp-Bracket Assembly
12	11072	6	Elbow Fitting

**Parts Diagram**



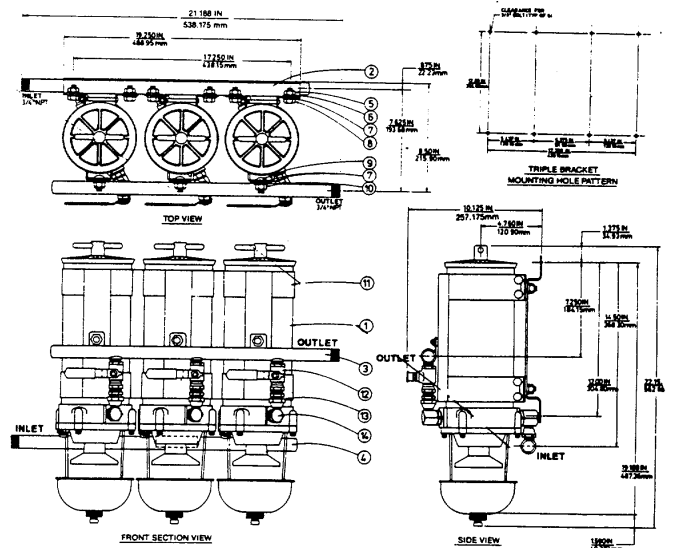
**Model 79/1000 MA**

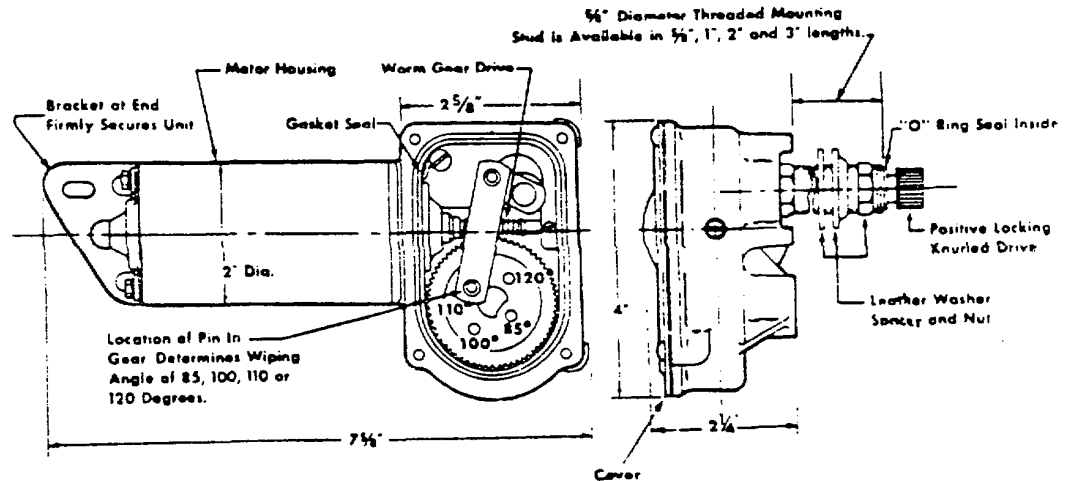
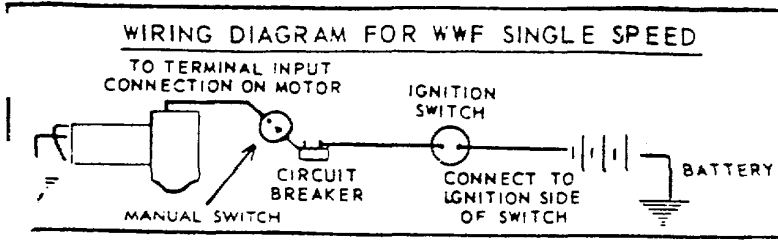
Height:	22-152" (562-66 mm)
Width:	21.188" (538.175mm)
Depth:	10.125" (257.175 mm)
Max. Flow Rate:	6.32/9.48 gpm (24/36 lpm)
Weight: 32 lbs.	(14.5 kg)

**Parts List**

Item	Part No.	Quantity	Description
1	1000MA	3	Filter Separator
2	11843	1	Triple Bracket
3	11902	1	Triple Manifold Outlet
4	11893	1	Triple Manifold Inlet
5	11079	12	3/8" Hex-Nut
6	11102	12	3/8" Washer-Lock
7	11080	30	3/8" Washer-Flat
8	11078	12	3/8" Hex-Bolt
9	11898	3	3/8" Carriage Bolt
10	11901	3	3/8" Hex-Nut, Self Lock
11	11895	3	Clamp-Bracket Assembly
12	11073	3	1/2" Ball Valve
13	11074	3	1/2" NPT x 1/2" NPSM Fitting
14	11072	6	Elbow Fitting

**Parts Diagram**





### INSTALLATION INSTRUCTIONS FOR WWF WINDSHIELD WIPERS

(except 1000 Series)

This windshield wiper can be adjusted for 85, 100, 110, and 120 degree wiping angles.

1. Locate mounting position of wiper assembly.
2. Determine whether adequate space is available (see overall dimensions on print on rear.)
3. Locate approximate stud position on header. See that blade will wipe the desired area of windshield.
4. Should a change of wiping angle be needed:
  - a. Remove gear case cover.
  - b. Remove spring clip on pivot shaft arm.
  - c. Lift link and install in desired degrees on gear.
  - d. Reverse the above procedure to reassemble.

Wiping angles available are 85, 100, 110, and 120 degrees.

5. Distance between stud hole & bracket hole should be 6.25 inches.
6. Drill tower stud hole first using a 5/8" drill.
7. Drill mounting bracket hole for a No. 10 screw.

8. Place the wiper in position and install the mounting stud attaching nut and washers. Tighten to 30-50 in. lbs.
9. Wiring - Diagram shown on rear. On applications where mounting is of wood, fiber, glass, etc., a separate ground wire must be attached to the motor and connected to a battery ground point. A No. 14 wire is recommended.

**NOTE - Blade and arm should be mounted approx. 1" minimum away from windshield moulding. Make certain the wiper blade does not strike at either end of the wiping stroke. If blade strikes at both ends, it will be necessary to shorten the arm and blade length or reduce the wiping angle of the wiper. (Refer to # 4.)**

#### MAXIMUM ARM AND BLADE RECOMMENDATION

1 - 15" Arm

1 - 15" Blade

PERKO

**9600 SERIES  
IGNITION PROTECTED  
MAIN BATTERY SWITCHES  
ON-OFF TYPE**

**NOW AVAILABLE WITH NEW KEY LOCK OPTION FOR EXTRA THEFT PROTECTION**

Protected By U.S. Patent No. 4280028 and other Patents Pending

Surface Mount - Red Plastic Housing with Improved Design to Protect Electrical Connections - Large Black Plastic Knob - Copper Contacts - Stainless Steel Spring - Brass Terminals For use with 6, 12, 24 and 32 Volt Systems  
Capacity 250 AMPS Continuous  
360 AMPS Intermittent

Diameter Inches	Depth Inches	Standard Package	Weight Pounds
5-1/4	2-5/8	5	1

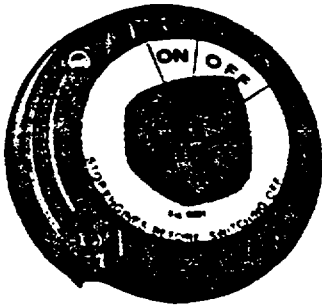


Fig. 9601 without Key Lock Assembly

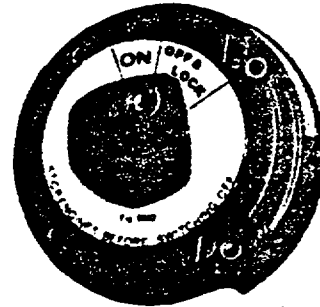


Fig. 9602 with Key Lock Assembly

PERKO, INC., 16490 N.W. 13TH AVE., P.O. BOX 64000-D, MIAMI, FLORIDA 33164 )

### ALTERNATOR FIELD

The advantage of these models permits ins  
engine is running without damage to the alt

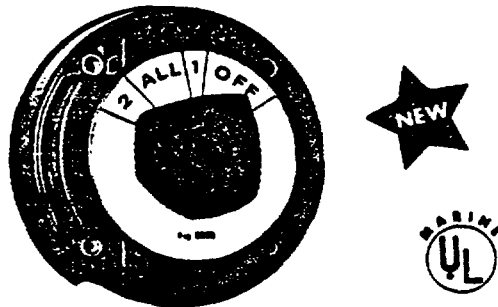


Fig. 8503 without Key Lock Assembly  
with Field Disconnect Feature

\*For Dual Engine Syn  
Above switche

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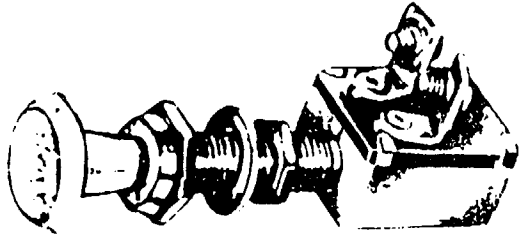
ALL OF THE ABOVE SWITCHES ARE PACKED IN OUR NE  
SEE PAGE

**PERKO**

**PUSH AND PULL SWITCHES-Fig. 105**

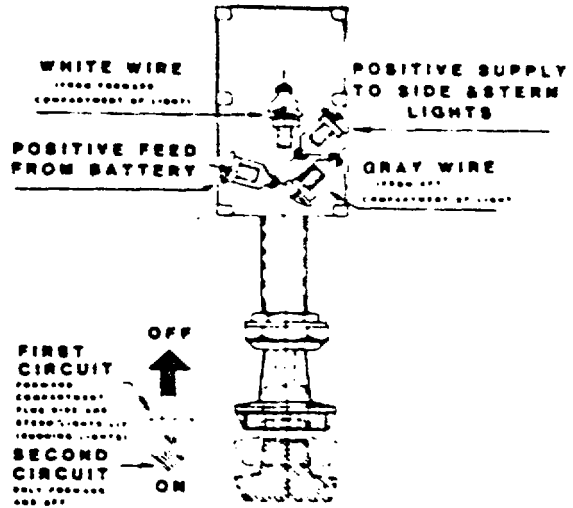
All Brass - 2 Terminal - OFF-ON - 25 Amps. at 12 Volts

No.	Chromium Plated Each	Diam. Neck Inches	For Wood Thickness Inches	Length Overall Inches	Diam. Knob Inches	Weight Ounces
1		3/8	1	3	3/4	2
2		3/8	1-1/4	3-1/4	3/4	2-1/2



*Fig. 105*

FOR USE WITH CONVENTIONAL BATTERIES  
AND ALL ROUND LIGHTS  
IN THIS TYPE OF LIGHTS



WHITE WIRE  
FORWARD  
COMPARTMENT OF LIGHTS

POSITIVE SUPPLY  
TO SIDE & STERN  
LIGHTS

POSITIVE FEED  
FROM BATTERY

GRAY WIRE  
FORWARD  
COMPARTMENT OF LIGHTS

FIRST  
CIRCUIT  
FORWARD  
COMPARTMENT  
OF LIGHTS AND  
SIDE AND  
STERN LIGHTS  
FORWARD  
COMPARTMENT  
OF LIGHTS

SECOND  
CIRCUIT  
ONLY FORWARD  
AND OFF  
COMPARTMENT  
OF LIGHTS  
FORWARD

NOTE-THIS SWITCH IS NOT  
IGNITION PROTECTED

(OVER)

PERKO

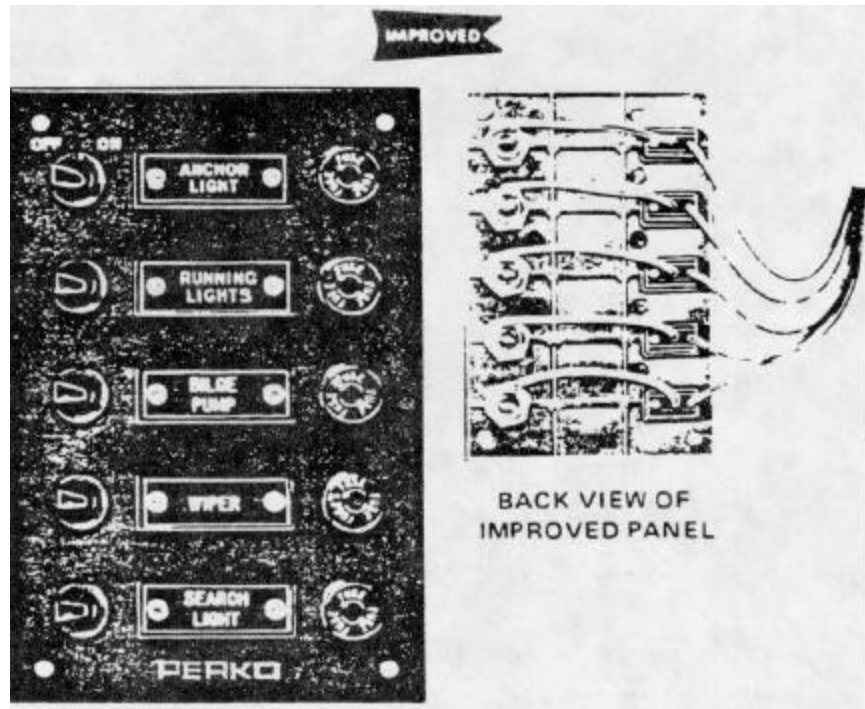


Fig. 517

SWITCH PANEL - Fig. 517

Black Textured Finish - Embossed Lettering  
 Complete With Switches, Fuse Holders, and Name Plates.  
 This Improved Panel is Now Molded From A Durable Plastic  
 That Will Not Crack Or Split But Is Flexible Enough To  
 Mount on Curved As Well As Flat Surfaces.  
 Illustration .shows stock panel. Dealer or user may change  
 name plates, see Fig. 519 for additional selection. Changes  
 can be made at factory for additional cost. See footnote.

Each	Size Inches	Weight Ounces
	6-1/2x4-1/4	8

Spare Switches, Specify Fig. 514.

Spare Fuse Holders, Specify Fig. 516.

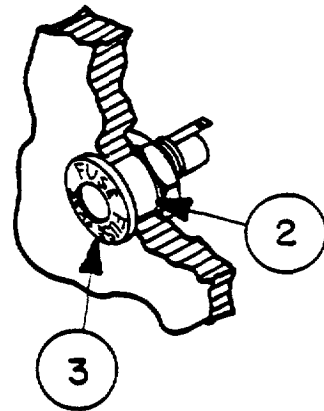
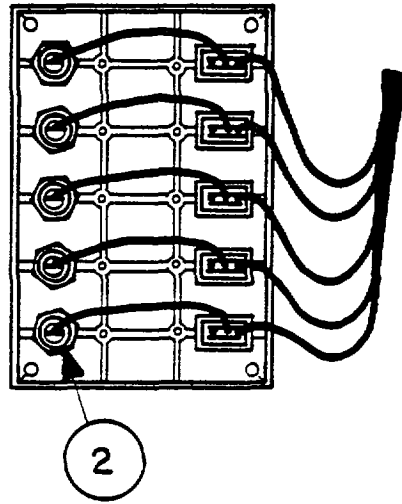
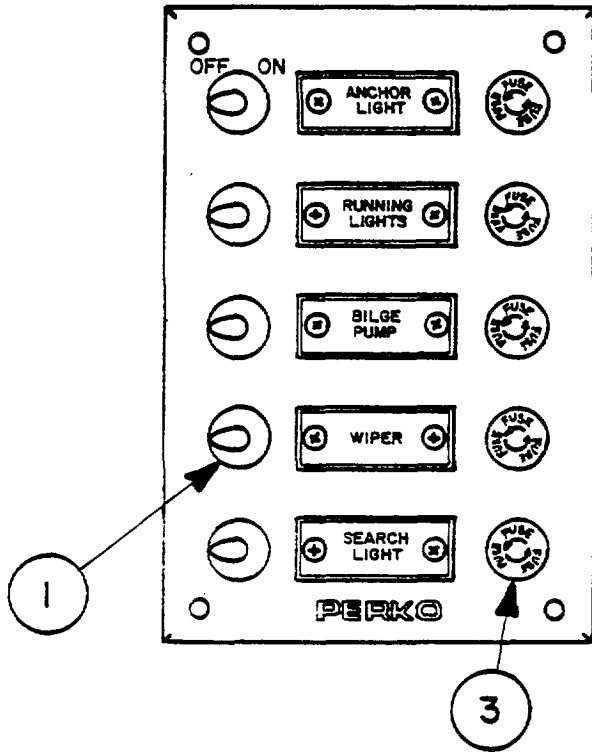
Spare Cap Only for Fuse Holders, Specify Fig. 522.

Note, If Name Plates Other Than Shown Are Desired Specify Fig.  
 517A And Names Required.

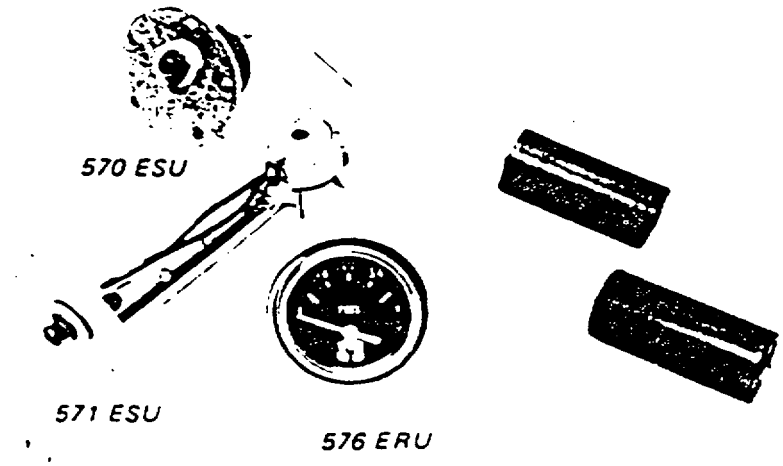
MANUFACTURED BY PERKO, INC. 16490 N.W. 13<sup>TH</sup> AVE., P.O. BOX 64000-D, MIAMI, FLORIDA 33164  
 FOR COMPLETE LINE SEE CATALOG NO. 230

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***ELECTRIC FUEL GAUGE and Sending Unit Kit***

Tempo fuel tanks are designed for easy installation of an electric fuel gauge. To order correct model, check depth of Your tank and style of gauge mount. Included are electric sending unit, electric receiving unit (instrument panel gauge) and installation instructions. Gauge wiring harness 513 WKI is recommended to complete installation.

Standard pack ..... 1  
 Shipping Weight..... 1 lb. each

part no.	flange style	tank depth
582 EFG	5 screw	6" to 12"
583 EFG	5 screw	10" to 15"
584 EFG	5 screw	15" to 24"

**ELECTRIC SENDING UNIT (Only)**

To order correct size, check depth of tank and style of gauge mount.

part no.	tank depth
570ESU	6" to 12"
571ESU	12" to 15"
572ESU	15" to 24"

**NOTE: For threaded flange order =548 FGA, Flange Adapter Kit in addition to sending unit.**

**576 ERU ELECTRIC FUEL GAUGE (Only)**

Electric receiving fuel gauge unit is compatible with all Tempo electric sending units listed.

Standard pack ..... 1



Fig. 300

DOME LIGHT- Fig. 300

Die Cast Zinc Alloy - Chromium Plated

Double Contact Socket - Push Switch

No.	Chromium Plated Each	Diameter Globe Inches	Diameter Overall Inches	Depth Overall Inches	Weight Ounces
0		3	3-3/4	1-1/2	7
1		4	5-3/8	1-7/8	9
2		5	6-1/2	2	11

Spare Globes, Specify Fig. 257 and Size

Spare Switches, See Fig. 703

Spare Sockets, See Fig. 24, No. 1

## ADDENDUM

### Adjustable D.R.R. For Aqua Probe

#### 530/540/550 Series

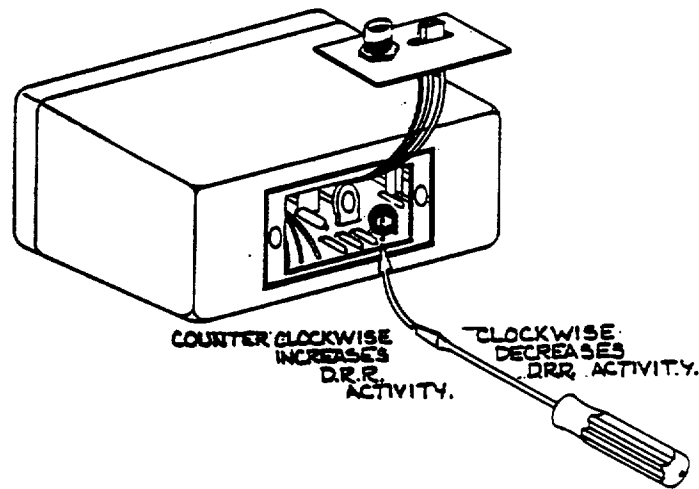
#### Digital Depth Instruments

As noted on page 9 of the Owner's Handbook supplied with your Aqua Probe Digital Depth Instrument each unit is supplied with an advanced version of Aqua Meter's exclusive D.R.R. (Delayed Receiver Recovery) system. Its purpose is to eliminate random false depth readings due to the presence of "subsurface interference" which consists of numerous small particles, air bubbles, and other targets. These subsurface interference causing targets are always present in the area just below the surface of any body of water and are capable of reflecting ultrasonic sound waves. Generally the echos from sub-surface interference targets are considerably weaker than echos from the true bottom target. Therefore the DRR circuit causes a reduction of the depth finder's receiver sensitivity to weaker/shallow/targets and allows the sensitivity to recover to normal levels for deeper/stronger bottom targets at a carefully controlled rate.

The D.R.R. circuit in your Aqua Probe Digital has been factory calibrated for the optimum level of sensitivity reduction and recovery rate. As received, the DRR in your unit will eliminate erroneous false readings due to all but the very most severe cases of subsurface interference. However, there may be some conditions where field adjustment of the DRR circuit will be helpful to compensate for abnormal conditions. As an example, if the bottom composition is very muddy and silty, or if there is heavy growth of marine vegetation (seaweeds) in the area where you do most of your boating, the bottom echo may be very weak. Such a bottom condition will absorb much of the ultrasonic sound waves, thus, requiring additional receiver sensitivity and a slightly reduced amount of D.R.R. Or as another example, consider navigating through a heavily trafficed channel. In this area, the

water is constantly being churned up by tidal currents, prop-wash from other boats, etc., causing extremely dense subsurface interference. In this case a slightly increased amount of D.R.R. would be required. Remove power from the unit and disconnect the transducer.

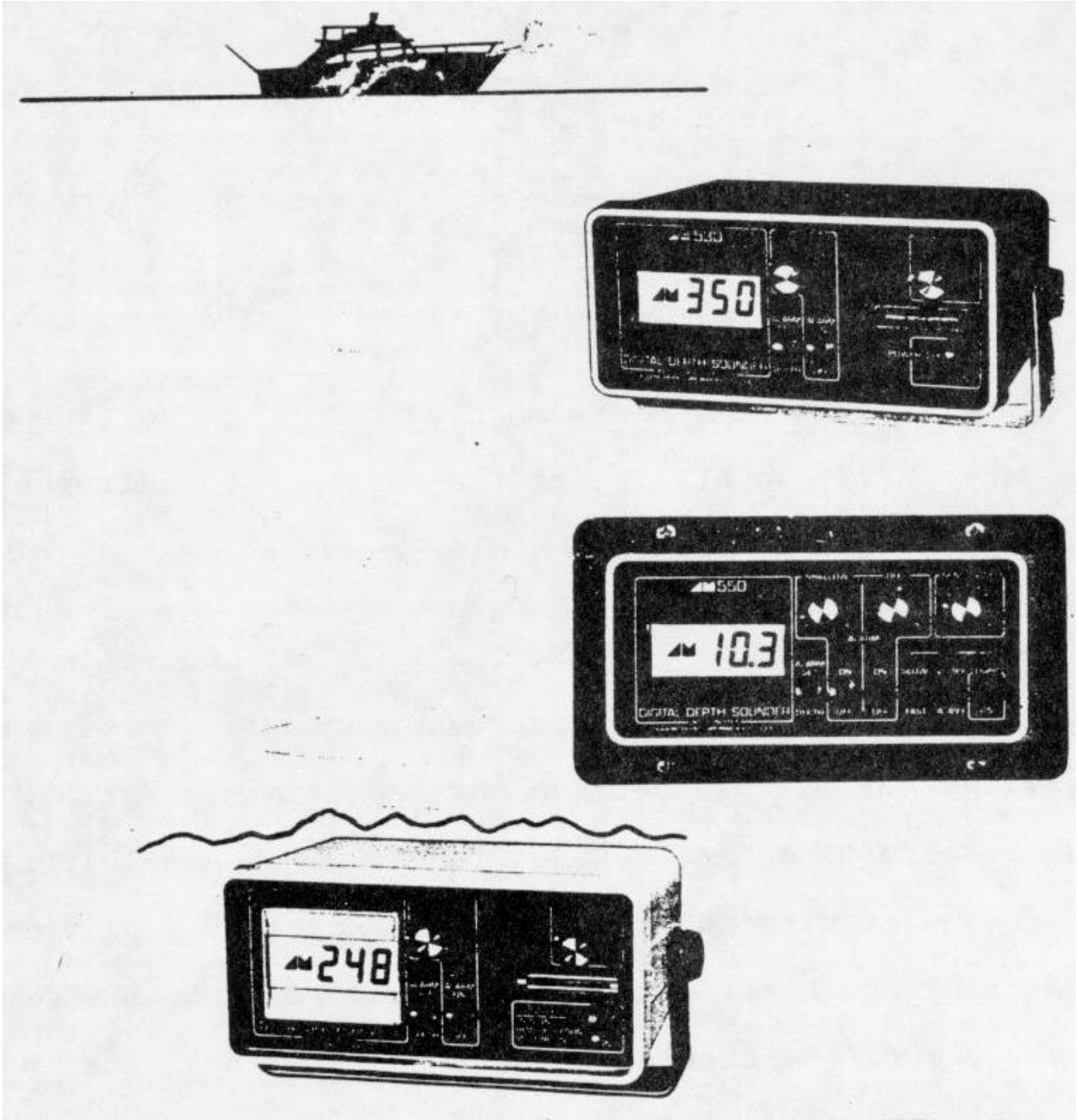
The D.R.R. LEVEL CONTROL is located on the main digital Printed Circuit Board and is accessible by removing the back plate.(See sketch)



**CAUTION: The DRR LEVEL CONTROL is mounted close to the rear of the case. The other larger control sets the units depth calibration accuracy, , , , , do not adjust this control!**

Before making any adjustments of the D.R.R. LEVEL CONTROL make note of its factory preset position so that you can easily return to the factory setting. It is then best to make adjustments (either increasing or decreasing DRR LEVEL as required) in small increments and then checking results for optimum performance in your particular area. This trial and error approach will assure that OVERCOMPENSATION does not take place. It should be noted that it is virtually impossible to arrive at one DRR Level setting that is perfect for ALL conditions. This is due to the nearly infinite combinations of variables that affect depth finder performance.. However, the DRR system in your Aqua Probe is the most sophisticated of its type on the market today, and will provide superior performance compared to other methods of subsurface interference rejection.

AQUA PROBE®  
DIGITAL DEPTH INSTRUMENT  
OWNER'S HANDBOOK  
\$1.50



Aqua Meters®  
Instrument Corporation

## THE INSIDE STORY OF DIGITAL DEPTH FINDING

You have just purchased the most useful and sophisticated digital depth instrument on the marine market today. Utilizing Aqua Meter's pioneering technology in shallow water depth-sounding, and leadership in marine instrumentation, your new Aqua Probe<sup>R</sup> digital will provide accurate valuable information, It is an important investment in helping you with navigating, piloting, and anchoring.

You already may be familiar with other types of depth sounding equipment--flashers and/or graph recorders--which offer you a wide range of information. If so, you will be accustomed to making judgements based on a "filtering" process your experience has taught your mind to make. When you are given a choice of readings, you automatically decide which one, or ones, are useful and correct.

For example, when you're using one of the popular flasher depth finders, your eye "sees" all the miscellaneous signals and blips displayed on the dial. But your mind registers only the strong signal on that portion of the dial in which reason tells you the correct depth reading is located. Your judgmental process categorizes the others as sub-surface interference, thermal layering, or fish which may or may not be important.

Or, when you're scanning the graph from a charting recorder, you can identify the actual layers of interference, or fish, along with the contours of the bottom. Your mind automatically "averages" the bottom readings into a useful range of depth information and stores or rejects any other readings.

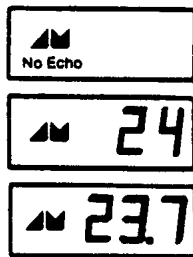
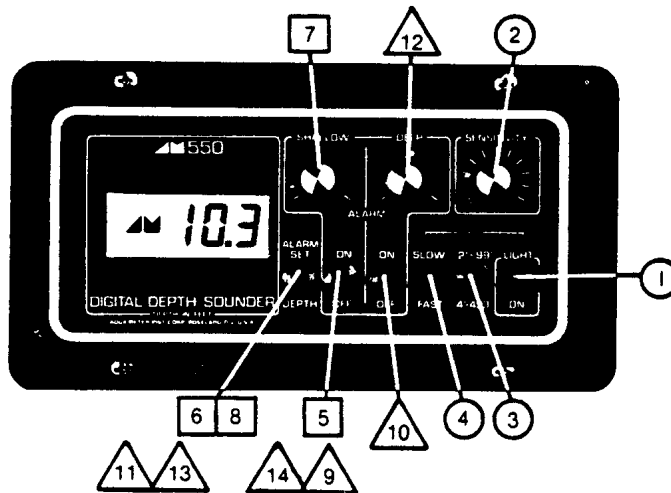
Graphs and flashers, then, can simultaneously display a multitude of return signals for your interpretation.

Conversely, any digital depth finder operates like a computer in that it is programmed to interpret the return signals for you, and will display only the depth of the strongest, shallowest echo. Also, unlike the other types of depth instruments, it will not give you a multitude of returns from which to choose.

In fact, a great deal of very sophisticated interference suppressing circuitry has been built into your new Aqua Probe digital. It expressly prevents some of the extraneous returns which are normal and desirable for the flasher or graph, from interfering with the primary purpose of the digital instrument--giving you the clearest, strongest, most correct and quickly-read bottom indication in large, clear, easy-to-read numerals.

Teaching you how to achieve these results is the purpose of this manual.

<b>Contents</b>	
<b>The Inside Story of Digital Depth finding .....</b>	<b>2</b>
<b>Quick Tuning Procedures.....</b>	<b>3</b>
<b>Installation.....</b>	<b>5</b>
<b>Operation.....</b>	<b>9</b>
<b>Aqua Meter's Exclusive Technology .....</b>	<b>15</b>
<b>Navigating and Piloting .....</b>	<b>16</b>
<b>Transducer Mounting.....</b>	<b>19</b>
<b>Trouble Shooting Procedures.....</b>	<b>21</b>
<b>Maintenance and Service.....</b>	<b>23</b>
<b>Summing Up.....</b>	<b>23</b>



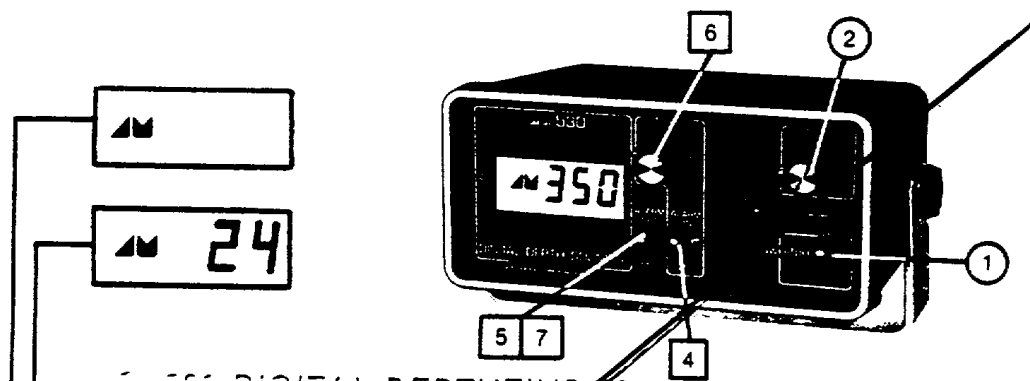
- 1 Turn all switches DOWN.
- 2 Increase sensitivity by turning the knob clockwise slowly until depth reading appears (and the "No Echo" disappears), plus two graduations.
- 3 Select range: 2 ft.-99ft. for shallow waters, or 4 ft.-499 ft. for deeper operation.
- 4 Select update rate: FAST (2 per second) or SLOW (1 every 2 seconds).

**CAUTION:** will not operate shallower than the range selected.

- 5 Switch Shallow Alarm ON. (Deep Alarm must be off.)
- 6 Switch to ALARM SET.
- 7 Adjust "Shallow" knob slowly to desired alarm depth.
- 8 Return switch to DEPTH to resume reading water depth. **NOTE:** Shallow alarm is now set and activated—water depth will be shown on the LCD.

- 9 Switch Shallow Alarm OFF (if it was ON).
- 10 Switch Deep Alarm ON
- 11 Switch to ALARM SET.

- 12 Adjust "Deep" knob slowly to desired alarm depth.
- 13 Return switch to DEPTH to resume reading depth. **NOTE:** Deep alarm is now set and activated and water depth will be shown on the LCD.
- 14 Shallow Alarm can now be turned ON for anchor alarm.



### NO. 530 DIGITAL DEPTHFINDER

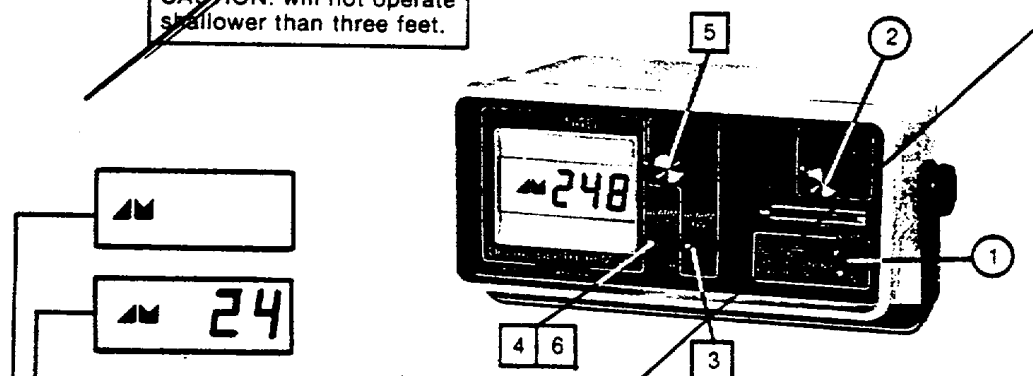
#### TO READ DEPTH

- 1 Turn all switches DOWN.
- 2 Increase sensitivity by turning the knob clockwise slowly until depth reading appears, plus two graduations.
- 3 The No. 530 is a fixed-range unit which reads in feet, from 3 ft. to 399 ft.

**CAUTION:** will not operate shallower than three feet.

#### TO USE ALARM

- 4 Switch Alarm ON.
- 5 Switch to ALARM SET.
- 6 Adjust knob slowly to desired alarm depth.
- 7 Return switch to DEPTH to resume reading water depth. NOTE: alarm is now set and activated and water depth will be shown on the LCD.



### NO. 540 DIGITAL REMOTE REPEATER

**NOTE:** BEFORE YOUR AQUA PROBE 540 REMOTE DIGITAL DEPTH REPEATER WILL OPERATE, IT IS NECESSARY TO TURN THE MAIN DEPTHFINDER "ON." BECAUSE THE NO. 540 REMOTE SIMPLY OFFERS A "REPEATER" DISPLAY BY SAMPLING SIGNALS, AND RETURNS, PASSING BETWEEN THE MAIN DEPTHFINDER AND TRANSDUCER, NO DEPTH WILL APPEAR ON THE NO. 540 REMOTE UNLESS THE MAIN DEPTHFINDER IS ON.

#### TO READ DEPTH

- 1 Turn all switches DOWN.
- 2 Increase sensitivity by turning the knob clockwise slowly until depth reading appears, plus two graduations.

**CAUTION:** The No. 540 Remote will only read as shallow as the main depthfinder plus one digit. For full understanding of remote/main depth-sounder relationships, refer to page 13, section 4B.

#### TO USE ALARM

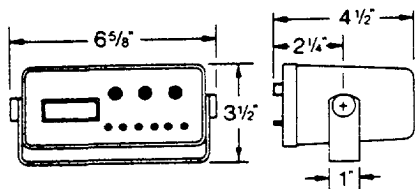
- 3 Switch Alarm ON.
- 4 Switch to ALARM SET.
- 5 Adjust knob slowly to desired alarm depth.
- 6 Return switch to DEPTH to resume reading water depth. NOTE: Alarm is now set and activated and water depth will be shown on the LCD.



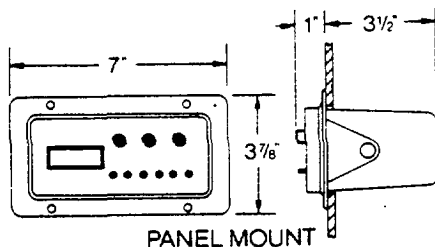
## HOW TO INSTALL YOUR AQUA PROBE DIGITAL DEPTH INSTRUMENT

All Aqua Probe digital depth instruments—the models No. 530, No. 550 and No. 540 remote—can be bracket-mounted on a surface, such as the top of an instrument panel, or hanging from the overhead, with the U-shaped mounting bracket and hardware which is provided.

All Aqua Probe digitals also can be mounted in a panel, or on a bulkhead, using the adapter flange and bracket which is also provided with all units.

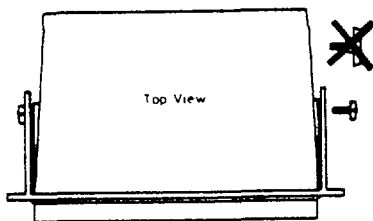


BRACKET MOUNT

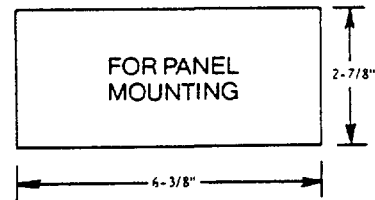


PANEL MOUNT

**PANEL MOUNTING:** To install your Aqua Probe digital through the face of an instrument panel or bulkhead, you need a flat area 7" wide by 3 7/8" high for the flange and unit face. Additionally, you'll need enough clearance behind the panel or bulkhead for the case of the depth instrument (3 1/2") plus cable connections.



First, you will need to remove the U-bracket. Then attach the panel mounting adapter flange to the face of the depth instrument. using the pan-head machine screws which are provided. before you attempt to position the unit in the bulkhead.



**MOUNTING LOCATION:** You do not have to be concerned about locating your new Aqua Probe in close proximity to your compass. There are no magnetic circuits and there will be no discernible effect on the compass' performance. However, the unit should be positioned in such a way that you will have easy access to the operating controls and switches. Naturally, you will make sure you have a direct view of the LCD readout. All hardware necessary for mounting (see list, page 6) is provided.

**WIRING:** Aqua probe digital depth units are provided with a power cord which should be connected to the ship's power (12V-DC, negative ground) thru a fuse, not provided. See FUSE paragraph on page six. It then must be plugged into the power connector on the back of the unit. The RED identified power cord lead is connected to the POSITIVE (+) terminal of the ship's battery. The BLACK lead is NEGATIVE (-).

**POLARITY PROTECTION:** Protection against damage from reverse polarity has been built right into all the Aqua Probe units. Therefore, should these leads be reverse-connected in error, the No. 550 and No. 530 depthfinders will NOT OPERATE; they also will not be damaged.

**CAUTION:** Since the model No. 540 remote digital depth instrument is to be used in conjunction with another main depthfinder, there will be a ground-to-ground connection between the two instruments through the jumper cable shield. Therefore, an erroneously-reversed polarity power connection on either unit COULD CAUSE DAMAGE to it or the other. To avoid this: turn on each unit and make sure it is functioning properly BEFORE INTERCONNECTING THE TWO WITH THE JUMPER CABLE. Aqua Meter Instrument Corp. cannot be held responsible for any damage to your depthfinder due to incorrect installation of your No. 540 remote, or visa versa.

Quantity	Description	Use
2 each	114 - 20 x 3/8" slotted pan-head machine screws	Attaching panel/bulkhead mounting adaptor flange to case
4 each	#6 x 1/2" Phillips oval-head self-tapping screws	Attaching panel/bulkhead mounting adaptor flange to panel
2 each	#10 x 3/4" slotted pan-head self-tapping screws	Attaching U-mounting bracket to surface
2 each	Thumb screws and rubber washers	Attaching U-mounting bracket to case

Note: additional hardware is provided for mounting the transducer to the boat, as noted in the TRANSDUCER MOUNTING section of this manual.

As noted above, any Aqua Probe digital unit is designed to operate from a standard 12V-DC, negative ground marine electrical system. This type of system actually can provide a range of voltage between 11 and 16 volts, depending on the condition of the battery and the alternator charging characteristics. The normal voltage of such a system may average about 13.6V-DC.

Your Aqua Probe digital is designed to operate normally within that 11 to 16V-DC power range. However, operation outside of that range could cause damage or a degradation in performance.

**IMPORTANT: AN EXTERNAL FUSE IS REQUIRED.**

Because fuse or circuit-breaker panels commonly are used on modern boats, *there is no internal fuse or circuit breaker in your Aqua Probe digital depth instrument.* Although the normal, average current requirement of these units is only about 0.2 amp (0.3 amp with the night light on), there will be a current surge which occurs rhythmically during the "transmit" phase of depthfinding operation. The pulse can be on the order of several amperes. Accordingly, a ONE-AMPERE, SLOW-BLOW FUSE or 2 AMP REGULAR FUSE should be used. It should be installed in the positive ( + ) power line to your unit.

**ELECTRICAL INTERFERENCE:** There will always be electrical interference present from your boat's ignition and charging systems, other electronic equipment, or miscellaneous electrical devices such as bilge pumps, bilge blowers, or automatic pilot. Without reasonable proper precautions, this interference may cause random, false, and inaccurate depth readings on your Aqua Probe digital depth instrument.

This interference can "contaminate" the depth finder in several ways. The most common source of contamination is *power line interference*. To avoid this, it is best to provide *separate power wiring for the depthfinder, (or any electronic accessories for that matter) directly from the battery to the operating console.* This may already be installed for instruments of similar types. Refer to your boat owners manual.

Do not use the "accessory" terminal of the ignition switch. Be sure that the power line is of adequate size (see the chart on page 7) to conduct the necessary amount of power, and is routed through the boat in such a way that it is kept apart from ignition, charging, or other circuits.

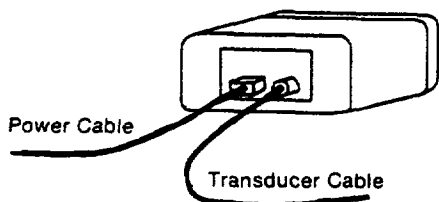
## POWER LINE SIZES RECOMMENDED FOR AQUA PROBE DIGITALS

### LENGTH OF WIRE PAIR MINIMUM SIZE\*

up to 20'	#16 AWG
20' to 30'	#14 AWG
30' to 40'	#12 AWG
over 40'	#10 AWG

\* - refer to USCG wiring requirements.

### TRANSDUCER CONNECTION FOR NO. 530 and 550 DEPTHFINDERS:

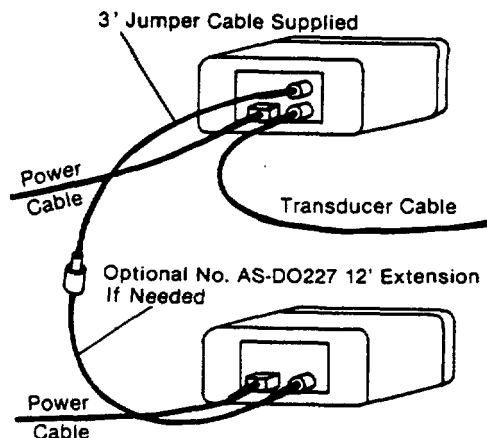


The transducer connectors on the No. 530 and No. 550 Aqua Probe digital depthfinders are special HEAVY GOLDPLATED, MIL-SPEC VERSIONS of the industry-standard universal RCA type phono connectors. These connectors are provided both on the transducer cable and the unit itself. The connection is simply made by inserting the plug on the cable into the socket on the back of the depthfinder. Use a slight, clockwise twisting motion, until the connectors are seated properly. Disconnection is accomplished with a similar clockwise, twist/pull action.

**WARNING: NEVER ATTEMPT TO REMOVE THE PLUG BY PULLING ON THE CABLE! Always use the knurled hold-area of the connector as a grip in disconnecting the transducer.**

Additional transducer-installation information is provided with the transducer. Each of the transducer types-transom mount, thru hull, or puck-type-has its own installation requirements.

### TRANSDUCER CONNECTION FOR THE NO. 540 REMOTE



The No. 540 digital remote indicator is completely self-contained. No modification to your existing depthfinder head is necessary. All you have to do is plug the transducer cable into the No 540 remote, plug the No. 540 remote's jumper cable into the transducer socket on your depthfinder, and provide a 12V-DC, negative ground power connection. The accuracy and sensitivity of your depthfinder will not be affected. The No. 540 remote depth indicator connects directly to any Aqua Meter or other popular depthfinder in the 175 to 225 KHz range.

The only connection between your new Aqua Probe No. 540 digital remote depth indicator and its master "main" depthfinder is the Jumper Cable which is supplied with the unit.

If the main unit is a flasher or graph depthfinder, you may want to install your new No. 540 digital nearby. Assuming the main depthfinder's transducer connector is a standard, RCA phono type of plug, simply plug the main depthfinder's transducer directly into the appropriate, transducer

jack on the rear of the No. 540, instead of directly into the host depthfinder. Then connect the jumper cable from the No. 540 remote to the master unit. Since the No. 540 remote operates on a unique, "sampling" principle, it can now "read" the signals passing between the master depthfinder and its transducer, and translate those signals into a digital depth readout.

### **MOUNTING YOUR NO. 540 IN A REMOTE LOCATION**

If you want to mount your No. 540 in a location remote from the master depthfinder-such as on a flybridge, aft fishing control station, nav-com station, or master stateroom-it will be necessary to use an optional transducer extension cable (Aqua Meter Part No. AS-DO227. 12 ft. low-capacitance transducer extension cable assembly) with the jumper cable.

### **SPECIAL TRASDUCER WIRING INFORMATION FOR YOUR AQUA PROBE No. 540 DIGITAL REMOTE**

Installation of the No. 540 remote with a competitive brand unit, may require transducer connector adaptors. For example:

*Connector Adaptors:* The jumper cable and connectors provided with the No. 540 remote will allow connection to all Aqua Probe 200 KHz depthfinders manufactured by Aqua Meter Instrument Corp., including Aqua Probe *Recorders, and any other depthfinders in the 175 to 225 KHz range that use standard RCA type phono connectors.* The following Aqua Meter depthfinders and recorders are compatible with the No. 540 remote without an additional connector adaptor: the 350 Series, the No's. 35455, 35859, 361, 364, 366, 372, 373, 374, 375, 340, 370, 380, 390, 394, 530, and 550.

For depthfinders in the 175 and 225 KHz range, that use other types of connectors, the following four methods of adapting transducer connections may be considered:

1. Aqua Meter offers connector adaptor kits to match depthfinders that use the popular phone or BNC types of connectors for transducers. They are shown below ...
  - a. For PHONE connectors use the Aqua Meter adaptor kit No. AS-A0170;



- b. For BNC connectors use the Aqua Meter adaptor kit No. ASA0171.



2. For other connectors, you may be able to purchase the necessary adaptors from your local electronics store. You will need one of each of the following:
  - a. Transducer jack to PHONO plug;
  - b. PHONO jack to transducer plug. Aqua Meter stocks a number of miscellaneous connector adaptors for the less popular types. Contact the factory to check for their availability.
3. The third alternative is to cut the transducer cable in the area where it passes the No. 540 remote depth indicator and install an RCA type male phono plug on each cut end. These connectors then plug into the rear of the No. 540 and the jumper cable is not needed.

This procedure is the most efficient by far. It also is the least expensive method. Some experience in electronics and soldering is necessary. An alternative is to have a local radio/TV repair shop install the phono plugs.

**NOTE: Since this method of installation requires modification of the transducer cable, it may affect the warranty on the transducer, although, if done properly, no damage will occur to either the depthfinder or transducer.**

**Naturally, Aqua Meter Instrument Corp., cannot be responsible for damage to your depthfinder or transducer due to faulty installation of connectors.**

4. The fourth approach is to use a universal connector adaptor-Aqua Meter part No. AS-D0226. This adaptor also has a built-in "Balun" matching transformer. Therefore, the adaptor can be used with two-wire or coaxial cables, as well as with three-wire or two-wire-plus-shield transducer cables. Instruction for installation of the universal connector adaptor is supplied with the adaptor.

## TRANSDUCER SPECIAL INFORMATION

The 550-and 530 are supplied with a high speed transducer with 20-foot cable, and transom mount brackets. (Optional 12-ft. cable extension is available.) The High Speed Transducer can also be used inside a

solid fiberglass or aluminum hull, by placing it in a water well or cementing it to the inside of the hull. (See separate instructions provided with the transducer.) If another type of 200 KHz Aqua Probe transducer is preferred, it can be substituted with no retuning.

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## OPERATION

Your Aqua Probe digital depth instrument has an advanced version of Aqua Meter's exclusive DRR (Delayed Receiver Recovery) circuit which was pioneered in the Aqua Meter "Cheater" line of shallow water depth fishfinders. This unique circuit virtually eliminates erroneous false echoes due to all but the most severe subsurface interference and thus, the false readings that they cause.

Proper adjustment of the sensitivity control (and mounting of the transducer, which is-detailed later in this manual) unquestionably is the most important factor in obtaining optimum performance from any depth finder. Unlike some competitive units that do not provide any way for the operator to adjust the sensitivity, your Aqua Probe digital unit combines overall gain adjustment, subsurface interference rejection adjustment, and vernier automatic gain limiting in one master SENSITIVITY knob.

The following procedure should be completely understood through actual operating experience. Once that experience has been achieved it will be obvious how logically the Aqua Probe digital depth instrument controls, switches, and operating functions are arranged.

### 1. PRE-SET THE CONTROLS:


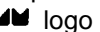
It is best to preset all controls before you attempt to operate the unit.

#### Turn the:

- POWER SWITCH (Light-Off-On) to center, off position;
- All other switches should be in the down position;
- SENSITIVITY and SHALLOW alarm knobs to minimum settings;


- DEEP alarm knob (on model No. 550 only) to its maximum setting.


### 2. TURN ON

Switch the POWER toggle (LIGHT-OFF-ON) down to the ON position. At this point, on all models, an Aqua Meter logo  should appear on the left side of the Liquid Crystal Display (LCD). It serves as an "on" indicator in much the same way that a pilot light does on older types of electronic equipment. If it is dusk or night time, instead of moving the power switch down to "ON", move it up to LIGHT. In this case, the unit will come on, the  logo will appear and the night light will illuminate the LCD with a soft red glow. The Aqua Meter exclusive LCD has a special reflective polarizer which not only improves contrast during daytime operation, but also serves to distribute the night-light more uniformly across the display under low-light conditions.

The electrical current drain with the power switch to "ON" is less than 0.2 amp, and this position should be used whenever battery reserve must be conserved. With the night-light activated, the current increases slightly, but is still less than 0.3 amp.

~~If your unit is a model No. 540 digital remote it is necessary to turn on the "main" depthfinder, to which the No. 540 is connected before the No. 540 will function.~~

~~The models No. 530 and 540 will display only the  logo.~~

The model No. 550 will display the  logo and the words "No Echo" in the lower left corner of the LCD at "zero" sensitivity. (See "Quick

Tuning," Pgs. 3 and 4.)

### 3. SET THE SENSITIVITY

At this point there will probably be no depth indicated on the LCD. "Probably" because the SENSITIVITY was turned all the way down when the controls were preset in an earlier step. With a minimum sensitivity setting it would require an extremely strong return echo to activate the digital circuitry. This condition usually can take place only in shallow water over a hard sandy bottom.

To read the depth, slowly advance the SENSITIVITY knob to that point where the water depth just starts to be displayed.

On the Model 550, at that point, the "No Echo" indication will disappear and the water depth will be displayed.

This is called the sensitivity "threshold" point. Once the threshold has been determined, continue to advance the SENSITIVITY control to about TWO GRADUATIONS HIGHER THAN THE THRESHOLD POINT.

This is the correct procedure for setting the SENSITIVITY level for normal depth reading. It will result in the most stable and consistent operation of the unit. and should be repeated periodically to assure that the two-graduations-above-threshold setting is being maintained. As your boat navigates from one area to another, the depth, bottom condition, sub-surface interference, and other factors affecting the strength of the return echo change. This procedure will allow some variations in return echo characteristics, due to the factors noted above, without frequent false indications.

As an example, the strength of the return echo can be reduced by more than 50% and the correct depth still will be displayed. In fact, the echo can even disappear for several counts. Yet a memory circuit in the depthfinder will continue to cause the last true indication to be displayed.

Also, when your depthfinder is correctly adjusted, the unit's sensitivity will not be so great as to cause frequent false depth readings from echo signals bounced off of

fish, weeds, thermoclines, or miscellaneous responses from the sides of the transducer's beam pattern.

If the No. 530 and 540 displays occasionally go blank, or on the model No. 550 the "No Echo" indication appears, the sensitivity should be readjusted upward. These symptoms can be caused by navigating into much deeper water, or into an area with a soft, muddy or weeded bottom. Additional receiver sensitivity provides the proper signal strength to trigger the digital processor.

Similarly, if the display frequently indicates an abnormal shallower depth reading-say you enter an area known to be about 50 ft. deep, where the display indicates 50 ... 50 ... 49 ... 48, jumps to 17 or 23 or some other random number, and then back to 50-you can assume that the unit is responding to a target between the surface and the bottom.

A more frequent cause of "falsing". or the momentary display of an abnormal random number in all digital depthfinders, is subsurface interference. The sonar signal is reflected off various particulates, marine vegetation and organisms. air bubbles from other boats, prop-wash, engine exhaust, cavitation, or waves which are always present in the upper layer of any body of water.

In this case the SENSITIVITY setting may be too high, and again it should be readjusted. In some very infrequent cases, the return echo signal from the intermediate target actually may be stronger than the bottom echo signal. Readjustment of SENSITIVITY will have little affect in eliminating the display of an occasional random number under this condition.

As with any depthfinder, the maximum depth capability depends on an almost infinite number of external variables such as water purity, reflection coefficient of the target (bottom), transducer mounting and coupling to the water, presence and gradient of thermoclines and subsurface interference. Under "ideal" conditions these ratings easily can be exceeded. Similarly, under extremely adverse conditions the maximum depth capability may be reduced to half of these ratings or even less.

#### 4. SET THE RANGE

Each of the Aqua Probe digital depthfinders will operate over a depth range unique to that particular model as follows:

Model	Min. Operating Depth	Max. Depth
No. 530	3'	400' +
No. 540	See 4A. below	
No. 550 (Shallow Range)	1.9'	99.9' + See 4B. below
(Deep Range)	4'	500' +


#### 4A. NO. 540 RANGE

While most operation instructions, which apply to the No. 530 and No. 550 digital depthfinders, also apply to the No. 540 remote, it is well to remember that the No. 540 only samples the signals of its the main depthfinder.

Therefore, the minimum depth capability of the No. 540 remote is determined primarily by the transmit pulse width of the master depthfinder to which it is connected. The minimum depth rating usually will be the same (plus 1 digit) as the master depthfinder. As an example, if the No. 540 is operated in conjunction with No. 530 that has a minimum depth capability of two to three ft., the No. 540 will read as shallow as three to four ft.

The *maximum* depth capability of the No. 540 remote also is determined by the master depthfinder. In this case, the factors involved are the transmit power and update rate of the master unit. As an example. if the No. 540 is used with an Aqua Probe No. 374 "Cheater" 0-40 ft. flasher type depthfinder, the maximum depth capability of the No. 540 also will be 40 ft. When used with a No. 530 or No. 550 digital, the No. 540 will have the same maximum depth capability as the master. If another brand depthfinder is used as the master, generally the No. 540 will read at least as deep as the main unit.

#### 4B. OVER RANGE CAPABILITY

The model 550 can be read deeper than 99.9 ft. on the shallow range. When 100 ft. depth is reached the "Over Range" indication will be displayed above the  logo on the left side of the LCD. In this case, the last three significant digits of the depth reading will continue to be displayed, such as "07.4". When this occurs, it will not be known whether the true depth is 107.4, 207.4, or 307.4 ft.

True depth can be determined by momentarily switching to the deep range. If "207" is displayed, the true depth is 207.4 ft. In this way 0.1 ft. resolution can be achieved well beyond 99.9 ft. -

The maximum depth capability of the No. 550's deep range is limited, by the digital processor circuitry, to 511 ft., when the update switch is in the fast position. Greater depths can be read by switching to the slow update rate.

#### 5. READ DEPTH

On the No. 530, 540 and on the deep (4'-499') range of the No. 550, the depth indicated on the LCD is in feet. The actual depth will be rounded-off to the -nearest foot by the digital processor. Accordingly, an actual depth of 34.4 ft. will read 34. ft. If the actual depth were 34.5 ft., the reading would be 35. The unit will read 34 ft from 33.5 thru 34.4 and then 35 ft from 34.5 thru 35.4, and so on.

When the depth range switch on the model No. 550 is moved up to the 2-99 ft. position, a decimal point will appear on the LCD and the unit will indicate the depth in tenth-of-a-foot increments with 0.1 ft. resolution. This "shallow" (tenths-of-a-ft) range should be used when very good depth resolution is required, such as when navigating over an area where the bottom has a very gradually changing slope. This range also should be used when you are in extremely shallow water, and for all other applications requiring precise depth measurement. Keep in mind, however, that in the shallow range the depth reading will vary almost continually. It will rarely stay the same for more than a few seconds, even with the boat seemingly at rest. This is because less than a one-inch change in depth is

sufficient to cause the display to change one digit.

For all other conditions, the deep, 4-499 ft. range on the No. 550 will yield adequate resolution. The resultant display will tend to appear more stable because a greater change in depth is required to change the reading. In addition, the No. 550's transmit pulse width is increased significantly on the "deep" range to improve maximum depth capability and depth reading stability. This takes place with some sacrifice in shallow water (minimum depth) resolution, and is why the 2-99 ft. range should be used whenever navigating in shallow areas.

## 6. SET THE UPDATE RATE

The update rate on the model No. 530 is fixed at approximately one sounding per second. The model No. 540 digital remote automatically is adjusted to the update rate of the master unit to which it is connected. It will vary from a minimum of about 0.4 sec. when used with a flasher depthfinder, such as Aqua Meter's NO. 374 "Cheater" 0-40 ft. model, to a maximum that is equal to the master unit's rate.

The No. 550 is equipped with a front panel switch to set the update rate or the speed at which the information displayed on the LCD readout is updated with new information. In the normal, down, fast, position of this switch, the displayed information is updated approximately twice each second. In the slow position, the displayed information is updated about once every two seconds. The fast rate should be used, not only for normal operation, but also especially when navigating in dangerous areas. The slow rate can be used while cruising in known areas or rough waters. It will yield a more-steady, and easy-to-read display. The slow rate also is advisable when fishfinding, since the fish depth will be displayed for a longer period of time.

## 7. SET THE SHALLOW ALARM (Also see "Quick Tuning", Pgs. 3 & 4)

All three Aqua Probe digital instruments are equipped with a variable SHALLOW WATER ALARM circuit. This circuit sounds an audible alarm whenever the boat is navigated into an area where the water depth is SHALLOWER than the alarm setting. This means you

can use the shallow alarm as a safety device to help avoid running aground. The shallow alarm also can be used as a navigational tool to give you notice when a bottom contour line on your marine chart has been reached. The shallow alarm can function very effectively too as a fish detector, if the sensitivity is increased slightly more than that required for normal bottom readings.

There are two switches, plus a variable knob, used to activate and adjust the shallow alarm circuit. These are:

- the alarm ON-OFF switch;
- the alarm knob which is used to adjust the shallow alarm circuit to any desired alarm depth within its range.
- the ALARM SET/DEPTH switch which is basically a DISPLAY SWITCH. It selects what information is to be displayed on the LCD readout. When in the normal down or DEPTH position, the LCD will show the depth of water below the transducer. When this switch is in the up, or ALARM SET, position, the LCD readout will show the depth to which the alarm circuit is set.

Turn on and adjust the unit for normal operation as described earlier. At this point, the correct depth should be displayed on the LCD readout.

Move the shallow alarm ON-OFF switch up to the ON position. Note: At this point the Audible Alarm should not be heard since the shallow alarm knob was preset to minimum. The alarm may sound when the alarm is turned on if the depth is shallower than that alarm setting. Keep in mind that whenever this switch is to the ON position, the shallow alarm circuit is activated regardless of the position of the display (ALARM SET/DEPTH) switch.

The LCD readout still should be indicating the depth of water. Now, move the DISPLAY switch from the down DEPTH position to the up ALARM SET position. At this point the LCD readout will indicate the depth to which the shallow alarm is set.

Slowly rotate the shallow alarm knob to increase the depth to which the alarm



is set. Notice that, as the control is advanced, the number displayed on the LCD readout becomes larger indicating that the shallow alarm set point is getting deeper.

Once the shallow alarm has been set to the desired alarm depth, move the DISPLAY switch down to DEPTH to resume reading the water depth on the LCD readout. You can check the alarm setting anytime the alarm is on by momentarily moving the DISPLAY switch to ALARM SET.

The range of depth settings possible for the Shallow Alarm varies from model to model as follows:

Model	Typical Range
530	5' - 100'
540	5' - 100'
550	2.5' - 50'

**CAUTION: On the No. 550 digital depthfinder the shallow alarm has been designed to take advantage of the unit's very-shallow-water resolution by allowing the alarm to be adjustable down to a similarly very-shallow depth. Because of this it may be possible to adjust the No. 550's shallow alarm to a set point that is shallower than the No. 550 can read in the deep range. When navigating and using the shallow alarm in very shallow areas, always switch the No. 550 to the tenths (2' - 99') range.**

Please note that if the display switch is moved to "Alarm Set" before the alarm is turned on, the LCD readout will lock onto the last depth reading. It will continue to display that same number until, either the alarm is turned on, or the display switch is returned to "depth".

### 8. USE THE SHALLOW ALARM (See Pg. 14 for "Anchor Alarm")

This section deals with the various uses for the shallow alarm. They include safety from grounding, use for navigation and fish finding. The section in this manual on "Navigating and Piloting" will detail that aspect of depthfinder use very thoroughly. The use of a Shallow Alarm as an aid to position determination and following contours will become obvious.

When you are using the alarm as a grounding warning, the shallow alarm should be set to a depth that not only will allow adequate clearance below the hull, but also sufficient advance warning that a dangerously shallow area is being approached. If the chart indicates that the depth of a channel nominally varies between five and eight ft. at dead low tide, and abruptly shoals at the edge, adjust the shallow alarm just slightly shallower than the five ft. point. This will give you the earliest possible warning that you are approaching a channel edge. Always keep in mind that the depth reading display on the LCD readout is the depth from the transducer face to the bottom.

To use the Shallow Alarm as a fish finder, adjust the setting to a point just above the bottom, so that any return echo between the surface and bottom will cause the alarm to sound. Then advance the SENSITIVITY knob to three or four graduations higher than the threshold point. This will increase the sensitivity of the unit so that it will respond, not only to the stronger bottom echo, but also the weaker echo signal reflected from fish. When the alarm sounds, note the instantaneous depth reading. It will indicate the depth of the fish for several seconds, then resume indicating the bottom depth.

### 9. SET THE DEEP ALARM

The No. 550 also is equipped with a deep alarm that is fully adjustable from the front panel, much the same way as the shallow alarm. Accordingly, its operation procedure is very similar. Turn on and adjust the unit for normal operation in the feet range, and either fast or slow update rate. At this point the correct depth should be displayed on the LCD readout.

If the shallow alarm has been activated, TURN IT OFF before proceeding with the adjustment of the deep alarm. Although both shallow and deep alarm can be operated simultaneously, as will be described later, *they must be adjusted individually.*

Move the deep alarm ON-OFF switch up to the ON position. Note: At this point the audible alarm will not be heard unless the water depth is greater than the maximum deep alarm setting.



**AQUA METER'S EXCLUSIVE TECHNOLOGY**

**DEPTH ACCURACY:** All internal signals necessary for the digital processor, LCD circuitry, and for establishing the unit's depth accuracy tolerance, are generated from a single, high-stability Reference Oscillator. This same basic design philosophy is common to all three Aqua Probe digital models: the No. 530, No. 540, and No. 550. The depth accuracy designed into the digitals is based on the assumption that the velocity of ultrasonic acoustical sound waves in water is 4800 feet-per-second. In practice, the actual speed of sound in water varies as a function of temperature, salinity, and pressure (depth). These variables alone can contribute a ± 5% worst-case-error to the depth reading if all the variables are at the extremes of their ranges, within the 600 ft. maximum depth capability of these units. However, the probabilities of all of these factors simultaneously being at the worst case extremes of their ranges, is very low and the assumed velocity usually is accurate. Accordingly, the rated depth accuracy for the three Aqua Probe digital models is given in the following chart:

In the event that a No. 540 digital remote depth indicator is operated with either a No. 530 or No. 550 digital depthfinder it is entirely possible that there may be a difference in depth readings between the two units. This difference would be due to their relative accuracy tolerances. However, both units generally would be subjected to the same input voltage and environmental conditions. They would tend to vary in the same tolerance direction, thus, limiting the difference in readings to 1 or 2 feet (or slightly more in deep water).

When operating your unit, remember, that any digital depth sounder only will indicate the distance from the transducer face to the nearest target within the transducer's beam pattern. It cannot provide information on the nature of the bottom, details of structure, or other characteristics. These are capabilities that are unique to flasher and recorder types of depthfinders, such as the Aqua Probe line of flasher models and No. 390 series straight line recorders. However, they will provide extremely accurate and reliable measurements of water depth without the need to "interpret" readings.

<b>Model</b>	<b>Nominal Accuracy - 13.6VDC, + 25Deg.C</b>	<b>Worst Case Accuracy - 10 to + 50°C 11 to 16VDC</b>
530	+1.4' ±0.5% - 0.6' *	+1.9' ±3.0% - 1.2' *
540	+1.6' ±0.5% - 0.8' *	+2.1' ±3.0% - + 1.2' *
550 in 2' -99' range	+ 0.2' ± 0.5% - 0 **	+ 0.5' ±3.0% - 0.3' **
550 in5% 4' - 499' range	+1.1' ±0.5% - 0.9' *	+ 1.4' ±3.0% - 1.2' *

\* Rounded off to nearest ft.  
\*\* Rounded off to nearest 1/10 ft.

As an example, a model No. 550 operated in the 2-99 ft. range, in exactly 60 ft. of water, nominally would read from a minimum of 59.7 ft. to a maximum of 60.5 ft. Similarly, a model No. 530 in exactly 150 ft. normally would read 149 ft. minimum to 152 ft. maximum. In essence. the unit is as accurate as the normal variations in the speed of sound in water will allow.

**INTERFERENCE**

Protection against interference is built into your Aqua-Probe digital depthfinder. An exclusive filter circuit and special shielding virtually eliminate interference from engine, radio, ignition, pump motors and other marine electrical devices. However, under certain conditions, even these precautions may not be sufficient and like all electronic

equipment, your unit can be susceptible to electrical interference.

Interference produces random, false depth readings which bear no relation to the true depth. It can be identified readily since it disappears as soon as the equipment causing the interference is shut off. Below are some checkpoints.

- Indicator and transducer cable may be too close to other electrical wiring on board. Try moving them.
- In some instances interference will be greater when the unit is powered from the boat's batteries than from a separate battery source.
- High speed and high engine rpm's can cause considerable interference. The transducer picks up mechanical vibration caused by the engine, propeller, shafting, etc. thus producing simulated 200 KHz echo signals that may false the depthfinder.

## **NAVIGATING AND PILOTING**

Every government navigation chart-be it a Coastal Chart, Smalcraft Chart, Lake Survey Chart, Intracoastal Waterway Chart or River Chart-gives hundreds and sometimes thousands of representative and useful soundings. Government survey teams have taken great pains to create a highly reliable underwater topography (or mapping of bottom contours) for almost every sizeable, navigable body of water.

Knowledgeable boatmen use quality depthfinders, along with their compass and charts, primarily for the safe piloting of their boats in unfamiliar waters. It tells them how much water is under their transducers at any given moment, and enables them to explore shoal areas without running aground. To repeat, it is important to remember, however, that every depthfinder has one critical limitation: it cannot make predictions. In other words, you can have 15 feet of water under you one minute and be hard aground the next because of rapid shoaling. But avoiding groundings is only one useful-if obvious-function of your digital depthfinder. Another, which we'll go into at length, takes advantage of the

many hundreds of accurate soundings provided on your chart.

## **Determining position**

Your digital depthfinder is probably the world's most under-rated or under utilized electronic navigational aid. This is because very few non-commercial owners understand and take advantage of its position-finding potential.

If you study a chart you will see that it not only has an enormous number of soundings or indicated depths, but it also has "elevations" or "bottom contour lines" which outline areas of equal or nearly equal depth. Your digital depthfinder is the only practical means of learning when you are crossing these lines. It is therefore an enormous help in determining your position relative to your chart.

## **Following contours**

Northern-bound commercial ships approaching the port of New York will be on the continental shelf off the New Jersey coast. When their depthfinders suddenly indicate much deeper water they know they've reached the Hudson River Canyon. They then turn toward the northwest and begin their approach up the Narrows. Most contour-following, however, is the other way around.

For example, say you're approaching a coastline in poor visibility, carefully comparing depth readings to your chart. Your Aqua-Probe digital, which .has been indicating depths of 60 to 70 feet, begins indicating sudden shoaling and soon is registering depths of 30 feet; your shallow alarm (set to 30 feet) sounds. Your chart confirms that your estimated course cuts rapidly across several successive fathom curves that run exactly parallel to the shore half a mile out. You may not know quite where you've crossed this shoaling area, but you do know you're half a mile off shore. In other words, your digital depthfinder has given you a pretty firm "line of position." (A simultaneous visual bearing on a landmark ashore or buoy, or a simultaneous bearing using a radio direction finder, would then give you a "fix"... that is, establish your position.)

Your chart, and a quick calculation, tells you that if you maintain your course and speed, you will reach another fathom curve and the water will shoal to about 20-24 feet in about 10 minutes, and soon thereafter become dangerously shallow. You proceed cautiously, set your depth alarms, watching your depthfinder closely, and as soon as you see your depth changing from around 30 ft. to 23 ft., you alter course at once. The harbor you want is up the coast and as long as you follow this fathom curve, i.e., steer to stay within 20 to 24 ft. of water, you'll reach your harbor entrance safely.

Simply adjust the shallow alarm to sound at a depth between two to four ft. shallower than the bottom contour you wish to follow. (see "Use the Shallow Alarm" section from the Operating Instructions in this manual). Then set the deep alarm to sound at a set point which is two to four ft. deeper than that contour line. Naturally, the actual set points of the alarms will vary with the sea conditions and wave heights. Then, steer as close a compass course as you are able; if the alarm sounds, note the depth from the LCD readout and steer shallower or deeper as required to follow the contour and quiet the alarm.

### **Two precautions**

Before going on to position finding, two important factors must be emphasized again. Your Aqua-Probe digital, like all depthfinders, measures depth from the bottom of your transducer-not from the surface of the water, and not from the bottom of your keel. This difference, which is often a couple of feet or more; must be remembered and factored into your readings.

The second factor is seasonal change on lakes and rivers, or tides in coastal areas. Since your digital depthfinder makes no allowance for the season of the year (thaws, rains, etc.), or tides that change water depths every hour, these must be factored in as well. Your chart gives the reference plane-or "datum"-of its charted soundings.

Any basic book on piloting explains how to use tables to calculate the height of tide at any given hour at any given location. It is then a simple matter to modify the

"depth of water" readings given on your Aqua-Prove digital so that they correspond to the "depths of soundings" given on your chart.

### **Position by line of soundings**

Suppose visibility is bad and you're navigating by "dead reckoning." You know your compass course, estimated speed over the bottom, and are making allowances for current and/or wind. How can your digital depthfinder tell you almost precisely where you are? The procedure is to establish a line of position by soundings. You study your chart to find promising bottom terrain ahead-that is, you look for fathom curves that lie ahead of your estimated course or "track." You then maintain course and speed and make a series of soundings (corrected for tide) at regularly timed intervals-say 5 minutes apart. You record six or more of these soundings and plot them on a transparent sheet (clear plastic or tracing paper) with the distance between each sounding matching boat speed and scale of chart. You then move the sheet around on your chart until your plots are aligned with the chart soundings. Assuming they closely agree, your last sounding along the line of position can be considered your "fix".

It goes without saying that soundings on a flat bottom are worthless in determining position, and that the more pronounced the unevenness of the bottom, the more reliable your "fix." It is also obvious that you have to be reasonably sure of your speed over the ground, and that this position finding method should be planned a bit in advance and practiced in non-emergency situations-i.e., with knowledge of exactly where you are.

### **Negative information**

Your digital depthfinder can tell you where you are; and, it can tell you where you are not. Suppose, again, that you're navigating by "dead reckoning" and you have an "estimated position." If your digital depthfinder agrees with the charted depth at this position you may or may not be right where you think you are (depending on whether or not there are other areas of equal depth in the vicinity). If, on the other hand,

your depthfinder gives a markedly different depth, you've learned that your estimated position is almost certainly wrong. In short, your Aqua-Probe digital provides a very valuable safety check.

### **In combination with other aids**

It almost goes without saying that a high quality, accurately compensated compass is absolutely essential for any piloting and navigation. No boat, even a small runabout, should venture offshore without one. Although good fixes can be gotten from a line of soundings, more reliable fixes can be obtained by combining soundings with other plotted lines of position—namely, cross bearings. These can be visual (Aqua Meter compasses—with exclusive "Nava-Grid"® course and bearing lines—double as good bearing compasses). Or they can be electronic, or both visual and electronic.

A radio direction finder, a compass and a depthfinder complement one another very effectively. The most simple procedure is to obtain your RDF bearing and plot it on your chart. You then take a depth reading as simultaneously as possible, correct it for tidal difference, and check along your plotted ROF bearing for the depth obtained. Unless there is more than one such depth in the vicinity of your bearing lines, you have your fix. The best fixes use three widely spaced bearing lines that converge on a tight triangle. The Aqua Meter Aqua-Guide® ROF is a first class navigational instrument that can, with practice, provide exceptionally accurate RDF bearings.

Experienced boat pilots and navigators check their positions continually, and use all available electronics—even in good weather, to assure reliance and confidence if the weather turns bad. They consider their depthfinders, compass and other navigating instruments to be completely indispensable.

### **Small boat use/anchoring**

Even up-to-date charts are not much help in an anchorage. Local silting or dredging may have gone unreported, and the quality of the holding ground may be

quite different from that noted on your chart. Also it's useful for finding shelter in adverse weather, or finding new and secluded anchorages, or unmarked channels, or for feeling your way into an unfamiliar dock.

So far we have been talking about piloting bigger boats, but your digital depthfinder is equally useful for exploring uncharted tidal estuaries, shallow marsh areas, and small uncharted rivers and lakes with a small boat. It can open up new territories. It can make your boating very much safer—even in so called "protected" inland waters. Since, as we've said, digital depthfinders make no predictions, always proceed at low speeds in uncharted and unfamiliar waters. For instance, it's an excellent idea to look for shallow water or underwater obstructions before water skiing. It can save a lot more than a broken prop. In other words, your Aqua-Probe digital is an extraordinarily versatile instrument. It's the one piece of electronics that's as valuable on high speed runabouts as it is on a big cruising boat making a landfall day or night.

### **Always available**

No matter how quickly a fog rolls in or a rain squall obscures visibility, the bottom with its characteristic, tell-tale contours is always there. Your Aqua Probe digital depthfinder is one of the most reliable and nontemperamental electronic instruments ever made. It can be used virtually every minute of the day or night. Few things in life are as reassuring as being able to know with certainty how much water is under your boat at any given moment... or being able to learn exactly where you are in thick weather. Your Aqua Probe digital can put this knowledge at your fingertips; it's a great confidence builder.

The quickest way to learn depthfinder navigation is to watch experienced navigators use it routinely. Failing that, it's a good idea to practice comparing your depthfinder's readings to charted depths when, from buoys or ranges, you know exact position on your chart. It's also a great way to study charts and sharpen piloting skills.

## **TRANSDUCER MOUNTING (SEE ALSO INSTRUCTIONS SUPPLIED WITH TRANSDUCER)**

The most important and time-consuming part of installing a depthfinder is determining the best place to install the transducer. The transducer must be submerged at all times, free of water turbulence and air bubbles, and its face must be as parallel to the surface of the water as possible.

Because there are about as many different hull shapes as there are boat models, no "best" location can be recommended. Trial and error testing may be necessary before you are satisfied. Of course, the experience of dealers and fellow boatsmen with similar hulls can be helpful.

### **TRANSOM MOUNT**

This is the most popular transducer mounting for smaller boats as well as some larger ones. Installation is quick and easy when a specially designed transom mounting bracket and transducer is used. It permits transducer removal while the boat is in the water. Equally important, it locates the transducer where it is safe from the serious damage that can occur during beaching or loading on a trailer. However, putting it close to an outboard or I/O may cause electrical or sonic interference problems. As a rule of thumb, try to mount the transducer a minimum of 12 inches from the engine and as close to flush with the hull bottom as possible in a location that will be submerged at all times.

### **INSIDE-THE-HULL**

This is an easy way of installing a depth-sounder mid-season while the boat is in the water, but cautions must be observed. The technique is popular among owners of fiberglass racing sailboats, and certainly can be used on the right type of powerboat hull. The fiberglass hull must be solid fiberglass and resin at the "water box" location, without any core or air chambers to interrupt the pulses intended to pass thru the hull. Primary

advantages are that no hole thru the hull is needed, there is no external unit to offer resistance to the flow of water (no matter how small), and the transducer cannot become fouled. Major disadvantage is that the maximum depth readings of the depthfinder will be somewhat reduced. Pulses cannot pass out and back thru the fiberglass without losing part of their energy. This clearly means that the depthfinder will not read as great a depth of water. It is impossible to make any hard-and-fast rules... particularly since loss increases with thickness of fiberglass... but expect that ability to read depths will be reduced 10 to 30%.

**Caution: Your Aqua-Probe depthfinder is sufficiently powerful for this type of installation, and will generally read at least to its depth scale. However, there are a great many depthfinders on the market with considerably lower transmitter power, and a "water box" installation is not likely to be successful with them. Some boats have a bilge pump sump or wet location that may serve as a water box.**

Transducers also can be cemented inside a hull using a 2 part epoxy resin. Because of the ease of installation, this is an increasingly popular technique and, due to the Aqua Probe's extremely high transmit power, will work better than most other high quality units available. However, the ability to adjust for optimum distance between the bottom of the transducer and the inside hull is limited. Therefore, success can vary from an installation equal to a "water box" to somewhat less efficient.

In selecting a location for mounting the transducer inside the hull, find an accessible spot in an area that is as level as practical (since the "window" or bottom of the transducer should be mounted parallel to the water line) and in a location where the minimum amount of hull vibrations or noise might be transmitted to the transducer. It is good to avoid a location close to engine mounts, shaft logs, or struts, and naturally, any place where the hull will be out of water when your boat is

heeling or under way.

A water-box can be made from any material that can be easily worked and laminated or attached to the hull, i.e., fiberglass, "PVC" or acrylic tubing or wood. Some boatmen recommend a short piece of 5 or 6 inch diameter tubing. Naturally, the hull forms the bottom of the box. The bottom edges of the box or tube must be shaped to fit snugly against the hull, with epoxy or other suitable cement used to hold it securely in place. You also will need to make a tightly fitting lid with a hole for the transducer stem or connecting wire. The transom mount type transducer can be used if mounted to the side of the box. Fluid in the "box" needs to have a density similar to water. Care should be taken to use a fluid that will not attack the hull material, and also a fluid that will not create a dangerous hazard if by chance it leaks into the bilge. Stay away from anti-freeze because it will attack the epoxy transducer "window." Mineral oil or glycerine are frequently used, or water may be used providing it is drained prior to lay-up to prevent freezing and checked occasionally for evaporation. Check the liquid in the box if any difficulty occurs, since the fluid may have leaked out. Wash the transducer with detergent before installing to make sure the surface is properly wetted.

Position your transducer as close to the hull as possible at first. Then adjust the vertical position by 1/8-inch increments over a 1/2-inch total. This will enable you to determine experimentally the best position for maximum depth readings and strongest return signal. This is important, since the pulses will tend to cancel or reinforce within the water box as a function of the distance between the hull and the transducer window.

#### **THRU-HULL INSTALLATION (WITH OPTIONAL TRANSDUCER)**

As we said, turbulence and air bubbles at the transducer must be avoided as much as possible. This problem is

most common in planning hull powerboats. Generally, the best transducer location on a planning hull is a point well aft of where the hull enters the water when on a plane.

"Thru-hull" is certainly the most common and most permanent method of transducer installation. Generally, the mounting is done by a professional, or by a boat owner who has enough confidence and ability to drill a hole thru the bottom of his hull. Never mount the transducer on the bottom of the keel where it will be vulnerable should you touch bottom. Also keep it at least 72 inches outboard from the keel. On a flat-bottom boat, the transducer is bolted thru a drilled hole and bedded in marine caulking compound to prevent leaks. Vessels with shaped hulls require custom carved "fairing blocks" to keep the bottom surface of the transducer parallel with the water surface. The silhouette of the fairing block should be kept as small as practical to minimize drag and chance of being damaged. Remember, the more smoothly the water flows over the transducer and fairing block, the less turbulence and air bubbles will be generated.

Sailboats have a different set of problems. The thru-hull transducer must be sufficiently outboard of the center line to avoid sonic reflections from the keel. As a rule of thumb, the average transducer has a cone angle of approximately 10' off of a vertical line. If this puts the transducer too far outboard, as might happen on some narrow, deep-keeled hulls, the transducer might be mounted ahead of the keel. If it is suspected that the location selected for transducer mounting is a little too close to the keel, try cheating a little on the clearance angle by tilting the transducer by no more than five degrees away from the keel. -The effect on sensitivity and depth accuracy will be negligible. Remember the transducer must always be underwater, regardless of heel angle, for your depthfinder to function.




## TROUBLE SHOOTING PROCEDURE

### SYMPTOM

### PROBABLE CAUSE

#### ALL UNITS: No. 530, 550 and 540 remote

1. Unit does not turn on:  
no  logo (See Sect. 1)

- a. Check fuse or circuit breaker in the power supply circuit;
- b. Check power connection for correct voltage (12V-DC) and polarity (negative ground);
- c. Make sure power connectors are clean and free from corrosion.

2. No depth reading, even at maximum sensitivity, and on the 550, "No Echo" is displayed (See Sect. 3)

- a. Depth deeper than maximum capability of the unit;
- b. Extremely poor reflection coefficient: i.e., Very muddy, silty bottom condition;
- c. Very densely aerated region, or heavy subsurface interference preventing echo penetration;
- d. Check transducer connection;
- e. Check transducer mounting and clean face.
- f. Defective transducer or wiring.

3. Depth reading abruptly changes to a much shallower reading, then, seconds later, returns to normal (See Sect. 3)

- a. Fish present in transducer beam pattern;
- b. Extreme subsurface interference;
- c. Readjust sensitivity to a lower level

4. Depth reading abruptly changes to a much deeper reading, then, seconds later, returns To normal (See Sect. 3)

- a. Boat motion causes momentary loss of transducer/water contact, so depthfinder responds to second or third multiple echo.
- b. Readjust sensitivity to a higher level.

5. Random "beeps" from audible alarm when the DEEP ALARM is on. (See Sect. 9)

- a. This is an *audible, no-echo* alarm; increase the sensitivity;
- b. Momentary loss of transducer/water contact, (due to high speed, rough seas. etc.) creating a "No Echo" condition.

6. Random "beeps" from audible alarm when SHALLOW ALARM is on. (See Sect. 3)

- a. Fish present in transducer beam pattern;
- b. Extreme subsurface interference;
- c. Readjust sensitivity to a lower level.

7. Depth reading does not change (See Sect. 7)

8. Random depth readings with no relation to the actual depth

9. Continuous very shallow readings, such as .7 or .8 on a No. 550, or 1 or 2 on a No. 530 or No. 540

10. On the No. 550, at very shallow depths of less than four ft., the depth reading is different on the 2.0'-99.9' range, than on the 4'-499' deep range

11. Alarm WILL sound, if...

a. Move DISPLAY switch from "Alarm Set" to "Depth".

- a. Electrical interference from Ignition system on engine or generator;
- b. Electrical interference from charging system;
- c. Mechanical vibration of transducer,
- d. Incorrect transducer mounting, causing air bubbles to flow across the face of the transducer.

- a. Air bubbles across transducer;
- b. Boat in shallower water than the depthfinder is designed to read.

- a. Depth too shallow for the deep (4'-499') range-use the 2.0'-99.9' "tenths-of-a-foot range.

- a. Water is shallower than Shallow Alarm setting
- b. Water is deeper than Deep Alarm setting;
- c. Deep Alarm is ON and "No Echo" is received (increase sensitivity);
- d. Both alarms are ON and Shallow Alarm is adjusted deeper than the Deep Alarm or vice-versa;

12. Alarm MAY sound, if...

e. Both alarms are on and DISPLAY switch is up to ALARM SET (alarms must be set separately).

- a. The unit is turned OFF, ON, or power is momentarily lost due to a poor, or intermittent power connection;
- b. There is severe sub-surface interference present when the Shallow Alarm is ON (reduce the sensitivity)
- c. There is severe electrical interference present: (See page 15 "Interference")
- d. There is a momentary voltage drop due to some other electrical accessory on the boat cycling on-such as bilge blower or pump.

#### SPECIAL TIPS ON 540 REMOTE

13. Remote No. 540 reads slightly different depth than the master unit

14. Remote No. 540 reads much differently from the master unit

a. A normal variation due to accuracy tolerances.

- a. Sensitivity control on either the No. 540, or the master unit, is incorrectly adjusted;
- b. Operation outside the rated depth of the No. 540;
- c. Check both the No. 540 and the master in a known-depth area, to determine which unit requires recalibration.

## Maintenance and Service

Aqua Meter digital depthfinders are rugged, precision-built electronic instruments. Under normal usage, they are designed to provide years of service with little or no special care on your part. From time to time, wipe the case with a cloth soaked in lukewarm water and a mild soap or detergent. Unplug the transducer and power cables, wipe them carefully and inspect for corrosion or damage to the insulation.

Inspect the transducer periodically. This is best done when the boat is being hauled. If operating in salt water, a light, smooth coat of non-metallic anti-fouling transducer paint may be applied with a rag or brush. (Lightly sand off and repaint before each following season.) A build-up of marine growth can well cause a loss of sensitivity, but surprisingly, a thin coating of grease, oil or just air bubbles is likely to cause greater loss. This is why your transducer should always be cleaned with detergent just before each and every time that your boat is launched.

With this treatment, your Aqua Meter transducer is designed to last for a great number of years. You may hear that transducers "age," and this is true. However, your Aqua Meter transducer has been pre-aged so that it has reached our critical stability acceptance level by the time it left our factory. It therefore can be relied on for many years of reliable service, as long as it is not damaged or abused.

## SUMMING UP

You don't have to be the least bit technically oriented to use your digital depth instrument effectively. For all its advanced circuitry and capabilities, your Aqua-Probe—regardless of the model—is exceptionally easy to operate and read. Above all, it is practical and versatile. It can tell you about the contour of the bottom; it can help you locate the best fishing grounds. It can keep you from running aground and damaging your boat and imperiling your crew.

Your Aqua-Probe can make your charts very much more valuable. It can point out piloting errors; can complement other navigational aids; and can help you explore harbors, rivers and lakes. It is available the instant it's needed. It is as much at home on ocean-going sailboats, trawlers and large racing yachts as it is on bass boats and tournament fishing rigs. Only a well-compensated, high quality compass (Aqua Meter makes about 25 models of them) is probably more essential on a boat.

In the days of super bass boats, sophisticated ocean racers, enormously expensive deep sea sport fishermen, and Loran, Omega and Satellite navigation systems, your Aqua-Probe digital depth instrument more than holds its own. It is obsolescence-proof. With proper installation, minimum maintenance and care...and lots of practice... it will add much to your boating pleasure and safety. Few owners understand how to use their depthfinder to anything like its full potential. We've written this handbook in the hope that you, for one, will use yours confidently and effectively.

We wish you many seasons of good fishing and safe, happy boating.

**AQUA PROBE<sup>®</sup>  
DEPTH INSTRUMENT  
OWNER'S HANDBOOK**

**Aqua meter  
Instrument Corporation**  
465 EAGLE ROCK AVENUE, ROSELAND, NEW JERSEY 07068

**AQUA METER**  
**Three Year Limited Service/Warranty**

Covering Model Nos.: 362, 365A, 374, 375, 376A, 530,530W, 540,  
540W, 550, 550W, 650, 650W, 650H, 650HW

**FIRST YEAR WARRANTY**

AQUA METER Instrument Corporation warrants this product to be free from defects in materials and workmanship for a period of one year from the date purchased by the consumer.

During such one year period upon the postage prepaid return of the product to AQUA METER Instrument Corporation, Roseland, New Jersey, 07068, or any of AQUA METER'S Authorized Electronic Field Repair Stations, along with proof of date of purchase, AQUA METER, or its field service agencies, shall repair or replace, at its option, any parts which, in its judgment are defective. AQUA METER shall not be responsible for any dismantling, re-assembly or re-installation charges.

AQUA METER shall not be liable in any respect under this limited one year warranty if the product has been repaired by unauthorized agencies, abused, altered or otherwise misused or damaged in any way.

All warranties, express or implied, of merchantability and all other warranties which extend beyond the description of the product on the face hereof, shall terminate one year after the date the product is purchased by the consumer. AQUA METER shall not be liable for any consequential damages, except to the extent required by law.

**SECOND AND THIRD YEAR SERVICE**

During the second and third year of ownership, AQUA METER will repair or replace any electrical or electronic part, except depth finder transducer or speedometer sender, for labor charges only, not to exceed \*\$19.50 for flasher type depth finders or \*29.50 for digital depth finders and speed/logs, plus freight to and from an authorized repair station or the factory.

With the exception of the not-to-exceed labor charge and limitation to electric and electronic parts, all conditions of the first year warranty are understood to apply during the second and third year.



**Aqua meter Instrument Corp.**

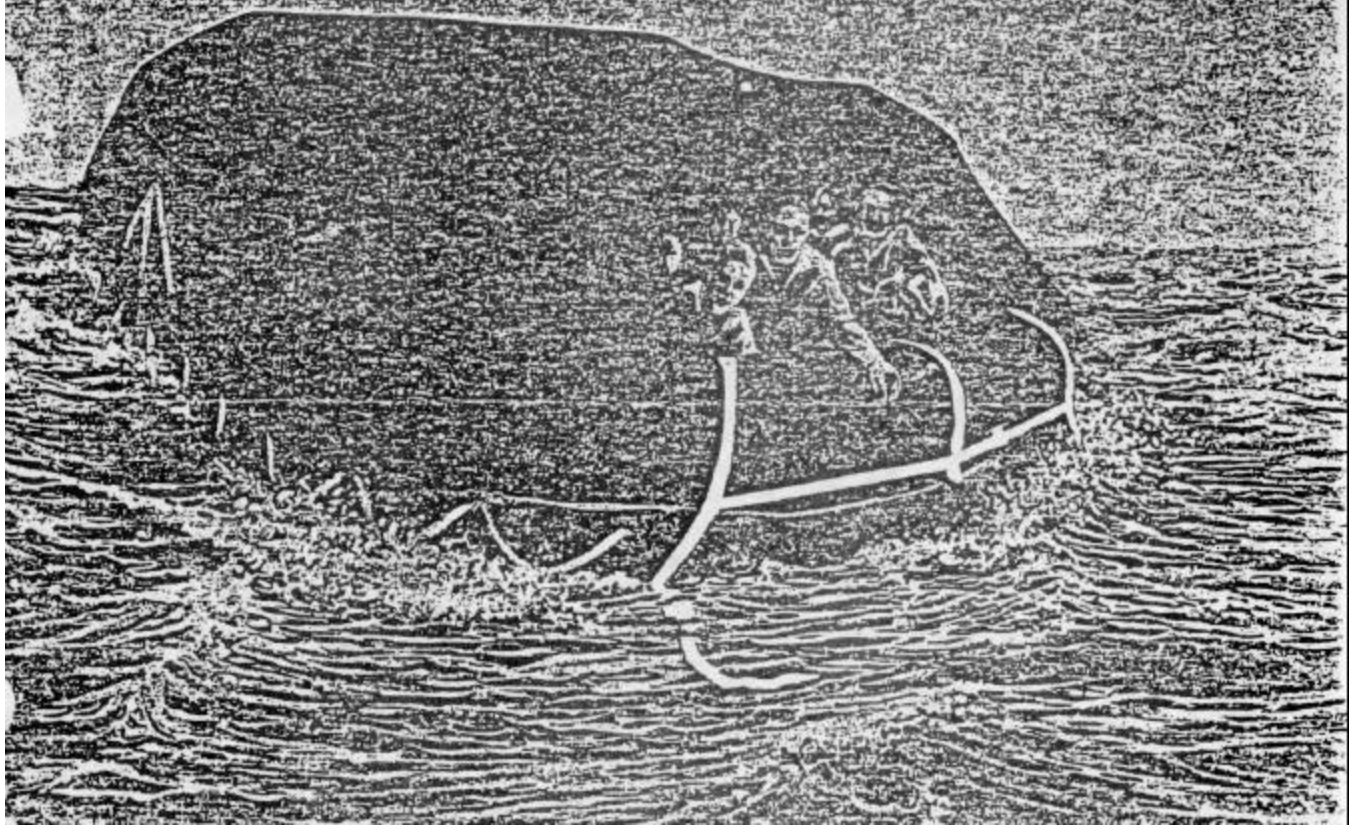
465 EAGLE ROCK AVENUE, ROSELAND, NEW JERSEY 07068  
A SUBSIDIARY OF KETCHAM & McDOUGALL, INCORPORATED

\*Subject to adjustment

LI-C0054 "Rev. H"

# SWITLIK

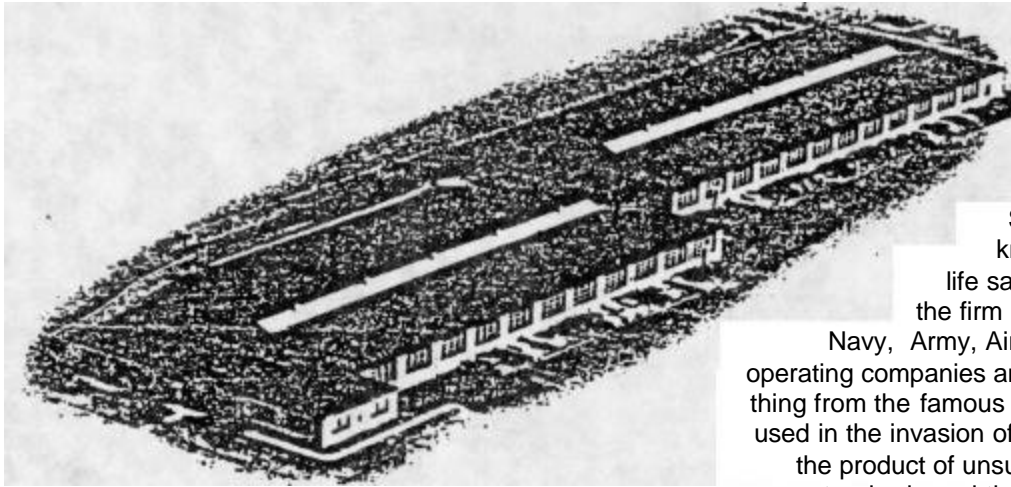
## Quality Life Rafts



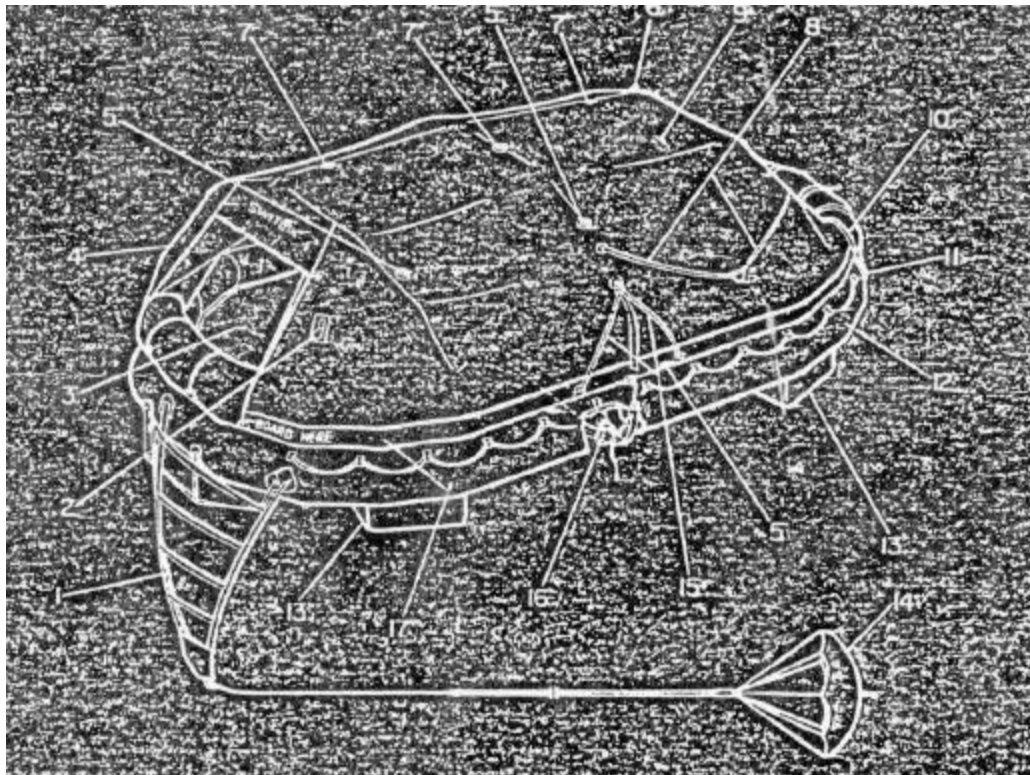
*Approved by U.S. Coast Guard  
Meet all Solas Requirements*

*Leading manufacturer of the world's  
Finest Survival Equipment for more than 45 years*

SWITLIK PARACHUTE COMPANY In Trenton, New Jersey, in the heart of the Industrial Delaware Valley, is the new modern home of the SWITLIK Parachute Company, Inc. It is one of the world's largest and oldest manufacturers of parachutes and aviation equipment and a leader in the development of improved designs and modern manufacturing techniques. For over a quarter of a century SWITLIK has produced more parachutes, inflatable life rafts & life vests for both military and civilian use than any other manufacturer.



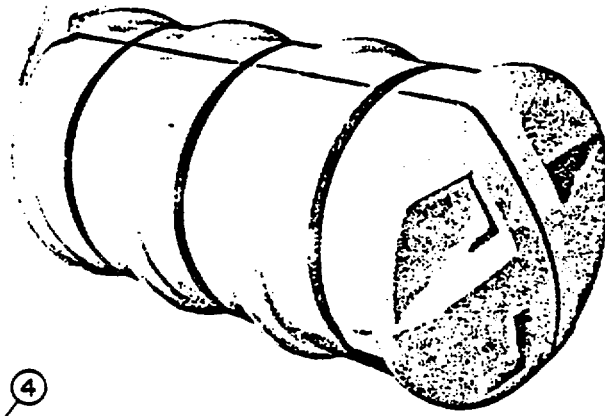
For more than two generations the SWITLIK name has been synonymous with the high standards of maximum dependability and safety. The leader in an industry demanding perfection, SWITLIK is one of the nation's best known manufacturers of survival and life saving equipment. For over 45 years, the firm has supplied the U.S. Government, Navy, Army, Air Force, commercial air lines, vessel operating companies and foreign governments with everything from the famous "Mae West" life vests to parachutes used in the invasion of Europe. All SWITLIK equipment is the product of unsurpassed experience, the most rigid standards and the highest reputation for the finest in quality materials and workmanship.



- 1 Towing Bridle
- 2 Floating Sheath Knife
- 3 Floor
- 4 Main Weather Cover
- 5 Deflation Plug
- 6 Recognition Light

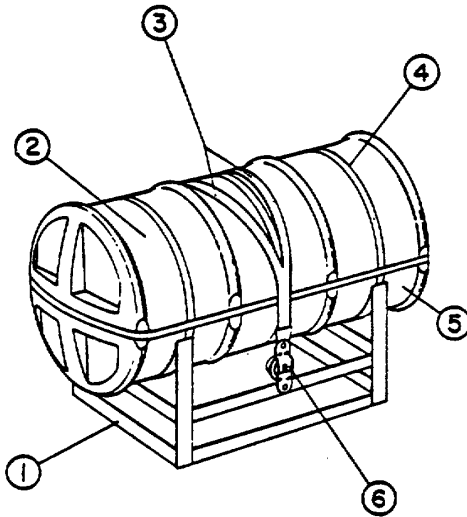
- 7 Pressure Relief Valve
- 8 Rain Water Catchment Assembly
- 9 Rescue Line Outfit
- 10 Boarding Ladder
- 11 External Lifeline

- 12 Water Activated Battery
- 13 Water Stabilizing Packet
- 14 Sea Anchor
- 15 Righting Strap
- 16 CO<sub>2</sub> Inflation System
- 17 Buoyancy Tubes



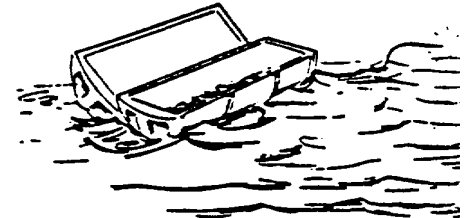
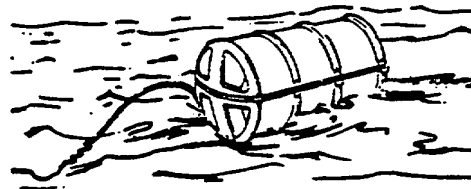
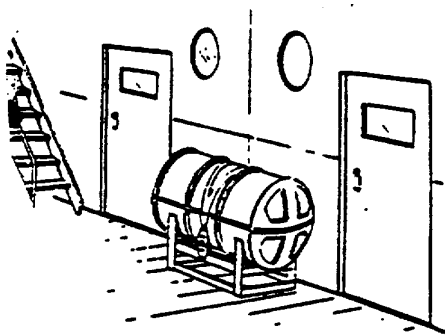
### MAINTENANCE FREE FIBER GLASS CONTAINER

SWITLIK inflatable life rafts are stored in a gleaming fiber glass case. The finish of this container is impregnated into the fiberglass making it completely maintenance free, not affected by sunlight and weathering conditions. There are no painted surfaces to be chipped or scratched. This sturdy material prevents any damage to raft and assures correct operation when needed.



- |                         |                                  |
|-------------------------|----------------------------------|
| 1. Cradle               | 4. Stainless Steel Packing Bands |
| 2. Inflatable Life Raft | 5. Fiber Glass Container         |
| 3. Tie Down Straps      | 6. Hydrostatic Release           |

### AUTOMATIC OR MANUAL LAUNCHING



Life raft completely incased in its fiber glass container and mounted in a cradle on deck.  
**MANUAL OPERATION:** 2 Men can carry or roll the raft in its container to the side of the ship, then simply throw it overboard, and with a sharp pull on the painter the raft will inflate within 30 seconds.  
**AUTOMATIC LAUNCHING:** Following any disaster at sea -without time to launch life boats or rafts- SWITLIK rafts are hydrostatically released and float to the surface. A painter line remains attached to the sinking vessel.

As the vessel continues to sink, the CO<sub>2</sub> system triggered. Within 30 seconds inflation is complete and the raft is ready for boarding. Finally the painter line parts completely releasing the raft from the sinking vessel.





**SWITLIK PARACHUTE COMPANY, INC. Marine Division**  
**1-525 East State Street, Trenton, N.J. 08607 Phone: (Area Code 609) 587-3300**  
*For over 45 Years · The Finest in Survival &. Life Saving Equipment*

## Switlik Life Rafts

### product of the highest manufacturing standards

**EXPERIENCE** –In an industry demanding perfection, SWITLIK has excelled for over 45 YEARS. The company has produced more types of survival equipment than any other manufacturer, including inflatable rafts & life preservers as used by the commercial airlines & the military forces around the world. All employees are experienced, carefully selected people, thoroughly trained and completely aware of the tremendous responsibility of their work.

materials, better construction, vital improvements in existing products, and completely new products of superior and advanced design.

**MATERIALS** –All the materials used in SWITLIK products from the synthetic fabrics down to the smallest accessory items utilize the finest quality materials available in the world.

**RESEARCH & DESIGN** –Pioneers in development, SWITLIK, through constant research, has lead the industry, year after year, with the introduction of new

**TESTING** –Before shipment, all SWITLIK products are subjected to a series of exhaustive and rigid tests each carefully planned to reveal any and all possible flaws.

### SPECIFICATIONS U. S. COAST GUARD APPROVED

#### LIFE RAFT DIMENSIONS

Raft	Approval Number	Packed Dimensions with Full Emergency Pack Fiber Glass Pack Container	Cradle Sizes	Overall length Inflated	Overall width Inflated	Overall height Inflated
4-man raft	160.051/13/0	18 in. dia. x 39 in.	20 in. W. x 13 in. L x 9 in. radius	6 ft. 2 in.	6 ft. 2 in.	3 ft. 9 in.
8-man raft	160.051/15/0	21 in. dia. x 44 in.	23 in. W. x 14 <sup>1</sup> / <sub>2</sub> in. L x 10 <sup>1</sup> / <sub>2</sub> in. radius	9 ft. 0 in.	7 ft. 4 <sup>3</sup> / <sub>4</sub> in.	3 ft. 11 in.
10-man raft	160.051/16/0	24 in. dia. x 49 in.	26 in. W. x 16 in. L x 12 in. radius	10 ft. 6 in.	7 ft. 5 <sup>3</sup> / <sub>4</sub> in.	4 ft. 0 in.
15-man raft	160.051/18/0	24 in. dia. x 54 in.	26 in. W. x 16 in. L x 12 in. radius	12 ft. 5 <sup>3</sup> / <sub>8</sub> in.	8 ft. 8 <sup>5</sup> / <sub>8</sub> in.	4 ft. 0 <sup>5</sup> / <sub>8</sub> in.
20-man raft	160.051/19/0	24 in. dia. x 59 in.	26 in. W. x 16 in. L x 12 in. radius	15 ft. 0 in.	9 ft 0 in.	4 ft. 6 <sup>5</sup> / <sub>8</sub> in.
25-man raft	160.051/20/0	26 in. dia. x 59 in.	28 in. W. x 17 in. L. x 13 in. radius	17 ft 3 <sup>1</sup> / <sub>2</sub> in.	9 ft. 10 <sup>3</sup> / <sub>4</sub> in.	4 ft. 7 <sup>1</sup> / <sub>2</sub> in.

#### STANDARD EQUIPMENT

1. Insulated canopy
2. Insulated inflatable floor
3. Painter
4. CO<sub>2</sub> cylinder and head
5. Sea Anchor
6. Towing bridles
7. Righting strap
8. Life lines
9. Heaving line
10. Paddles (2)
11. Automatic locator light
12. Automatic interior light
13. Rain water storage bags
14. Deflating and bilge pump
15. Leak stoppers
16. Repair kit
17. Floating knife and sheath
18. Survival Manual

19. Safety plugs
20. Rainwater catchments

#### LIMITED SERVICE EQUIPMENT - All Standard Equipment Plus

21. Flashlight
22. Spare flashlight bulbs (2)
23. Spare flashlight batteries (3)
24. Sponge (1)
25. Bailer (1)
26. Jackknife
27. Parachute distress signal (1)
28. Hand smoke flare (2)
29. Container for above

#### OCEAN SERVICE EQUIPMENT -

- All Standard & Limited Equipment Plus
30. Graduated drinking vessel
  31. Signal mirrors

32. First aid kit
33. 3 Cans of water per person
34. 1 lb. of ration per person
35. Additional bailer
36. Additional sponge
37. Additional parachute flare
38. Red hand flare (6) (SOLAS)

#### SOLAS EQUIPMENT - All Standard, Limited. & Ocean Service Equipment Plus

39. Additional jackknife (in raft over 12 persons)
40. Additional can opener
41. Signaling whistle
42. Fishing kit
43. Anti-seasick pills

**HALON 1301**

**OPERATION & MAINTENANCE**

**MANUAL**

**ROWPU BARGE**



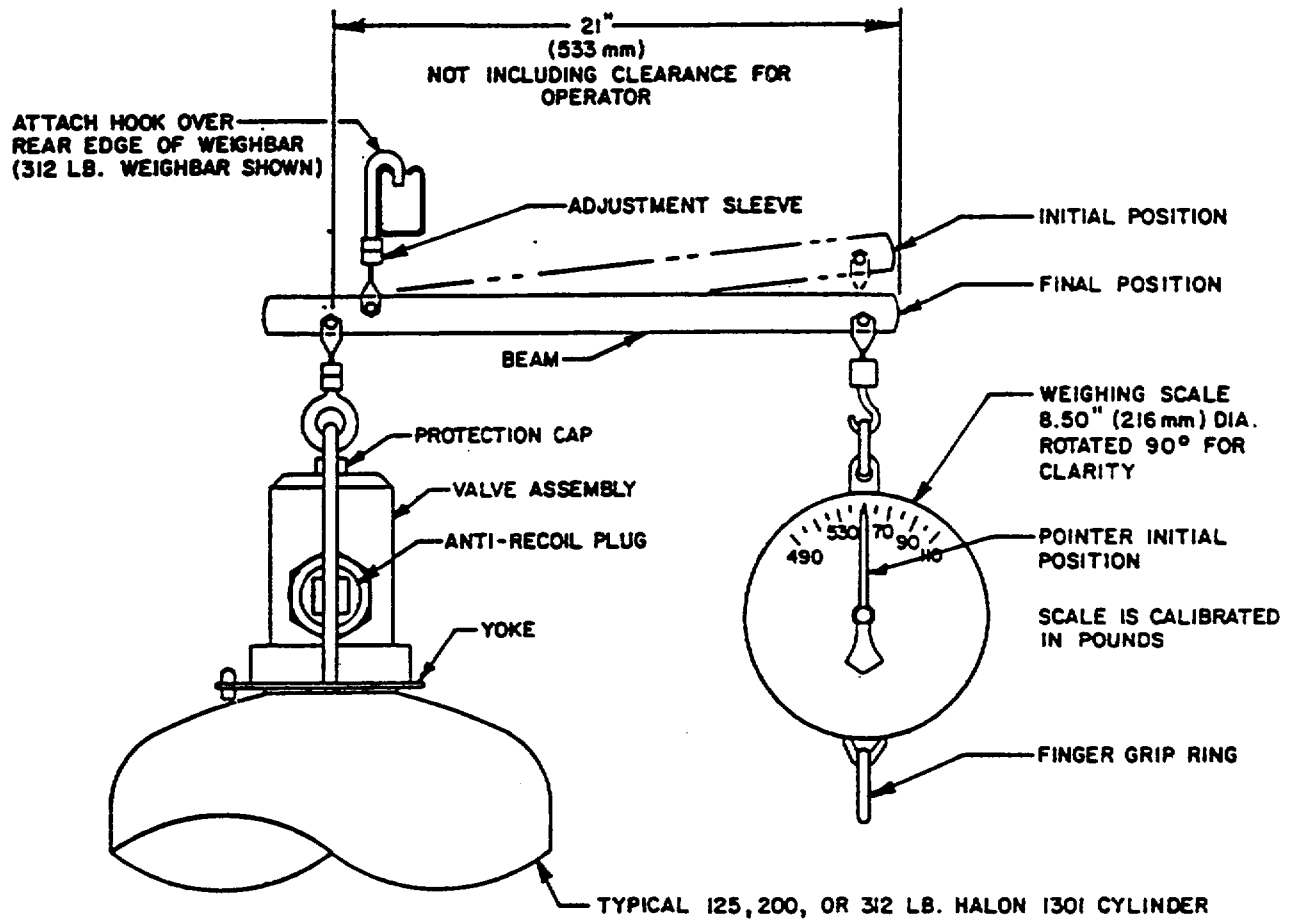
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**WALTER KIDDE**

Division of Kidde, Inc.  
Belleville, New Jersey 70109, U.S.A.

**COMPONENT DESCRIPTION**

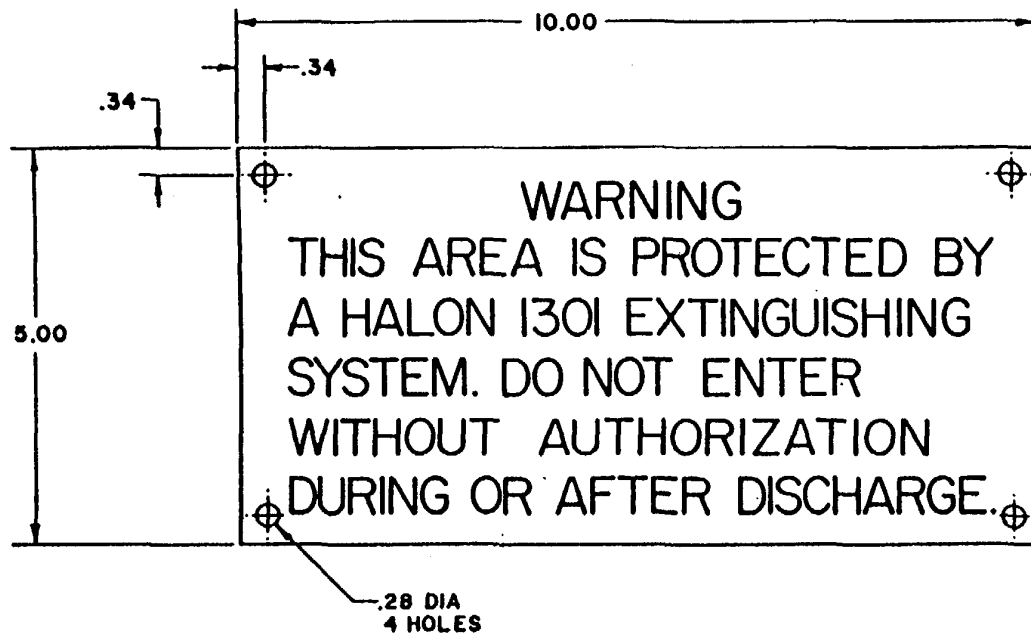
**HALON 1301 CYLINDER WEIGHING SCALE**



TO WEIGH CYLINDERS: REMOVE CONTROL HEAD AND ATTACH PROTECTION CAP. DISCONNECT DISCHARGE CONNECTION AND ATTACH ANTI-RECOIL PLUG. LOOSEN CYLINDER FROM FRAMING. HANG HOOK ON WEIGHBAR. PLACE YOKE UNDER VALVE ASSEMBLY. USE ADJUSTMENT SLEEVE TO BRING BEAM TO INITIAL POSITION. PULL DOWN ON FINGER GRIP RING UNTIL BEAM IS IN FINAL POSITION. READ CYLINDER WEIGHT ON WEIGHING SCALE.

P/N 897800





NOTE:  
MATERIAL: ALUMINUM, .032 THICK.

		280338	
		ISSUED BY	
FIRE PROTECTION SYSTEMS			
Walter Eddy & Company, Inc.			
Baltimore, New Jersey			
WARNING NAMEPLATE			
REV	DATE	BY	CHKD
01	11-13-74	J.D.L.	H.M.
DESCRIPTION		DATE	BY
FULL		11-13-74	1-617466

OPERATION AND MAINTENANCE MANUAL  
FOR  
HALON 1301 FIRE EXTINGUISHING SYSTEMS  
360 PSIG  
FOR  
ROWPU BARGE

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SECTION I  
INTRODUCTION

1-1. GENERAL.

1-2. This manual contains operation and maintenance information for a Halon 1301 fire extinguishing system, using 360 psi pressurized cylinder and valve assemblies, engineered and manufactured by Walter Kidde. The pressurized system is specifically engineered for a particular requirement to provide the best possible protection.

1-3. Personnel responsible for operation and maintenance of this system should become familiar with the procedures contained in this manual.

1-4. The Halon 1301 fire extinguishing system is used for controlling and extinguishing Class A (cellulosic material), Class B (flammable liquids and gases), and Class C (electrical) fires where a clean extinguishing agent is required. A clean agent is one which leaves no residue after the fire is extinguished, and is particularly applicable to high value materials where the materials may be susceptible to agent damage.

1-5. SAFETY

1-6. The Halon 1301 vapor has a low level of toxicity. Based on Underwriters' Laboratories tests with animals the agent is classified as Group 6, which is the least toxic classification of life hazard for concentrations up to 20%. In order to provide adequate safety factors, systems used in normally occupied areas are limited to design concentrations of 10%, and may exceed 7% only when the protected area can be evacuated within one minute. Areas not normally occupied may be flooded up to 15% concentration provided egress can be accomplished within 30 seconds. Should higher concentrations be required or fast egress not be possible then provisions must be made to prevent inhalation of vapors.



These factors must be considered in the design of systems for occupied areas. It is highly important to provide a system with rapid discharge ( less than 10 seconds normally) in order to minimize the vapor-flame exposure time. The occupants of a halon protection area will immediately recognize the decomposition products as they are sharp and acrid even in very small amounts. The obvious warning to evacuate must be observed.

1-7. Should it be necessary to enter a space containing halon and possibly also decomposition products, certain precautions are in order;

1. Use a fresh air mask or self-contained breathing equipment.
2. Do not use a filter type or canister mask.
3. Do not enter space unless observed from without.
4. Train persons involved in the hazard area in fire drill.
5. Provide adequate escape routes with directions signs and alarms
6. Maintain properly all life saving equipment involved.

1-8. The effects of exposure to Halon 1301 may persist for a short period of time following exposure; however, recovery may be expected to be rapid and complete. Halon 1301 would not be expected to accumulate in the body even with repeated exposures. Anyone suffering from the toxic effects of Halon 1301 vapors should immediately move or be moved to fresh air. Call a physician in treating persons suffering toxic effects due to exposure to this agent, the use of epinephrine (adrenaline) and similar drugs must be avoided because they may produce cardiac arrhythmias, including ventricular fibrillation.

#### 1-9. GENERAL DESCRIPTION OF SYSTEM AND COMPONENTS

1-10. The Kidde Halon 1301 Fire Extinguishing System consists basically of an arrangement of cylinder and valve assemblies connected thru piping conduits terminating in distribution nozzles. The quantity of Halon 1301 used is determined by the size of the protected area and the amount of concentration required for the particular fire hazard.

Provisions are also made for control of the agent discharge thru various arrangements of releasing devices.

1-11. SYSTEM COMPONENT. The Halon 1301 System installed in the ROWPU BARGE is made up of the following components: Two 312 pound capacity cylinders and valve assembly (P/N 897793) each filled with 290 pounds of Halon 1301 and super pressurized to 360 PSI at 70°F. One cylinder is a spare and is not connected to the system. The primary Halon cylinder is piped to a discharge manifold, the cylinders are held in place by straps (P/N 281866). The manifold components are a discharge delay (minimum delay 20 sec.) (P/N 896677), discharge indicator, (P/N 875553), safety outlet 3/4" (P/N 844346), lever operated control head (P/N 870653), pressure/lever operated control head (P/N 870897), 3/8" flex loop (P/N 844226), pressure operated switch (P/N 873752), 1 1/2" stop valve (P/N870123) and a safety outlet (P/N 844346). Other components are: two pressure operated sirens (P/N 981574) located in void 4 port and starboard, two split fan discharge nozzles (P/N 29474463) located in void 4 port and starboard. The control/activation mechanism is composed of two manual pull boxes (P/N 871403) held in place by pull box bracket (P/N 60532) and connected to the cable operated control head (P/N 979469) by a 1/16" stainless steel cable through a series of corner pulleys (P/N 803808) and a dual pull mechanism (P/N 840058).

#### 1-12. DESCRIPTION OF COMPONENTS.

1-13. CYLINDER AND VALVE ASSEMBLY. This assembly provides for storage of the Halon 1301 agent under a super pressurization of nitrogen of 360 psig at 70°F. See K-2020, K-2080.

1-14. Steel alloy cylinders are used which comply with DOT Specification 4BA having a service rating of 500 psig and a minimum burst pressure of 2000 psig.

1-15. An aluminum valve assembled to the cylinder allows for leak tight storage of the agent in the standby condition. Release of the agent occurs when the valve control is energized by manual means. See K2050.

1-16. A pressure gage and a burst disc safety device are incorporated as an integral part of the cylinder valve. The pressure gage monitors the charge pressure of the agent supply. Protection against over pressurization is provided by the safety device which will relieve at between 750 and 900 psig. See K-2060.

1-17. VALVE CONTROLS.

1-18. LOCAL MANUAL RELEASE. Local manual operation is obtained by a lever operated device mounted to the pilot port of the valve. See K-4020.

1-19. REMOTE MANUAL RELEASE. The remote activation of the cylinder valve is accomplished through the break glass pull box, Z-Bracket, 1/16" stainless steel cable and corner pulleys interconnected with 3/8" steel pipe. The two break glass pull boxes are connected to the cable operated control head through the dual pull mechanism. See K-4040, K-4041, K-4080, K-4100 and K-4020.

1-20. STOP VALVE. Release of Halon 1301 from the manifold is control by the 1 1/2" stop valve. See K-3070.

1-21. LEVER OR PRESSURE OPERATED CONTROL HEAD. The stop valve is operated when the lever or pressure operated control head is operated in either the lever or pressure mode. See K-3150.

1-22. LEVER OPERATED CONTROL HEAD. The discharge delay can be manually overridden by operation of the attached lever operated control head. See K-4010.

1-23. CONTROL AND WARNING DEVICES.

1-24. DISCHARGE DELAY. The operation of the stop valve is delayed for a minimum of twenty seconds by the discharge delay. See K-3190 and K-3191.

1-25. PRESSURE OPERATED SIREN. The siren provides an audible predischARGE warning to personnel in void 4 port or starboard. See K-3200.

1-26. ACCESSORY EQUIPMENT.

1-27. PRESSURE OPERATED SWITCH. This device operates from Halon pressure when the cylinder valve opens. A built-in switch changes position to de-energize void 4 ventilation fan circuits and shut-down machinery. See K-3160.

1-28. DISCHARGE INDICATOR. This device has an indicating plunger that is moved from a normal (non-visual) position to a discharged indication position when Halon pressure is present in the manifold. See K-3110.

1-29. SAFETY OUTLET. This device provides an over-pressure relief at between 750-900 PSI. See K-3120.

1-30. SPLIT FAN TYPE DISCHARGE NOZZLE. The split fan discharge nozzle disperses Halon in a 360° pattern during discharge of the system. See K-2150.

1-31. 3/8" FLEX LOOPS. The flex loop connects the output orifice of the discharge delay to the pressure mechanism of the lever or pressure operated control head which is connected to the stop valve. See K-3030, K-3150 and K-3070.

1-32. CYLINDER STRAP. The cylinder straps secure the cylinders in position. SEE K-2160.

1-33. HALON 1301 CYLINDER WEIGHING SCALE. This scale is designed specifically to weigh a 312 pound Halon 1301 cylinder. See K-7120.

## SECTION II

### OPERATION

#### 2-1. GENERAL.

2-2. SYSTEM ACTIVATION. The Halon 1301 Fire Extinguishing System in the ROWPU BARGE protects void 4 port and starboard. The system is manually activated from any of three locations.

### WARNING

**Alert and evacuate personnel from fire hazard area immediately on detection of fire and where possible prior to actuation of system.**

2-3. REMOTE MANUAL. Two remote pull boxes are located in ROWPU space. One is located on a center line support post near the ladder to void 4 starboard. The other is located on the starboard side near the personnel door. These remote pull stations are used to activate the Halon system by breaking the glass and pulling the handle. Pulling the handle operates the cable operated control head on the Halon cylinder.

2-4. LOCAL MANUAL. The system can also be activated by operating the local manual release lever of the cable operated control head.

2-5. SEQUENCE OF SYSTEM ACTIVATION. Once the system has activated a series of events is set into motion. Operation of the cable operated control head opens the cylinder valve, discharging Halon into the manifold. Causing the sirens to commence sounding, the pressure operated switch to operate shutting down ventilation and machinery, the discharge indicator to operate and indicate the system has discharged. When the Halon is discharged into the manifold Halon flows into the discharge delay after a minimum of twenty seconds the discharge delay opens allowing Halon to flow through the 3/8" flex loop to operate the pressure/lever operated control head on the stop valve. This in turn opens the stop valve allowing the Halon to flow from the cylinder through the discharge nozzles into void 4 port and starboard. All Halon will be discharged in 10 seconds or less after the stop valve opens.

### NOTE

The discharge delay and the stop valve can be bypassed by operating the lever operated control head attached to either or both of them causing the Halon to flow to the nozzles without delay.

### 2-6. POST FIRE OPERATION

#### CAUTION

Do not enter hazard area in which fire has been extinguished with an open flame or lighted cigarette as the possible presence of flammable vapors may cause re-ignition or explosion.

#### CAUTION

After the Halon system has been discharged do not enter void 4 port or starboard without self-contained breathing equipment until the void has been thoroughly ventilated.

After the fire has been extinguished and the source of ignition has been removed start the void 4 ventilation system and run for at least 15 minutes before reentering void 4.

2-7. To restart the ventilation system move the plunger on the pressure operated switch to the set position and then start the ventilation blowers.

2-8. Restoring the Halon system to operational condition carry out the following steps:

1. Replace pull box glass.
2. Reset cable operated control head
  - a. Remove control head from cylinder valve assembly and observe the position of the plunger. The plunger should be protruding slightly. Reset control head by moving control head manual release lever. When reset, the plunger will be recessed in the control head.

3. Depress the indicating plunger of the discharge indicator.
4. Remove the empty Halon cylinder by removing the straps and disconnecting the pipe union between the cylinder valve and the manifold.
5. Move the spare (full) Halon cylinder into position at the manifold. Remove interconnecting manifold/cylinder valve pipe from the discharge cylinder and connect the pipe to the full cylinder and manifold.

**SECTION III**  
**MAINTENANCE**

3-1. PERIODIC INSPECTION.

3-2. The fire extinguishing system requires ordinary care to ensure efficient operation at all times. However, periodic inspections should be made to determine the exact condition of the system equipment.

3-3. MONTHLY.

3-4. Make a general inspection survey of the system components and their immediate vicinity to ensure that accidental damage to equipment has not occurred and that no obstructions to the operation of the system or system distribution of agent are present. Ensure that egress to the extinguisher assembly and all control pull boxes are unobstructed. Check extinguisher assembly pressure gages for proper operating pressure. 360 PSI at 70°F, 395 PSI at 80°F, 430 PSI at 90°F, 470 PSI at 100°F.

3-5. SEMI-ANNUALLY.

3-6. Check all agent supply cylinder pressure gages for proper operating pressure. Check extinguisher assembly for proper charged weight. If charge weight or pressure has decreased, a pressure leak is apparent. Forward charged extinguisher assembly with control head removed, to a service facility when weight loss is in excess of 5% or a loss in pressure (adjusted for temperature) is more than 10%.

3-7. SERVICE.

3-8. Fire extinguishing system service consists of the removal of an expended cylinder assembly from the fire extinguishing system, recharge of the cylinder assembly by a qualified person and installation of the recharged cylinder assembly into the system.

3-9. MAINTENANCE.

3-10. System maintenance is performed as a result of periodic inspection, service requirement or system operation.



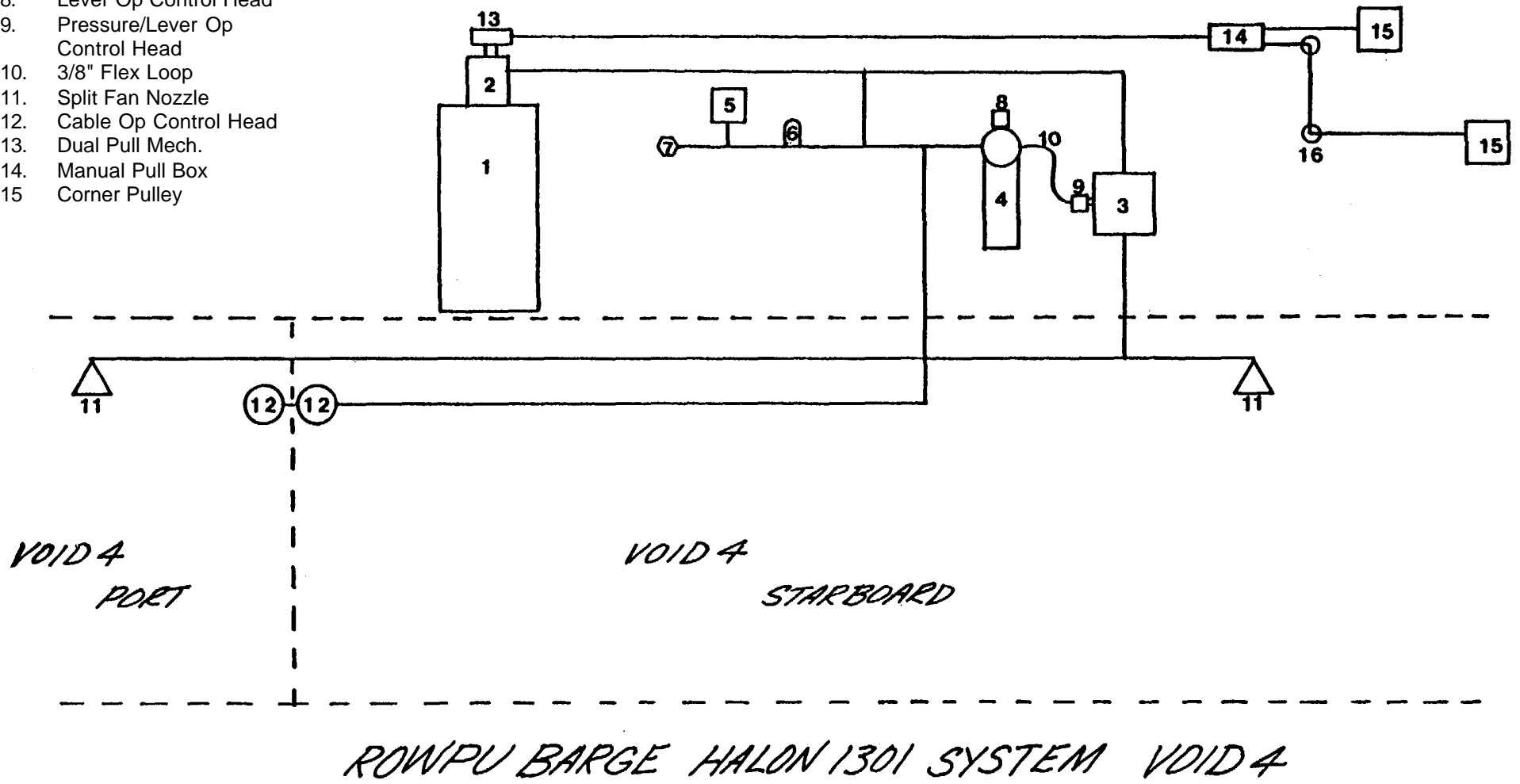
SECTION IV

Halon 1301 Fire Suppression  
System for Void 4 Port and Starboard

4-1. Material List

Quantity	Description	Kidde Part No.
2	Halon 1301 Cylinder w/ valve (filled with 290 Lbs. Halon)	897793
1	Discharge Delay	896677
1	Discharge Indicator	875553
1	Cable Operated Control Head	979469
1	Safety Outlet 3/4"	844346
1	Lever Operated Control Head	870652
1	Press/Lever Op. Control Head	870897
1	3/8" Flex Loop	844226
1	Pressure Operated Switch	873752
2	Pull Box Surface	871403
A/R	Corner Pulleys	803808
2	Siren, Pressure Op.	981574
4	Cylinder Strap	281866
4	Bracket-Pull Box	60532
2	Nozzle	29474463
1	1 <sup>1</sup> / <sub>2</sub> " Stop Valve	870123
1	Scale	897800
A/R	Warning Plate	281188
A/R	Warning Plate	218270
1	Dual Pull Mechanism	840058
1	Safety Outlet	844346

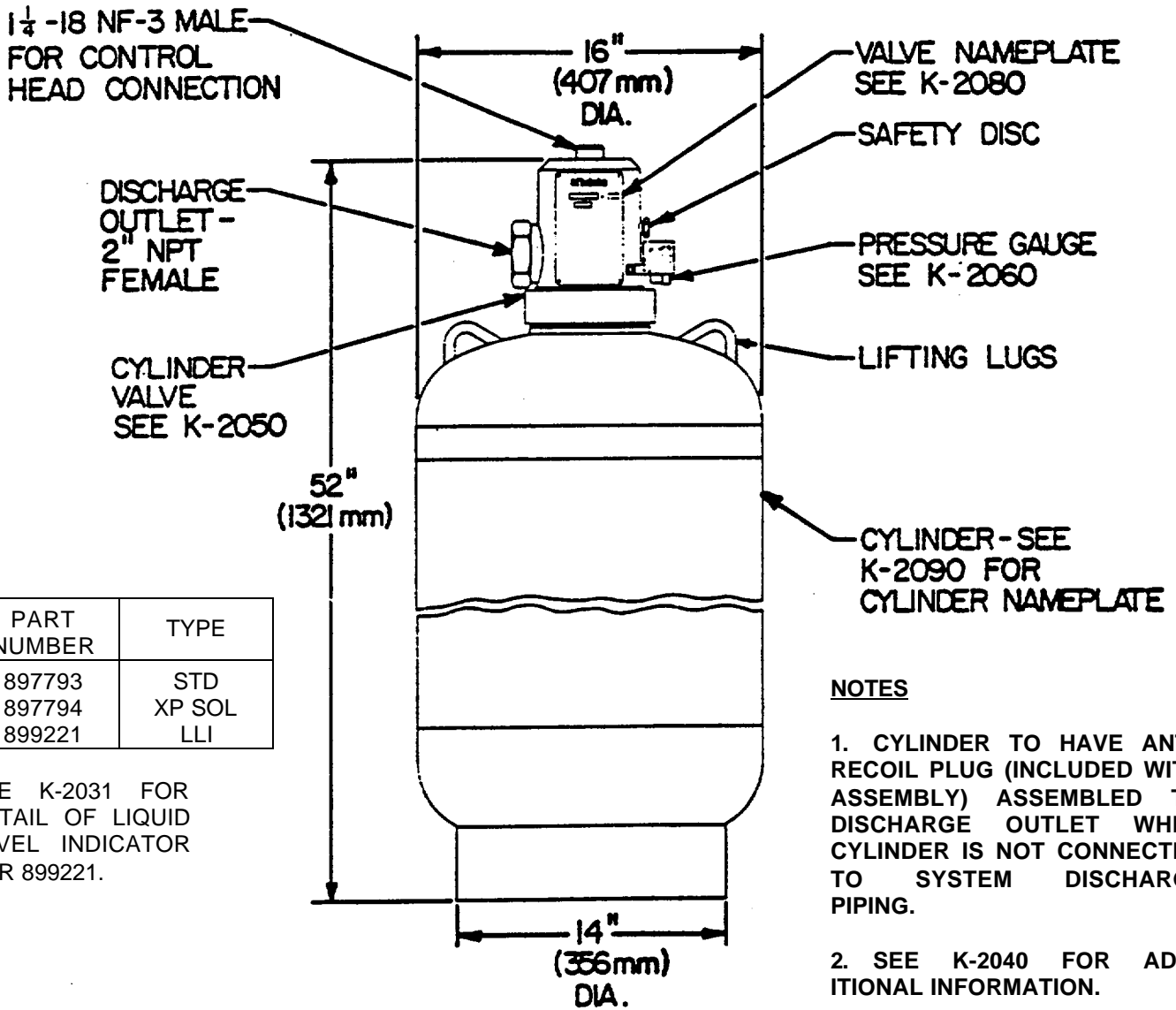
1. Halon Cylinder
2. Valve Assembly
3. Stop Valve
4. Discharge Delay
5. Pressure Op Switch
6. Discharge Indicator
7. Safety Relief
8. Lever Op Control Head
9. Pressure/Lever Op Control Head
10. 3/8" Flex Loop
11. Split Fan Nozzle
12. Cable Op Control Head
13. Dual Pull Mech.
14. Manual Pull Box
15. Corner Pulley



**WALTER KIDDE**  
 Division of Kidde, Inc.  
 Belleville, New Jersey 70109, U.S.A.

**COMPONENT DESCRIPTION**

312 LB. (141.5 KG) CAPACITY 360 PSI HALON 1301  
 CYLINDER AND VALVE ASSEMBLY



PART NUMBER	TYPE
897793	STD
897794	XP SOL
899221	LLI

SEE K-2031 FOR  
 DETAIL OF LIQUID  
 LEVEL INDICATOR  
 FOR 899221.

**NOTES**

1. CYLINDER TO HAVE ANTI-RECOIL PLUG (INCLUDED WITH ASSEMBLY) ASSEMBLED TO DISCHARGE OUTLET WHEN CYLINDER IS NOT CONNECTED TO SYSTEM DISCHARGE PIPING.
2. SEE K-2040 FOR ADDITIONAL INFORMATION.
3. SEE K-2070 FOR DETAIL OF SOLENOID FOR 897794.

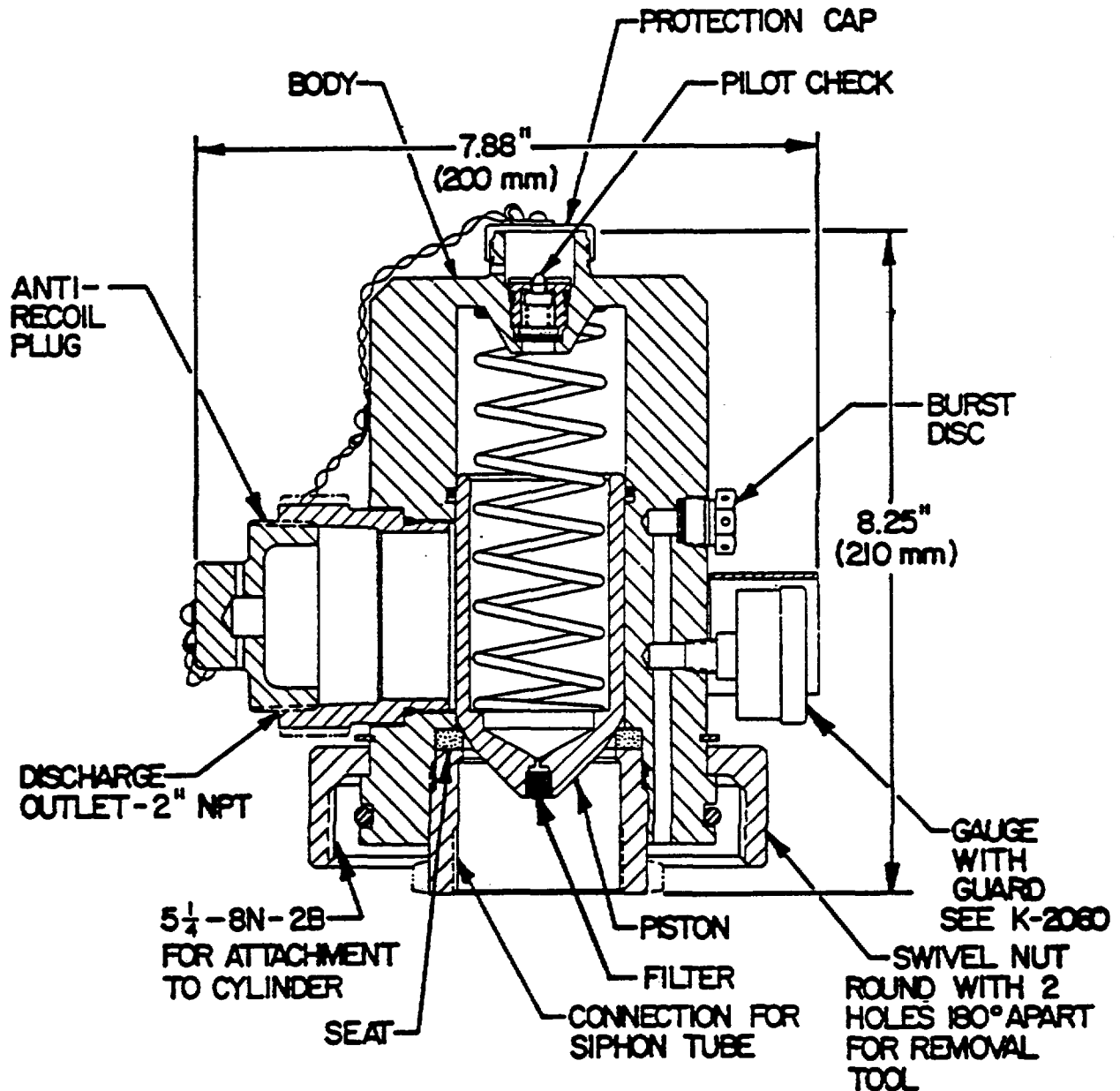
**MATERIALS**  
 VALVE BODY ALUMINUM  
 CYLINDER: STEEL, PAINTED RED,  
 WITH WHITE STRIPE

P/N-SEE TABLE



REV. I

360 PSI HALON 1301 CYLINDER VALVE



MATERIALS  
VALVE BODY: ALUMINUM  
SWIVEL NUT: STEEL  
PISTON: ALUMINUM  
SEAT: RUBBER



**WALTER KIDDE**

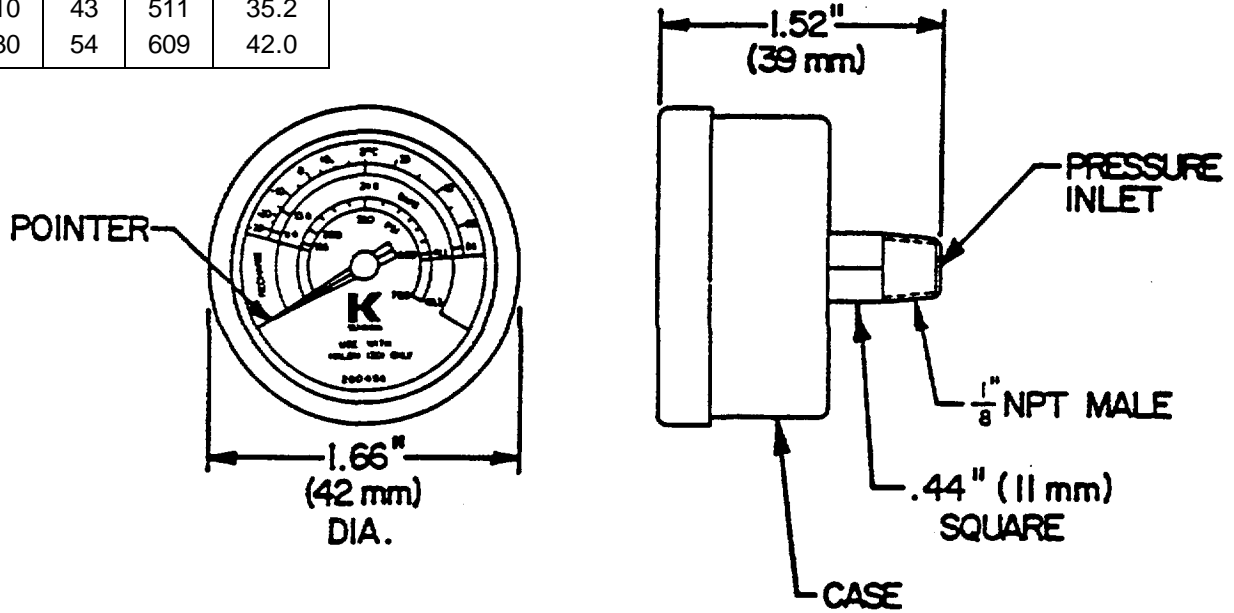
Division of Kidde, Inc.  
Belleville, New Jersey 70109, U.S.A.

**COMPONENT DESCRIPTION**

**PRESSURE GAUGE  
360 PSI HALON 1301 CYLINDER**

GAUGE CALIBRATION			
°F	°C	PSI	BARS
-10	-23	180	12.4
10	-12	212	14.6
30	-1	253	17.4
50	10	301	20.8
70	21	360	24.8
90	32	429	29.6
110	43	511	35.2
130	54	609	42.0

BASED ON CYLINDER FILL DENSITY OF  
 $70 \frac{\text{LBS}}{\text{FT}^3}$  ( $1121 \frac{\text{KG}}{\text{M}^3}$ )



**MATERIALS**

CASE: STAINLESS STEEL

WINDOW: CLEAR POLYCARBONATE

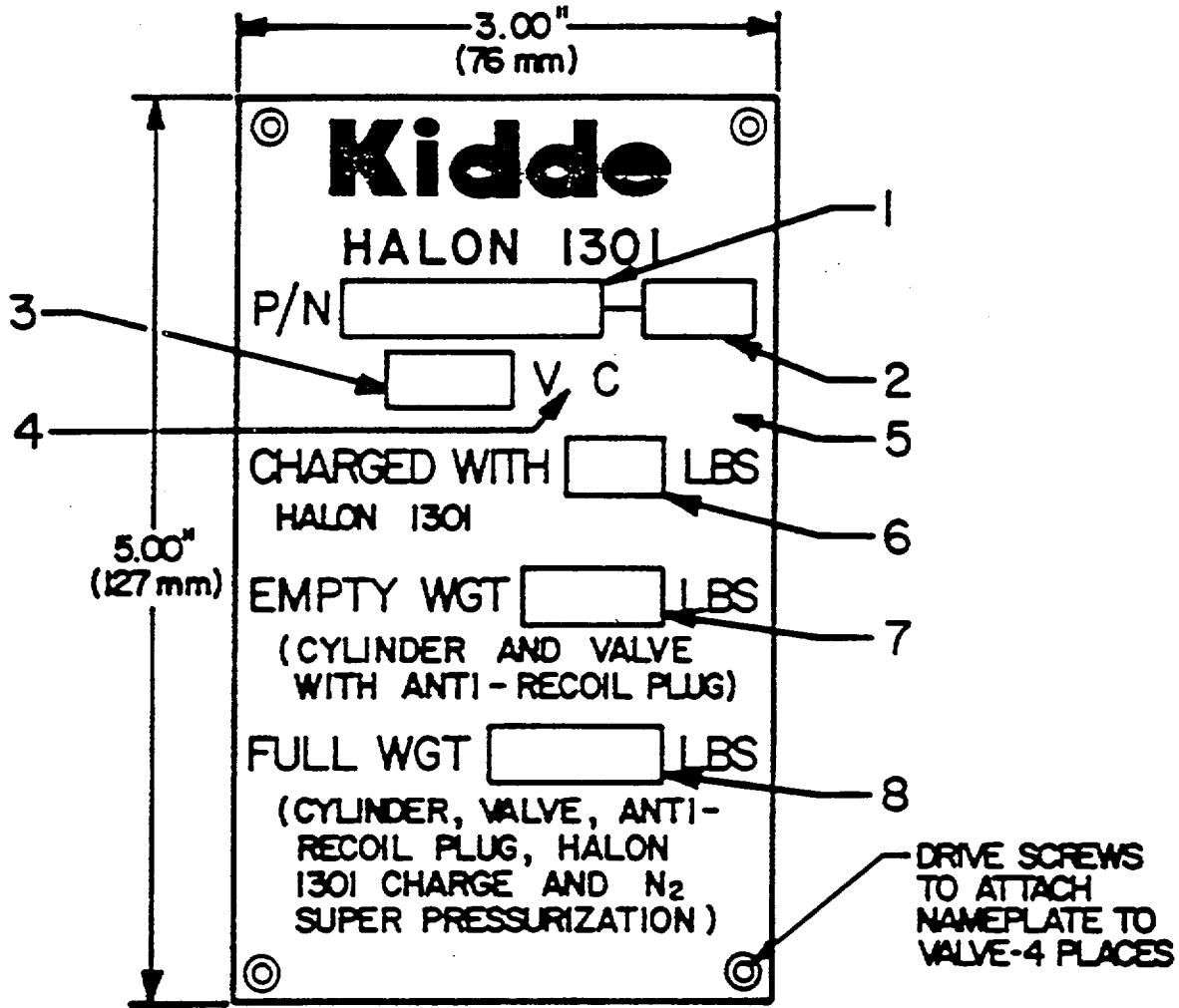


P/N 280458

K-2060

VALVE NAME PLATE  
 360 PSI HALON 1301

MATERIAL: ALUMINUM



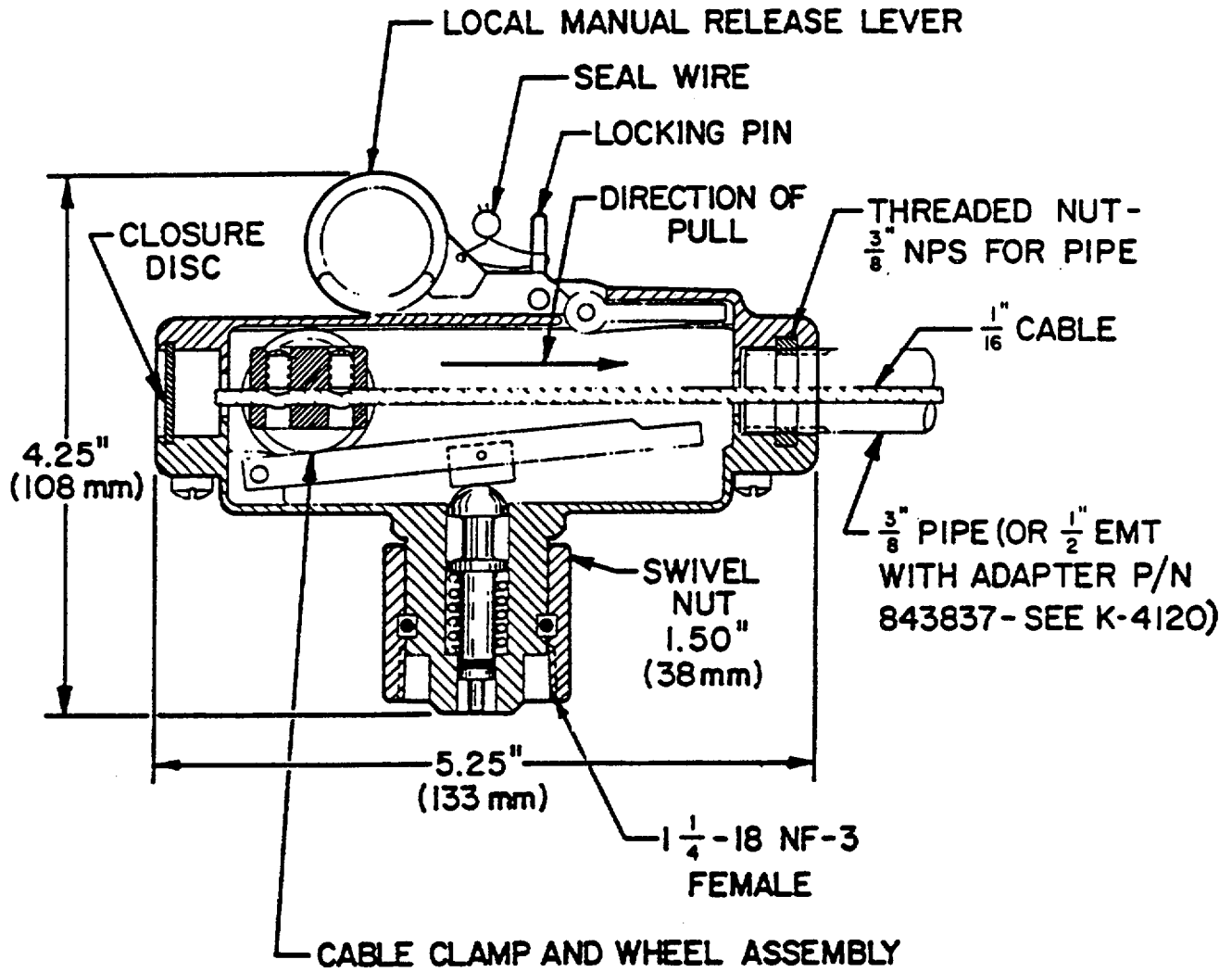
NAMEPLATE STAMPING

- 1- PART NUMBER OF ASSEMBLY
- 2- U. L. AUTHORIZATION NUMBER OF INITIAL FILL STATION
- IF CYLINDER IS EQUIPPED WITH EXPLOSION PROOF SOLENOID: —
- 3- VOLTAGE
- 4- "A" OR "D" FOR VAC OR VDC AS REQUIRED
- IF CYLINDER IS EQUIPPED WITH LIQUID LEVEL INDICATOR: —
- 5- CORRECTION FACTOR
- FOR ALL CYLINDERS: —
- 6- HALON 1301 CHARGE
- 7- CYLINDER EMPTY WEIGHT BEFORE CHARGING
- 8- CYLINDER FULL WEIGHT AFTER CHARGING

P/N 293425



CABLE OPERATED CONTROL HEAD



P/N 979469

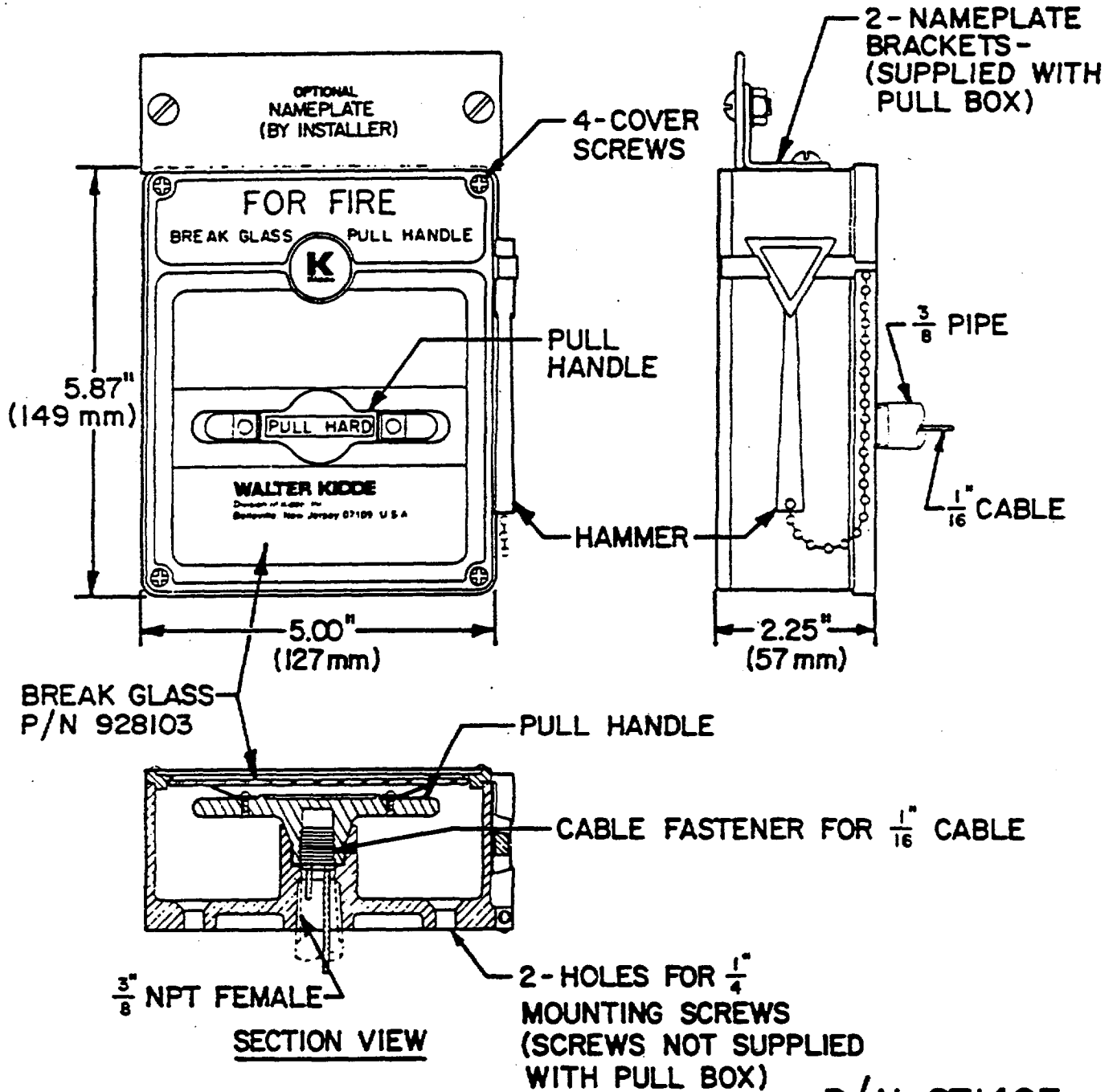


K-4020

WALTER KIDDE  
 Division of Kidde, Inc.  
 Belleville, New Jersey 70109, U.S.A.

COMPONENT DESCRIPTION

PULL BOX, BREAK GLASS



P/N 871403

**MATERIALS**  
 BODY: ALUMINUM  
 HANDLE: BRASS

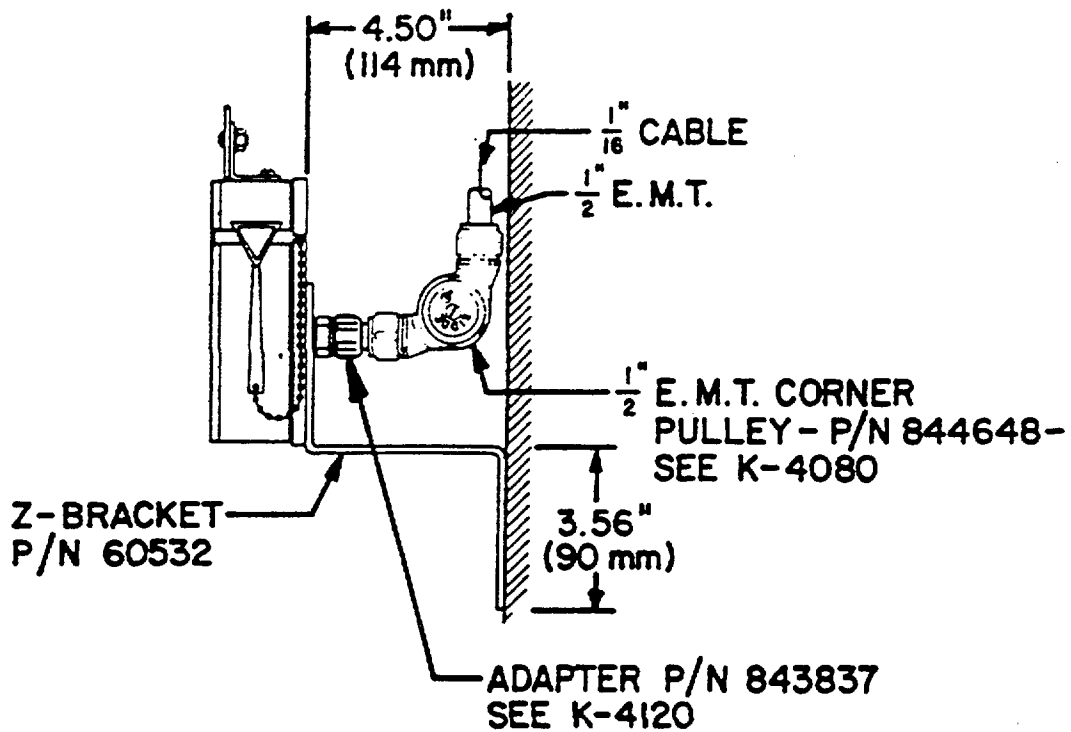
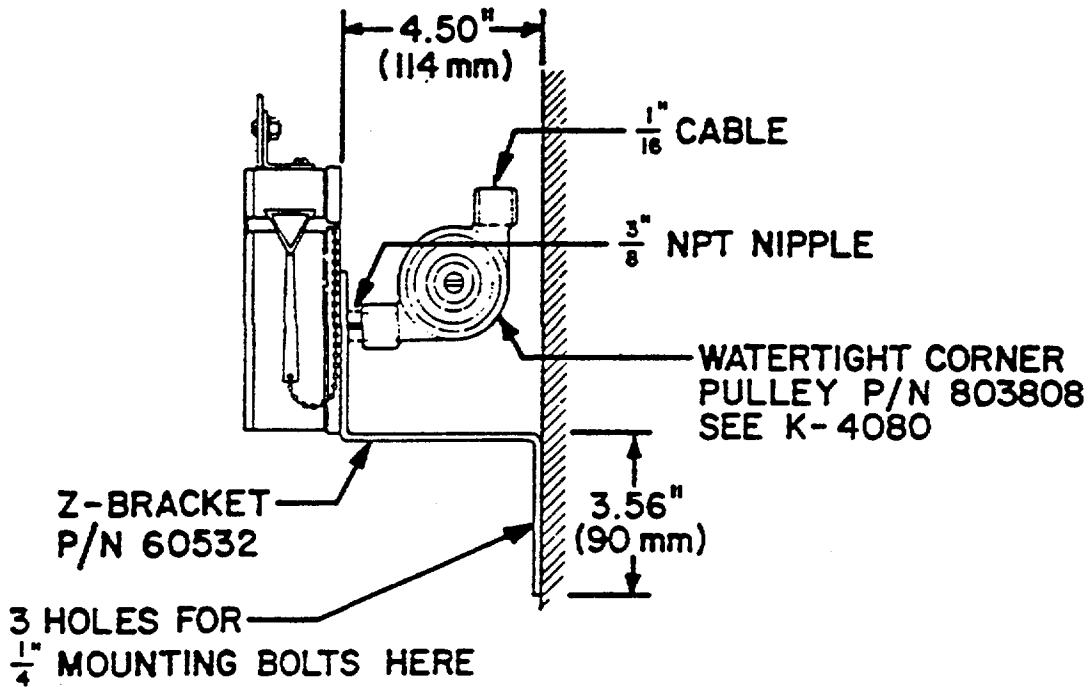




**WALTER KIDDE**  
Division of Kidde, Inc.  
Belleville, New Jersey 70109, U.S.A.

**COMPONENT DESCRIPTION**

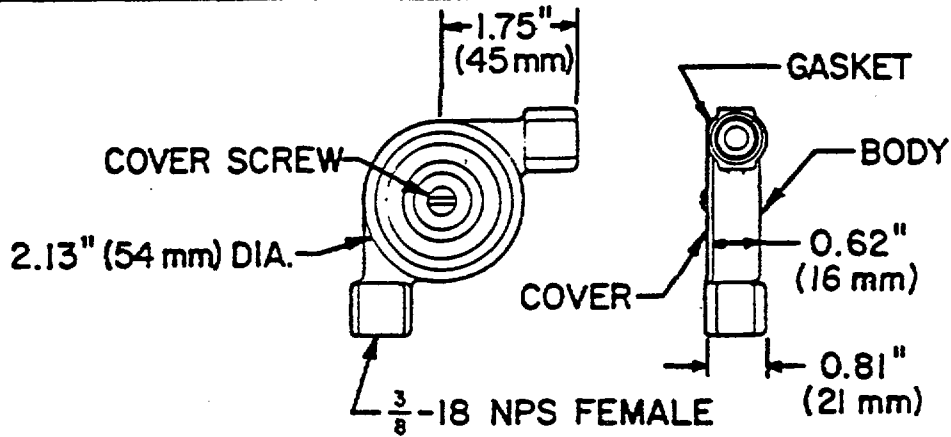
**BREAK GLASS PULL BOX  
USED WITH Z-BRACKET**



CORNER PULLEYS

WATERTIGHT CORNER PULLEY

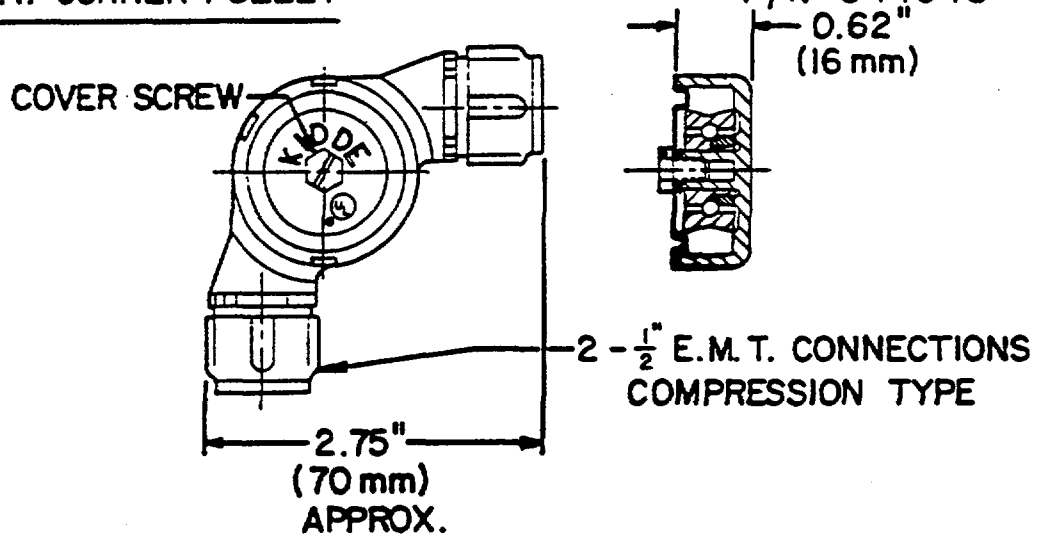
P/N 803808



MATERIALS  
COVER AND BODY: BRASS  
GASKET: RUBBER

1/2" E.M.T. CORNER PULLEY

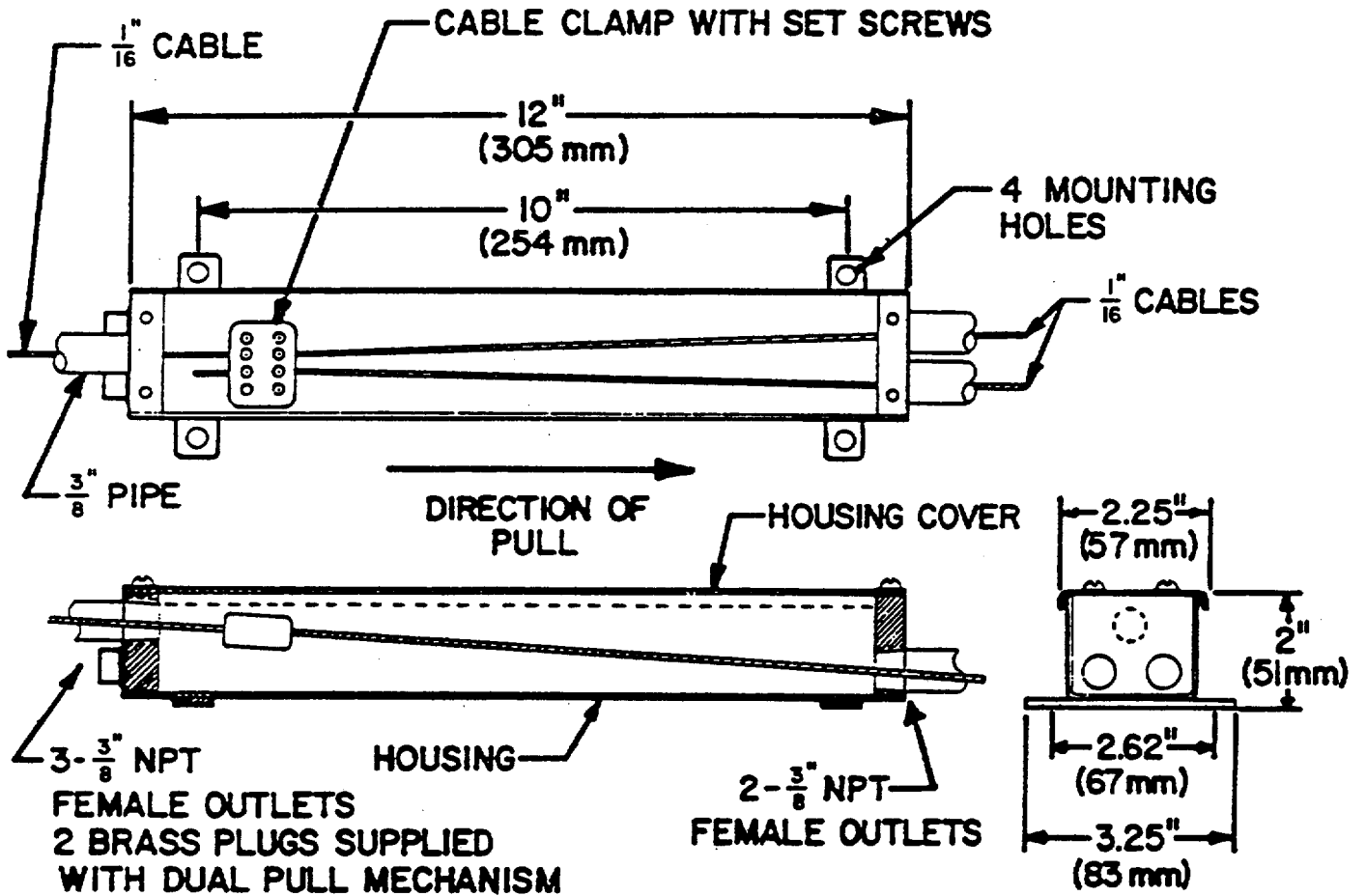
P/N 844648



MATERIALS  
HOUSING: ALUMINUM  
COVER: CADMIUM PLATED STEEL

P/N-SEE ABOVE

DUAL PULL MECHANISM



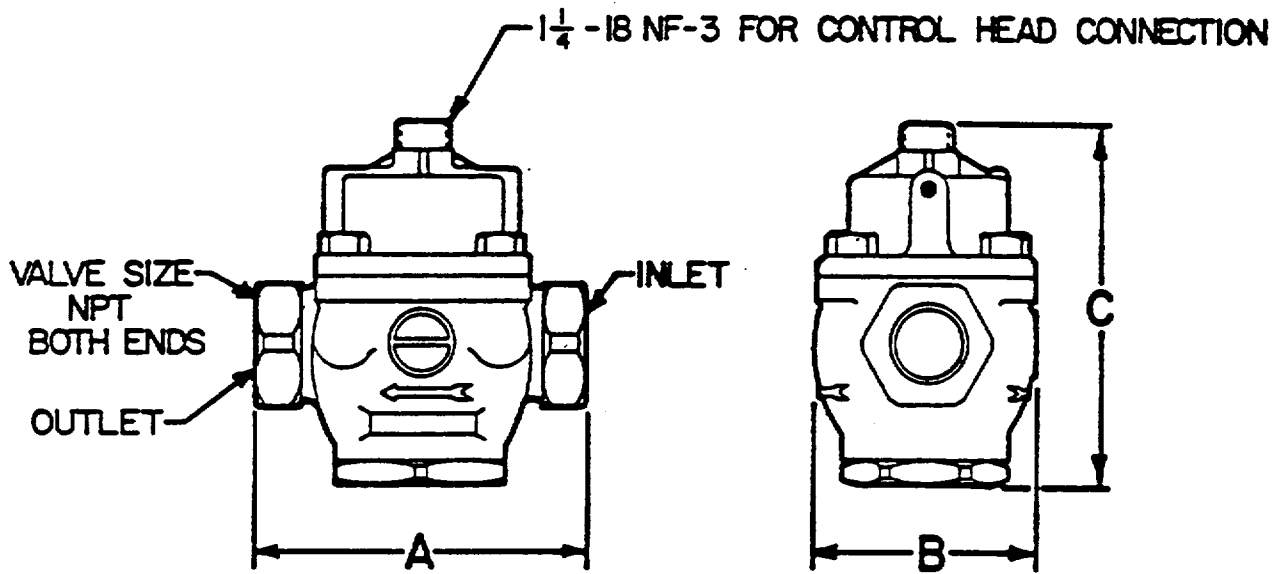
USE  $\frac{3}{32}$ " HEX KEY FOR CABLE CLAMP SET SCREWS.

P/N 840058

STOP (DIRECTIONAL) VALVES, 1/2" THROUGH 2" SIZES

NOTES

1. VALVE MUST BE INSTALLED WITH ARROW POINTING IN DIRECTION OF FLOW.
2. VALVE MAY BE INSTALLED IN HORIZONTAL OR VERTICAL PIPE RUN.



FART NUMBER	VALVE SIZE NPT	A		B		C	
		IN	mm	IN	mm	IN	mm
870023	1/2"	3.75	95	2.5	64	4.68	119
870022	3/4"	4.25	108	2.81	71	5.68	144
870122	1"	5.5	140	3.62	92	6.87	175
870032	1 1/4"	5.5	140	3.62	92	6.87	175
870123	1 1/2"	7.5	191	4.75	121	8.43	214
870049	2"	7.5	191	4.75	121	8.43	214

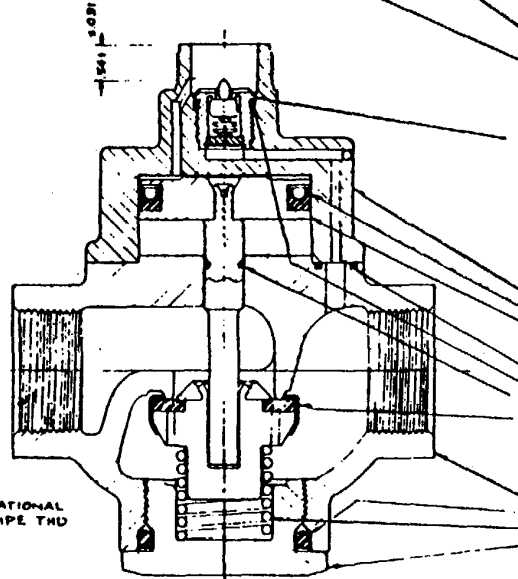
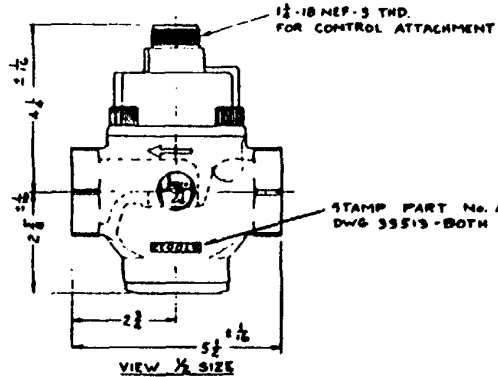
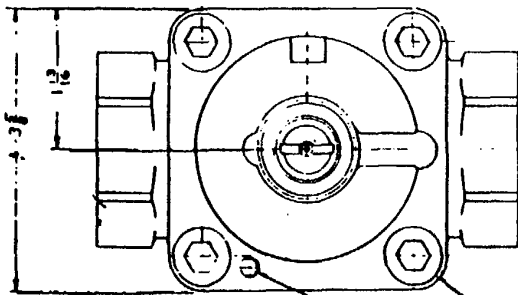
MATERIAL  
 BODY: BRASS

P/N-SEE TABLE

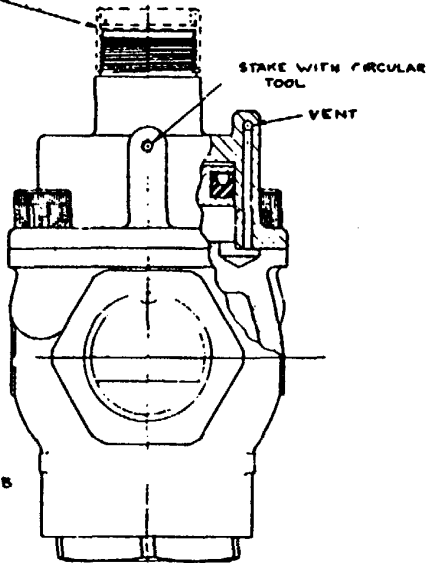
K  
 Kidde

K-3070

REV	DESCRIPTION	DATE	BY
B	RE DRAWING ACCORDING TO...	11/15/52	...
C	ADDED 55513 PART NO. & MAT. NO.	11/15/52	...
D	...	11/15/52	...
E	...	11/15/52	...
F	...	11/15/52	...
G	...	11/15/52	...
H	...	11/15/52	...
I	...	11/15/52	...
J	...	11/15/52	...
K	...	11/15/52	...
L	...	11/15/52	...
M	...	11/15/52	...
N	...	11/15/52	...



- 24257-PROTECTION CAP
  - 1746-3216-5 (SREW CAP-FIL-STEEL (MILLON SOLKE))
  - STEEL CADMIUM PLATED WITH PHOSPHATE 1/2-20NF116 (6)
  - 200419-GROOV PN (ST/ST)
  - 800326-PILOT & FILTER UNIT
  - 23064-SPRING (ST/ST)
  - 913066-CHECK ASSY
  - 23061-STUD (ST/ST)
  - 23062-CORE (COMPOSITION)
  - 23063-CUP (BRASS)
  - 20209-FILTER (BRASS)
  - 240149-HOUSING (BRASS)
  - 1848-0008-RING 1/2 OD (STL. CADMIUM)
  - 210082-BONNET BRONZE FED SPEC. QQ-B72-CL-B
  - 800318-PACKING (AN 6226-28)
  - 800338-PISTON ASSY
  - 200319-PISTON (BRASS)
  - 200320-MOU ST ST
  - 1080-0800-O RING 1/4 OD (AN 6227-B)
  - 1080-1200-O RING 1/4 OD (AN 6227-D)
  - 1560-0700-O RING 1/2 OD (AN 6227-I)
  - 800057-CHECK ASSY
  - 200287-BODY (BRASS)
  - 200288-ONDC (COMPOSITION)
  - 200289-RETAINER (BRASS)
  - 200290-FERRULE (BRASS)
  - 270023-BODY BRONZE FED SPEC. QQ-B72-CL-B
  - 5730-3100-O RING 2 1/4 OD (AN 6227-31)
  - 33485-SPRING (ST, ST)
  - 200292-PLUG (BRASS)
- TIGHTEN WITH MIN. TORQUE OF 150 FT LBS

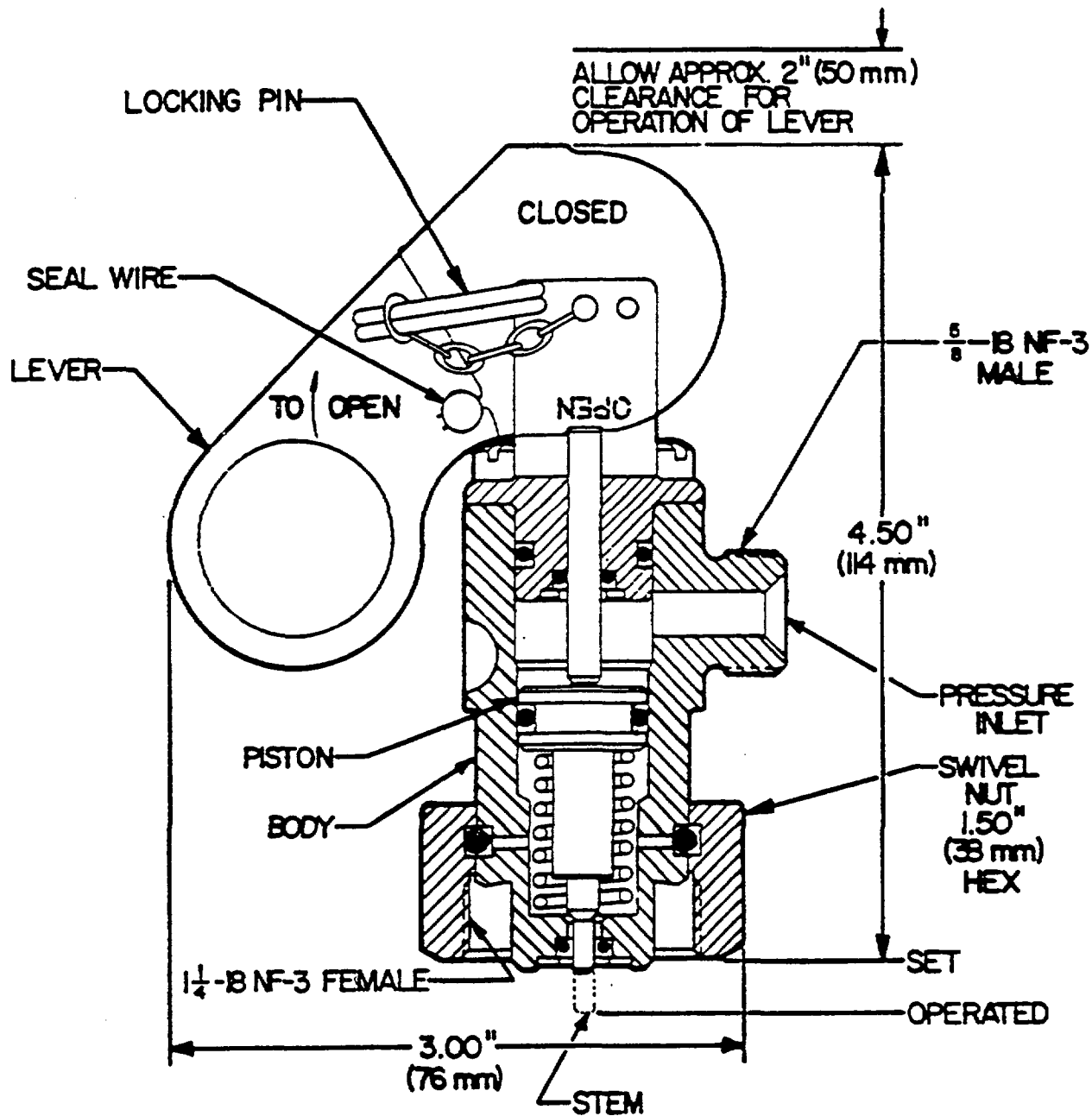


NOTES  
 1-TEST PRESSURE 11160 PSI  
 2-MINIMUM BURST PRESSURE 40000 PSI  
 3-@ EFFECTIVE SEAT AREA 1.670  
 @ EFFECTIVE PISTON AREA 3.990  
 @ RATIO PISTON AREA/SEAT AREA: 2.47

MATERIAL	APPROX. QUANTITY	TOLERANCES	VALVE
...	...	...	INDUSTRIAL OR MARINE STOP VALVE
...	...	...	1 1/2" PIPE
...	...	...	FULL MS 870032 N

MS 870032

LEVER OR PRESSURE OPERATED CONTROL HEAD



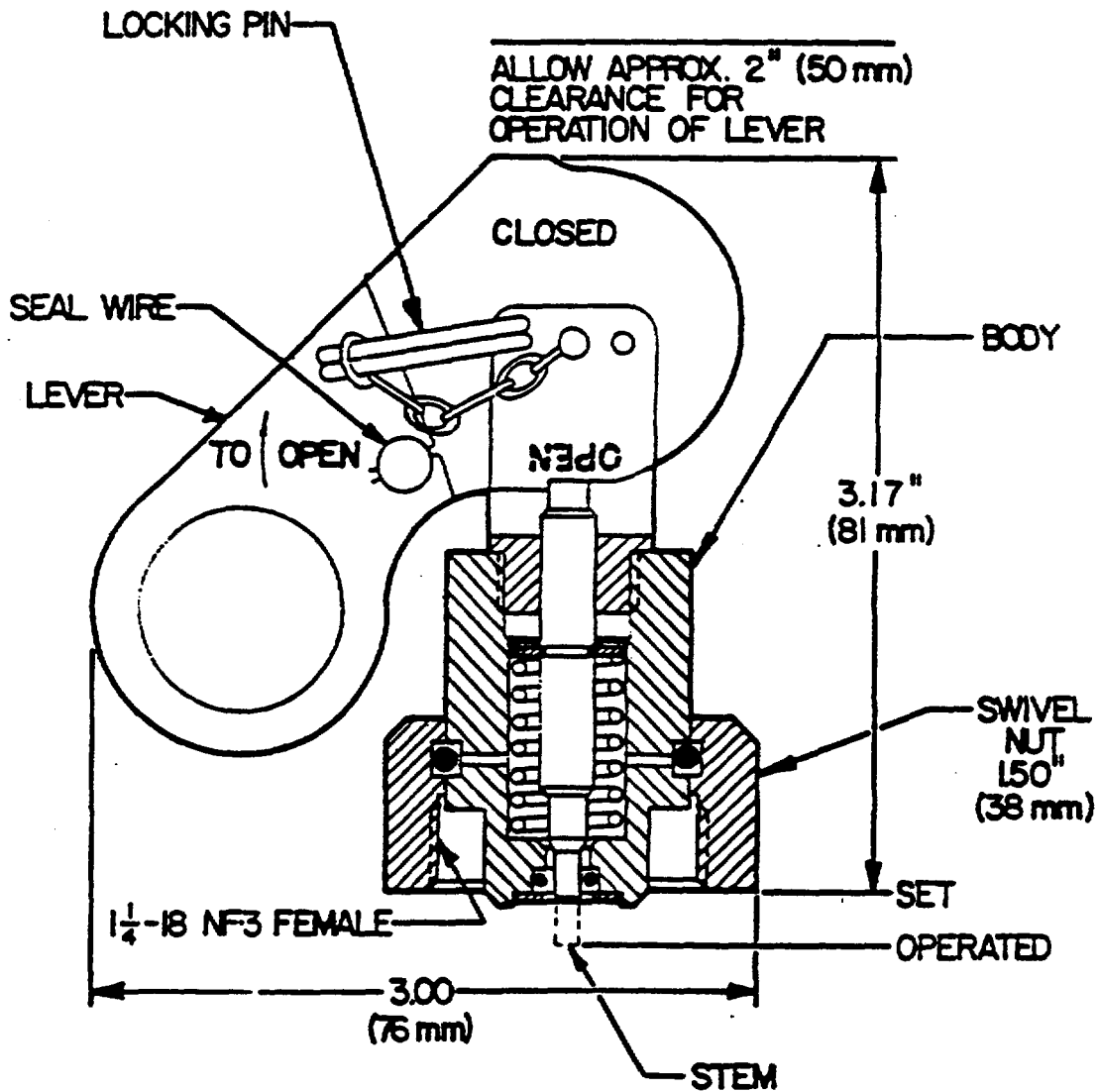
MATERIALS  
 LEVER: STAINLESS STEEL  
 BODY AND PISTON: BRASS

P/N 870897

k  
 Kidde

K-3150

LEVER OR PRESSURE OPERATED CONTROL HEAD



MATERIALS  
LEVER: STAINLESS STEEL  
BODY: BRASS

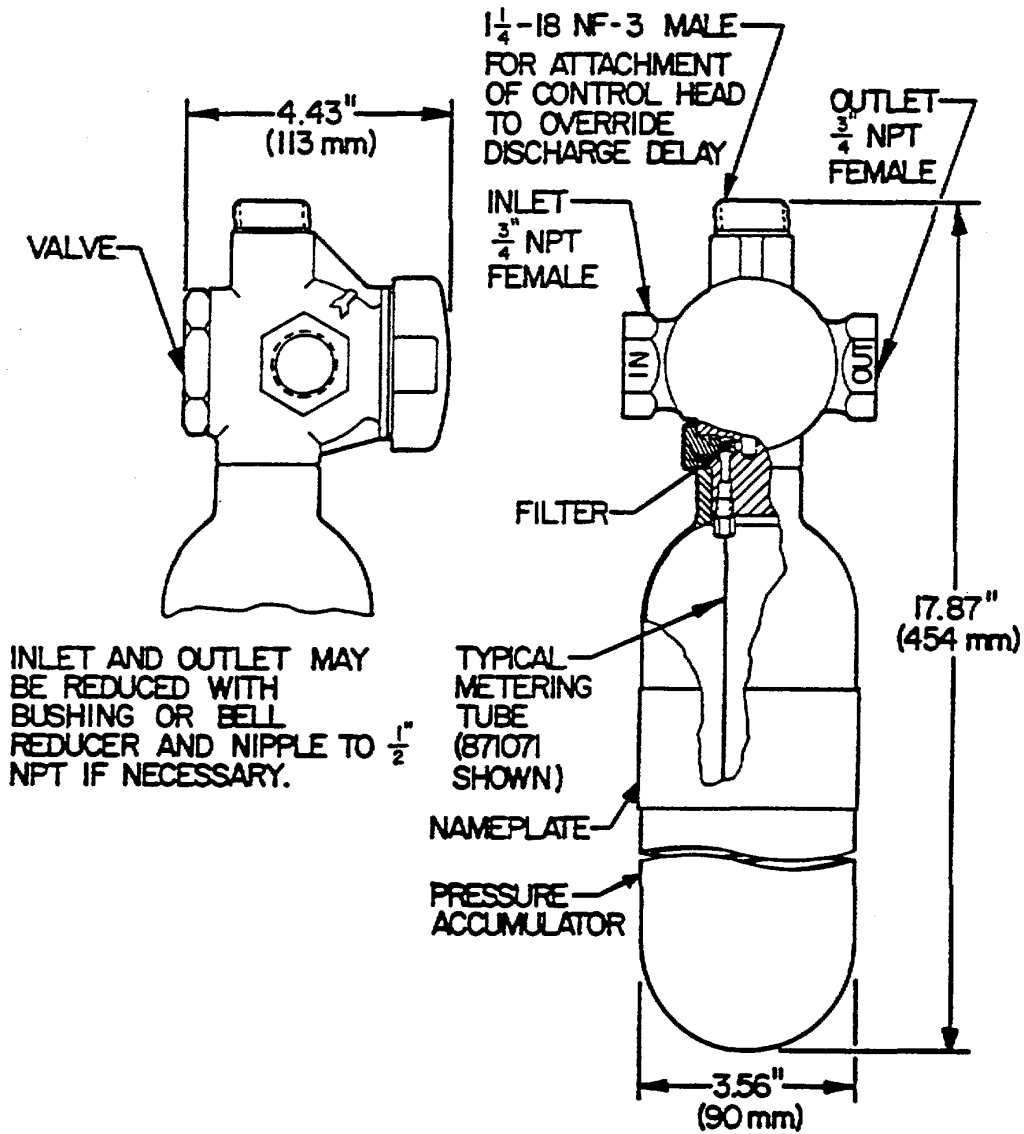
P/N 870652

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Kidde

DISCHARGE DELAYS

MATERIALS  
 PRESSURE ACCUMULATOR: STEEL  
 METERING TUBE: STAINLESS STEEL  
 VALVE BODY: BRASS

FINISH: RED PAINT

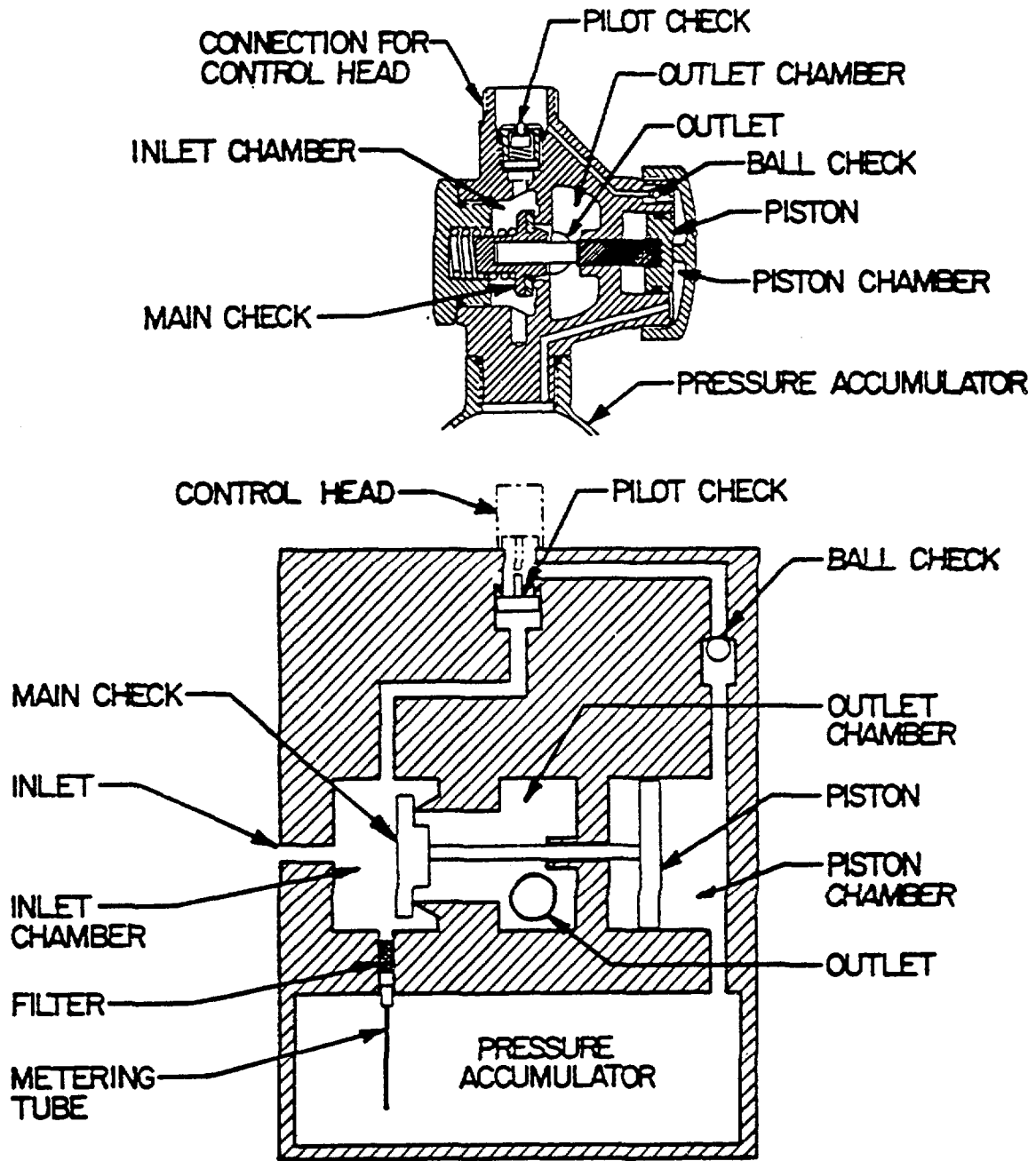


DIA. P/N-SEE TABLE

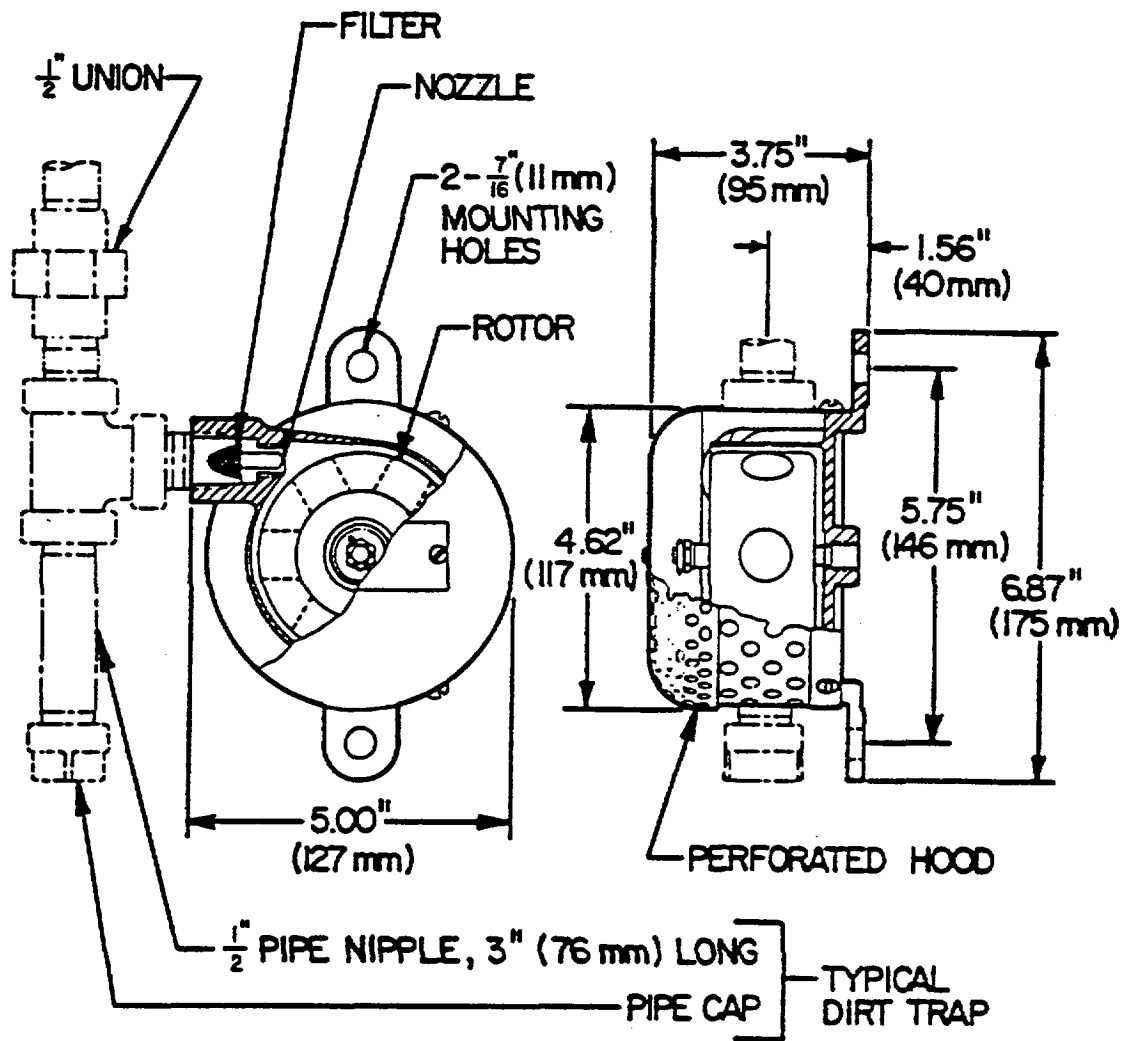
PART NUMBER	AGENT	NOMINAL DELAY TIME APPROX	TYPE OF METERING TUBE
871071	CO <sub>2</sub>	25	STRAIGHT
897636	CO <sub>2</sub>	60	CURLED
896677	360 PSI HALON 1301	25	NONE (ORIFICE ONLY)



DISCHARGE DELAYS



PRESSURE OPERATED SIREN

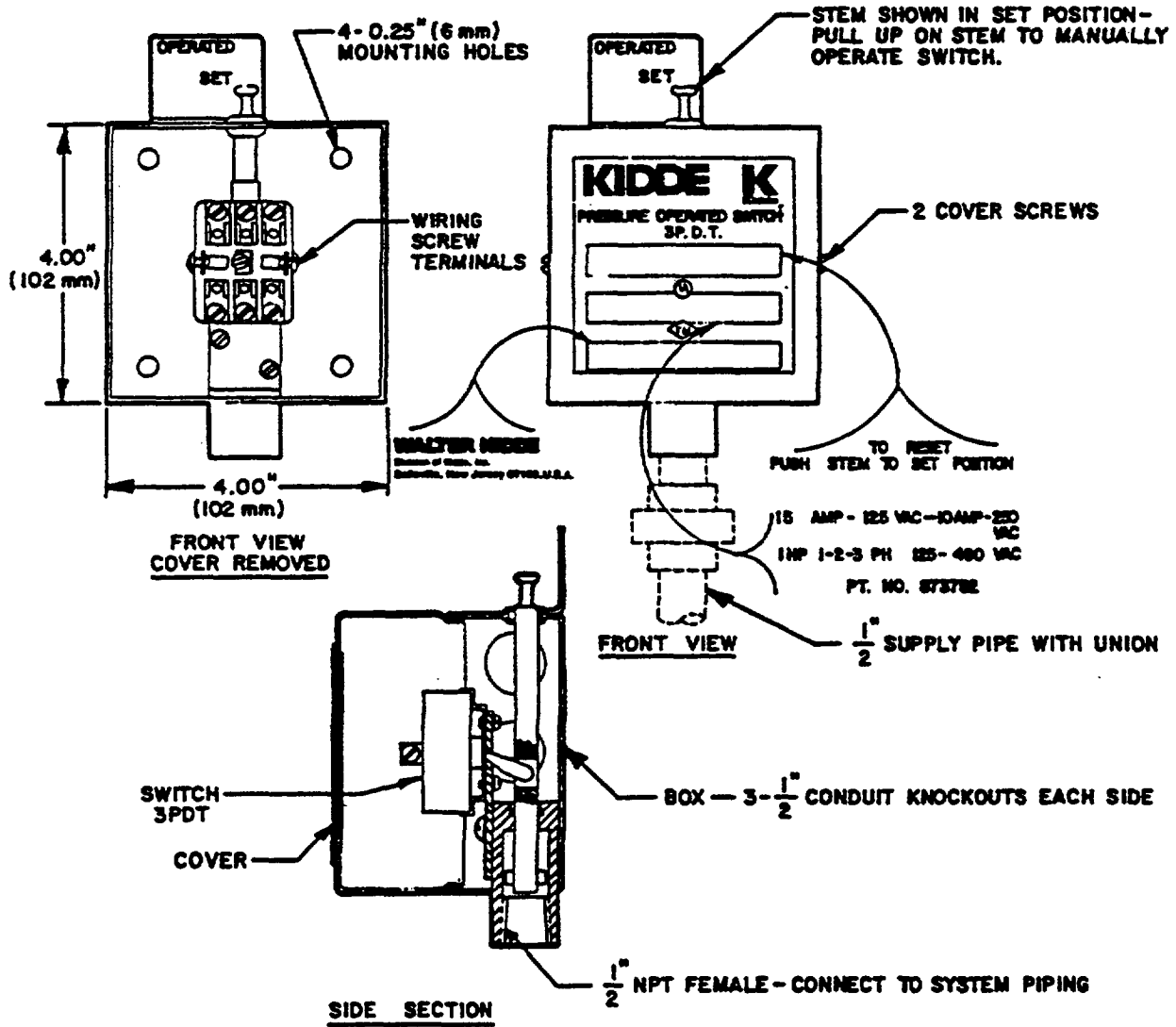


MATERIALS  
BODY: BRONZE  
ROTOR: BRASS  
NOZZLE AND FILTER: MONEL  
HOOD: STEEL

P/N 981574

FINISH: ED FAINT

PRESSURE OPERATED CONTROL SWITCH



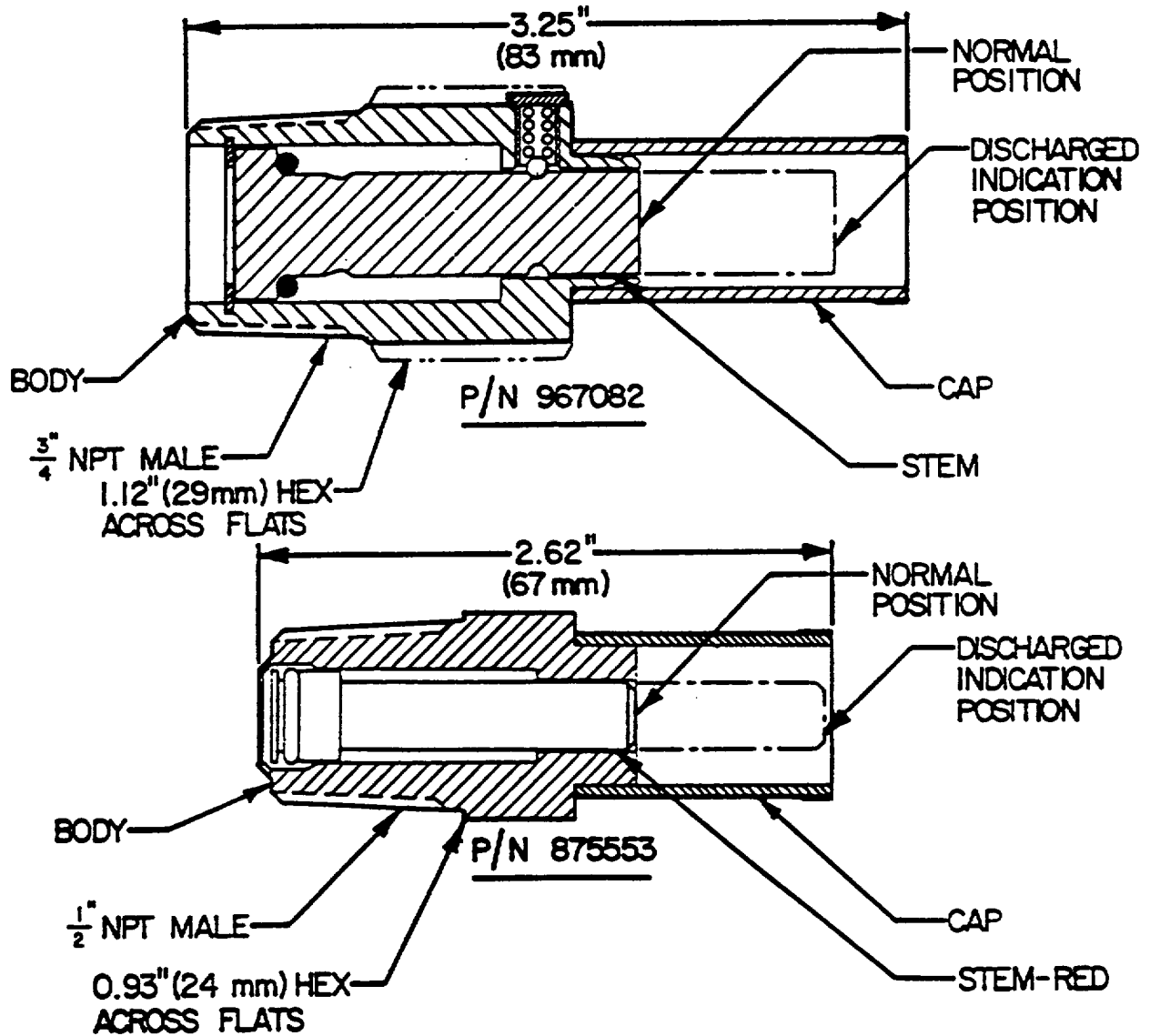
P/N 873752

NOTES:

1. SWITCH MAY BE MOUNTED IN ANY POSITION BUT PREFERRED INSTALLATION IS UPRIGHT AS SHOWN.
2. WHEN LOAD EXCEEDS SWITCH RATING, SWITCH SHOULD BREAK COIL CIRCUIT OF RELAY OF SUITABLE RATING WHICH DISCONNECTS LOAD.

K  
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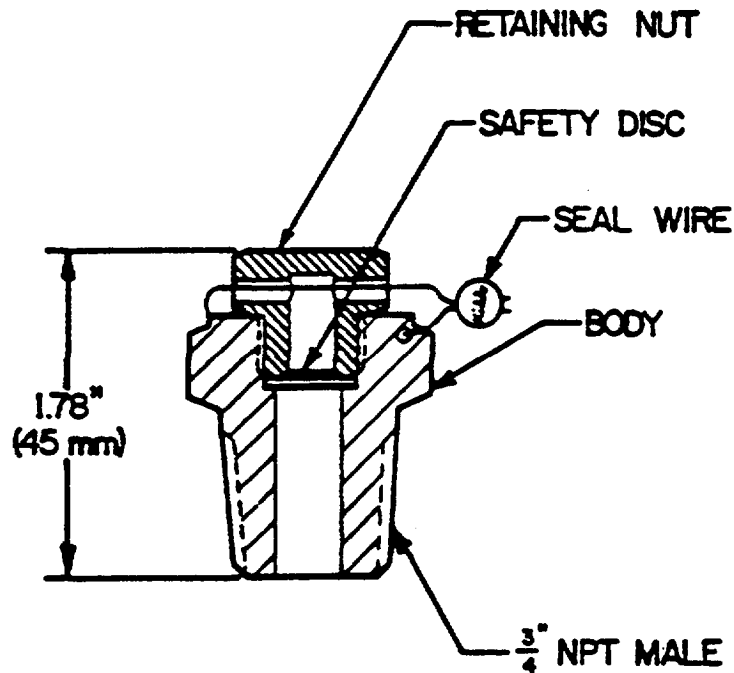
DISCHARGE INDICATORS



MATERIALS  
BODY-967082: BRASS  
BODY-875553: ALUMINUM  
CAPS: CLEAR CELLULOSE ACETATE

P/N-SEE ABOVE

SAFETY OUTLETS



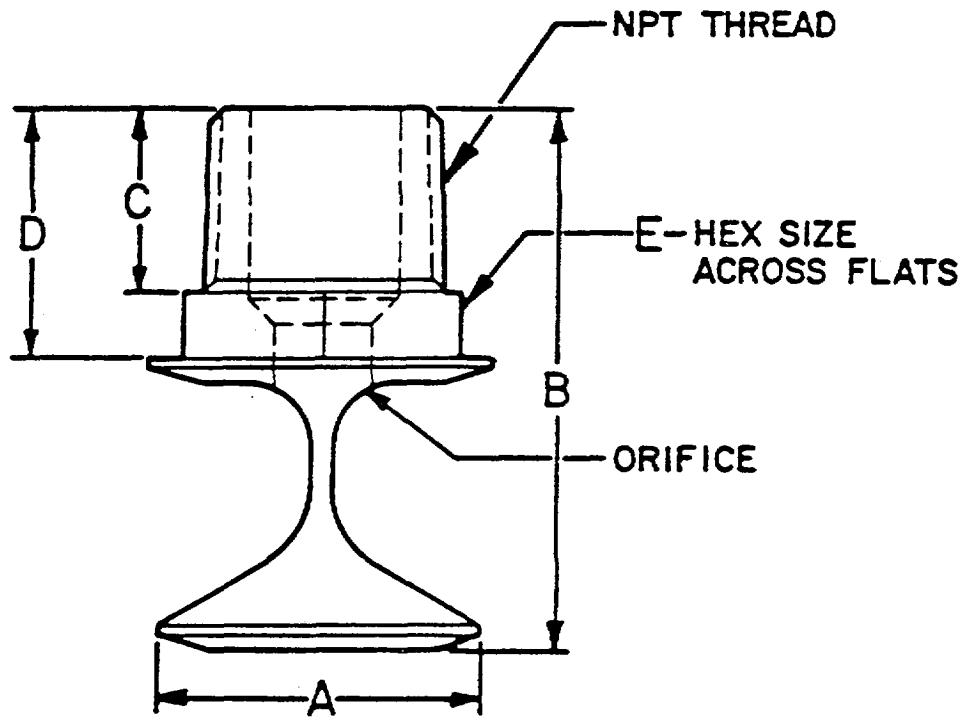
NUMBER	AGENT	PRESSURE RELIEF OPERATES AT	
		PSI	BARS
803242	CO <sub>2</sub>	2400-2800	166-193
844346	360 PSI HALLON 1301	750-900	52-62

**MATERIALS**  
**BODY AND RETAINING NUT: BRASS**  
**SEAL WIRE: COPPER AND LEAD**

P/N-SEE TABLE

K  
 Kidde

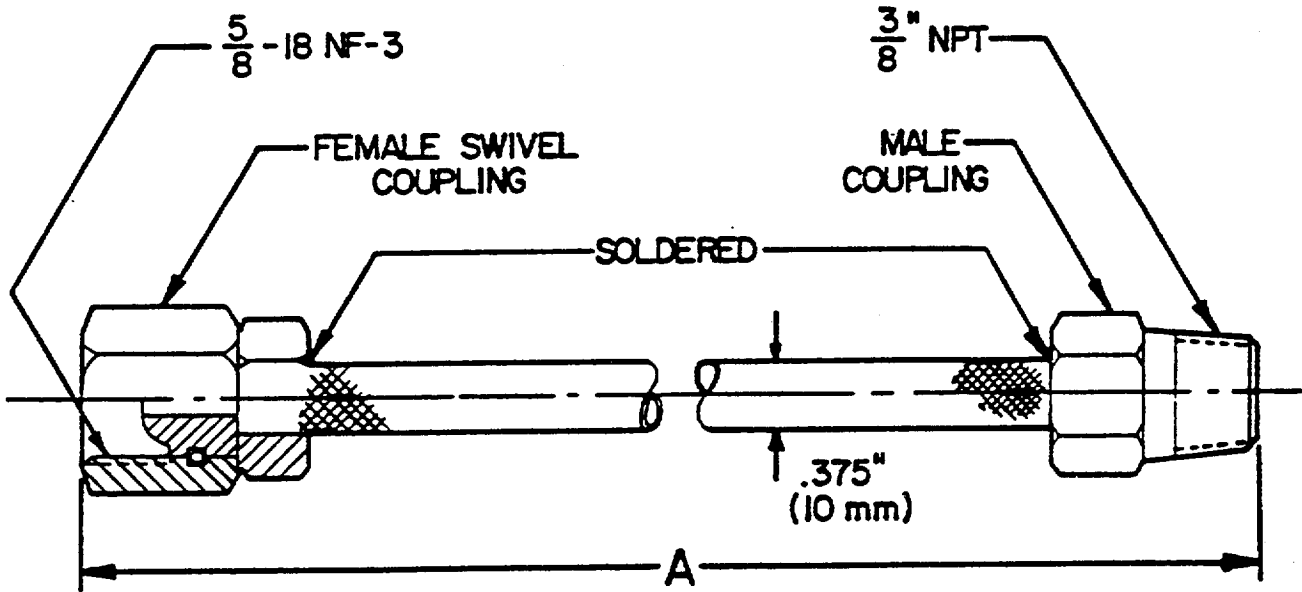
HALON 1301 DISCHARGE NOZZLE  
 SPLIT FAN TYPE



NPT	A		B		C		D		E		NO OF ORIFICE SIZES	PART NUMBERS	ORIFICE DIAMETERS	
	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm			IN	mm
$\frac{1}{2}$	1.8	45	2.8	72	.88	22	1.4	35	1.4	35	2	29474120& 29474133	.2500&.3750	6.350-9.525
$\frac{3}{4}$	1.8	45	3.0	75	1.0	25	1.4	35	1.4	35	60	29474200- 29474259	.1250-.7500	3.175-19.05
1	1.8	45	3.0	75	1.0	25	1.4	35	1.4	35	17	29474351- 29474467	.870-1.0000	15.87-25.40
$1 \frac{1}{4}$	2.4	61	3.4	87	1.1	28	1.5	38	2.0	49	15	29474463- 29474467	.8750-1.25000	22.22-31.75
$1 \frac{1}{2}$	2.4	61	3.4	87	1.1	28	1.5	38	2.0	49	15	29474682-	1.1250-1.5000	28.57-48.42
2	2.8	70	3.9	99	1.1	27	1.7	42	2.5	64	18	29474682- 29474699	1.3750-1.9062	34.92-48.42

P/N-SEE TABLE

3 "FLEX LOOPS  
 8



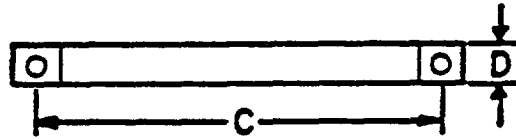
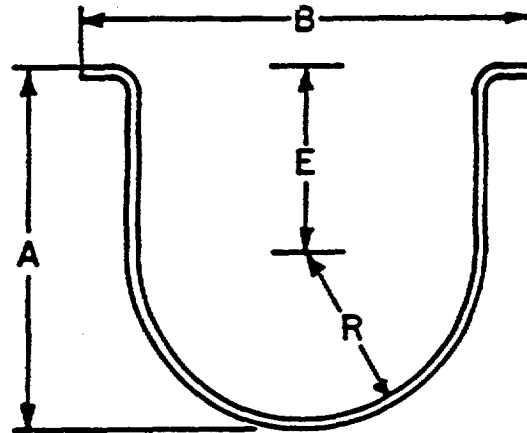
PART NUMBER	"A" DIMENSION	
	IN	mm
844226	18	457
844707	24	610

**MATERIALS**  
 HOSE: BRONZE, WIRE BRAIDED, .188" (4.8 mm) I. D. MINIMUM  
 COUPLINGS: BRASS  
 MINIMUM BURSTING PRESSURE: 5000 PSI (345 BARS)

P/N-SEE TABLE

K  
 Kidde

360 PSI AND 600 PSI HALON 1301  
 CYLINDER STRAPS



PART NUMBER	CYLINDER SIZE	A		B		C		D		E		R	
		IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM
270012	20	6.22	158	9.81	249	8.75	22.2	1.00	25.4	2.62	66.5	3.41	86.6
270014	40&60	7.94	202	11.5	292	10.4	264	1.00	15.4	3.50	689	4.25	108
22971	125&200	13.1	333	17.1	434	15.4	391	1.75	44.5	6.06	154	6.8	173
28166	312	15.5	394	17.5	495	17.9	455	1.5	445	7.25	184	8.1	206
294651	550	21.6	549	25.6	655	24.1	612	1.75	44.5	10.3	262	11.0	279

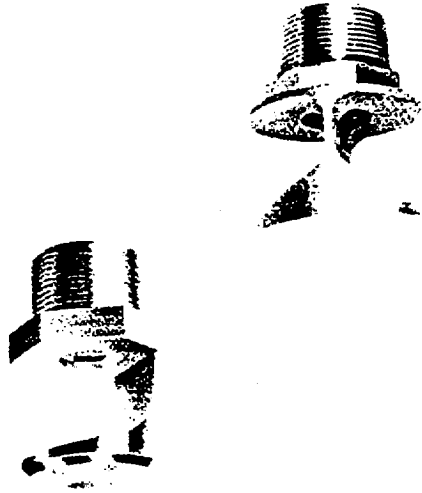
MATERIAL STEEL

P/N-SEE TABLE

K  
 Kidde



**KIDDE  
HALON 1301  
SYSTEMS**



FIRE PROTECTION PRODUCTS  
COMPLETE RANGE OF PORTABLE EXTINGUISHERS  
HI-EX FOAM PORTABLE GENERATORS  
CUSTOM-ENGINEERED SYSTEMS  
Carbon Dioxide  
Dry Chemical  
Halon 1301  
Foam  
Water  
SENTINEL PRE-ENGINEERED PACKAGE SYSTEMS  
Halon 1301  
Dry Chemical  
LARGE WHEELED AND STATIONARY EXTINGUISHERS  
Dry Chemical  
HOSE REEL SYSTEMS  
Carbon Dioxide  
Dry Chemical  
FIRE DETECTION PRODUCTS  
Computerized Fire and  
Intrusion Alarm Systems  
Pneumatic Fire Detectors  
Thermostatic Fire Detectors  
Continuous Strip Thermistors  
Ionization Smoke Detectors  
Photoelectric Smoke Detectors

**WHO SAID "WATER IS CHEAP"?**  
**TRY IT ON COMPUTER ROOM FIRES!**

Kidde's capability in the fire protection field extends over a wide spectrum from detection systems and components to portable extinguishers and engineered fire protection systems using the most effective agent to solve a particular protection problem. For over SIXTY YEARS, Kidde has been a leader in the development of:

**DETECTION**

- Continuous Strip
- Rate-of-rise
- Fixed Temperature
- Pneumatic
- Products of Combustion
- Photoelectric
- Ultra Violet

**EXTINGUISHING Systems**

- Halon 1301
- Carbon Dioxide
- Dry Chemical
- Hi-Ex Foam

Since the late 1940's Kidde has engineered and produced systems utilizing Halon 1301 for commercial, industrial and aerospace applications. Approximately 75% of the commercial aircraft in the free world utilize fixed Halon extinguishing systems for engine protection.

**TYPES OF HAZARDS**

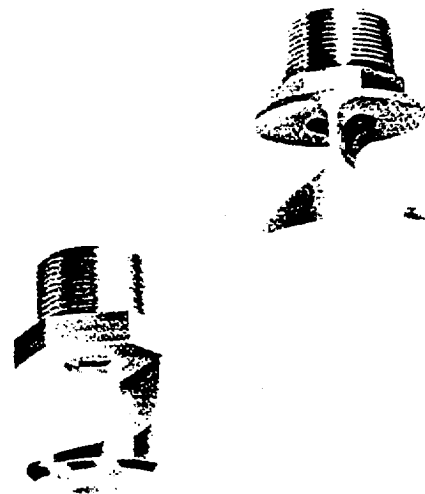
A safe and effective fire extinguishing agent, Halon 1301 is approved and meets the National Fire Protection Association's (NFPA) Standard 12-A for use against Class A (stacked paper, wood surfaces, plastic, rubber and other carbonaceous materials), Class B (paint, solvent, grease, gasoline, oil and other flammable liquids), and Class C (electrical) fires. Stored as a liquid, Halon 1301 discharges as an odorless, colorless and non-conductive gas. Similar in this respect to carbon dioxide, Halon 1301 is classified as a "liquefied gas" and on a weight-of-agent basis is considered ONE OF THE MOST EFFECTIVE AGENTS AVAILABLE.

**EFFECTIVENESS**

Extinguishing agents differ in how they put out fires. Some agents liquids, gas and foams extinguish fires by smothering, cooling or separating the elements of a fire (such as fuel from oxygen). Halon 1301 extinguishes a fire FASTER by chemically "interrupting" the combustion process itself. This puts out the fire faster and can prevent further burning or explosion of flammable vapors. ONLY A 5% CONCENTRATION BY VOLUME IS NEEDED TO STOP MOST FIRES!

**PERSONNEL SAFETY**

Classified as the "least toxic" (Group 6) by Underwriters Laboratories, 1301 provides greater personnel safety. Properly applied, it is the safest gaseous extinguishing agent available. Colorless and odorless, 1301 allows personnel to see and breathe permitting them to leave the fire area safely. The "low toxicity" classification provides additional safety by permitting fire protection crews to enter the fire area immediately, if necessary.



## CLEAN

Halon 1301 is clean. It leaves no residue eliminating costly after-fire clean-up. When discharged, the 1301 vaporizes as it enters the fire area via discharge nozzles. The agent diffuses into the surrounding atmosphere without leaving a residue. Most materials (steel, stainless steel, aluminum, brass and other metals as well as plastics, rubber and electronic components are unaffected by 1301. The "clean" quality of Halon 1301 is particularly important in protecting expensive electronic, electrical, processing equipment and high value materials.

## COST ADVANTAGES

Since less 1301 agent is required to extinguish a fire than conventional gaseous agents, much less agent storage space is required. Fewer cylinders can be used and still provide maximum protection. Further design and cost advantages can be realized by using special piping, time delays and predischARGE alarms resulting in lower system costs. Kidde design techniques permit multiple zone protection from a single supply source.

## **HALON 1301 FIRE EXTINGUISHING SYSTEMS**

Kidde fire extinguishing systems are designed to detect, isolate and extinguish fires.

There are five basic components in Kidde engineered Halon 1301 fire protection systems regardless of type: detectors, controls, cylinders, piping and nozzles. A system consists of one or more cylinders storing the agent super-pressurized with nitrogen to 360 psig. In most cases, a pipe line is run to the hazard from the cylinders. If space permits, within the area being protected, a modular concept can be used (i.e. single cylinders with one or two nozzles can be located around or within the periphery of the protected space).

When more than one hazard is to be protected by the same battery of cylinders, directional valves are installed to direct the gas automatically to the proper hazard. At the hazard, specially designed nozzles provide for the proper application of the Halon 1301.

Automatic detection causes the contents of the cylinders to be released. When released, the stored pressure acts as the propellant to expel the Halon 1301 via the distribution pipes through the system nozzles.

## CONTROL & RELEASE EQUIPMENT

There are two principle parts in the control and release portion of the system: (a) the cylinder valve, and (b) the control head. See Figure 1.

Halon 1301 is stored in the steel cylinder as a liquid which is super-pressurized by nitrogen to 360 psig at 700 F.

### VALVE

The discharge valve operates on a principle whereby the cylinder pressure is used to effect the release of the agent. In a normal standby situation, the pressure on both sides of the valve piston is equalized by a small interconnecting orifice through the piston. This provides a differential force to hold the valve closed (See Figure 2). When the extinguishing system is actuated, the control head which is mounted on top of the cylinder valve depresses a pilot check. This allows the pressure above the piston to vent rapidly to atmosphere, reversing the differential pressure force. The piston is then driven to the open position allowing the agent to be discharged. See Figure 3.

The discharge valve incorporates a safety release burst disc which is designed to release at 750-900 psig through an anti-recoil plug to atmosphere.

Where the size or type of hazard requires more than one cylinder of Halon 1301, the cylinders are manifolded together. In these multiple cylinder installations of more than two cylinders, a pair of cylinders is fitted with control heads. These are known as control or master cylinders. The other cylinders are called slave cylinders.

When the system operates, the Halon 1301 from these control cylinders pressurizes the manifold connecting all the cylinders thus releasing the content in the balance of the cylinders. The pressure-operated or slave cylinders are identical to control cylinders except they are not fitted with control heads.

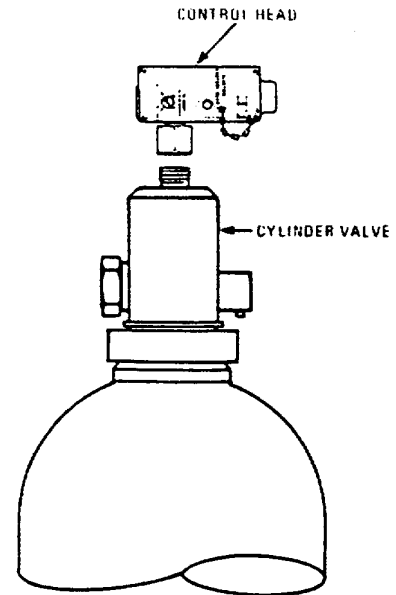


FIG. 1

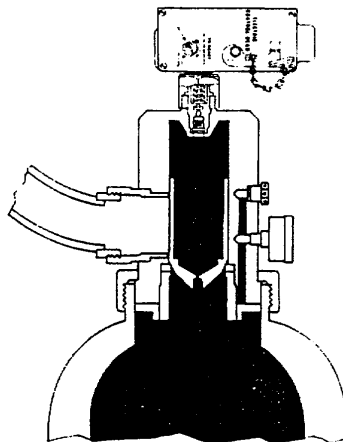


FIG. 2

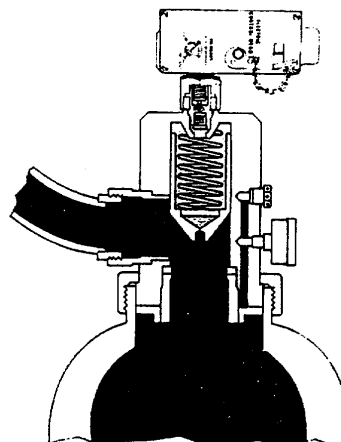


FIG. 3

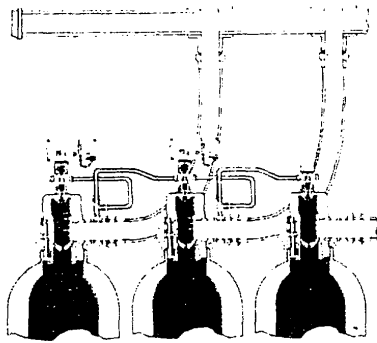


FIG. 4A

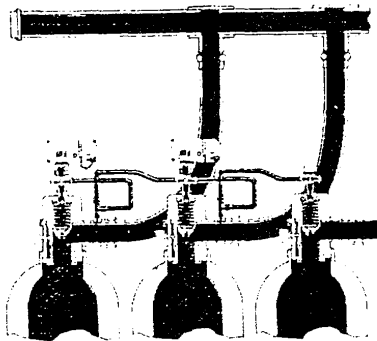


FIG. 4B

Figure 4A shows the position of parts on pressure-operated cylinders ready to operate.

Figure 4B shows the parts during operation.

The pressure causes the piston to depress therefore venting the upper cavity in the valve. Once vented, the main seat opens automatically.

Figure 4A shows a typical multiple cylinder assembly showing the manner in which the two control cylinders are manifolded to the other cylinders in the system. Note that Halon 1301 flows from the discharge flexible loop to the pressure-operated control head. Structural steel framing or racks are supplied with each system for supporting the cylinders and manifold.

### DIRECTIONAL VALVE SYSTEM

In some instances it may be necessary to protect more than one hazard with the same bank of cylinders. In these cases, pressure-operated stop valves are used to route the Halon 1301 to whichever space in which a fire occurs. These valves are available to complement the cylinders' releasing equipment in order to permit flexibility of installation.

When a fire occurs in one of the compartments with a directional valve system, the detecting equipment via a control panel performs the following functions:

1. Opens the proper directional valve
2. Releases the Halon 1301 cylinders

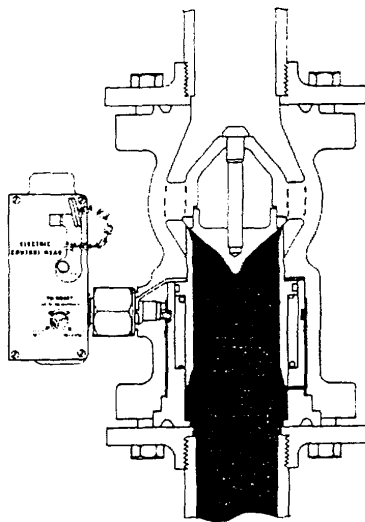


FIG. 5

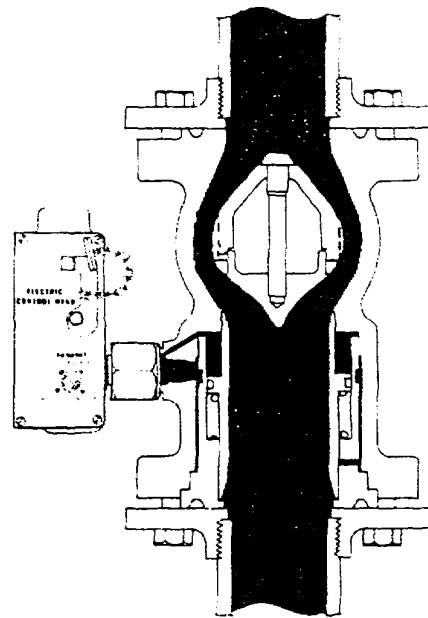


FIG. 6

## ELECTRIC OPERATION

The opening of the directional valve is accomplished by fitting the directional valve with an electric control head. Figure 5 shows the assembly of a pressure-operated directional valve and an electric control head in its closed position.

When the Halon 1301 being discharged reaches the closed valve, it enters an auxiliary annular cavity around the main valve seat. Figure 5 shows the location of the pressurized gas which is dead-ended against the pilot seat. Once the pilot seat is depressed by the electric control head, the pressurized gas generates a force on the piston which has been compressing the spring and holding the valve closed. The valve, as a result of this pressure, opens instantly.

The valve design is unique in the fact that it is an in-line type having very little pressure drop across the seat. Figure 6 shows the position of the parts of the valve while the valve is open during operation.

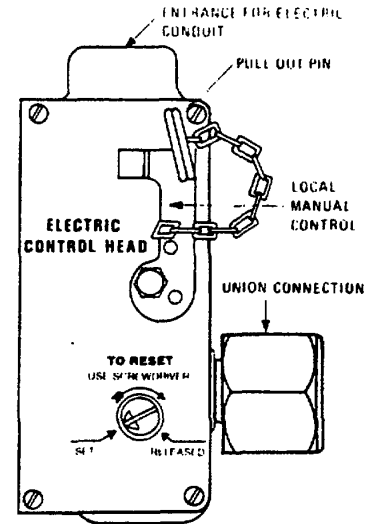


FIG. 7

## ELECTRIC CONTROL HEAD

The electric control head (see Figure 7) is available for use with various voltages. When heat due to fire causes the detector to close and complete the electric circuit, electric energy operates a solenoid in the electric control head which trips a lever mechanism releasing a spring to drive the plunger forward to open the pilot seat. The electric control head can be operated from a remote point utilizing manually operated switch cases.

This control head includes an important maintenance feature: it can be removed from the cylinders for check-out. Visual checks can be made to verify actuation by manually operating the system.

## EXPLOSION PROOF ELECTRIC CONTROL HEAD

The explosion proof electric control head is available with various voltages. It is suitable for use in Class 1, Groups C & D type environments as specified in the National Electrical Code.

The explosion proof head like the electric head is operated by the movement of the solenoid that trips a lever mechanism releasing a spring that drives a plunger forward to open the pilot seat. See Figure 8.

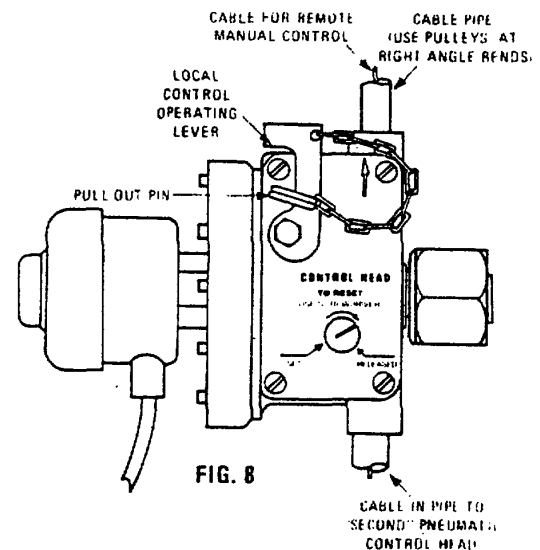


FIG. 8

## CONTROL HEAD INSPECTION

After operation, it is not necessary to replace any control head parts. The control head is reset by using a screwdriver to turn the reset shaft from "released" position to "set" position. See Figure 9. The head is also fitted with an emergency manual control. The manual control can be utilized by pulling out the safety locking pin, and then operating the lever.

An important advantage in the design of the control head is that visual inspection is all that is needed to determine whether the head has operated. If the reset shaft has rotated to "released" position then the head has operated.

In fact, no replacement parts are required to recondition a discharged system at recharge.

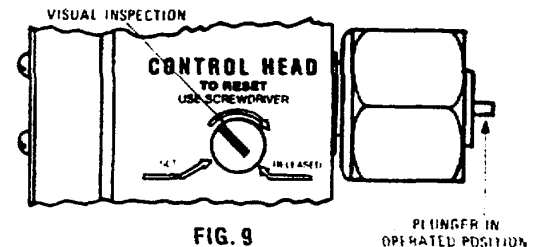


FIG. 9

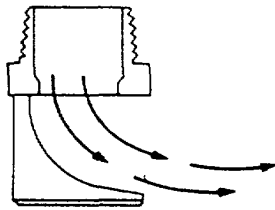


FIG. 10

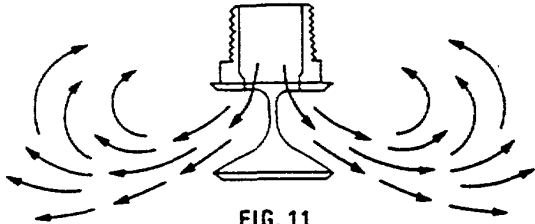


FIG. 11

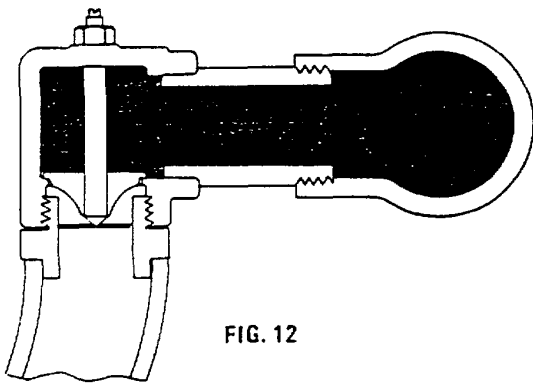


FIG. 12

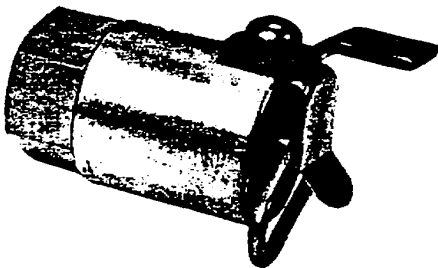


FIG. 13



FIG. 14

## NOZZLES

Kidde discharge nozzles provide the proper flow rate of Halon 1301 desired, and their unique design provides a turbulence-discharge of the gas to provide an optimized diffusion of the gas in the air. Two basic configurations are available:

1. 180° Fan nozzle. See Figure 10.
2. 360° Split fan nozzle. See Figure 11.

## ACCESSORIES

If a cylinder is disconnected for replacement, elbow check valves (See Figure 12), installed between the flexible loop and the manifold, ensure the safety of personnel. This valve will prevent the pressurized gas in the manifold from entering the flexible loop if the loop is not pressurized.

Pressure operated trips, Figure 13, and switches, Figure 14, isolate the rest of the plant while the fire is being extinguished. Trips, operated by the pressure of Halon 1301 in the piping, permit the closing of doors, windows, dampers, and other openings. The fire is prevented from spreading and damaging the rest of the plant. Pressure operated switches, also operated by gas pressure, shut off machines, ventilating fans, and other electric equipment when the system operates.

Kidde offers, as an extra, a simplified weighing arrangement for weighing cylinders in place without disconnecting them from the cylinder manifold. (Figure 15) The weighing bar and weighing bar bracket are supplied as part of this simplified weighing arrangement. These parts are drilled and cut to proper length so that they are easily fastened to the cylinder framing. The scale gives a direct reading of the weight of the cylinder. Because of a 10 to 1 ratio on the scale beam a pull of 15 lbs. on the scale hook will record 150 lbs. on the scale.



## SYSTEM TESTING

The Kidde System not only features simplified testing, but more important it features an arrangement which permits the entire detection sequence of operations to be tested easily and effectively. No replacement parts are needed after test. Here is how it is done. (Applicable to the electric and pneumatic systems.)

1. Disconnect the control head from the control cylinders. This simply involves loosening and removing a union connection.
2. Place heat under the thermostats or smoke around the ionization detector and check that control heads have operated.
3. Reset control heads before re-attaching to cylinders. Reset control heads that are attached to directional valves. This arrangement permits detectors to be tested without removing them from the circuit. (Most detectors reset themselves automatically. The electric control heads require no replacement, simply resetting. In this way you are assured that the actual parts reinstalled have been given a thorough test.)

## APPROVED SYSTEMS

Kidde pressure operated systems are the result of many years of development, research and retesting. The equipment is fully listed by Underwriters Laboratories and Factory Mutual Laboratories approved. Marine Systems are also U.S. Coast Guard approved. FIG. 15

Check these important advantages:

- All operating parts completely enclosed; not subject to fouling or accidental operation.
- No falling weights.
- No parts to replace after operation.
- Visual inspection can determine if cylinders have been operated.
- All vital operating parts can be easily tested.

Now, before fire starts, is the time to plan your fire protection. When you have a Kidde built-in Halon 1301 system you have the best protection available, a quality product, backed by the research, development and manufacturing skills of the world's leading manufacturer of Halon 1301 fire extinguishing equipment.

Kidde distributors, located throughout the world, are always ready to serve you for all your fire protection needs.

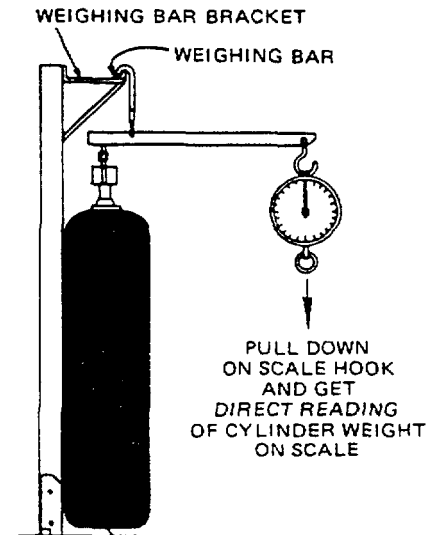


FIG. 15

**KIDDE  
HALON 1301  
SYSTEMS**

The Kidde Systems consist of a detection network (a variety of sensors including those capable of detecting incipient products of combustion which occur prior to visible smoke), manual or automatic control heads (lever, cable, pneumatic or electrical), piping network, cylinders (varying capacities) and nozzles (fan type-split or straight). When a single agent supply source is used to protect multiple hazards, a direction valve routes the agent to whichever hazard is afire.

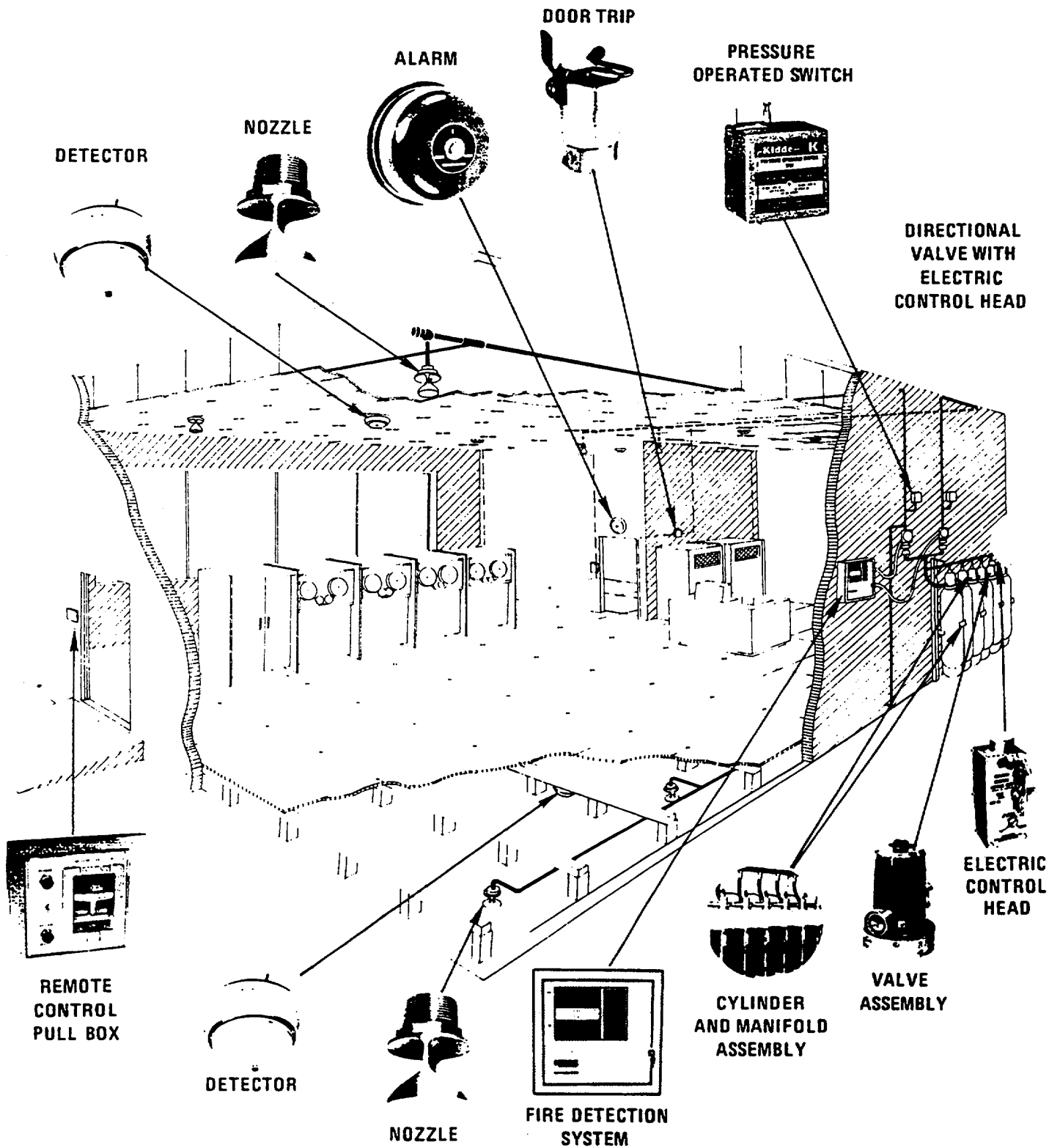
**TOTAL FLOODING SYSTEMS**

*Total Flooding Systems extinguish fires* by rapidly filling an enclosed volume with enough Halon 1301 to create an atmosphere that is incapable of supporting combustion.

**HALON 1301 TYPICAL APPLICATIONS**

TOTAL FLOODING	Rotating electric equipment
Liquid storage rooms	Fur vaults
Dust collectors	Data processing rooms
Oil purification rooms	Tape storage vaults
Ovens	Libraries
Electrical equipment rooms	Art storage
Test cells	Ship engine rooms
Transformer rooms	Ship paint lockers
Flo-coaters	Turbine enclosures
Cable tunnels	Pipeline pump station
buildings	

ELECTRONIC DATA PROCESSING and TAPE STORAGE ROOMS  
 Kidde Remote, Local and Automatic Operated  
 Halon 1301 Fire Extinguishing System



**Kidde**



**CUSTOM  
ENGINEERED  
FIRE PROTECTION  
SYSTEMS**

**CO<sub>2</sub> • HI-EX FOAM® • LO-EX FOAM  
DRY CHEMICAL • HALON**

Ask your Kidde distributor for additional information.

**REGIONAL OFFICES  
California 90806, Signal Hill**

**CANADIAN OFFICE  
Walter Kidde & Company of Canada, Ltd.  
Toronto, Ontario**

**K                      WALTER KIDDE  
Kidde                Division of Kidde. Inc.  
Wake Forest, North Carolina 27587, U.S.A.**

**1-74- RS - 6/83**

**PRINTED IN U.S.A.**

**K  
Kidde**

**INSTRUCTION MANUAL**  
**Installation, Operation and Maintenance**  
**of**  
**Hose Reel and Hose Rack Systems**

**WALTER KIDDE**  
**Division of Kidde, Inc.**  
**Belleville, N.J. 07109**

## CARBON DIOXIDE AS AN EXTINGUISHING AGENT

The "Kidde" Fire Extinguishing System uses carbon dioxide gas as the extinguishing agent. Carbon dioxide is a standard commercial product, being most commonly used for carbonating beverages, and is available in most of the large cities and seaports throughout the world.

Carbon dioxide is normally colorless except that, when discharging, it resembles a cloud of steam. When inhaled in small amounts, it produces a tingle in the nostrils the same as experienced when drinking soda water. It is a non-conductor of electricity, is non-corrosive, and non-injurious to all substances, and although heavier than air, it does not contain oxygen in any form available for supporting combustion or for sustaining human life in breathing.

"Fast" fires such as engine room, oil, or paint fires, are quickly extinguished by flooding the area with carbon dioxide gas. This reduces the oxygen content and creates an inert atmosphere which smothers the fire. "Slow" or "Deep-seared" fires, such as fires in paper-clothing or similar substances, are extinguished by prolonged action of a high concentration of carbon dioxide. In addition to its smothering action, carbon dioxide is aided in extinguishing fire by its cooling effect.

Since a person will have difficulty in breathing and may suffocate in an atmosphere of carbon dioxide, caution must be taken before entering any space filled with this odorless gas. Thoroughly ventilate the space into which the gas has been discharged to make certain that all portions contain only fresh air.

If it be necessary for a person to enter a space before it is thoroughly ventilated, he may do so by using a fresh air mask or other type of self-contained breathing apparatus. DO NOT USE a filter type of mask or a canister gas mask. No one should enter such & space without another person as observer and standby outside the space.

Should a person be overcome by carbon dioxide, it is essential that he be immediately rescued from the space containing the gas. Call a physician. To revive a person so overcome, give him plenty of fresh air and apply artificial respiration (as in the case of drowning) using oxygen, but do not use carbon dioxide as a stimulant.

An ammonia inhalant may be used and the person should be kept warm (by the application of friction and heat to the extremities).

The carbon dioxide is stored in liquid form in steel cylinders carefully tested for strength under governmental supervision. The pressure within the cylinder depends on the temperature, being 504 pounds per square inch at 32 degrees F. and 850 pounds per square inch at 70 degrees F., although the carbon dioxide content is never determined by using a pressure gauge. The gas content may be determined only by the weighing of the cylinder.

Each cylinder is provided with a safety relief disc which will release the gas before the pressure exceeds the cylinder test pressure. Cylinders should be stored in a cool place whenever possible. The maximum safe storage temperature for all cylinders is 130 degrees F. Specially charged cylinders can be supplied for higher storage temperature.

## INSTALLATION

### GENERAL

The assembled Kidde Hose applications are shown on the installation drawings included in this book; these drawings should be consulted for identification of parts.

This equipment should be installed where the hose and discharge horn are easily accessible to all fire hazards, such as fuel pumps, electrical apparatus, etc.

Mount the cylinder (s) vertically. For local control systems, the control head should be in a position where it may be easily operated.

In the case of remote control system, the break-glass pull box is to be mounted along side the hose reel or rack.

The following procedure has been found by experience to be the most efficient and practical method of installation. It is, therefore, recommended that the installation be made in accordance with these instructions.

Refer to drawings No.      for specifications of the pipe and fittings to be used for conducting carbon dioxide.

### DETAILED INSTRUCTIONS

1. Fasten the cylinder strap anchors securely to the bulkhead in accordance with dimensions as shown on the installation drawing, measuring from the bottom of the cylinders. When necessary, allow for a chock to be placed under the cylinders to prevent corrosion.
2. Set the cylinder (s) in place, leaving the shipping caps on during this operation. Place the cylinder straps in position and bolt handtight to the bulkhead.
3. Remove the shipping cap from cylinders. Turn cylinder (s) so that the safety outlet is facing the bulkhead, then tighten cylinder strap bolts securely. Remove top and side protecting caps from cylinder valves.
4. Mount the hose rack or reel as shown on installation drawing L-79200 or L-79013.
5. For remote control systems only, install the break-glass pull box adjacent to the reel or rack. The control cable should be enclosed in pipe or conduit. This should be standard 3/8" size of hot dipped galvanized steel or standard weight brass. Run control cable piping as directly as possible to cylinders. **BENDS OR OFFSETS ARE NOT PERMITTED.** Kidde corner pulleys are to be used at all angle bends. Fasten cable to remote control head as shown on Drawing L-82134.
6. Provide for the connection of cylinder (s) to the distributing hose. For details, refer to the installation drawing included in this book. In making connections, pipe dope or red lead should not be used, but tighten all connections securely with a wrench.

7. Connect the horn securely to the hose and place the hose in the mounting clips provided. The temporary shut-off on horn should be left in the closed position.
8. Make certain that control head is in "set" position. (See detailed instructions under "Reinstallation of Cylinders"). Mount the control head on the control head outlet of the cylinder valve
9. After horn, hose and piping are integrally connected, mount discharge heads on cylinder valves following directions stamped on swivel nut of discharge head. (Older type discharge heads containing multi-hole corprene gasket must be tightened securely using at least an 18" wrench. New type discharge heads containing two greased rubber rings should be brought up only snug tight.) Connect hose, flexible loops, or piping to discharge head outlets.
10. Check installation to make certain that all connections are secure and that the installation has been made in accordance with these instructions and enclosed drawings.



## OPERATION

1. To discharge carbon dioxide gas, remove pull out pin from control head and pull lever to open position.
2. Run horn to point of attack on fire.
3. Open horn valve by pushing stirrup handle forward.
4. Direct gas at base of flame. As flame recedes, follow slowly, don't hurry. See detailed instruction below.
5. To temporarily stop flow of gas, close horn valve.

### A. SURFACE FIRES

1. Direct the discharge CLOSE to the edge of fire nearest you. Do not point the horn at the center of the flame. If it is desired to drop the horn to an inaccessible fire, make certain the horn valve is in open position.
2. Move the horn back and forth across base of the flame. Chase the flame slowly and deliberately as the fire is extinguished. For bulkhead fires, direct the discharge at the bottom and work upward gradually as the fire recedes.
3. Continue to discharge gas until any smoldering parts are covered with "snow".

### B. ELECTRICAL FIRES - SWITCHBOARDS, MOTORS, ETC.

1. Direct the gas into all openings on the burning substances and continue to apply the carbon dioxide after the flame has been extinguished, until the burned substance is coated with "snow". This procedure will cool the burned material and prevent any incandescent particles from reigniting.
2. It is not necessary to remove the potential from the apparatus before applying carbon dioxide gas to the fire, as the dielectric strength of carbon dioxide is greater than that of air. However, it is desirable to do this as soon as possible to prevent the fire from spreading.

IMPORTANT: After fire has been extinguished, leave horn valve open until all pressure is relieved from hose.

## MAINTENANCE

### AFTER FIRE HAS BEEN EXTINGUISHED

1. Make certain that horn valve is left open until all pressure is relieved from hose.
2. Remove the empty cylinders and have them recharged immediately. See instructions for removal of cylinders elsewhere in this book.
3. Rewind hose on rack or reel and replace horn in clip. The valve must be left in its closed position.
4. For remote control systems, pull the control cable back and forth between the cylinder(s) and break-glass pull box to make certain it operates freely. Replace glass at the pull box.

### PERIODIC INSPECTION

Kidde equipment requires no more than ordinary care to insure its proper operation at all times. Frequent inspections, however, should be made to determine the exact condition of the apparatus.

#### ONCE EVERY MONTH

Make a general inspection of the equipment to make certain that nothing has been placed to interfere with the operation of equipment. The discharge horn and reel or rack, also, should be unobstructed.

Inspect piping and hose for any mechanical damage. Operate horn valve several times to make certain it does not stick. The valve should be left in its closed position.

#### ONCE EVERY YEAR

It is recommended that the system be inspected by a service engineer of Walter Kidde & Company, Inc.

The Kidde cylinders should be removed and weighed to determine the carbon dioxide content. (Do not attempt to determine content by using a pressure gauge.) See instructions for removal included in this book before proceeding. The tare weight should be subtracted from the charged weight stamped on the valve body. This resultant weight is the actual weight of the charge, and should this have decreased by more than 10% of the charged weight assembly should be recharged. Record the net weight of the gas in each cylinder on record sheets included in this book.

#### ONCE EVERY TWO YEARS

Blow out the entire system with air or carbon dioxide to make sure that it is not plugged. Be sure to run hose out to its full length.

**CAUTION:**

**DO NOT Use water or oxygen for blowing out. The use of oxygen, especially, is dangerous as the possible presence of even a minute quantity of oil may cause an explosion.**

Make certain that all gas is discharged from hoses then rewind hose on reel or rack and be sure horn valve is in its closed position. See "After Fire Has Been Extinguished".

INSTRUCTIONS FOR REMOVAL OF CYLINDER

These instructions are to be carefully observed in the order given below when any cylinder or group of cylinders is to be removed at any time.

**CAUTION:**

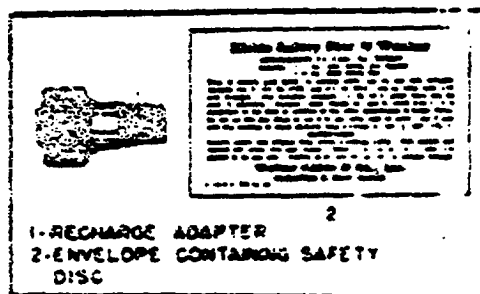
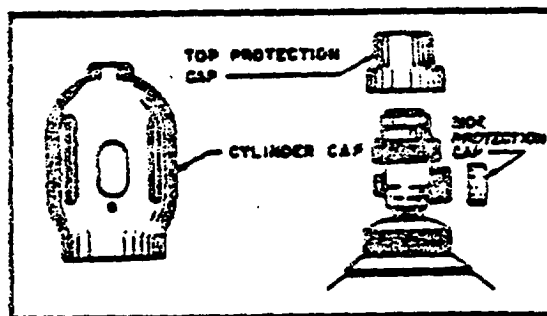
**When removing charged cylinders, always disconnect the discharge heads first. This will eliminate the possibility of discharging the carbon dioxide, with possible injury to personnel.**

1. Remove discharge beads from all cylinder valves by loosening mounting nuts (right-hand thread). On two, or more, cylinder installations, swing discharge head and loop away from cylinder and allow to hang.
2. Remove all control heads from the cylinder valves. To do this, loosen mounting at (right-hand thread)
3. Screw large top protection cap to threads on top of cylinder valve. Cap control head outlet by screwing on side protection cap.
4. Remove cylinder strap.
5. Remove cylinder. It is recommended that the cylinder cap be screwed on, to prevent damage to cylinder valve during removal. (This cap is not included in the empty weight of the cylinder.)

RECHARGING INFORMATION

Kidde cylinders should be recharged with "bone-dry" carbon dioxide. This can be done at any recharging station, see "Kidde System" or "Walter Kidde Sales Agency" in your telephone directory.

Recharge adapter part number 933537 is required in the recharging of an empty or partially filled cylinder. For safety discs order part number 902048 for cylinders marked ICC-3A-1800 or ICC-3A-2015 and part numbers 903664 for cylinders marked ICC-3A-2300.



## INSTRUCTIONS FOR REINSTALLATION OF CYLINDERS

These instructions are to be carefully observed in the order given below when any cylinder or group of cylinders is to be reinstalled at any time.

### **CAUTION:**

**When reinstalling charged cylinders, always replace the discharge heads last. This will eliminate the possibility of discharging the carbon dioxide, with possible injury to personnel.**

1. Place fully recharged cylinder in cylinder rack before removing the cylinder cap. (See sketch on previous page for identification of parts.)
2. Install the cylinder strap, and tighten bolts only enough to allow for turning of cylinder as may be required later.
3. Remove the cylinder cap and the top protection cap from the cylinder valve. Remove the side protection caps from the cylinder valves to be equipped with control heads.
4. Turn cylinder so that the control head outlet points in the proper direction; then tighten the bolts of the cylinder racks securely.
5. Make certain all control heads have been reset as follows:
  - A. Cable-operated Control Head.
    - (1) Remove cover from control head.
    - (2) Make sure plunger is retracted below surface of control head body, then engage a few threads of the mounting nut to the cylinder valve.
    - (3) Retract actuating roller as far as possible from direction of pull. (Roller should be at start of stroke)
    - (4) Replace cover, locking pin, and new seal wire.

### **NOTE:**

**When two control heads are connected in tandem, make certain both are completely reset before assembling to cylinder valves.**

- B. Leave-operated Control Head.
  - (1) Move lever back to its "closed" position. The plunger should fully recede into control head body.
  - (2) Replace locking pin and new seal wire.
6. Reinstall control head to cylinder valve. Tighten mounting nut.
7. Connect discharge head to cylinder valve following directions stamped on swivel nut of discharge head. (Older type discharge heads containing multi-hole corprene gasket must be tightened securely using at least an 18" wrench. New type discharge heads containing two greased rubber rings should be brought up only snug tight.
8. Connect hose, flexible loops or piping to discharge head outlet.

**PIPE AND FITTING SPECIFICATIONS FOR  
VESSELS UNDER U. S. COAST GUARD JURISDICTION**

(APPLIES TO ALL PIPE & FITTINGS THROUGHOUT THE SYSTEM)

**GENERAL**

1. ALL PIPE AND FITTINGS TO HAVE A MINIMUM BURSTING PRESSURE (NOT WORKING PRESSURE) OF 6,000 LBS. P.S.I.
2. THREADS ON ALL PIPES AND FITTINGS ARE TO BE TAPER THREADS CONFORMING TO A.S.A. SPECIFICATION B-2.
3. THREADED CONNECTORS ARE PERMITTED ONLY ON SIZES UP TO AND INCLUDING 2" I.P.S. ABOVE 2" I.P.S. CONNECTIONS ARE TO BUTT-WELDED OR STL-BRAZED.

**PIPE (STEEL)**

1. BETWEEN CYLINDER AND STOP VALVES:
  - a) PIPE IN SIZES UP TO AND INCLUDING 3/4" I.P.S IS TO BE STEEL, SEAMLESS. SCHEDULE 40-ASTM-A106 OR A53
  - b) PIPE IN SIZES LARGER THAN 3/4" I.P.S. IS TO BE STEEL, SEAMLESS. SCHEDULE 90-ASTM-A106 OR A53
2. BETWEEN STOP VALVES AND NOZZLES:
  - a) PIPE IN SIZES UP TO AND INCLUDING 3-4" I.P.S. IS TO BE STEEL. SCHEDULE 40-ASTM-A106 OR A53.
  - b) PIPE IN SIZES LARGER THAN 3/4" I.P.S. IS TO BE STEEL. SCHEDULE 60-ASTM-A106 OR A53.
3. ALL PIPE IS TO BE HOT DIPPED GALVANIZED AND FREE OF SCALE.

**FITTINGS (STEEL)**

1. BETWEEN CYLINDERS AND STOP VALVES:
  - a) FITTINGS IN SIZES UP TO AND INCLUDING 2" I.P.S. ARE TO BE FORGED STEEL GALVANIZED 3000 LB. WOG. OR 300 LB. AAR MALL. GALV.
  - b) FITTINGS LARGER THAN 2" I.P.S. ARE TO BE GALVANIZED STEEL BUTT-WELDED FITTINGS ASTM-A106, SCHEDULE 40, GRADE A OR B OR BRONZE STL-BRAZE - 3000 LB. WOG. (AVAILABLE UP TO AND INCLUDING 2-1/2" I.P.S.)
2. BETWEEN STOP VALVES AND NOZZLES:
  - a) FITTINGS UP TO AND INCLUDING 3/4" I.P.S. ARE TO BE STANDARD WEIGHT MALLEABLE IRON GALVANIZED (150 LBS.)
  - b) FITTINGS IN SIZES 1" I.P.S. THROUGH 2" I.P.S. ARE TO BE EXTRA HEAVY (300 LBS. AAR) MALLEABLE IRON GALVANIZED
  - c) FITTINGS LARGER THAN 2" I.P.S. ARE TO BE GALVANIZED STEEL BUTT-WELDED FITTINGS ASTM-A105, SCHEDULE 40, GRADE A OR B, OR BRONZE STL-BRAZE - 3000 LB. WOG (AVAILABLE UP TO AND INCLUDING 2-1/2" I.P.S.)

**FLANGED FITTINGS**

FLANGED FITTINGS IF USED ARE TO BE 1500 LB. FORGED STEEL, BUTT-WELDED OR 3000 I.B. WOG BRONZE SIL-BRAZE.

**GASKETS FOR FLANGED FITTINGS**

STAINLESS STEEL FLEXITALLIC GASKETS MANUFACTURED BY THE FLEXITALLIC GASKET CO. ARE RECOMMENDED, BUT OTHER SUITABLE HIGH PRESSURE GASKET MATERIALS ARE PERMISSIBLE.

**BUSHINGS**

IF ODD SIZED REDUCING FITTINGS ARE NOT AVAILABLE, FLUSH STEEL OR HEX STEEL MAY BE USED. FLUSH BUSHINGS SHOULD NOT BE USED IN FITTINGS LARGER THAN 2" I.P.S., NOR FOR A REDUCTION GREATER THAN TWO SIZES. ABOVE 2" I.P.S., AND FOR A REDUCTION GREATER THAN TWO SIZES USE HEX STEEL BUSHINGS.

**BRASS PIPE AND FITTINGS**

(MAY BE USED ONLY BETWEEN STOP VALVES AND NOZZLES IN SIZES UP TO AND INCLUDING 1" I.P.S.)

1. BRASS PIPE IS TO BE EXTRA HEAVY.
2. BRONZE FITTINGS ARE TO BE EXTRA HEAVY.

**APPROVED FITTINGS**

1. THE FOLLOWING FITTINGS HAVE BEEN FOUND TO BE SATISFACTORY:

STEEL AND MALLEABLE IRON

**TEES, ELLS, CROSSES AND COUPLINGS (SCREWED TYPE)**

IN SIZES UP TO 3/4" I.P.S. INCLUSIVE - 130 LB. WSP BANDED MALLEABLE IRON GALVANIZED  
IN SIZES 1" I.P.S. TO 2" I.P.S. INCLUSIVE - 300 LB. AAR MALLEABLE IRON GALVANIZED

(CRANE, FLAGG, GRABLER, WALWORTH, MALLEABLE IRON FITTING COMPANY, AND STOCKHAM)

**UNIONS (SCREWED TYPE)**

IN SIZES 1/2" I.P.S. TO 3/4" I.P.S. INCLUSIVE (BRONZE TO STEEL SEATS PREFERRED)  
MALLEABLE IRON 130 LB. W.S.P. GALVANIZED  
IN SIZES 1" I.P.S. TO 2" I.P.S. INCLUSIVE (BRONZE TO STEEL SEATS PREFERRED) - MALLEABLE IRON 300 LB. W.S.P. GALVANIZED  
(FLAGG, STOCKHAM) FORGED STEEL 3000 LB. WOG BLACK (CATAWIS6A)

**TEES, ELBOWS, CROSSES (BUTT-WELDED TYPE)**

IN SIZES OVER 2" I.P.S. (ASTM-A105. SCHEDULE 30, GRADE A OR B, STEEL GALVANIZED. (LADISH, WALWORTH, CRANE)

**UNIONS (COMPANION FLANGES)**

BUTT-WELDED. IN SIZES 2-1/2" THRU 6" I.P.S. - 1500 LB. FORGED STEEL GALVANIZED. (CRANE, WALWORTH, LADISH)

BRONZE FITTINGS

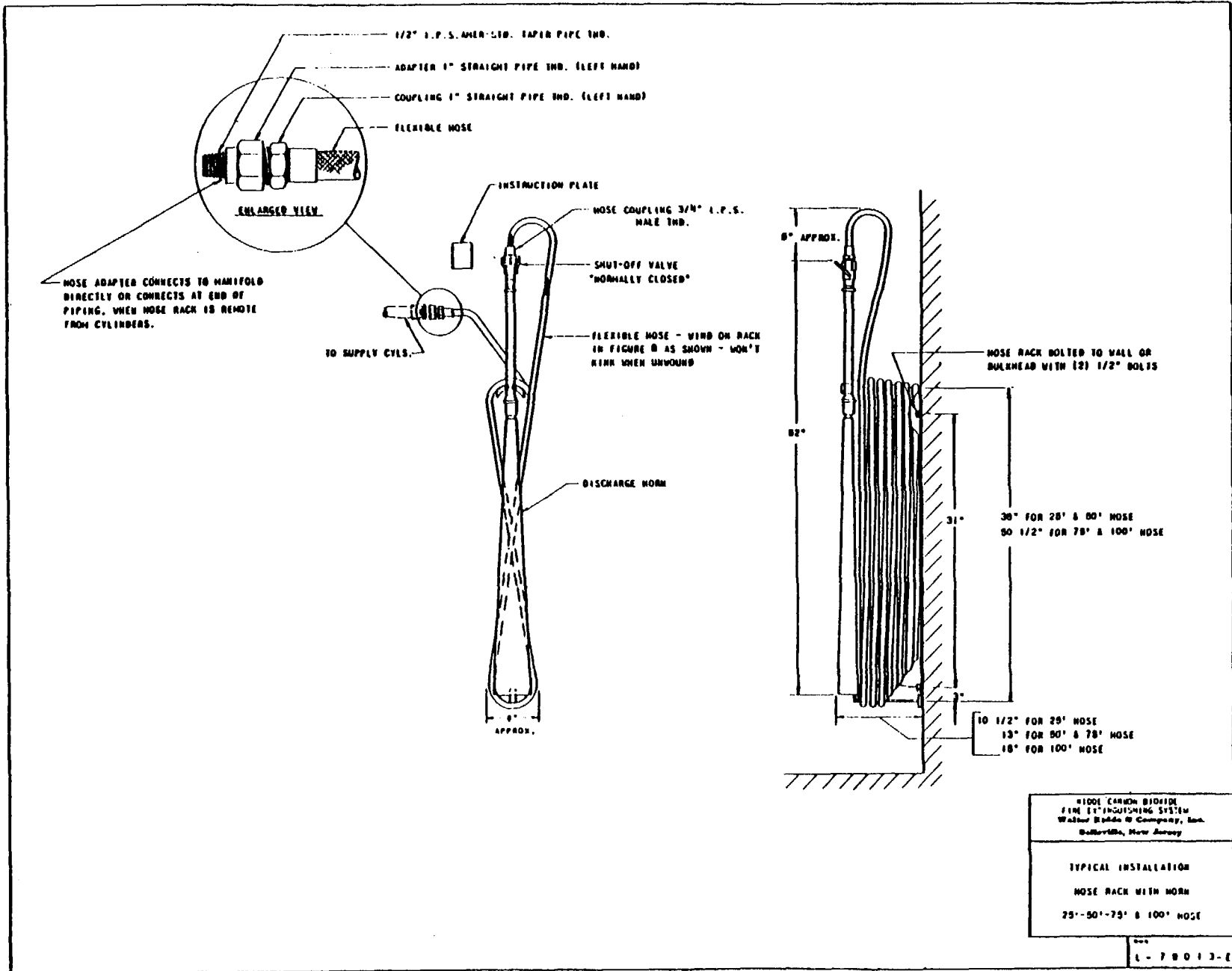
**TEES, ELLS, CROSSES, UNIONS, AND COUPLINGS (SCREWED TYPE)**

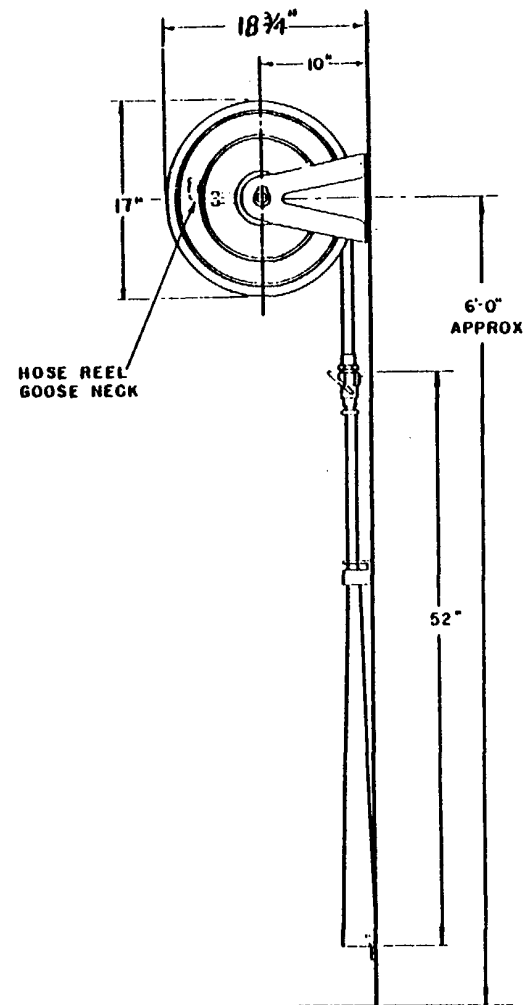
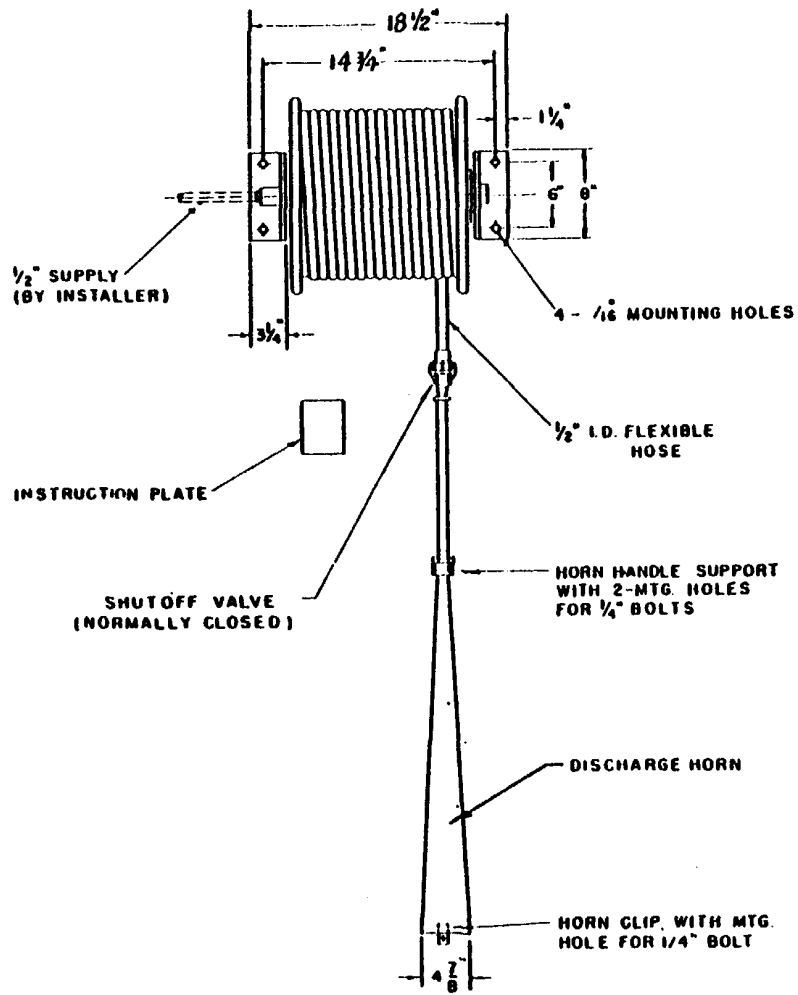
IN SIZES UP TO AND INCLUDING 1" I.P.S.

CRANE - EXTRA HEAVY BRONZE  
WALWORTH - EXTRA HEAVY BRONZE  
FLAGG - EXTRA HEAVY BRONZE

APPROVED PER COAST GUARD LETTER DATED OCT. 6, 1960  
APPROVED PER COAST GUARD LETTER DATED MAR. 14, 1974  
REV. 3 APPROVED PER U.S.C.G. LETTER DATED MAR. 30, 1979

		FIRE PROTECTION SYSTEMS WALTER KIDDE & COMPANY, INC. HELLVILLE N.J.
REVISIONS:		PIPE & FITTINGS SPECIFICATION FOR CONVEYING HIGH PRESSURE CARBON DIOXIDE U.S. COAST GUARD JURISDICTION
NO.	DATE	
1	3-2-60	63498-3



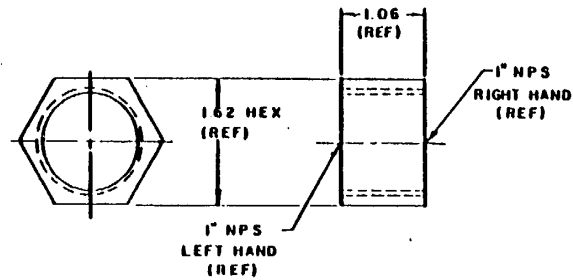
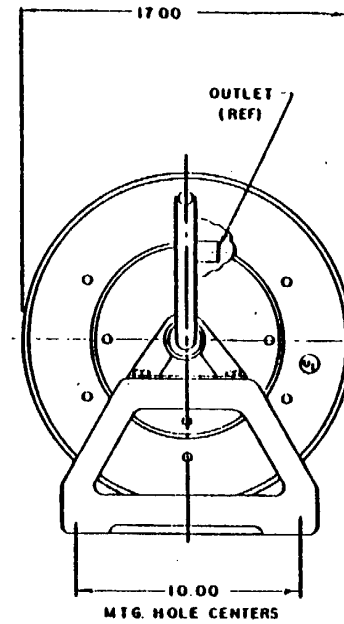
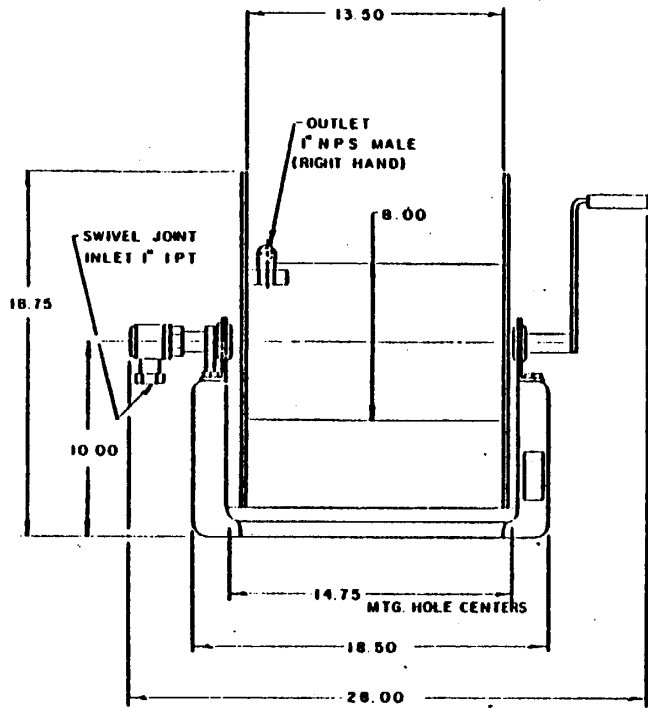


**NOTE:**

REEL IS USUALLY MOUNTED WITH HOSE UNWINDING FROM BACK & SUPPLY LINE ON LEFT SIDE. IF SUPPLY IS TO COME FROM THE RIGHT TIGHTEN GOOSENECK ONE HALF TURN

KIDDE CARBON DIOXIDE  
 FIRE EXTINGUISHING SYSTEM  
 Walter Kidde & Company, Inc.  
 BELLEVILLE, NEW JERSEY  
**TYPICAL INSTALLATION**  
 **$\frac{1}{2}''$  HOSE REEL**  
**WITH**  
**MODEL 50 OR 100 HORN**

L-79200-H



**DESIGN DATA**

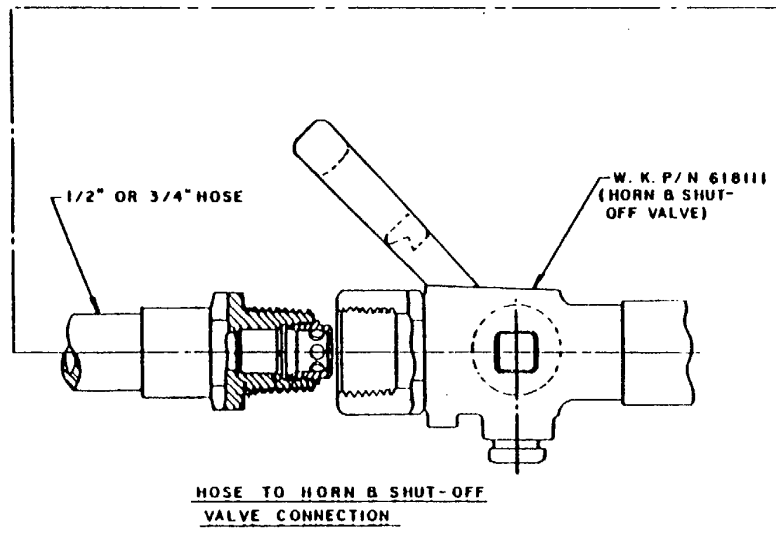
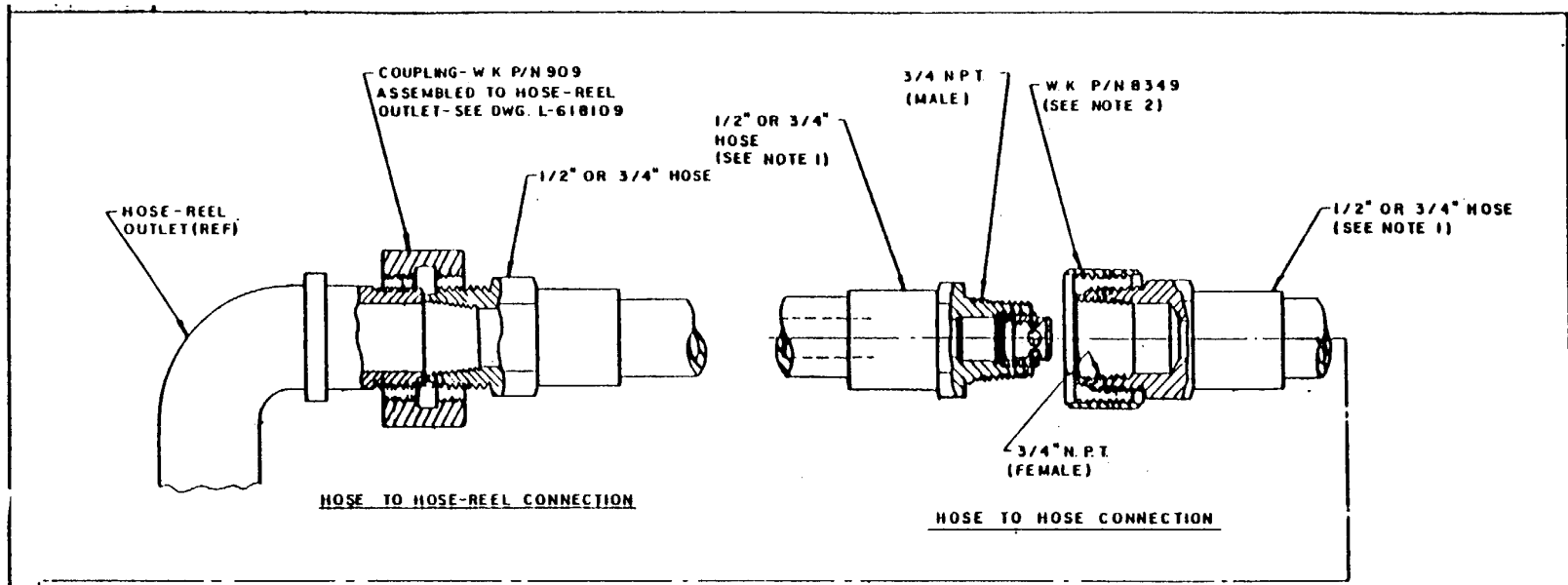
1. HOSE LENGTH, 200FT (FOR 1/2" HOSE) OR 85FT (FOR 3/4" HOSE).
2. OPERATING PRESSURE RANGE, 1000 TO 3000 PSI.
3. MOUNTING INSTALLATION, FRAME MOUNTED, (4) .44 DIA HOLES.
4. WEIGHT, 55 LBS. (APPROX).
5. OUTLET AND INTERNAL PARTS, STEEL AND MALLEABLE IRON.

**NOTE:**

COUPLING, W.K. P/M 909  
 SUPPLIED TO VENDOR  
 ASSEMBLE TO OUTLET  
 (HAND TIGHT)


<p>FIRE PROTECTION SYSTEMS  <b>KIDDE BELLEVILLE</b>  <small>BRIDGE PLAZA, PITTSBURGH, PA. 15222</small></p>	
<p>HOSE REEL          1/2 OR 3/4 HOSE          CARBON DIOXIDE</p>	
A.V.	L-618109

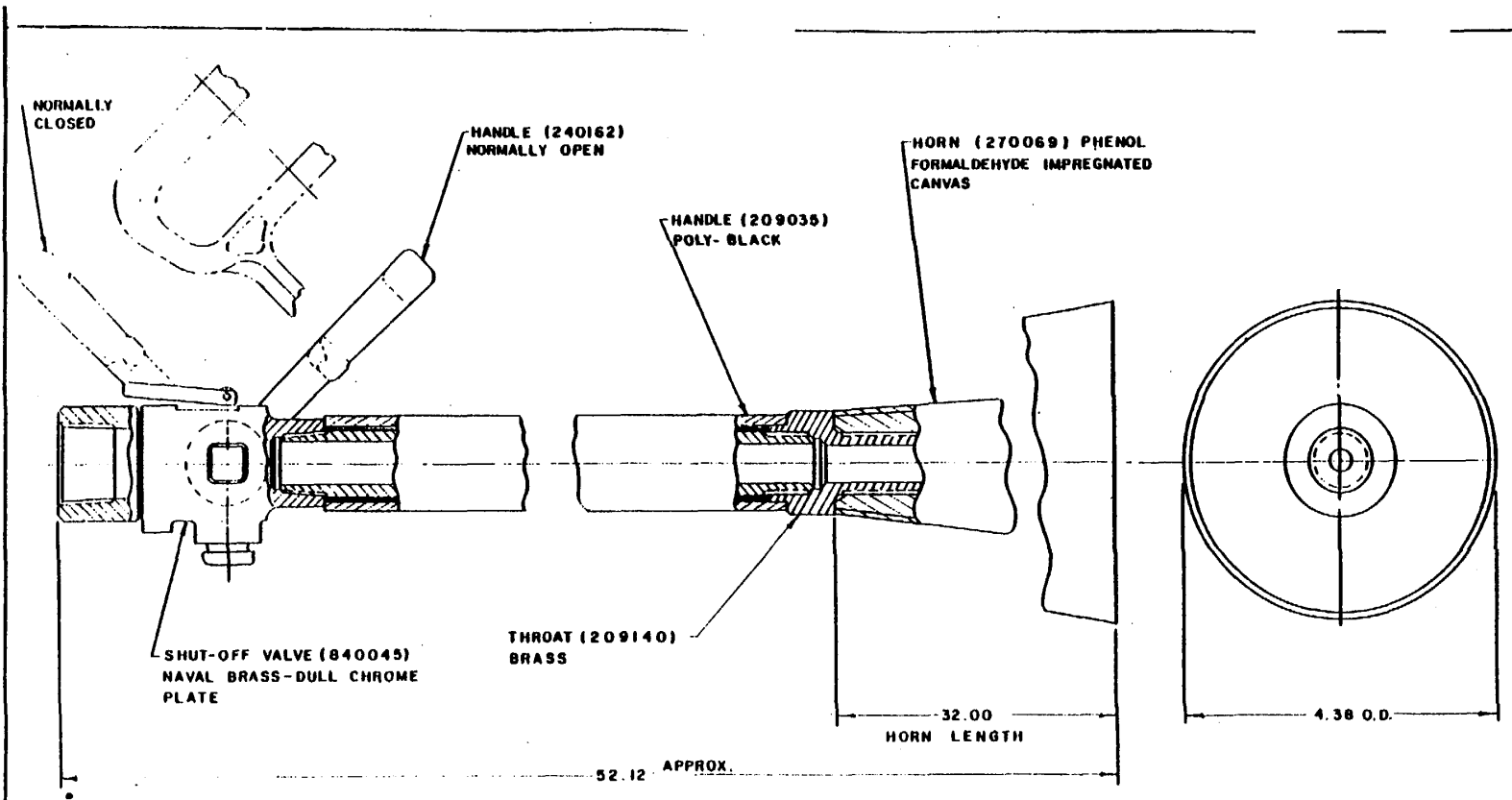




**NOTES:**

1. ATTACH MULTIPLE 1/2" OR 3/4" HOSE TOGETHER AS SHOWN.
2. CAUTION: W.K. P/N 8349 IS TO BE USED FOR THREAD PROTECTION ONLY, DO NOT USE AS COUPLING.

 <p><b>FIRE PROTECTION SYSTEMS</b> <b>KIDDE BELLEVILLE</b> A Division of Kidde, Inc. Belleville, Mo. 64604, U.S.A.</p>
<p><b>TYPICAL INSTALLATIONS</b> <b>HOSE-REEL TO HOSE,</b> <b>HOSE TO HOSE &amp; HOSE</b> <b>TO HORN CONNECTIONS</b></p>
<p>L-618110</p>



**NOTE:**

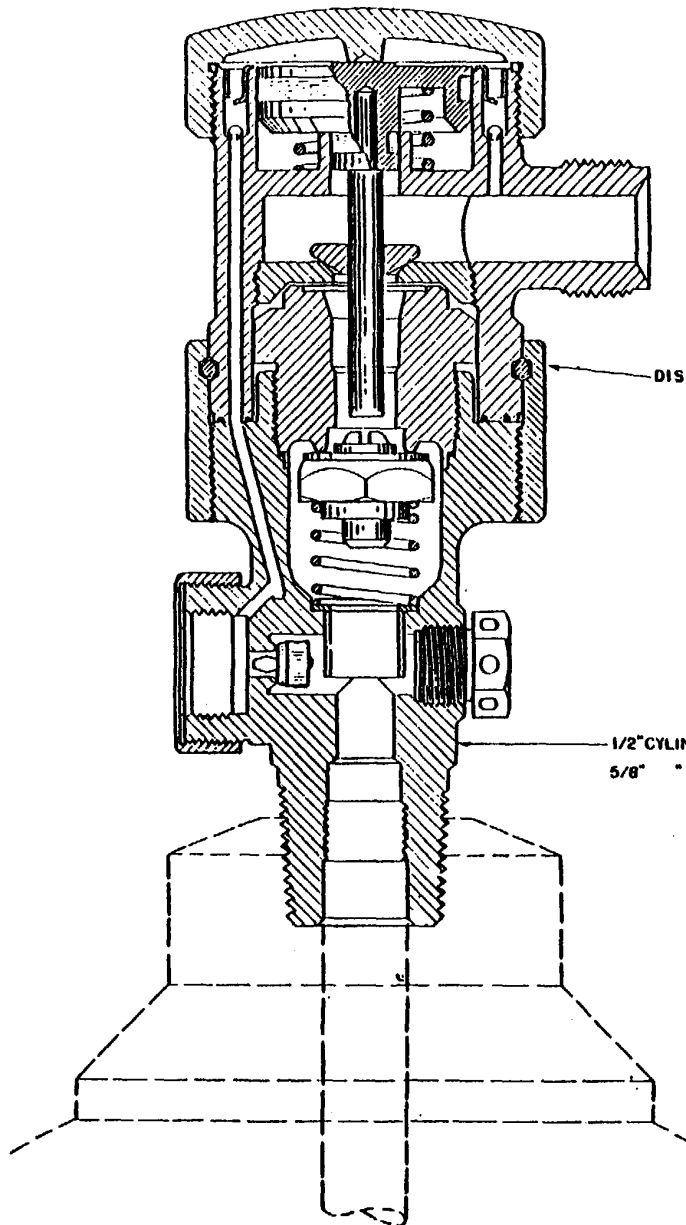
REQUIRES (1) CLIP FOR HANDLE P/N 980099  
 (1) CLIP FOR HORN P/N 939

FIRE PROTECTION SYSTEMS <b>KIDDE BELLEVILLE</b> <small>Division of Kidde, Inc. &amp; Company, Inc.          Beltsville, New Jersey 07100 U.S.A.</small>	
<b>TYPICAL INSTALLATION          HORN &amp; SHUT-OFF          VALVE ASSEMBLY</b>	
L-618111	

P/N980564

REFERENCE DRAWING

L-82130  
L-82132  
OR  
L-86610



DISCHARGE HEAD (PLAIN NUT) PART NO. 872450  
(SEE DWG. L-82130)

1/2" CYLINDER VALVE - 50LB. CAP CYLS. - PT. NO. 981372 (DWG. L-82132)  
5/8" " " - 75LB. CAP CYLS. - PT. NO. 840253 (DWG. L-86610)  
(1/2" CYL. VALVE SHOWN)

ISSUED ON

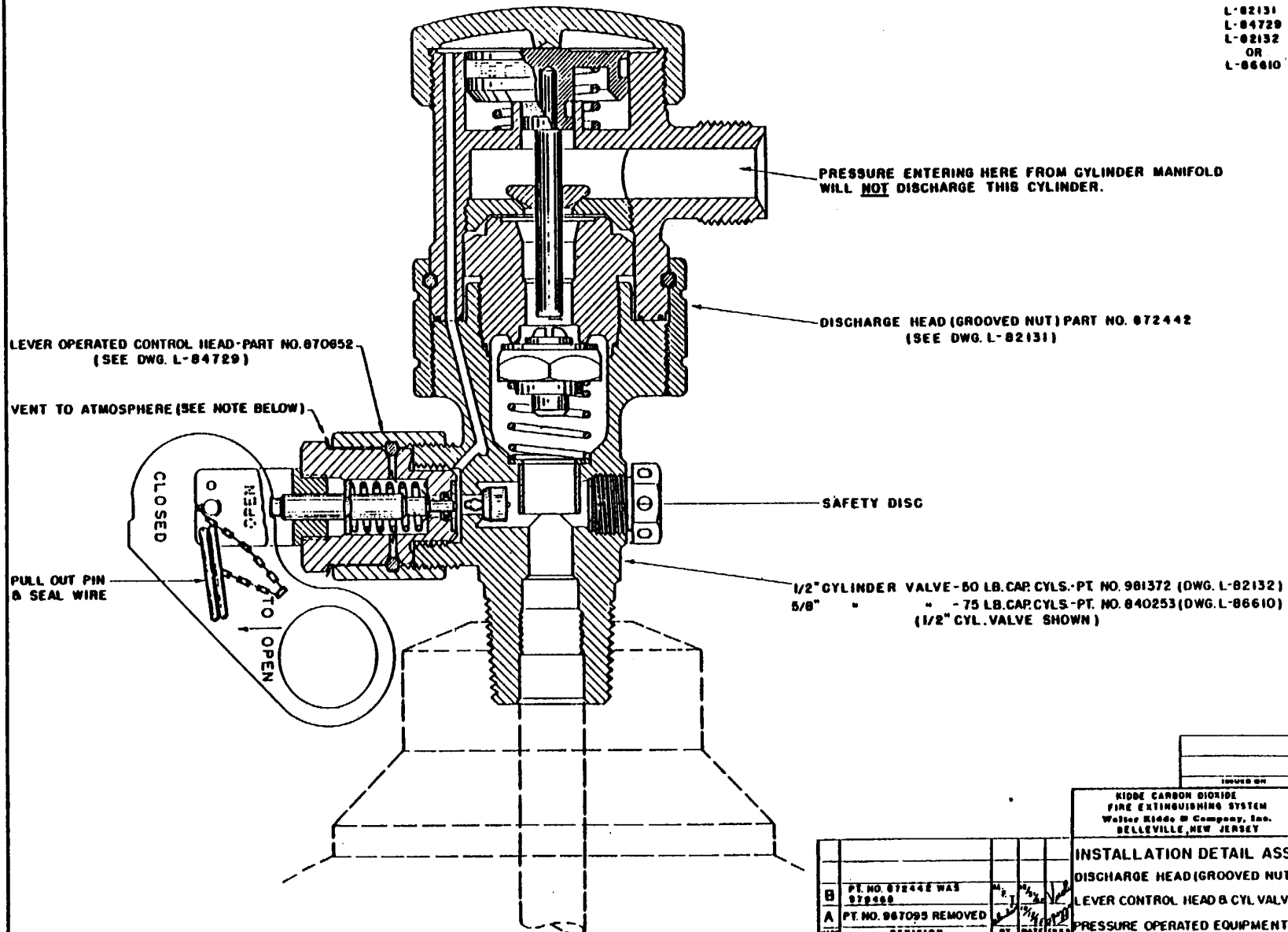
KIDDE CARBON DIOXIDE  
FIRE EXTINGUISHING SYSTEM  
Walter Kidde & Company, Inc.  
BELLEVILLE, NEW JERSEY

INSTALLATION DETAIL ASSY  
DISCHARGE HEAD (PLAIN NUT)  
AND CYLINDER VALVE  
FLOOD VALVE EQUIPMENT

REVISION	DATE	BY	CHKD
B	REVISED TO DATE	P.M.	8-17-51
A	REVISED TO DATE		

DATE	3-1-51	SCALE	1 1/2" - 1"	NO.	L-84562-8
------	--------	-------	-------------	-----	-----------

REFERENCE DRAWING  
 L-82131  
 L-84729  
 L-82132  
 OR  
 L-86610



PRESSURE ENTERING HERE FROM CYLINDER MANIFOLD WILL NOT DISCHARGE THIS CYLINDER.

DISCHARGE HEAD (GROOVED NUT) PART NO. 872442 (SEE DWG. L-82131)

LEVER OPERATED CONTROL HEAD-PART NO. 870852 (SEE DWG. L-84729)

VENT TO ATMOSPHERE (SEE NOTE BELOW)

SAFETY DISC

PULL OUT PIN & SEAL WIRE

CLOSED

TO OPEN

1/2" CYLINDER VALVE - 50 LB. CAP. CYLS. - PT. NO. 981372 (DWG. L-82132)  
 5/8" " " - 75 LB. CAP. CYLS. - PT. NO. 840253 (DWG. L-86610)  
 (1/2" CYL. VALVE SHOWN)

NOTE: VENTED TO ATMOSPHERE IN "NORMALLY CLOSED" POSITION ONLY.

REVISION	DATE	BY	DATE
B			
A			

KIDDE CARBON DIOXIDE  
 FIRE EXTINGUISHING SYSTEM  
 Walter Kidde & Company, Inc.  
 BELLEVILLE, NEW JERSEY

INSTALLATION DETAIL ASSY  
 DISCHARGE HEAD (GROOVED NUT)  
 LEVER CONTROL HEAD & CYL. VALVE  
 PRESSURE OPERATED EQUIPMENT

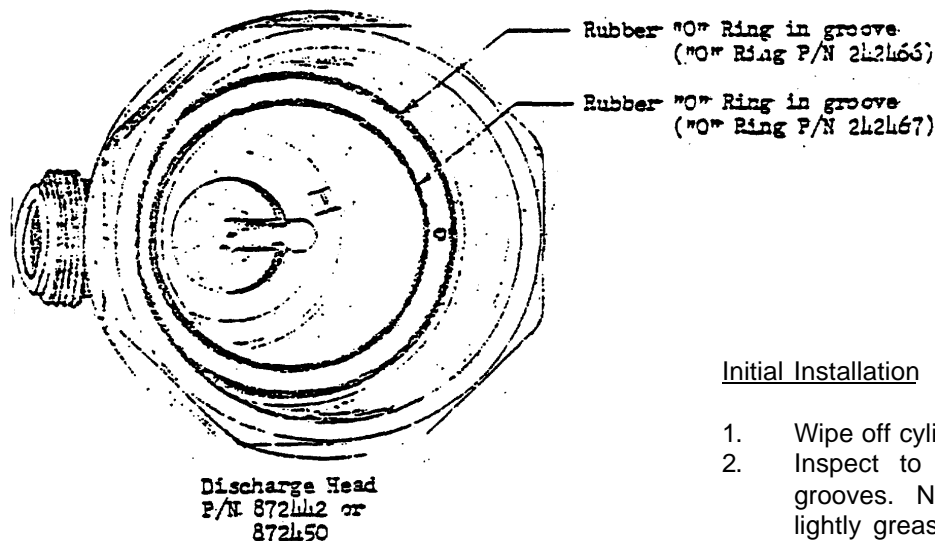
3-2-51 L-84565-B

## ASSEMBLY INSTRUCTIONS - DISCHARGE HEAD

WALTER KIDDE PART NO. 872442 (Grooved Nut)  
872450 (Plain Nut)

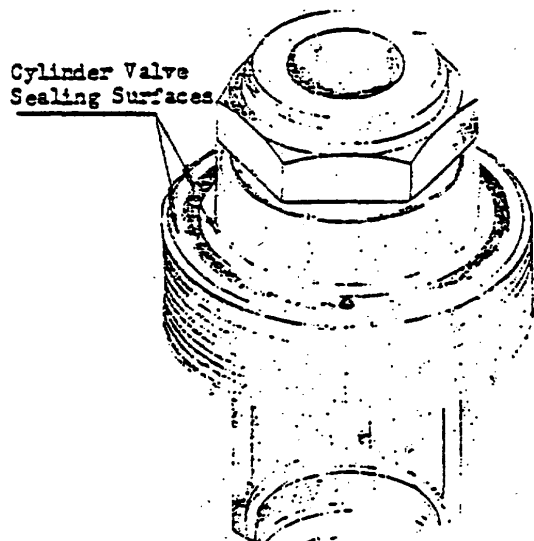
### Note:

These instructions are in addition to existing installation and maintenance instructions.



### Note:

Due to the possibility of slight burrs on the O.D. of the existing cylinder valves, some difficulty may be encountered assembling the head. This condition may occur on a very small of installations. To remedy this condition, smooth the O.D. of cylinder valve with a piece of fine emery cloth. Remove loose particles of emery from surface of cylinder valve.



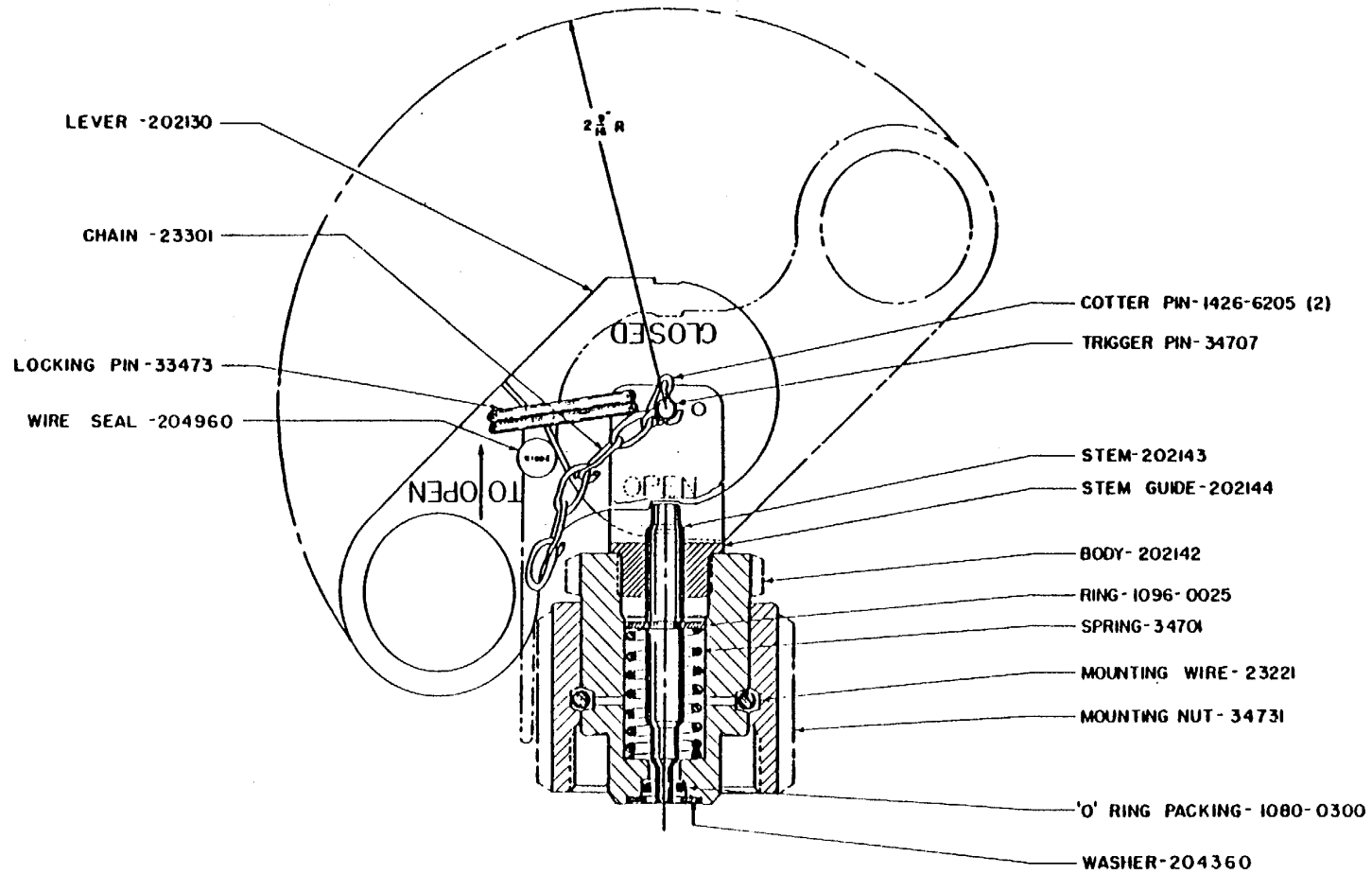
### Initial Installation

1. Wipe off cylinder valve sealing surface.
2. Inspect to see that rubber rings are in their grooves. Note that these rubber rings have been lightly greased at the factory and should need no further greasing.
3. Keep head stationary and wrench-tighten until head is snug.

### After Discharge Head Has Been Removed and Before Reassembling

1. Wipe off cylinder valve sealing surface.
2. Inspect to see that both rubber rings are in their grooves. If one or both rubber rings are out of their grooves, it is absolutely necessary that they be replaced with new rubber rings greased per the following paragraph. New rings are preferred because they may be replaced much more rapidly than old rings.
3. Lightly grease rubber rings using a petroleum base grease (for example, "Vaseline", "Petrolatum", "Marfak No. 2 Heavy Duty", "Regal Starfak No. 2" or "Mobil Grease No. 5"). Wipe off excess grease and install the rings in their grooves with the fingers. Be sure rings are in place. It is important to keep the rubber rings clean and free from foreign particles during the greasing and installation.
4. Keep head stationary and wrench-tighten until head is snug.

WALTER KIDDE & COMPANY, INC.  
BELLEVILLE 9, NEW JERSEY



PT. NO. 870652

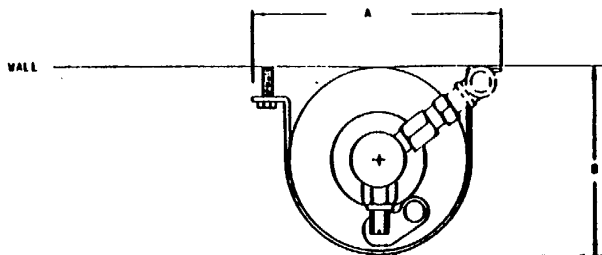
KIDDE CARBON DIOXIDE  
FIRE EXTINGUISHING SYSTEM  
Walker Kidde & Company, Inc.  
Baltimore, New Jersey

INSTALLATION DETAIL  
CONTROL HEAD  
LEVER OPERATED  
VENTED TYPE

REV	DATE	BY	CHKD
A	204300 WAS 12-00-1960		
	204300 WAS 10-22		
	REVISION		
DATE	DESIGN	APP'D	SCALE
8-15-51	W. L. King	W. L. King	2X

DATE 8-15-51

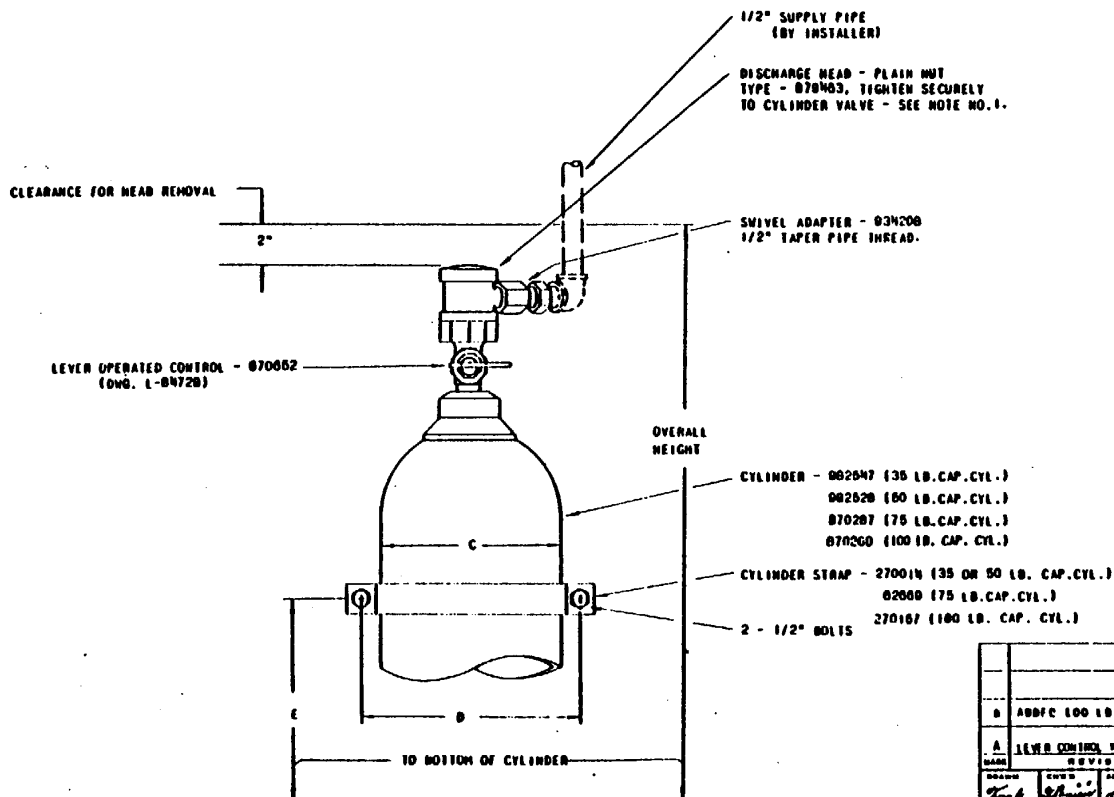
NO. L-84729 - A



PLAN

CYLINDER CAPACITY	DIMENSIONS IN INCHES					OVERALL HEIGHT
	A	B	C	D	E	
35 LB.	11 1/2	8 3/4	8 1/2	10 3/8	23	43
50 LB.	11 1/2	8 3/4	8 1/2	10 3/8	34	60
75 LB.	12 1/4	9 1/2	9 1/4	11 1/8	38	64
100 LB.	14	10 3/4	10 3/4	12 3/8	40	66

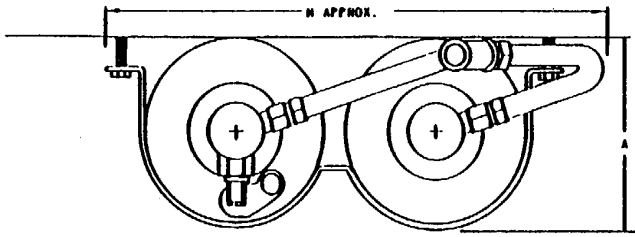
- NOTES:
- DO NOT ASSEMBLE DISCHARGE HEAD UNTIL AFTER LEVER CONTROL HEAD HAS BEEN ATTACHED TO CYLINDER VALVE.
  - CYLINDER MUST BE CONVENIENTLY LOCATED OUTSIDE OF HAZARD SO CONTROL LEVER IS READILY ACCESSIBLE.



DATE	BY	DATE	BY
10/21/55	J. J. [Signature]	10/21/55	[Signature]

ISSUED ON	DATE
10/21/55	10/21/55
RIDGE CARBON DIOXIDE FIRE EXTINGUISHING SYSTEM Walter Knott & Company, Inc. Belleville, New Jersey	
TYPICAL INSTALLATION ONE CYLINDER SYSTEM LOCAL MANUAL CONTROL PRESSURE OPERATED EQUIPMENT	
DATE	DWG
8-21-55	L-88617-P

WALL



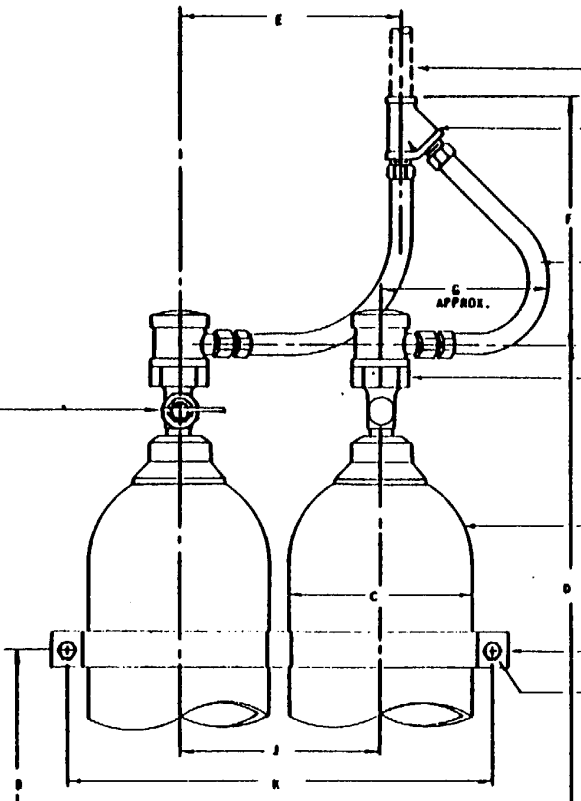
PLAN

CYLINDER CAPACITY	DIMENSIONS IN INCHES									
	A	B	C	D	E	F	G	H	J	K
50 LB.	8 3/4	34	8 1/2	50	10	10	7	24	10	21
75 LB.	9 3/4	38	8 1/4	50	12	12	8	26	10	21 1/2
100 LB.	10 7/8	40	10 9/16	52 1/2	12 3/4	12	8	28 3/4	11 1/2	24 1/2

REFERENCE DRAWING L-84720

- NOTES:
- DO NOT ASSEMBLE DISCHARGE HEADS UNTIL AFTER LEVER CONTROL HEAD HAS BEEN ATTACHED TO CYLINDER VALVE.
  - CYLINDERS MUST BE CONVENIENTLY LOCATED OUTSIDE OF HAZARD SO CONTROL LEVER IS READILY ACCESSIBLE.

LEVER OPERATED CONTROL - 870682 (DWG. L-84729)



SUPPLY PIPE (BY INSTALLER)

"Y" FITTING (X.N.M.I.)  
 1/2" - 207878 (50 LB. CAP. CYL.)  
 3/4" - 207877 (75 LB. & 100 LB. CAP. CYL.)

FLEXIBLE DISCHARGE LOOP - 800017 (50 LB. CAP. CYLINDERS)  
 800013 (75 LB. & 100 LB. CAP. CYL.)

DISCHARGE HEAD - 872450  
 PLAIN NUT TYPE - TIGHTEN SECURELY TO CYLINDER VALVE (SEE NOTE NO. 1)

CYLINDER - 882528 (50 LB. CAP. CYL.)  
 870287 (75 LB. CAP. CYL.)  
 870280 (100 LB. CAP. CYL.)

CYLINDER STRAP - 241210 (50 & 75 LB. CAP. CYLINDERS)  
 CYL. STRAP - 241234 - (100 LB. CAP. CYL.)

2-1/2" BOLTS

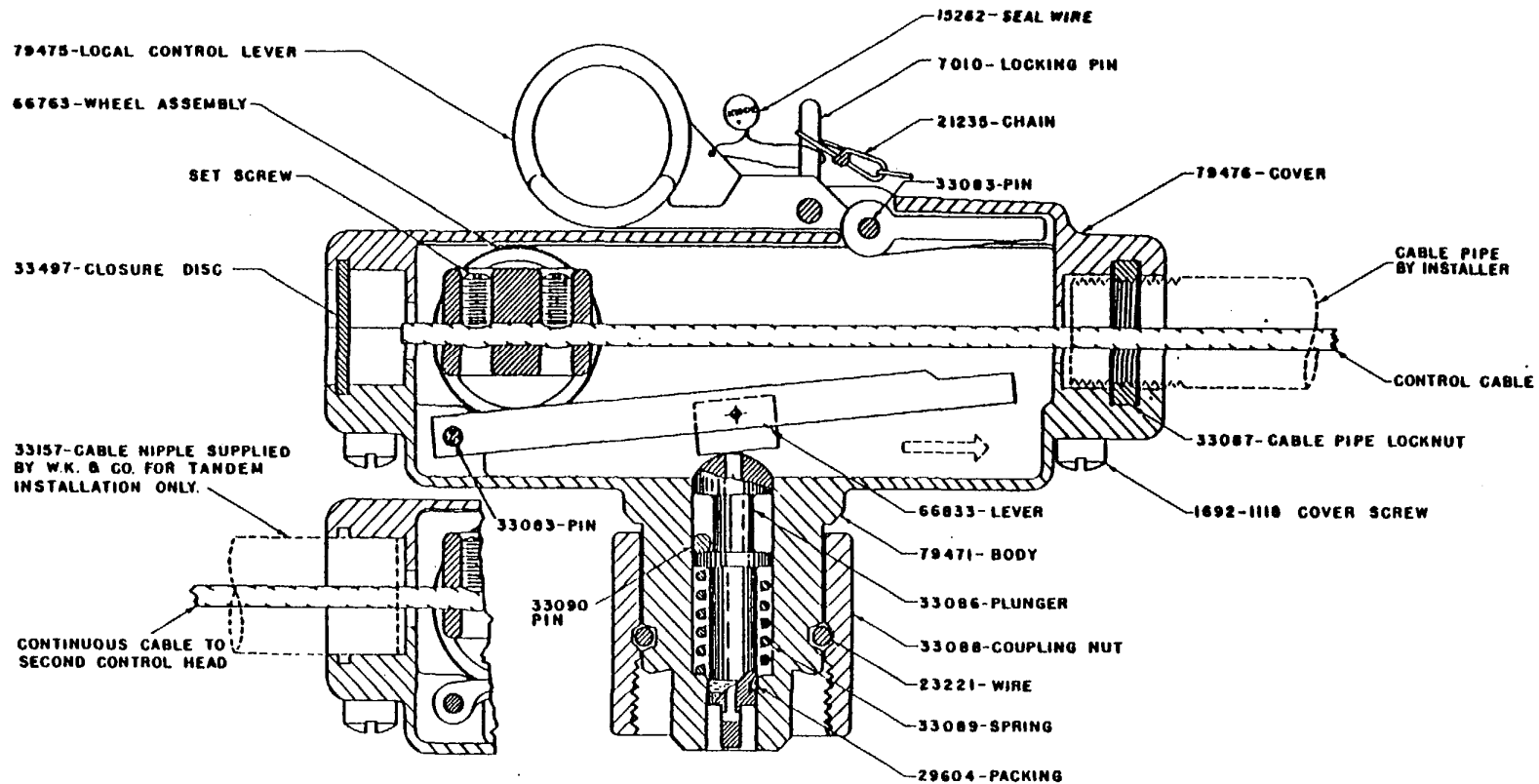
NO.	REV.	DATE	BY	CHKD.
B	872450 WAS 979463			
A	MODEL 100 LB. CYLINDER	145		
DATE	DESIGNED BY	SCALE	DATE	CHKD.
	Fore	3" - 1" - 0"		

ISSUED ON  
 21001 CARBON DIOXIDE  
 FIRE EXTINGUISHING SYSTEM  
 Walter Kidde & Company, Inc.  
 Baltimore, New Jersey

TYPICAL INSTALLATION  
 2 - CYLINDER SYSTEM  
 LOCAL MANUAL CONTROL  
 PRESSURE OPERATED EQUIPMENT

DATE	DWG.
8-1-54	L 80018-B





### INSTALLATION INSTRUCTIONS

#### SINGLE CONTROL HEAD

1. CAUTION-TO AVOID POSSIBILITY OF ACCIDENTAL DISCHARGE, DO NOT INSTALL DISCHARGE HEAD ON CONTROL CYLINDER UNTIL AFTER CABLE-OPERATED CONTROL HEAD IS INSTALLED.
2. SECURE CONTROL CYLINDER IN CYLINDER RACKS WITH CONTROL OUTLET FACING IN PROPER DIRECTION, THEN REMOVE CONTROL OUTLET PROTECTION CAP.
3. REMOVE COVER FROM CONTROL HEAD AND TAKE OUT WHEEL ASSEMBLY, CABLE PIPE LOCKNUT, AND CLOSURE DISC
4. MAKE SURE PLUNGER IS BELOW SURFACE OF CONTROL HEAD BODY, THEN COUPLE BODY TO CYLINDER WITH ARROW POINTING IN DIRECTION OF PULL.
5. ASSEMBLE CABLE PIPE LOCKNUT TO CABLE PIPE AND PLACE CABLE PIPE IN POSITION IN CONTROL HEAD BODY.
6. SLIDE WHEEL ASSEMBLY ON CONTROL CABLE TO PROPER SET POSITION, THEN TIGHTEN SET SCREWS SECURELY. MAKE SURE WHEEL ASSEMBLY IS AT START OF STROKE. DO NOT DEPRESS LEVER AS THIS WILL CAUSE DISCHARGE OF GAS.

7. CUT OFF EXCESS CONTROL CABLE CLOSE TO WHEEL ASSEMBLY, INSERT CLOSURE DISC AND REPLACE COVER ON CONTROL HEAD.
8. EXAMINE SEAL AT LOCKING PIN, MAKE SURE IT IS INTACT.
9. INSTALL DISCHARGE HEAD ON CONTROL CYLINDER.

#### TANDEM CONTROL HEADS

10. INSTALL FIRST CONTROL HEAD AS DESCRIBED IN STEPS 1 THRU 9 EXCEPT THAT IN STEP 7 CLOSURE DISC IS OMITTED AND CABLE IS NOT TO BE CUT UNTIL SECOND HEAD IS INSTALLED.
11. REPEAT STEPS 2, 3, AND 4 FOR SECOND CONTROL HEAD.
12. ASSEMBLE SECOND CABLE PIPE LOCKNUT TO CABLE NIPPLE, SLIDE NIPPLE OVER FREE END OF CONTROL CABLE AND PLACE IN PROPER POSITION BETWEEN THE CONTROL HEADS.
13. REPEAT STEPS 6, 7, 8, AND 9 FOR THE SECOND CONTROL HEAD.

PART NO. 79469

ISSUED ON

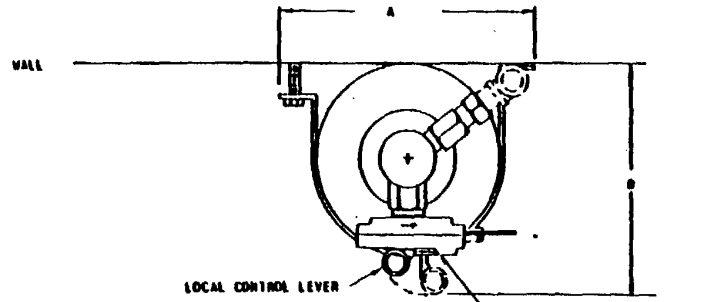
KIDDE CARBON DIOXIDE  
FINE EXTINGUISHING SYSTEM  
Walter Kidde & Company, Inc.  
Baltimore, New Jersey

INSTALLATION DETAIL  
CONTROL HEAD  
CABLE-OPERATED  
FLOOD VALVE EQUIPMENT

C	PART 6600B RE-DESIGNED	6-11-45	TAG	J.K.
B	REVISED TITLE	6-11-45	TAG	J.K.
A	SLIGHT REVISION	6-11-45	TAG	J.K.
REVISION				
DATE	BY	CHKD	BY	CHKD
TAG	J.K.	J.K.	DOUBLE	6-11-45

DATE 6-11-45

FIG. L-82134 - C



PLAN

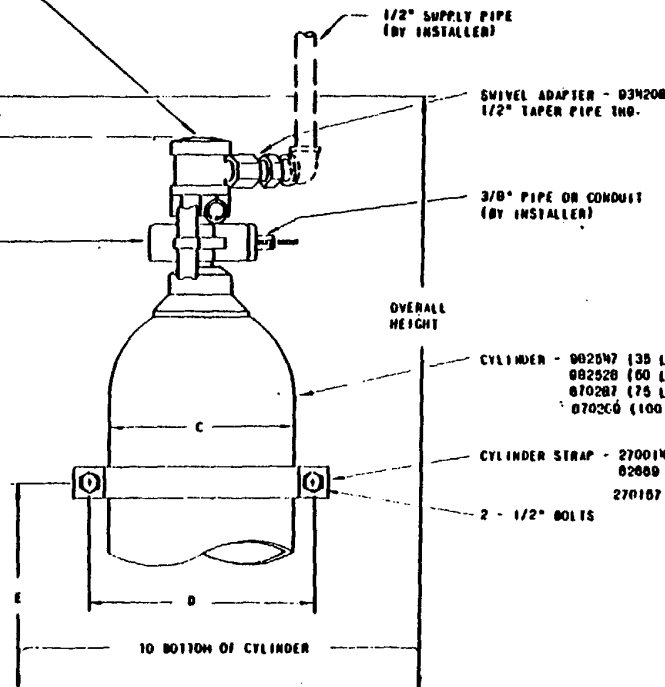
CYLINDER CAPACITY	DIMENSIONS IN INCHES					OVERALL HEIGHT
	A	B	C	D	E	
35 LB.	11 1/2	8 3/4	8 1/2	10 3/8	23	43
50 LB.	11 1/2	8 3/4	8 1/2	10 3/8	31	50
75 LB.	12 1/4	9 1/2	9 1/4	11 1/8	38	54
100 LB.	14	10 3/4	10 3/8	12 3/8	40	68

- NOTES:
1. DO NOT ASSEMBLE DISCHARGE HEAD UNTIL AFTER CONTROL HEAD HAS BEEN ATTACHED TO CYLINDER VALVE.
  2. REMOTE CONTROL CABLE TO BE RUN IN 3/8" GALVANIZED CONDUIT OR PIPE, USING 90 DEGREE CORNER PULLEYS AT ALL CHANGES IN DIRECTION. NO BENDS OR OFFSETS PERMITTED.
  3. CONTROL HEAD MAY BE REVERSED SO THAT CABLE PULLS TO LEFT

DISCHARGE HEAD - PLAIN NUT TYPE - 970403, TIGHTEN SECURELY TO CYLINDER VALVE - SEE NOTE NO. 1

CLEARANCE FOR HEAD REMOVAL

CABLE OPERATED CONTROL - 970409 DWG. L-82134



NO.	DATE	BY	CHKD	DATE	CHKD
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

APPROVED FOR: *[Signature]* DATE: *[Date]*

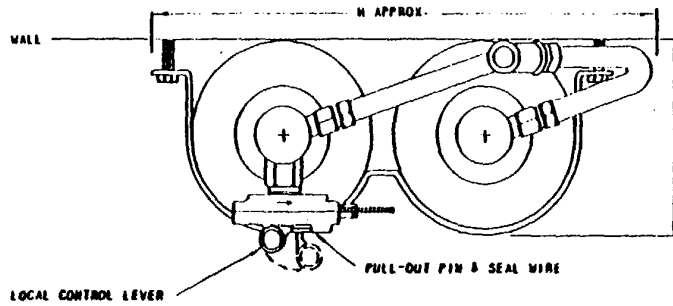
PROJ. NO. \_\_\_\_\_

KIDDE CARBON DIOXIDE  
FIRE EXTINGUISHING SYSTEM  
Walter Kidde & Company, Inc.  
Baltimore, New Jersey

TYPICAL INSTALLATION  
ONE CYLINDER SYSTEM  
REMOTE MANUAL CONTROL  
CABLE OPERATED  
PRESSURE OPERATED EQUIPMENT

DATE: 8-26-55

DWG. NO. L-82134

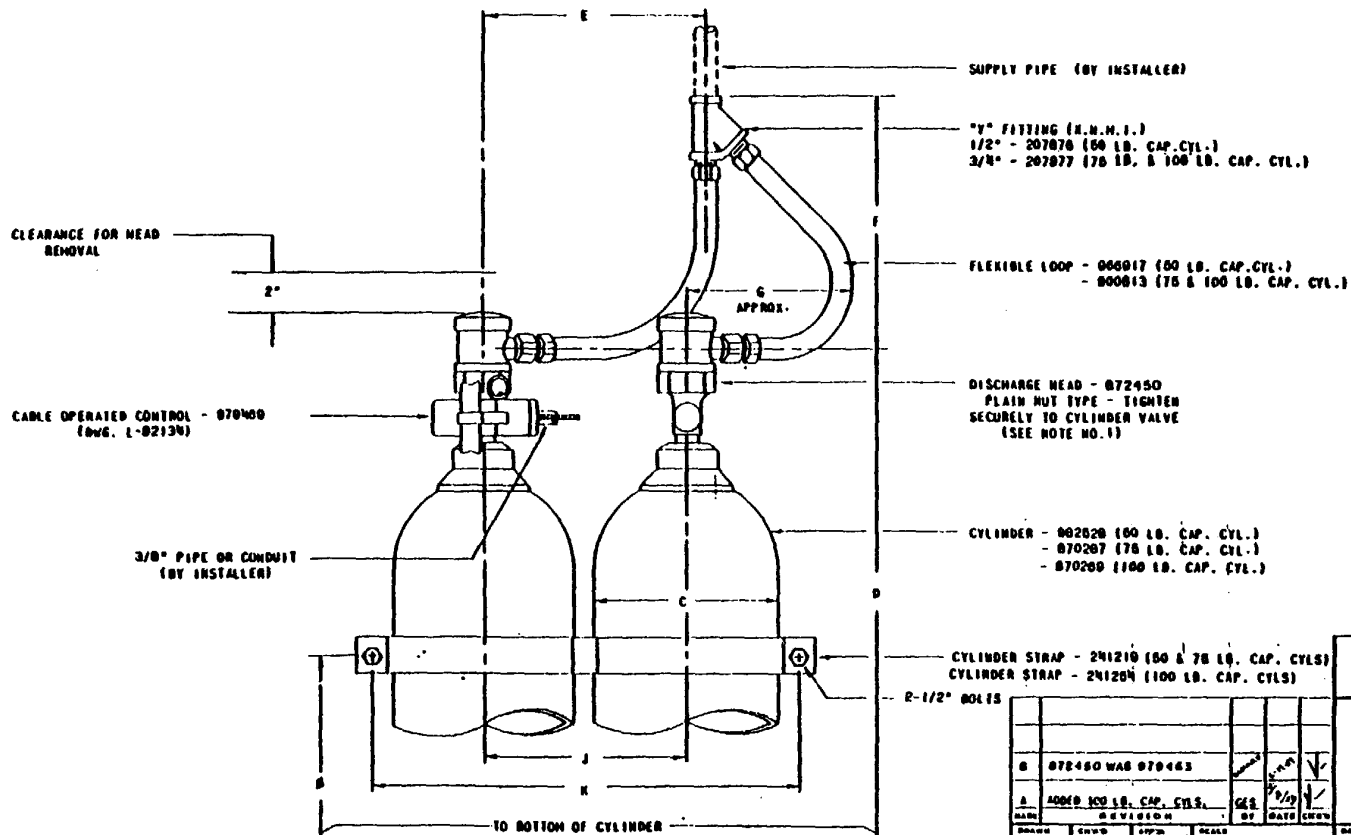


PLAN

CYLINDER CAPACITY	DIMENSIONS IN INCHES									
	A	B	C	D	E	F	G	H	J	K
60 LB.	8 3/4	34	8 1/2	65	10	10	7	24	10	21 1/2
75 LB.	9 3/4	38	9 1/4	60 8/8	12	12	8	25	10	21 1/2
100 LB.	10 7/8	40	10 1/8	52 8/8	12 3/4	12	8	26 3/4	11 1/2	24 1/8

REFERENCE DRAWINGS  
L-82134

- NOTES:
- DO NOT ASSEMBLE DISCHARGE HEADS UNTIL AFTER CONTROL HEAD HAS BEEN ATTACHED TO CYLINDER VALVE.
  - REMOTE CONTROL CABLE TO BE RUN IN 3/8" GALVANIZED CONDUIT OR PIPE USING 90 DEGREE CORNER PULLEYS AT ALL CHANGES IN DIRECTION. NO BENDS OR OFFSETS PERMITTED.
  - CONTROL HEAD MAY BE REVERSED SO THAT CABLE PULLS TO THE LEFT.



CYLINDER STRAP - 241210 (50 & 75 LB. CAP. CYLS)  
CYLINDER STRAP - 241204 (100 LB. CAP. CYLS)

R-1/2" BOLTS

DATE: 3-30-65  
BY: [Signature]  
CHECKED BY: [Signature]

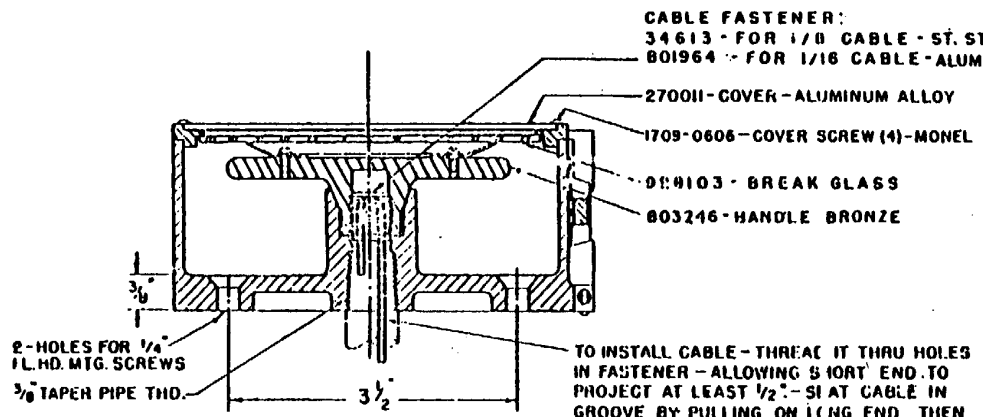
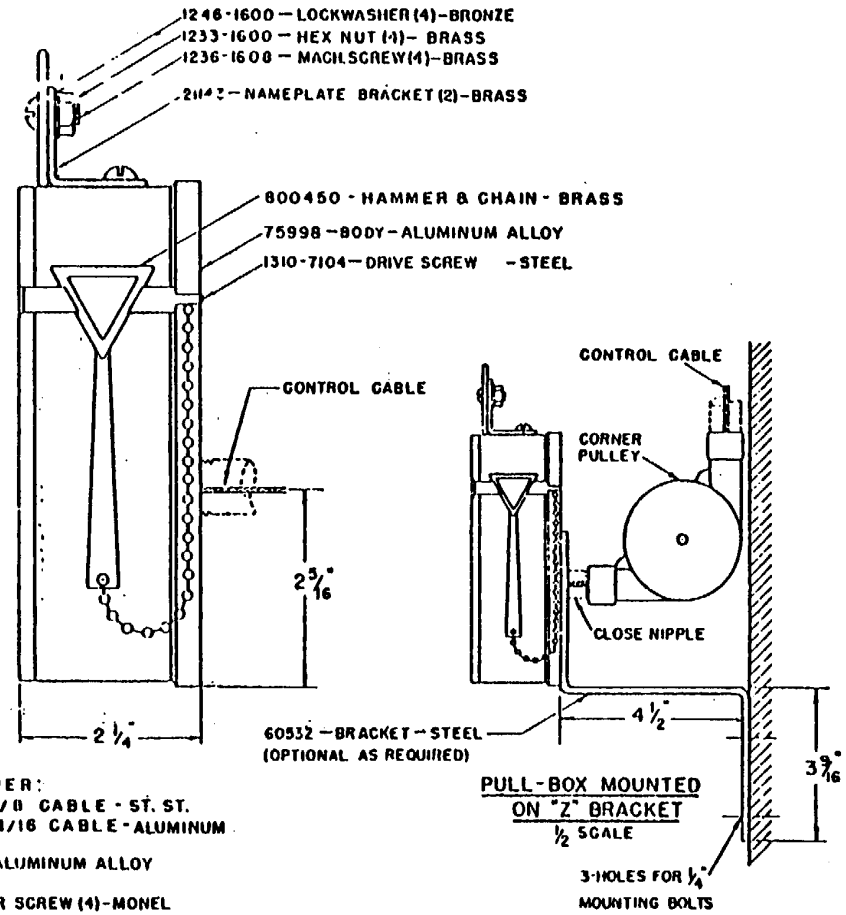
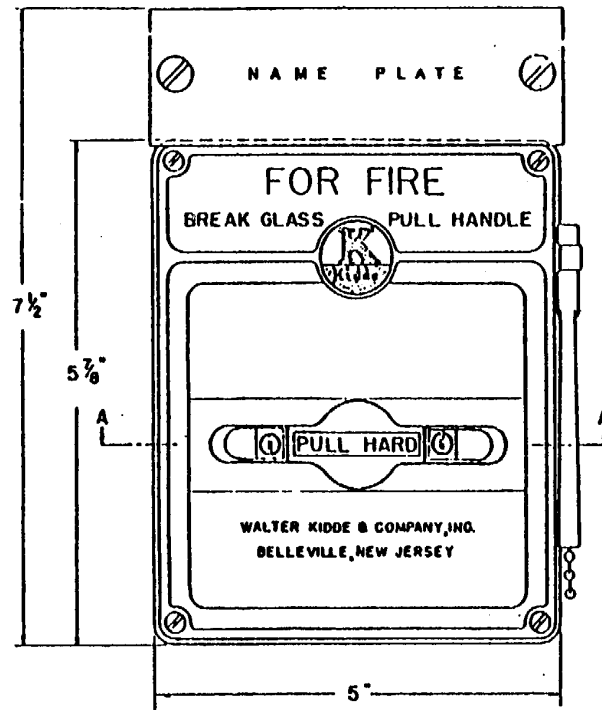
ISSUED ON

RIGID CARBON DIOXIDE  
FIRE EXTINGUISHING SYSTEM  
Wolcott Riddle & Company, Inc.  
Burlington, New Jersey

TYPICAL INSTALLATION  
2-CYLINDER SYSTEM  
REMOTE MANUAL CONTROL  
CABLE OPERATED  
PRESSURE OPERATED EQUIPMENT

DATE: 3-30-65  
L-82134-1-B

REFERENCE DRAWING



CABLE FASTENER:  
 34613 - FOR 1/8 CABLE - ST. ST.  
 801964 - FOR 1/16 CABLE - ALUMINUM

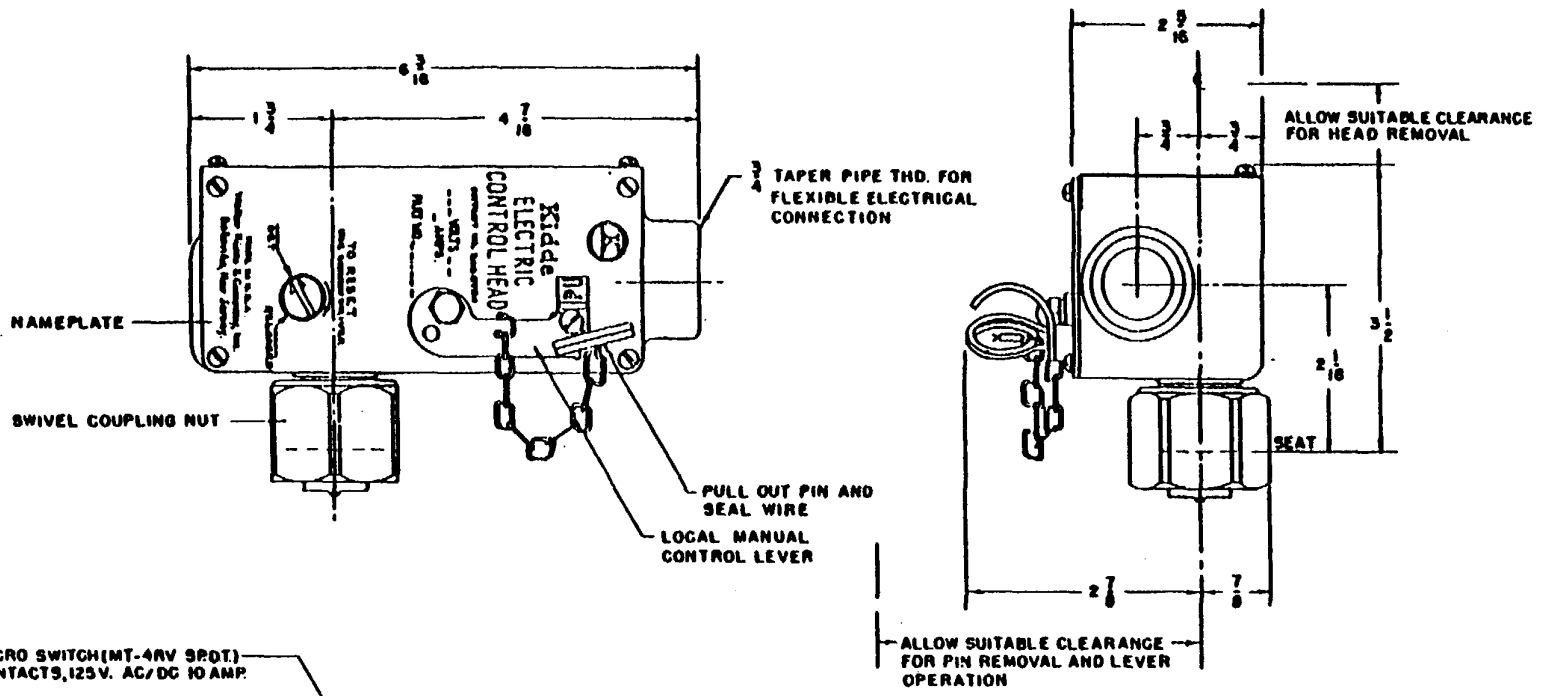
**NOTE**  
 MOUNT PULL BOX IN ACCESSIBLE LOCATION AND APPROXIMATELY 4' TO 5' FROM FLOOR.

KIDDE CARBON DIOXIDE  
 FIRE EXTINGUISHING SYSTEM  
 Walter Kidde & Company, Inc.  
 Belleville, New Jersey

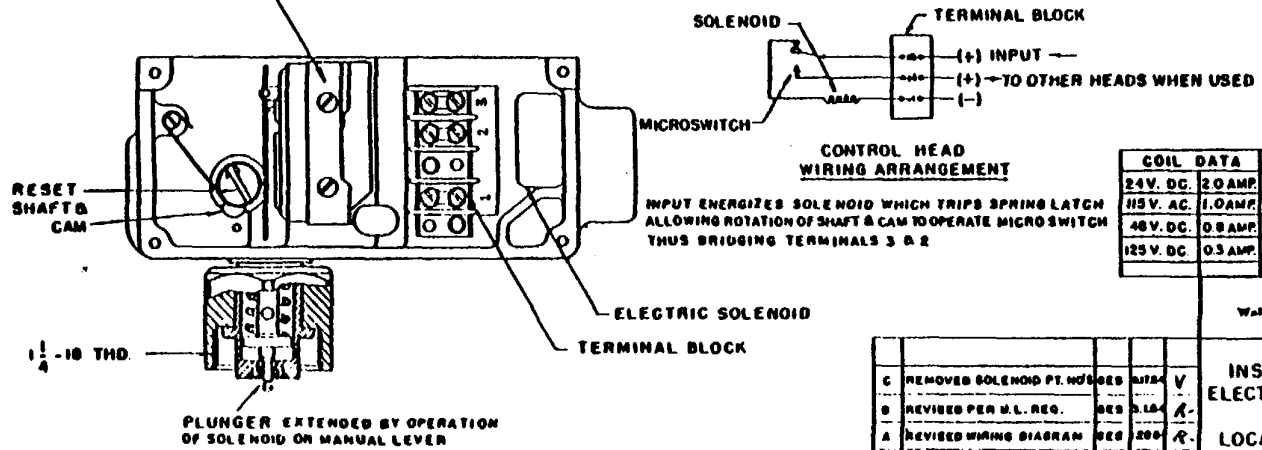
INSTALLATION OF  
 BREAK GLASS PULL-BOX  
 SURFACE TYPE

P	DELETED PULLEY LEFT - RIGHT COUPLING	JRY	11/11/41		
O	800450 - 1/4" CABLE FASTENER - ALUM. WAS. BY BRASS	JRY	11/11/41		
	REVISION	BY	DATE	CHKD	
J.C.M.					

FULL EXCEPT AS NOTED DATE 9-16-26 DWG. L-75442-P



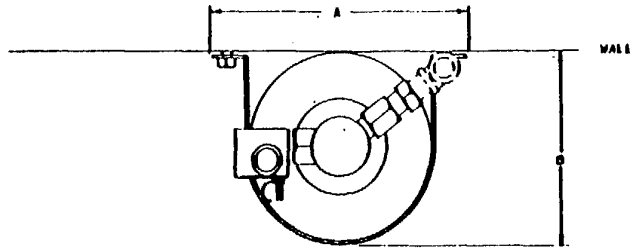
MICRO SWITCH (MT-4RV SPDT) CONTACTS, 125 V. AC/DC 10 AMP



COIL DATA		ASSEMBLY PT. NO.
24V. DC.	2.0 AMP.	890101
115V. AC.	1.0 AMP.	890102
48V. DC.	0.8 AMP.	890104
125V. DC.	0.5 AMP.	890149

Walter Kiddie & Company, Inc.  
Belleville, New Jersey

REV.	REVISION	BY	DATE	SCALE	DATE	NO.
C	REMOVED SOLENOID PT. NOS.	DES	5/75	V		
B	REVISED PER U.L. REQ.	DES	3/54	R		
A	REVISED WIRING DIAGRAM	DES	2/50	R		
INSTALLATION DETAIL ELECTRIC CONTROL HEAD WITH LOCAL MANUAL CONTROL						
DESIGNER	BY	CHECKED	DATE	SCALE	DATE	NO.
SCHARP	R	DES		FULL	10-20-53	L-85631 -C

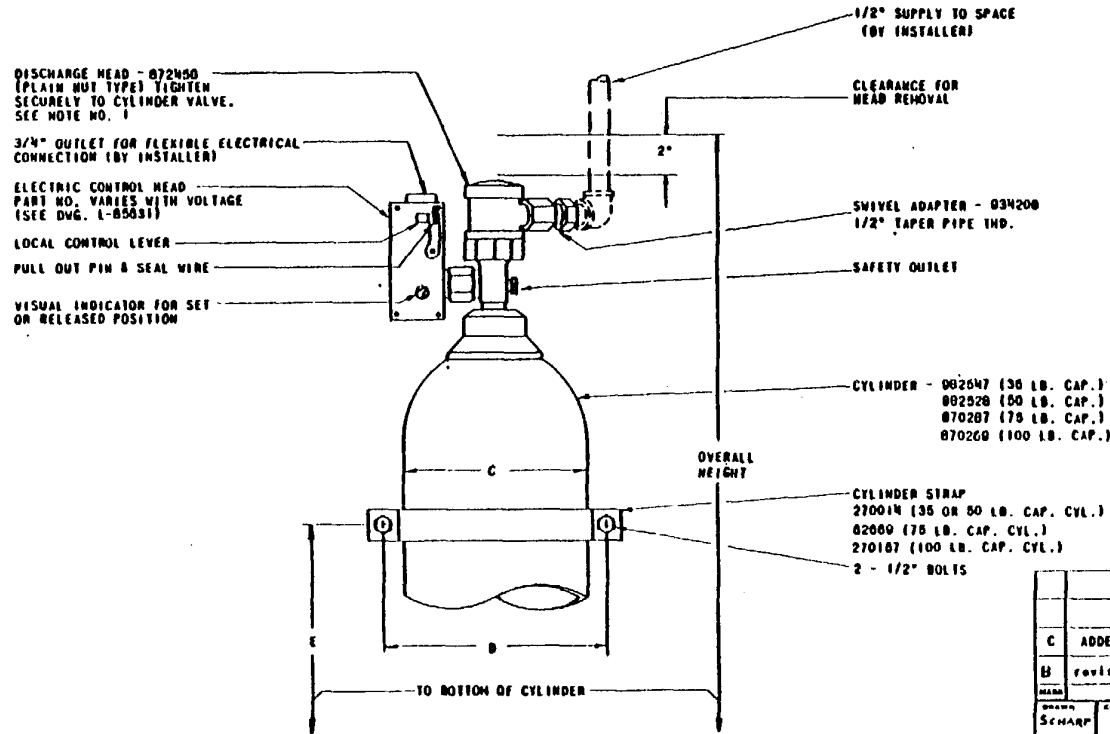


PLAN

CYLINDER CAPACITY	DIMENSIONS IN INCHES					
	A	B	C	D	E	OVERALL
35 LB.	11 1/2	8 3/4	8 1/2	10 3/8	23	43
50 LB.	11 1/2	8 3/4	8 1/2	10 3/8	34	50
75 LB.	12 1/4	8 1/2	8 1/4	11 1/8	38	64
100 LB.	14	10 3/4	10 1/2	12 3/8	40	66

NOTES:

- DO NOT ASSEMBLE DISCHARGE HEAD UNTIL AFTER ELECTRIC CONTROL HEAD HAS BEEN ATTACHED TO CYLINDER VALVE.
- ON LOCAL CONTROL SYSTEMS, CYLINDER MUST BE CONVENIENTLY LOCATED OUTSIDE OF HAZARD SO LOCAL CONTROL LEVER IS READILY ACCESSIBLE.



REVISIONS

NO.	DATE	BY	CHKD.	REVISION
1				ADDED 100 LB. CYLINDER
2				REVISED & REDRAWN

DATE: 7-10-55

BY: SCHARP

CHKD.: I. D.

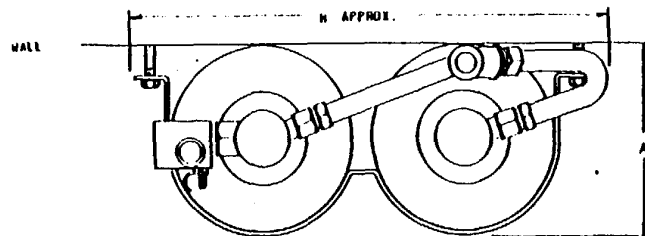
APPV.: C. W. F.

SCALE: 1" = 1" - 0"

DRW: L-88630-C

MANUFACTURER: WALTER BILDA & COMPANY, INC. BASKERVILLE, NEW JERSEY

TYPICAL INSTALLATION  
ONE CYLINDER AUTOMATIC  
ELECTRIC CONTROL  
PRESSURE OPERATED EQUIPMENT

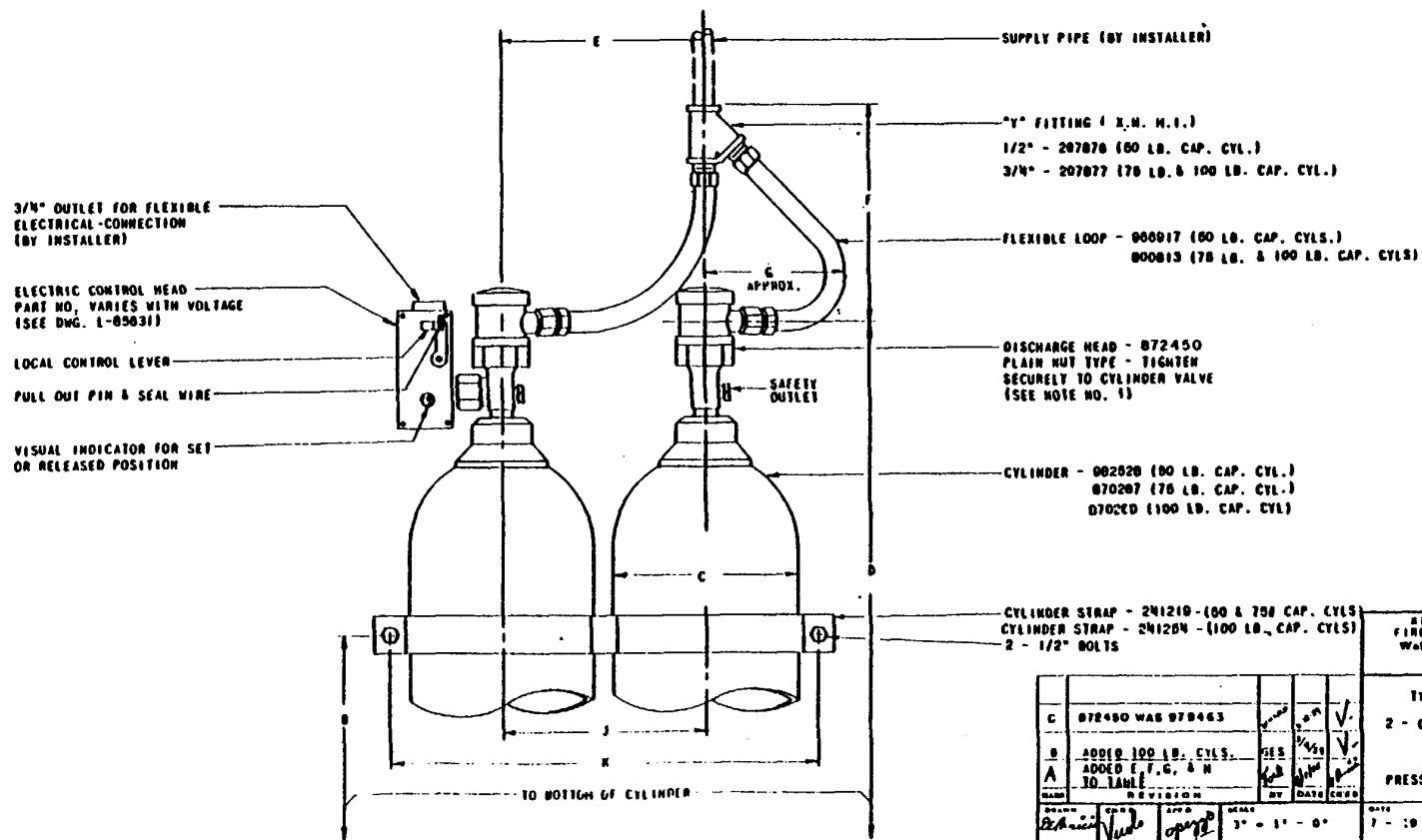


PLAN

CYLINDER CAPACITY	DIMENSIONS IN INCHES									
	A	B	C	D	E	F	G	H	J	K
50 LB.	8 3/4	3 1/2	8 1/2	6 1/2	10	10	7	2 1/4	10	2 1/2
75 LB.	8 3/4	3 1/2	8 1/4	6 5/8	12	12	8	2 1/2	10	2 1/2
100 LB.	10 7/8	4	10 1/2	6 7/8	12 1/2	12	8	2 3/4	11 1/2	2 3/4

REFERENCE DRAWINGS  
L-85631

- NOTES:
- DO NOT ASSEMBLE DISCHARGE HEADS UNTIL AFTER ELECTRIC CONTROL HEAD HAS BEEN ATTACHED TO CYLINDER VALVE.
  - ON LOCAL CONTROL SYSTEMS, CYLINDERS MUST BE CONVENIENTLY LOCATED OUTSIDE OF HAZARD SO LOCAL CONTROL LEVER IS READILY ACCESSIBLE.



- SUPPLY PIPE (BY INSTALLER)
- Y FITTING (X.M.H.I.)  
1/2" - 207876 (50 LB. CAP. CYL.)  
3/4" - 207877 (75 LB. & 100 LB. CAP. CYL.)
- FLEXIBLE LOOP - 900917 (50 LB. CAP. CYLS.)  
900913 (75 LB. & 100 LB. CAP. CYLS)
- DISCHARGE HEAD - 872450  
PLAIN NUT TYPE - TIGHTEN SECURELY TO CYLINDER VALVE (SEE NOTE NO. 1)
- CYLINDER - 082828 (50 LB. CAP. CYL.)  
870287 (75 LB. CAP. CYL.)  
0702ED (100 LB. CAP. CYL.)
- CYLINDER STRAP - 241218 - (50 & 75 CAP. CYLS)  
CYLINDER STRAP - 241204 - (100 LB. CAP. CYLS)  
2 - 1/2" BOLTS

- 3/4" OUTLET FOR FLEXIBLE ELECTRICAL CONNECTION (BY INSTALLER)
- ELECTRIC CONTROL HEAD PART NO. VARIES WITH VOLTAGE (SEE DWG. L-85631)
- LOCAL CONTROL LEVER
- PULL OUT PIN & SEAL WIRE
- VISUAL INDICATOR FOR SET OR RELEASED POSITION

ISSUED ON

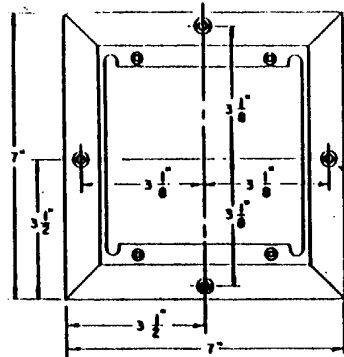
TRIDE CARBON DIOXIDE  
FIRE EXTINGUISHING SYSTEM  
Walter Kidde & Company, Inc.  
Baltimore, New Jersey

TYPICAL INSTALLATION  
2 - CYL. AUTOMATIC SYSTEM  
ELECTRIC CONTROL  
PRESSURE OPERATED EQUIPMENT

C	872450 WAS 870463	✓	✓	✓	✓
B	ADDED 100 LB. CYLS.	✓	✓	✓	✓
A	ADDED E, F, G, & H TO TABLE	✓	✓	✓	✓
REVISION	BY	DATE	APPROVED	DATE	APPROVED

DATE 7-10-55

DWG L-85631-C



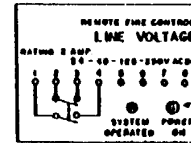
**FRAME-FRONT VIEW**  
FLUSH OR PANEL MOUNTING

FOR FLUSH OR PANEL MOUNTING—FRAME IS INSERTED BETWEEN COVER & BOX. SEE DETAIL BELOW

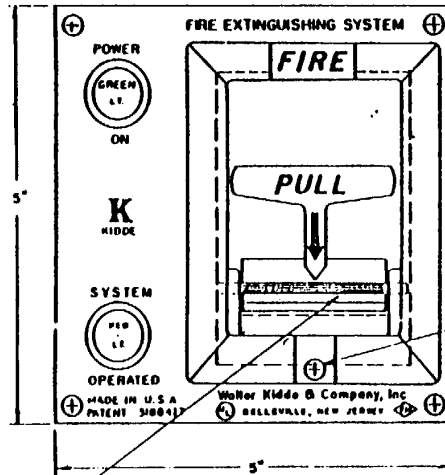
FLUSH FRAME & SCRS.—PART NO. 804306  
 PANEL . . . . . 804307

4-7/32" MOUNTING HOLES FOR NO. 10 R.H. SCR. IN FLANGE FOR PANEL MOUNTING ONLY.

VOLTS	ASSY. NUMBER	LIGHT BULB REPLACEMENT	
		W. KIDDE NO.	G.E. NO.
24 48	D.C. 893607	215995	1835
125	A.C. 893608	215995	1835
250	A.C. 893609	215995	1835



WIRING FOR RED & GREEN LIGHTS VARIES WITH VOLTAGE.



**FRONT VIEW**

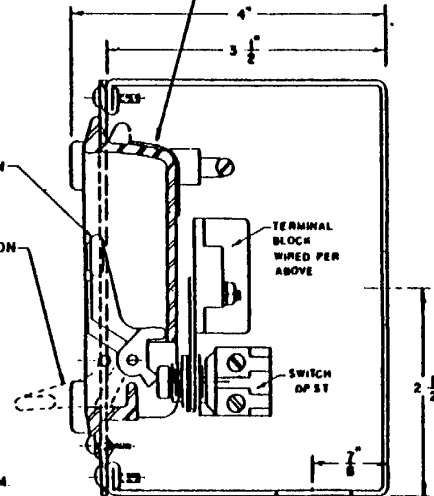
GLASS SEAL ROD—REPLACE FROM LEFT SIDE BY BACKING OFF RESET SCREW UNTIL HOLE IS EXPOSED.

3—SPARE SEAL RODS SUPPLIED WITH EACH UNIT. PART NO. 213690

HANDLE—IN NORMAL POSITION

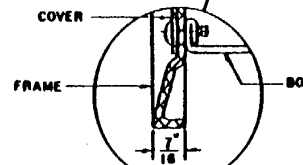
HANDLE—IN OPERATED POSITION CANNOT BE RETURNED UNTIL RESET SCREW IS BACKED-OFF APPROX. 3/8"

RESET SCREW CAUTION DO NOT UNSCREW IF SEAL ROD IS INTACT—THIS WILL DISCHARGE SYSTEM.



**SIDE SECTION**

1/2" OR 3/4" CONDUIT MAY ENTER FROM TOP—BOTTOM OR BACK. (POSITION BOX TO SUIT)



**DETAIL WITH FRAME**

FINISH  
 CRACKLE RED—  
 WITH SATIN FINISH  
 ALUMINUM COVER

ISSUED ON

SIBBE CARBON DIOXIDE  
 FIRE EXTINGUISHING SYSTEM  
 Walter Kidde & Company, Inc.  
 Belleville, New Jersey

**ELECTRIC REMOTE CONTROL  
 BREAK SEAL TYPE**

**SURFACE—FLUSH OR  
 PANEL MOUNTED**

DRAWN	CHECKED	APPROVED	SCALE	DATE	NO.
P.M.M.	3/1	[Signature]	FULL & HALF SIZE	8-15-62	L-615409-B





YOU CAN BE PROUD OF YOUR KIDDE EQUIPMENT. IT AFFORDS YOU THE BEST POSSIBLE PROTECTION FROM FIRE. THE FOLLOWING INSTRUCTIONS WILL ENABLE YOU TO BECOME FULLY FAMILIAR WITH THIS EQUIPMENT AND TO MAINTAIN IT IN PERFECT CONDITION AT ALL TIMES.

IF YOU PREFER YOU CAN HAVE EXPERT KIDDE MAINTENANCE WITH COMPETENT, EXPERIENCED, FACTORY TRAINED MEN TO HANDLE YOUR SERVICING. ASK YOUR KIDDE REPRESENTATIVE ABOUT OUR ANNUAL SERVICE AGREEMENT.

THIS KIDDE PRODUCT IS TAILOR-MADE TO MEET YOUR PARTICULAR REQUIREMENTS AND TO PERFORM AS YOU WANT IT TO PERFORM. IT INCORPORATES THE APPLICATION KNOWLEDGE AND SKILLS THAT WE HAVE ACQUIRED IN MORE THAN THIRTY YEARS OF INTENSIVE CONCENTRATION IN THIS FIELD. IT IS HIGH QUALITY EQUIPMENT BUILT TO LAST LONGER AND BE OPERABLE FOR MANY YEARS AFTER INSTALLATION.

TREAT YOUR EQUIPMENT WELL AND IT WILL SERVE YOU FAITHFULLY.

PLEASE NOTE

WHILE THE INFORMATION CONTAINED HEREIN IS INTENDED TO COVER ALL FACETS PERTAINING TO THE OPERATION AND MAINTENANCE OF YOUR CARBON DIOXIDE FIRE EXTINGUISHING SYSTEM. IT MAY BE THAT OVER THE YEARS CHANGES IN PHYSICAL SIZE OR PROCESS HAVE OUT-GROWN THE ORIGINAL "KIDDE" PROTECTION. YOUR SYSTEM MAY REQUIRE REVIEW AND REVISION OF COVERAGE. IF SO, DO NOT HESITATE TO CONTACT YOUR NEAREST W. KIDDE & CO. INC., REPRESENTATIVE.

**WALTER KIDDE**  
Division of Kidde, Inc.



INSTRUCTIONS FOR THE  
OPERATION AND MAINTENANCE  
OF THE KIDDE MARINE SMOKE DETECTOR  
WITH AND/OR WITHOUT  
REMOTE REPEATER  
AURAL TYPE KMSD

When communicating with Walter Kidde regarding any part of this system, refer to the Hull identification which was obtained at the time of original installation.

TO BE COMPLETED BY THE INSTALLER

\_\_\_\_\_ Shipyard Hull No. \_\_\_\_\_

This vessel is equipped with a Kidde Marine Smoke Detector.

KMSD Serial No. \_\_\_\_\_

KMSD Part No. \_\_\_\_\_

KMSD Part No. \_\_\_\_\_

KMSD Part No. \_\_\_\_\_

KMSD Part No. \_\_\_\_\_

KMSD Part No. \_\_\_\_\_

This shipset consists of a line capacity detector assembly.

U.S. Department  
of Transportation

United States  
Coast Guard



Commandant  
United States Coast Guard  
Phone:

Washington, DC 20593  
Staff Symbol: G-MTH-4/13  
(202) 426-2197

19 FEB 1985  
16714/161.002/13/0

Dr. John H. Dyer  
Walter Kidde  
Division of Kidde, Inc  
P.O. Box 1147  
Wake Forest, NC. 27587

Dear Dr. Dyer:

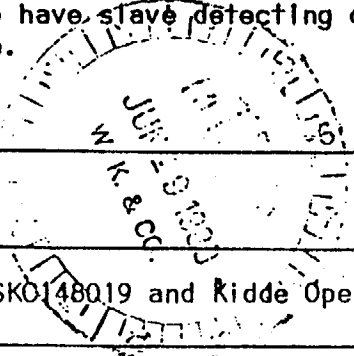
I have taken steps to update and revise the approval for your KMSD detection system per your letter of 31 January 1985. There are no additional tests or documentation required at this time.

International standards are being revised and may eventually result in some changes to our approval procedures. We will inform you if any of these changes take place prior to expiration of the new approval in 1990. A new approval certificate will be issued before June 11, 1985. A draft copy of the certificate is attached for your information.

Sincerely,

R. B. MEYER  
Commander, U.S. Coast Guard  
Chief, Ship Design Branch  
Marine Technical and Hazardous  
Materials Division  
By direction of the Commandant

Enclosure

<b>ISSUED TO</b> Walter Kidde & Co., Inc. 675 Main Street Belleville, NJ 07109	<b>UNITED STATES COAST GUARD  CERTIFICATE OF APPROVAL</b>  for Fire Protection System	<b>EXPIRATION DATE</b> 11 June 1985	<b>APPROVAL NUMBER</b> 161.002/13/0
<b>DESCRIPTION</b>  Kidde Marine Smoke Detector, Model KMSD, Aural type smoke detection system (24 or 48 zones) consisting of smoke detecting cabinet, suction fan blower cabinet, olfactory (sniffer) valve, optional repeater panel, two 8" alarm gongs per installation. Systems with 25 to 48 line capacity shall also have slave detecting cabinet, second suction fan blower, and second olfactory valve.			
<b>REMARKS</b>  None			
<b>IDENTIFYING DATA</b> Kidde dwg. No. SKC148127, SKC148018, SKC148019 and Kidde Operation and Maintenance Manual.			
<p>THIS IS TO CERTIFY THAT the above named manufacturer has submitted to the undersigned satisfactory evidence that the item specified herein complies with the applicable laws and regulations as outlined on the reverse side of this Certificate, and approval is hereby given. This approval shall be in effect for a period of five years from the date hereon unless sooner canceled or suspended by proper authority.</p> <p>Given Under My Hand This 11th..... Day of  June..... 19. 80, at Washington, D. C.</p> <p style="text-align: right;">   BY DIRECTION OF THE COMMANDANT  A. E. HENN, EBR, USCG FOR  .....  Chief, Merchant Marine Technical Division, U. S. C. G. </p>			

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## SECTION 1

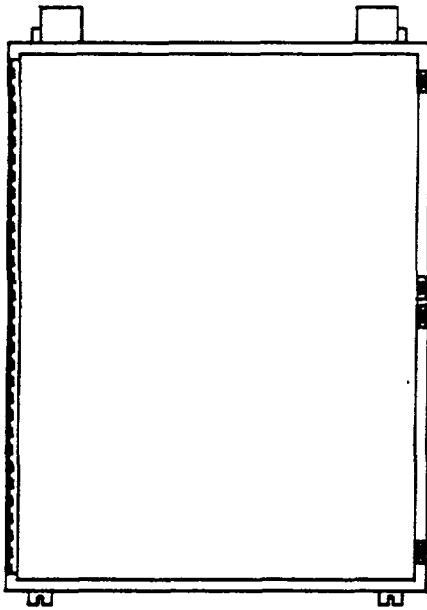
### GENERAL

- 1.1 When factory adjusted, the Kidde Marine Smoke Detector (KMSD) meets the requirements of the U.S. Coast Guard as defined in 46CFR161.002-15.
- 1.2 The KMSD system continuously monitors all compartments into which a pipeline is installed. Air samples are continuously and simultaneously drawn through all CO<sub>2</sub> pipelines to the smoke detector cabinet where each line is continuously monitored for smoke by means of an individual light source and photoelectric cell.
- 1.3 Smoke detectors are supplied in models having 1 through 48 line capacity.
- 1.4 The Smoke Detector System, KMSD, is designed to be used alone or in conjunction with a Kidde marine-type CO<sub>2</sub> system.
- 1.5 When installed, a KMSD system consists of the following principle elements:
  - a. Smoke detecting cabinet assembly
  - b. Suction fan blower cabinet assembly
  - c. Three-way valves installed in the CO<sub>2</sub> system manifold
  - d. CO<sub>2</sub> system pipework
  - e. Pipework exclusive to smoke detection system
  - f. Accumulators installed in lieu of nozzles on the CO<sub>2</sub> system
  - g. Olfactory (sniffer) valve normally installed in the wheelhouse
  - h. Optional repeater panel
  - i. 8-inch alarm gongs: 2 required per installation
  - j. Automatic condensate drain valves, where required
- 1.6 Models with 25 to 48 line capacity have the following additional elements:
  - k. Slave detecting cabinet
  - l. Second suction fan blower assembly
- 1.7 Three elements are covered in this manual:
  - a. Smoke detecting cabinet
  - b. Suction fan blower assembly
  - c. Repeater panel

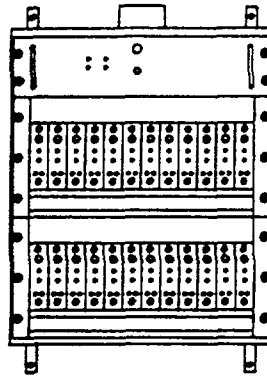
- 1.8 The pipework, three-way valves, condensate drain, CO2 system piping, and smoke accumulators are covered in the CO2 system manual.
- 1.9 Figure 1-1 shows the basic system and part numbers for each item.
- 1.10 Figure 1-2 shows the dimensions and mounting details of the smoke detector cabinet assembly (maximum 24 lines). Slave detection cabinets have identical dimensions and requirements, and increase capacity to 48 lines.
- 1.11 This cabinet must be mounted upright on a bulkhead not subject to exceptional mechanical shock.
- 1.12 Figure 1-3 shows a typical 18 line cabinet.
- 1.13 Figure 1-4 shows the electronics drawer pulled out for inspection.
- 1.14 Figure 1-5 shows the electronics drawer lowered for servicing.
- 1.15 Figure 1-6 gives the dimensions and mounting details of the suction fan blower assembly.
- 1.16 This unit must be mounted upright on a bulkhead.
- 1.17 Figure 1-7 shows the exterior of the blower cabinet as installed with flexible connections for the inlet, outlet and olfactory line installed.
- 1.18 Figure 1-8 shows the blower cabinet door open and two suction fan blowers, manifold, two check (flapper) valves, and two motor starters.
- 1.19 Figure 1-9 gives the dimensions and mounting details for the standard (1 to 24 line) repeater cabinet.
- 1.20 Figure 1-10 gives the dimensions and mounting details for the 25-48 line repeater cabinet.
- 1.21 Figure 1-11 shows the exterior of an 18 line repeater cabinet.
- 1.22 Figure 1-12 shows the interior of the 18 line repeater cabinet.
- 1.23 Finish colors are as follows:
  - a. Smoke detector cabinet
    1. Front panels - black matte
    2. Balance of cabinet - fire engine red

b. Repeater cabinet

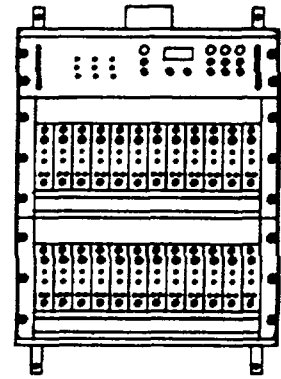
1. Exterior - fire engine red
2. Interior - white



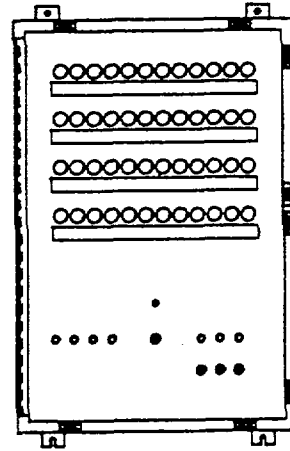
TYPICAL  
BLOWER CABINET



TYPICAL SLAVE SMOKE  
DETECTOR CABINET



TYPICAL MAIN SMOKE  
DETECTOR CABINET



TYPICAL  
REPEATER CABINET

DESCRIPTION	APPLICATION	PART NUMBER *
60 HZ MAIN SMOKE DETECTION CABINET	1 THRU 24 ZONES W/REPEATER OPTION	486148-XX
	1 THRU 24 ZONES W/I REPEATER OPTION	485149-XX
50 HZ MAIN SMOKE DETECTION CABINET	1 THRU 24 ZONES W/I REPEATER OPTION	48814950-XX
	1 THRU 24 ZONES W/I REPEATER OPTION	488151-XX
60 HZ SLAVE SMOKE DETECTION CABINET	25 THRU 48 ZONES W/REPEATER OPTION	486152-XX
	25 THRU 48 ZONES W/O REPEATER OPTION	408853-XX
50 HZ SLAVE SMOKE DETECTION CABINET	25 THRU 48 ZONES N/REPEATER OPTION	4886154-XX
	25 THRU 48 ZONES W/I REPEATER OPTION	488155-XX
REPEATER CABINET	1 THRU 24 ZONES	488158-XX
	1 THRU 48 ZONES	486157-XX
60 HZ BLOWER CABINET	MAIN S/D CABINET ONLY	898849
	MAIN S/D CABINET W/SLAVE S/O CABINET	898352
	SLAVE S/D CABINET	898354
50 HZ BLOWER CABINET	MAIN S/D CABINET W/SLAVE S/D CABINET	898353
	SLAVE S/D CABINET	898355

Figure 1-1. System Con-  
figuration,  
SKA-148941

# XX DENOTES NUMBER OF ZONES



DETECTOR CABINET ASSEMBLY

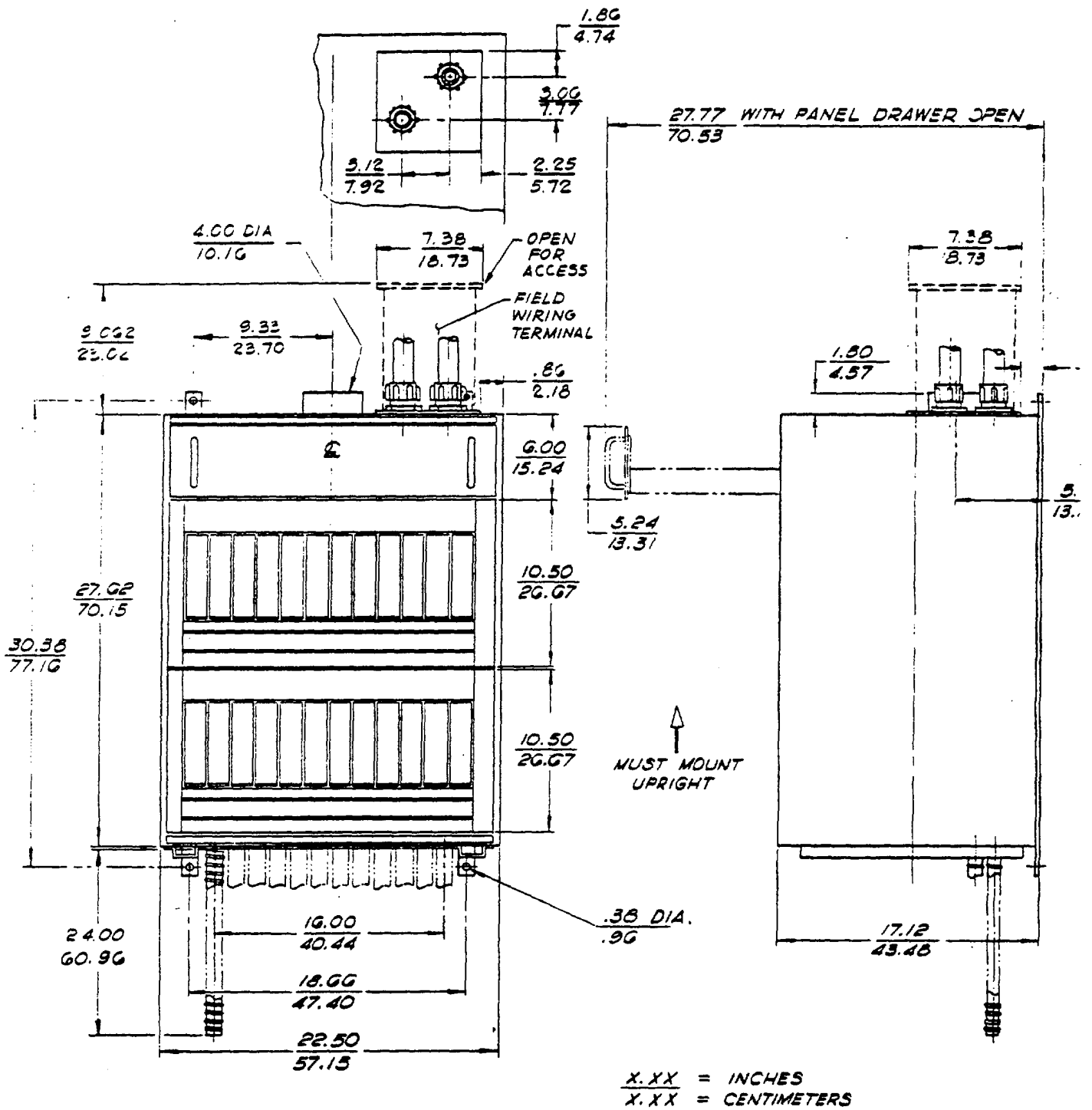
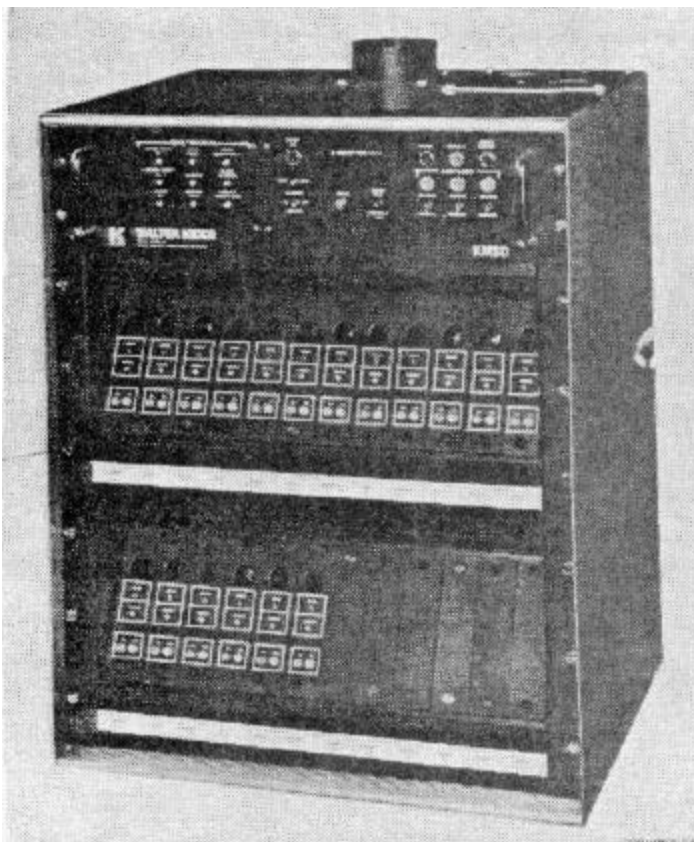
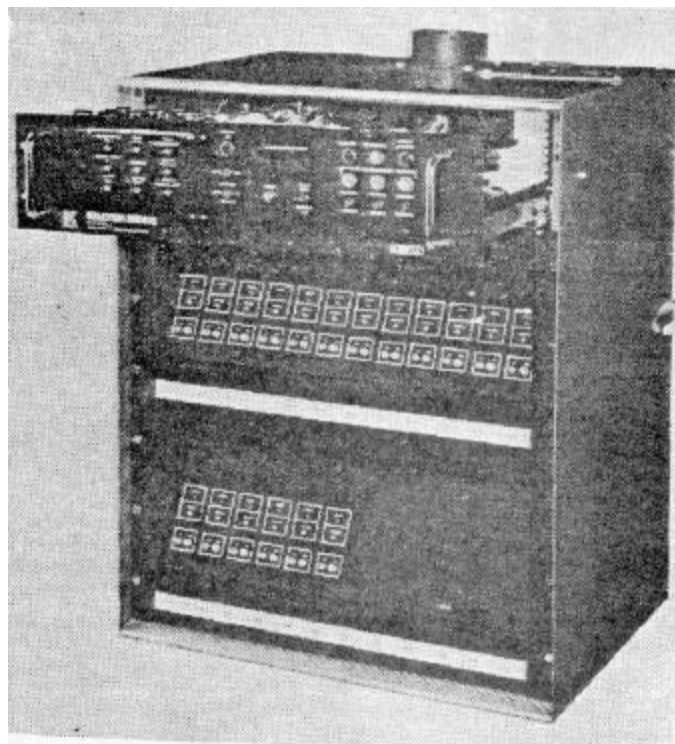


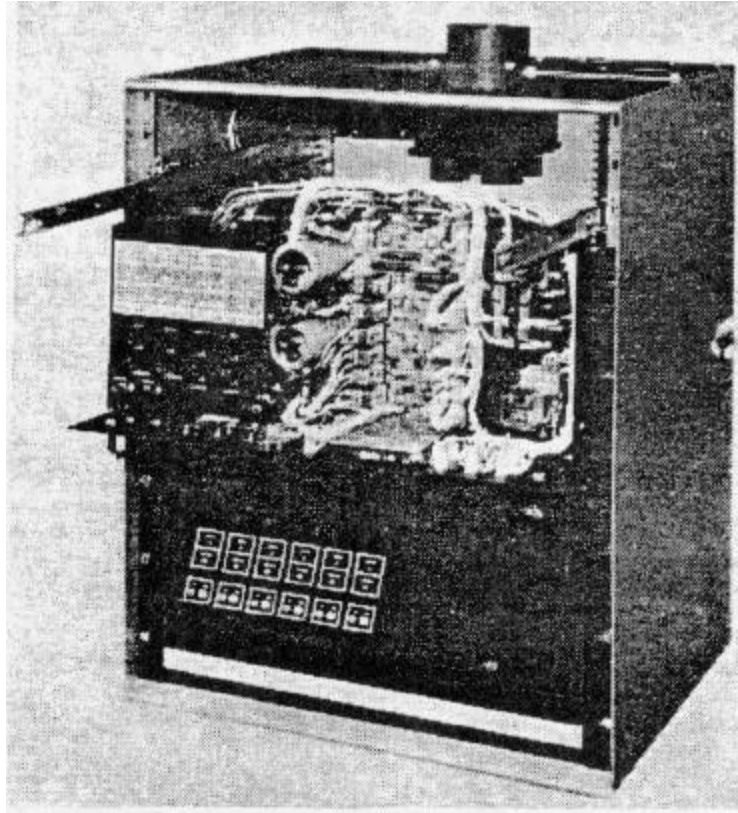
Figure 1-2. Detector Cabinet Dimensions and Mounting Details. SKC-148129



*Figure 1-3. Typical 18 Line Smoke Detector Cabinet*



*Figure 1-4. Cabinet with Drawer Pulled Out for Inspection*



*Figure 1-5. Cabinet with Drawer Lowered for Servicing*

# BLOWER HOUSING

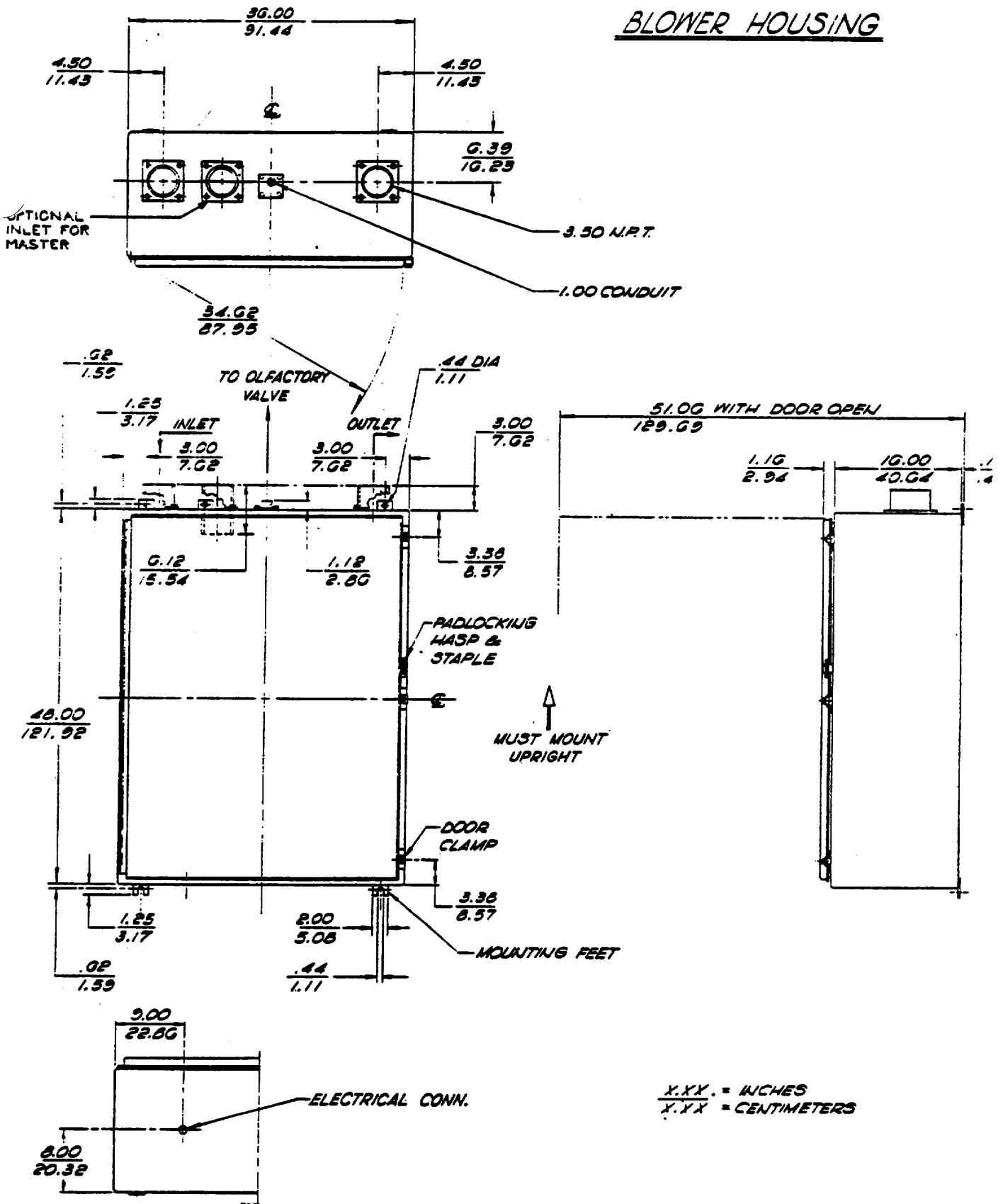
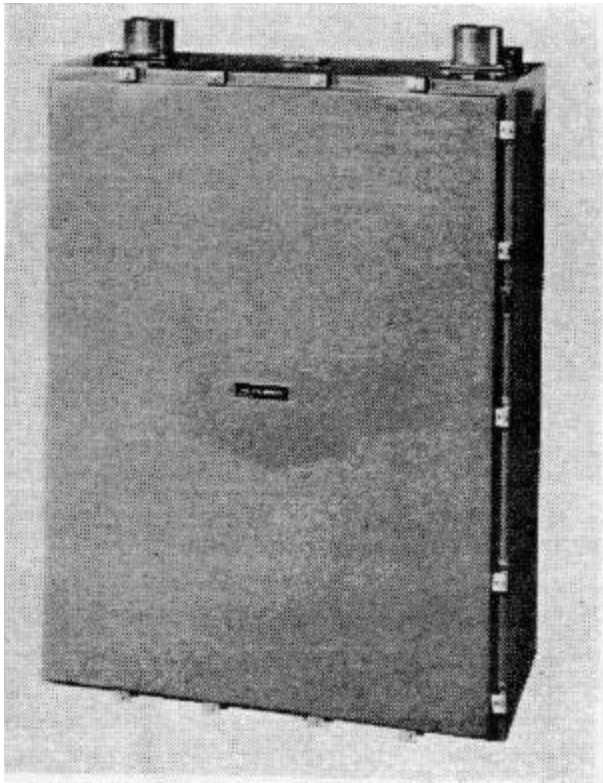
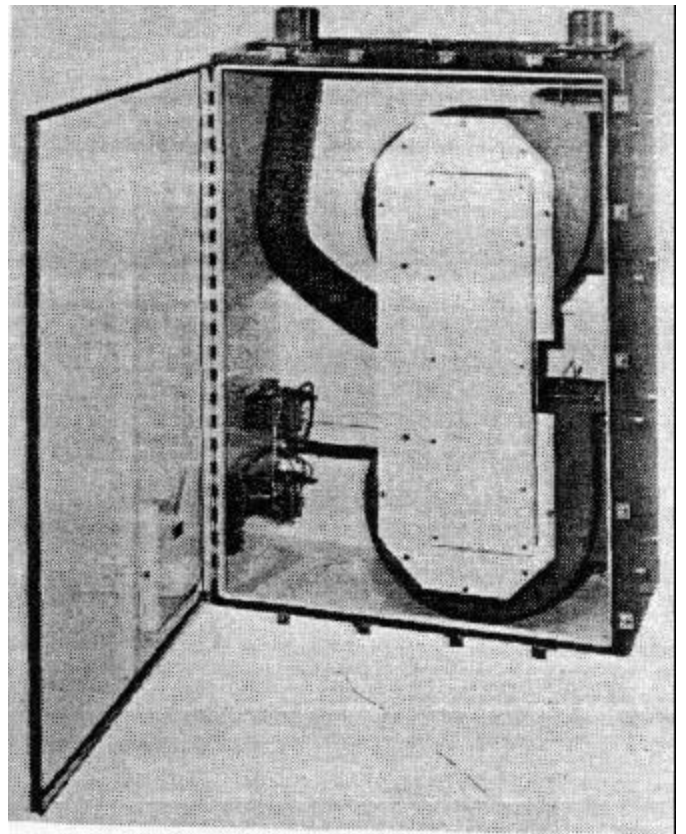


Figure 1-6. Blower Housing Dimensions and Mounting Details, SKC-148135



*Figure 1-7. Blower Cabinet Exterior with Connections*

*Figure 1-8. Blower Cabinet, Interior View*



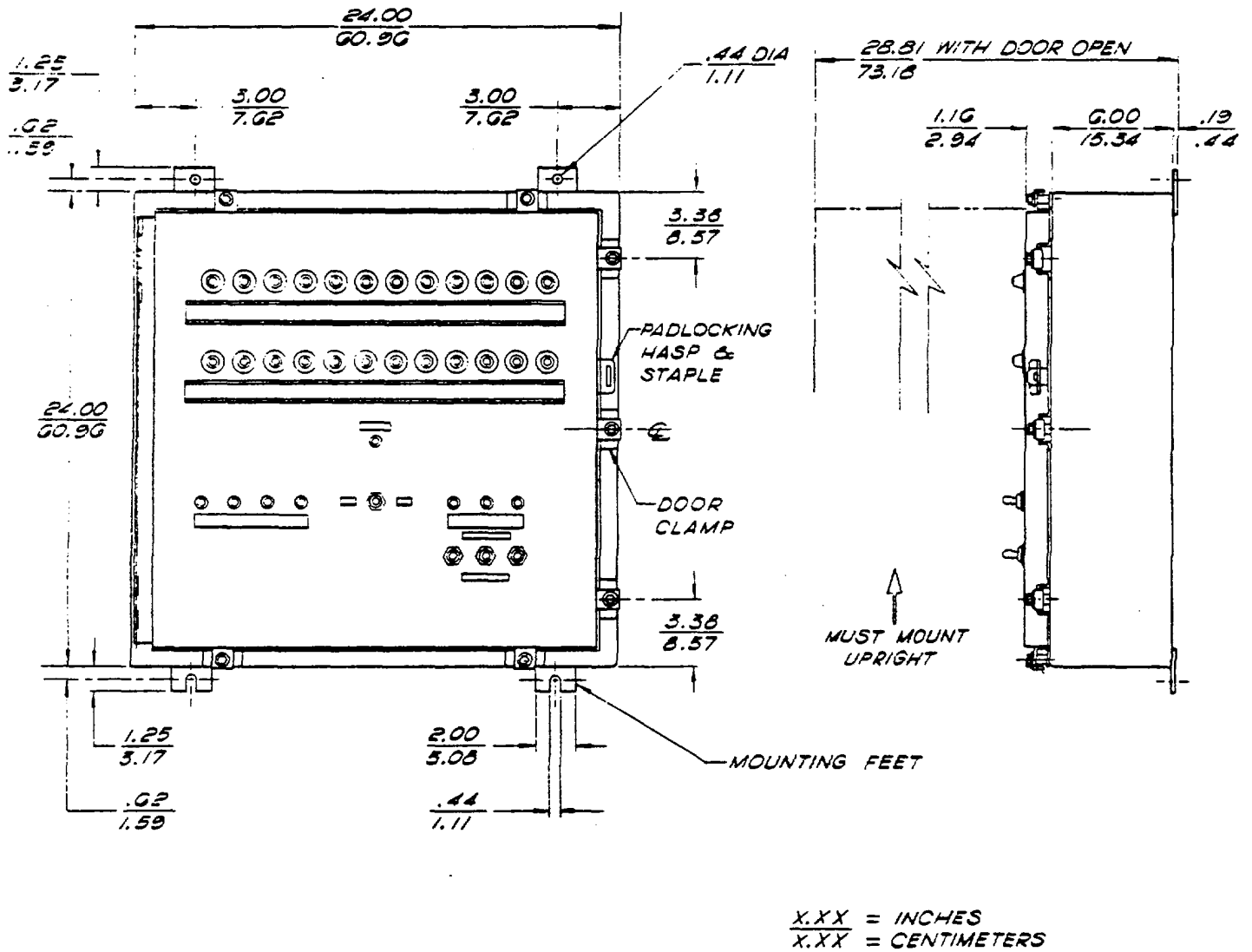
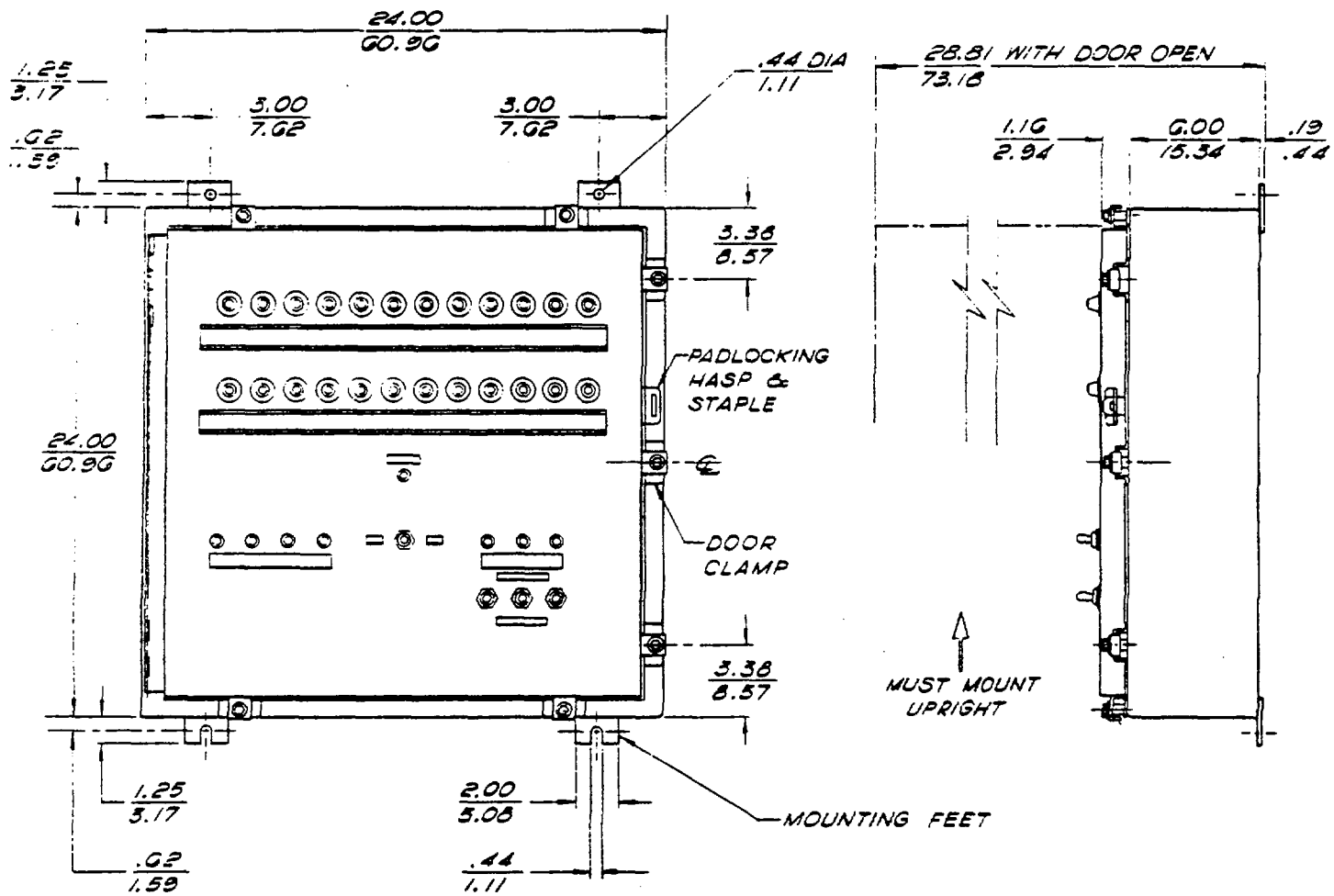


Figure 1-9. Repeater Cabinet Dimensions and Mounting Details, Lines 1 through 24. SKC-148131

**REPEATER CABINET  
25 THROUGH 48 ZONES**



$\frac{X.XX}{X.XX}$  = INCHES  
 $\frac{X.XX}{X.XX}$  = CENTIMETERS

Figure 1-10. Repeater Cabinet, Lines 25 through 48,  
 Dimensions and Mounting Details, SKC-148141

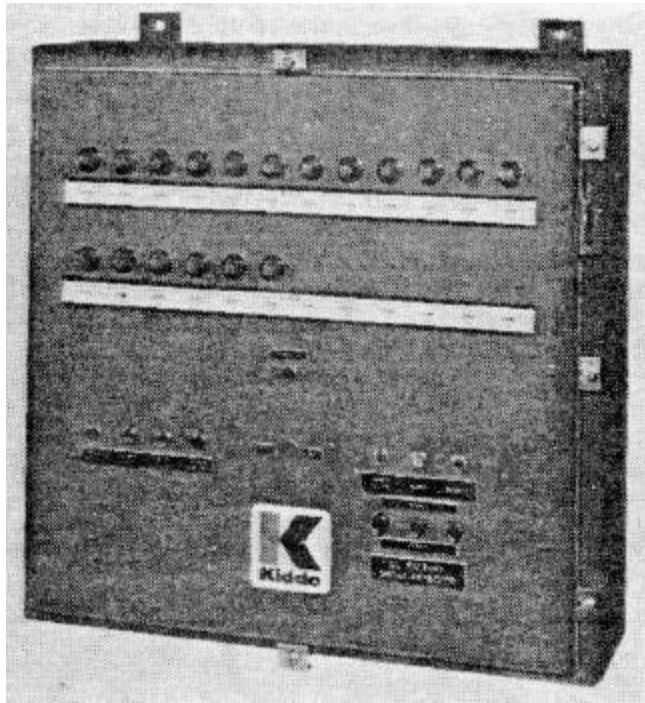


Figure 1-11. Exterior View of 18 Line Repeater Cabinet

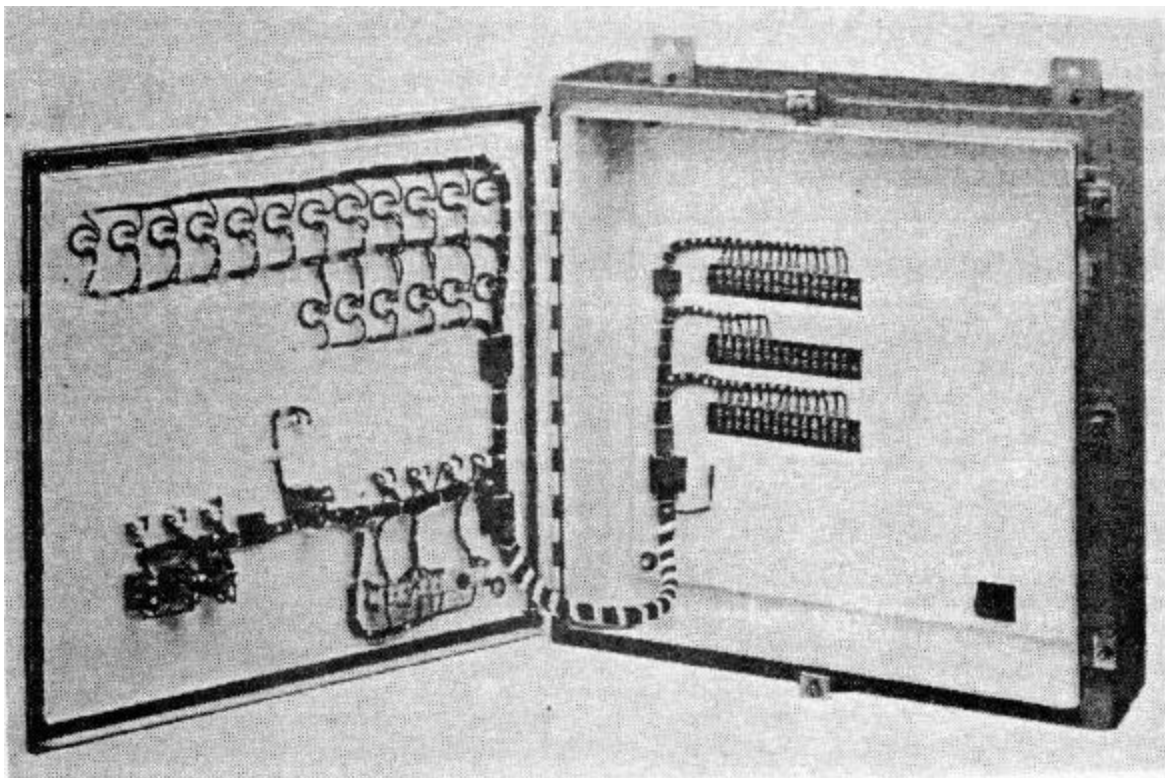


Figure 1-12. Interior View of 18 Line Repeater Cabinet



- c. Suction blower cabinet
  - 1. Exterior - fire engine red
  - 2. Interior - white
  - 3. Manifold - white
  - 4. Blower housings - grey matte
  - 5. Motors - grey
- d. Smoke bells
  - 1. Gong - natural brass
  - 2. Housing - grey matte
- e. Buzzers - grey matte
- f. 3-Way valves - natural brass
- g. Accumulators - primer only, to be painted with vessel
- h. Hoses - black and/or grey as supplied by vendor
- i. Olfactory (sniffer) valve - natural brass

1.23 Note on Conventions:

This is a United States manual. All notations and specifications are in U.S. units such as inches, feet, American wire gauge, water column inches, etc. Where convenient, metric conversions (not the available equivalents) are given in parentheses or below the line. The acceptability of substitute metric-sized components must be determined by authorities having jurisdiction.

## SECTION 2

### THEORY OF OPERATION

- 2.1 The basic principles of operation of the system are illustrated in Figures 2-1 through 2-4.
- 2.2 Air samples are continuously drawn from each protected space through the CO<sub>2</sub> system distribution piping, with individual lines to each detecting module at the main cabinet. The air samples are continually inspected for the presence of smoke as a result of being drawn through a darkened space in each module. A light beam is directed into the darkened space in such a manner that it does not fall on the sensitive photoelectric cell (Figure 2-1).
- 2.3 When smoke is present in the air sample, it causes the light to scatter, permitting some light to reach the photoelectric cell (Figure 2-2). At a factory calibrated level, the electric circuitry will cause the module to lock into the alarm mode, originating the specified audible and visual alarm signals.
- 2.4 For most spaces on the vessel, the smoke detector piping is also used for the discharge of CO<sub>2</sub> (Figure 2-3)  
Manually operated 3-way valves are supplied on the CO<sub>2</sub> system manifold to provide an interconnection from the accumulator in the protected area to the individual detector module.
- 2.5 The 3-way valves permit carbon dioxide to be discharged into the selected space without penetrating the smoke detection system (Figure 2-4).
- 2.6 **NOTE:** The 3-way valves may be used to isolate the smoke detection cabinet from spaces causing false alarms caused by abnormally dirty ambient air conditions or the presence of smoke known not to be dangerous.
- 2.7 **CAUTION:** If this step has been taken and an actual fire condition develops, all 3-way valves other than those on lines to the fire areas must be returned to normal prior to discharging the CO<sub>2</sub> system.
- 2.8 **NOTE:** It is necessary to operate the 3-way valve to discharge into the smoke detector unit through any of the lines at any time.
- 2.9 Details of the installation and operation of the CO<sub>2</sub> system are covered in the Kidde CO<sub>2</sub> system manual.

Air samples are continuously drawn from each protected space and conveyed by individual lines to the main cabinet. There the the sample is inspected for the presence of smoke.

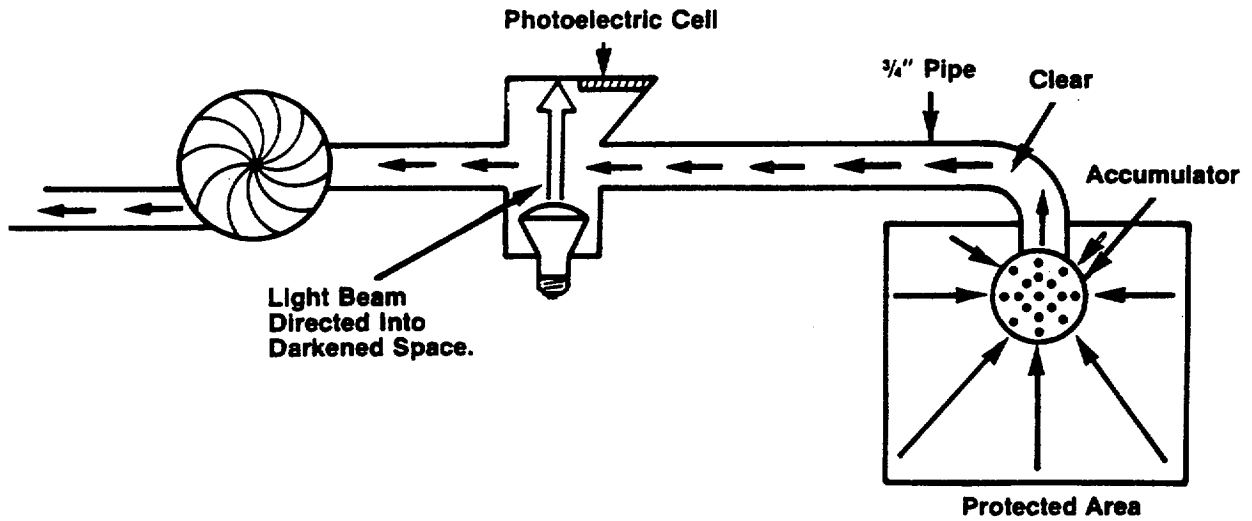


Figure 2-1. Air Samples Being Sampled By Smoke Detection System

The presence of smoke in the viewing path of the light source causes the light to scatter and be seen by the photocell. At a prescribed "smoke level" an alarm is sounded.

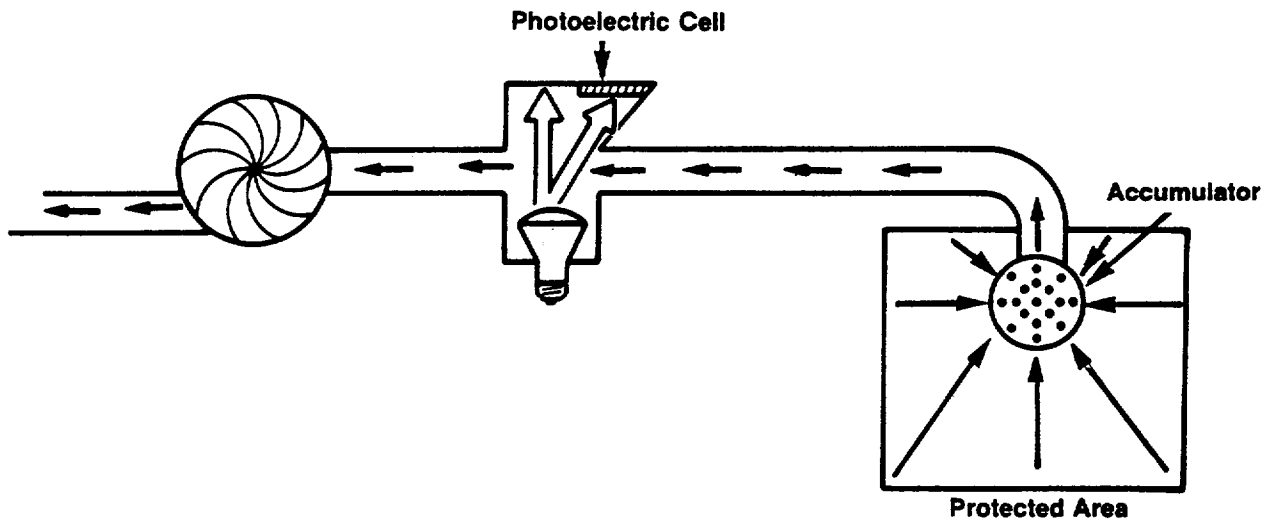


Figure 2-2. Light Being Scattered By Presence of Smoke in Viewing Path

In many installations the smoke lines are interconnected with a carbon dioxide fire extinguishing system through a manually operated 3-way valve.

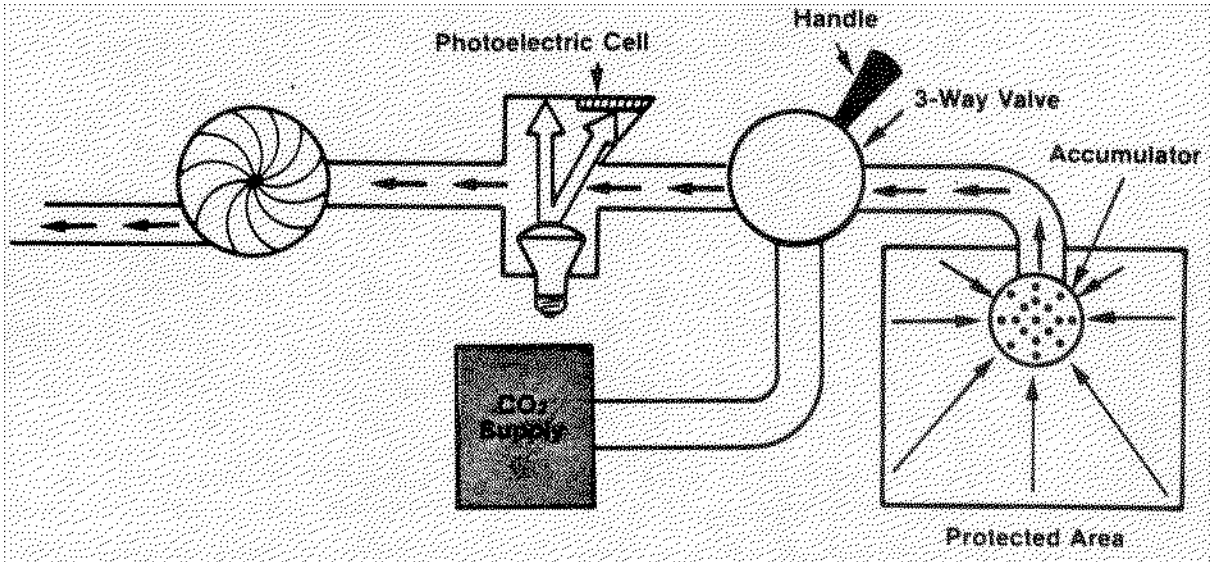


Figure 2-3. Smoke Lines Interconnected With Carbon Dioxide Extinguishing System Through 3-Way Valve

Carbon dioxide can be discharged into the affected space.

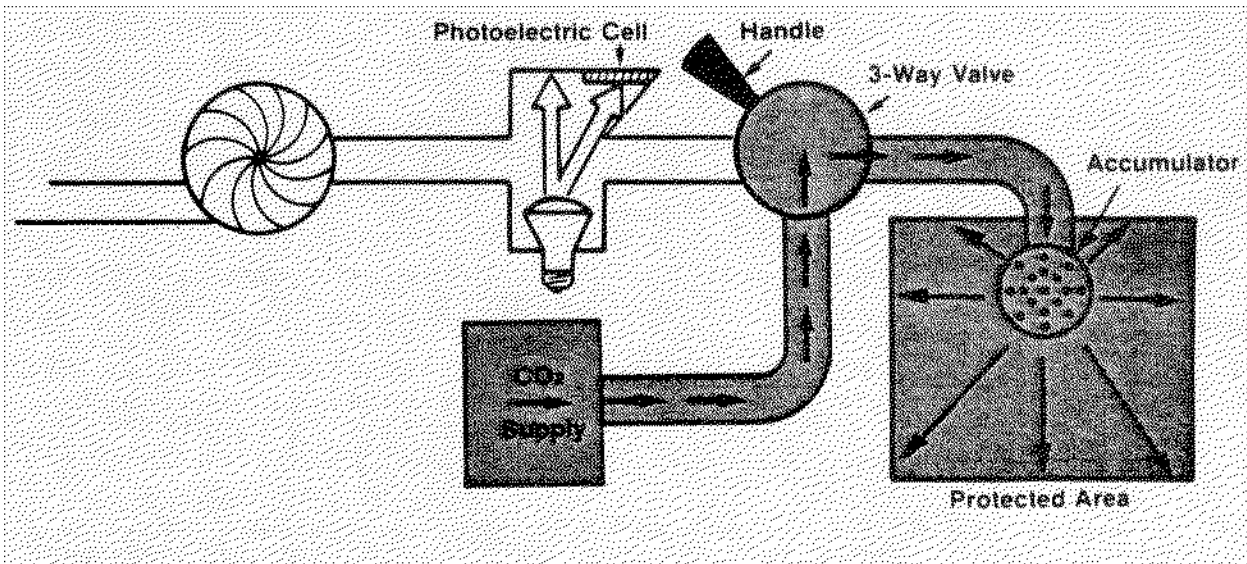


Figure 2-4. Carbon Dioxide Discharged Into Affected Space By Operation of 3-Way Valve.

**SECTION 3**  
**SYSTEM POWER SUPPLY**

- 3.1 KMSD systems may be ordered for the following electrical services:
- a. 120V, 60Hz
  - b. 120V, 50Hz
  - c. 240V, 60Hz
  - d. 240V, 50Hz
- 3.2 All systems require a storage battery-based 24VDC supply (1 ampere) for the power failure alarm.
- 3.3 Figure 3-1 shows the principle elements of the system's internal and external power supplies.
- 3.4 The entire smoke detecting system receives its normal operating power from the ship's lighting and power system switchboard.
- 3.5 In the event of primary power failure, sufficient power for continuous normal operation is drawn from the ship's service power system switchboard. The transfer is accomplished within the KMSD cabinet by means of relay K1 (main AC transfer relay).
- 3.6 On ships adequately equipped, transfer from normal power to emergency power may be accomplished at the emergency lighting switchboard, and a single AC power line run to the KMSD cabinet.
- 3.7 The system receives 24 Volt battery power from the ship which is used to operate the power failure alarm. Audible and visual power failure signals occur at the smoke detector cabinet and the repeater cabinet (when used).
- 3.8 Internally, the detecting cabinet provides two complete redundant 24 Volt DC regulated power supplies.
- 3.9 Voltage sensing devices and relays are arranged so the panel will automatically switch to the No. 2 (reserve) power supply should the No. 1 (primary) power supply fail to maintain at least 85% of normal voltage under any load condition.
- 3.10 Failure, including voltage outputs below 85% of nominal, of either power supply is indicated by illumination of the power supply failure LED on the cabinet front panel together with the common trouble signal as long as the other supply remains functional.

- 3.11 In the event that both power supplies fail, the ship's battery-powered failure alarm indication occurs, even though AC power was maintained.
- 3.12 The batteries supply the power failure alarm only. The smoke detecting system is not operational during power failure conditions since blower units do not operate during loss of ship's AC power.

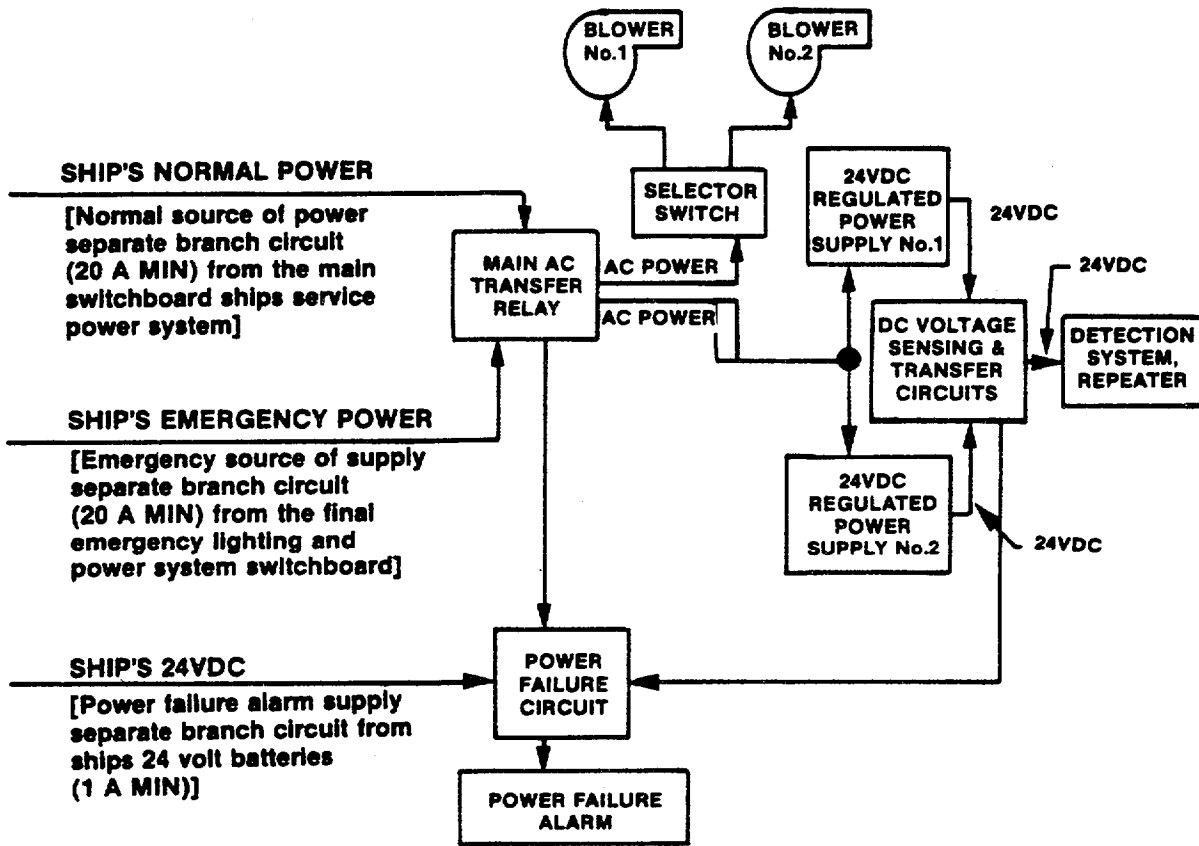


Figure 3-1. Principal Internal and External Elements of System's Power Supply

## SECTION 4

### MECHANICAL INSTALLATION

- 4.1 The KMSD smoke detector cabinet may be installed in either the CO<sub>2</sub> room or the wheelhouse, at the owner's option.
- 4.2 When the detector cabinet is in the CO<sub>2</sub> room, a repeater cabinet must be installed in the wheelhouse.
- 4.3 When the detector cabinet is in the wheelhouse, a repeater cabinet should be installed in the CO<sub>2</sub> room. Operational provisions for dockside access to the wheelhouse will be necessary.
- 4.4 The suction blower cabinet may be installed anywhere convenient, within the limitations specified for the interconnecting piping in Table 4-1 and the air flow diagrams. See Figures 4-1 and 4-2.
- 4.5 If the blower cabinet is installed in an outside location, the -flexible hoses must be painted or covered to prevent deterioration from sunlight, etc.
- 4.6 With double blower cabinets (Figure 4-2), the slide valve in the slave cabinet (No. 2) is "locked" wide open; while the slide valve in the master cabinet (No. 1) is adjusted for  $1\text{-}3/4 \pm 1/4$  inches of water with both blower cabinets operating.
- 4.7 The suction blower must be installed upright so that the blower discharge flapper valves are in a closed position when the blowers are turned off (see Figure 4-3).
- 4.8 The olfactory valve must be installed in the wheelhouse. It is recommended that this valve be installed at approximately eye level.
- 4.9 A one-inch nominal I.D. outlet pipe is provided on the suction blower housing to supply the olfactory valve. Note piping limitations in Table 4-1.
- 4.10 This pipe samples the air exhausted from the smoke detecting system, thereby permitting the detection of smoke by smell and/or the verification of a smoke alarm signal.



TABLE 4-1. PIPING LIMITATIONS

<u>Pipe Identification</u>	<u>Pipe Size</u>	<u>Maximum</u>	<u>Length</u>
Between detector cabinet and furthest accumulator.	3/4 in. I.D. (Nom)	1000 equivalent feet	
Between detector cabinet and suction blower housing	3.5 in. I.D. (Nom)	100 equivalent feet	
Between blower housing and atmosphere	3.5 in. I.D. (Nom)	15 equivalent feet	
Between blower housing and olfactory valve	1 in. I.D. (Nom)	250 equivalent feet	

**NOTE 1: Equivalent lengths are based on those given for O02 piping in NFPA Pamphlet 12.**

**NOTE 2: Equivalent length for detection lines in addition to the 3-way valve.**

AIR FLOW DIAGRAM

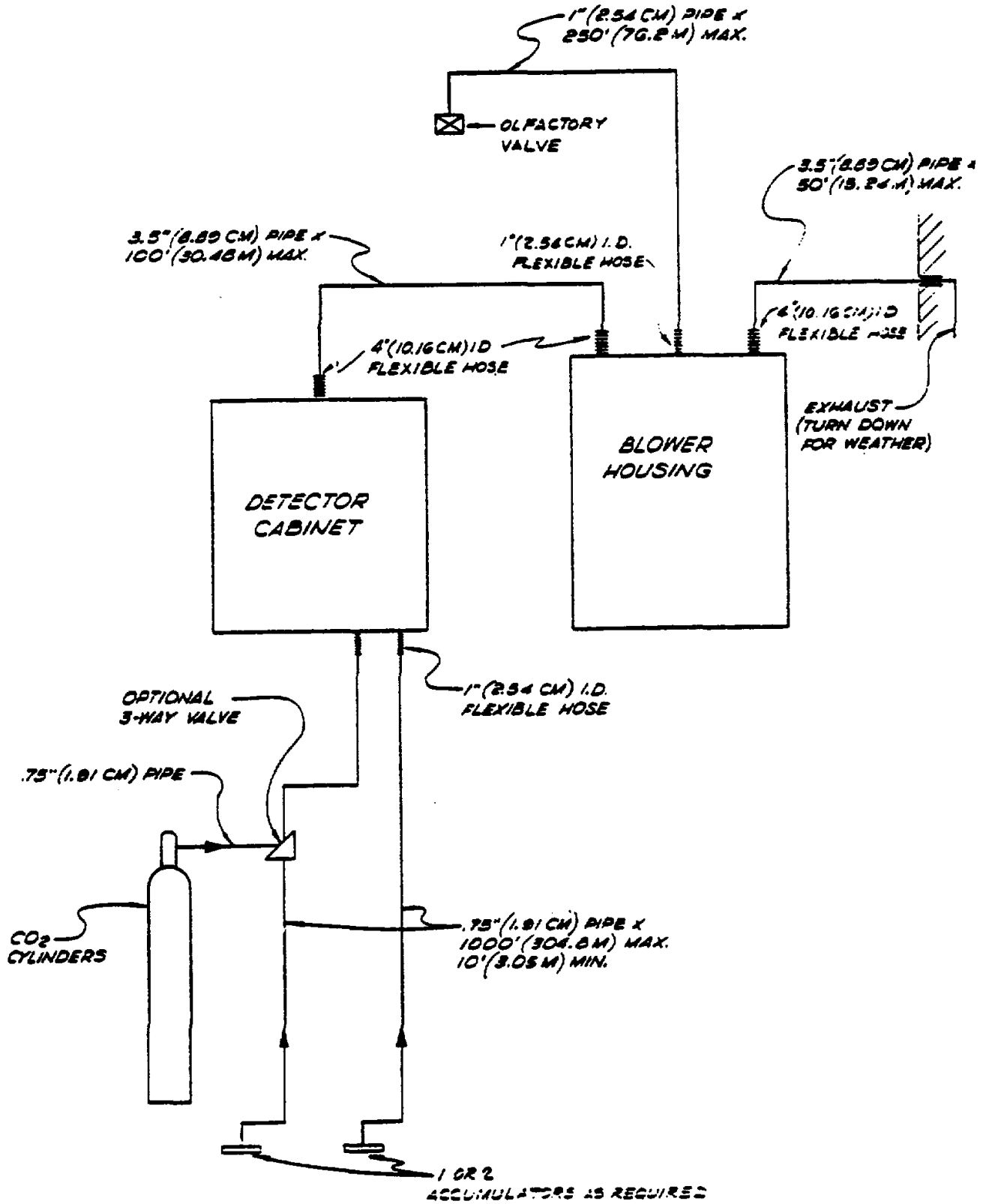


Figure 4-1. Air Flow Diagram, 1-24 Lines, SKC-148140

AIR FLOW DIAGRAM 25 THROUGH 48 ZONES

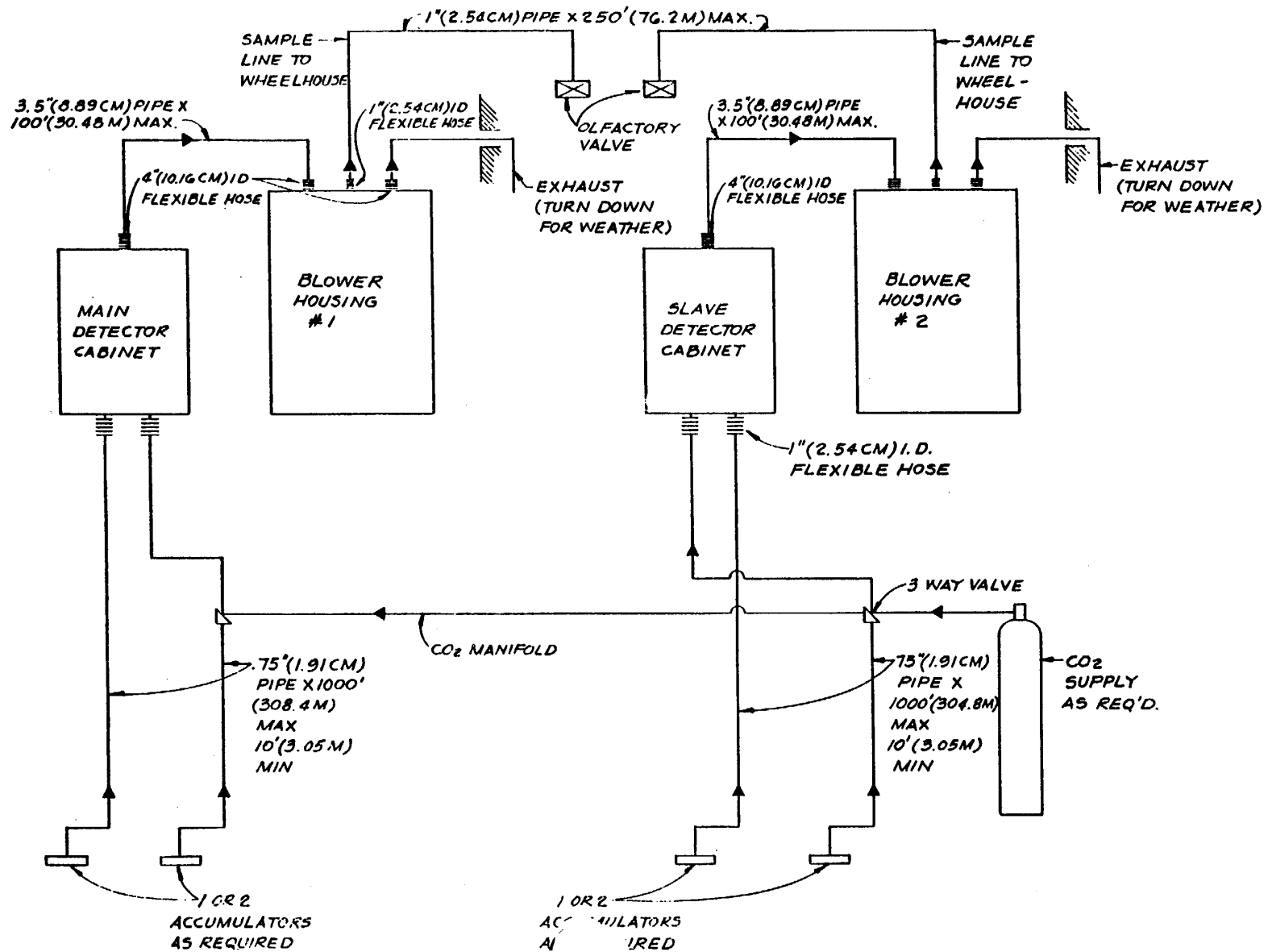


Figure 4-2. Air Flow Diagram; 25-48 Lines; SKC-148138

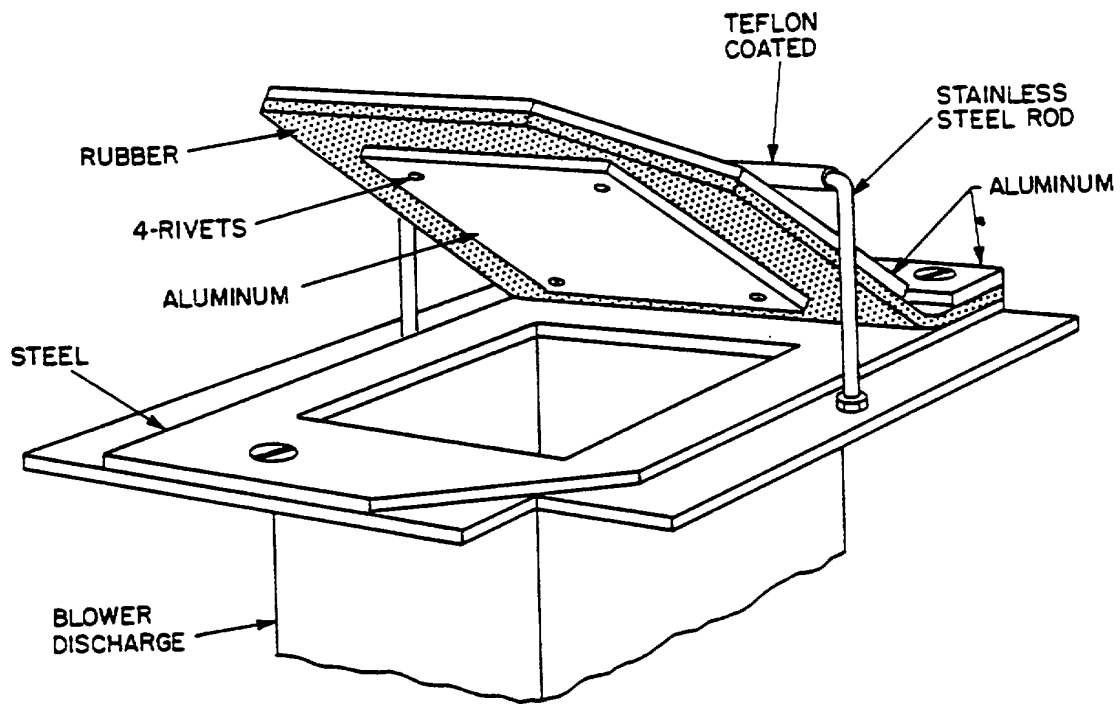


Figure 4-3. Blower Discharge Flapper Valve

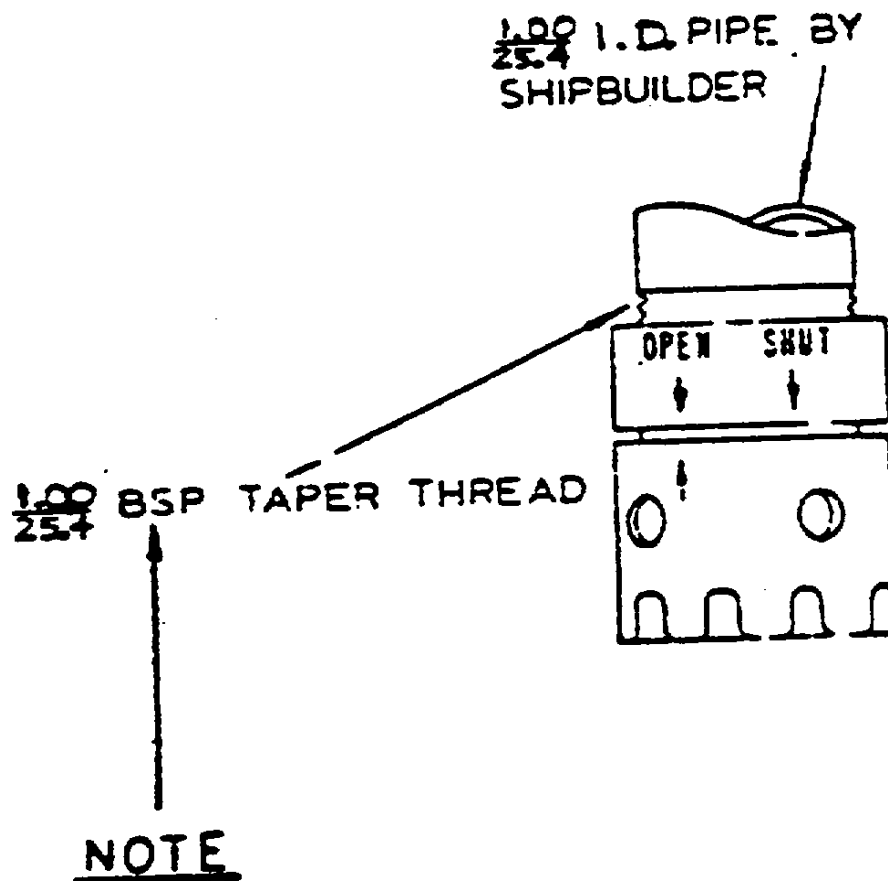


Figure 4-4. Olfactory Valve, 219410

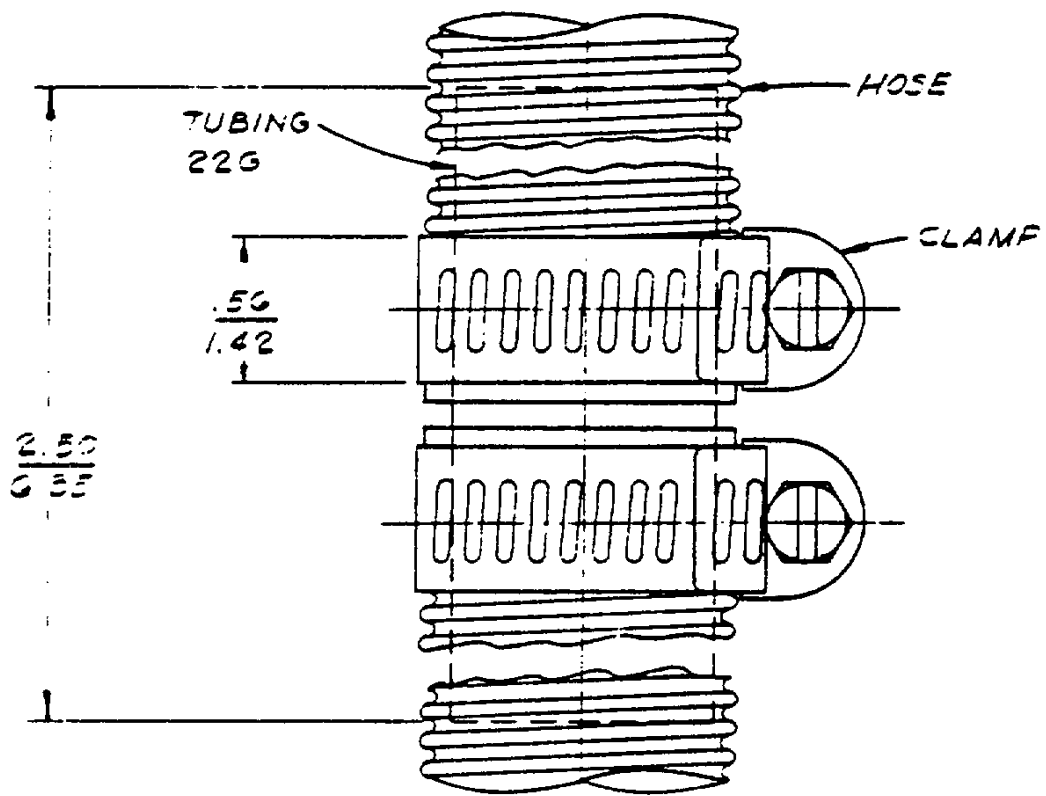


Figure 4-5. Typical Hose Coupling, SKC-148132

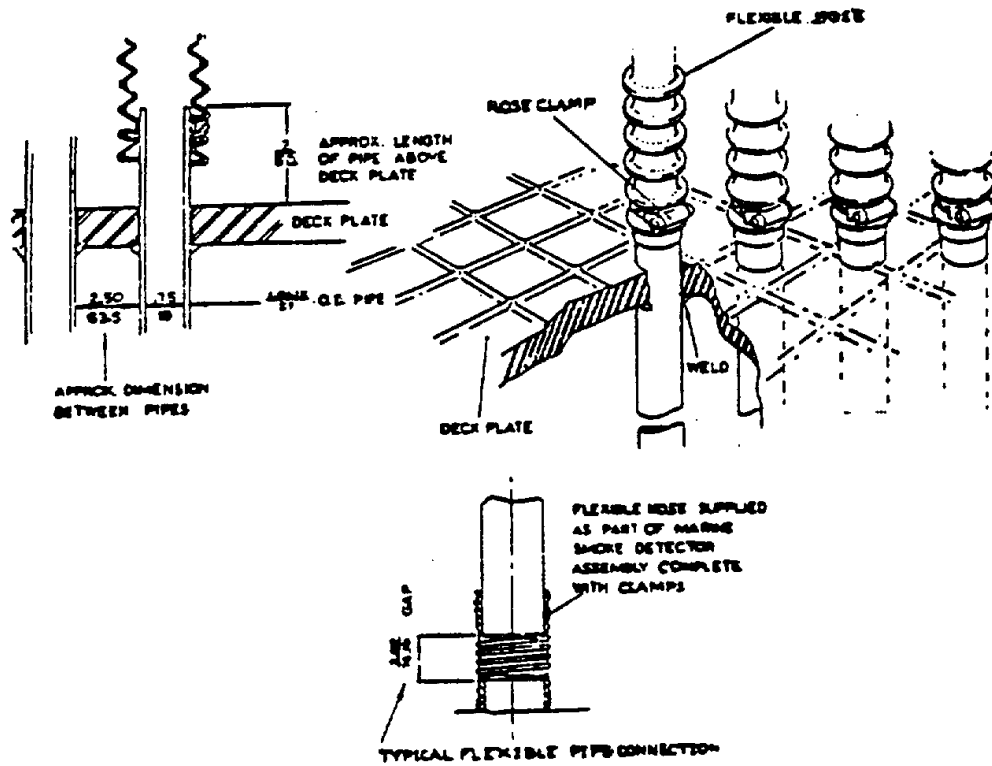


Figure 4-6. Flexible Hose Connections, SKB-148126

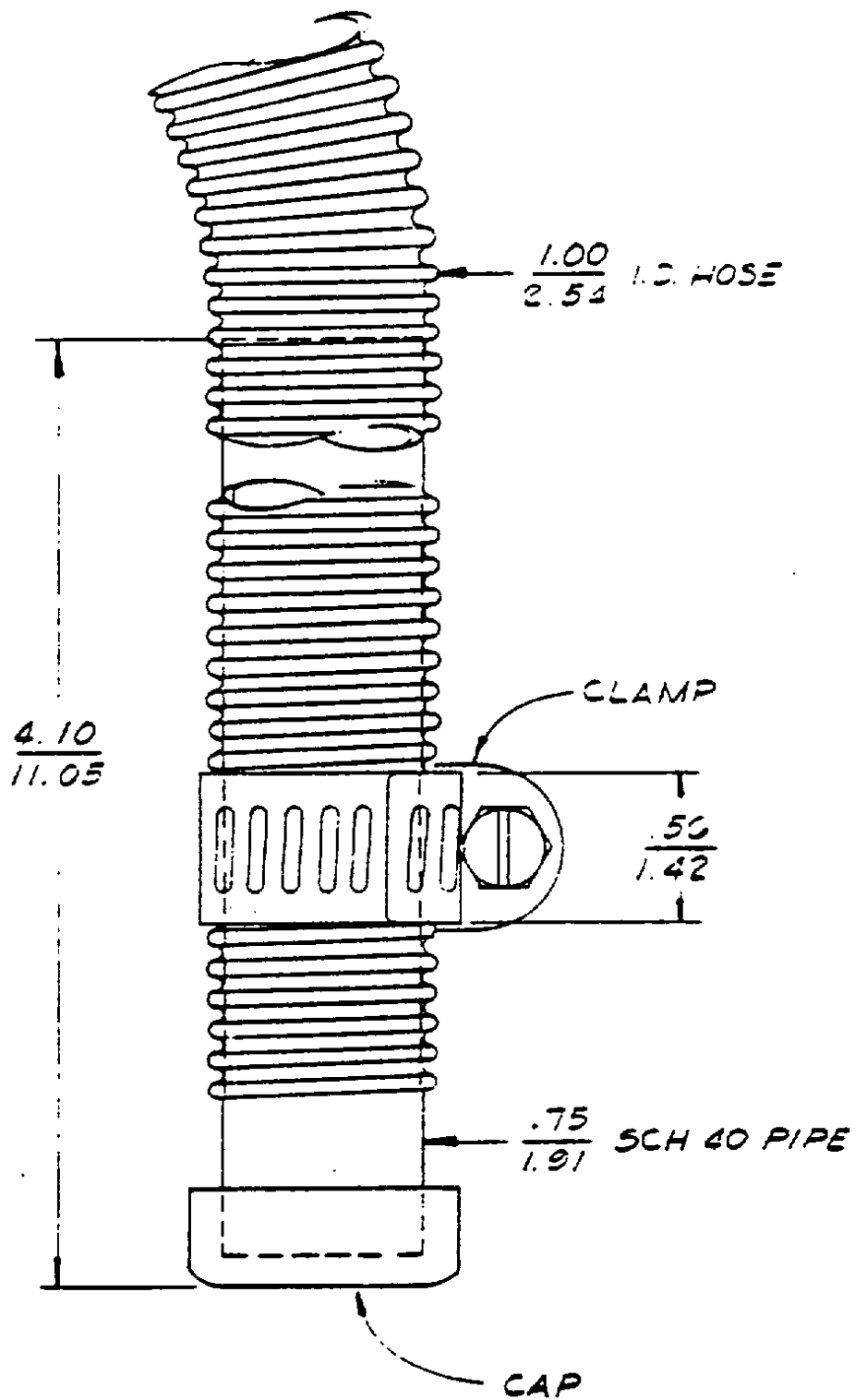


Figure 4-7. Hose Plug for Unused Line (by others), SKC-148128

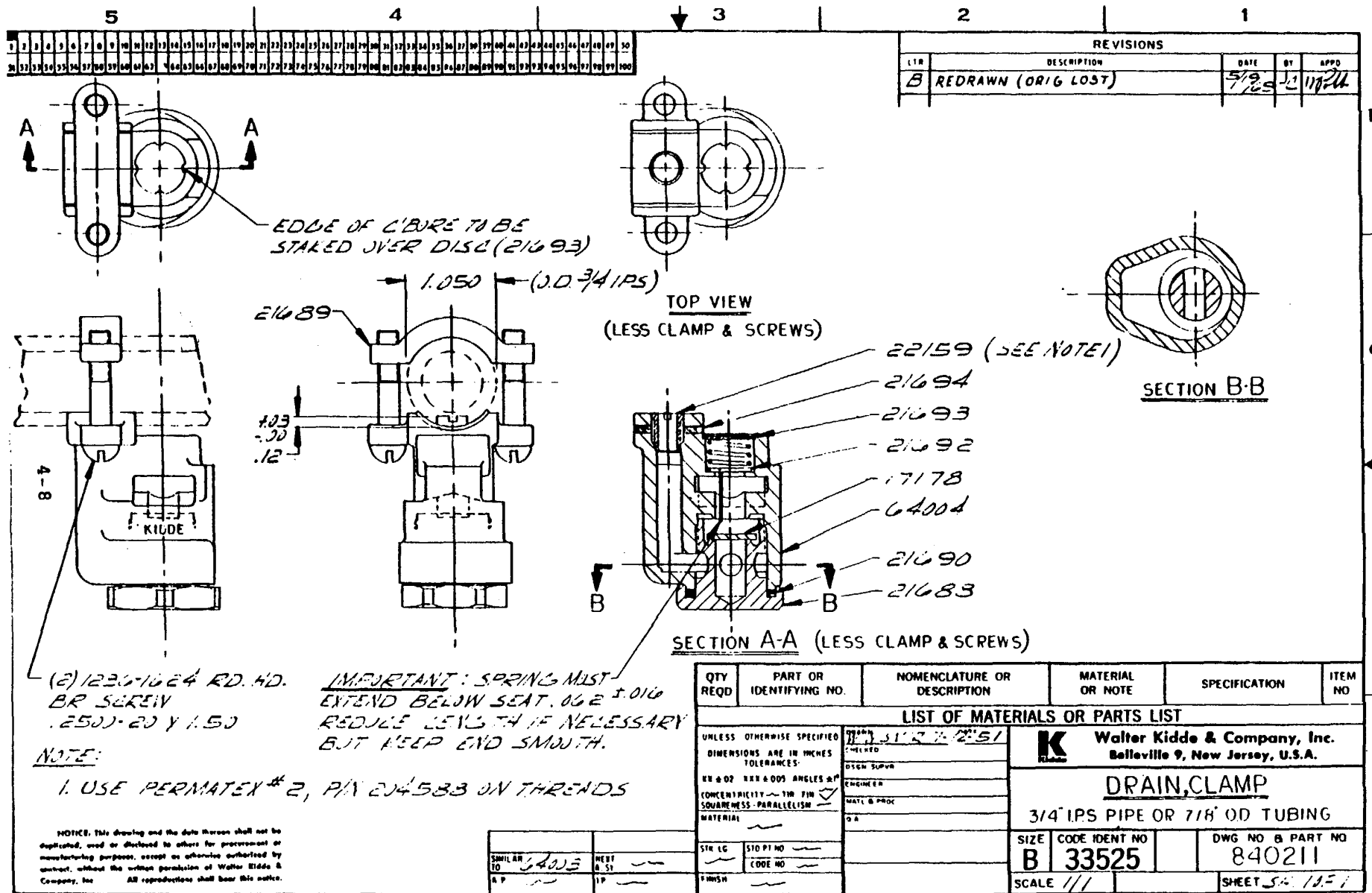


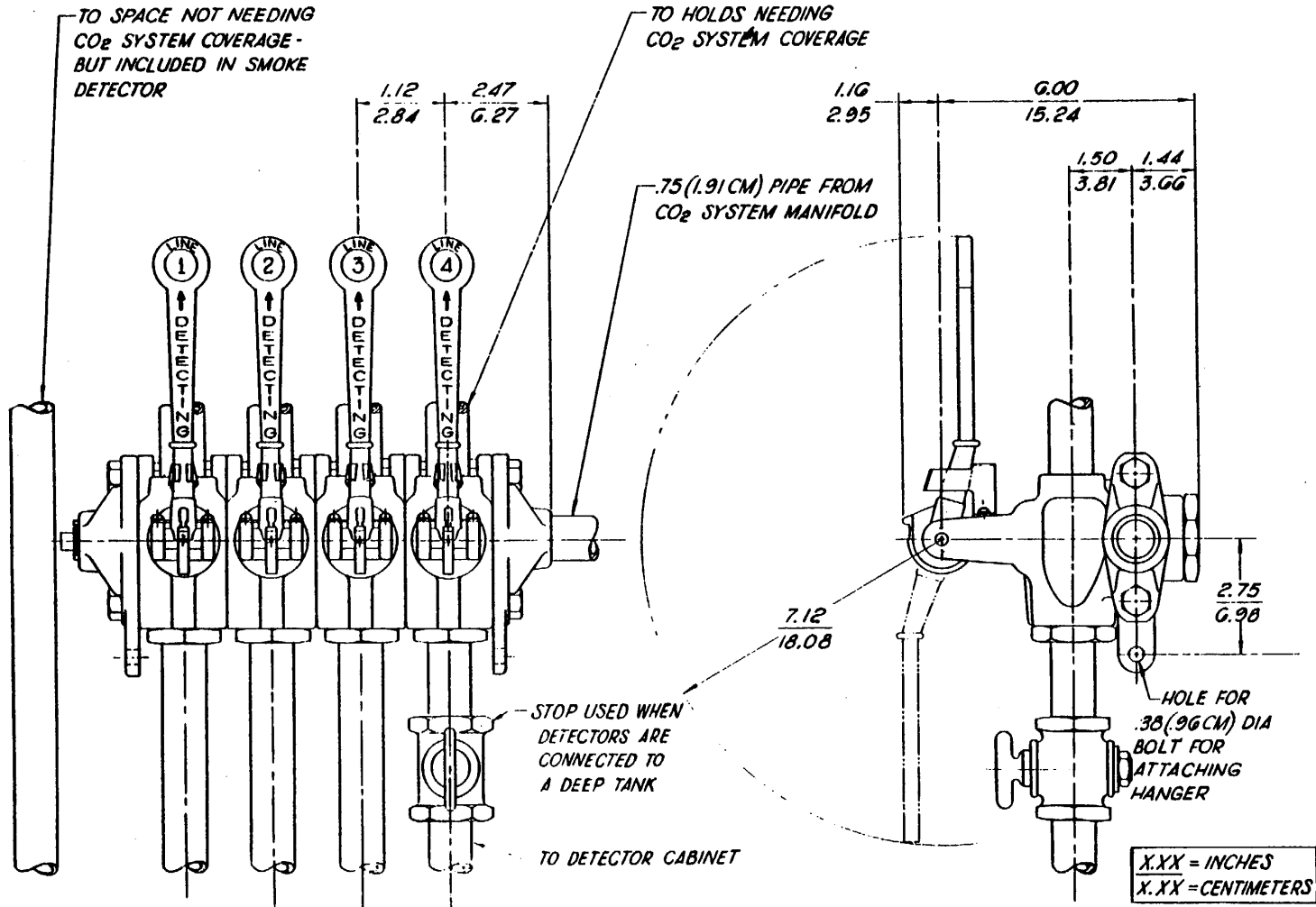
Figure 4-8. Drain Valve, 840211

- 4.11 The olfactory valve has a shut-off control to regulate the amount of air being discharged into the wheelhouse (Figure 4-4).
- 4.12 All piping connections to the detection cabinet and suction blower housing must be made with flexible hose couplings as shown in Figures 4-5 and 4-6.
- 4.13 Where detection system piping penetrates decks and bulkheads, they must be welded as shown in Figure 4-6.
- 4.14 Unused hose inlets to the detecting cabinet must be plugged as shown in Figure 4-7.
- 4.15 Under some conditions of operation, warm, moist air may be drawn through the CO<sub>2</sub> system piping into colder areas of the ship, forming condensation in the pipeline. If this condition is allowed to persist for a sufficient length of time, the accumulated water could choke off the flow of air.
- 4-16. To prevent the accumulation of water in the lines, automatic condensate drainage valves must be installed on every low point of the CO<sub>2</sub> system piping (see Figure 4-8). These valves permit moisture to drain at a vacuum of approximately one inch or less water column, yet automatically seal off the flow of CO<sub>2</sub> at the time the system is discharged.
- 4.17 Because the suction blower maintains a vacuum of six inches or greater water column, an automatic condensate drain switch has been provided in the cabinet to momentarily stop the blower at regular intervals twice every 24 hours for 45 seconds each time).
- 4.18 Every line used for the CO<sub>2</sub> extinguishment system must have a 3-way valve installed (see Figure 4-9).
- 4.19 All lines connected to a deep tank must have a stop installed between the 3-way valve and the detector cabinet (see Figure 4-9) to permit isolation when liquid is carried in the tank.
- 4.20 When a space does not require CO<sub>2</sub> system coverage, the piping may be run direct from the accumulators to the detector cabinet (see Figure 4-9).
- 4.21 Two types of smoke accumulators may be used:
  - a. Regular flush type (No. 63339)
  - b. Weldable type (No. 964008) with back and side outlets



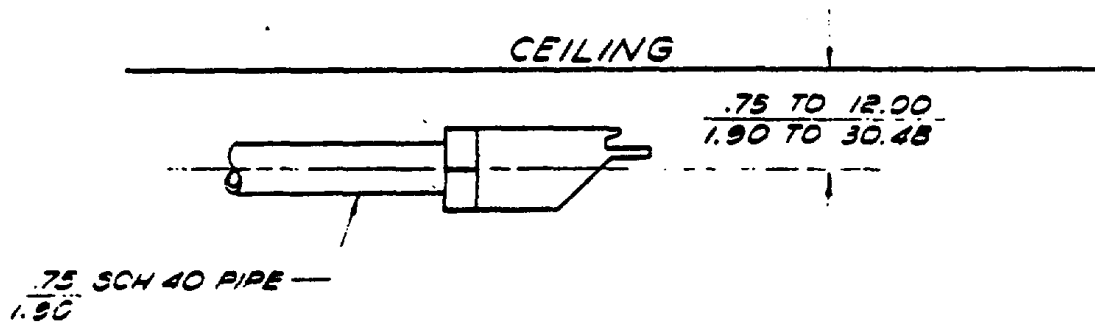
- 4.22 Figure 4-10 shows maximum and minimum spacings between these accumulators and the vessel structure.
- 4.23 Either one or two accumulators may be connected to a single 3/4" pipeline.
- 4.24 The coverage of a single accumulator is a circle of 40 ft. radius.
- 4.25 If a single space is larger than that which may be covered by two accumulators, one or more additional lines must be used.
- 4.26 In case of very small spaces, (less than 5,000 cu. ft. (141.58m<sup>3</sup>), a maximum of 3 accumulators may be used on a single detection zone.
- 4.27 There is no limitation on the height of the protected space.

### 3-WAY VALVE MANIFOLD



SKC148134

Figure 4-9. 3-Way Valve Manifold, SKC-148134



SMOKE ACCUMULATOR WITH BACK AND SIDE OUTLETS (DWG NO. 964008)

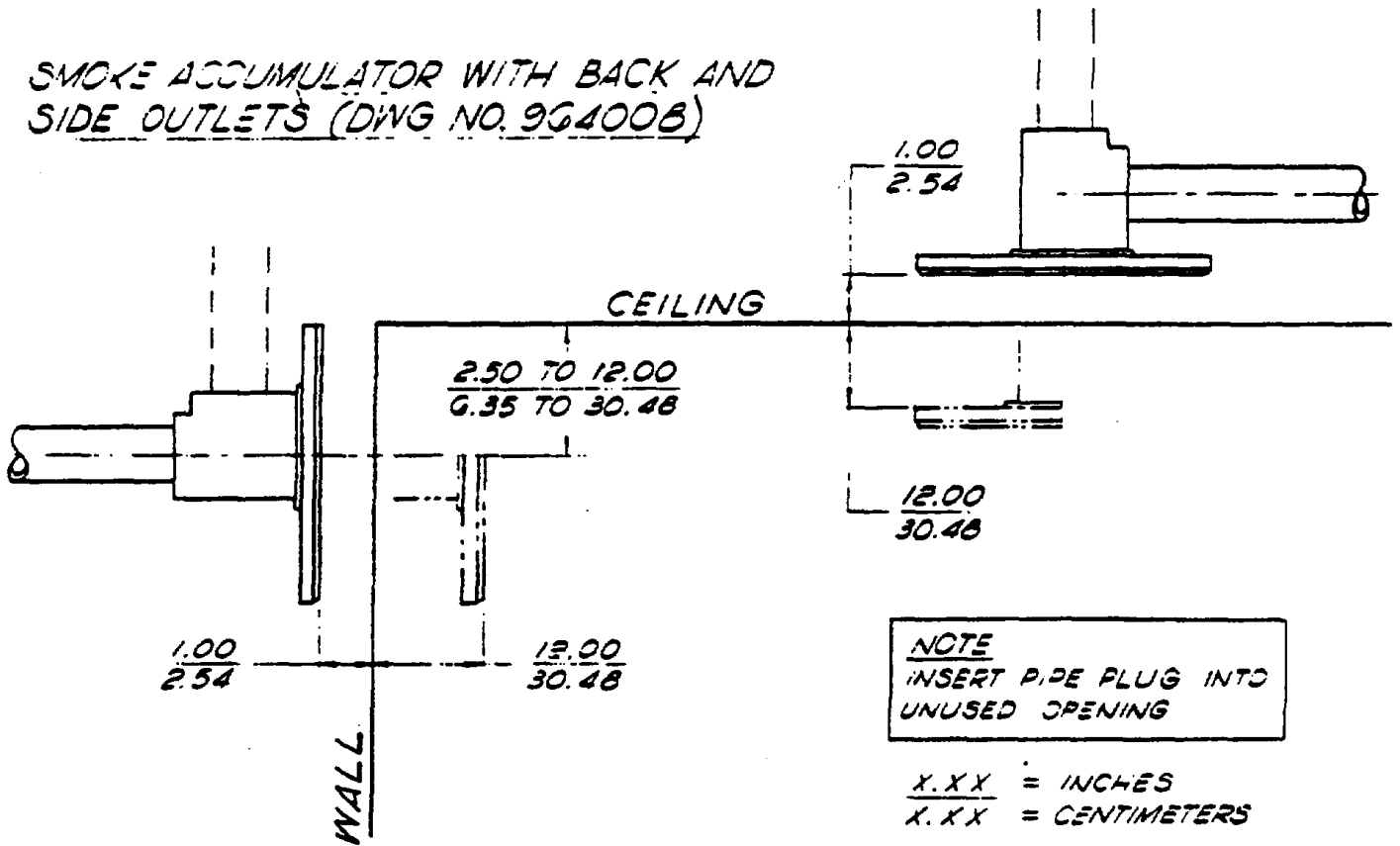
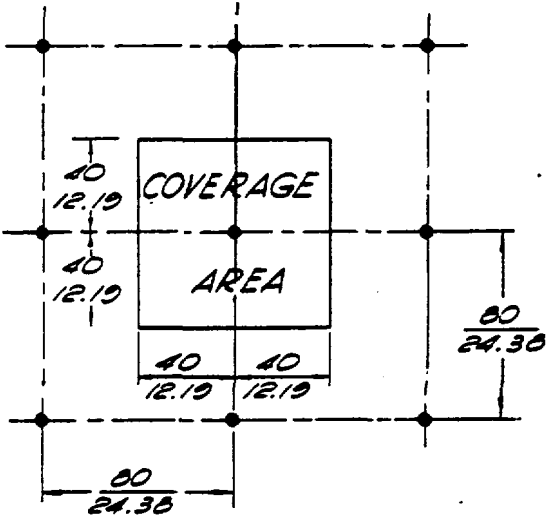


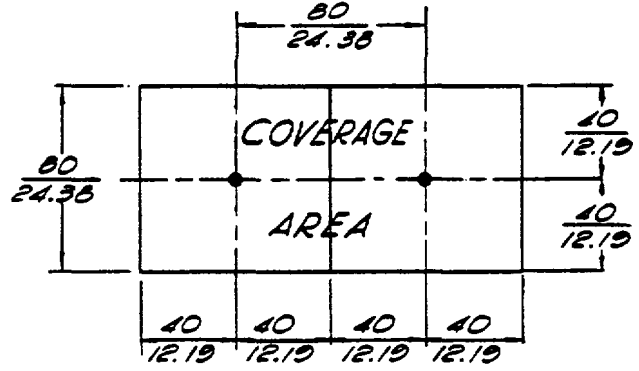
Figure 4-10. Smoke Accumulator Locations, SKC-148137

1. IN CASE OF VERY SMALL SPACES LESS THAN 5000 FT.<sup>3</sup> (141.58M<sup>3</sup>), A MAXIMUM OF 3 ACCUMULATORS MAY BE USED ON A SINGLE DETECTION ZONE.
2. MAXIMUM SPACING IS 80 FT. (24.38M) ON CENTERS AND 40 FT. (12.19M) FROM SIDEWALLS.

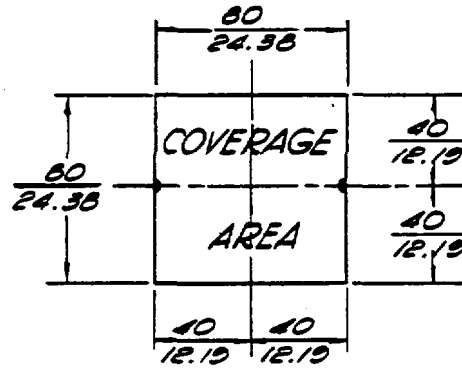
CENTER MOUNTING-CEILING



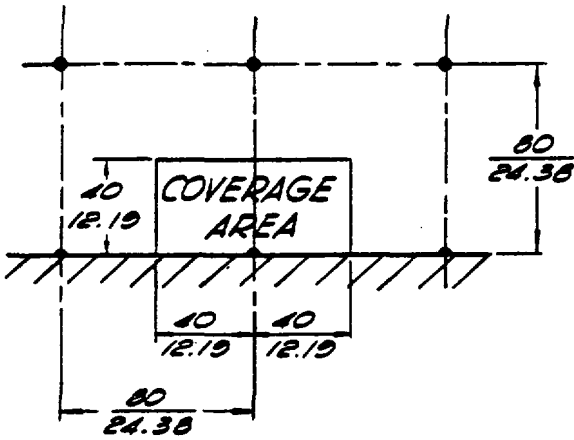
ARRANGEMENT FOR MAX 12,800 FT.<sup>2</sup> (1189.16M<sup>2</sup>) AREA



ARRANGEMENT FOR MAX 6,400 FT.<sup>2</sup> (594.58 M<sup>2</sup>) AREA



SIDEWALL MOUNTING



XX = FEET  
XX.XX = METERS

Figure 4-11. Smoke Accumulator Arrangements

## SECTION 5

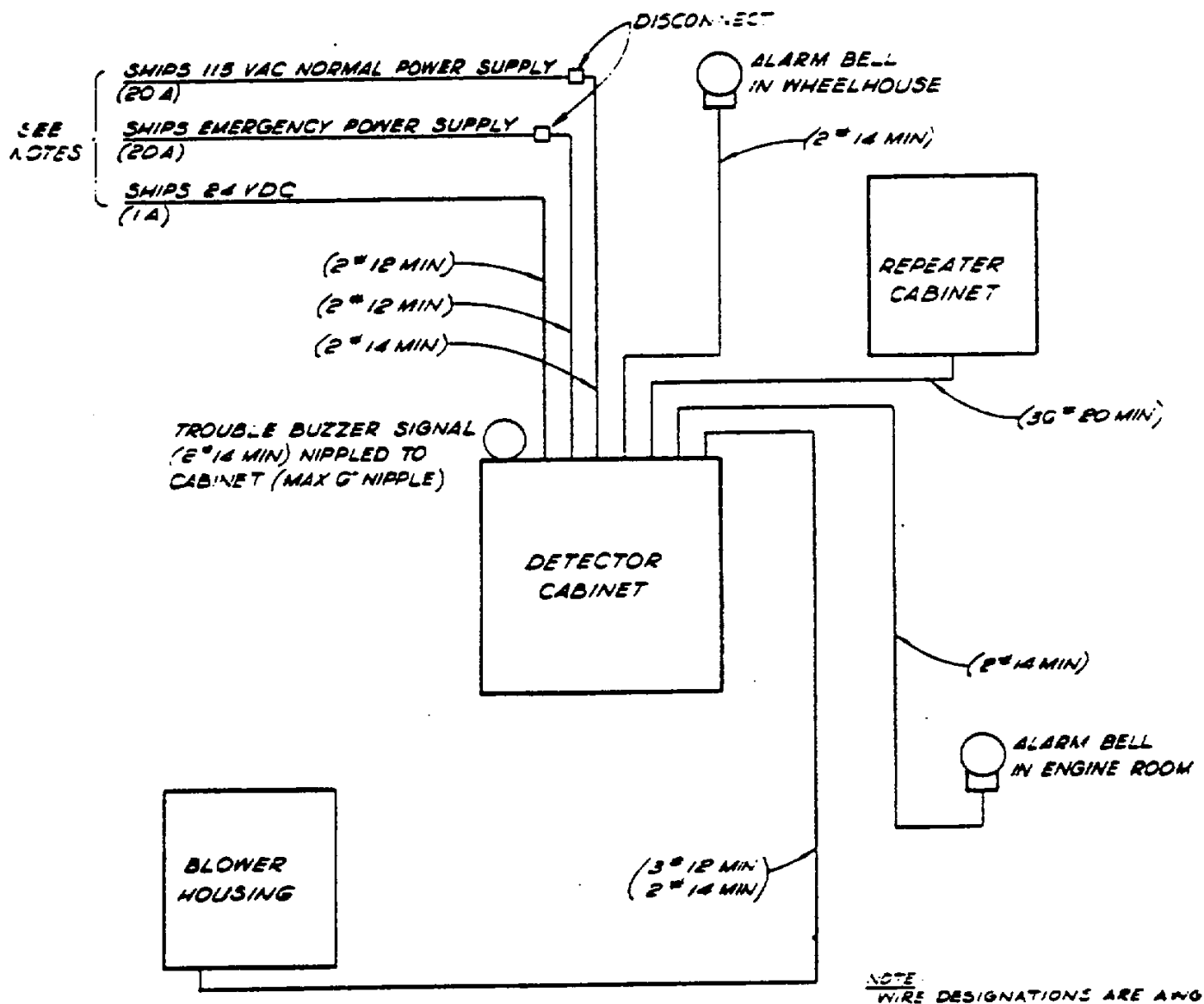
### ELECTRICAL INSTALLATION

- 5.1 **CAUTION:** This smoke detecting system is not a test instrument. All wiring must be tested for continuity, shorts, and freedom from grounds prior to making any connections to any part of the smoke detection system.
- 5.2 Removal of fuses is not sufficient isolation for any testing or meggering of lines.
- 5.3 Minimum insulation from ground of all external conductors taken together must be more than 50,000 ohms.
- 5.4 All wire sizes are specified AWG (American Wire Gauge).
- 5.5 Minimum working voltage of conductors 18 AWG or larger must be 600 volts.
- 5.6 Minimum working voltage of conductors 20 AWG or larger must be 300 volts.
- 5.7 Conductors of the smoke detecting system must not be run in conduits, sheaths, or wireways containing wiring from any other ship's system.
- 5.8 Conductors of the smoke detecting system must not be run in conduits, sheaths, or wireways containing wiring from the system's buzzer or bell.
- 5.9 Electrical layout for a system of 1 through 24 lines is to be in accordance with Figure 5-1, "Electrical Flow Diagram, 1 to 24 Lines".
- 5.10 Electrical layout for a system of 25 through 48 lines is to be in accordance with Figure 5-2, "Electrical Flow Diagram, 25 to 48 Lines".
- 5.11 Minimum wire sizes and groupings as shown on Figures 5-1 and 5-2 must be observed.
- 5.12 Field wiring connections are shown as follows:
- a. Figure 5-7, Field Wiring Diagram, 24 Line Capacity
  - b. Figure 5-8, Field Wiring Diagram, 48 Line Capacity

- 5.13 The trouble buzzer (Figure 5-5) is field installed.
- 5.14 Connect the trouble buzzer directly to the detector cabinet using a conduit bushing or nipple not exceeding six inches (6") in length.
- 5.15 The trouble buzzer is wired (minimum 18 AWG) to TB7-9 and TB7-10. (Polarity need not be observed) (see Figure 5-8).
- 5.16 A common signal device buzzer (Figure 5-5) is field installed at the repeater cabinet, either 24 or 48 line size.
- 5.17 The common signal device may be installed inside the cabinet by bolting to the inside panel or outside by using a conduit bushing or nipple not exceeding six inches (6") in length.
- 5.18 The common signal device is wired (minimum 18 AWG) to TB3-1 and TB3-2. (Polarity need not be observed).
- 5.19 One 8" smoke bell (Figure 5-6) must be installed in the engine room.
- 5.20 One 8" smoke bell (Figure 5-6) must be installed in the wheelhouse.
- 5.21 Figures 5-7 and 5-8 are the point-to-point field connection diagrams for a 24-line (maximum) system showing the actual terminal block designations of the various wiring connections.
- 5.22 Figures 5-2 is the electrical flow diagram for a 48-line (maximum) system.
- 5.23 After mechanical and electrical installation is completed, the blower cabinet must be adjusted (see Figure 5-4).
- 5.24 All CO<sub>2</sub> 3-way valves must be in the detecting position.
- 5.25 Insert a tube in the small hole in the center of the bottom of the blower box and attach it to a water manometer or inclined draft gauge capable of measuring up to two inches of water.
- 5.26 Operate Blower M1 and adjust the pressure in the blower cabinet to 1-3/4 ± 1/4 inches of water by turning the "adjust" screw (Figure 5-4) and lock with the lock screw on top of the cabinet.

- 5.27 The adjust screw operates the baffle, opening (increasing air flow) or closing (decreasing air flow) it within the cabinet. Full rotation of the baffle is 900 (Figure 5-4).
- 5.28 Operate Blower M2 to insure that cabinet pressure is the same (within  $\pm 1/4$  inches of water) with both blowers operating.
- 5.29 Adjust the second blower in the same way.
- 5.30 **CAUTION:** If blowers are to be used to "vacuum" out the system, the smoke detecting modules should be removed and the holes plugged. This will prevent residual dust from the clean-up operation from damaging the modules. Hard to remove debris should be removed from the system by attaching an air supply to the 3-way valve and blowing it out from each direction.

ELECTRICAL FLOW DIAGRAM  
1 THROUGH 24 ZONES



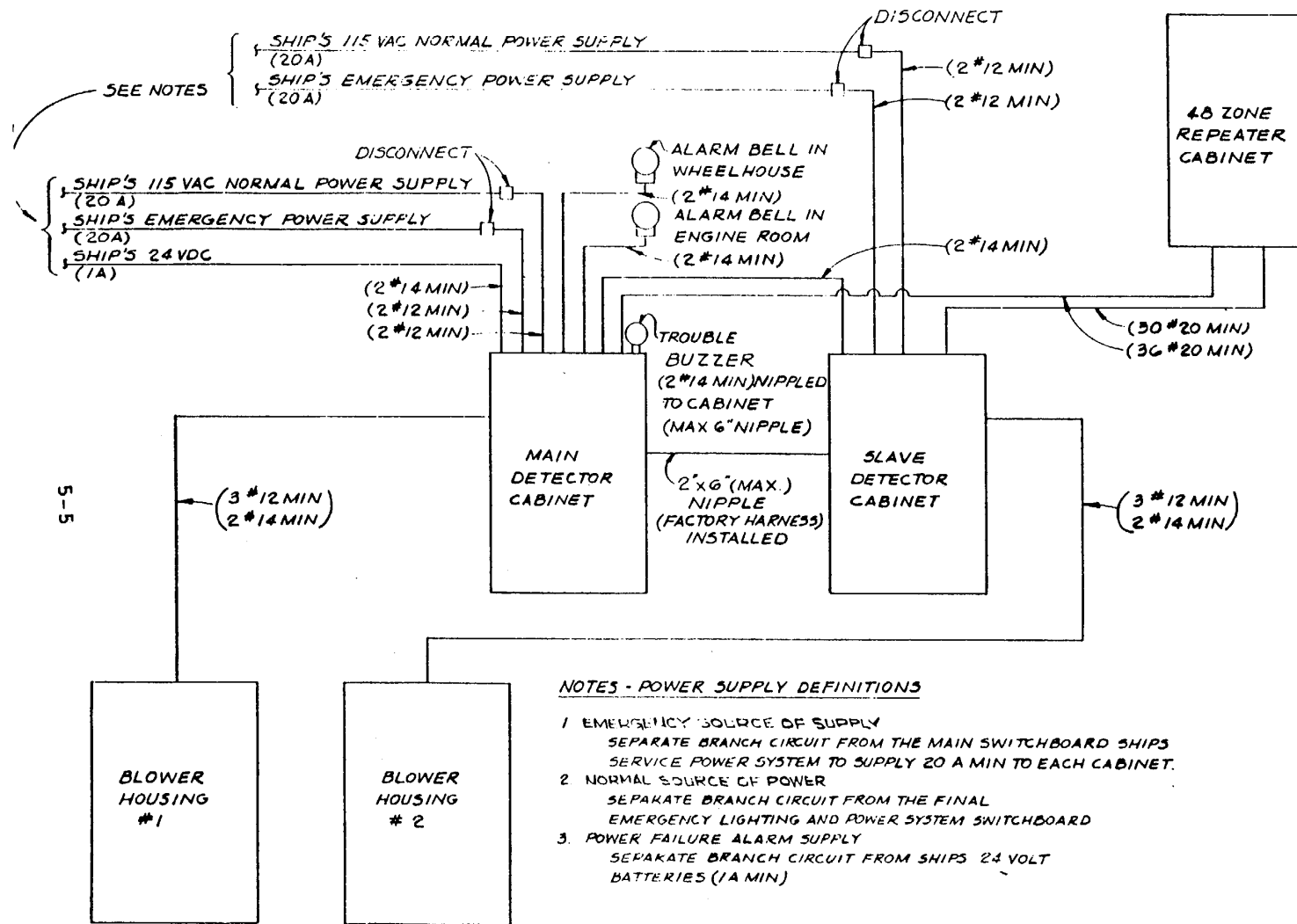
NOTES - POWER SUPPLY DEFINITIONS

1. EMERGENCY SOURCE SUPPLY  
SEPARATE BRANCH CIRCUIT (20 A MIN) FROM THE MAIN SWITCHBOARD SHIPS SERVICE POWER SYSTEM
2. NORMAL SOURCE OF SUPPLY  
SEPARATE BRANCH CIRCUIT (20 A MIN) FROM THE FINAL EMERGENCY LIGHTING AND POWER SYSTEM SWITCHBOARD
3. POWER FAILURE ALARM SUPPLY  
SEPARATE BRANCH CIRCUIT FROM SHIPS 24 VOLT BATTERIES (1 A MIN)

Figure 5-1. Electrical Flow Diagram, 1-24 Line, SKC-148019



ELECTRICAL FLOW DIAGRAM 25 THROUGH 48 ZONES



148127

Figure 5-2. Electrical Flow Diagram, 25 Through 49 Line, SKC-148127

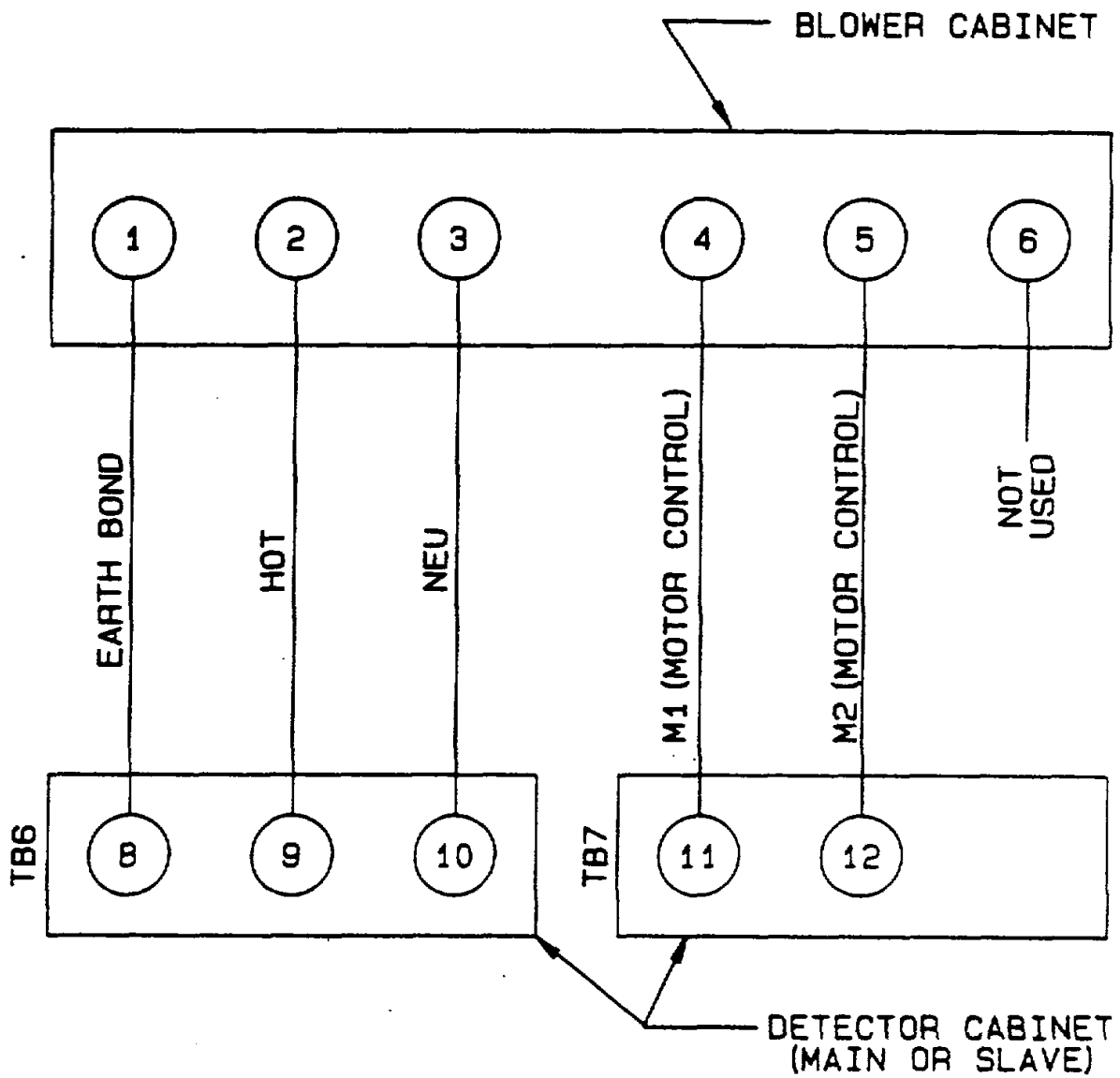


Figure 5-3. Field Wiring, Blower Housing, SKC-148144

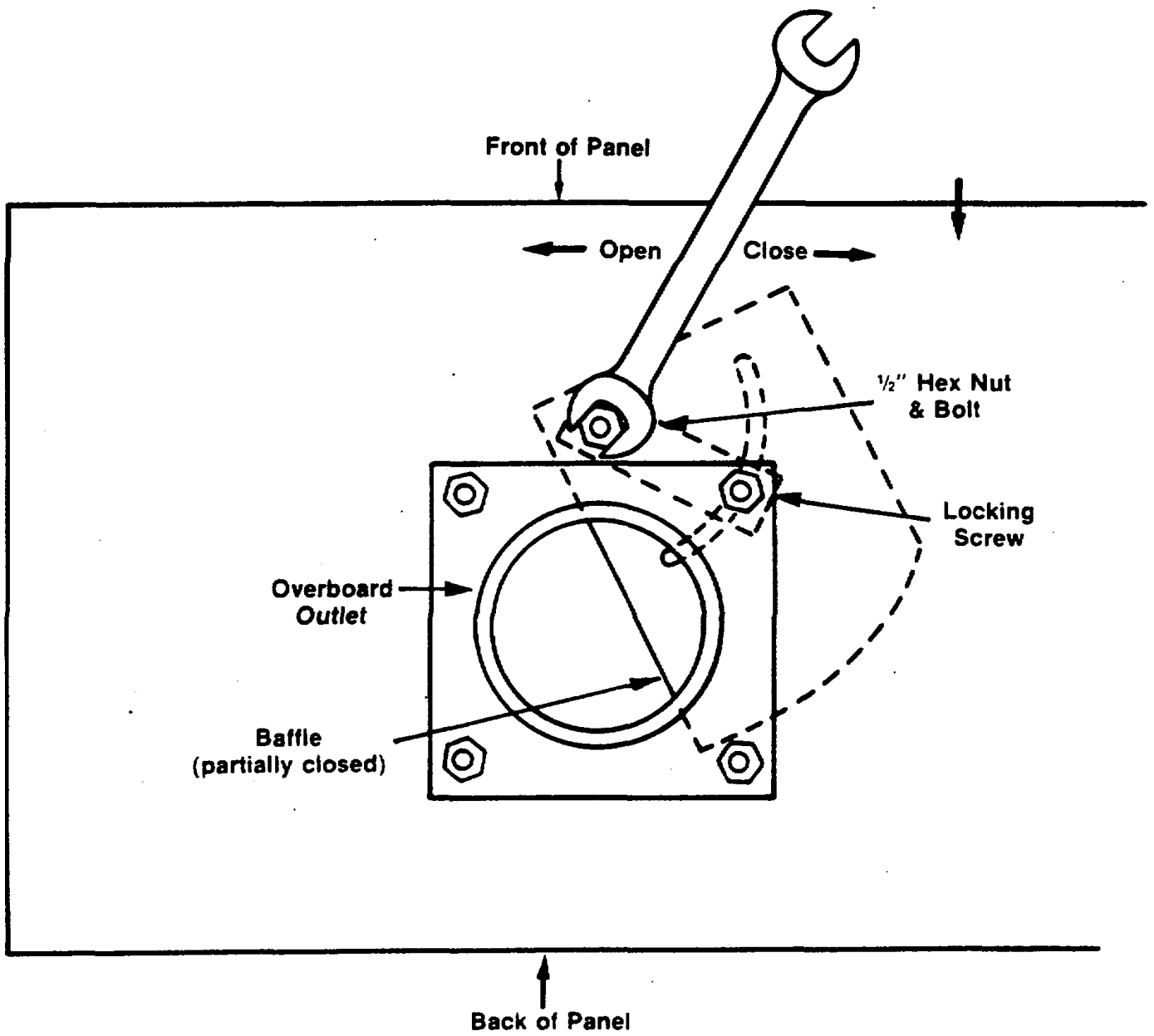


Figure 5-4. Blower Box Adjusting Baffle

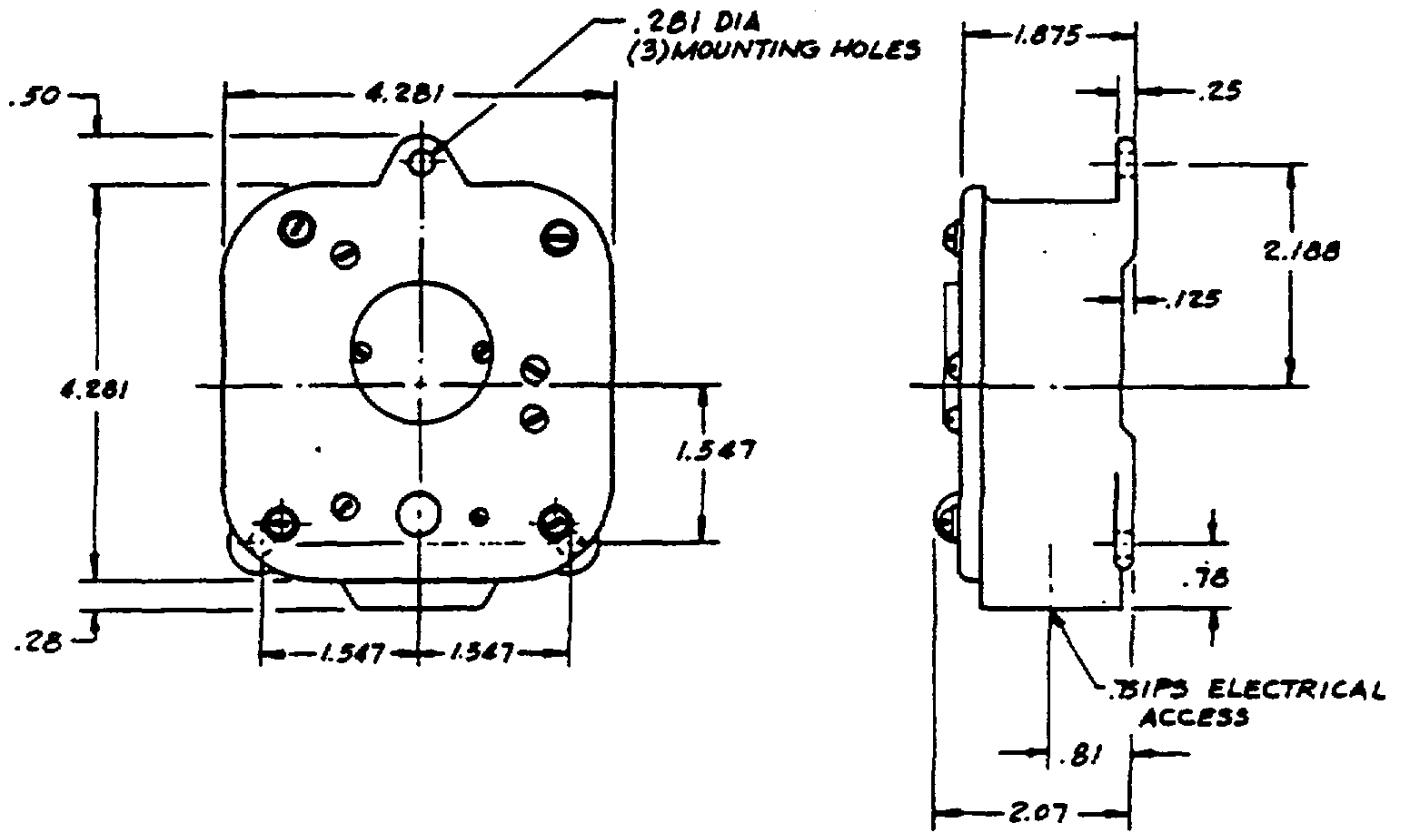


Figure 5-5. Buzzer, 262278

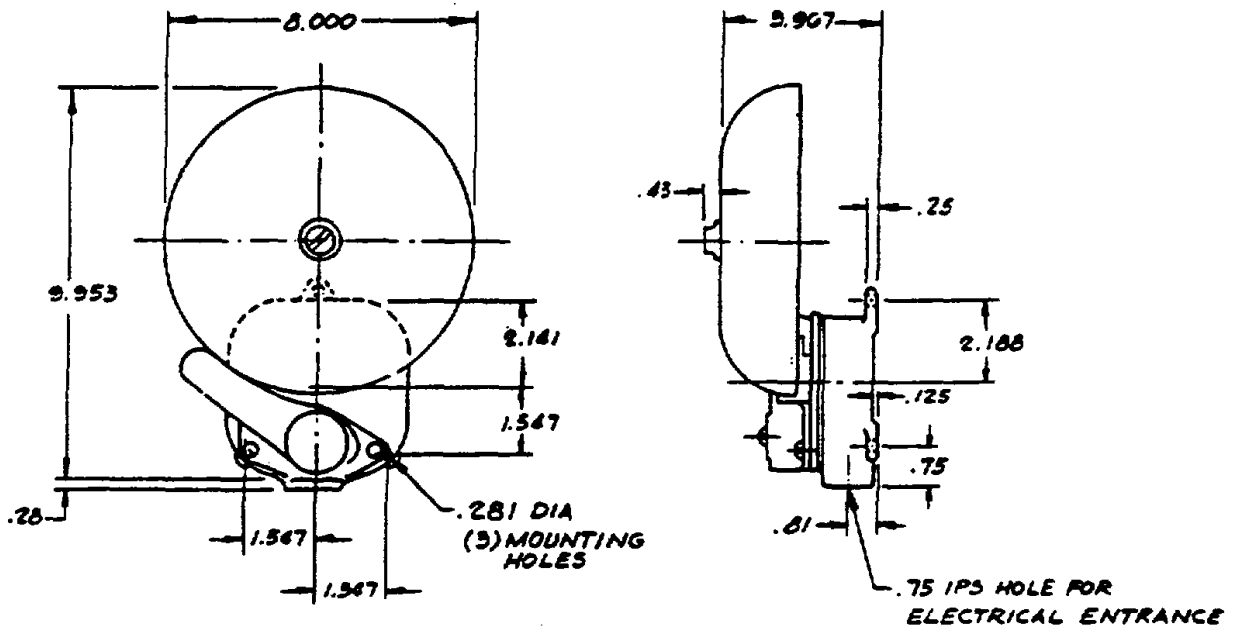


Figure 5-6. 8-Inch Bell, 262277

## SECTION 6

### OPERATION OF SYSTEM

- 6.1 Each detecting line has its own individual observation window through which:
  - a. Normal movement of air through the line may be detected by observing the flutter of a target.
  - b. Smoke may be visually detected if it enters.
- 6.2 In the event smoke is detected by any detection line module, the following occurs:
  - a. The line "SMOKE" alarm LED (red) on the front of that individual module lights.
  - b. The common "REMOTE SMOKE LAMP (red) on the main panel front lights.
  - c. The corresponding line indicator lamp (red) lights on the remote repeater cabinet.
  - d. Smoke alarm bells in both wheelhouse and engine room are energized.
- 6.3 Verification of the presence of smoke may be made by:
  - a. Visual observation through the observation window in the individual module.
  - b. Opening the olfactory valve in the wheelhouse to smell the air being discharged from the blower housing.
- 6.4 The smoke alarm bells in both the wheelhouse and engine room may be silenced by operating the "ALARM SILENCE" switch on the detection cabinet control section.
- 6.5 The common signal device at the repeater cabinet is silenced by the "SILENCE" switch on the repeater cabinet front.
- 6.6 Once the smoke has cleared from the detection module, the system may be reset by operating the "RESET" switch on the panel front.
- 6.7 All smoke alarm signals will remain latched until reset in this manner.

- 6.8 When the panel successfully resets, ringback will cause the trouble buzzers on the detector cabinet and the common signal device on the repeater cabinet to sound until the "SILENCE" switches are returned to their "NORMAL" position.
- 6.9 Off-normal position of each "SILENCE" switch is visually indicated by an amber "ALARM SILENCE" lamp which is illuminated by the operation of the "SILENCE" switch.
- 6.10 Each detector module continually supervises:
- a. Its own light source.
  - b. The presence of lamp operating power.
  - c. The continuity of wiring to fire lamp at the remote repeater cabinet (when used).
  - d. The integrity of the lamp filament at the repeater cabinet (when used).
- 6.11 Failure of any one of the supervised items results in illumination of the trouble LED (amber) on the individual module front.
- 6.12 Origination of trouble from any individual module causes the common "TROUBLE" lamp (amber) to illuminate and the trouble buzzer and the common signal device to operate.
- 6.13 The trouble buzzer may be silenced by operating the "TROUBLE SILENCE" switch on the panel front.
- 6.14 At the repeater cabinet, the common trouble is illuminated and the common signal device operates.
- 6.15 The common signal device at the repeater cabinet is silenced by operating the "TROUBLE SILENCE" switch.
- 6.16 Off-normal position of the "TROUBLE SILENCE" switch is indicated by an amber "TROUBLE SILENCE" lamp.
- 6.17 Trouble signals are non-latching. When the condition causing the trouble is removed, the "TROUBLE" lamp on the module front will go out.
- 6.18 Following the elimination of a trouble output from the module, the common "TROUBLE" lamp will be extinguished.

- 6.19 If the trouble buzzer and common signal device have been silenced, it will resound with elimination of the trouble condition until the "TROUBLE SILENCE" switch is returned to its normal position.
- 6.20 Returning "TROUBLE SILENCE" switch to its normal position will extinguish the "TROUBLE SILENCE" lamp.
- 6.21 All trouble indications, whether on an individual module or the common panel are cancelled when a smoke alarm develops in that line (alarm overrides trouble).

## SECTION 7

### CIRCUIT DESCRIPTIONS

- 7.1 The electronics drawer is located at the top of the detector cabinet and contains:
- a. Two redundant power supplies
  - b. All system fuses
  - c. Common system indicator lamps
  - d. System controls
- 7.2 Under normal conditions it is not necessary to open the electronics cabinet. It is secured by four screws and should not be opened by anyone except qualified maintenance personnel.
- 7.3 The front panel of the electronics drawer has the indicators listed in Table 7-1.
- 7.4 The front panel of the electronics drawer has the controls listed in Table 7-2.
- 7.5 The electronics drawer contains the fuses listed in Table 7-3.
- 7.6 The electronics drawer contains the relays listed in Table 7-4.
- 7.7 Figure 7-1 shows the electronics drawer fully open and the various components mentioned.
- 7.8 Smoke Alarm Silence Switch

The common smoke alarm will persist for approximately five minutes beyond the time that the last vestiges of smoke are cleared from the individual line detection modules (assuming reset is operated). Common alarm is indicated both by the illumination of the common alarm lamp and energizing of the smoke alarm bells in the engine room and the wheelhouse. The smoke alarm silence switch will silence the audible signals and illuminate the smoke alarm silenced lamp located just above it.

Once the smoke alarm condition is eliminated and the panel reset, the trouble buzzer at the main cabinet and the common signal device at the repeater cabinet will sound until the smoke alarm silence switches are restored to normal position.



## 7.9 Common Trouble Lamp

The common trouble lamp indicates the existence of a trouble condition either in the line detector modules or in the electronics drawer.

TABLE 7-1

TABLE OF FRONT PANEL INDICATORS

<u>Description</u>	<u>Lamp Color</u>
Power-On Lamp	Green
Common Smoke Alarm Lamp	Red
Smoke Alarm Silenced Lamp	Amber
Common Trouble Lamp	Amber
Common Trouble Silenced Lamp	Amber
Power Failure Alarm Lamp	Blue
Power Failure Alarm Silenced Lamp	Amber
Power Supply No. 1 Failure	Amber LED*
Power Supply No. 2 Failure	Amber LED*
Alarm Bell Trouble	Amber LED*
Main Panel Trouble	Amber LED*
Blower Failure	Amber LED*
Ground Fault	Amber LED*
Timer Disconnected	Amber LED*
Clock High Speed	Amber LED*
Remote Smoke Lamp Failure	Amber LED*
Blower Timer Cycle (Condensate Drain Switch Counter)	Red Digital

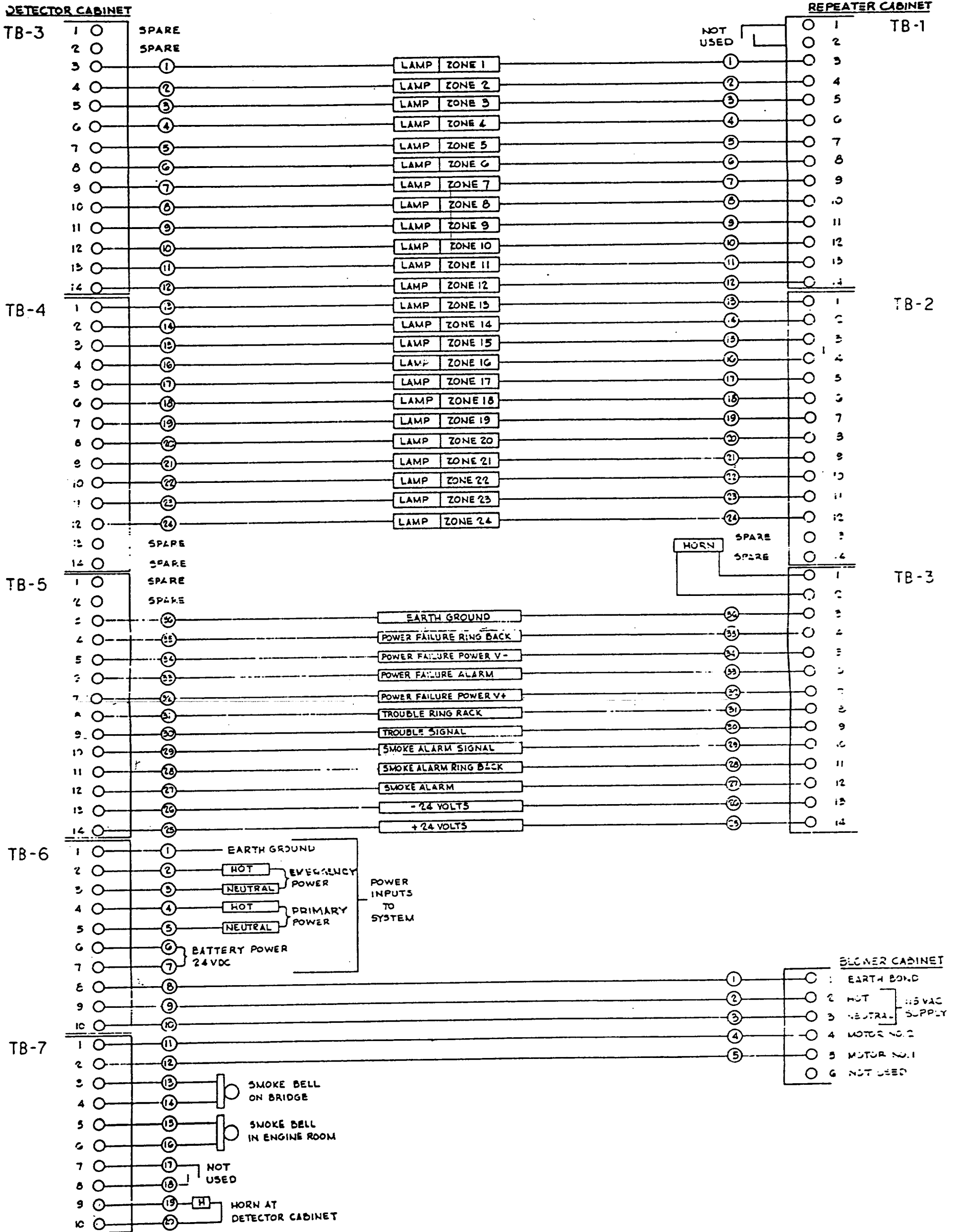
\*Trouble indicators

TABLE 7-2

TABLE OF FRONT PANEL CONTROLS

Day/Night Switch  
Blower Selection Switch  
Alarm Test Switch\*  
Trouble Test Switch\*  
Reset Switch  
Alarm Silence Switch  
Trouble Silence Switch  
Power Failure Alarm Silence Switch

\*Items 3 and 4 are two positions of the same control)



SKC148018

Figure 5-7.



TABLE 7-3

## TABLE OF FUSES

<u>Fuse</u>	<u>Type &amp; Size</u>	<u>Function</u>
F-1	FNM-30	AC High Side Primary Power Line
F-2	FNM-30	AC High Side Stand-By Power Line
F-3	AGC-1	Ship's 24 Volt DC Battery Power Line
F-4	AGC-3	Transformer Primary Power Supply No. 1
F-5	AGC-3	Transformer Primary Power Supply No. 2
F-6	AGC-2.5	AC High Side Suction Blower Motor Starter Contactor Control
F-7	MTA-6	24VDC Output Power Supply No. 1
F-8	MTA-6	24VDC Output Power Supply No. 2
F-9	AGC-1	Bell Circuit No. 1
F-10	AGC-1	Bell Circuit No. 2

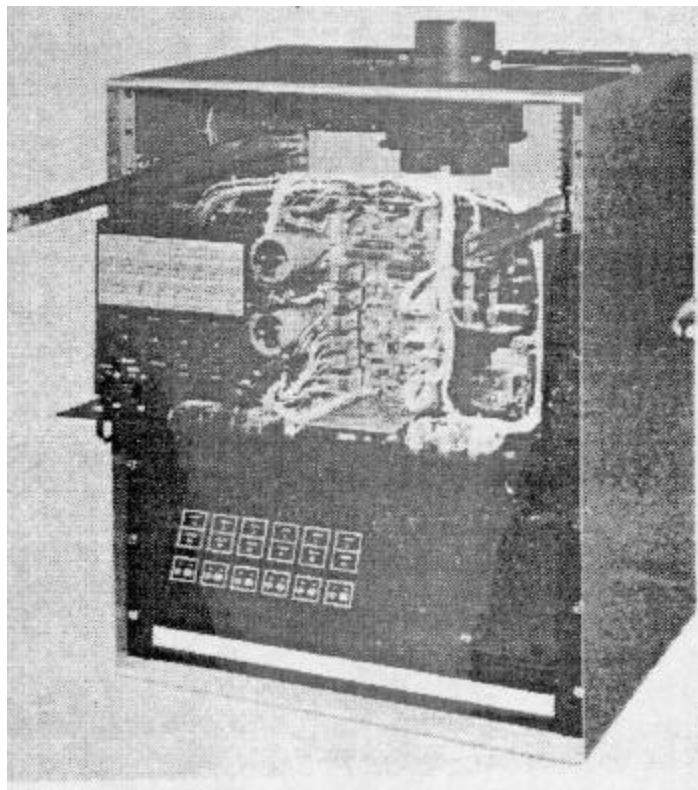
The following is located on the individual circuit card:

F-11	AGC-3	Output 15 volt Power Supply, Condensate Drain Switch Timer
------	-------	---

TABLE 7-4

TABLE OF RELAYS

<u>Relay No.</u>	<u>Function</u>
K-1	AC Power Transfer Relay (switches panel between main, and emergency power)
K-2	Supervisory Output Relay Power Supply No. 1
K-3	Supervisory Output Relay Power Supply No. 2
K-4	Common Trouble Relay
K-5	Common Alarm Relay
K-6	Alarm Silence Relay
K-7	Motor Control Relay (operated by condensate drain timer)
K-8	Power Failure Relay



*Figure 7-1. Detector Cabinet with Electronics Drawer Open*



Trouble condition is indicated by the illumination of the common trouble lamp and the energizing of the trouble buzzer. The trouble buzzer may be silenced by operating the trouble silence switch. Operation of the trouble silence switch illuminates the trouble silence lamp. If the trouble condition is cleared while the trouble silence switch is in the off-normal position, the trouble buzzer will resound until the trouble silence switch is restored to its normal position.

#### 7.10 Blower Selection Switch

To provide the continuous operation availability of the smoke detector for the duration of the voyage, the suction blower assembly is equipped with two identical blower motor assemblies, either one of which operates the system.

The selection of Blower No. 1 or Blower No. 2 is made by means of the blower selecting switch on the smoke detector electronics drawer on the front panel.

In the event the blower failure trouble lamp is illuminated, the blower selecting switch should be set to the other blower.

Some ships customarily operate both blowers on an alternating basis with Blower No. 1 operated on odd days and Blower No. 2 operated on even days.

#### 7.11 Power Failure Alarm

The power failure alarm is energized in the event of:

- a. Loss of AC power on Line 1 or the opening of Fuse 1 or
- b. The simultaneous failure of both Power Supply Nos. 1 and 2.

Power failure alarm consists of the illumination of the power failure alarm lamp on the front panel plus the energizing of the trouble buzzer.

The trouble buzzer is silenced by operating the power failure alarm silence switch. Operating the switch illuminates the power failure alarm silence lamp.

If power is restored while the power failure alarm silence switch is in the off-normal position. the trouble buzzer will resound until the switch is returned to its normal position.

## 7.12 Alarm Test/Trouble Test

A single switch with a center-off position is provided on the front panel to test all of the individual line detecting module functions for both alarm and trouble.

- a. Raising the switch to the upper position simulates the presence of smoke in all line detector modules.
- b. Operation of alarm test results in all line detector modules going into the alarm condition as well as the production of a common alarm output from the main panel (common alarm output is the illumination of common alarm lamp plus the energizing of the smoke alarm bells in the wheelhouse and engine room). Common and line alarm lamps are illuminated on the repeater panel (when used).
- c. Simulated alarms should be cancelled by operation of reset switch. It is recommended that test conditions not be left in effect for a longer period of time than necessary to ensure proper annunciation.
- d. Lowering of the test switch to the trouble position simulates a trouble condition in all line detector modules.
- e. Operation of the trouble test switch, while held in the test position, results in the display of the amber trouble signal on the front of each line detector module as well as the common trouble signal on the electronic cabinet drawer front (common trouble signal represents illumination of the common trouble lamp plus the energizing of the trouble buzzer at the main detector cabinet and the common signal device at the remote repeater cabinet respectively).
- f. Trouble signals do not latch. Therefore, the trouble indication generated by trouble tests will persist only as long as the switch is depressed.

## 7.13 Bell Circuits

Two bell circuits are provided; one for the bell in the engine room and one for the bell in the wheelhouse, as required by U.S. Coast Guard regulations. Both bell circuits are continually supervised by the detector cabinet for presence of the bells in the circuit, the wiring of the bells, circuit continuity, and both ground fault and short circuit conditions. The bell circuit faults produce the illumination of the alarm bell trouble LED indicator and the common trouble lamp. A common trouble condition operates the trouble buzzer at

both the main panel and the common signal device at the remote repeater cabinet. The trouble signal is silenced by operating the "SILENCE" switch, which will silence the panel trouble buzzer. The "TROUBLE SILENCE" switch on the repeater cabinet will silence the common signal device at the repeater cabinet. Both these are provided with ringback. After elimination of trouble, the trouble buzzer will sound until the "SILENCE" switch is returned to normal.

#### 7.14 Power Supplies

The KMSD System employs dual redundant power supplies. If the output voltage of Power Supply No. 1 falls below 85% of nominal, or if the input or output fuse to Power Supply No. 1 fails, the panel automatically switches to Power Supply No. 2.

Failure of Power Supply No. 1 or any of its components or fuses results in illumination of the front panel LED, Power Supply No. 1 and a common trouble signal, which sounds the common trouble buzzer in both the detector cabinet and common signal device at the remote repeater cabinet.

The trouble buzzer is silenced by operating the "SILENCE" switch on the control cabinet and the common signal device may be silenced by the "trouble silence switch" at the remote repeater unit. Ringback is provided when the trouble condition is cleared. The trouble buzzer will resound until the "TROUBLE SILENCE" switch is restored to the normal position.

Off-normal position of the "TROUBLE SILENCE" switch is indicated by a trouble silence light, which appears above the "TROUBLE SILENCE" switch.

Power failure alarm is operated by:

- a. Failure of ship's power. Should the AC power appearing on Power Supply No. 1 fail for any reason, including the failure of fuse 1, the power failure alarm will sound.

Power failure alarm is indicated by illumination of the power failure lamp and energizing of the trouble buzzer, at the detector cabinet and the common signal device at the remote repeater cabinet.

The power failure audible signal is silenced by operating the power failure alarm silence switch. Operating this switch illuminates the power failure silence lamp. If power is restored while the "POWER FAILURE SILENCE" switch is in the "SILENCE" position, the trouble buzzer will resound (ringback).

- b. In the event that both Power Supply No. 1 (24 volt DC) and Power Supply No. 2 (24 volt DC) fail, even though AC power is present, the power failure alarm will be operated. The same silencing and ringback features apply when generated by this means.

#### 7.15 Condensate Drain

Each operation of the condensate drain switch is indicated by an increment of 1 on the digital readout appearing on the front panel of the electronics drawer.

The service log of the unit indicates the specified number of operations and permits verification of the operation of the condensate drain switch at the rate of approximately twice per calendar day.

In the event of total power failure, the readout will automatically reset to zero. This fact should be noted and the date of the occurrence logged.

In the event the condensate drain switch mechanism fails, the following indications are available:

- a. If the condensate drain switch fails to turn the blowers off, the digital readout will not advance. Verification of the appropriate number of shutdowns of the blower is made by multiplying the number of days since the system was serviced by two. Digital readout should be within ten percent (10%) of that value.
- b. If the condensate drain switch turns the blower off and fails to restore it, the blower failure trouble signal will occur on the panel. It will be indicated by both an amber blower failure lamp in the trouble group and a common trouble signal, both visual and audible.

The condensate drain switch is a separate printed circuit board which plugs into the main printed circuit board. Removal of this circuit board results in illumination of the timer disconnect trouble lamp and the common trouble lamp plus the energizing of the common trouble signal plus blower shutdown.

- 7.16 Three switches and a fuse are located on the timer circuit board.

#### **NOTE**

**Operation of these switches or replacement of the fuse is intended to be by factory-trained servicement only and should not be attempted by the ship's personnel. Field service operations are normally restricted to the replacement of the entire circuit board.**

The switches operate as follows:

- a. Lamp Test Switch Depressing of this lamp lights all segments of the three seven-segment numerical displays which should appear as 8 8 8. Any indications other than the 8 8 8 require replacement of electronic components by factory-trained personnel only.
- b. High Speed Switch Operation of the high speed switch changes the basic time of the condensate drain switch to approximately fifteen minutes. This permits the serviceman to observe the correct operation of all elements in the system.

While in the high speed position, this switch illuminates the front panel individual LED trouble lamp labeled "Clock High Speed".

- c. Reset Switch A pushbutton type located extremely low on the far left side of the board. It is intended to be operated by a pencil or a non-metallic probe and should never be operated until after a log entry has been made indicating the numerical display. Operation of this switch restores this display to 0 0 0.

- 7.17 The operation of the clock, both high speed and standard speed, is indicated by a flashing decimal point on the numerical display. The flash rate of this LED indicator is proportional to the rate at which the clock operates. It should operate continuously throughout the operation of the system.

Loss of the flashing decimal point indicates the loss of the timer circuit. Should this occur during a voyage when no replacement timer board is available, manually disconnect the blower on a twice-a-day, forty-second-per-event basis. This can be accomplished by unscrewing fuse No. 6, removing it from the socket for approximately forty (40) seconds and then restoring it.

This period without static pressure is sufficient to permit any accumulated moisture to drain from the automatic condensate drain valve.

In the event the condensate drain timer should cease operating, the digital readout would cease advancing at a two-a-day basis. It is recommended that the ship's personnel observe and record these readings on a weekly basis.

In the event the digital readout is observed not to be advancing and a replacement timer board is not available during a

voyage, the blower motors can be shut down manually by removing fuse No. 6 for a forty (40) second period twice a day or for one eighty (80) second period once a day (the latter will cause a trouble signal near the end).

In the event the condensate drain switch fails to an off condition, the suction blower failure trouble signal will occur approximately one minute after the initial stopping of the blowers.

#### **NOTE**

**This failure mode has a delayed operation to prevent nuisance trouble signals during the daily interruption of blower operation.**

#### 7.18 Supervision of Repeater

The detecting cabinet provides continuous supervision of the significant connections between the detector cabinet and the remote repeater cabinet, including filament supervision of the common smoke lamp and all smoke alarm lamps on the repeater cabinet.

Loss of continuity between the main detector cabinet and the remote repeater cabinet produces a signal on the "Remote Smoke Lamp" LED on the electronics drawer front as well as a common trouble signal from the panel.

#### 7.19 Day/Night Switch

A day/night switch is provided on the detector cabinet for night navigation. This permits the dimming of the power-on indicator and the blanking of the digital readout during the night operation (the decimal point which indicates the operation of the timer is not dimmed in night operation).

#### 7.20 Reset Switch

Consistent with current alarm system practice, the smoke alarm signal at the individual line module and common panel indication latches. This signal is cancelled by the operation of the reset switch:

1. **NOTE: Reset is not possible while any smoke remains in a line detector module.**
2. Reset will only take place approximately five minutes after elimination of the last traces of smoke from any line detector module.

## 7.21 Troubleshooting

KMSD field service repairs are limited to subsystem and circuit board replacement. All defective printed circuit boards and modules should be returned to factory service for repairs. Refer to Table 7-1.

- a. If (Lb) Power Supply No. 1 trouble light is on, check fuses F1, F2; relay KR1 ; contacts 5, 4 and 1, 3; fuse F4: transformer T1: bridge rectifier A7; fuse F7; relay K2: connections P7. P6. Replace main electronic board.
- b. If (16) Power Supply No. 2 trouble light is on, perform step 1 above before replacing main electronic board.
- c. If (L9) alarm bell trouble indicator is on, check fuse F9, F10; relay K5; connector P15.
- d. If (L8) main panel light is on, check reset switch (S6); relay K5 coil; common alarm front panel (T2).
- e. If blower failure indicator (L7) is on, check fuse F6; relay K7; contacts 6, 7; timer board; connector P3. Other possible causes are defective pressure switch, motor failure in blower cabinet or restricted air flow.
- f. If (L-11) ground fault trouble light is on, check the DC resistance with an ohmmeter (TURN OFF POWER TO SYSTEM) between +24VDC and cabinet frame and between -24VDC and cabinet frame. The readings should both be no less than 50,000 ohms, adjust the ground fault potentiometer R50 located on the supervisory control electronic printed circuit board per test procedure 153621. If test procedure 153621 is not available, cut ground fault defeat jumper.
- g. If (L-16) timer disconnect trouble light is on, the blower timer cycle printed circuit board is unplugged from its connector. Check connector P17.
- h. If (L-15) clock high speed trouble light is on, test switch (S1) is in the test position. Return to normal position to the right.
- i. If smoke lamp light (1-10) is on, check repeater cabinet common alarm lamp DS-26.
- j. If the smoke detector module zone trouble light is on, check corresponding zone alarm lamp at repeater cabinet;

rotate smoke module knurled hold down screws counterclockwise to a loose position and pull the module from its housing. Check photocell lamp. If all preceding checks prove satisfactory, replace smoke detector module assembly P/N 897793).

- k. If the smoke detector module alarm light is on intermittently without verification of a smoke source. check the detector sensitivity voltage at TP1, TP2, referring to the detector log table recorded voltage levels in the electronics drawer assembly.

#### **NOTE**

**All detector voltages are measured with a 10 Meg minimum input resistance voltmeter.**

Any voltages decreasing by 20-30% require inspection and cleaning of the associated detector module and housing assembly.

- l. If the common trouble lamp (L2) is on and LS through L-11 and L-16 and L-15 are off, check all connectors at the supervisory control circuit board; check all smoke detector plug modules for proper engagement with mating connectors.

- m. If the power fail lamp (L-13) is on. refer 'to step 1.



## SECTION 8

### SENSITIVITY ADJUSTMENT

- 8.1 On the fuse panel in the section above the fuses, a self-adhesive label shows 24 smoke detector sections corresponding to the possible 24 modules located within the cabinet.
- 8.2 This table is used to record the sensitivities of the individual modules during each scheduled service. During each service, new measurements are taken and recorded on a fresh label. These readings are then compared to the previous readings to determine if dust is accumulating within the detector module's housings. The two readings should be within 3 millivolts. The smaller the voltage reading, the closer the individual detector is to alarm.
- 8.3 The individual values of the various detectors may vary, but a typical maximum sensitivity as shipped would be a reading of about 1.5 to 2.5VDC. The actual trip point of the detectors will be in the 7 to 10 millivolt range.
- 8.4 Decreasing value of delta V indicates that dust has collected in the receptacle or that paint is peeling. Dust receptacle. If any white surface is showing, repaint with black vinyl matte emulsion.
- 8.5 If the presence of dust causes the reading to approach alarm (trip) conditions, those particular detectors may be adjusted to a reduced sensitivity with a field adjustment potentiometer located on the circuit board within the module. See Figure 8-3.
- 8.6 To measure the sensitivity of the individual detector module, two test receptacles appear on the front of each detector module. The voltage reading should be taken by means of high impedance (minimum 5 megohms) digital voltmeter, capable of reading on at least 3-1/2 digits.
- 8.7 Polarity is of no importance although test point 1 will normally be positive in relation to test point 2 during standby conditions. The significant value is the voltage between the two points (delta voltage). This reading can be expected to be 1000 millivolts or greater in any event and normally as indicated above.

8.8 Remove an individual module smoke as follows:

- a. Loosen the two thumb screws top and bottom. Screws are captive type and do not come all the way out.
- b. Grasp the two screws and pull towards you.
- c. The module will slide out, revealing a printed circuit board with two potentiometers, one along the edge of the metal framework and one closer to the center section of the board. The potentiometer near the edge of the board is sealed at the factory and represents the standardization calibration of the device made in the UL qualified smoke detector chamber.

**CAUTION**

**Under no circumstances must be factory adjusted potentiometer be changed. This is a supercritical adjustment made under very controlled conditions and can NEVER be re-established in the field.**

8.9 Make adjustments with a non-metallic, narrow screwdriver (TV front-end tuning wand). Adjust the potentiometer (with a single turn positive stop in each direction). As shipped, it will be turned all the way counterclockwise. Turn it about halfway clockwise and return the module to the housing.

8.10 Removal of the module produces a trouble signal. Re-inserting the module will eliminate the trouble signal and will produce an immediate alarm signal because the photoelectric cell in the detector has been exposed to ambient light conditions while being adjusted.

**CAUTION**

**Do not attempt to reset the panel immediately since the photoelectric cell takes some time to restore. Wait approximately five minutes and then operate the switch. The panel should now reset completely. (If you are doing more than one adjustment or adjusting more than one module, it is advisable to make all the adjustments first and then reset five minutes after the reinsertion of the last module.**

8.11 When re-inserting the module, it is essential that the assembly seats firmly and the thumb screws are turned down tightly to produce a positive air seal under the module front. Occasionally, the use of a non-petroleum lubricant will improve the sealing qualities.

8.12 The modules are equipped with light brown sealing gaskets to prevent moisture from being drawn into the cabinet, causing false alarms.

- 8.13 After the re-insertion of the module, pass a smoke source such as a cigarette or punk stick in front of the module to observe that no smoke is being drawn in around the gasket area. Should this happen, tighten the thumb screws until it stops.
- 8.14 The incandescent light source appears as a knurled black knob marked with a white "K" on the rear upright of the smoke detector module. Unscrew counterclockwise for replacement and discard the entire assembly and replace with a new one, knob and lamp together. Care must be taken that this replacement lamp is the proper factory replacement part (P/N 262211) to ensure that the detector performance will return to standard.

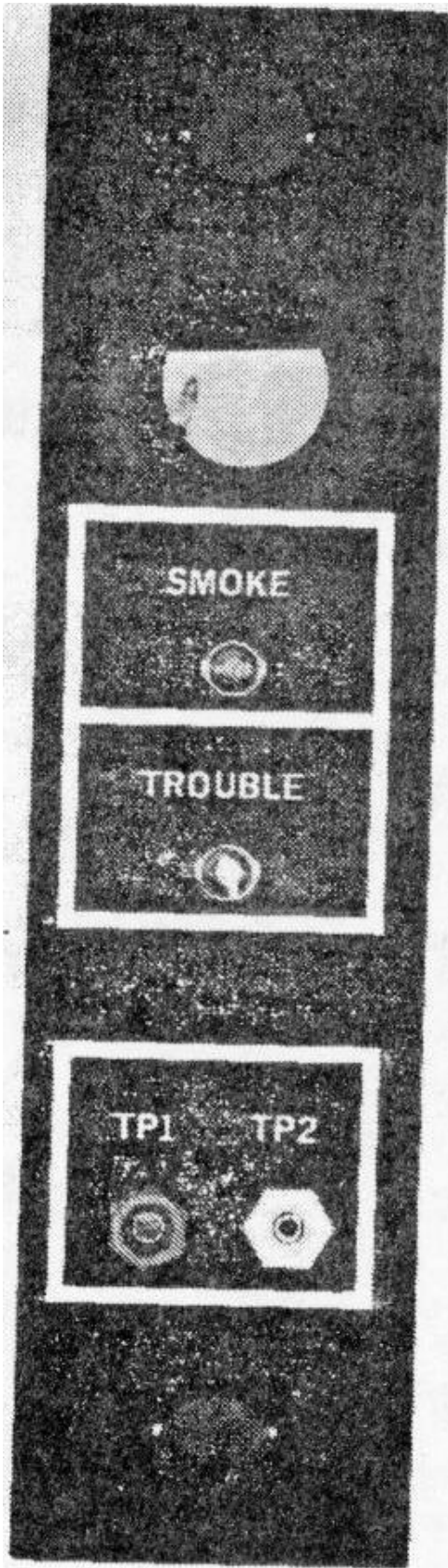


Figure 8-1. Module Front View

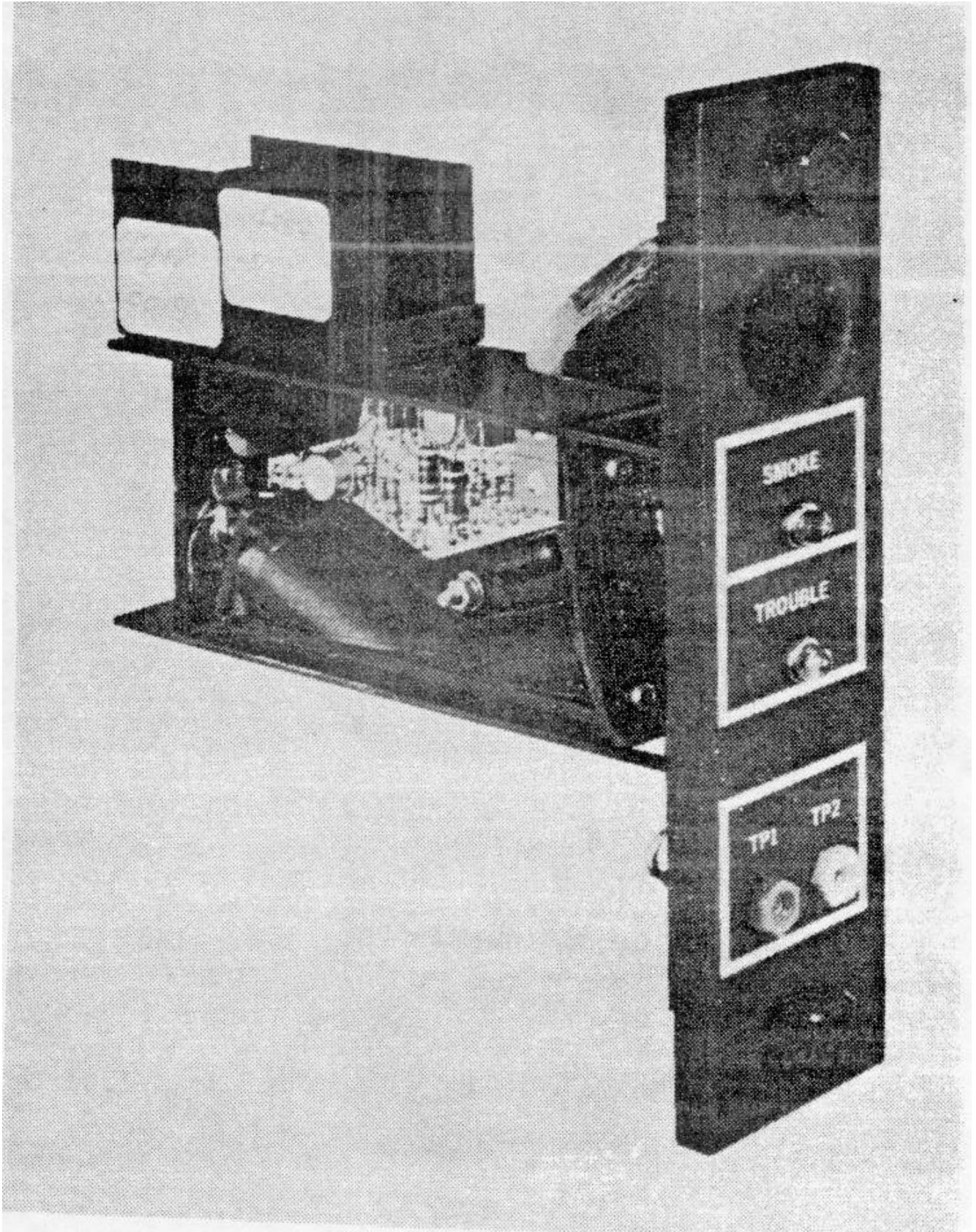


Figure 8-2. Module, Three-Quarter View

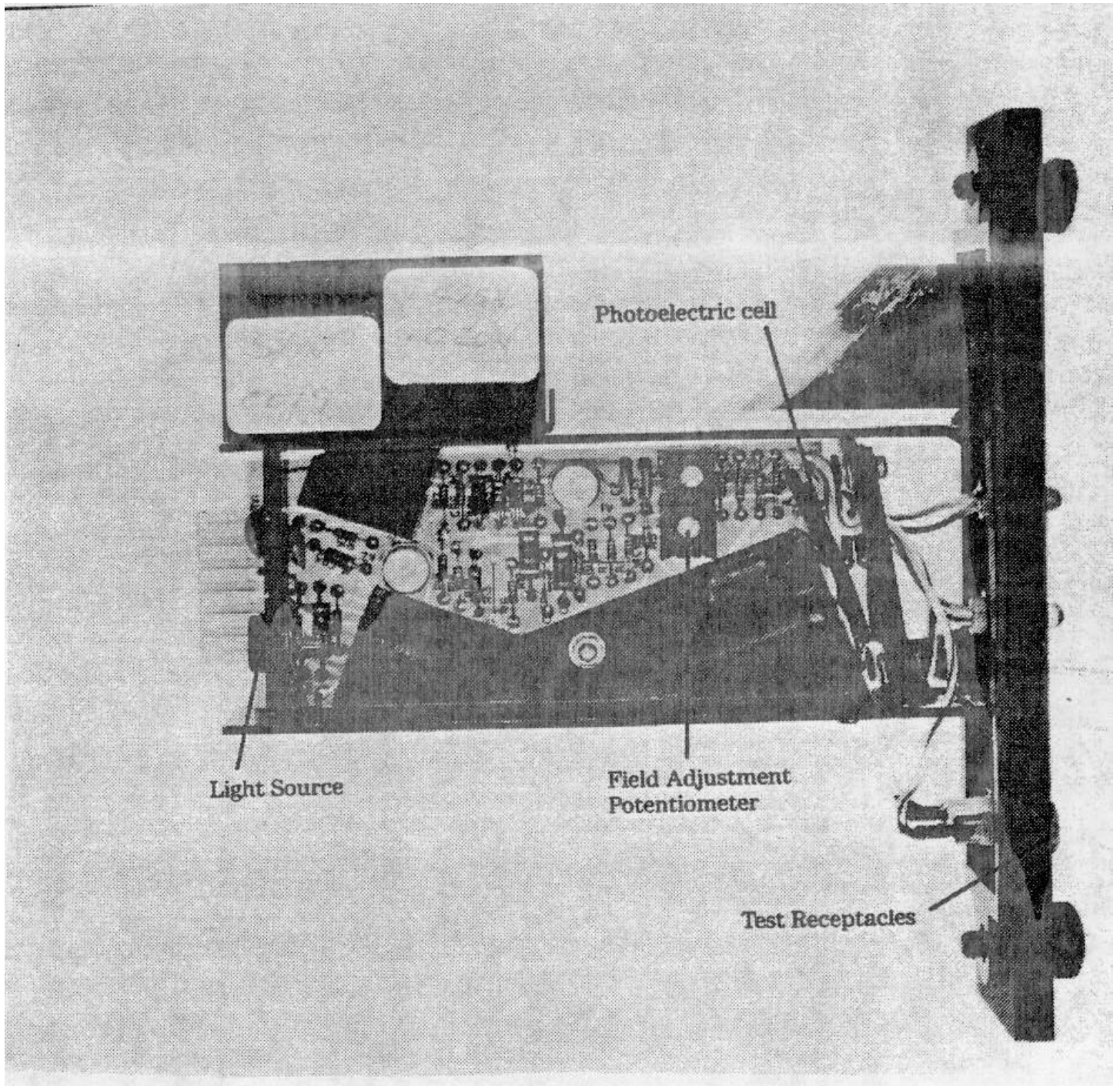
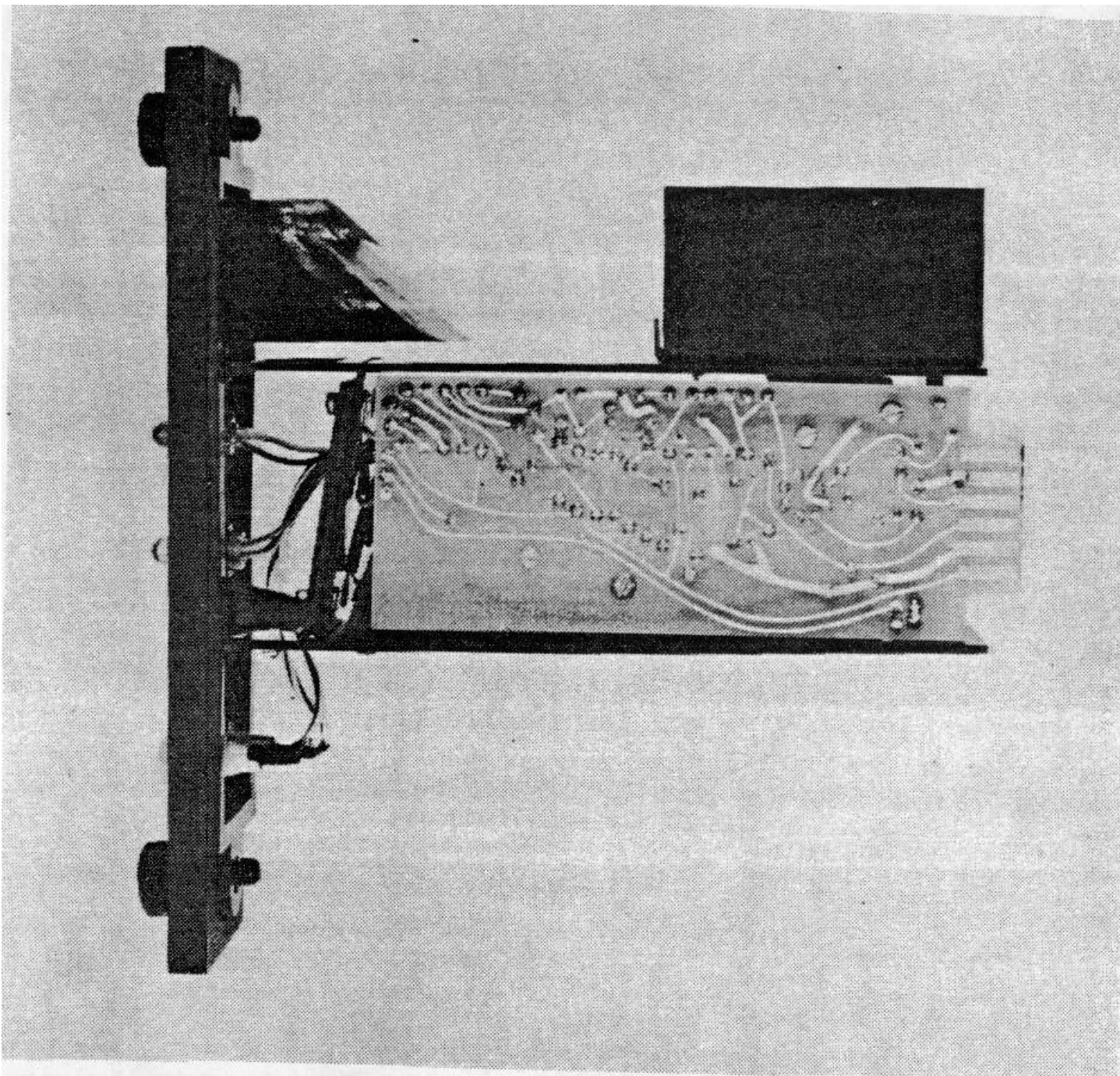


Figure 8-3. Module Side View, Removed from Housing





*Figure 8-4. Module Side View*

## SECTION 9

### SMOKE TESTING

- 9.1 This section includes testing operations after the system has been thoroughly check out for electrical malfunction and all components are in a normal condition. Normal condition means all smoke modules are sealed in place and the system has been placed in a normal operating condition. Furthermore, it means that all electrical irregularities have been removed, all detector modules are in place and the suction blower is operating in a normal fashion. Each smoke detector line should then be tested for correct operation using smoke.
- 9.2 Smoke testing must be carried out by two persons; one to note the results at the detector cabinet and one to introduce smoke into the accumulators throughout the vessel.
- 9.3 Before commencing the smoke tests, make certain the 3-way valves are in the correct position with the handle reading "Smoke Detector"
- 9.4 To perform smoke tests of the KMSD installation, it is recommended that a smoke test source be fabricated similar to that illustrated in Figures 9-1 through 9-11.
- 9.5 Essentially, the tester consists of a cigarette holder arranged on the end of a long extendable tube with a rubber ball at the other end for puffing the cigarette and a wire cage to surround the cigarette to prevent burning coals from being dropped into the cargo space.
- 9.6 For the test, a preferably "king-sized", American-type cigarette is used. It should have a full diameter, no filter, and be treated with combustion maintenance additives such as licorice or nitrates.
- 9.7 The cigarette should be lighted, placed in the holder, and the screen placed over it.
- 9.8 Additional sections of tubing are added to bring the cigarette in immediate proximity to the first smoke detector accumulator to be tested. It may be necessary to puff the cigarette with the bulb to keep it burning during this operation.
- 9.9 It is necessary for the operator of the smoke tester to carry a portable light so that smoke entering the accumulator may be observed.



- 9.10 The tester must produce smoke continuously for a period of one to four minutes, the actual time being dependent on the length of that particular line and the number of accumulators installed connected to it.
- 9.11 It is essential that the smoke flow be continuous and not a series of isolated puffs as the detector will consider the clear spaces between the smoke as a return to normal, non-smoke condition.
- 9.12 If the smoke testing team has difficulty with their initial attempts, a continuous delta voltage reading should be made at the line module test points in the manner described in the preceding section on sensitivity adjustment.
- 9.13 As smoke is introduced into the module, the delta voltage should decline.
- 9.14 If the voltage appears to modulate (decline and increase), it indicates smoke is not being introduced continuously into the accumulator. If no voltage decline is observed, it indicates:
- a. There are serious discontinuities in the pipework.
  - b. There are blockages in the pipework.
  - c. The pipework does not run to the module being tested.
- 9.15 The smoke test procedure is performed by two persons:
- a. One man operates the smoke tester and applies smoke to each accumulator installed in the vessel.
  - b. The second man, stationed at the detector cabinet, observes the system alarming, resets it, and records the specific accumulator causing a specific detector module to alarm.
- 9.16 The notes by the team member at the cabinet are used to provide an accurate layout of the accumulators, CO<sub>2</sub> pipework and their connections to the detector modules.
- 9.17 It is necessary that each and every accumulator be tested in this manner to insure accumulators are all connected to the pipework and none are blocked.
- 9.18 The detection cabinet is always operated at maximum sensitivity (as shipped), provided the delta voltage is at the approximate level noted under the section on sensitivity adjustment.

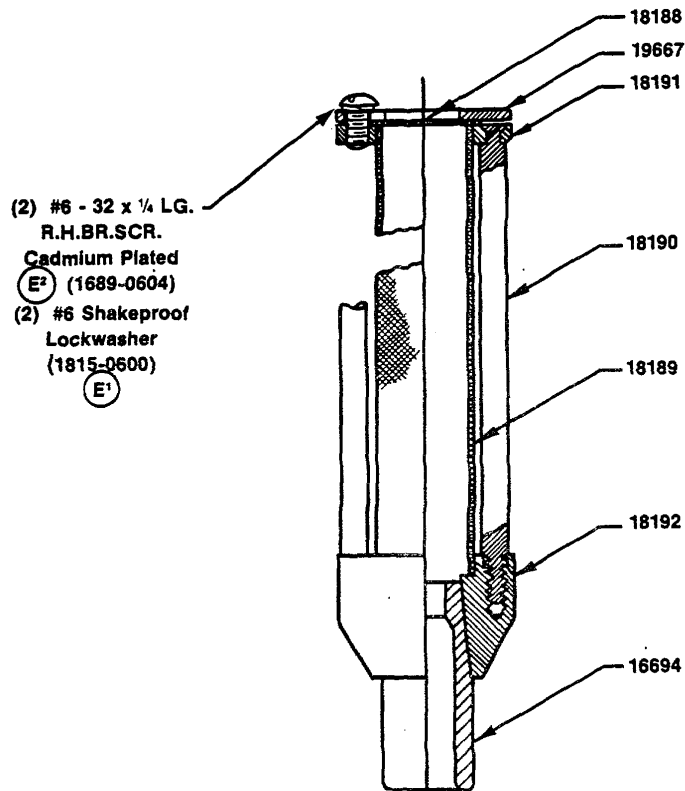


Figure 9-1. Spark Screen Assembly

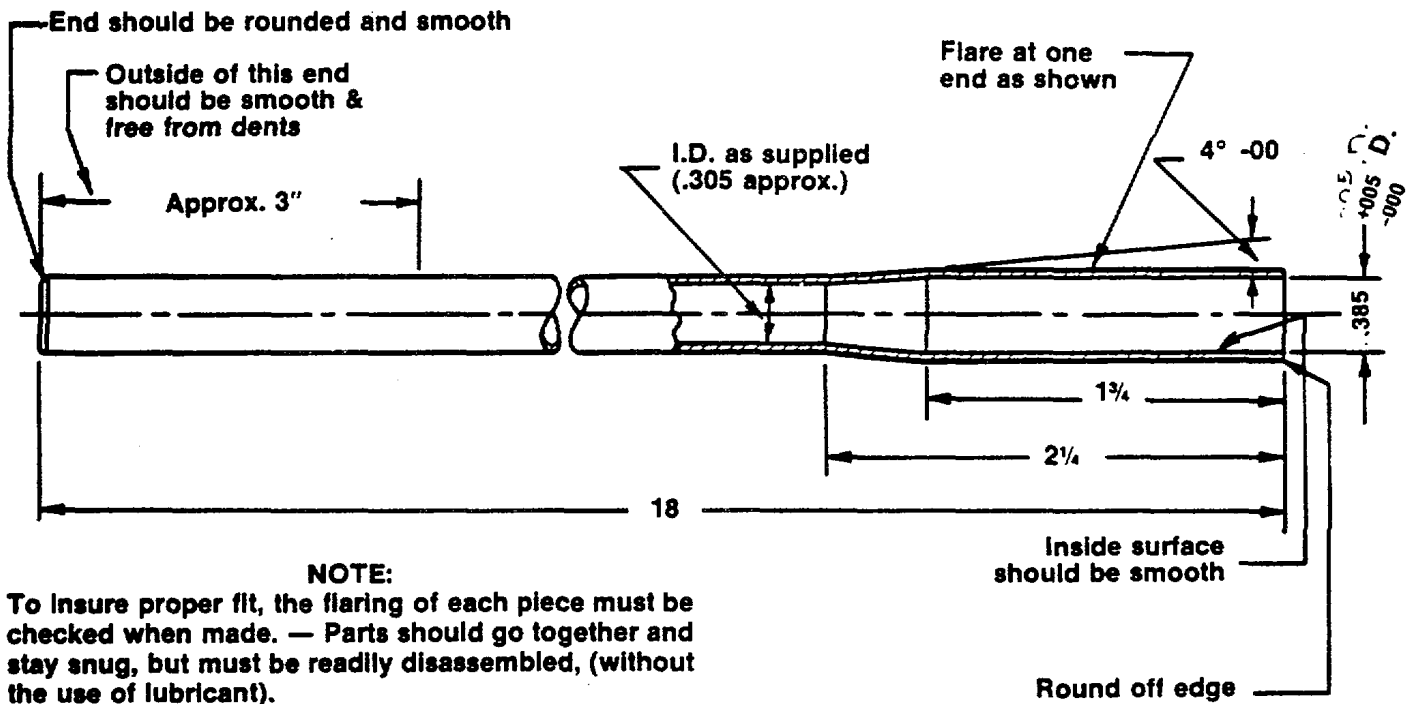


Figure 9-2. Flared Tubing

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ALUMINUM TUBING (3S-H14)

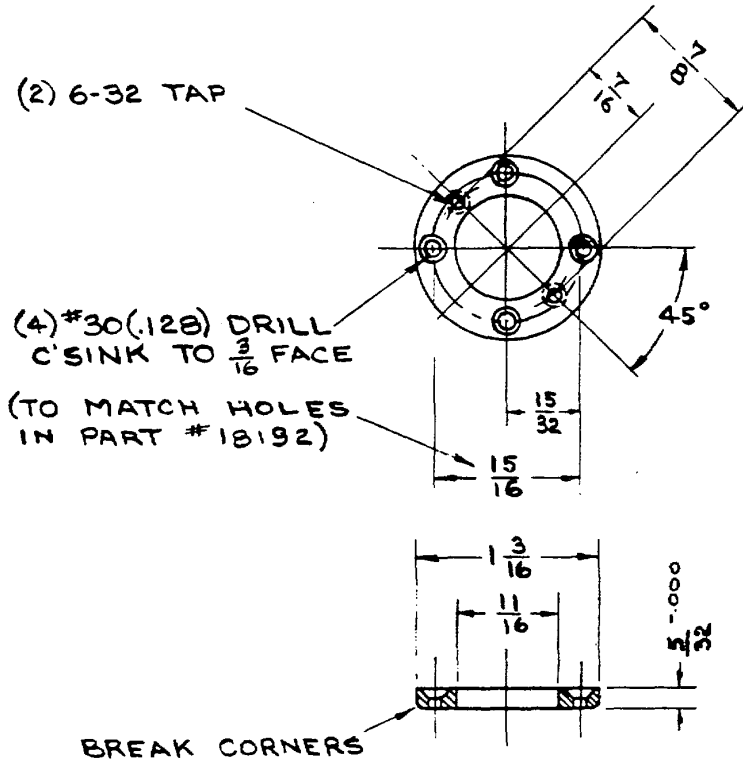
$\frac{3}{8}$  O.D. x .035 WALL  
15" LONG

16690
ASSEMBLY NO.

				<b>Walter Kidde &amp; Company, Inc.</b> 60 WEST ST., BLOOMFIELD, NEW JERSEY	
				STRAIGHT TUBING SMOKE DETECTOR TESTER	
B	MATERIAL CHANGE	BY	12-18 SK	GS	
A	REDRAWN - A' - WAS 2SH	BY	2-16-43	GT	
MARK	REVISION	BY	DATE	CH'K'D	
<small>FRACTIONAL DIM. ± 1/64" DECIMAL DIM. ± .005" UNLESS OTHERWISE NOTED</small>					
MATERIAL		FINISH		MACHINE FINISHES	SCALE
STD. PART NO. 1751 CODE NO. 3506				f 1 ROUGH FILE OR GRIND	DATE
				f 2 REMOVE FINS & BURRS	11-27-34
				f 3 ROUGH MACHINE	DRAWN
				f 4 SMOOTH MACHINE	CH'K'D
				f 5 POLISHED SURFACE	H.P.
				16693 B	

Figure 9-3.

16181



16695  
ASSEMBLY NO.

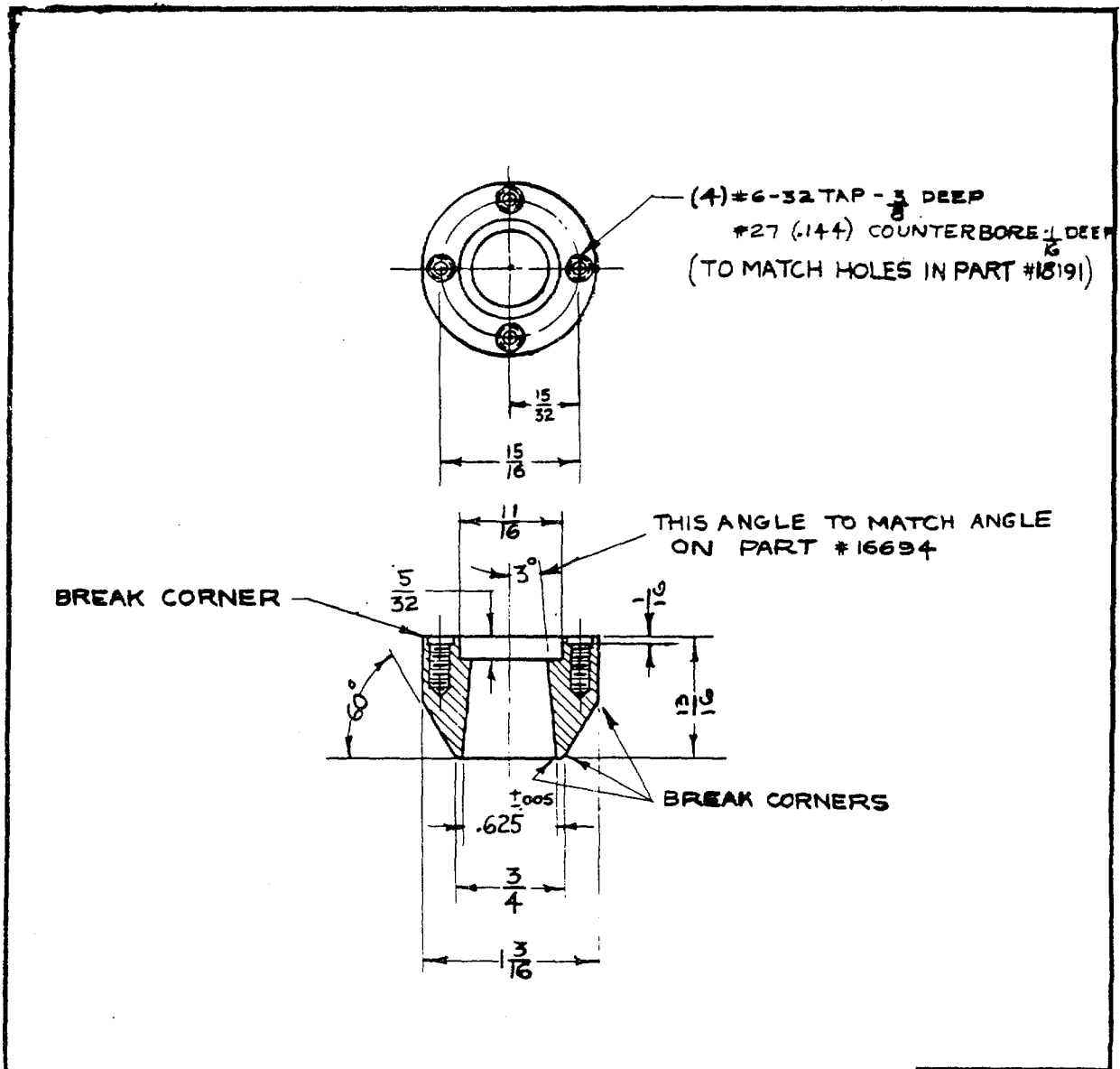
E	115-T3 WAS 250	J.C.	6-30-53	CEB
D	REDRAWN - NO CHANGE	G.F.H.	8-12-43	GD
MARK	REVISION	BY	DATE	CH'K'D

Walter Kidde & Company, Inc.  
60 WEST ST., BLOOMFIELD, NEW JERSEY

TOP HOLDER  
FOR  
SMOKE DETECTOR TESTER

FRACTIONAL DIM. $\pm 1/64$ DECIMAL DIM. $\pm .005$ UNLESS OTHERWISE NOTED		MACHINE FINISHED		SCALE		DATE	
MATERIAL $\frac{3}{16}$ DIA. ALUMINUM- 115-T3-ROUND STOCK LENGTH- $\frac{9}{32}$ "		FINISH ANODIC TREATMENT		FULL		8-19-36	
STD. PART NO. 1177 CODE NO. 0106		<ul style="list-style-type: none"> <li>#1 ROUGH FILE OR GRIND</li> <li>#2 REMOVE FINS &amp; BURRS</li> <li>#3 ROUGH MACHINE</li> <li>#4 SMOOTH MACHINE</li> <li>#5 POLISHED SURFACE</li> </ul>		DRAWN N.S.		CH'K'D 18191 E	

Figure 9-4.



16695  
ASSEMBLY NO.

E	115-T3 WAS 2 50	J.C.	6-26-33	CEB
D	REDRAWN-NO CHANGES	MCD	8-12-33	all
MARK	REVISION	BY	DATE	CH'K'D

**Walter Kidde & Company, Inc.**  
80 WEST ST., BLOOMFIELD, NEW JERSEY

**BOTTOM HOLDER  
FOR  
SMOKE DETECTOR TESTER**

FRACTIONAL DIM. ± 1/64" ORIGINAL DIM. ± .005 UNLESS OTHERWISE NOTED

**MATERIAL**  
1 3/16 DIA. ALUMINUM -  
115T3 ROUND  
STOCK LENGTH - 1 5/16"

STD. PART NO. 1177 CODE NO. Q106

**FINISH**  
ANODIZE

- MACHINE FINISHES**
- F1 ROUGH FILE OR GRIND
  - F2 REMOVE FIRMS & BURRS
  - F3 ROUGH MACHINE
  - F4 SMOOTH MACHINE
  - F5 POLISHED SURFACE

**SCALE**  
FULL

**DRAWN** NS

**DATE**  
8-12-36

**CH'K'D**

18192 E

Figure 9-5.

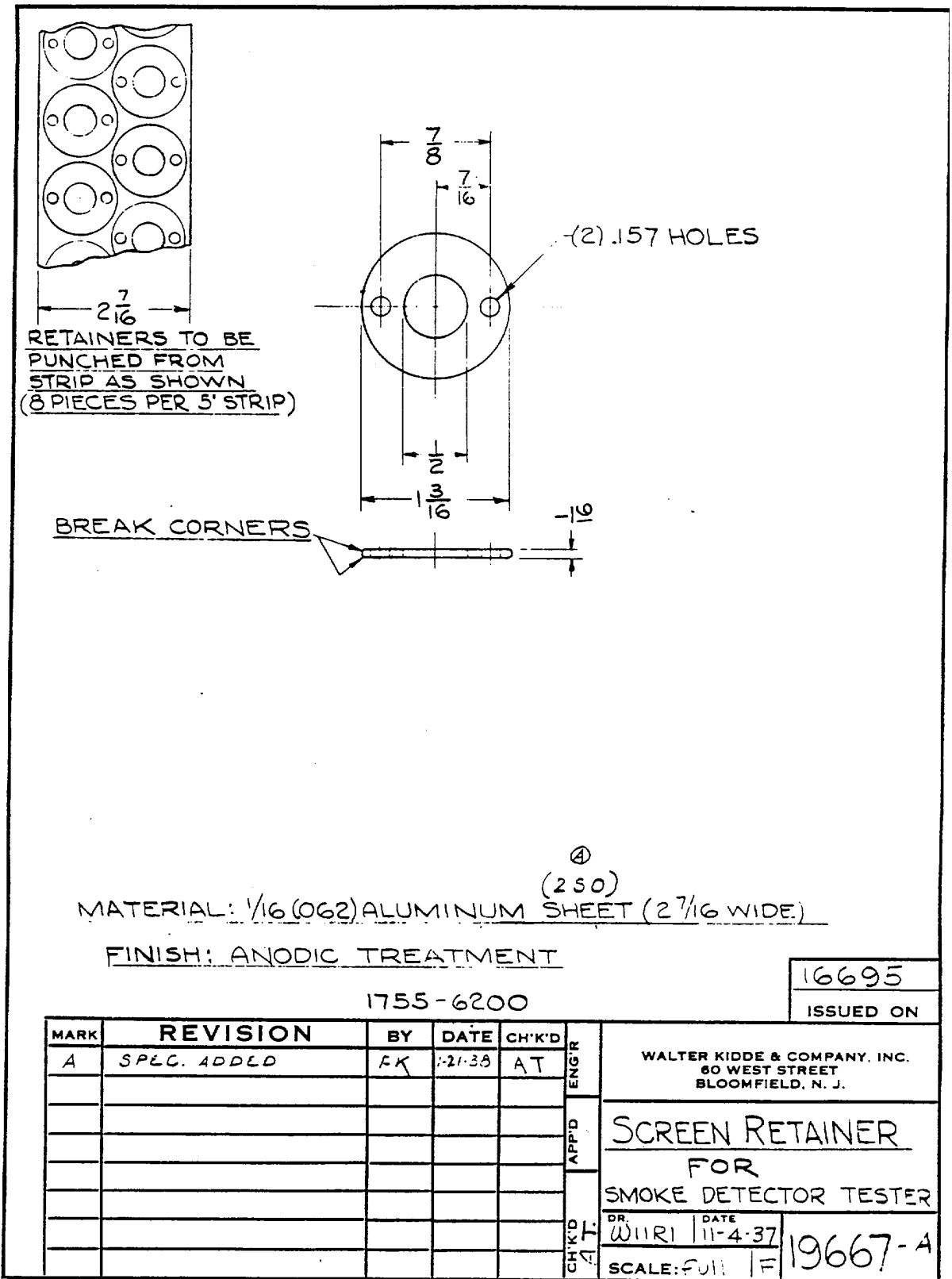
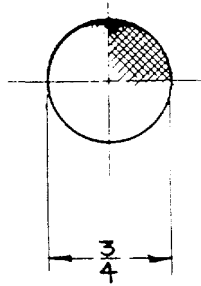


Figure 9-6.



98181

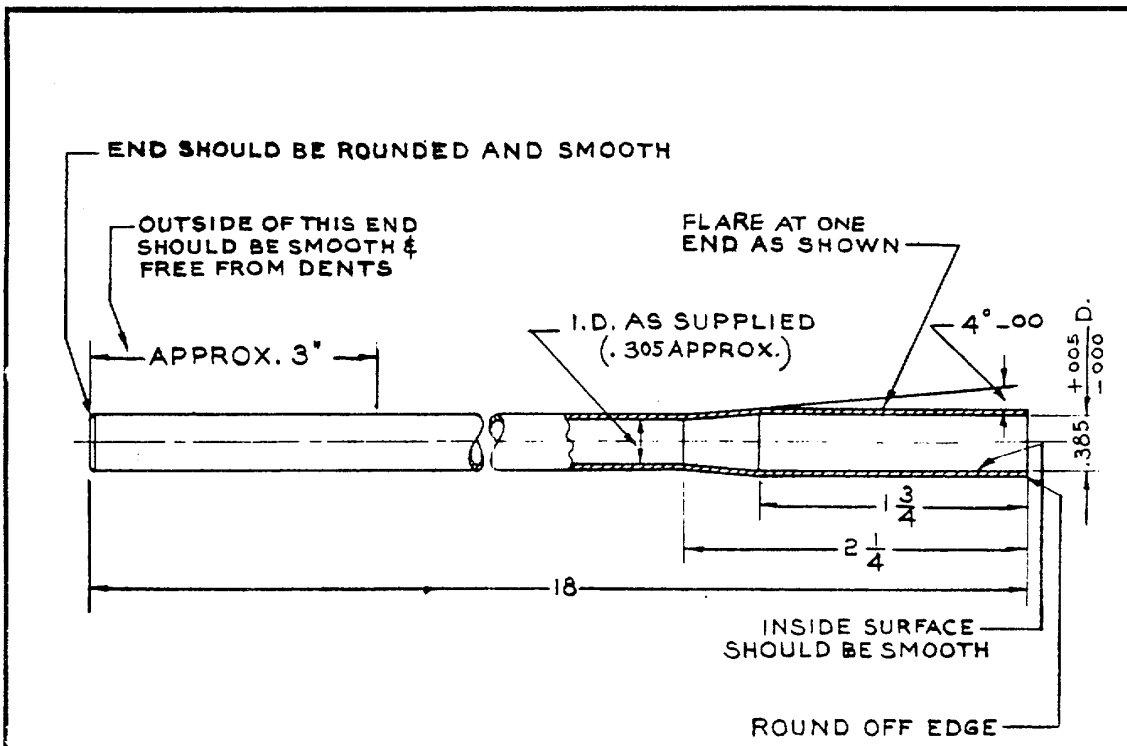


16605  
ASSEMBLY NO.

				<b>Walter Kidde &amp; Company, Inc.</b> 60 WEST ST., BLOOMFIELD, NEW JERSEY	
				<b>TOP SCREEN FOR SMOKE DETECTOR TESTER</b>	
B REDRAWN - NO CHANGES REVISION		MCD BY	8-18-54 DATE	AWB CH'K'D	
FRACTIONAL DIM. ± 1/64" DECIMAL DIM. ± .005" UNLESS OTHERWISE NOTED					
<b>MATERIAL</b> MONEL SCREEN - 50 MESH - .0075 D. WIRE STOCK SIZE - 1" X 1"		<b>FINISH</b>		<b>MACHINE FINISHES</b> 1 ROUGH FILE OR GRIND 2 REMOVE PINS & BURRS 3 ROUGH MACHINE 4 SMOOTH MACHINE 5 POLISHED SURFACE	<b>SCALE</b> FULL
STD. PART NO. 1709 CODE NO. 9291				<b>DATE</b> 8-9-54	<b>DRAWN</b> NS
				<b>CH'K'D</b> 18153	B

Figure 9-8.





**NOTE:**  
 TO INSURE PROPER FIT, THE FLARING OF EACH PIECE MUST BE CHECKED WHEN MADE. - PARTS SHOULD GO TOGETHER AND STAY SNUG, BUT MUST BE READILY DISASSEMBLED, (WITHOUT THE USE OF LUBRICANT.)

\* "MAY BE PURCHASED CUT TO LENGTH OF 18 3/16"

916690  
 ASSEMBLY NO.

				<b>Walter Kidde &amp; Company, Inc.</b> 60 WEST ST., BLOOMFIELD, NEW JERSEY	
				<b>FLARED TUBING</b> <b>SMOKE DETECTOR TESTER</b>	
F	MATERIAL CHANGE	B D	12-18	GS	
E	ADDED NOTE *	C.Y.	12-28-51	PH	
D	REDRAWN - Matl. was ALUM. 2 SH	P.A.	12-31-42	67	
MARK REVISION		BY		DATE CH'K'D	
<small>FRACTIONAL DIM. 1/64" DECIMAL DIM. .000" UNLESS OTHERWISE NOTED</small>					
MATERIAL		FINISH		MACHINE FINISHES	SCALE
ALUMINUM (3S-H14)				f1 ROUGH FILE OR GRIND	FULL
3/8 O.D. X .035 WALL				f2 REMOVE FINS & BURRS	DATE
STD. PART NO. 1751 CODE NO. 3506				f3 ROUGH MACHINE	11-12-34
				f4 SMOOTH MACHINE	DRAWN
				f5 POLISHED SURFACE	CH'K'D
					H.P.
					16692 F

Figure 9-9.

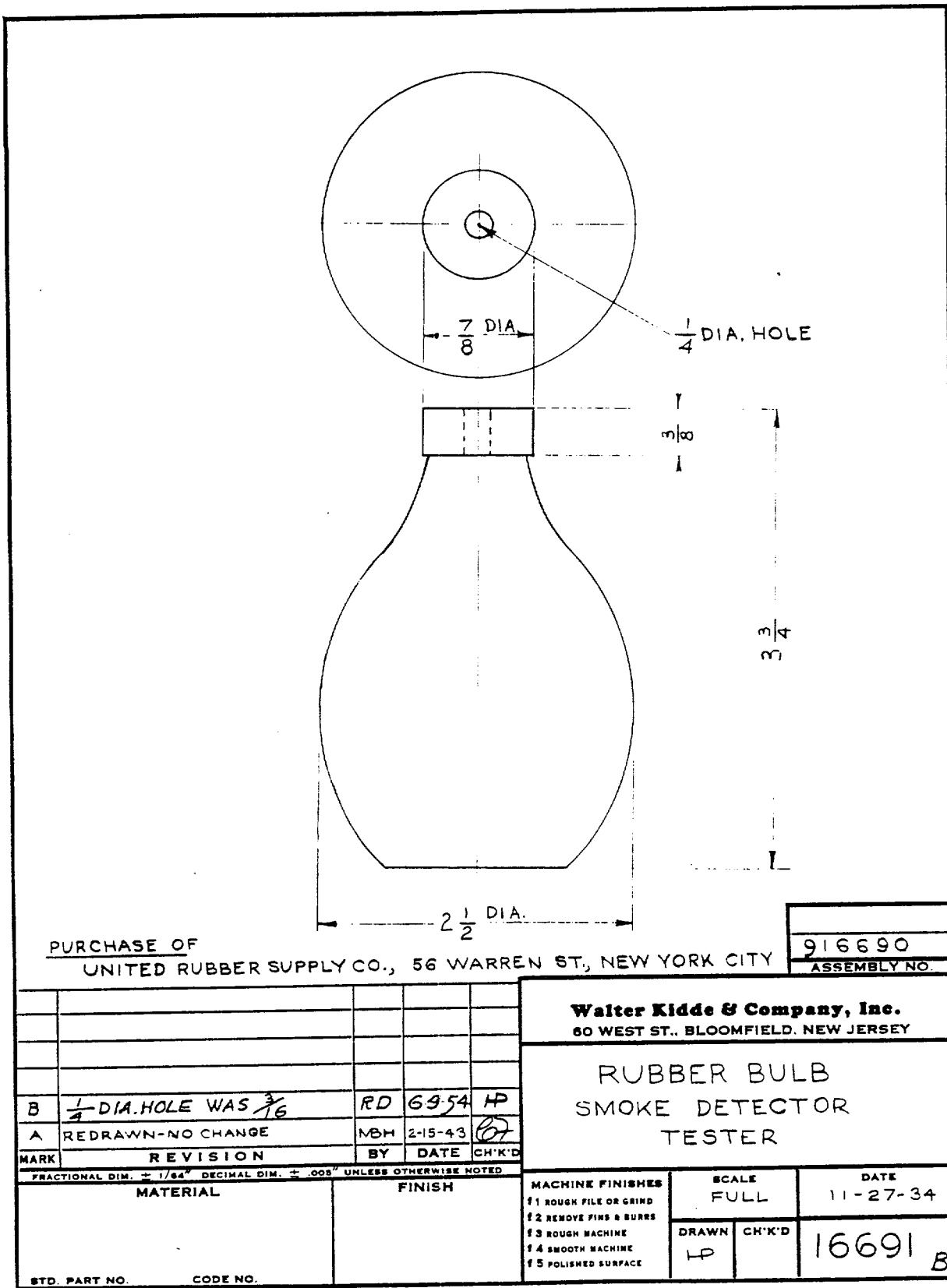
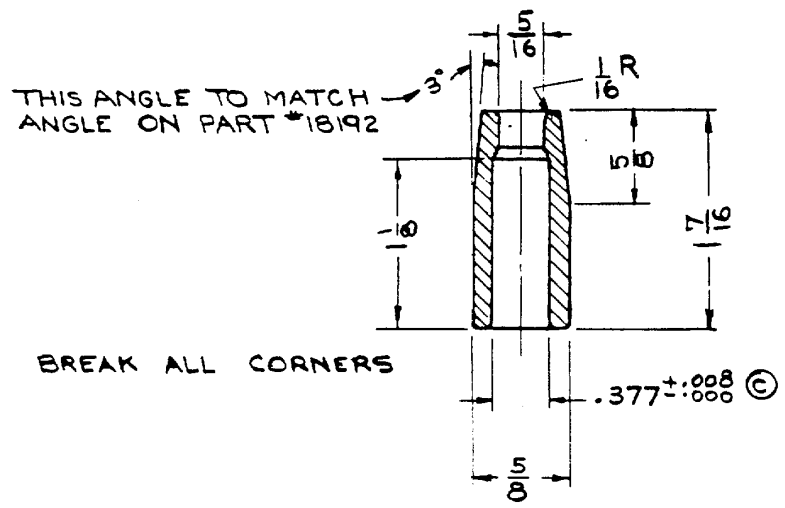
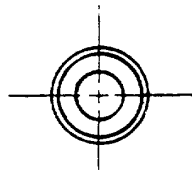


Figure 9-10.

16694



16695  
ASSEMBLY NO.

				<b>Walter Kilde &amp; Company, Inc.</b> 60 WEST ST., BLOOMFIELD, NEW JERSEY		
				<b>CIGARETTE HOLDER FOR SMOKE DETECTOR TESTER</b>		
D	ADDED 115-T3	J.C.	6-30-55			
C	.377 ± .008 WAS .380 ± .005	P.A.	7-27-44			
B	REDRAWN - NO CHANGE	G.F.H.	8-5-43			
MARK	REVISION	BY	DATE	CHK'D		
<b>MATERIAL</b> 5/8" DIA. ALUMINUM ROD (STOCK LENGTH 1 3/16) 115-T3 STD. PART NO. 1177 CODE NO. 0020		<b>FINISH</b> ANODIC TREATMENT		<b>MACHINE FINISHES</b> F1 BUSH FILE OR GRIND F2 REMOVE FINN & BURRS F3 BROOM MACHINE F4 SMOOTH MACHINE F5 POLISHED SURFACE	<b>SCALE</b> FULL	<b>DATE</b> 11-2-51
				<b>DRAWN</b> M	<b>CHK'D</b> 16694 D	

Figure 9-11.

**SECTION 10**

**SPARES**

*TABLE 10-1*

<u>Part No.</u>	<u>Description</u>	<u>Number Supplied</u>			
		<u>1-12</u> <u>Line</u>	<u>13-24</u> <u>Line</u>	<u>25-36</u> <u>Line</u>	<u>37-48</u> <u>Line</u>
898793	Smoke Detector Module	1	1	2	2
898745	Smoke Detector Module without Repeater	1	1	2	2
878206	Blanking Module (Supervisory)	2	3	4	6
262211	Exciter Lamps for Detection	4	8	12	16
FNM-30	FNM-30 (F-1) (F-2)	4	4	8	8
AGC-1	AGC-1 (F-3) (F-9) F-10)	6	6	6	6
AGC-3	AGC-3 (F-4) (F-5) (F-11)	2	2	4	4
MTH-6	MTH-6 (F-7) F-8)	4	4	8	8
PB R10EM4 V 700	Relay (K-2) (K-3)	2	2	4	4
PB R10EY4 V 700	Relay (K-5)	1	1	1	1
262210	Red Front Panel Lamp	1	1	1	1
262208	Amber Front Panel Lamp	2	2	4	4
262088	Green Front Panel Lamp	2	2	2	2
262089	*Red Repeater Lamp (large)	2	4	6	8
262210	*Red Repeater Lamp (small)	2	2	2	2
262088	*Green Repeater Lamp	1	1	1	1
262209	*Blue Repeater Lamp	1	1	1	1
220098	Black Vinyl Matt Emulsion Paint or equivalent	1	1	1	1

\*Supplied with repeaters only

# Air Cub Breathing Apparatus

## Pressure Demand Type

### BEFORE USE

1. THOROUGHLY CHECK OUT THIS APPARATUS ON RECEIPT PRIOR TO USE.
2. FOR USE ONLY BY QUALIFIED TRAINED PERSONNEL.
3. CAUTION: WEAR IMPERMEABLE PROTECTIVE CLOTHING FOR EXPOSURE TO GASES AND VAPORS WHICH CAN POISON BY SKIN ABSORPTION.
4. UNDER NO CIRCUMSTANCES SHOULD THIS APPARATUS BE USED AS AN UNDERWATER DEVICE.

### INSTRUCTIONS FOR USE AND MAINTENANCE

The MSA Pressure Demand Air Cub provides complete respiratory protection and is approved by the Mining Enforcement and Safety Administration (MESA) and National Institute for Occupational Safety and Health (NIOSH) as a "15-minute duration" unit. This apparatus can be used at temperatures down to -25° F however a noseclip must be used at temperatures below +32° F. The Air Cub also provides an Audi-Larm Signal which automatically cocks when the cylinder valve is opened. Its loud clear warning signal provides sufficient time for safely leaving hazardous atmospheres. The Demand Regulator is spring loaded to provide a positive pressure in the facepiece during inhalation and prevent possible inward leakage.

The warranties made by MSA with respect to this product are voided if the product is not used and serviced (maintained) in accordance with these instructions for use and maintenance."

### PREPARATION FOR USE

The following consecutive steps should be followed in putting on the apparatus before entering a toxic atmosphere:

1. Check the pressure gauge in the cylinder valve to insure that the cylinder is full (2216 psi pressure). If there is less pressure, the service life will be reduced accordingly.
2. Put on the apparatus as follows: Grasp the large round ring on the harness with the right hand, and the shoulder pad with the left hand, then swing the harness over the head so the shoulder pad is on the right shoulder. Adjust the regulator strap to the desired tightness. Fasten the loose strap (with the snap) to the ring. then tighten strap as much as desired.
3. Close the By-Pass (red) handwheel on the demand regulator, then open the cylinder valve handwheel fully. As the cylinder valve is being opened, the Audi-Larm will ring as pressure in the high pressure hose increases. This indicates the Audi-Larm is functional. If the Audi-Larm does not ring the equipment should be checked and corrected before proceeding.
4. Place palm of hand over the Demand Regulator outlet firmly to block it leak tight. This is necessary as the Demand Regulator is spring loaded and air will flow automatically if the outlet is not blocked.
5. Open the Main-Line (yellow) handwheel fully and observe the pressure gauge on the Demand Regulator. This gauge indicates continually the pressure in the cylinder and should read approximately 2200 psi (2216 actually) if fully charged. If there is less pressure in the cylinder the service life will be reduced accordingly. Turn off the cylinder valve and watch the pressure gauge on the regulator. There should be no drop in pressure. If the equipment is leaktight and if there is noticeable deflection of the needle, the equipment should be checked and the leak corrected before entering a toxic atmosphere. Again open the cylinder valve handwheel fully. and lock open with the lever. Shut off Main-Line Valve.
6. The facepiece is then put on using the following method: Pull out the facepiece headband straps so that the ends are at the buckles and grip the facepiece between thumb and finger insert the chin into the facepiece and pull headbands back over the head. To obtain a firm and comfortable fit against the face at all points, adjust headband as follows:
  - (a) See that straps lie flat against the head
  - (b) Tighten lower or "neck" straps.
  - (c) Tighten "side" straps (do not adjust forehead or "front strap".
  - (d) Place both hands on headband pad and push in towards the neck.
  - (e) Repeat operations (b) and (c).
  - (f) Tighten forehead or "front" strap, if necessary. to position the lens for best vision.

Test the mask facepiece for tightness by squeezing the corrugated breathing tube tightly. Inhale gently so that the facepiece collapses slightly and hold breath for ten seconds. The facepiece will remain collapsed while the breath is held providing the assembly is gas tight. If any leakage is detected around the facial seal, readjust head harness straps. If other than facial seal leakage is detected, investigate the condition and correct. The facepiece must be subjected to a tightness test before each use. Connect mask hose to regulator. Open Main-Line Valve fully.

7. Test the complete system for air flow from the cylinder to the facepiece by breathing normally. The regulator should follow the normal breathing pattern.

8. Test the By-Pass (red) valve by opening it briefly. With the By-Pass valve open, a rush of air should be delivered to the facepiece. If the rush of air is delivered, the apparatus is ready for use. Close the By-Pass (red) valve.

9. Breathe normally as the apparatus automatically satisfies breathing requirements.

### SERVICE LIFE

### WARNING

1. This device may not provide satisfactory face seal with certain physical characteristics (such as beards or gross sideburns), as outlined in ANSI Z88.2-1969, resulting in leakage in connection with the facepiece, which voids or limits the protection. If such a condition exists, the user assumes all risks of death or serious bodily injury which may possibly result.
2. Never use any lubricated on any part of the apparatus and always keep all parts entirely free from oil and grease.

This equipment is approved by MESA and NIOSH as a "15-minute duration" unit, based on the fact that the equipment, when tested by NIOSH on men performing moderate-to-heavy work, was found to last 15 minutes or more in each of the different types of work tests.

The user should not expect to obtain exactly 15 minutes service life from this apparatus on each use. The work being performed may be more or less strenuous than that used in the NIOSH tests. Where work is more strenuous, the duration may be shorter, possibly as short as 8 minutes.

The duration of the unit will depend on factors such as:

- (a) the degrees of physical activity of the user;
- (b) the physical condition of the user;
- (c) the degree of which the user's breathing is increased by excitement, fear, or other emotional factors;
- (d) the degree of training or experience which the user has had with this or similar equipment;
- (e) whether or not the cylinder is fully charged at the start of the work period;
- (f) the possible presence in the compressed air of carbon dioxide concentrations greater than the .04% normally found in atmospheric air;
- (g) the atmospheric pressure: if used in a pressurized tunnel caisson at 2 atmospheres (15 psi gauge) the duration will be one-half as long as when used at 1 atmosphere: and at 3 atmospheres will be one-third as long.
- (h) the condition of the apparatus.

### USE IN TOXIC ATMOSPHERE

It is necessary to periodically check the pressure gauge on the Demand Regulator as it continually indicates the pressure in the cylinder. When the needle reaches approximately 540 psi on the pressure gauge, the Audi-Larm Signal will begin ringing. When the bell starts ringing or when the pressure reaches 540 psi, it is time to return to fresh air.

During normal use the By-Pass (red) valve is closed and is used only if the Automatic Demand Regulator becomes inoperative. It provides a continuous flow and should be opened first, the Main-Line (yellow) handwheel closed, and the By-Pass valve adjusted to provide the flow desired. Leave hazardous area immediately since life of apparatus is greatly diminished when By-Pass valve is being used.

Never remove the facepiece except in a safe, non-hazardous, non-toxic atmosphere

### AFTER USE

1. Unlock the lever on the cylinder valve and close the valve. Do not use excessive force as the valve closes leaktight with little effort.
2. Release pressure in high pressure hose by breathing until air is exhausted and then remove facepiece. DO NOT USE BY-PASS VALVE TO EXHAUST AIR PRESSURE. Disconnect the hand tight coupling nut at the cylinder valve. Do not disconnect with pressure shown on the demand regulator gauge.
3. Loosen the cylinder clamp screw on the band with key screwdriver (in strap loop). and slide cylinder out.
4. Replace cylinder with a full charged one: then slide the cylinder, valve end first through the band. Place the spacer (without O ring) of the metal frame assembly in line with the pressure gauge on the cylinder, then tighten the screw on the band. Connect the Hand Tight Coupling Nut at the Cylinder Valve.
5. Remove the facepiece assembly and clean and sanitize it with MSA Cleaner-Sanitizer (Pt. No. 34337).
  - (a) Add one package (1 oz.) of powdered Cleaner-Sanitizer to a gallon of warm water (about 120° F.)
  - (b) Immerse facepiece and tube in the solution and scrub gently until clean.
  - (c) Rinse in clear warm water and allow to air dry.
6. CAUTION - Before placing mask in case. release pressure from system as described in step No. 2 immediately above.
7. Place cylinder in cradle of case. Arrange harness around the lower right corner and front of case. Place regulator face down in plastic dish. Place facepiece and hose assembly on its side, lens away from cylinder, between harness and cylinder.
8. Store flat, in a cool, dry place where possible.

### REPAIR

Replacement or repairs shall be done only by experienced persons with parts designed for the apparatus. No attempt shall be made to replace components or to make adjustment or repairs beyond the manufacturer's recommendations.

Manufactured by

**MSA**

L-671 (L) Rev. 3

MINE SAFETY APPLIANCES COMPANY

PITTSBURGH, PENNSYLVANIA, U.S.A.. 15208

995696

**MSA****Air Mask, Pressure Demand Type****BEFORE USE**

1. THOROUGHLY CHECK OUT THIS APPARATUS ON RECEIPT PRIOR TO USE.
2. FOR USE ONLY BY QUALIFIED TRAINED PERSONNEL.
3. CAUTION: WEAR IMPERMEABLE PROTECTIVE CLOTHING FOR EXPOSURE TO GASES AND VAPORS WHICH CAN POISON BY SKIN ABSORPTION.

**INSTRUCTIONS FOR USE AND MAINTENANCE**

The MSA® Pressure Demand Air Mask provides complete respiratory protection and is approved by the Mine Safety and Health Administration (MSHA) and National Institute for Occupational Safety and Health (NIOSH) as a "1/2-hour duration" unit. This apparatus can be used at temperatures down to -25° F., however a noseclip must be used at temperatures below +32°F. The Air Mask also provides an Audi-Larm Signal which automatically cocks when the cylinder valve is opened. Its loud clear warning signal indicates it is time to return to fresh air. There is approximately 6 minutes breathing supply left. See "Service Life" statement for factors which affect service life. The Pressure Demand Regulator is spring loaded to provide a positive pressure in the facepiece during inhalation and prevent possible inward leakage.

The warranties made by MSA with respect to this product are voided if the product is not used and serviced (maintained) in accordance with these "instructions for use and maintenance."

**PREPARATION FOR USE**

The following consecutive steps should be followed in putting on the apparatus before entering a toxic atmosphere:

1. Check the pressure gauge in the cylinder valve to insure that the cylinder is full (2216 psi pressure). If there is less pressure, the service life will be reduced accordingly.
2. Put on the apparatus using either of the following methods:
  - (a) Open the lid of the case and extend the shoulder straps to their full length. Lean forward; grasp the cylinder and backplate firmly with both hands, between the cylinder clamp and the waist belt. Lift the apparatus straight up and over the head and rest it on your back. The shoulder straps will fall into place over the shoulders. Adjust straps before straightening up. Fasten waist belt snugly. Should further adjustment be necessary, lean forward and adjust straps. Use of chest strap is optional.
  - (b) Extend narrow shoulder straps. Don the apparatus like a vest. Lean forward while the shoulder straps are being adjusted. Fasten waist belt securely and snap chest strap if desired.
3. Close the By-Pass (red) handwheel on the Pressure Demand Regulator and open the Cylinder Valve Handwheel fully (at least 3 turns). As the cylinder valve is being opened, the Audi-Larm will ring as pressure in the high pressure hose increases. This indicates the Audi-Larm is functional. If the Audi-Larm does not ring, the equipment should be checked and corrected before proceeding.
4. Place palm of hand over the Pressure Demand Regulator outlet firmly to block it leaktight. This is necessary as the Pressure Demand Regulator is spring loaded and air will flow automatically if the outlet is not blocked.
5. Open the Main Line (yellow) handwheel fully and observe the pressure gauge on the Pressure Demand Regulator. This gauge indicates continually the pressure in the cylinder and should read approximately 2200 psi (2216 actually) if fully charged. If there is less pressure in the cylinder the service life will be reduced accordingly. Turn off the cylinder valve and watch the pressure gauge on the regulator. There should be no drop in pressure if the equipment is leaktight and if there is noticeable deflection of the needle, the equipment should be checked and the leak corrected before entering a toxic atmosphere. Again open the cylinder valve handwheel fully and lock open with lever. Shut off Main-Line Valve.
6. The facepiece is then put on using the following method: Pull out the facepiece headband straps so that the ends are at the buckles and grip the facepiece between thumb and finger. Insert the chin into the facepiece and pull headbands back over the head. To obtain a firm and comfortable fit against the face at all points, adjust headband as follows:
  - (a) See that straps lie flat against the head.
  - (b) Tighten lower or "neck" straps.
  - (c) Tighten "side" straps (do not adjust forehead or "front" strap).
  - (d) Place both hands on headband pad and push in towards the neck.
  - (e) Repeat operations (b) and (c).
  - (f) Tighten forehead or "front" strap. If necessary to position the lens for best vision.

Test the mask facepiece for tightness by squeezing the corrugated breathing tube tightly. Inhale gently so that the facepiece collapses slightly and hold breath for ten seconds. The facepiece will remain collapsed while the breath is held providing the assembly is gas tight. If any leakage is detected around the facial seal, readjust head harness straps. If other than facial seal leakage is detected, investigate the condition and correct. The facepiece must be subjected to a tightness test before each use. Connect mask hose to regulator. Open Main-Line (yellow) valve handwheel fully because the handwheel must be turned as far as possible to insure adequate air flow under varying cylinder pressures.

**WARNING**

1. This device may not provide a satisfactory face seal with certain physical characteristics (such as beards or gross sideburns), as outlined in ANSIZ88.2-1969, resulting in leakage in connection with the facepiece, which voids or limits the protection. If such a condition exists, the user assumes all risks of death or serious bodily injury which may possibly result.
2. Under no circumstances should this apparatus be used as an underwater device.
3. Never use any lubricant on any part of the apparatus and always keep parts entirely free from oil and grease.

7. Test the complete system for air flow from the cylinder to the facepiece by breathing normally. The regulator should follow the normal breathing pattern.

8. Test the By-Pass (red) valve by opening it briefly. With the By-Pass valve open, a rush of air should be delivered to the facepiece. If the rush of air is delivered, the apparatus is ready for use. Close the By-Pass (red) valve.

9. Breathe normally as the apparatus automatically satisfies breathing requirements.

**SERVICE LIFE**

This equipment is approved by MSHA and NIOSH as a "1/2-hour duration" unit, based on the fact that the equipment, when tested by NIOSH on men performing moderate-to-heavy work, was found to last 30 minutes or more in each of the different types of work tests.

The user should not expect to obtain exactly 30 minutes service life from this apparatus on each use. The work being performed may be more or less strenuous than that used in the NIOSH tests. Where work is more strenuous, the duration may be shorter, possibly as short as 15 minutes.

The duration of the unit will depend on factors such as:

- (a) the degrees of physical activity of the user;
- (b) the physical condition of the user;
- (c) the degree of which the user's breathing is increased by excitement, fear, or other emotional factors;
- (d) the degree of training or experience which the user has had with this or similar equipment;
- (e) whether or not the cylinder is fully charged at the start of the work period;
- (f) the possible presence in the compressed air of carbon dioxide concentrations greater than the .04% normally found in atmospheric air;
- (g) the atmospheric pressure; if used in a pressurized tunnel or caisson at 2 atmospheres (15 psi gauge) the duration will be one-half as long as when used at 1 atmosphere and at 3 atmospheres will be one third as long.
- (h) the condition of the apparatus.

**USE IN TOXIC ATMOSPHERE**

It is necessary to periodically check the pressure gauge on the Pressure Demand Regulator as it continually indicates the pressure in the cylinder. When the needle reaches approximately 540 psi on the pressure gauge, the Audi-Larm Signal will begin ringing. When the bell starts ringing or when the pressure reaches 540 psi, it is time to return to fresh air.

During normal use the By-Pass (red) valve is closed and is used only if the Automatic Pressure Demand Regulator becomes inoperative. It provides a continuous flow and should be opened first, the Main-Line (yellow) handwheel closed, and the By-Pass valve adjusted to provide the flow desired. Leave hazardous area immediately since life of apparatus is greatly diminished when By-Pass valve is being used. Never remove the facepiece except in a safe, non-hazardous, non-toxic atmosphere.

**AFTER USE**

1. Unlock the lever on the cylinder valve and close the valve. Do not use excessive force as the valve closes leaktight with little effort.
2. Release pressure in high pressure hose by breathing until air is exhausted and then remove facepiece. **DO NOT USE BY-PASS VALVE TO EXHAUST AIR PRESSURE** Disconnect the hand tight coupling nut at the cylinder valve. **Do not disconnect with pressure shown on the pressure demand regulator gauge.**
3. Release the cylinder clamp drawbolt and remove the cylinder.
4. Replace cylinder with a full charged one and connect line hand tight coupling nut at the cylinder valve.
5. Remove the facepiece assembly and clean and sanitize it with MSA® Cleaner-Sanitizer (Pt. No. 34337).
  - (a) Make a solution with the contents of one package added to water, following the instructions on the Cleaner-Sanitizer carton.
  - (b) Immerse facepiece and tube in the solution and scrub gently until clean.
  - (c) Rinse in clear warm water and allow to air dry.

**CAUTION:** Cleaning and Sanitizing at the recommended 120° F temperature will avoid possible overheating and distortion of parts of the respirator assembly, which would necessitate replacement.
6. **CAUTION** - Before placing mask in case, release pressure from system as described in step No. 2 immediately above.
7. Place apparatus in case (see packaging arrangement diagram).
8. Store flat, in a cool, dry place where possible.

**REPAIR**

Replacement or repairs shall be done only by experienced persons with parts designed for the apparatus. No attempt shall be made to replace components or to make adjustment or repairs beyond the manufacturer's recommendations.

Manufactured by  
MINE SAFETY APPLIANCES COMPANY  
PITTSBURGH, PENNSYLVANIA, U.S.A. 15208  
SL487(L) Rev.7 463620

## Ultralite Cub™

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apparatus

parts list

(for Ultralite Cub™ with Ultravue® Facepiece)

part no. 476013 Ultralite Cub™ Pressure Demand, in case  
part no. 476009 Ultralite Cub™ Pressure Demand, less case  
part no. 476011 Ultralite Cub™ Demand, in case  
part no. 476007 Ultralite Cub™ Demand, less case

Manufactured by

**MSA**

**MINE SAFETY APPLIANCES COMPANY  
PITTSBURGH, PENNSYLVANIA, U.S.A., 15208**

**Ultravue® Demand Facepiece**  
 U.S. Patent Numbers 3,323,135 and 3,348,537  
**Facepiece Assemblies**

**SMALL – MODEL 7-203-2**

Part No.	Description
471218	FACEPIECE BLACK
471219	Facepiece, Black, with Nosecup
471220	Facepiece, Black, Less Speaking Diaphragm
471221	Facepiece, Black, with Nosecup Less Speaking Diaphragm
471222	Facepiece, Green
471223	Facepiece, Green, with Nosecup
471224	Facepiece, Green, Less Speaking Diaphragm
471225	Facepiece, Green, with Nosecup Less Speaking Diaphragm
471226	Facepiece, Yellow (Silicone)
471227	Facepiece, Yellow (Silicone) with Nosecup
471228	Facepiece, Yellow (Silicone) Less Speaking Diaphragm
471229	Facepiece, Yellow (Silicone) with Nosecup, Less Speaking Diaphragm

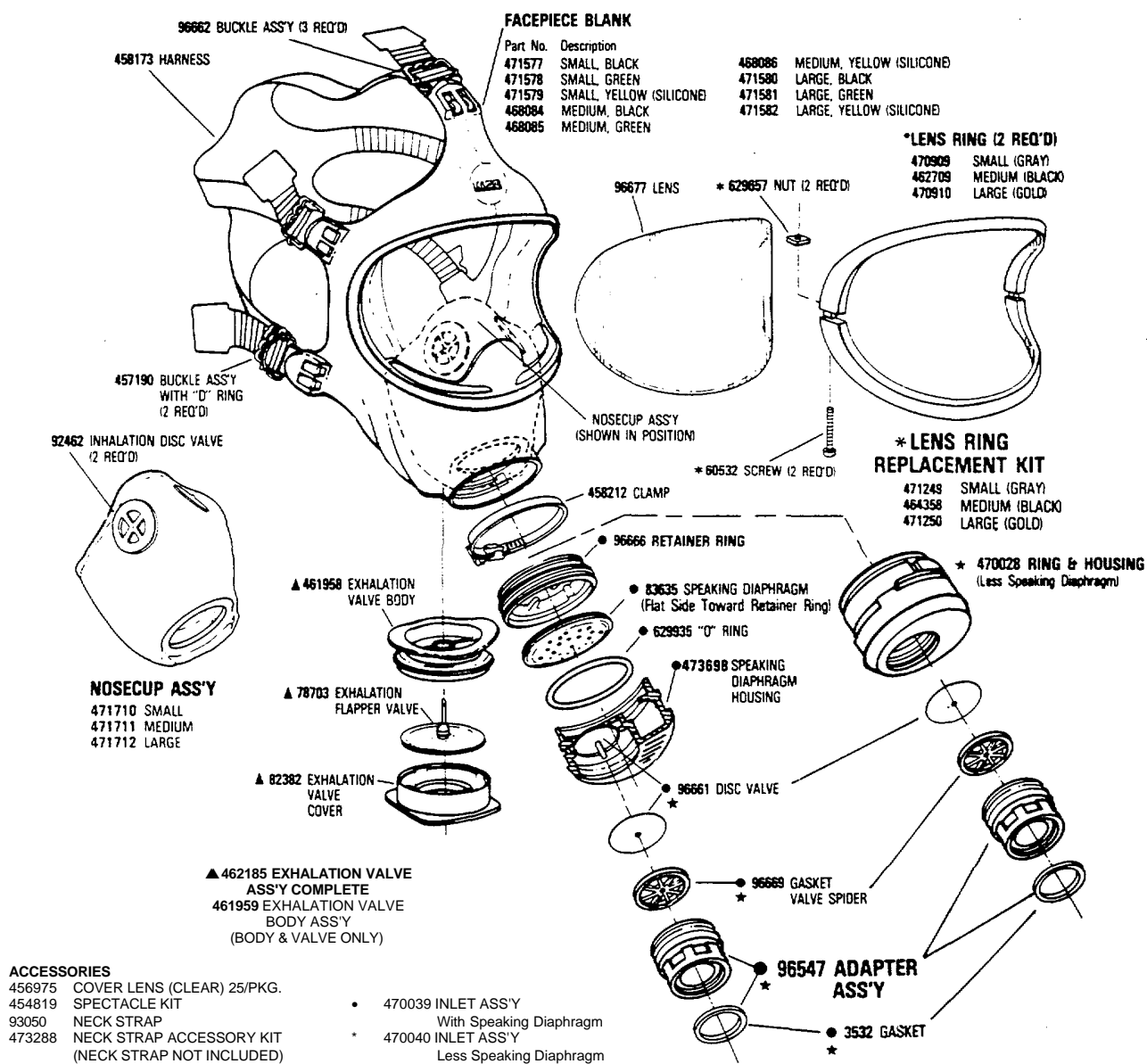
**MEDIUM – MODEL 7-203-1**

Part No.	Description
457126	FACEPIECE BLACK
471209	Facepiece, Black, with Nosecup
471212	Facepiece, Black, Less Speaking Diaphragm
471213	Facepiece, Black, with Nosecup Less Speaking Diaphragm
463872	Facepiece, Green
471211	Facepiece, Green, with Nosecup
471214	Facepiece, Green, Less Speaking Diaphragm
471215	Facepiece, Green, with Nosecup Less Speaking Diaphragm
464738	Facepiece, Yellow (Silicone)
471210	Facepiece, Yellow (Silicone) with Nosecup
471216	Facepiece, Yellow (Silicone) Less Speaking Diaphragm
471217	Facepiece, Yellow (Silicone) with Nosecup, Less Speaking Diaphragm

**LARGE – MODEL 7-203-3**

Part No.	Description
471230	FACEPIECE BLACK
471231	Facepiece, Black, with Nosecup
471232	Facepiece, Black, Less Speaking Diaphragm
471233	Facepiece, Black, with Nosecup Less Speaking Diaphragm
471234	Facepiece, Green
471235	Facepiece, Green, with Nosecup
471236	Facepiece, Green, Less Speaking Diaphragm
471237	Facepiece, Green, with Nosecup Less Speaking Diaphragm
471238	Facepiece, Yellow (Silicone)
471239	Facepiece, Yellow (Silicone) with Nosecup
471240	Facepiece, Yellow (Silicone) Less Speaking Diaphragm
471241	Facepiece, Yellow (Silicone) with Nosecup, Less Speaking Diaphragm

**Facepiece Components**





**Ultravue® Pressure Demand Facepiece**  
 U.S. Patent Numbers 3,323,135 and 3,348,537  
**Facepiece Assemblies**

**SMALL – Model 7-212-2**

Part No.	Description
471371	FACEPIECE, BLACK
471372	Facepiece, Green
471796	Facepiece, Black, Less Speaking Diaphragm
471799	Facepiece, Green, Less Speaking Diaphragm

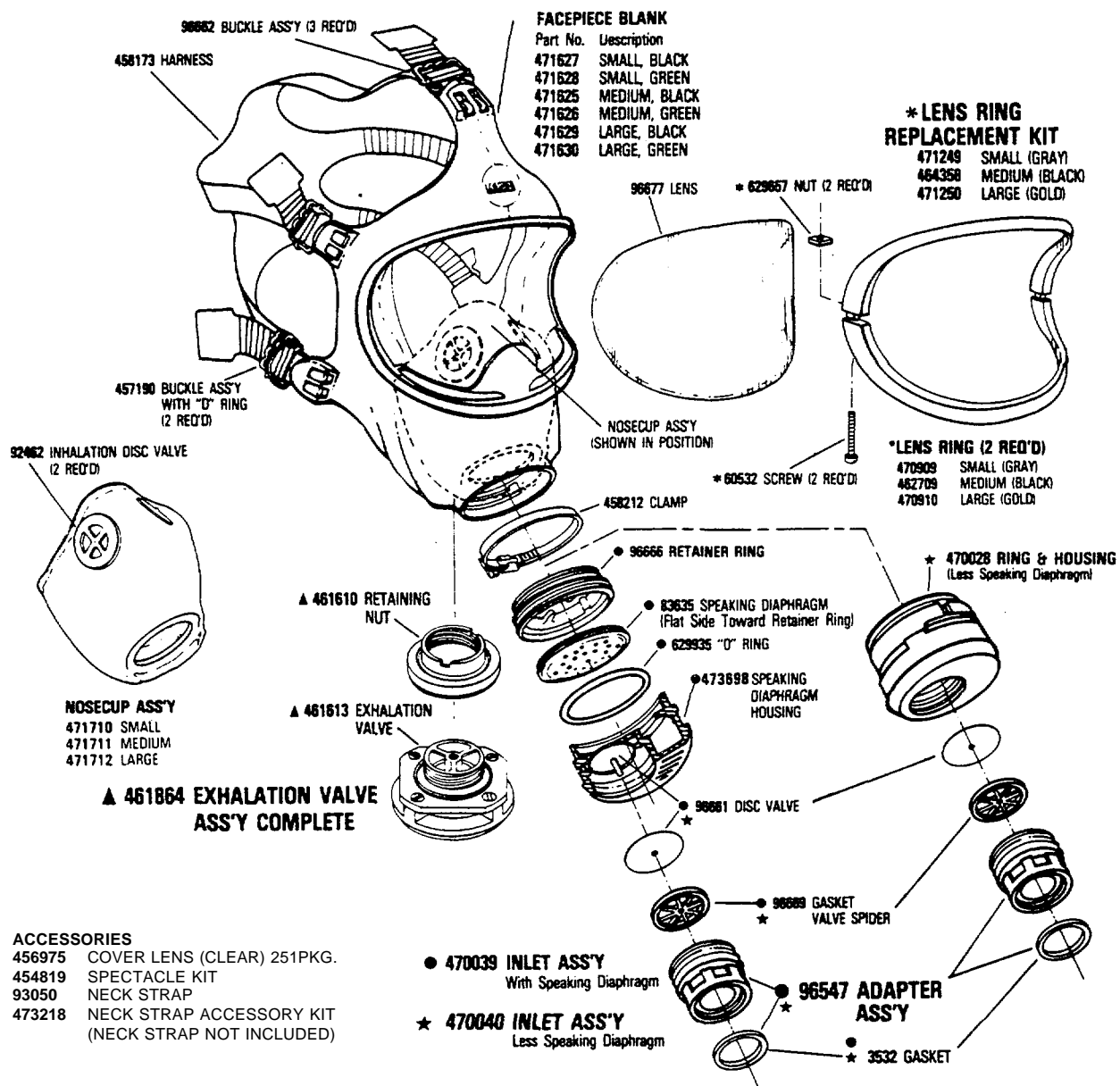
**MEDIUM – MODEL 7-212-1**

Part No.	Description
471369	FACEPIECE, BLACK
471370	Facepiece, Green
471796	Facepiece, Black, Less Speaking Diaphragm
471797	Facepiece, Green, Less Speaking Diaphragm

**LARGE – MODEL 7-212-3**

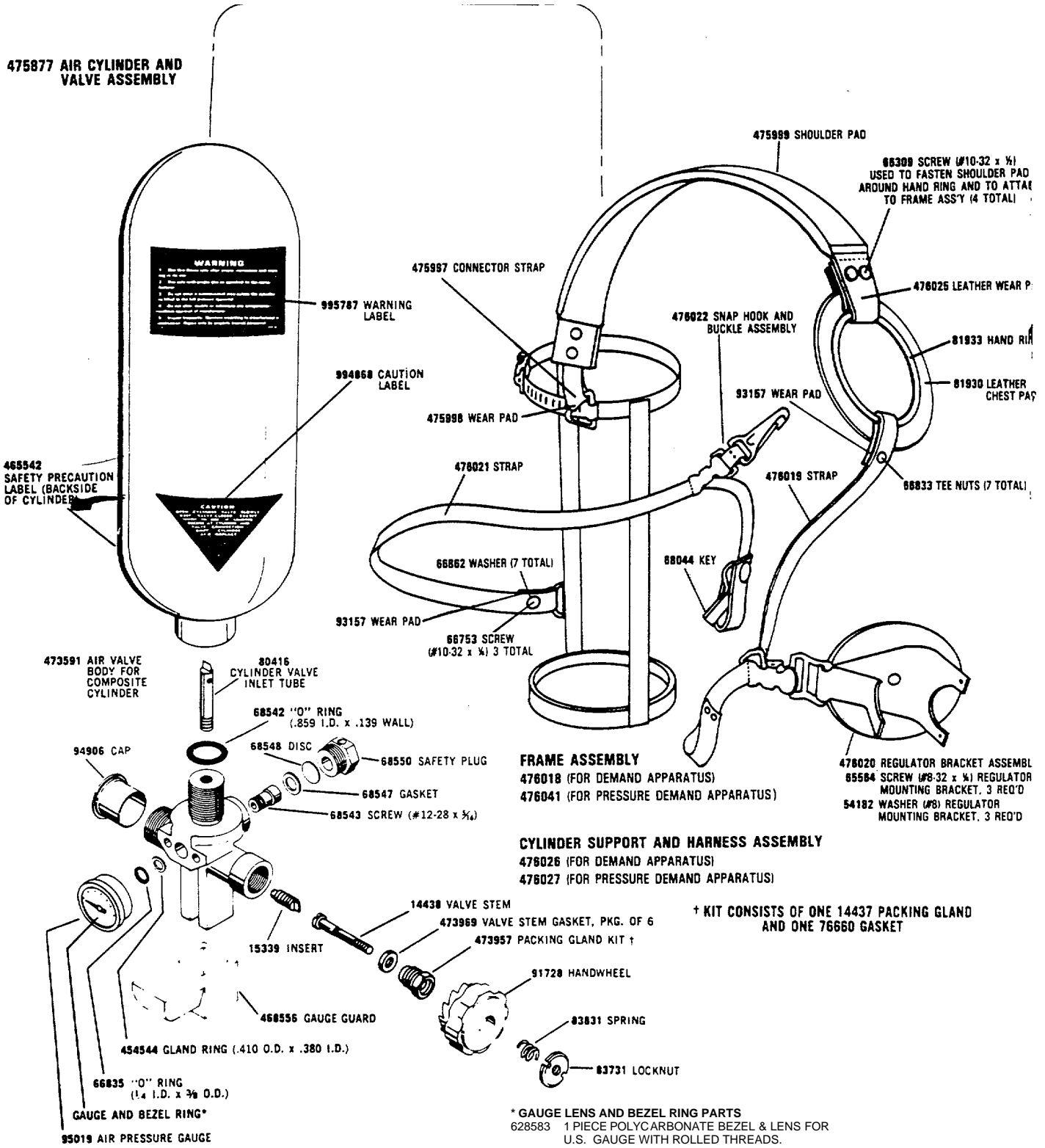
Part No.	Description
471373	FACEPIECE, BLACK
471374	Facepiece, Green
471800	Facepiece, Black, Less Speaking Diaphragm
471801	Facepiece, Green, Less Speaking Diaphragm

**Facepiece Components**



# Ultralite Cub™

(Harness, Carrier and Cylinder Assembly)



\* GAUGE LENS AND BEZEL RING PARTS

628583 1 PIECE POLYCARBONATE BEZEL & LENS FOR U.S. GAUGE WITH ROLLED THREADS.

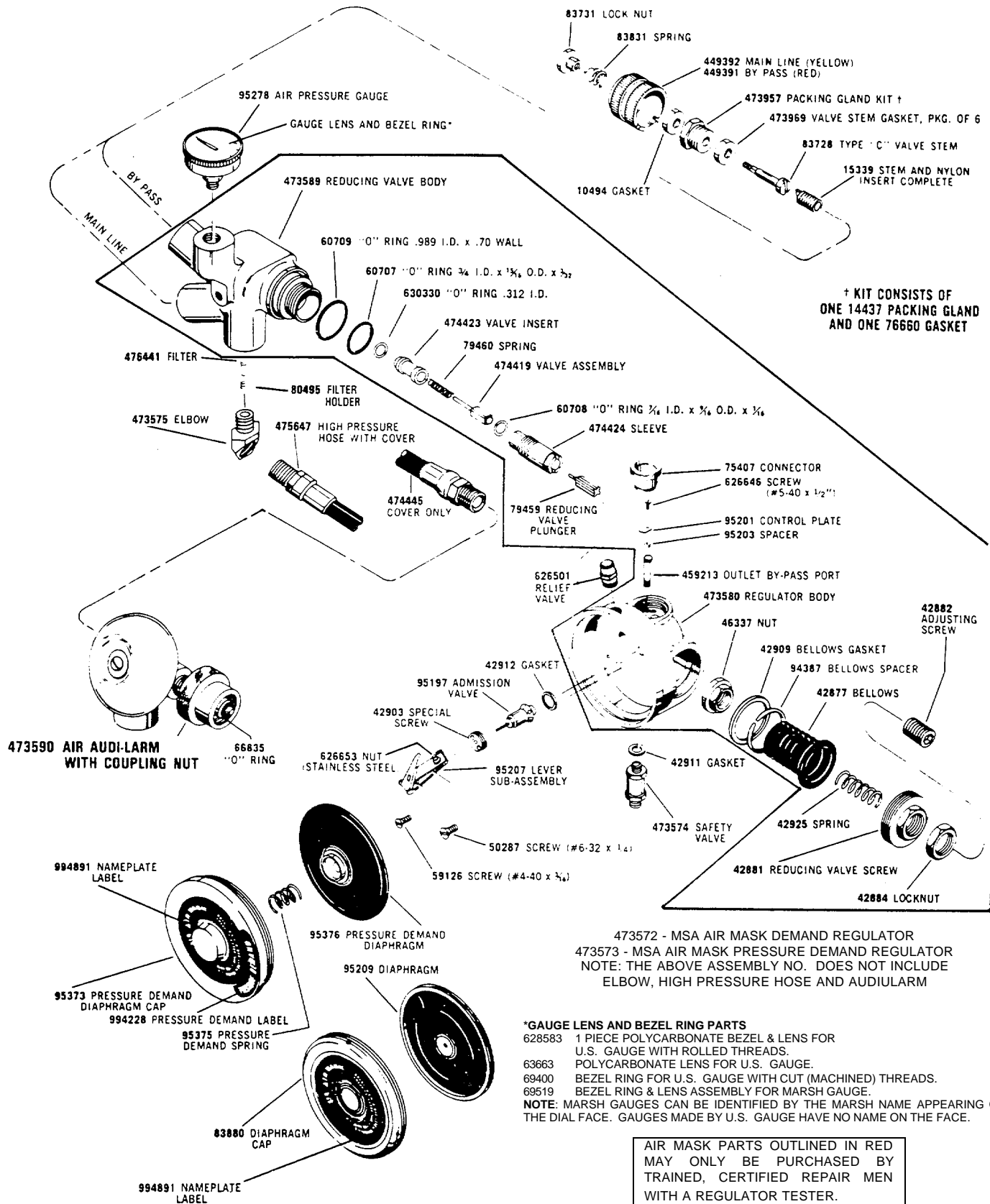
63663 POLYCARBONATE LENS FOR U.S. GAUGE.

69400 BEZEL RING FOR U.S. GAUGE WITH CUT (MACHINED) THREADS.

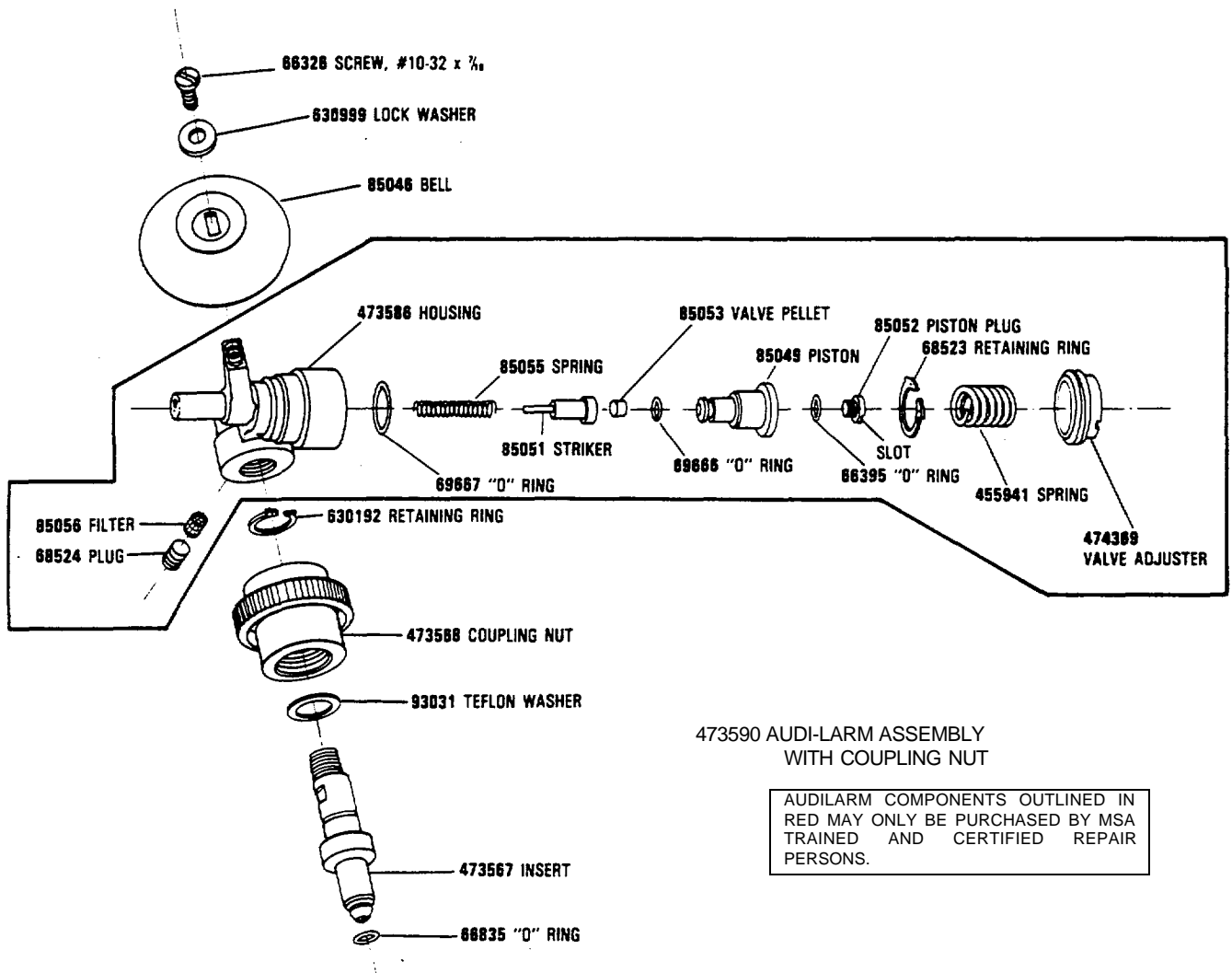
61519 BEZEL RING & LENS ASSEMBLY FOR MARSH GAUGE.

NOTE: MARSH GAUGES CAN BE IDENTIFIED BY THE MARSH NAME APPEARING ON THE DIAL FACE. GAUGES MADE BY U.S. GAUGE HAVE NO NAME ON THE FACE.

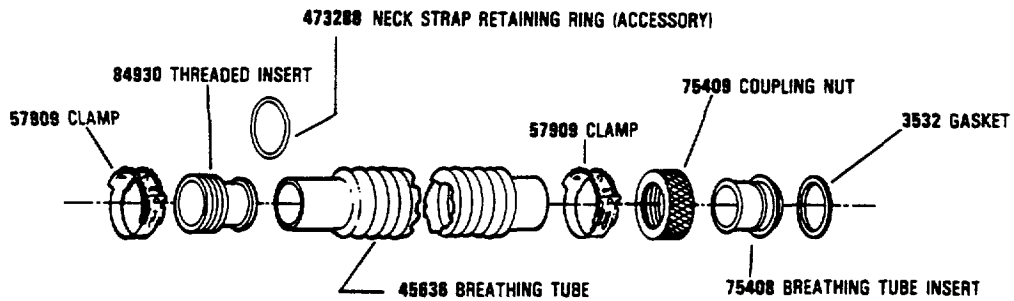
# Ultralite Cub™ (Demand and Pressure Demand Regulator Parts)



**Ultralite Cub™**  
(Audi-Larm™ Assembly Parts)



**(Breathing Tube Assembly)**



96065 BREATHING TUBE ASSEMBLY

458734 BREATHING TUBE QUICK DISCONNECT ASS'Y. (ACCESSORY)

Manufactured by

**MSA**

**MINE SAFETY APPLIANCES COMPANY  
PITTSBURGH, PENNSYLVANIA, U.S.A., 15208**

TAL 489 REV. 0

476032

**Ultralite Air Mask**

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**parts list  
(for Air Mask with Ultravue® Facepiece)**

part no. 473639 Air Mask, Demand, Composite II Cylinder, in case  
part no. 473615 Air Mask, Demand, Composite II Cylinder, less case  
part no. 473640 Air Mask, Demand, Hoop Wound Cylinder, in case  
part no. 473616 Air Mask, Demand, Hoop Wound Cylinder, less case  
part no. 473641 Air Mask, Demand, Steel Cylinder conforming to Fed. Spec. GG-B-675, in case  
part no. 473617 Air Mask, Demand, Steel Cylinder conforming to Fed. Spec. GG-B-675, less case  
part no. 473642 Air Mask, Demand, Steel Cylinder, in case  
part no. 473618 Air Mask, Demand, Steel Cylinder, less case

part no. 473649 Air Mask, Pressure Demand, Composite II Cylinder, in case  
part no. 473625 Air Mask, Pressure Demand, Composite II Cylinder, less case  
part no. 473650 Air Mask, Pressure Demand, Hoop Wound Cylinder, in case  
part no. 473626 Air Mask, Pressure Demand, Hoop Wound Cylinder, less case  
part no. 473651 Air Mask, Pressure Demand, Steel Cylinder Conforming to  
Fed. Spec. GG-B-675, in case  
part no. 473627 Air Mask, Pressure Demand, Steel Cylinder Conforming to  
Fed. Spec. GG-B-675, less case  
part no. 473652 Air Mask, Pressure Demand, Steel Cylinder, in case  
part no. 473628 Air Mask, Pressure Demand, Steel Cylinder, less case

# Ultravue® Demand Facepiece

U.S. Patent Numbers 3,323,135 and 3,348,537

## Facepiece Assemblies

### SMALL – MODEL 7-203-2

Part No.	Description
471218	FACEPIECE BLACK
471219	Facepiece, Black, with Nosecup
471220	Facepiece, Black, Less Speaking Diaphragm
471221	Facepiece, Black, with Nosecup, Less Speaking Diaphragm
471222	Facepiece, Green
471223	Facepiece, Green, with Nosecup
471224	Facepiece, Green, Less Speaking Diaphragm
471225	Facepiece, Green, with Nosecup, Less Speaking Diaphragm
471226	Facepiece, Yellow (Silicone)
471227	Facepiece, Yellow (Silicone) with Nosecup
471228	Facepiece, Yellow (Silicone), Less Speaking Diaphragm
471229	Facepiece, Yellow (Silicone) with Nosecup, Less Speaking Diaphragm

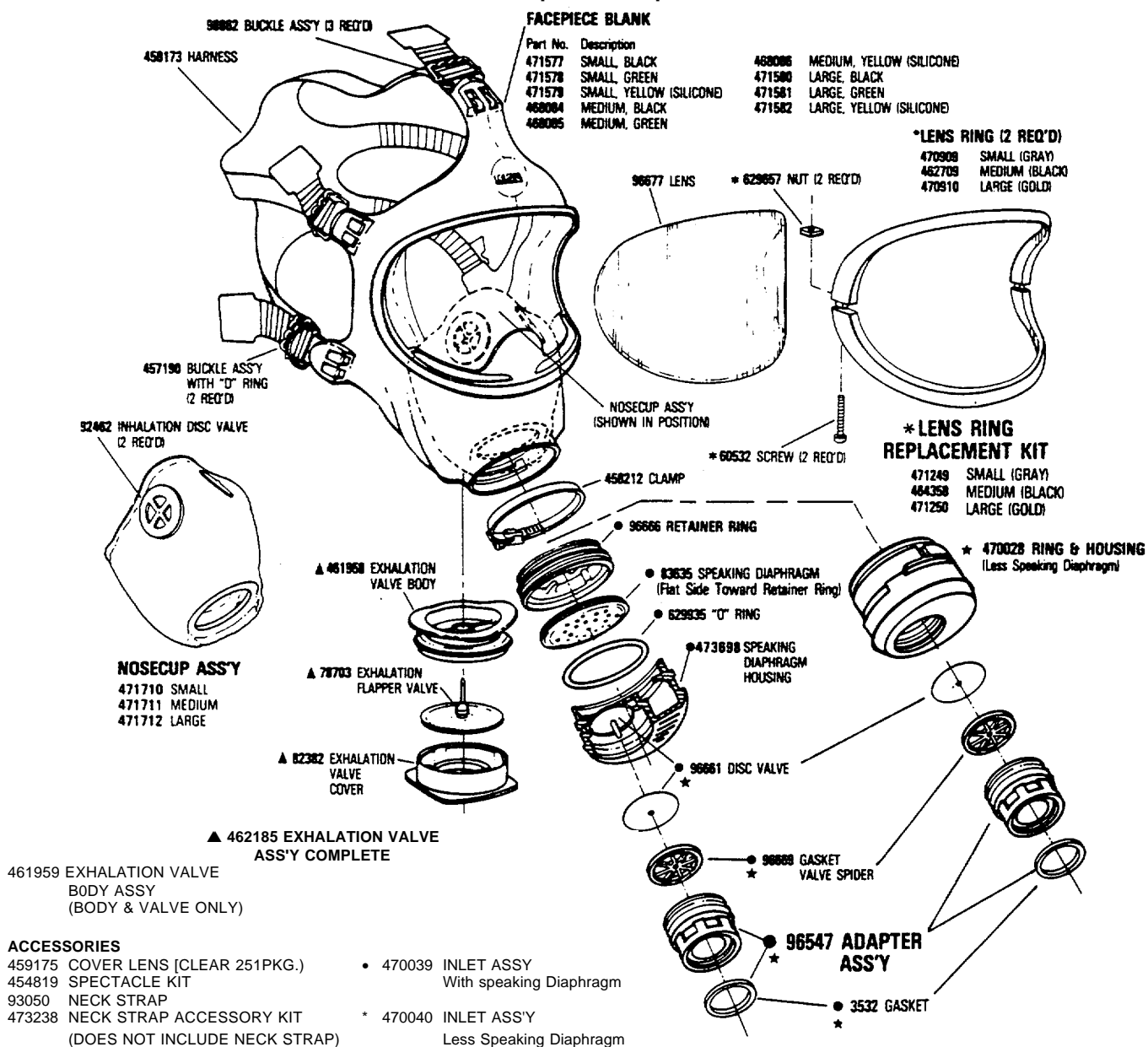
### MEDIUM – MODEL 7-203-1

Part No.	Description
457126	FACEPIECE BLACK
471209	Facepiece, Black, with Nosecup
471212	Facepiece, Black, Less Speaking Diaphragm
471213	Facepiece, Black, with Nosecup, Less Speaking Diaphragm
463872	Facepiece, Green
471211	Facepiece, Green, with Nosecup
471214	Facepiece, Green, Less Speaking Diaphragm
471215	Facepiece, Green, with Nosecup, Less Speaking Diaphragm
464738	Facepiece, Yellow (Silicone), Less Speaking Diaphragm
471210	Facepiece, Yellow (Silicone) with Nosecup
471216	Facepiece, Yellow (Silicone), Less Speaking Diaphragm
471217	Facepiece, Yellow (Silicone) with Nosecup, Less Speaking Diaphragm

### LARGE – MODEL 7-203-3

Part No.	Description
471230	FACEPIECE BLACK
471231	Facepiece, Black, with Nosecup
471232	Facepiece, Black, Less Speaking Diaphragm
471233	Facepiece, Black, with Nosecup, Less Speaking Diaphragm
471234	Facepiece, Green
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471236	Facepiece, Green, Less Speaking Diaphragm
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471238	Facepiece, Yellow (Silicone)
471239	Facepiece, Yellow (Silicone) with Nosecup
471240	Facepiece, Yellow (Silicone), Less Speaking Diaphragm
471241	Facepiece, Yellow (Silicone) with Nosecup, Less Speaking Diaphragm

### Facepiece Components



**Ultravue® Pressure Demand Facepiece**  
 U.S. Patent Numbers 3,323,135 and 3,348,537  
**Facepiece Assemblies**

**SMALL – Model 7-212-2**

Part No.	Description
471371	FACEPIECE, BLACK
471372	Facepiece, Green
471796	Facepiece, Black, Less Speaking Diaphragm
471799	Facepiece, Green, Less Speaking Diaphragm

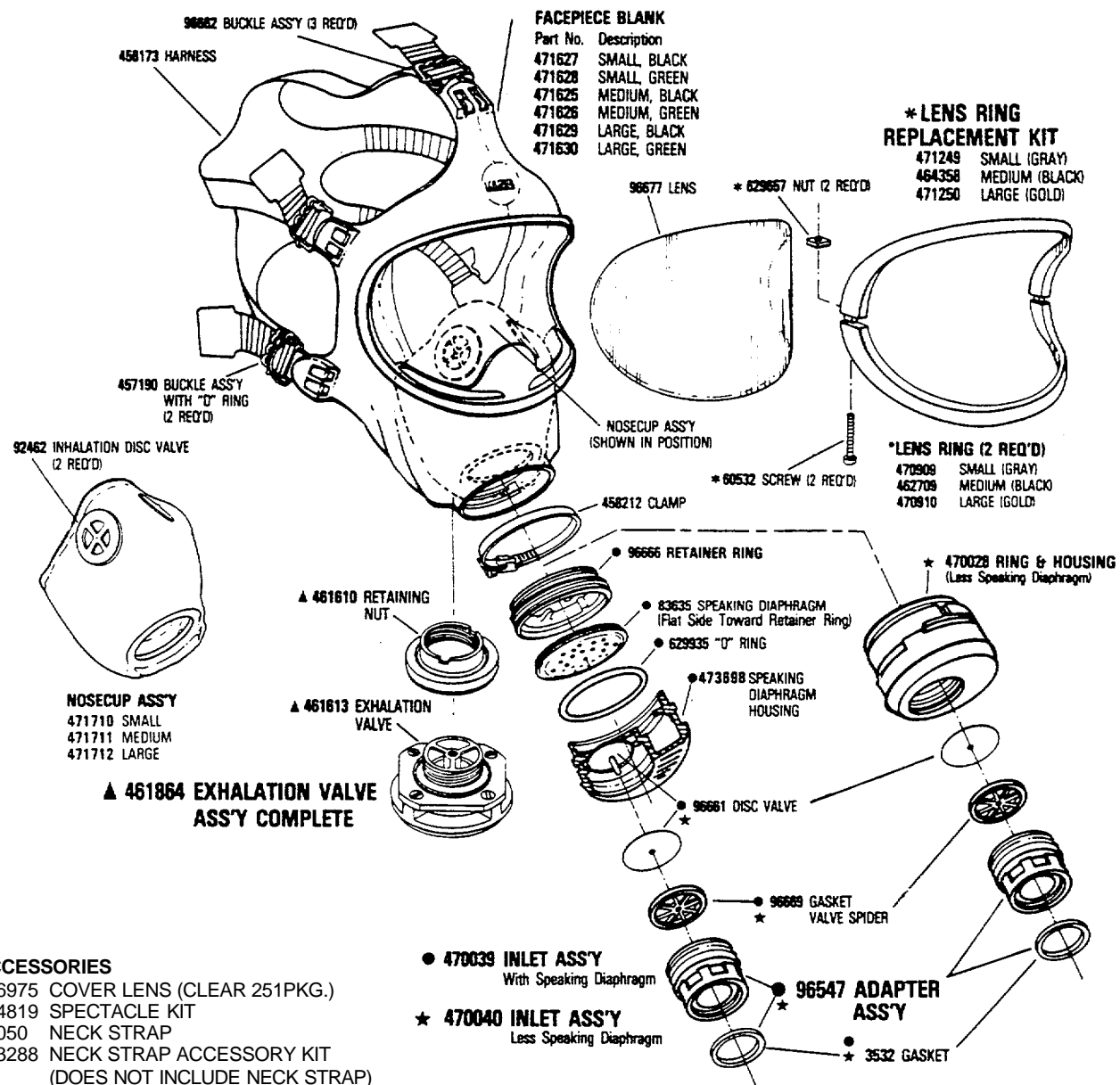
**MEDIUM – MODEL 7-212-1**

Part No.	Description
471369	FACEPIECE, BLACK
471370	Facepiece, Green
471796	Facepiece, Black, Less Speaking Diaphragm
471797	Facepiece, Green, Less Speaking Diaphragm

**LARGE – MODEL 7-212-3**

Part No.	Description
471373	FACEPIECE, BLACK
471374	Facepiece, Green
471800	Facepiece, Black, Less Speaking Diaphragm
471801	Facepiece, Green, Less Speaking Diaphragm

**Facepiece Components**



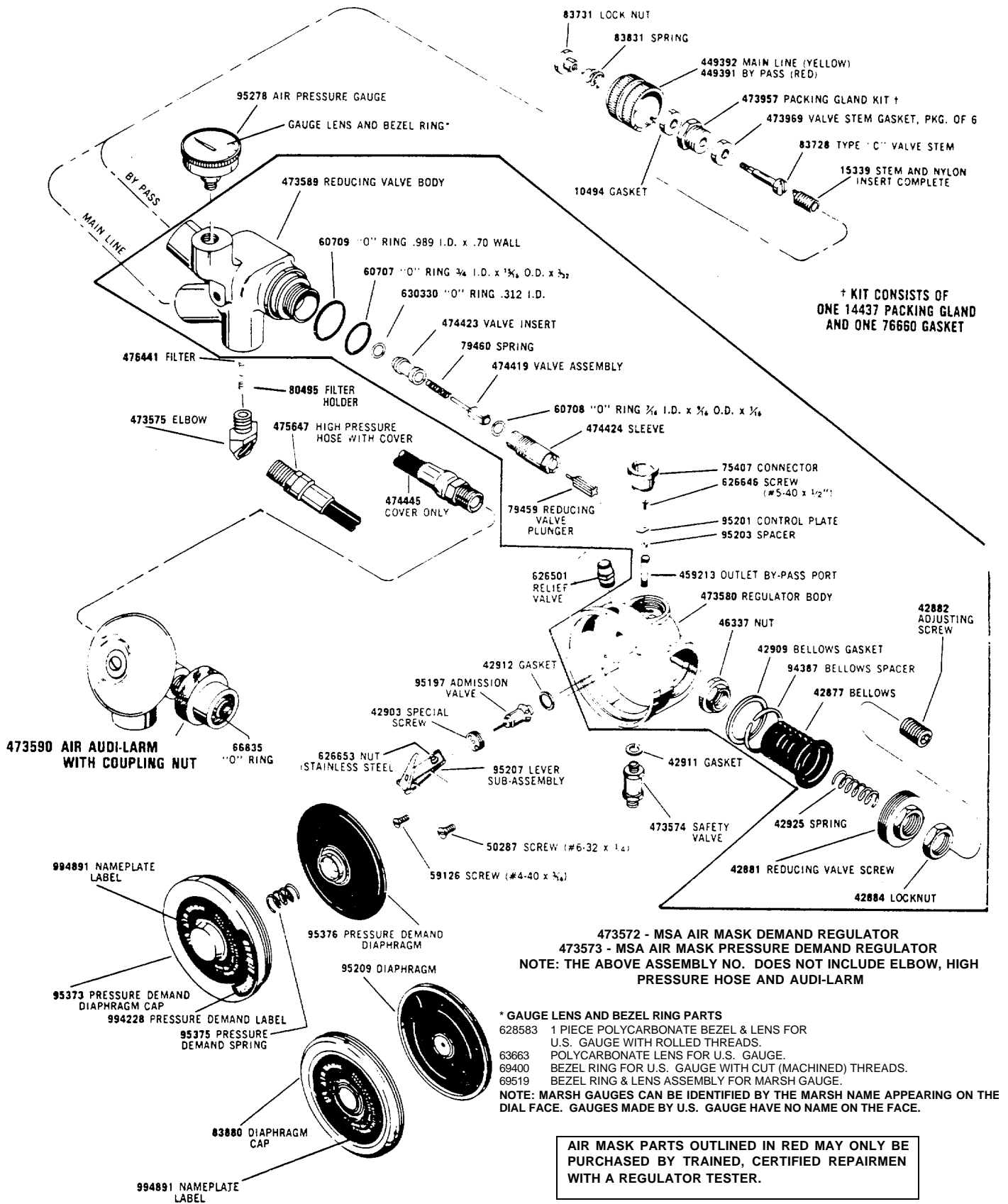
**ACCESSORIES**

- 456975 COVER LENS (CLEAR 251PKG.)
- 454819 SPECTACLE KIT
- 93050 NECK STRAP
- 473288 NECK STRAP ACCESSORY KIT (DOES NOT INCLUDE NECK STRAP)

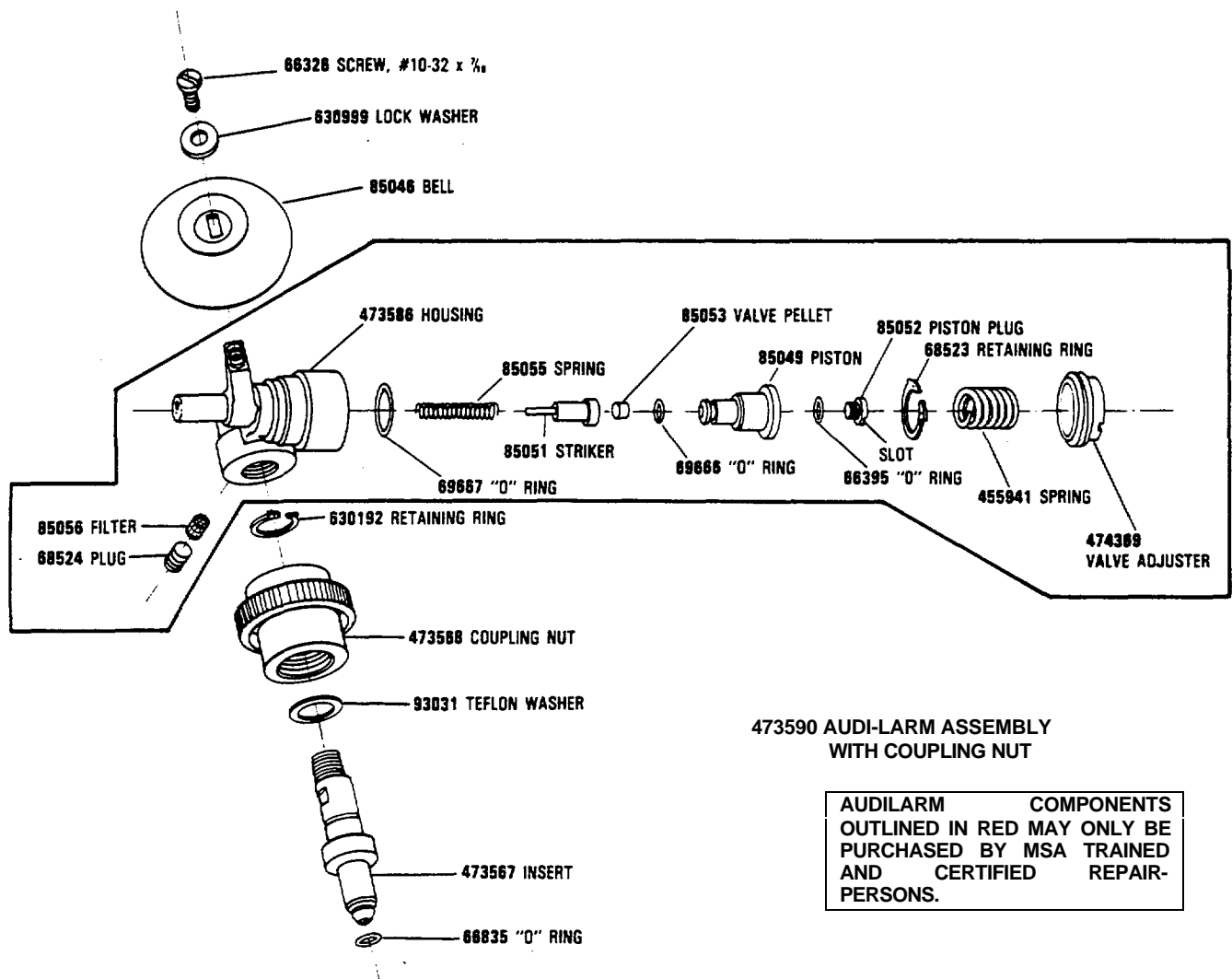




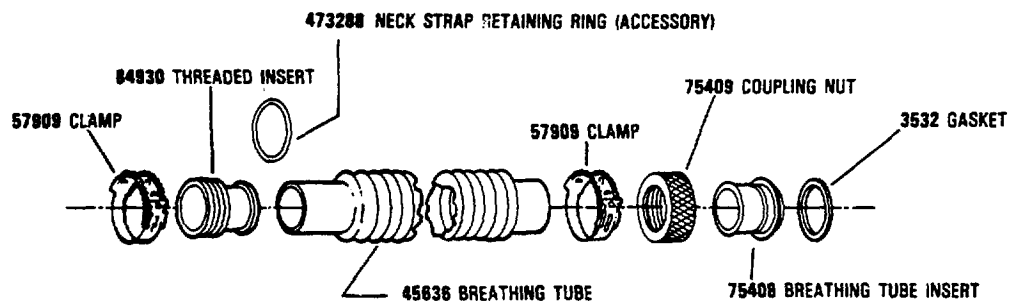
# Ultralite Air Mask (Demand and Pressure Demand Regulator Parts)



**Ultralite Air Mask  
(Audi-Larm™ Assembly Parts)**



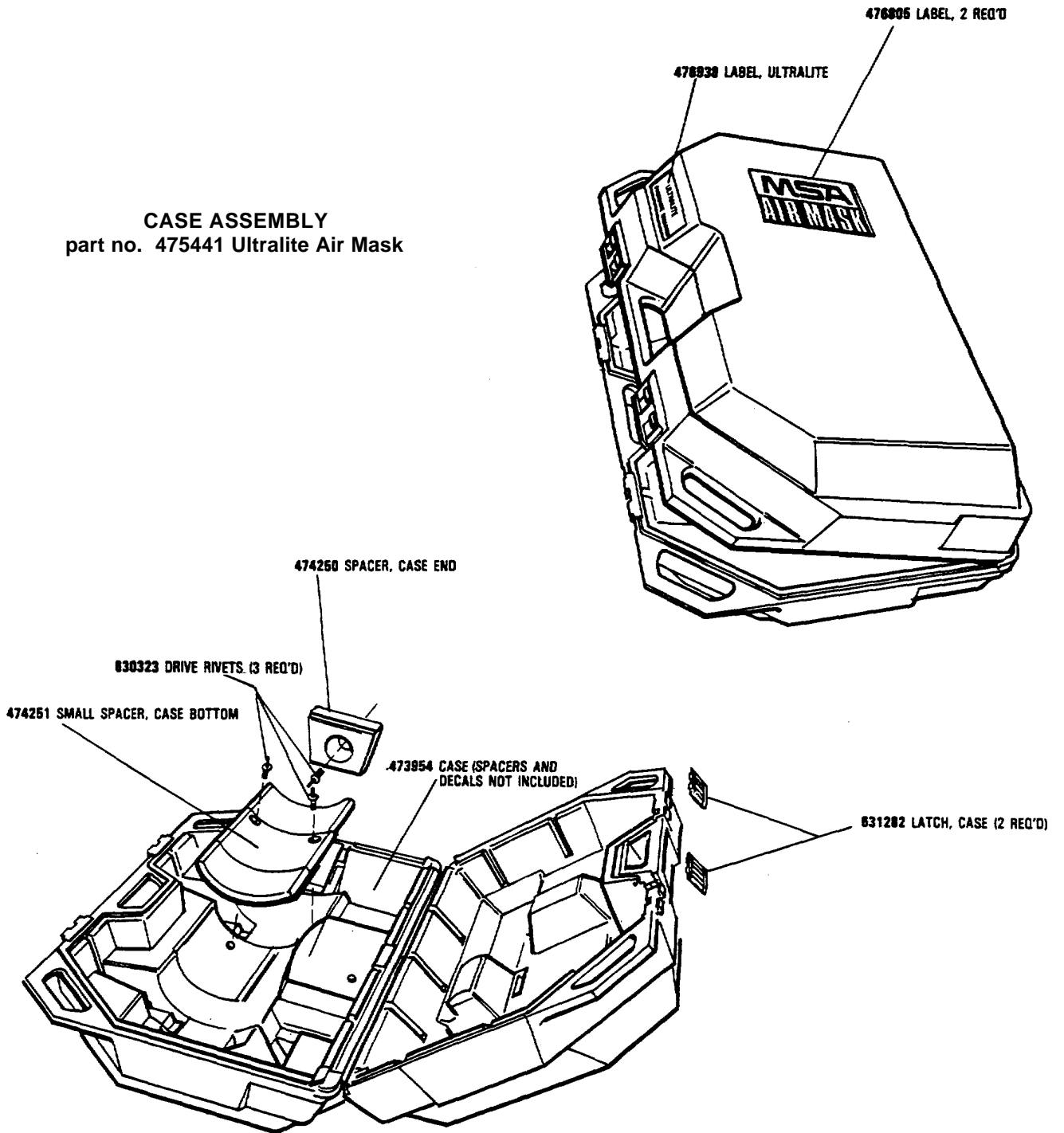
**(Breathing Tube Assembly)**



449267 BREATHING TUBE ASSEMBLY

**Ultralite Air Mask**  
**(Case assembly complete with Spacer, Latches and Labels)**

**CASE ASSEMBLY**  
part no. 475441 Ultralite Air Mask







**Facepiece Assembly**

Molded from soft rubber compound. Ultravue® facepiece has a one-piece polycarbonate lens that is replaceable, five adjustable headbands, speaking diaphragm and spring-balanced exhalation valve. Three sizes in green and black rubber are available. Nosecup and spectacle mounting kit accessories available. Breathing tube connects facepiece to regulator.

**Inspection Check Points**

Rubber: distortion, dirt, cracks, tears, holes.  
Harness: breaks, loss of elasticity, missing buckles and straps.  
Serrations: wear.  
Lens: cracks, scratches, tight seal.  
Exhalation Valve: visual check for cleanliness.  
Breathing Tube: cracks in corrugations missing or loose hose connections.



**Regulator**

Reduces high pressure air from cylinder to breathable pressure and controls the flow of air to facepiece. Pressure demand regulator maintains positive pressure in facepiece during both inhalation and exhalation.

**Inspection Check Points**

Diaphragm Cap: securely in place.  
Pressure Gauge: damage.  
Main-Line and By-Pass Valves: functional with unit pressurized.  
Breathing Tube Connector: threads stripped or worn.



**Audi-Larm™ Warning Alarm**

Sounds a continuous loud warning at approximately 540 psig for about 6 minutes when equipped with a rated 30-minute 2216 psig cylinder. Low pressure alarm assembly located at one end of flexible high pressure-hose that connects cylinder to the regulator.

**Inspection Check Points**

Warning Alarm: functional with unit pressurized.  
High-Pressure Hose: cuts, severe abrasion, connector is hand tight.  
"O" Ring: in place, dirt and wear.



**Cylinders**

1. Fully-wound Composite (aluminum liner fully wrapped with high-strength glass filaments except for the thick neck area).
2. Hoop-wound (wrapped on sides only. Crown and base of cylinders exposed).
3. Steel.

These cylinders have a capacity of 45 cubic feet of air and a rated service life of 30 minutes.

**Inspection Check Points**

Hydrostatic test date: 3 years for Composite and Hoop-wound, 5 years for Steel.  
Cylinder pressure: 2216 psig.  
Body: cracks, dents, weakened areas.  
Valve: damage.  
Gauge: damage, fully charged.



**Harness**

Harness has foam padded two-inch-wide strap at each shoulder, a padded strap across bottom of backplate, and a chest strap. Backplate is made of aluminum. Cylinder is held in position by ratchet-type latch that can engage any of four slots in the stainless steel spring clamp to accommodate various sizes of cylinders.

**Inspection Check Points**

Straps, clips: wear, in place.  
Waist belt: wear, buckle functional.  
Backplate: damage or defects.  
Cylinder latch: holds cylinder tightly.

Stretch the breathing tube to remove water from between the corrugations. Closely inspect the tube for perforations, small cracks, or signs of wear, especially along the corrugations.



Breathing tubes may have marks at the base of each corrugation that appear to be cracks. The marks were created during the molding of the tube. If there are cracks in areas other than the base of the corrugations or perforations, cuts, and signs of wear, replace the breathing tube.



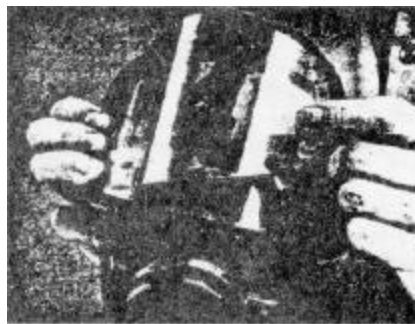
To check the breathing tube for leaks, close one end with a solid rubber stopper. Close the other end with a rubber stopper with a 1/8-inch hole in it. Stretch the tube 10-12 inches beyond its normal length and cover the hole in the stopper. With the hole still covered, release the tension on the tube. The air inside the tube will compress to about 3 psi. Submerge the tube in water. Bubbles will indicate leaks.



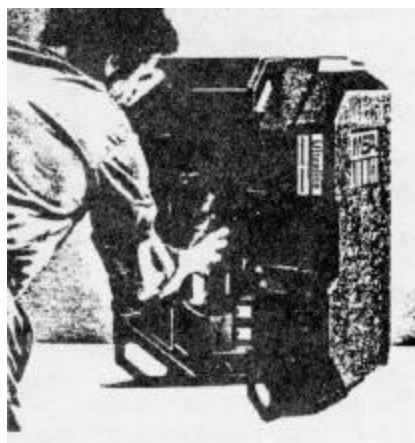
Allow the facepiece and breathing tube to air-dry, remembering to stretch the breathing tube to release excess water. Do not attempt to force-dry the parts by placing them near a heater or in direct sunlight because the rubber will deteriorate.



When the facepiece is dry, install a cover lens to protect the lens from scratches. The cover lens is backed with a pressure-sensitive material for easy installation.



The carrying case also should be cleaned. Turn it upside down and tap both the back and lid to loosen debris. The inside of the case then should be sponged off with the Cleaner-Sanitizer II solution.



## Clean the Harness Assembly

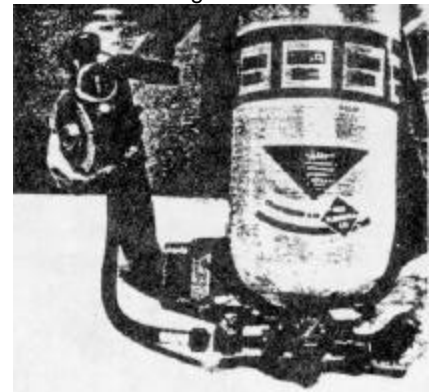
A soiled harness is an open invitation for eventual deterioration and may reduce the serviceable life of the equipment.

A mild soap or commercial cleaning detergent should be used on the harness.

- Wipe off all surface dirt with a sponge dampened (not soaking) with water. Rinse sponge; squeeze dry.
- Work up a thick lather with mild soap or commercial detergent. Thoroughly wash the harness with the lathered sponge, being careful to use the lather only.
- Wipe dry with a clean cloth.
- Let the harness air dry. Do not place it near hot steam pipes or other sources of excessive heat.

## 6. Inspection

Following the cleaning-sanitizing process, the entire apparatus is reassembled and inspected by sight and sound for normal operation. All connections on the apparatus should be checked for tightness.



## 7. Recordkeeping

Following the inspection, the date and initials of the designated person should be recorded on the MSA Inspection Tag. A more detailed record of the operations performed can be noted on the MSA inspection and maintenance log. See page 8 of this bulletin for more details.

When the inspection data has been recorded, the breathing apparatus is stored in a ready position (Step 3).

## Monthly Inspection

In addition to routine inspections and inspections after each use, as called for by ANSI, a more thorough examination and testing procedure must be performed monthly by designated personnel to check cylinders, valves, connections, and hoses for air-tightness. The operation of the regulator valves must be tested and the apparatus cleaned, sanitized, and stored.

Check the cylinder pressure as described in Step 1. If necessary, replace the cylinder (Step 2). Also, examine the facepiece and breathing tube and dry the regulator as in Step 4.

### 8. Check Air-Tightness

Test for air leaks between the cylinder and the regulator outlet by observing changes in gauge pressure. First, block the regulator outlet with your hand or the rubber protective cover. Then open both cylinder and main-line regulator valves. Note the cylinder pressure.



After observing the regulator pressure, close the cylinder valve and watch the regulator pressure gauge.



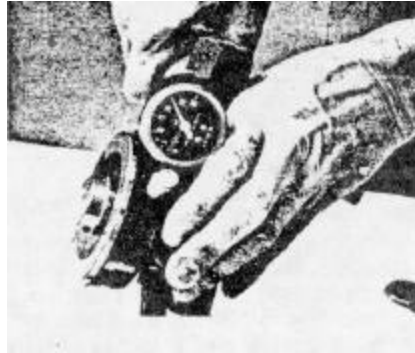
If the needle drops more than 100 psig in 30 seconds, leaks are present. Do not use the apparatus if it leaks. Close

the main-line valve to conserve the air supply.

### 9. Check Audi-Larm Function

MSA recommends that the function of the Audi-Larm warning device be checked by observing the regulator gauge pressure at which the alarm rings. This test should be performed with a minimum cylinder pressure of 1,200 psig.

First, pressurize the system by opening the cylinder valve for a moment, then close it. The alarm should ring, indicating it has automatically cocked. Place your hand or the rubber protective cover over the regulator outlet to block it leak-tight. Open the main-line valve.



Slowly remove your hand or the rubber protective cover from the regulator outlet and observe the drop in pressure on the regulator gauge and the point at which the Audi-Larm begins to ring. The ringing should begin at approximately 540 psig and continue until the air in the system is exhausted. If the Audi-Larm does not function properly, the apparatus must be removed from service. Close the main-line valve.



### 10. Check Diaphragm Function

Check that the cylinder and regulator valves are closed and that the system is not pressurized.

Gently Inhale through the regulator outlet and hold your breath for about 10 seconds. If the negative pressure is maintained, there is no leakage.

Gently exhale through the regulator outlet for about 10 seconds. If the positive pressure is maintained, there is no leakage.



Do not use the apparatus if air flow through the regulator is detected in either test. The regulator outlet should be sanitized after testing.

### 11. Check Main-Line and By-Pass Valves

Operation of the main-line valve and bypass valve is tested by putting on the device and operating it normally. Venting of pressure relief valves, or continuing flow of air through the regulator when the user is not inhaling, indicates the regulator needs to be repaired. In addition, any unusual sounds such as whistling, chattering, clicking or rattling means that the regulator should be further checked. If any of these symptoms occur, the apparatus must be removed from service.



Clean and sanitize the apparatus (Step 5), inspect the entire unit (Step 6), and record information on the MSA inspection tag or checklist (Step 7). Finally, the unit is stored ready for the next use (Step 3).



## Installation of Accessories

### Nosecup

The nosecup is used with the Ultravue facepiece to reduce the possibility of lens fogging. It is effective under conditions of high humidity and/or low (below 32° F) temperatures.



To install the nosecup, position it as shown below. Start at the front of the facepiece and push the rubber ring of the nosecup under the plastic retainer ring of the speaking diaphragm assembly. Continue stretching the nosecup ring and work it securely into place.



### Spectacle Kit

Designed for use by those persons who must wear corrective lenses. A proper seal cannot be established if the temple bars of spectacles extend through the sealing edge of a full facepiece. The kit includes the support assembly, frame guide, and the spectacle frame. Prescription

lenses can be obtained locally or through MSA.



Align the support assembly in the proper wearing position and press the arms together. Put the support assembly inside the facepiece so that the arms are tight against the rubber facepiece edge and the lens.



Adjust the spectacles horizontally by sliding the prongs of the frame in or out of the frame guide.



And adjust them vertically by sliding the frame guide up or down on the metal rods of the support assembly.



### Neckstrap Kit

The neckstrap accessory should always be used to support the facepiece. In this ready position, there is little possibility that water and debris can collect in the facepiece.



Collapse the corrugations of the breathing tube and force the ring into the third corrugation. Remove the neckstrap from the facepiece. Make sure the neckstrap is straight and not twisted, and attach the ends to the ring by collapsing the corrugations and slipping the ends of the strap under the ring. Snap the fasteners closed.



## Safety Standards, Repairs, and Recordkeeping

### ANSI and OSHA Requirements

#### OSHA refers to Inspection and maintenance under 1910.134 of the General Rule

Self-contained breathing apparatus is a vital part of personal protective equipment. It safeguards against hazardous atmospheres. But breathing apparatus is just like any other piece of professional equipment. It requires proper inspection and maintenance.

Under the provisions of the American National Standards Institute's (ANSI) Standards Z88.2 and Z88.5, responsibility for the respiratory protection program must be assigned to an administrator. He and the person(s) he designates must have sufficient knowledge and training to conduct equipment maintenance and inspection. ANSI Z88.2 and Z88.5 describe the inspection and maintenance procedures that designated personnel must follow during the checks made:

- at least weekly
- after each use of the apparatus
- monthly during thorough examination and testing.

The end result of such inspection and maintenance procedures is that the user can be assured that his equipment will be checked in compliance with ANSI requirements.

Copies of ANSI Z88.2 and Z88.5 may be purchased from the American National Standards Institute, 1430 Broadway, New York, N.Y. 10018.

#### Repairs by Qualified Persons Only

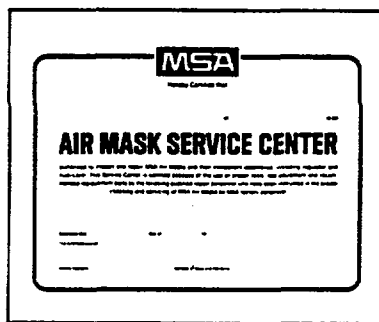
MSA now provides three levels of inspection, maintenance, and repair for self contained breathing apparatus.

Level I includes procedures necessary to conduct a general cleaning and inspection of the breathing apparatus in accordance with the ANSI standards.

The procedures for Level I are included in this bulletin. No special training is required, although the user must have a thorough understanding of the apparatus. Level II is for Trained Air Mask Maintenance Personnel. This

intermediate program covers about 90% of all field repairs. Most of the operations deal with the low-pressure areas of the apparatus, although a few repairs can be made to high-pressure components. Level II requires training by an authorized MSA representative, along with some special tools and an MSA Portable Regulator Tester. A certificate of instruction is issued upon successful completion of the program.

Level III involves the Certified Regulator Repairman Program for authorized MSA Air Mask Service Centers. These persons are authorized to perform all maintenance and repairs, including the high-pressure areas of the regulator, Audi-Larm assembly, and cylinder valve. Certified Regulator Repairmen must first successfully complete Level II training and then be certified by an MSA product specialist. This can be done at your location. Qualified organizations are issued a certificate (see below). If there is no Air Mask Service Center in your area, return the unit to MSA for service.



Here is one note of caution. Breathing apparatus must not be repaired beyond the manufacturer's recommendations. ANSI Z88.5 make this clear "Replacement or repairs shall be done only by qualified persons, using parts designed for the breathing apparatus. No attempt shall be made to replace parts or to make adjustments or repairs beyond the manufacturer's recommendations. Reducing or admission valves or regulators shall be returned to the manufacturer or to a

trained technician for adjustment or repair. Parts shall not be interchanged among devices of different manufacturers."

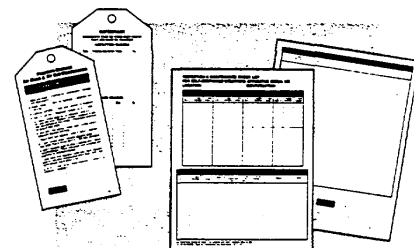
Under no circumstances should any **maintenance or repair operations be attempted unless personnel are trained or certified by MSA. Without training or certification, only those operations described in this bulletin may be performed on MSA breathing apparatus.**

#### MSA Inspection Tags and Forms

For easy checking and recording of inspections called for under OSHA 1910.134 and ANSI, an inspection tag (shown below) for the Ultralite Air Mask is available from MSA.

The inspection tag may be attached to the backplate of the breathing apparatus, or elsewhere, for easy reference. A checklist on the front of the tag outlines the procedures for conducting the inspections that must be made on breathing apparatus after each use and monthly, as prescribed by OSHA.

The back of the card has space available to record both monthly inspections and individual use of the apparatus.



In addition, MSA can supply you with a permanent log for recording the weekly, after each use, and monthly inspections. The log can be kept in the files, separate from the apparatus. This letter-size log (shown above) is a handy check-off list to use when making inspections of breathing apparatus. A serial number on the regulator can be used to identify each unit.

Note: This bulletin is offered only as a general guide for the inspection and maintenance of Ultralite Air Masks from MSA. Under no circumstances should these products be inspected and maintained except by qualified, trained personnel and not until the instructions, labels, or other literature accompanying the products have been carefully read and the precautions therein set forth are followed. Only they contain the complete and detailed information concerning these products.

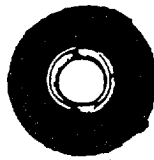
**MSA**

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Branch offices throughout the United States (Call toll-free 1-800-MSA-2222).  
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**MSA Air Mask Maintenance**

**CHECK LIST**

1. Mask and Hose - Examine for contamination, damage and deterioration.
2. Stretch Hose - Check for tightness of assembly and cracking.
3. Examine Harness for wear and function of hardware.
4. Test unit as worn (Regulator hooked up to cylinder).
  - a. Check cylinder gage for full indication (2216 P.S.I. on Ultralite units; 4500 P.S.I. on Custom 4500 Air Mask). Replace or recharge cylinder if pressure is less than that stamped on the cylinder. (This procedure should be done at least weekly.)
  - b. With main-line (yellow) closed, open cylinder valve to pressurize regulator and hose.
  - c. Place hand over regulator outlet to block it leaktight.
  - d. Open the mainline valve.
  - e. Close cylinder valve. Compare regulator gage to cylinder gage. Plus or minus 100 P.S.I. (200 total) allowable.
  - f. Watch regulator gage for drop in reading which would indicate leakage. (Check instruction card furnished with apparatus for allowable leakage.)
  - g. Take hand from regulator outlet slightly and check regulator gage for indication of pressure at which Audi-Larm rings. Alarm should ring at about 1/4 full.
  - h. With cylinder valve closed, breathe out remaining pressure, if necessary.

**MINE SAFETY APPLIANCES COMPANY**

600 Penn Center Boulevard, Pittsburgh, PA 15235 USA  
489 (L) Rev. 5 466051



**for MSA® Self-Contained Breathing Apparatus Cylinders**

Breathing apparatus cylinders should be recharged as soon as practicable after use. Cylinders should not be stored partially charged, for two reasons:

1. If used without recharge, the duration of the apparatus is reduced.
2. The safety relief device (cylinder burst disc) is designed to vent the air from a full cylinder when the cylinder is exposed to fire or heat. If the cylinder is not full, damage to the cylinder's strength may occur before the burst disc vents when exposed to fire or heat.

For maximum safety the cylinders should be stored full or empty (pressure above ambient but less than 100 psig).

Prior to recharging, cylinders must be examined externally for evidence of high heat exposure, corrosion, or other evidence of significant damage.

**WARNING**

**Cylinders which show evidence of exposure to high heat or flame; e.g., Paint turned to a brown or black color, Decals charred or missing, Gauge Lens melted, or Elastomeric materials distorted; shall be removed from service and re-hydrostatic tested prior to recharging.**

Additional information of value when performing external and internal inspections of cylinders may be found in CGA Pamphlet C-6, "Standards for Visual Inspection of Compressed Gas Cylinders" and/or CGA Pamphlet C-6.2-1982, "Visual Inspection for Fiberglass Reinforced High Pressure Cylinders," available from the Compressed Gas Association, Inc., 500 Fifth Avenue, New York, New York 10036.

**If there is any doubt about the suitability of the cylinder for recharge, it should be returned to a certified hydrostatic test facility for expert examination and retesting.**

Always check to be sure the retest date is within the prescribed period and that the cylinder is properly labeled to indicate its gaseous service. New labels are restricted items which are not available except through certified hydrostatic test facilities.

Establish the service pressure of the cylinder. Type 3AA cylinders that bear a plus (+) sign after the latest retest date may be recharged to a pressure 10% greater than the stamped service pressure; i.e., a cylinder stamped 3AA 2015 with a plus (+) sign after the latest test date may be recharged to 2216 psig. All other cylinders which are not type 3AA shall be filled to the designated service pressure only (as found on the DOT approval label).

Appropriately connect the cylinder to the filling recharge system and refill at a recommended rate less than 300 psi per minute. (use caution if faster recharging rates are used). Terminate the filling when the pressure reaches service pressure, and allow the cylinder to cool to room temperature. If necessary, top-off the cylinder such that service pressure is attained with the cylinder at a temperature of 70° F. Close the valves on the cylinder and the recharge system and remove the cylinder. Apply a soap solution to determine if there is any leakage between the cylinder and the valve. If there is no leakage, the cylinder is now ready for reuse.

**Manufactured by  
MINE SAFETY APPLIANCES COMPANY  
PITTSBURGH, PENNSYLVANIA, U.S.A., 15208**

## Pressure Demand Exhalation Valves

part numbers 461613 and 461860

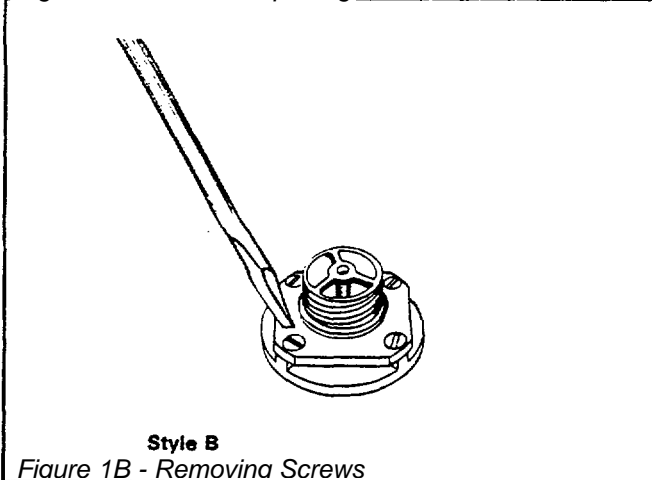
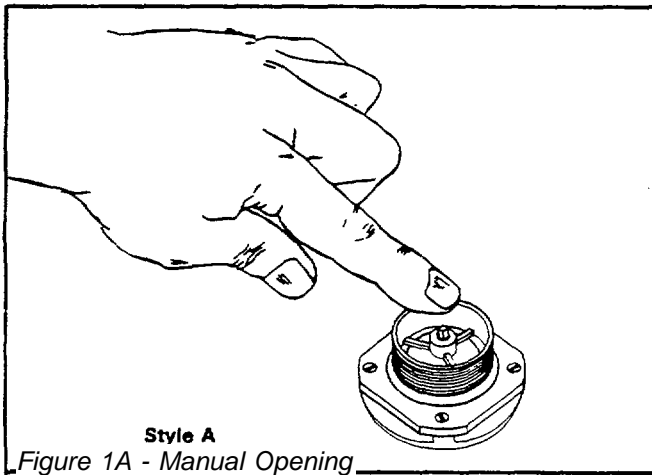
Refer to the illustrated parts list for the apparatus

### CLEANING INSTRUCTIONS

#### General:

Moisture in the breath, saliva, dust collected in the mask, and perspiration adhering to the valve create a bonding effect on the valve, which may cause it to stick on the first exhaled breath. Two styles of valves exist which require different attention to this problem (See Figures 1A and 1B for pictorial differences).

Style A in Figure 1A can be manually opened should it stick during storage. Press on the center pin until it is flush with the guide hole. The following procedures are recommended for cleaning. A leaking valve probably only needs cleaned.



#### After Each Use:

After washing and rinsing the facepiece, the valve in Style A must be held open (See Figure 1A) and flushed with rinse water. Style B does not have this feature. Before the facepiece is stored, the valve must be forced air dried as

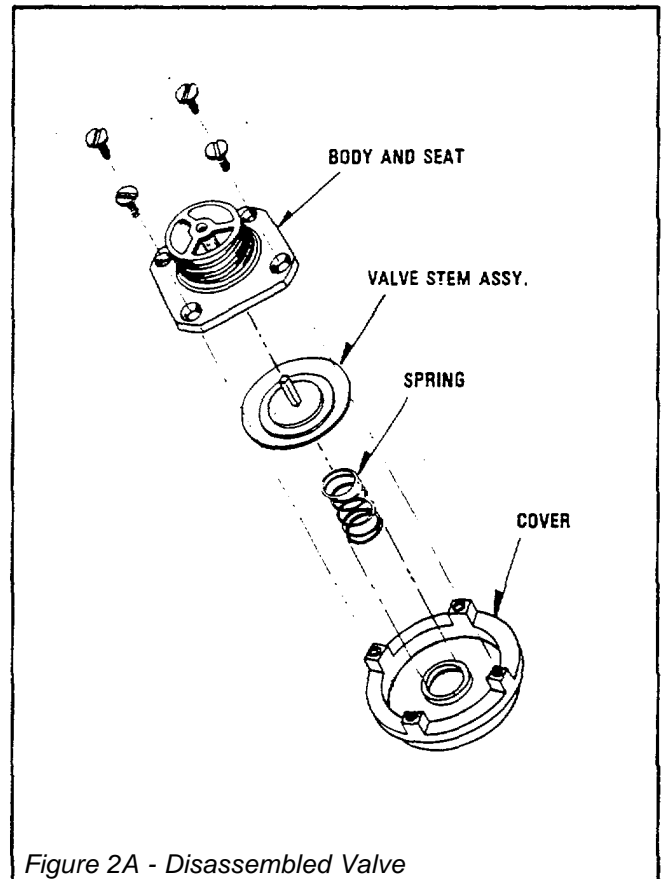
described in Step #8. The purpose of this procedure is to insure the valve is stored in a dry condition.

#### Periodic Cleaning:

1. Remove the valve from the Ultravue® facepiece by unscrewing the nut, Part Number 461610, inside the facepiece with the special wrench supplied with the apparatus. Remove the valve from the Clearvue® facepiece by removing the clamp, Part Number 57909.

**CAUTION:** When performing the next step do not stretch or deform the spring which is inside the valve. Handle the seat spring and valve stem assembly carefully. DO NOT scratch or nick the valve seats.

2. Disassemble the valve by removing the four screws shown in figures 1B and 2 with the proper size screwdriver.





3. Clean the valve seat and rubber flapper on the valve stem assembly with a soft cloth or soft bristle brush. See figures 3 and 4. Use warm water and MSA® Cleaner-Sanitizer, Part Number 34337. Add one package of powdered Cleaner-Sanitizer to a gallon of warm water (about 120°F). It is not necessary to clean the compression spring. Rinse parts thoroughly with warm clear water.

**CAUTION: Cleaning and sanitizing at the recommended 120°F temperature will avoid overheating and distortion of parts which would necessitate replacement.**

4. Dry all the parts by air drying or blowing clean dry breathable compressed air over the parts.

5. Reassemble the valve by setting the valve body on a clean surface with the seat side up, see figure #5. Insert the stem of the valve stem assembly into the guide hole of the body, set the spring in place on the valve stem assembly and insure that spring seats in the guide socket inside the cover. Install the four screws. The last one or two turns of the screws will have greater resistance to turning. This is the self locking feature of the screw. Damaged screws should be discarded and replaced with new ones.

\* 6. Install the valve assembly in the facepiece and insure that the nut is firmly tightened.

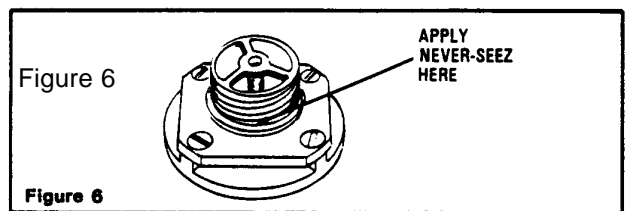
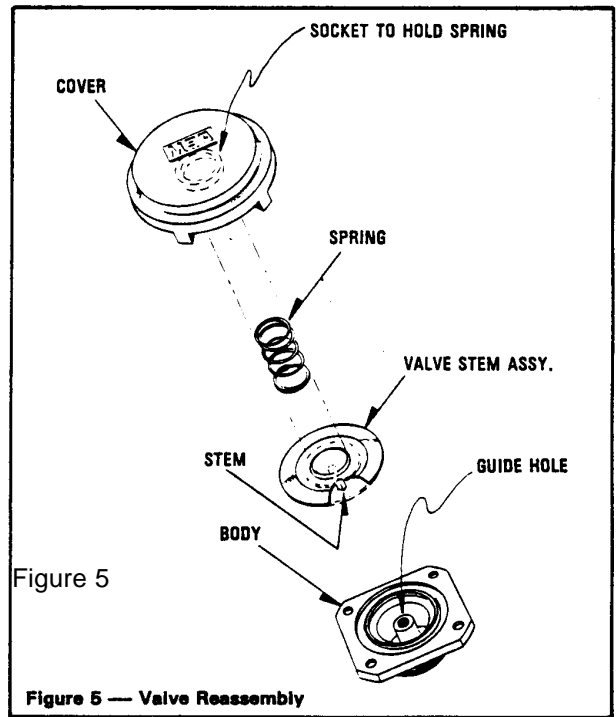
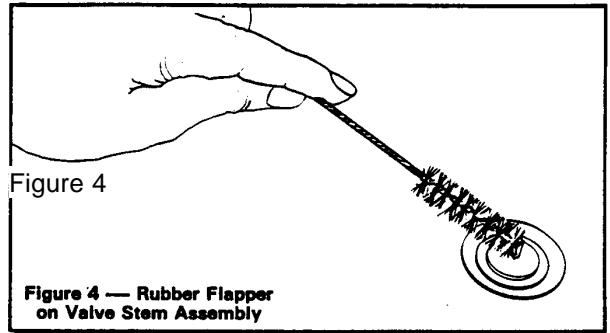
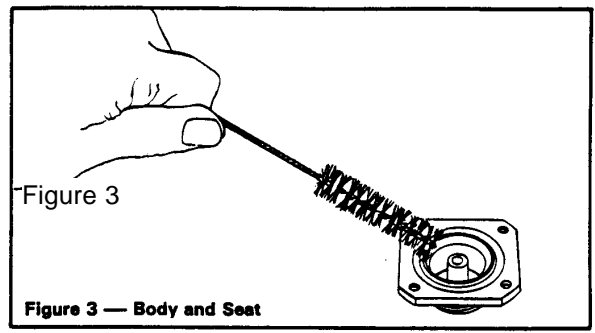
7. Don mask and test for leaks as per the apparatus instructions.

8. Before storage, the valve must be forced air dried. Do this by disconnecting the breathing tube from the facepiece, hold the end of the tube over the exhalation valve inside the facepiece and blow air through the valve, by opening the BY PASS valve slightly. Make sure air passes through the valve for about one-half minute.

**Storage:** Store the mask in the plastic bag furnished with the apparatus.

\* **Applies to the Ultravue facepiece only. For Clearvue facepiece tighten 57909 Clamp around valve body.**

**IMPORTANT NOTE:** When you install the valve assembly in the Ultravue facepiece (Step 6), it is recommended that you rub a small amount of Never-Seez compound (Part Number 29527) on the threads of the valve.



## APPENDIX C

## Preventive maintenance checks and services (PMCS) for the Workboat, Lifesaving and Firefighting System

## C-7 Introduction to PMCS

## NOTE

**TM 55-1930-209-14&P-9 contains PMCS FOR ALL SYSTEMS ON THE ROWPU Barge. This appendix contains only PMCS for the Workboat, Lifesaving and Firefighting System**

## a. General.

- (1) Systematic (B) before, (D) during, (A) after, and scheduled periodic PMCS are essential to ensure that the Reverse Osmosis Water Purification Barge is in operational readiness at all times. The purpose of the PMCS program is to discover and correct deficiencies and malfunctions before they cause serious damage or failure of the barges and their support systems. An effective PMCS program requires that operators report all unusual conditions noticed before, during and after operation as well as while performing periodic PMCS. All deficiencies and malfunctions discovered during maintenance inspections must be recorded, together with the corrective action taken, on DA Form 2404 (Equipment Inspection and Maintenance Worksheet).
- (2) A schedule for preventive maintenance inspections and service should be established and adhered to. When operating under unusual conditions, such as extreme heat or cold, it may be necessary to perform PMCS more frequently.
- (3) The PMCS items have been arranged and numbered in a logical sequence to provide for greater efficiency and the least amount of downtime required for maintenance.

## b. PMCS columnar entries.

- (1) Item Number Column. Checks and services are numbered in chronological order regardless of interval. This column is used as a source of item numbers for the "Item Number" column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording results of PMCS.
- (2) Interval Column. The interval columns tell you when to do a certain check or service: before, during, or after operation. Sometimes a dot may be placed in more than one interval column which would mean you should do the check or service at each of those intervals.
- (3) Item to Be Inspected Column. This column lists the common name of the item to be inspected such as "Air Filters."
- (4) Procedures Column. This column tells you how to do the required checks and services. Carefully follow these instructions.
- (5) Equipment is Not Ready/Available if Column. This column tells you when and why your equipment cannot be used.

## NOTE

**The terms "Ready/Available" and "Mission Capable" refer to the same status: equipment is on hand and is able to perform its combat missions. (See DA PAM 738-750).**

- (6) Increased Inspections. Perform weekly as well as Before Operations PMCS if:
  - (d) You are the assigned operator and have not operated the item since the last weekly PMCS.
  - (e) You are operating the item for the first time.
- (7) Leakage definitions. In checking for fluid leaks, the following leakage definitions apply to all ROWPU barges and barge equipment, product water, and seawater leakage by class type.
  - (a) Class I - Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.
  - (b) Class II - Leakage of fluid great enough to form drops, but not enough to cause drops to drip from the item being checked/inspected.
  - (c) Class III - Leakage of fluid great enough to form drops that fall from the item being checked/inspected.

**CAUTION**

**Equipment operation is allowable with minor leakages (Class I or II). However, the fluid level or operating pressure of the item being checked/inspected must be considered. When in doubt, notify the shift leader or bargemaster.**

**When operating with Class I or Class II leaks, continue to check fluid levels as required by PMCS and operating instructions.**

- (8) The following fuel and hazardous material leakage procedures apply for any fuel, chemical, or bilge system.

**WARNING**

**Class I, II or III leaks or seepage occurring in a fuel, chemical, or bilge container, tank, line, piping, or valve can cause fire or health hazards.**

- (a) If any leaks or seepage from a fuel, chemical, or bilge container, tank, or fluid line is detected, it must be immediately reported to the shift leader or bargemaster for corrective action.
  - (b) To prevent combustible or toxic fumes from collecting or contaminated material from spilling, exercise extreme caution after detecting leaks or seepage of flammable or hazardous material.
- c. Continuous operation. When equipment must be kept in continuous operation for extended periods of time, check and service only those items that can be checked and serviced without disturbing operations. Perform complete checks and services when the equipment can be shut down.
  - d. Maintenance log. Always record the time and date of PMCS, any deficiencies noted, and corrective action taken in the PMCS log book.

**C-2 Major components.** The workboat, lifesaving and firefighting system consists of a 23-foot, reinforced aluminum-hulled, triple-V-bottomed craft, liferafts, lifevests, lifesaving ring buoys, a Halon 1301 system, CO<sub>2</sub> hose reel units, a smoke detector system, fire extinguishers, breathing apparatuses, and a portable firefighting pump. The major components for this system are listed in CHAPTER 1. Also listed are basic functions and location on the barge for each component.

**C-3 Workboat, lifesaving and firefighting equipment system description.** This system provides water transportation for crewmembers and visitors, small cargo, transporting the messenger line for shore discharge hose and similar work-related tasks associated with operating the ROWPU barge in a safe manner.

**C-3.1** Workboat is a 23-foot, reinforced aluminum-hulled, triple-V-bottomed craft with a forward cabin for six passengers plus the operator and a flush after-deck for small cargo and messenger line reel unit. Closed cell flotation foam has been used to fill the forward compartment, under the cabin floor, and small compartments on both sides of the engine compartment. Workboat has two push knees on the bow, an aluminum tubular protective frame around the outboard drive, and two bow and two stern mooring bitts. Workboat has a diving ladder that fits into sockets on either port or starboard just aft of cabin and forward of aft guard rail. Lifesaving equipment includes eight lifevests stowed under cabin benchseats and a ring lifebuoy with floating marker light and line.

**C-3.2** Power is supplied by a six cylinder inline turbo-charged diesel engine, inboard/outboard configuration, driving a single propeller. Engine revolutions per minute (rpms) and engagement are controlled by one lever at the operator's station. Steering is by hydraulically operated controls at the operator's station. Complete instrumentation, including a 4-inch compass and engine hour meter, is included at the operator's station. Workboat has two automatic bilge pumps, and a 50-gallon diesel fuel tank in the engine compartment.

**C-3.3** Workboat, when not in daily use, is stowed in its cradle on deckhouse top. It is held in place by three strap winches on each side. These straps are hooked into three eyes on each side of boat just under the rubber bumper. The boat is launched from storage using a three-point suspension harness attached to specially constructed points on the hull and lifted overboard by a hydraulic bow crane and lowered into the water. The boat is lifted from the water and stored on the cradle in the same manner.

**C-3.4** Lifesaving Equipment, consists of 2 liferafts, 15 type II, and 24 type V lifevests and 4 lifesaving ring buoys. These liferafts are designed primarily to protect personnel until rescue vessels arrive. They are equipped with two small paddles for maneuvering only. Life buoys and lifevests are designed to sustain a conscious person in the water while awaiting immediate rescue, not for moving any distance while in the water.

**C-3.5** Barge firefighting equipment consists of Halon 1301 system, 2 CO<sub>2</sub> hose reel units, a smoke detector system, 17 portable CO<sub>2</sub> fire extinguishers, 5 dry chemical fire extinguishers, 5 self-contained breathing apparatuses, and a portable, engine-driven firefighting pump. In addition, there is a 10-pound, portable, dry chemical fire extinguisher on the workboat.

Table C-1. Preventive Maintenance Checks and Services for Workboat, Lifesaving, and Firefighting Systems (Continued)

ITEM NO.	INTERVAL					ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY/ AVAILABLE IF
	B	D	A	D	H			
						WORKBOAT	<b>NOTE</b>	
							<b>These procedures start with the workboat in the water and secured to the side of the barge with four lines using the small workboat cleats on the forward two-thirds of the barge on either side in the area with the vertical fenders.</b>	
1	•		•	•		Hull	Make visual check of hull and installed equipment, such as running lights and searchlights. Make sure it is properly secured with lines and bumpers.	
2	•		•	•		Engine Compartment	<ul style="list-style-type: none"> <li>a. To check engine compartment, open cabin and make sure master switch is OFF. Obtain engine hatch tool from under operator's seat.</li> <li>b. Using hatch tool, rotate lock nuts on each corner one-half turn counterclockwise and slowly open engine compartment (aft deck closure). Check for escaping air which indicates that water may be entering engine compartment and forcing air out.</li> <li>c. Check engine compartment for diesel fuel, water, oil, or hydraulic fuel leaks. Tighten filters and fittings as necessary.</li> </ul>	Class III leaks.
3						<u>Engine</u>		
3a		•		•		Engine Start/ Workboat Controls Activation	Perform the following engine start and workboat controls activation procedures: <ul style="list-style-type: none"> <li>1) With all electrical circuits OFF, except bilge pump on AUTO setting, turn master switch ON.</li> <li>2) Turn ignition switch to position 1 to check engine electrical accessories.</li> <li>3) Lower outboard drive, if in the TILT range. Small red light on outboard drive panels is ON if outboard drive is in TILT range.</li> </ul>	

Table C-1. Preventive Maintenance Checks and Services for Workboat, Lifesaving, and Firefighting Systems (Continued)

ITEM NO.	INTERVAL					ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY/ AVAILABLE IF
	B	D	A	D	H			
							<p style="text-align: center;"><b>CAUTION</b></p> <p><b>Engine must NOT be started with outboard drive in TILT range. When engine is in TILT UP position, water pickup point on outboard drive is out of water and engine cannot receive seawater to cool closed coolant system.</b></p> <p>4) Release engine speed control from shift control by placing shift control lever in NEUTRAL position, and while holding in on button at bottom of lever, move lever forward.</p> <p>5) Check fuel gauge on instrument panel. Refuel, if necessary, in accordance with Item 3 c b.</p> <p>6) Turn ignition switch to position 2, activating diesel engine glow plugs. If engine is cold, hold in this position for 30 seconds. An automatic cold starting device is built into fuel injection pump. This warmup of glow plugs is not necessary on a warm engine.</p> <p style="text-align: center;"><b>WARNING</b></p> <p><b>Operator and passengers onboard workboat must wear ear protectors whenever engine rpm exceeds 1500 rpm.</b></p> <p>7) Pull shift control lever to neutral position. This will engage shifting mechanism with engine speed control. While workboat is still tied to the barge, move control lever to FORWARD at idle. Check that boat starts moving forward. Go immediately to NEUTRAL and then do the same in REVERSE. With shift control lever in NEUTRAL, turn wheel strongly to starboard and then to port. Have observer check that outboard drive moves in response to wheel movements. If these checks indicate power and control, and engine instruments are indicating normal conditions, proceed with normal operations. If workboat does NOT respond to these checks, notify shift leader or bargemaster for corrective action.</p>	<p>Outboard drive does not respond to wheel movement.</p> <p>Engine does not respond to FORWARD or REVERSE gears.</p>

Table C-1. Preventive Maintenance Checks and Services for Workboat, Lifesaving, and Firefighting Systems (Continued)

ITEM NO.	INTERVAL					ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY/ AVAILABLE IF
	B	D	A	D	H			
3b	•	•	•	•		Oil Level	<p>8) Start engine and release starter switch, and it will return to position 1, master switch, all electrical accessories on. Check instruments. Oil pressure gauge and voltmeter readings should be normal. If instrument readings are not in normal range or if engine alarm buzzer sounds, stop engine immediately. Notify shift leader or bargemaster for corrective action.</p> <p>9) Run engine at high idle (900-1200) until gauges reach normal operating ranges and check that cooling water is being discharged overboard.</p> <p>10) Reduce engine speed to normal idle (600 rpm) and check that engine is running smoothly.</p> <p>a. Check oil level. Dipstick is on top of engine between branches of intake manifold. Oil level should be between top and bottom of hatch marks of stick. Fill if necessary through oil filler cap on top of engine. Use diesel lubricating oil CD (MIL-L-2104), SAE 20W30, above 50°F and oil CD, SAE 10W, below 50°F.</p> <p style="text-align: center;"><b>WARNING</b></p> <p><b>At operating temperatures, engine coolant is hot and under pressure. It also contains alkaline materials harmful to eyes and skin. To avoid personal injury, check coolant level only when engine is stopped and filler cap is cool enough to be touched with a bare hand. Should engine coolant come in contact with eyes or skin, immediately flush affected area with clean water and seek medical assistance if necessary.</b></p>	<p>Instrument readings not normal or engine alarm buzzer sounds.</p> <p>Cooling water being discharged overboard.</p> <p>Oil level is below hatch marks on dipstick.</p>

Table C-1. Preventive Maintenance Checks and Services for Workboat, Lifesaving, and Firefighting Systems (Continued)

ITEM NO.	INTERVAL					ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY/ AVAILABLE IF
	B	D	A	D	H			
3c	•		•	•		Engine Fuel System	<p>a. Check fuel tank for leaks and cracks. Class III leaks.</p> <p style="text-align: center;"><b>WARNING</b></p> <p><b>During fueling operations, neither open flame nor smoking is permitted within 25 feet of fueling operations. Only minimum number of persons necessary to conduct fueling are permitted in area. Make sure all electrical accessories are off before a refueling operation begins.</b></p> <p>b. Check fuel gauge on instrument panel. If necessary to refuel, follow these procedures:</p> <p style="text-align: center;"><b>WARNINGS</b></p> <p><b>ELECTRICAL HIGH VOLTAGE CAN KILL YOU</b></p> <ul style="list-style-type: none"> <li>- <b>Electrical high voltage cannot be seen but it can kill you. Electricity is unlike most other dangerous things you can come in contact with because it gives no warning and no symptoms to be wary of. Its effect is immediate. It can kill you, render you unconscious, or severely burn you. To ensure your safety and that of other maintenance personnel, always observe the following precautions:</b></li> </ul> <p><b>ALWAYS make sure the unit is properly grounded.</b></p> <ol style="list-style-type: none"> <li>1) Secure engine compartment hatch.</li> <li>2) Attach ground wire from barge to workboat, assuring good contact from clamp to metal part of workboat.</li> <li>3) Use Perko special key or large screwdriver to open fuel filler cap on port-side aft of cabin.</li> <li>4) Monitor fuel gauge on instrument panel at operator's station while filling tank. Do NOT fill fuel tank full. Leave room for expansion of cool fuel coming from voids storage tank into warmer workboat fuel tank.</li> <li>5) Close fuel filler cap.</li> <li>6) Remove ground wires and reattach to fueling stations.</li> <li>7) Clean fuel spills immediately.</li> </ol>	Workboat not properly grounded.
		•	•		200 hrs			



Table C-1. Preventive Maintenance Checks and Services for Workboat, Lifesaving, and Firefighting Systems (Continued)

ITEM NO.	INTERVAL					ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY/ AVAILABLE IF
	B	D	A	D	H			
					200 hrs		c. Change air filter. Clean around air filter housing. Loosen four clamps and remove cover on air intake housing. Change filter and install in reverse order. Make sure dirt does not enter housing while changing filter.	
					200 hrs		d. Change crankcase ventilation air filter. Unscrew old filter and discard. Screw in new filter.	
					200 hrs		e. Turn off fuel valves:  1) Barge 1. Turn off both incoming and return fuel line valves on portside stern bulkhead above the Racor fuel filter. These two shutoff valves are not installed on Barges 2 and 3. 2) Barges 2 and 3. Turn off fuel oil at turnoff valves on top of fuel tank. Be prepared for more fuel oil spills as fuel in line drains out through filter mounting.	
					200 hrs		f. Change engine-mounted fuel filter (may not be mounted on all workboat engines).  1) Unscrew old filter and discard. Avoid fuel oil splashes and spills. 2) Check that contact surface in cover and filter gasket are clean and undamaged. 3) Carefully fill new filter with clean fuel oil and screw on by hand until gasket touches cover. Tighten no more than another 1/2 turn.	Filter gasket damaged.
					200 hrs		g. Change Racor fuel filter on stern bulkhead.  1) Use T-handle on top of filter to unscrew top. 2) Inspect gasket. If reusable, clean and retain. If not reusable, replace gasket. 3) Remove old filter element and discard. 4) Insert Racor replacement element (Racor part 201 OSM, or military equivalent) over center tube with a turning motion. 5) Fill filter with clean fuel oil. Lubricate gasket and T-handle O-ring with fuel oil.	

Table C-1. Preventive Maintenance Checks and Services for Workboat, Lifesaving, and Firefighting Systems (Continued)

ITEM NO.	INTERVAL					ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY/ AVAILABLE IF
	B	D	A	D	H			
					200 hrs		6) Replace top of filter and tighten with T-handle. Clean any fuel oil spills.  h. Open fuel valves. 1) Barge 1. Open two fuel oil shutoff valves closed in paragraph e above. 2) Barges 2 and 3. Open fuel oil shutoff valves closed in paragraph e.  i. Vent fuel system. 1) Open vent screw, on top of engine-mounted fuel filter bracket, about four turns. Place container under fuel filter to catch leaking oil. 2) Use hand operated pump extension on bottom of fuel pump and pump fuel until it flows freely, without bubbles, from vent. 3) Close vent.  j. Clean fuel oil spills.  k. Check V-belt tension by depressing belt midway between pulleys. Belt should depress about 3/8 in. Belts must have proper tension to get full alternator output and proper cooling water temperature. Check belts for wear and cracks. Replace both belts if there are any indications of deterioration. Never replace only one belt.	Belt tension is more than 3/8 in.  Belts cracked or worn.
3d	•		•	•	25 hrs	Engine Cooling System	a. Check coolant level in heat exchanger by opening cap at front of engine. If necessary, fill to upper edge of splash plate on the thermostat housing. Coolant must be either a 50-50 mixture of fresh, clean water, and corrosion-protective antifreeze or fresh, clean water with a corrosion-protective additive. If coolant level is very low, check again after engine has started and is idling. If necessary, add additional coolant to bring level to upper edge of splash plate on thermostat housing.  b. Check three zinc anodes in engine cooling system for wear. If worn more than 50 percent, replace with Volvo Pewnta part 800476-4. 1) Check anode one on aft bottom end of oil cooler on portside of block.	Coolant level is below upper edge of splash plate.

Table C-1. Preventive Maintenance Checks and Services for Workboat, Lifesaving, and Firefighting Systems (Continued)

ITEM NO.	INTERVAL					ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY/ AVAILABLE IF
	B	D	A	D	H			
	B - Before                      D - During                      A - After                      D - Daily                      H - Hourly							
3f					10 hrs 50 hrs	Seawater Filter	2) Check anode two on bottom of forward end of water exchanger housing. 3) Check anode three on bottom of after-cooler housing.  If operating in dirty water, clean seawater Class III leaks filter. If water is relatively clean or if several 10 hour checks indicate cleaning is not necessary at this interval, schedule cleaning at 25 hour intervals. Unscrew cover (should come off by hand) and remove gasket and filter basket. Clean basket with soap and water, rinse and replace. Make sure gasket is installed properly and replace cover hand-tight. When engine is started, check cover for leaks and tighten if necessary.	
3g					50 hrs  100 hrs  200 hrs	Crankcase	a. Check crankcase ventilation air filter and oil valve. If vent air, mixed with oil, starts to flow out at oil valve, this indicates crankcase ventilation air filter is clogged and must be changed. Unscrew old filter and discard. Screw in new filter.  b. Change crankcase oil.  1) Run engine until operating temperature is normal. 2) With engine turned off, suck oil through tube of drain pipe located on top of engine next to oil dipstick. 3) Without a filter change (normally scheduled every 200 hours), use 10 qt to bring oil level to between marks on dipstick. Fill through oil filler cap on top of engine. Use diesel lubricating oil CD (MIL-L-2104), SAE 20W30, above 50°F and oil CD SAE 10W, below 50°F. With filter change, use 11 qt of oil.  c. Change oil filter.  1) After draining oil, place a cloth beneath oil filter and screw off old filter. Do not spill oil. If filter is difficult to remove, use oil filter wrench or punch a hole in filter and use long screwdriver to remove filter. 2) Discard old filter. Remove old rubber seal with old filter.	Crankcase is clogged.

Table C-1. Preventive Maintenance Checks and Services for Workboat, Lifesaving, and Firefighting Systems (Continued)

ITEM NO.	INTERVAL					ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY/ AVAILABLE IF
	B	D	A	D	H			
4	•		•		200 hrs	Battery Box and Batteries	<p>3) Clean mating surfaces on new filter and filter receptacle. Coat new rubber seal with clean oil and install.</p> <p>4) Screw on new filter by hand until it touches contact surfaces of filter receptacle. Turn filter 1/2 turn more. Do not tighten filter any further.</p> <p>5) Fill crankcase with 11 qt of oil.</p> <p>6) Start engine and run at idling speed. Check that oil gauge shows normal pressure.</p> <p>7) Check oil filter for leaks. If necessary to stop seepage, tighten very slightly by hand. Check oil level to make sure it is between dipstick marks.</p> <p style="text-align: center;"><b>WARNING</b></p> <p><b>Fumes from batteries may be flammable and explosive. Do NOT smoke or have open flame when checking or working on battery bank. Battery electrolyte presents potential health hazards. Contact with eyes and skin should be avoided. Safety glasses, gloves, and rubber aprons must be worn when handling this chemical. Electrolyte contains sulfuric acid which can cause severe burns and is highly toxic to skin, eyes, and respiratory system.</b></p> <p>a. Check battery boxes (located in engine compartment, port and starboard) for loose or missing securements or fasteners. Tighten and replace as necessary.</p> <p>b. Check batteries, casings, and battery cables for cracks and tight connections.</p> <p>c. Check batteries for proper electrolyte level. Add distilled or clean tap water to bring level above plates.</p> <p>d. Make sure battery selector switch is set to ALL position.</p> <p>e. Check that batteries, cables, and casings are corrosion-free and coated with anti-corrosion grease.</p>	Battery casing loose or cracked.

Table C-1. Preventive Maintenance Checks and Services for Workboat, Lifesaving, and Firefighting Systems (Continued)

ITEM NO.	INTERVAL					ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY/ AVAILABLE IF
	B	D	A	D	H			
5	•		•	•	200 hrs	Depth Finder	a. Clean depth finder with a damp cloth. b. Unplug transducer and power cables and wipe clean. Check for corrosion or damage to insulation. Correct as necessary. c. Check that power cable and transducer cable are firmly seated in bottom of depth finder unit.	
6	•		•		200 hrs	Hydraulic	a. Inspect hydraulic hoses for chafing, damage, steering age, and wear. Check for leaks. Replace or repair as necessary.	Class III leaks.
	•		•		200 hrs		b. Check for loose nuts, bolts, and fittings. Tighten or replace as necessary.	Loose fittings.
	•		•		200 hrs		c. Check for corrosion, dirt, and rust. Clean as necessary using cloth or brush and a light coating of grease.	
	•		•		200 hrs		d. Check that all moving parts are well lubricated.	
7	•		•		200 hrs	a. Inspect and clean clutch and throttle control cables as follows: <ol style="list-style-type: none"> <li>1) Wipe metallic parts, such as screw-heads, cable sleeves, etc., with oil or light grease to prevent corrosion.</li> <li>2) Wipe chrome-plated hand levers and covers with a clean cloth.</li> <li>3) Inspect control mechanism for loose or damaged fastenings. Tighten or repair as required.</li> <li>4) Ensure that control mechanism moving parts are lubricated with marine grease.</li> <li>5) Examine cables and engine connections for signs of damage or wear.</li> </ol>	Control mechanism loose or missing.  Cables on engine connections damaged or worn.	

Table C-1. Preventive Maintenance Checks and Services for Workboat, Lifesaving, and Firefighting Systems (Continued)

ITEM NO.	INTERVAL					ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY/ AVAILABLE IF
	B	D	A	D	H			
8	•			•	200 hrs	Compass	Inspect the compass unit for bubble in compass oil, sticking dial, or discolored compass oil. Any of these conditions indicates an improperly operating compass. Replace the compass and return the old compass for repair.	
9	•			•	200 hrs	Navigation Lights	Inspect workboat navigation lights. Replace cracked lenses and burned out bulbs, as required.	Navigation lights. burned out.
10	•			•	200 hrs	Bilge Pump	a. Check the bilge pump as follows: <ol style="list-style-type: none"> <li>1) Check bilge pump strainer and clean as necessary.</li> <li>2) Make sure that bilge pump wiring is corrosion-free and connections are tight.</li> <li>3) Check automatic switch to ensure that bilge pump operates normally.</li> <li>4) Check for leaks in pump hoses. Repair or replace as necessary. Make sure all bilge pump and hose fasteners are secure.</li> </ol>	Wiring damaged.  Switch does not operate pump.
11					25 hrs	Outboard Drive	a. Check that outboard drive oil level is between marks on dipstick when inserted in oil hole and NOT screwed down. Do not screw dipstick into threads when checking oil level. Outboard drive must be in FULL DOWN position when checking oil. Be careful to keep any water from entering oil hole. Fill with same grade of oil as in engine, filling through dipstick hole. Do not lose O-ring in groove under dipstick top, and be sure to screw dipstick in tightly when finishing this maintenance procedure.	O-ring missing.
					25 hrs		b. Lubricate steering bearings on top of outboard drive inside engine compartment. Use a grease gun with water-resistant grease, and pump in grease until it is forced out at the bearings.	

Table C-1. Preventive Maintenance Checks and Services for Workboat, Lifesaving, and Firefighting Systems (Continued)

ITEM NO.	INTERVAL					ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY/ AVAILABLE IF
	B	D	A	D	H			
					25 hrs		c. Check corrosion protection devices (zinc anodes) and replace when they have been worn down by 50 percent or more. This includes three zinc anodes - one on each side and one underneath outboard drive along bottom of transom - and zinc ring behind propeller (Volvo Penta part 839388). Three zinc anodes in the engine are checked at 200 hour service.	Zinc anodes are worn down by 50% or more.
					25 hrs		d. Make sure propeller locking nut is tight.	Loose propeller locking nut.
					25 hrs		e. Check fluid level in hydraulic helm pump by removing cap on top of steering housing behind wheel at operator's position. Fluid should be within 1 in. of top when boat is level. If necessary, fill with Seastar hydraulic fluid or Texaco aircraft oil HO-15. Replace cap.	Hydraulic fluid low.
					200 hrs		f. With workboat on its cradle, change oil in outboard drive. <ol style="list-style-type: none"> <li>1) Remove oil dipstick and do not loosen O-ring on dipstick.</li> <li>2) On outboard, remove plug (outboard must be in full TILT UP position before placing boat on cradle) under propeller gear housing and drain oil into receptacle for disposal.</li> <li>3) Refit plug with O-ring installed.</li> <li>4) Remove oil filter plug and fill with 2.5 qt of same type and grade of oil used in engine. Do not overfill. Install filter plug and its O-ring.</li> <li>5) Lower outboard drive and check oil level using dipstick. Do not screw dipstick into threads when checking oil. If additional oil is required, fill through dipstick hole. If overfull, drain oil until proper level shows on dipstick.</li> <li>6) Refit dipstick, with O-ring fitted, by screwing into its receptacle. Check that drain plug is not leaking. Tighten if necessary.</li> </ol>	

Table C-1. Preventive Maintenance Checks and Services ;or Workboat, Lifesaving, and Firefighting Systems (Continued)

B - Before  
D - During  
A - After

D - Daily  
W - Weekly  
M - Monthly

Q - Quarterly  
S - Semiannually  
A - Annually

ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
1	•		•								LIFESAVING SYSTEM	<p style="text-align: center;"><b>NOTE</b></p> <p><b>All life vest and lifesaving equipment must be inspected and certified by the United States Coast Guard (USCG) not less than once every 12 months. Immediately correct or dispose of equipment not passing inspection. Replace life rafts and contents and obtain new USCG certification every 5 years.</b></p>	
											Life Rafts		
2	•										Buoy Rings	<p>a. Visually inspect rings for damage, loose or missing fasteners. Repair, tighten or replace as necessary.</p> <p>b. Inspect ropes for frays and breaks. Replace as necessary.</p>	<p>Ropes frayed or broken.</p>



Table C-1. Preventive Maintenance Checks and Services ;or Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
3	•				•		•				Life Vests	c. Check marker light batteries. Replace or recharge as necessary.  <b>CAUTION</b>  Keep life vests away from lubricants and fuels. If splashed with oil, lubricants, or fuel oil, wipe off immediately. Then wash clean with soap and water. Rinse thoroughly. Never store wet life vests or other lifesaving items in a closed storage container. Hang in a well-ventilated space until completely dry. When dry, brush life vests and inspect other items for damage or wear before returning lifesaving equipment to its authorized stowage point.	Marker light batteries not charged or missing.
	•				•	•					FIREFIGHTING SYSTEM	a. Check that life vests are clean and free of oil, lubricants, or fuel oil. Clean with soapy water, rinse and dry as necessary. b. Ensure that clean and dry life vests are stored in a clean, dry stowage area.  <b>WARNING</b>  Monobromotrifluoromethane liquid or gas can cause  <b>DEATH</b> Or serious injury if personnel fail to observe safety precautions.	



Table C-1. Preventive Maintenance Checks and Services ;or Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
2											CO <sub>2</sub> Hose Reel Unit	<p style="text-align: center;"><b>WARNINGS</b></p> <p>CO<sub>2</sub> (carbon dioxide) gas used as an extinguishing agent does not contain oxygen in any form for supporting combustion or sustaining human life in breathing. Caution must be used before entering any space filled with CO<sub>2</sub> gas. Unless the space has been thoroughly ventilated with fresh air, a self-contained breathing apparatus must be worn when entering enclosed areas where CO<sub>2</sub> gas has been released.</p> <p>When releasing CO<sub>2</sub>, operators must stay out of fumes and oxygen-starved area created by the CO<sub>2</sub> gas.</p> <p>Operators must hold release nozzle horn by its handle or wear thick gloves to protect hands from freezing to nozzle. CO<sub>2</sub> gas generates extreme cold which can cause personal injury.</p> <p>The maximum safe storage temperature for all CO<sub>2</sub> cylinders is 130° F. To avoid accidental release of CO<sub>2</sub> gas through activation of the cylinder safety relief valve, ensure that each cylinder is kept or stored in places where the temperature will not reach critical levels.</p> <p>a. Visually check for damage to hoses and other equipment and for obstructions to discharge nozzles. Notify bargemaster or shift leader of damage or inoperability of system.</p> <p style="text-align: center;"><b>CAUTION</b></p> <p>CO<sub>2</sub> can cause corrosion of equipment. Clean all materials with soapy water immediately after use of this agent.</p> <p>b. Clean hoses and other hardware with soapy water.</p>	Hoses or nozzles obstructed or damaged.

Table C-1. Preventive Maintenance Checks and Services ;or Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
			•									c. Make certain that horn valve is left open until all pressure is relieved from hose. d. Notify shift leader or bargemaster for requirement to remove or replace CO <sub>2</sub> gas cylinders. e. Rewind hose on rack or reel and replace horn in clip. The valve must be left in its closed position. f. For remote control systems, pull the control cable back and forth between the cylinder(s) and break-glass pull box to make certain it operates freely. Replace glass at the pull box. g. Check control head to make sure safety pin is installed and activating lever has not been pulled. h. Check SET/RELEASED indicator on side of control head to make sure it is in SET position. If not, take screwdriver and move to SET position. i. Check hoses for cracks, breaks, loose piping connections to cylinders, and loose nozzles. Operate horn valve several times to make sure the valve does not stick.  <p style="text-align: center;"><b>CAUTION</b></p> Do NOT use water or oxygen for blowing out. The use of oxygen, especially, is dangerous as the possible presence of even a minute quantity of oil may cause an explosion.  j. Blow out CO <sub>2</sub> hose/reel system with air or carbon dioxide to make sure that it is not plugged. Run hose out to its full length.	Hoses cracked or broken.

Table C-1. Preventive Maintenance Checks and Services ;or Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
3	•		•		•						Marine Smoke Detector	a. Check that smoke detector cabinets in ROWPU space and blower assembly cabinet on deckhouse top are clean. Clean with damp cloth to remove dirt. b. Check that air hoses and electrical connections are tight and secure. Use insulated tools to tighten. c. Check all indicators and alarms by operating ALARM TEST/TROUBLE TEST switch as follows:  1) Hold switch in ALARM TEST position to simulate presence of smoke in each of eight voids. Check that red smoke indicator light on each module and red ALARM INDICATOR light comes on and alarms sound in ROWPU space and dayroom.  2) Release switch and push blue RESET button to silence alarms and return system to normal operation. If lights indicate trouble, notify bargemaster or shift leader for corrective action.  3) Hold switch in TROUBLE TEST position to simulate trouble condition. Make sure trouble buzzer on detector cabinet sounds, amber - VOID MODULE TROUBLE indicator on each one of eight modules comes on, and the following amber lights in ZONE TROUBLES come on:  - Power supply No. 1 - Power supply No. 2 - Alarm bell - Main panel - Blower - Ground fault - Timer disconnect - Clock HI speed	Smoke detector cabinets are dirty.  Electrical connections are loose. ALARM TEST/TROUBLE TEST switch inoperable.  Red indicator light does not come on.  System does not RESET.  Amber lights in ZONE TROUBLES does not come on.

Table C-1. Preventive Maintenance Checks and Services ;or Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
												<p>4) Release switch to return system to normal operation. If lights indicate trouble, notify bargemaster or shift leader for corrective action.</p> <p>d. Inspect and clean smoke detector for corrosion, dirt, grime, loose wiring, faulty lamps, or other deficiencies. Correct, repair, and replace worn or damaged parts as necessary.</p> <p>e. After verifying smoke detector system is operating normally with all detector modules in place and the suction blower operating normally, conduct the following test:</p> <ol style="list-style-type: none"> <li>1) Smoke testing must be carried out by two persons: one to note the results at the detector cabinet and one to introduce smoke into the accumulators throughout the vessel.</li> <li>2) Before commencing the smoke test, make certain the 3-way valves are in the correct position with the handle reading "Smoke Detector."</li> <li>3) To perform smoke tests, use a smoke test source device.</li> </ol> <p style="text-align: center;"><b>NOTE</b></p> <p><b>A smoke test source device can be fabricated using specifications suggested in manufacturer's manual or procured through authorized supply, as recommended by the supporting Fire Marshal.</b></p> <ol style="list-style-type: none"> <li>4) It is necessary for the operator of the smoke tester to carry a portable light so that smoke entering the accumulator may be observed.</li> <li>5) The tester must produce smoke continuously for a period of 1 to 4 minutes, the actual time being dependent on the length of that particular line and the number of installed accumulators connected to it.</li> </ol>	<p>System does not return to normal.</p> <p>Any deficiencies exist.</p>

Table C-1. Preventive Maintenance Checks and Services ;or Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
					•							6) It is essential that the smoke flow be <u>continuous</u> and <u>not</u> a series of isolated puffs as the detector will sense the clear spaces between the smoke as a return to normal, non-smoke condition. 7) If the smoke testing team has difficulty with their initial attempts, refer to smoke detector system sensitivity adjustment and smoke testing procedures contained in the manufacturer's manual. 8) As smoke is introduced into the module, the delta voltage should decline. 9) If the voltage appears to modulate (decline and increase), this indicates smoke is not being introduced continuously into the accumulator. If no voltage decline is observed, it indicates: (a) There are serious discontinuities in the pipework. (b) There are blockages in the pipework. (c) The pipework does not run to the module being tested. 10) The smoke test procedure is performed by two persons: (a) One man operates the smoke tester and applies smoke to each accumulator installed in the vessel. (b) The second man, stationed at the detector cabinet, observes the system alarming, resets it, and records the specific accumulator causing a specific detector module to alarm.	

Table C-1. Preventive Maintenance Checks and Services ;or Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
4	•		•	•	•						Portable Fire Extinguisher	<p>11) The notes by the team member at the cabinet are used to provide an accurate layout of the accumulators, CO<sub>2</sub> pipework, and their connections to the detector modules.</p> <p>12) It is necessary that each and every accumulator be tested in this manner to ensure accumulators are all connected to the pipework and none are blocked.</p> <p>13) The detection cabinet is always operated at maximum sensitivity (as shipped), provided the delta voltage is at the approximate level noted under the section on sensitivity adjustment.</p> <p>14) Notify shift leader or bargemaster of any discrepancy or bargemaster of any test failure.</p> <p style="text-align: center;"><b>WARNINGS</b></p> <p><b>CO<sub>2</sub> (carbon dioxide) gas used as an extinguishing agent does not contain oxygen in any form for supporting combustion or sustaining human life in breathing. Caution must be used before entering any space filled with CO<sub>2</sub> gas. Unless the space has been thoroughly ventilated with fresh air, a self-contained breathing apparatus must be worn when entering enclosed areas where CO<sub>2</sub> gas has been released.</b></p> <p><b>When releasing CO<sub>2</sub>, operators must stay out of fumes and oxygen-starved area created by the CO<sub>2</sub> gas.</b></p> <p><b>The maximum safe storage temperature for all CO<sub>2</sub> cylinders is 130° F. To avoid accidental release of CO<sub>2</sub> gas through activation of the cylinder safety relief valve, ensure that each cylinder is kept or stored in places where the temperature will not reach critical levels.</b></p>	Any tests fail.



Table C-1. Preventive Maintenance Checks and Services ;or Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
5	•		•	•	•		•				Self-Contained Breathing Apparatus (SCBA)	<p>a. Check that each portable fire extinguisher is clearly marked and at its authorized fire station.</p> <p>b. Check that each fire extinguisher is undamaged, clean and free from obstruction which could cause delay for emergency access to the device. Notify bargemaster or shift leader of damage or inoperability of equipment</p> <p style="text-align: center;"><b>CAUTION</b></p> <p><b>CO<sub>2</sub> can cause corrosion of equipment. Clean all materials with soapy water immediately after use of this agent.</b></p> <p>c. Clean hoses and other hardware with soapy water.</p> <p>d. Notify supporting Fire Marshal of requirement to recharge empty cylinders.</p> <p style="text-align: center;"><b>WARNINGS</b></p> <p><b>All SCBA's onboard must contain an air cylinder marked with a large yellow strike or triangle. Different SCBA's, although similar in appearance, use different types of air cylinders. Those onboard use low-pressure, natural air (not oxygen) pressured to 2216 psi when full and marked with a yellow stripe or triangle. Other SCBA's have similar cylinders pressured to 4500 psi and marked with green. If a SCBA is attached to the wrong type of cylinder, it may initially check out but could fail during use.</b></p> <p><b>The SCBA may not provide a satisfactory face seal if the user wears a full beard or sideburns. An improper seal around the facepiece limits the protection provided by the SCBA. If such a condition exists, the user assumes all risks of death or serious bodily injury that may result.</b></p>	Fire extinguisher has been discharged or the inspection tag is outdated or missing.

Table C-1. Preventive Maintenance Checks and Services ;or Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
												<p style="text-align: center;"><b>WARNING</b></p> <p><b>There are two black SCBA's with carrying case and three green SCBA air mask units. The two black SCBA's have a 24-30 minute capacity and the three green ones have a 9-15 minute capacity. SCBA components are facepiece, breathing tube, pressure-demand regulator, carrier and harness assembly, and cylinder valve assembly.</b></p> <p>a. Check that each SCBA is at its authorized station.</p> <p>b. Check that each SCBA is undamaged, clean and free from obstruction which could cause delay for emergency access to the device. Notify bargemaster or shift leader of damage or inoperability of equipment.</p> <p>c. Check that air tank is fully charged and does not leak. Notify supporting Fire Marshal of requirement to recharge empty tanks.</p> <p>d. Unlock lever on cylinder valve and close valve. Do not use excessive force as the valve closes leaktight easily.</p> <p>e. Release pressure in high pressure hose by breathing until air is exhausted and then remove facepiece. <b>DO NOT USE BY-PASS VALVE TO EXHAUST AIR PRESSURE.</b></p> <p>f. Disconnect the hand tight coupling nut at the cylinder valve. Do not disconnect with pressure shown on the demand regulator gauge.</p> <p>g. Ultralite Cub and Ultralite Mask:</p> <p>1) Ultralite Cub. Loosen cylinder clamp screw on the band with key screwdriver (in strap loop) and slide cylinder out.</p>	<p>SCBA is damaged or obstructed.</p> <p>Air tank leaks or is not fully charged.</p> <p>Seals are broken</p>

Table C-1. Preventive Maintenance Checks and Services ;or Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
			•									2) Ultralite Mask. Release the cylinder clamp drawbolt and remove the cylinder.  h. Ultralite Cub:  1) Replace depleted cylinder with a fully charged cylinder. Slide cylinder, valve end first, through the band. Place spacer, without D-ring, of metal frame assembly in line with pressure gauge on cylinder; tighten screw on band. Connect with hand tight coupling nut at the cylinder valve.  2) Ultralite Mask: Replace depleted cylinder with a fully charged cylinder and connect the hand tight coupling nut at the cylinder valve.  <p style="text-align: center;"><b>CAUTION</b></p> <p><b>Cleaning and sanitizing at the recommended 120° F temperature will avoid unnecessary replacement. Overheating and resulting distortion of parts of the respirator would necessitate replacement.</b></p> i. Remove the facepiece assembly and clean and sanitize it with MSA Cleaner-Sanitizer (Pt. No. 34337).  1) Add one package (1 oz) of powdered Cleaner-Sanitizer to a gallon of warm water (about 120°F). 2) Immerse facepiece and tube in the solution and scrub gently until clean. 3) Rinse in clean warm water and allow to air dry by removing the regulator cap, spring, and diaphragm. Use a paper towel or dry cloth to dry the low pressure side of the regulator. Do not bend lever assembly arms.	Cylinder not charged.  Cylinder not charged

Table C-1. Preventive Maintenance Checks and Services ;or Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
												<p style="text-align: center;"><b>CAUTION</b></p> <p><b>Before placing mask in case, release pressure from system, as described in step b immediately above.</b></p> <p>j. Examine the mask(s) for missing, cracked, or broken parts in the facepiece, breathing tube assembly, regulator, Audi-Larm assembly, and harness. Visually check the exhalation valve.</p> <p>k. Place cylinder in cradle of case. Arrange harness around the lower right corner and front of case. Place regulator face-down in plastic dish. Place facepiece and attached hose assembly on its side, lens away from cylinder, between harness and cylinder.</p> <p>l. Store flat, in a cool, dry place where possible.</p> <p style="text-align: center;"><b>WARNING</b></p> <p><b>Never attempt to connect a 4500 psig cylinder to a 2216 psig apparatus. The coupling nut will not thread completely. There are two bleed holes drilled at the bottom of the 4500 psig cylinder valve. If the system is connected by accident, air will bleed out instead of being introduced into the Audi-Larm.</b></p> <p>m. Check the cylinder pressure gauge. The needle should be on the FULL mark. If not full, change the cylinder, as described in paragraph 3-17.3.6.1.</p> <p>n. Check the mask for damage and leaks. Make sure all SCBA's are at their assigned locations and are easily accessible.</p> <p>o. Notify the shift leader or bargemaster if any SCBA is damaged or fails its inspection.</p>	<p>Masks have missing, cracked or broken parts.</p> <p>Cylinder not FULL.</p> <p>Mask damaged or leaking.</p> <p>SCBA fails any portion of</p>

Table C-1. Preventive Maintenance Checks and Services ;or Workboat, Lifesaving, and Firefighting Systems (Continued)

B - Before  
D - During  
A - After

D - Daily  
W - Weekly  
M - Monthly

Q - Quarterly  
S - Semiannually  
A - Annually

ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
						•						p. Test for air leaks between the cylinder and the regulator outlet by observing changes in gauge pressure. First, open both cylinder and main-line regulator valves and note the indicated regulator pressure (blocking the breathing tube outlet on pressure demand units). q. After observing the regulator pressure, close the cylinder valve and watch the regulator pressure gauge. If the indicator drops more than 100 psig in 30 seconds, leaks are present. They may be located by applying soapy water to connections and couplings. Expanding bubbles indicate leaks. Close mainline valve to conserve air supply. r. Check the Audi-Larm Function by observing the regulator gauge pressure at which the alarm rings. This test should be performed with a minimum cylinder pressure of 1200 psig.  1) To check a pressure demand apparatus, pressurize the system by opening the cylinder valve for a moment, then close it. Place your hand or the rubber protective cover over the regulator outlet to block it leak-tight. Open the mainline valve. The alarm should NOT ring. 2) Slowly remove your hand or the rubber protective cover from the regulator outlet and observe the drop in pressure on the regulator gauge and the point at which the Audi-Larm begins to ring (Table 3-5). The ringing will continue until air in the system is exhausted.	Leaks exist between cylinder and regulator outlet.  Indicator drops more than 100 psig in 30 seconds.  Alarm inoperable.  Alarm sounds.

Table C-1. Preventive Maintenance Checks and Services ;or Workboat, Lifesaving, and Firefighting Systems (Continued)

B - Before  
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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF																		
	B	D	A	D	W	M	Q	S	A																						
												<table border="1"> <tr> <td>Audi-Larm No.*</td> <td>Stamp Cyl. Press.</td> <td>Filled Cyl. Press.</td> <td>Norm. Ring. Press.</td> <td>Min. Ring. Press.</td> <td>Max. Ring. Press.</td> </tr> <tr> <td>1310</td> <td>1800</td> <td>1980</td> <td>400</td> <td>375</td> <td>475</td> </tr> <tr> <td></td> <td>2015</td> <td>2216</td> <td>540</td> <td>500</td> <td>580</td> </tr> </table> <p>13E27 449910 449911 460255 460256</p> <p>* Audi-Larm Bureau of Mines Approval Number or NIOSH/MSHA Part Number is located on alarm body.</p> <p>3) To check a demand apparatus, pressurize the system (1200 psig minimum), close the cylinder valve, open the by-pass valve slightly to permit the air to bleed out of the system, and observe the drop in pressure on the regulator gauge and the point at which the alarm rings. When the air is completely exhausted, close the by-pass valve.</p> <p>s. Check the Diaphragm Function. Remove the breathing tube and check that the cylinder and the regulator valves are closed and that the system is not pressurized:</p> <p>1) Gently INHALE through the regulator outlet and hold for about 10 seconds. If the negative pressure is maintained, there is no leakage.</p> <p>2) Gently EXHALE through the regulator outlet for about 10 seconds. If the positive pressure is maintained, there is no leakage.</p> <p>3) The regulator outlet should be sanitized after testing. Do not use the apparatus if air flow through the regulator is detected in either test.</p>	Audi-Larm No.*	Stamp Cyl. Press.	Filled Cyl. Press.	Norm. Ring. Press.	Min. Ring. Press.	Max. Ring. Press.	1310	1800	1980	400	375	475		2015	2216	540	500	580	Diaphragm leaks.
Audi-Larm No.*	Stamp Cyl. Press.	Filled Cyl. Press.	Norm. Ring. Press.	Min. Ring. Press.	Max. Ring. Press.																										
1310	1800	1980	400	375	475																										
	2015	2216	540	500	580																										

Table C-1. Preventive Maintenance Checks and Services ;or Workboat, Lifesaving, and Firefighting Systems (Continued)

B - Before  
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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
6			•			•					Portable Fire-fighting Pump (Model PE-250)	<p>t. Check the Regulator Function. The regulator function should be checked monthly and preferably after each use to verify that performance is within specifications. The Portable Regulator Tester is used to measure the resistance and the flow of air through the regulator at the proper suction or positive pressure. Check the Main-Line and By-Pass Valves:</p> <ol style="list-style-type: none"> <li>1) Operation of the main-line valve and by-pass valve is tested by putting on the device and operating it normally. Venting of pressure relief valves, or continuing flow of air through the regulator when the user is not inhaling, indicates the regulator needs to be repaired. In addition, any unusual sounds such as whistling, chattering, clicking, or rattling means that the regulator should be further checked.</li> <li>2) Clean and sanitize the apparatus, inspect the entire unit, and record information on the inspection tag or check list. Store the unit.</li> </ol> <p style="text-align: center;"><b>WARNING</b></p> <p><b>Do NOT operate pump in closed area without exhaust hose connected and routed safely to outside fresh air. Exhaust gases are hazardous to personnel.</b></p> <ol style="list-style-type: none"> <li>a. Visually check pump assembly set for deficiencies that could cause hazardous conditions for personnel and equipment. Notify bargemaster or shift leader of deficiencies which require corrective action.</li> <li>b. Check fuel supply. Refuel as necessary with mixture of two cans of BIA-TC-W-Service oil (NSN 9150-00-117-8791) is blended with each 6 gal of 90 octane gasoline.</li> </ol>	<p>There is any malfunction in regulator.</p> <p>Class III leaks.</p>

Table C-1. Preventive Maintenance Checks and Services ;or Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
	•											c. Check that all hoses and fittings are undamaged and not excessively worn. Replace as required. d. Check battery connections. Make sure cables are securely fastened and free of corrosion. Clean as necessary and coat with protective grease. e. Check that engine exhaust hose and gaskets are tight and properly sealed. Check for leaks. Tighten, replace or repair as necessary. f. Flush pump assembly with clean, fresh water. g. Drain and thoroughly dry all hoses, pipes, and valves. h. Check for rust and corrosion. Touch up paint in accordance with TB 43-0144 as necessary. Do not paint threads or labels. i. Inspect pump assembly set for visible deficiencies that, if not corrected, could become hazardous to people or equipment.  <p style="text-align: center;"><b>WARNING</b></p> <b>Do NOT operate pump in closed area without exhaust hose connected and routed safely to outside fresh air. Exhaust gases are hazardous to personnel.</b>	Hoses worn or damaged.  Battery is cracked or damaged.  Exhaust hose leaks.
			•	•							•	j. Make sure engine exhaust hose and gaskets are tight and sealed properly with no leaks.	Exhaust hose leaks.



Table C-1. Preventive Maintenance Checks and Services ;or Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
			•		•							<p>k. After each use with contaminated water or salt water, wash down and flush out the pump with clean, non-contaminated, fresh water as follows:</p> <ol style="list-style-type: none"> <li>1) Mix 2 cans BIA-TC-W service oil (NSN 9150-00-117-8791) and 6 gal of 90 octane gasoline in fuel tank.</li> <li>2) Connect fuel hose to engine.</li> <li>3) Connect fittings and hose to suction, discharge, and exhaust connections.</li> <li>4) Place suction hose with foot valve and strainer into fresh water supply.</li> <li>5) Prime pump until full, inspect for leaks.</li> <li>6) Shut discharge valve.</li> </ol> <p style="text-align: center;"><b>WARNING</b></p> <p><b>Ensure exhaust gases discharge to outside atmosphere.</b></p> <ol style="list-style-type: none"> <li>7) Start engine. Switch to start, advance speed slightly, press start button, choke as necessary.</li> <li>8) Prime pump; push priming button and hold, when water discharges from priming pump; ensure discharge hose is manned; open water discharge valve slowly. Release priming button.</li> </ol> <p style="text-align: center;"><b>NOTE</b></p> <p><b>Primer pump should evacuate air from impeller housing and suction hose in approximately 60 seconds.</b></p> <p style="text-align: center;"><b>CAUTION</b></p> <p><b>Do not operate pump more than 2 minutes unless pressure shows on gauge or priming pump discharges water.</b></p>	

Table C-1. Preventive Maintenance Checks and Services for Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
												9) Operate pump; switch to run; adjust engine speed to obtain desired discharge pressure. 10) Operate pump for 1 minute; inspect for leaks, unusual noises, and vibrations. 11) Slow engine speed to idle and push primer button; observe discharge at primer pump; allow primer pump to run for 30 or 45 seconds to flush out; release primer button. 12) Shut discharge valve. 13) Stop engine by disconnecting fuel hose on suction side and allowing engine to run until excess fuel is burned off. 14) Depressurize and remove fuel tank. 15) Check oil level in priming pump oiler; fill if necessary. Switch engine control to OFF position, then push both starter and priming buttons to oil priming for storage. Hold both buttons for approximately 5 seconds. Release buttons. 16) Disconnect hoses and fittings. 17) Drain pump by opening pump drain valve fully counterclockwise. 18) Dry unit, replace caps on all openings; close pump drain valve. 19) Stow pump hoses and connectors.	Class III leaks.

Table C-1. Preventive Maintenance Checks and Services for Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
						•						I. Perform all daily checks. m. Check specific gravity of battery and charge and clean as follows:  1) Remove vent caps and check individual cell specific gravity. 2) Place hydrometer in each cell and take reading and recharge if required. The following table provides ranges of specific gravity (S.P. Gr.) for a cell of 80°F (26.7°C).  <i>Cold and Temperate Climates</i>  1.265 S.P. Gr.      100 percent charged 1.225 S.P. Gr.      75 percent charged 1.190 S.P. Gr.      50 percent charged 1.155 S.P. Gr.      25 percent charged 1.120 S.P. Gr.      Discharged  <i>Tropical Climates</i>  1.225 S.P. Gr.      100 percent charged 1.185 S.P. Gr.      75 percent charged 1.150 S.P. Gr.      50 percent charged 1.115 S.P. Gr.      25 percent charged 1.080 S.P. Gr.      Discharged  3) Remove battery from pump if charging is required. 4) Connect battery to 12 V battery charger at 10 amp hr charging rate or equivalent. 5) Replace hydrometer in each cell and take reading; continue charge if required.	Battery not charged.

Table C-1. Preventive Maintenance Checks and Services for Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
						•						6) Check water level in each cell and fill with distilled water, if available, or ordinary tap water as required. 7) Reinstall battery in pump. 8) Check battery for cracks and terminals and cables for cleanliness. If corrosion is indicated, proceed as follows:  (a) Remove battery cables from terminals. (b) Using a wire brush, clean cable terminals and battery terminals. (c) Coat battery terminals with grease.  <p style="text-align: center;"><b>CAUTION</b></p> <b>Connect positive battery cable to positive (+) terminal on battery and negative battery cable to negative (-) terminal on battery.</b>  (d) Reconnect battery cables.	Battery cracked.
							•					n. Check for belt tension and wear using these procedures:  1) Shut down pump and tag "OUT OF SERVICE." 2) Remove fan belt guard by removing the two attaching screws, then remove fan cover. 3) Check fan belt tension by pressing in on fan belt. Fan belt deflection should be 5/32 in. 4) Adjust fan belt as follows:  (a) Loosen the four bolts on the priming pump mounting bracket and the two bolts on the priming pump stabilizer bracket.	Belts cracked or broken.



Table C-1. Preventive Maintenance Checks and Services for Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
												<p style="text-align: center;"><b>NOTE</b></p> <p><b>The priming pump oiler should be filled full to provide oil for priming operation.</b></p> <p>3) If oil level is below full, add oil per Military Specification MIL-L-46152 until oil level reaches full.</p> <p>p. Check and adjust the carburetor as follows:</p> <p>1) Shut down the pump and tag "OUT OF SERVICE."</p> <p style="text-align: center;"><b>CAUTION</b></p> <p><b>Fuel adjustment screws must be bottomed lightly. Do not force.</b></p> <p>2) Turn idle fuel and main fuel adjustment screws clockwise until they bottom.</p> <p>3) Turn idle fuel and main fuel adjustment screws counterclockwise one turn.</p> <p style="text-align: center;"><b>NOTE</b></p> <p><b>The carburetor is now adjusted slightly to the rich side. If a leaner adjustment is required, turn adjustment screws clockwise 1/8 of a turn.</b></p> <p>q. Annually or when starting is difficult, remove each spark plug and inspect as follows:</p> <p>1) Shut down pump and tag "OUT OF SERVICE."</p> <p>2) Remove spark plug cables from spark plugs.</p>	

Table C-1. Preventive Maintenance Checks and Services for Workboat, Lifesaving, and Firefighting Systems (Continued)

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ITEM NO.	INTERVAL										ITEM TO BE INSPECTED	PROCEDURES CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	EQUIPMENT IS NOT READY AVAILABLE IF
	B	D	A	D	W	M	Q	S	A				
											•	3) Unscrew and remove spark plugs. 4) Spark plugs should be replaced if the electrodes are black or white or if porcelain is cracked.  <p style="text-align: center;"><b>NOTE</b></p> <p><b>Spark plugs whose electrodes are tan in color need not be replaced.</b></p> 5) If new spark plugs are required, use Champion RN-3 spark plugs. 6) Install spark plugs and torque tighten to 20 lb/ft. 7) Reinstall spark plug cables. 8) If the spark plugs were replaced because their electrodes were either black or white. 9) Remove the "OUT OF SERVICE" tag.  r. Check the ignition timing annually or when starting is difficult. Perform the procedure as follows:  1) Shut down the pump and tag "OUT OF SERVICE." 2) Remove spark plug wires from spark plugs. 3) Remove retractable starter by removing three hex head bolts. 4) Unscrew and remove three hex head bolts and remove starter pulley. 5) Twist fan belt out of the way.  <p style="text-align: center;"><b>CAUTION</b></p> <p><b>When adjusting the stator assembly, take care not to damage the coil windings.</b></p>	Electrodes are black or white or if porcelain is cracked.
											•		





Table C-1. Preventive Maintenance Checks and Services for Workboat, Lifesaving, and Firefighting Systems (Continued)

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	B	D	A	D	W	M	Q	S	A				
											•	8) Reassemble parts in reverse order of disassembly using new gasket and impeller seal. Tighten impeller screw to 70 lb/ft torque, mounting screw to 24 lb/ft, and cover nuts to 14 lb/ft. 9) Remove pump "OUT OF SERVICE" tag upon completion.	
											•	t. Inspect pump suction hoses and exhaust hose for damage or wear. Notify shift leader or bargemaster if repair or replacement is required.	Exhaust hose damaged.
											•	u. Inspect valves, strainer, and adapter for damage and wear. Clean as necessary. Operate valves to prevent sticking. Notify shift leader or bargemaster of any deficiencies.	Valves inoperable.

By Order of the Secretary of the Army:

Official:

GORDON R. SULLIVAN  
*General, United States Army*  
*Chief of Staff*

MILTON H. HAMILTON  
*Administrative Assistant to the*  
*Secretary of the Army*  
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TM 55-1930-209-14&P-17

PUBLICATION DATE

15 Oct. 1992

PUBLICATION TITLE Water Purification  
Barges Workboat, Lifesaving

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO
6	2-1 a		
81		4-3	
125	line 20		

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

In line 6 of paragraph 2-1a the manual states the engine has 6 Cylinders. The engine on my set only has 4 Cylinders. Change the manual to show 4 Cylinders.

Callout 16 on figure 4-3 is pointing at a bolt. In key to figure 4-3, item 16 is called a shim - Please correct one or the other.

I ordered a gasket, item 19 on figure B-16 by NSN 2 910-00-762-3001. I got a gasket but it doesn't fit. Supply says I got what I ordered, so the NSN is wrong. Please give me a good NSN

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TEAR ALONG PERFORATED LINE

## The Metric System and Equivalents

### *Linear Measure*

1 centimeter = 10 millimeters = .39 inch  
 1 decimeter = 10 centimeters = 3.94 inches  
 1 meter = 10 decimeters = 39.37 inches  
 1 dekameter = 10 Meters = 32.8 feet  
 1 hectometer = 10 dekameters = 328.08 feet  
 1 kilometer = 10 hectometers = 3,280.8 feet

### *Weights*

1 centigram = 10 milligrams = .15 grain  
 1 decigram = 10 centigrams = 1.54 grains  
 1 gram = 10 decigram = 0.35 ounce  
 1 dekagram = 10 Grams = .35 ounce  
 1 hectogram = 10 dekagrams = 3.52 ounces  
 1 kilogram = 10 hectograms = 2.2 pounds  
 1 quintal = 100 kilograms = 220.46 pounds  
 1 metric ton = 10 quintals = 1.1 short tons

### *Liquid Measure*

1 centiliter = 10 milliliters = .34 fluid ounce  
 1 deciliter = 10 centiliters = 3.38 fluid ounces  
 1 liter = 10 deciliters = 33.81 fluid ounces  
 1 dekaliter = 10 liters = 2.64 gallons  
 1 hectoliter = 10 dekaliters = 27.42 gallons  
 1 kiloliter = 10 hectoliters = 264.18 gallons

### *Square Measure*

1 sq. centimeter = 100 sq millimeters = .155 sq. inch  
 1 sq. decimeter = 100 sq centimeters = 125.5 sq. inches  
 1 sq. meter (centare) = 100 sq decimeters = 10.76 sq. feet  
 1 sq. dekameter (are) = 1,076.4 sq. feet  
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres  
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

### *Cubic Measure*

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch  
 1 cu. decimeter = 1000 cu. decimeters = 61.02 cu. inches  
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

## Approximate Conversion Factors

<i>To change</i>	<i>To</i>	<i>Multiply by</i>	<i>To change</i>	<i>To</i>	<i>Multiply by</i>
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pounds-inches	newton-meters	.11296			

### Temperature (Exact)

°F	Fahrenheit Temperature	5/9 (after subtracting 32)	Celsius Temperature	°C
----	------------------------	----------------------------	---------------------	----

