

TECHNICAL MANUAL

**UNIT,
INTERMEDIATE DIRECT SUPPORT,
AND
INTERMEDIATE GENERAL SUPPORT
MAINTENANCE MANUAL**

**LAUNDRY UNIT, TRAILER
MOUNTED, MODEL M85
NSN 3510-01-222-9301**

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This copy is a reprint that includes current pages from Changes 1 through 4.

HEADQUARTERS, DEPARTMENT OF THE ARMY

WARNING

CARBON MONOXIDE (EXHAUST GAS) CAN KILL YOU

Carbon monoxide is without color or smell; but can kill you. Breathing carbon monoxide produces symptoms of headache, dizziness, loss of muscular control, a sleepy feeling, and coma. Brain damage or death can result from heavy exposure. Carbon monoxide occurs in the exhaust fumes of fuel-burning heaters and internal combustion engines. Carbon monoxide can become dangerously concentrated under conditions of no ventilation.

Precautions must be followed to ensure safety of personnel when the laundry unit is in operation:

DO NOT operate laundry unit in an enclosed area without proper ventilation.

BE ALERT at all times during servicing procedures for carbon monoxide poisoning. If exposure is present, **IMMEDIATELY** evacuate personnel to fresh air.

THE BEST DEFENSE AGAINST CARBON MONOXIDE POISONING IS GOOD VENTILATION

WARNING

JEWELRY

Remove rings, bracelets, wristwatches, and neck chains before working around or on the laundry unit. Jewelry can catch on equipment and cause injury, or may short across an electrical circuit and cause severe burns or electrical shock.

WARNING

BEFORE OPERATION

Do not operate the unit until the ground terminal stud of the engine-generator set has been connected to a suitable ground. Electrical faults in the engine-generator set, load lines, or load equipment can cause death by electrocution from contact with an ungrounded system.

WARNING

DURING OPERATION

Do not make or change electrical connections while the unit is in operation. The voltage generated by the engine-generator can cause death by electrocution. Keep moisture away from the engine-generator and keep the surrounding area dry when operating the unit. Failure to observe this warning may result in death by electrocution. Do not service the unit with fuel while the unit is in operation. Failure to observe this warning may result in serious injury or death to personnel.

WARNING

PRESSURIZED SYSTEM

Relieve all pressure from laundry unit air system before disconnecting air system lines and fittings. Wear safety glasses and stand clear of loosened air line fitting. High pressure air can propel debris at high speed, causing eye injury or blindness. If you are injured, obtain medical aid immediately.

WARNING

MOVING PARTS

Be careful not to come in contact with rotating belts or other moving parts. To do so will cause serious injury. If you are injured, obtain medical aid immediately.

WARNING

FLAMMABLE SOLVENT

Drycleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point is 100 138°F (38 59°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, immediately flush with clean water and get medical aid immediately.

WARNING

COMPRESSED AIR

Compressed air used for cleaning purposes will not exceed 30 psi (207 kPa). Use only with effective chip-guarding and personal-protective equipment (goggles, shields, gloves, etc.).

WARNING

FLAMMABLE FUELS

Fuels are toxic and flammable. Wear protective goggles and refuel only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. If you become dizzy, get fresh air immediately and get medical aid. If contact with eyes or skin is made, immediately flush with clean water and get medical aid for eyes immediately.

WARNING

HEAVY COMPONENTS

Components of this laundry are heavy and may be awkward to handle. Use correct lifting procedures, indicated lifting devices, and/or assistance from other personnel to avoid injury. Always follow safety instructions when using lifting devices.

WARNING

HIGH VOLTAGE

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

CHANGE

NO. 4

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WASHINGTON, D.C., 30 December 1994

Unit, Intermediate Direct Support
and
Intermediate General Support
Maintenance Manual

**LAUNDRY UNIT, TRAILER
MOUNTED, MODEL M85
NSN 3510-01-222-9301**

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3-53 and 3-54
B-5 and B-6
B-9/(B-10 blank)
C-1 through C-3/(C-4 blank)

Insert pages

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3-53 through 3-55/(3-56 blank)
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MODEL M85
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4-3 and 4-4
C-3/C-4
Index 1 through Index 4

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MAINTENANCE MANUAL

LAUNDRY UNIT, TRAILER-MOUNTED
MODEL M85
NSN 3510-01-222-9301

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 directly to: Commander, US Army Aviation and Troop Command, ATTN: AMSAT-I-MP, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished directly to you.

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HOW TO USE THIS MANUAL

This manual is designed to help you maintain the M85 laundry unit. It's divided into chapters, sections, and appendixes. Chapters 1 and 2 contain general information and unit maintenance procedures. Chapters 3 and 4 contain intermediate direct support and intermediate general support maintenance procedures. The chapters are divided into sections containing maintenance procedures for the various components.

The appendixes contain supplemental information which you will need to maintain the M85 laundry unit.

The maintenance procedures contained in this manual tell you several things:

-what tools you need to do the job
-materials or parts required
-what condition the unit is to be in before work is started

In addition to text, you'll have either an assembled view or an exploded-view illustration of the associated parts. Sometimes, the illustration will be keyed by an arrow to an overall view of the unit to help you determine the approximate location of the parts. The illustration is keyed to the text by numbers and shows you how to take the part off and put it on.

CHAPTER 1

INTRODUCTION

Section I. GENERAL INFORMATION

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1-1. SCOPE.

Type of manual: unit, intermediate direct support, and intermediate general support maintenance

Equipment model number and name: M85, Trailer-Mounted Laundry

Purpose of Equipment: to provide regular troop units and hospitals with field laundry service

1-2. MAINTENANCE FORMS, RECORDS, AND REPORTS. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738750, The Army Maintenance Management System (TAMMS).

1-3. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE. For destruction of army materiel to prevent enemy use, refer to TM 750-244-6, Procedures for Destruction-of Tank-Automotive Equipment to Prevent Enemy Use. To prevent enemy use of laundry, add sand or soil to fuel pumps, bearings, drive motors, and water pump. Cut drive belts, wiring harnesses, and hoses. Scatter and conceal vital components. Break washer door glass and control panel buttons. Use explosives or set fire to unit using flammable liquids.

1-4. PREPARATION FOR STORAGE OR SHIPMENT.

- a. Perform laundry shutdown procedures. Refer to TM 10-3510-209-10, Operator's Manual for the M85 Trailer-Mounted Laundry Unit.
- b. Drain all water from unit: washer, water heater, water pump, and air compressor tank.
- c. Disconnect and drain all hoses. Stow hoses in bins.

1-4. PREPARATION FOR STORAGE OR SHIPMENT. (CONT)

- d. Disconnect and drain all fuel supply and drain lines. Install protective caps on fuel pump inlet and outlet connections. Stow all fuel lines in bins.
- e. If stowage is for more than 5 days, perform the following:
 - (1) Close the burner fuel shutoff valves on both the dryer and the water heater.
 - (2) Operate the units a few minutes after the burner shutoff valve is closed. This allows the blower to purge any vaporized fuel from the burner.
 - (3) Remove the end of fuel feed hose assembly from the supply drum and place it in a quart container filled with OE-30 oil (Item 17, App C). Operate both units until the container is empty and the burner stops.
 - (4) Install protective caps on fuel pump inlet and outlet connections.
- f. Stow water pump and work platform in transport position.

1-5. NOMENCLATURE CROSS-REFERENCE.

<u>Common Name</u>	<u>Official Nomenclature</u>
Alarm Box	Box, safety warning
Compressor	Compressor, air
Controller	Program control, washer
Control Stand	Stand, controller
Dryer	Drying tumbler
Dryer bin	Bin assembly, dryer
Extractor	Extractor, laundry, centrifugal
Extractor Bin	Pre-extraction bin
Generator	Generator set, diesel engine driven, 10 kW, 60 Hz
Ground Rod Holder	Holder assembly, ground rods
Laundry	Model M85 laundry unit, trailer-mounted
Platform	Work platform
Trailer	Trailer, cargo, 5-ton, Model M10-61 E1
Washer	Washing machine, laundry, open end
Water heater	Heater, water, liquid fuel fired, Model M-80

1-6. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR). If your laundry unit needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368, (Product Quality Deficiency Report). Mail it to: Commander, US Army Aviation and Troop Command, ATTN: AMSAT-I-MDO, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished to you.

1-7. WARRANTY INFORMATION. The laundry unit components are warranted by the manufacturer for 12 months. The warranty starts on the date bound in block 23, DA Form 2408-9, Equipment Control Record, in the log book Report defects in material or workmanship to you supervisor, who will take appropriate action through your unit maintenance shop.

Section II. EQUIPMENT DESCRIPTION AND DATA

Para	Title	Page
1-8	Equipment Characteristics, Capabilities, and Features	1-3
1-9	Location and Description of Major Components	1-3
1-10	Equipment Data	1-3
1-11	Safety, Care, and Handling	1-6

1-8. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES. Refer to TM 10-3510-209-10 for equipment characteristics, capabilities, and features.

1-9. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS. Refer to TM 10-3510-209-10 for location and description of major components.

1-10. EQUIPMENT DATA.

a. Open-End Washer.

Manufacturer	Pellerin Milnor Corporation
Model	360EW/ACJ
Maximum rpm	33
Capacity.....	60 lb (27 kg)
Water pressure required	10 psi (69 kPa) minimum, 75 psi (517 kPa) maximum
Air pressure required	60 psi (414 kPa) minimum, 80 psi (552 kPa) maximum
Volts	208/220
Phase	3
Frequency	60 Hz
Amps	7.6

(1) Washer Drive Unit

Part No.	54-S0-20
Model No.	3220-50-W
Ratio	19.6 : 1
Speed	608 rpm

(2) Washer motor

Specification	35F486W373
Power	1.5 hp (1 119 W)
Volts	208/220
Phase	3
Frequency	60 Hz
Amps	4.61
Speed	1725 rpm
Manufacturer	Baldor Electric Co.
Part No.	39G080FBL

1-10. EQUIPMENT DATA. (CONT)

b. Extractor.

Manufacturer.....Bock Laundry Machines, Inc.
 Model No.....605 MIL
 Volts.....208/220
 Phase.....3
 Frequency.....60 Hz
 Amps.....9.3
 Maximum motor speed.....1725 rpm

Extractor Motor

Part No.2363REM-50-MIL
 Manufacturer.....Lincoln Electric
 Power.....3 hp (2 237 W)
 Speed.....1750 rpm
 Volts.....208/220
 Phase.....3
 Frequency.....60 Hz
 Amps.....9.3 - 8.4

c. Dryer.

Manufacturer.....York-Shipley
 Model No.....79466-205000

(1) Burner Blower and Fuel Pump Motor

Manufacturer.....Century Electric Company
 Part No.....8-135-845-20
 Power.....1/2 hp (373 W)
 Speed.....3450/2850 rpm
 Volts.....208/220
 Phase.....3
 Frequency.....60 Hz
 Amps.....2.1 - 2.0

(2) Dryer Drive Motor

Manufacturer.....Howell Electric Motors
 Power.....1/2 hp (373 W)
 Volts.....208/220
 Phase.....3
 Frequency.....60 Hz
 Amps.....2.0
 Speed.....1725 rpm

1-10. EQUIPMENT DATA. (CONT)

(3) Fuel Pump

Manufacturer Sundstrand
 Type 1-stage-gear or
 2-stage-gear
 Model J3CA or H3BA
 Pressure..... 0 to 150 psi (1 034 kPa)

(4) Burner Blower Fuel Pump Motor

Manufacturer General Electric
 Corporation
 Model 5K33FN191U
 Speed 3450 rpm
 Volts 208/220
 Phase 3
 Frequency 60 Hz
 Power 1/3 hp (249 W)

f. Water Pump.

Manufacturer Gorman-Rupp Company
 Model 81 1/2 EI-E3/4 3P
 Type Centrifugal, self-priming
 after initial prime; 18-20
 gpm (68-76 liters/min) at
 65-foot (19.8 m) head

Pump Motor

Manufacturer General Electric
 Corporation
 Model 5/L43GG3266
 Speed 3450 rpm
 Power 3/4 hp (559 W)
 Volts 208/220
 Phase 3
 Frequency 60 Hz
 Amps 3.1 - 1.0

1-11. SAFETY, CARE, AND HANDLING. When performing maintenance procedures, observe all warnings and cautions and take appropriate safety measures. A summary of the warnings contained in this manual is located on the warning and first aid data page immediately following the cover page.

Section III. PRINCIPLES OF OPERATION

Refer to TM 10-3510-209-10 for principles of operation.

CHAPTER 2

UNIT MAINTENANCE INSTRUCTIONS

Section I. LUBRICATION INSTRUCTIONS

Para	Title	Page
2-1	Lubrication Instructions	2-1

2-1. LUBRICATION INSTRUCTIONS. Refer to LO 10-3510-209-12 for lubrication instructions on the laundry unit. Refer to LO 5-6115-585-12 for lubrication instructions on the generator set, skid mounted. Refer to TM 9-2330-376-14&P for lubrication instructions on the trailer.

Section II. REPAIR PARTS; SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE); AND SUPPORT EQUIPMENT

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2-2	Special Tools, TMDE, and Support Equipment	2-1
2-3	Repair Parts	2-1

2-1.1. COMMON TOOLS AND EQUIPMENT. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

2-2. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT. Refer to Appendix B, Maintenance Allocation Chart, and TM 10-3510-209-24P, Repair Parts and Special Tools List, for a list of special tools, TMDE, and support equipment.

2-3. REPAIR PARTS. Repair parts are listed and illustrated in the repair parts and special tools list (TM 10-3510-209-24P) covering unit maintenance for this equipment.

Section III. SERVICE UPON RECEIPT

Para	Title	Page
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2-5	Cable Diagrams, Wire Run List, and Control Circuits	2-2

2-4. SERVICE UPON RECEIPT OF MATERIAL.

a. Inspect laundry unit for damage to surfaces incurred during shipment. If damage is found, report the damage on an SF 364, Report of Item Discrepancy.

b. Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with the instructions in DA PAM 738-750.

c. Check to see whether the equipment has been modified.

2-4. SERVICE UPON RECEIPT OF MATERIAL. (CONT)

- d. Refer to TM 9-2330-376-14&P, Unit, Intermediate Direct Support, and Intermediate General Support Maintenance and Repair Parts List, for service upon receipt of trailer.
- e. Refer to TM 5-6115-585-12, Operator and Organizational Maintenance for Generator, for service upon receipt of generator set.
- f. Perform needed depreservation. Prepare laundry unit for inspection and operation as outlined on DA Form 2258. Make a thorough visual inspection of the laundry unit for loose or missing mounting hardware, parts, and components.
- g. Perform the Daily and Before preventive maintenance checks and services. (Refer to TM 10-3510-209-10.)
- h. Lubricate the unit in accordance with LO 10-3510-209-12, Laundry Unit, Trailer Mounted.
- i. For site and shelter requirements, refer to TM 10-3510-209-10.

2-5. CABLE DIAGRAMS, WIRE RUN LIST, AND CONTROL CIRCUITS.

The following wiring diagrams show the electrical components and connecting wires of each major appliance of the laundry unit.

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2-6	Water Pump Wiring Diagram.....	2-12
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2-5. CABLE DIAGRAMS, WIRE RUN LIST, AND CONTROL CIRCUITS. (CONT)

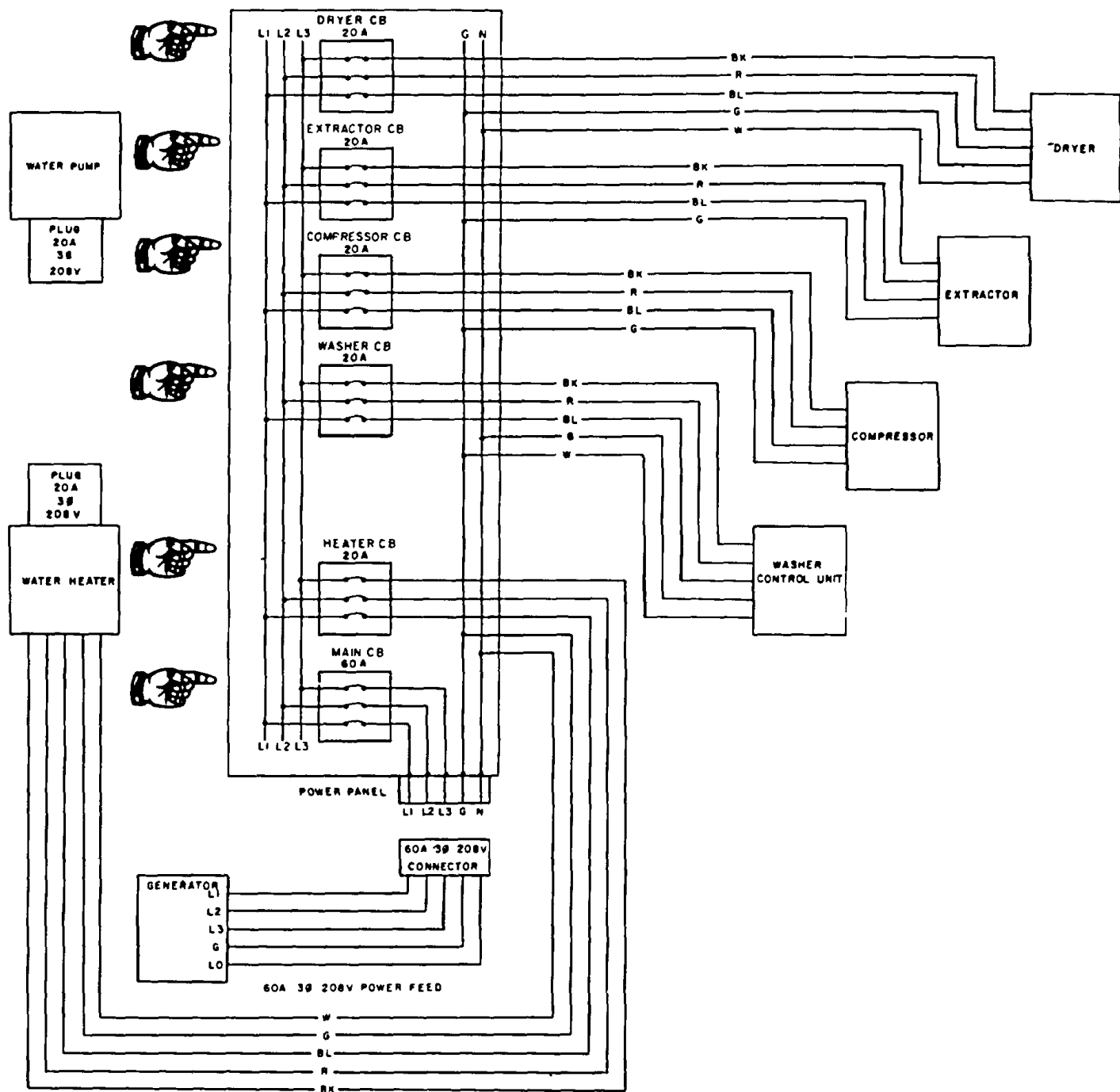


FIGURE 2-1. Laundry wiring diagram.

2-5. CABLE DIAGRAMS, WIRE RUN LIST, AND CONTROL CIRCUITS. (CONT)

SYMBOLS

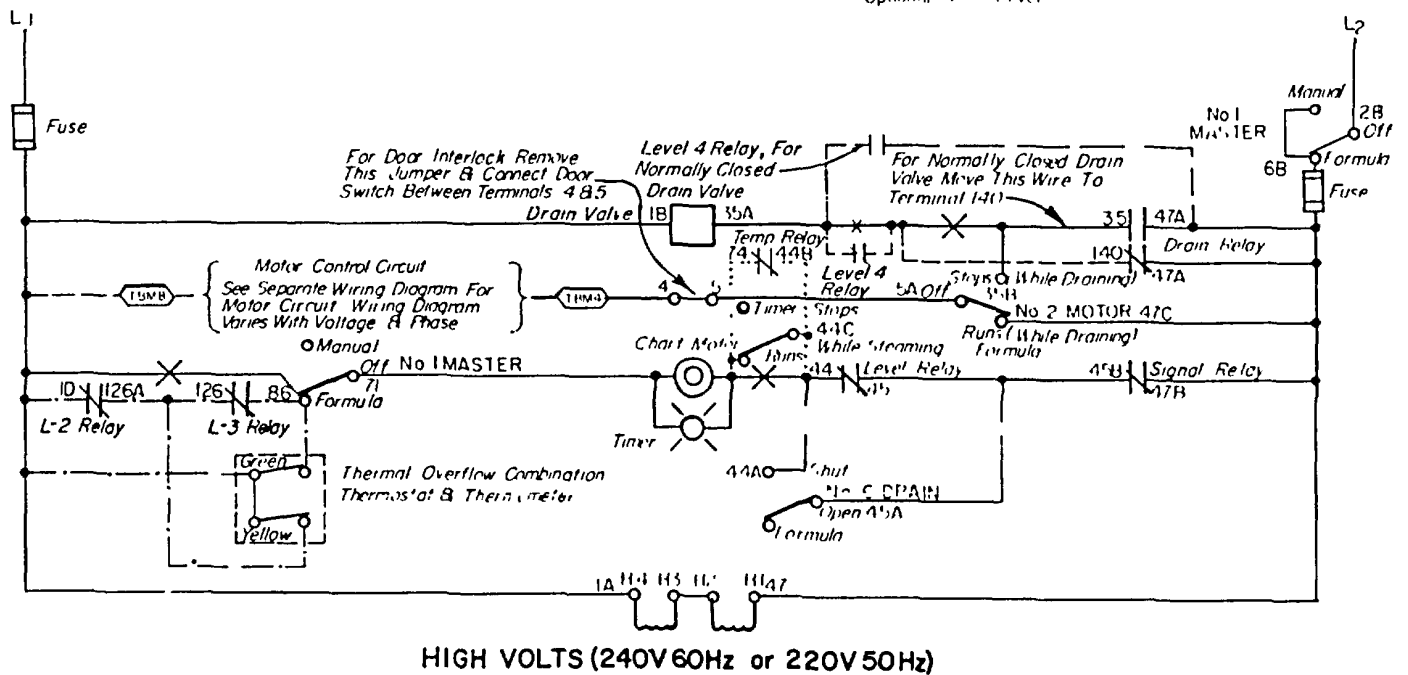
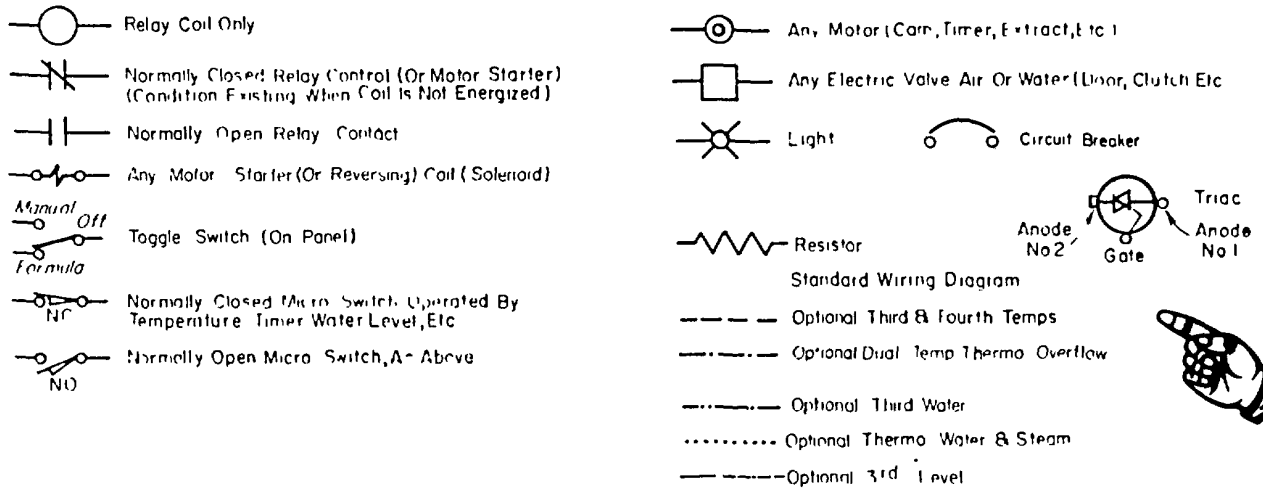
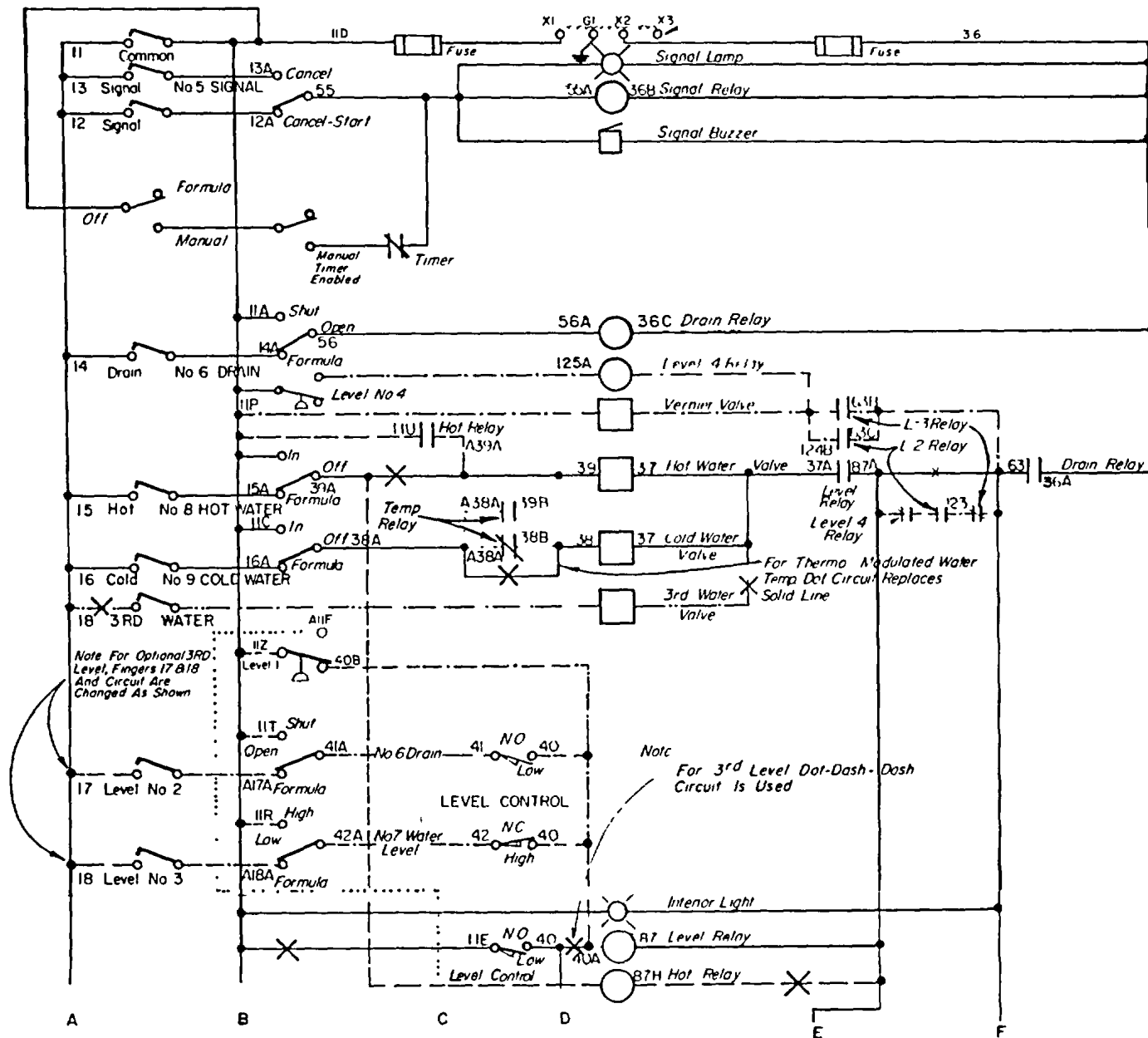


FIGURE 2-2. Washer wiring diagram. (sheet 1 of 5)

2-5. CABLE DIAGRAMS, WIRE RUN LIST, AND CONTROL CIRCUITS. (CONT)



LOW VOLTS continued on sheet 3 of 5

LOW VOLTS (24V 60 Hz or 24V 50 Hz)

FIGURE 2-2. Washer wiring diagram. (sheet 2 of 5)

2-5. CABLE DIAGRAMS, WIRE RUN LIST, AND CONTROL CIRCUITS. (CONT)

LOW VOLTS (Cont) (24V 60Hz or 24V 50Hz)

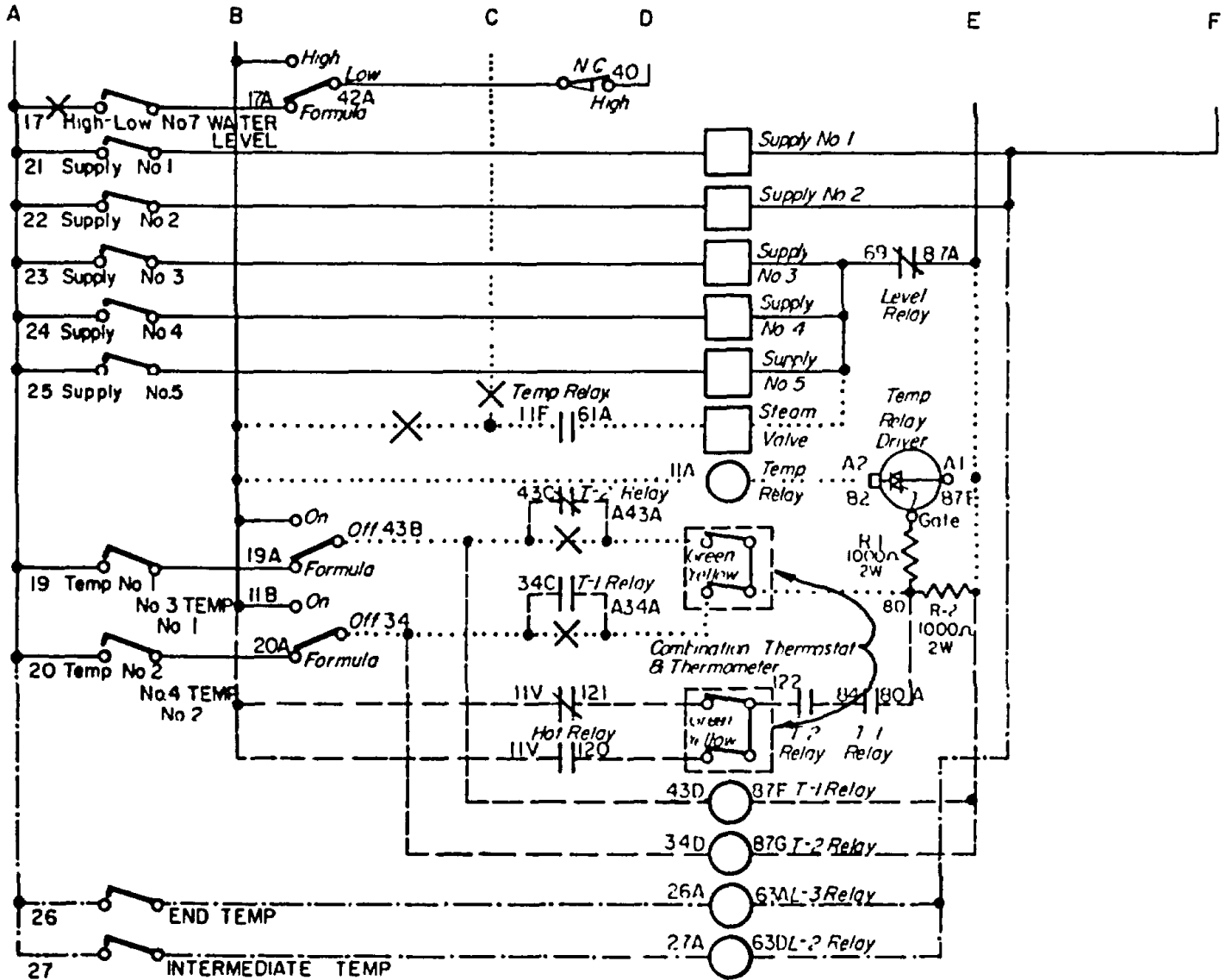


FIGURE 2-2. Washer wiring diagram. (sheet 3 of 5)

2-5. CABLE DIAGRAMS, WIRE RUN LIST, AND CONTROL CIRCUITS. (CONT)

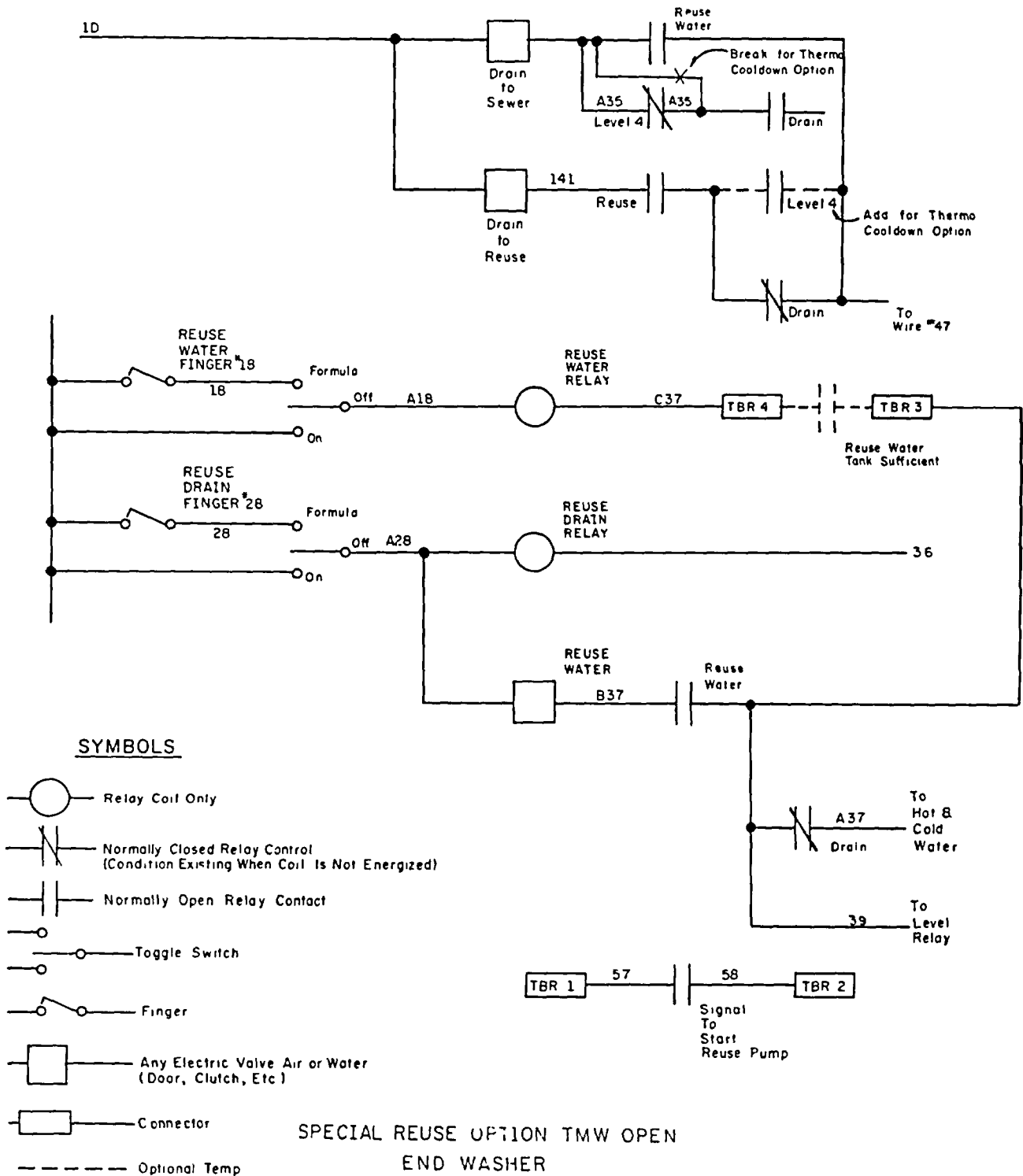
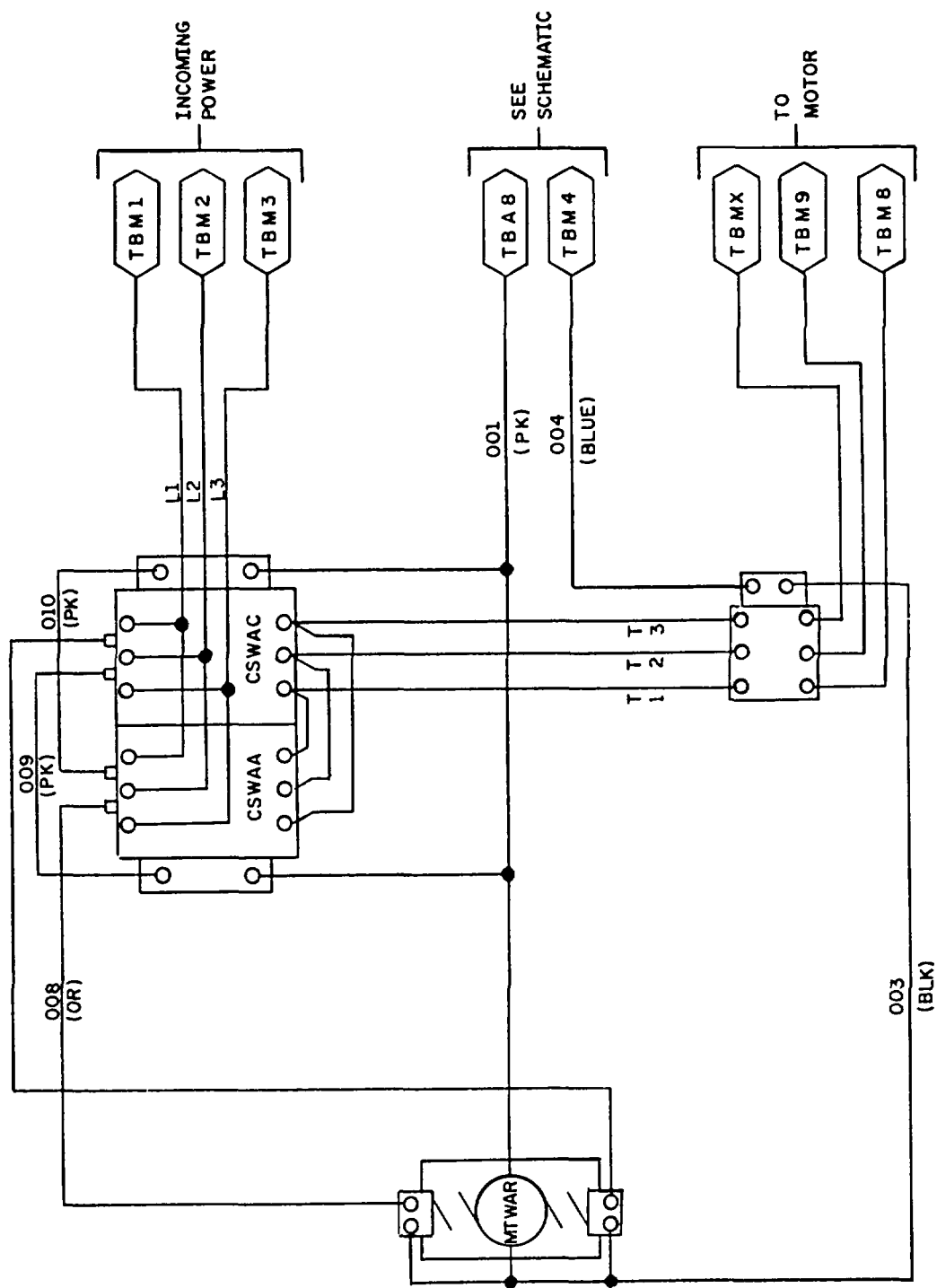


FIGURE 2-2. Washer wiring diagram. (sheet 4 of 5)

2-5. CABLE DIAGRAMS, WIRE RUN LIST, AND CONTROL CIRCUITS. (CONT)



THREE PHASE MOTOR REVERSING CONTROLLER CIRCUIT

FIGURE 2-2. Washer wiring diagram. (sheet 5 of 5)

2-5. CABLE DIAGRAMS, WIRE RUN LIST, AND CONTROL CIRCUITS. (CONT)

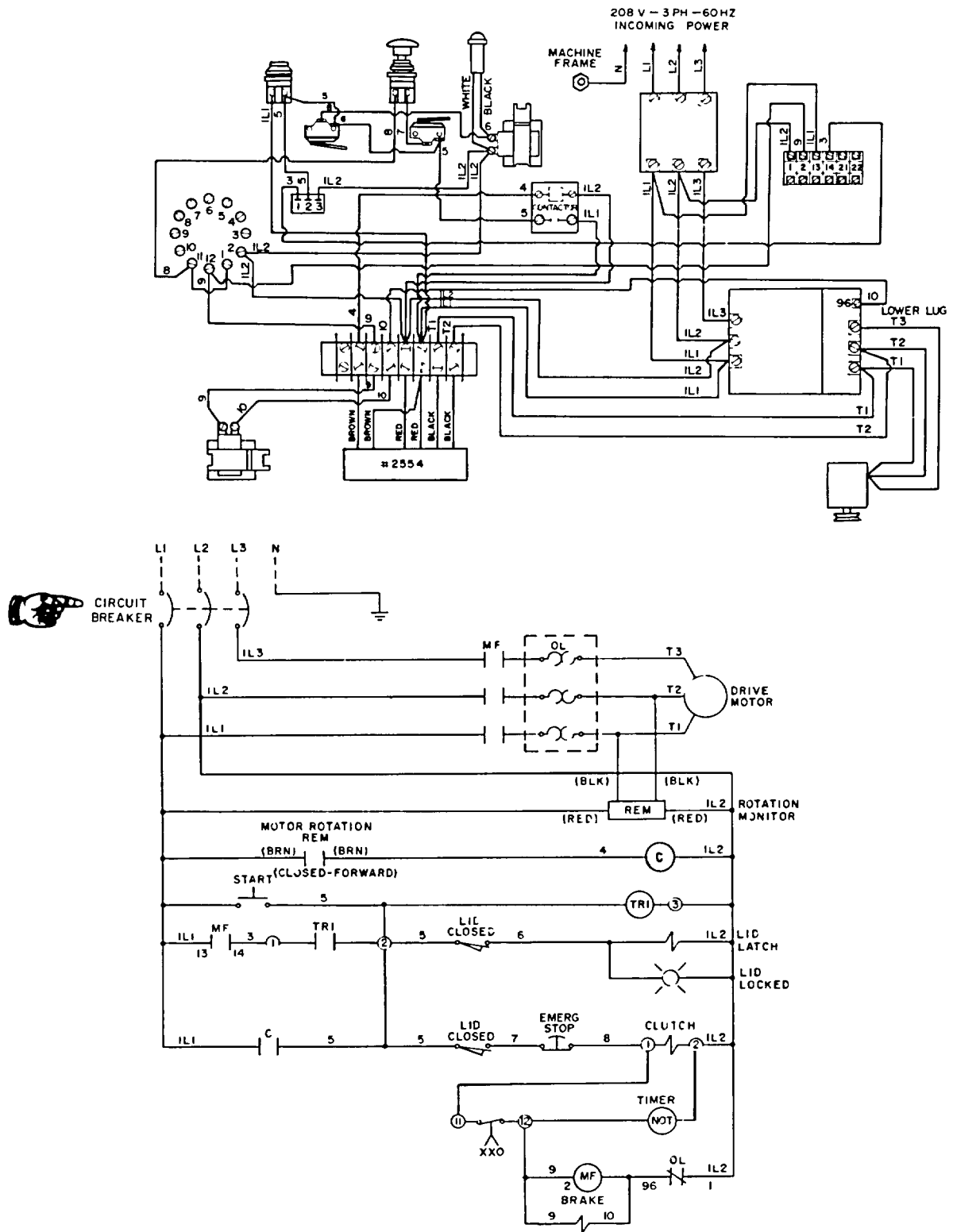


FIGURE 2-3. Extractor wiring diagram.

2-5. CABLE DIAGRAMS, WIRE RUN LIST, AND CONTROL CIRCUITS. (CONT)

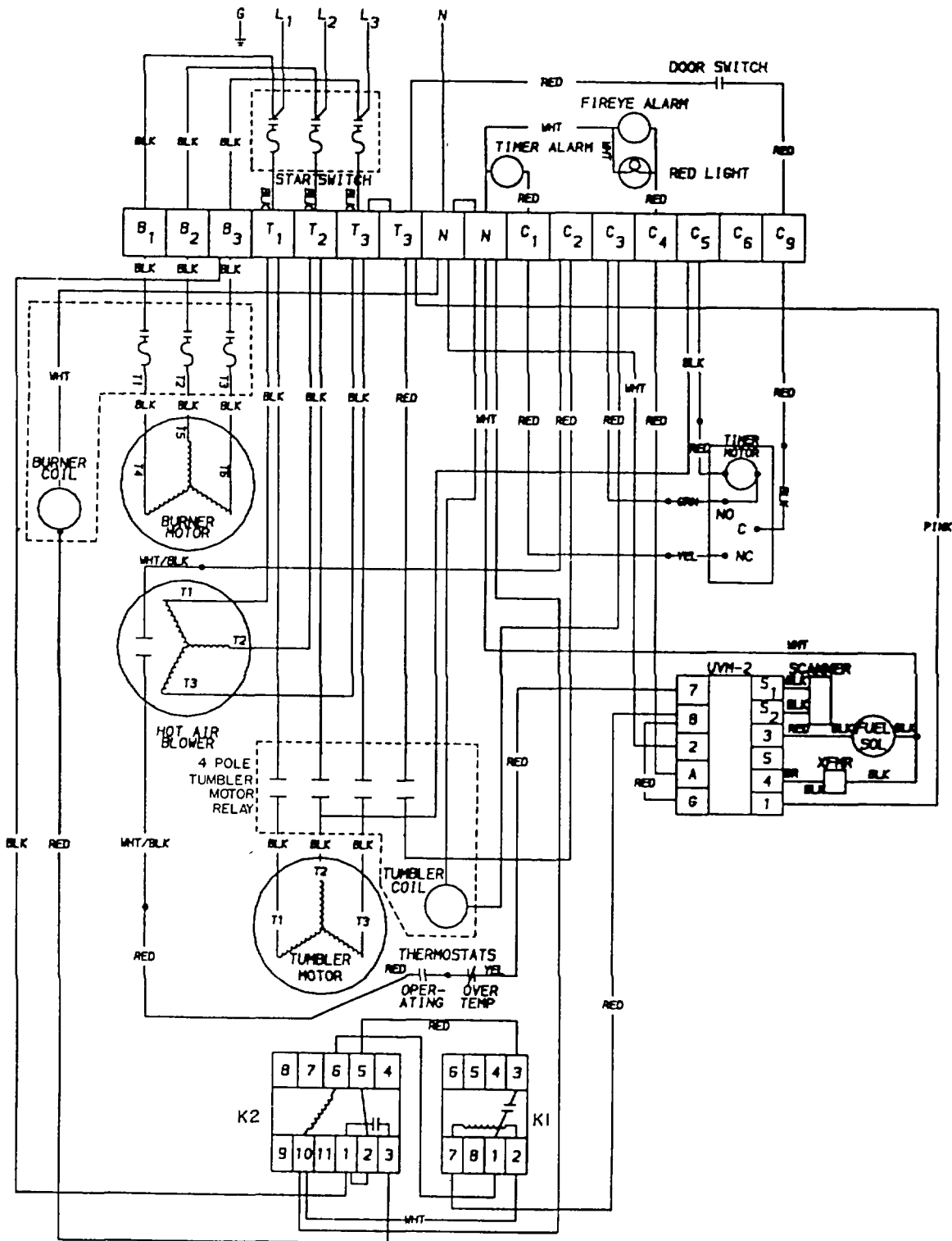


FIGURE 2-4. Dryer wiring diagram.

2-5. CABLE DIAGRAMS, WIRE RUN LIST, AND CONTROL CIRCUITS. (CONT)

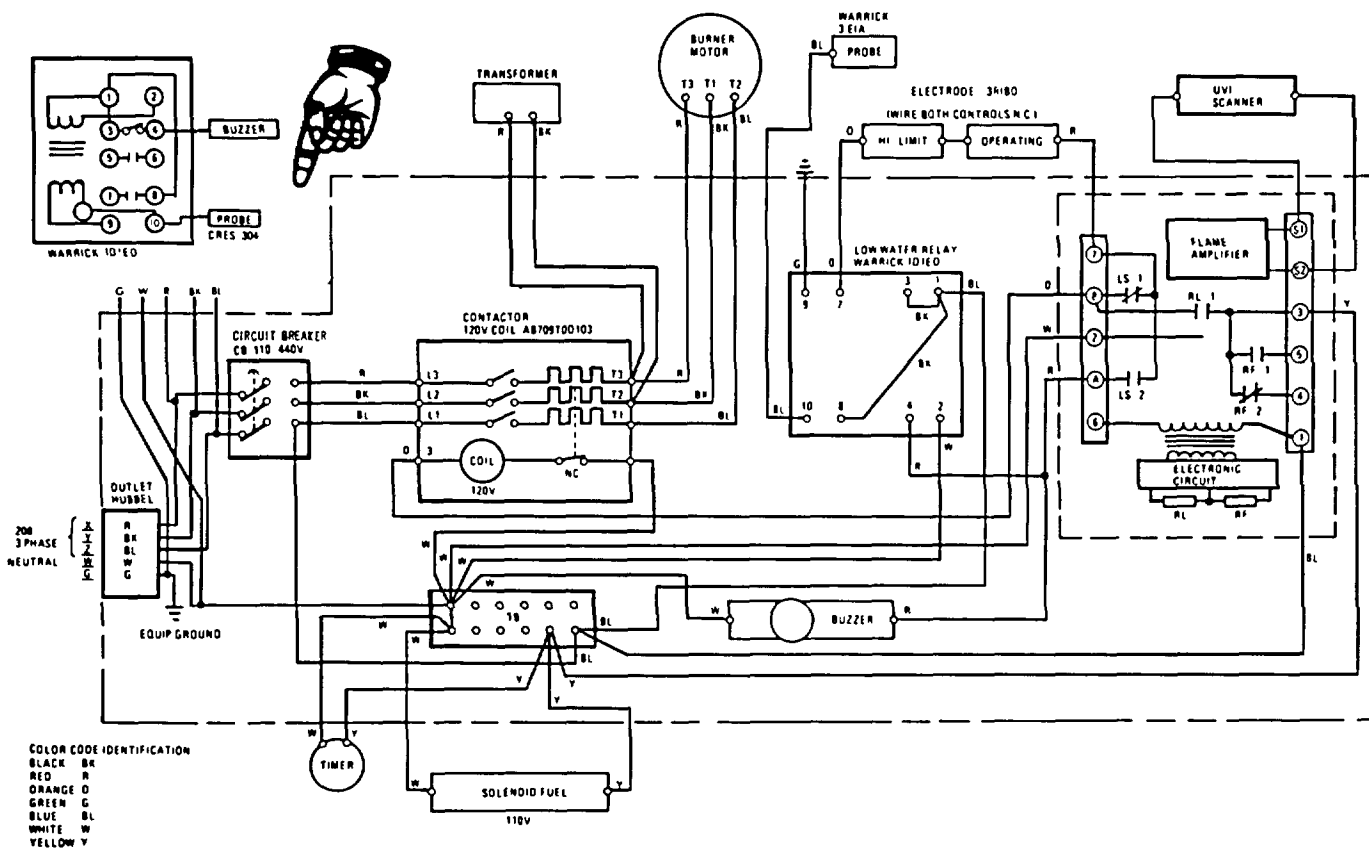


FIGURE 2-5. Water heater wiring diagram.

2-5. CABLE DIAGRAMS, WIRE RUN LIST, AND CONTROL CIRCUITS. (CONT)

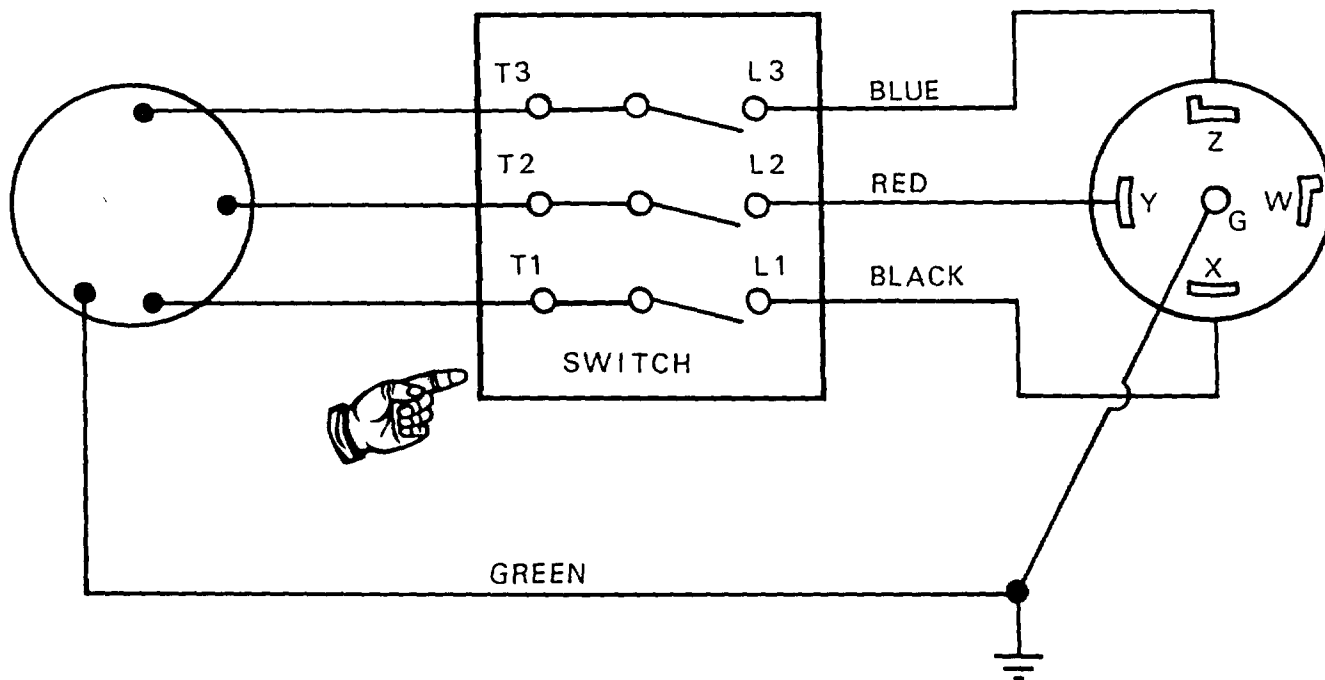


FIGURE 2-6. Water pump wiring diagram.

2-5. CABLE DIAGRAMS, WIRE RUN LIST, AND CONTROL CIRCUITS. (CONT)

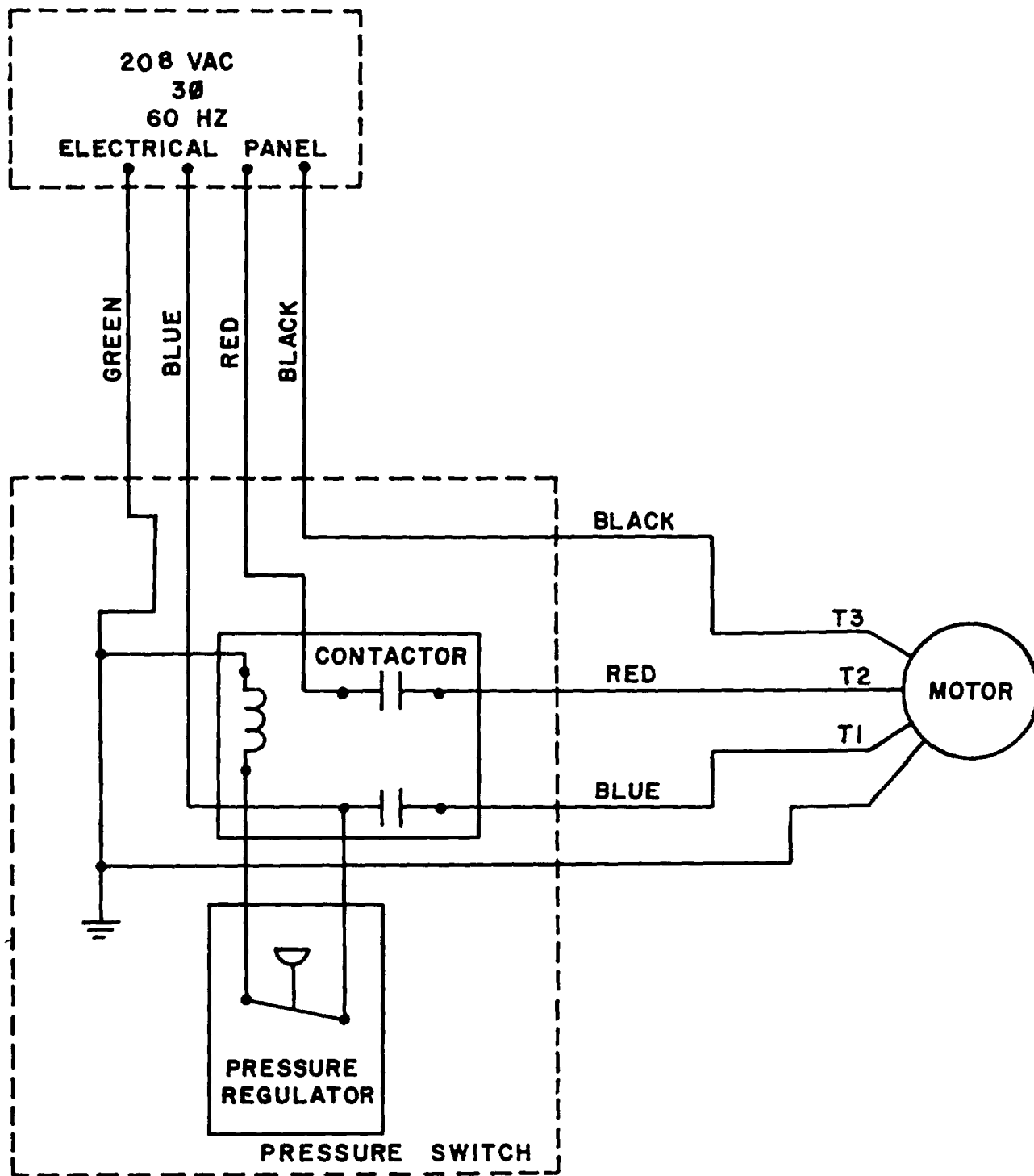


FIGURE 2-7. Air compressor wiring diagram.

2-5. CABLE DIAGRAMS, WIRE RUN LIST, AND CONTROL CIRCUITS. (CONT)

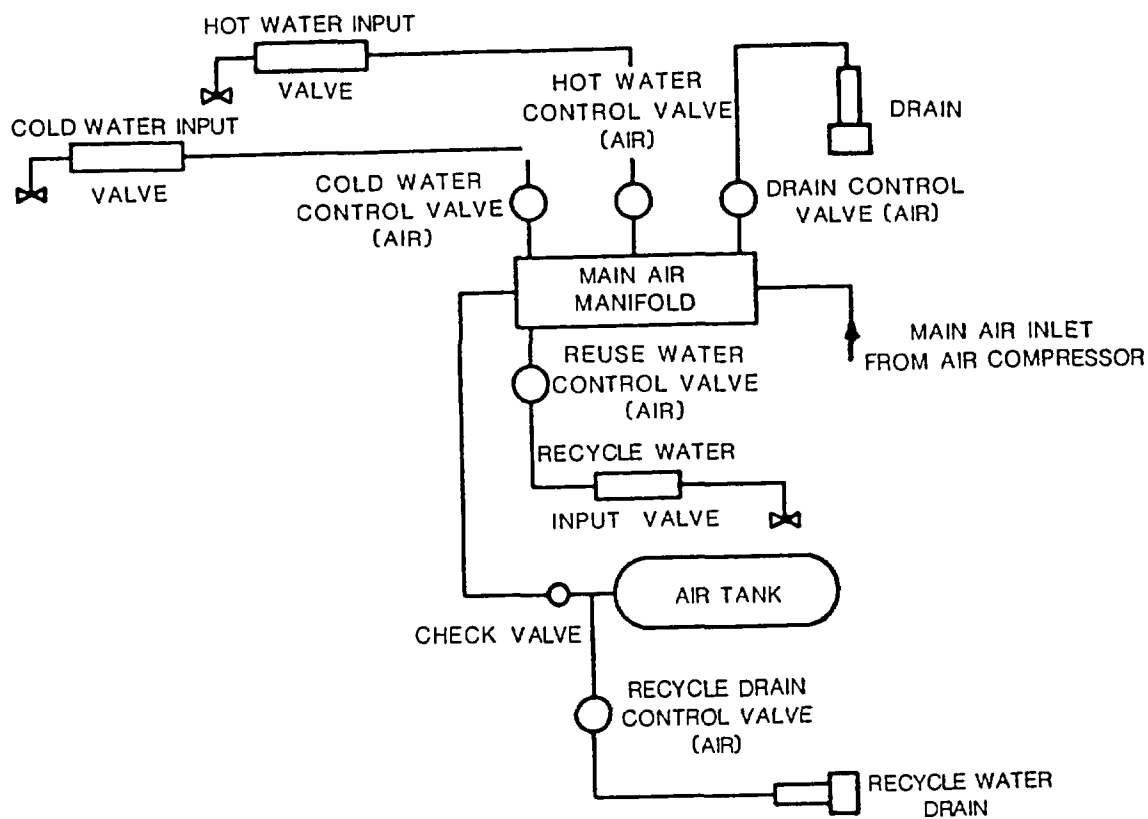


FIGURE 2-8. Air Line Schematic

Section IV. UNIT PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Para	Title	Page
2-6	General	2-15
2-7	Preventive Maintenance Checks and Services	2-15
2-8	Special Instructions	2-16

2-6. GENERAL. Your Preventive Maintenance Checks and Services table lists the inspections and care of your equipment required to keep it in good condition.

2-7. PREVENTIVE MAINTENANCE CHECKS AND SERVICES.

a. Item number column. This is the order in which you perform checks and services on the laundry unit. The entry in this column will also be used as a source of item numbers for the "TM Item Number" column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording results of PMCS.

b. Interval columns. The interval column of your PMCS table tells you when to do a certain check or service.

c. Item to be inspected. Identification of item to be inspected.

d. Procedures column. The procedures column of your PMCS table tells you how to do the required checks and services. Carefully follow these instructions. If you do not have the tools, or if the procedure tells you to, have the next higher level of maintenance do the work.

2-8. SPECIAL INSTRUCTIONS. Leakage definitions for operator/crew PMCS shall be classified as follows:

CAUTION

Equipment operation is allowable with minor leakage's (Class I or II). Of course, you must consider the fluid capacity in the item/system being checked/inspected. When in doubt, notify you supervisor.

CAUTION

When operating with Class I or II leaks, continue to check fluid levels as required in your PMCS.

CAUTION

Class III leaks should be reported to your supervisor.

- 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 item being check/inspected.
- c. Class III - Leakage of fluid great enough to form drops that fall from the item being checked/inspected.

Table 2-1. Unit Preventive Maintenance Checks and Services

NOTE:

Within designated interval, these checks are to be performed in the order listed.

M-Monthly

S-Semiannually

A-Annually

Item No.	Interval			Item to be inspected Procedures
	M	S	A	
1			•	WASHER a. Check that water temperature gage is operational. b. Check water level for proper adjustment (High/Low) and float for proper operation. c. Check hoses and conduit for damage.

Table 2-1. Unit Preventive Maintenance Checks and Services (Continued)

M-Monthly

S-Semiannually

A-Annually

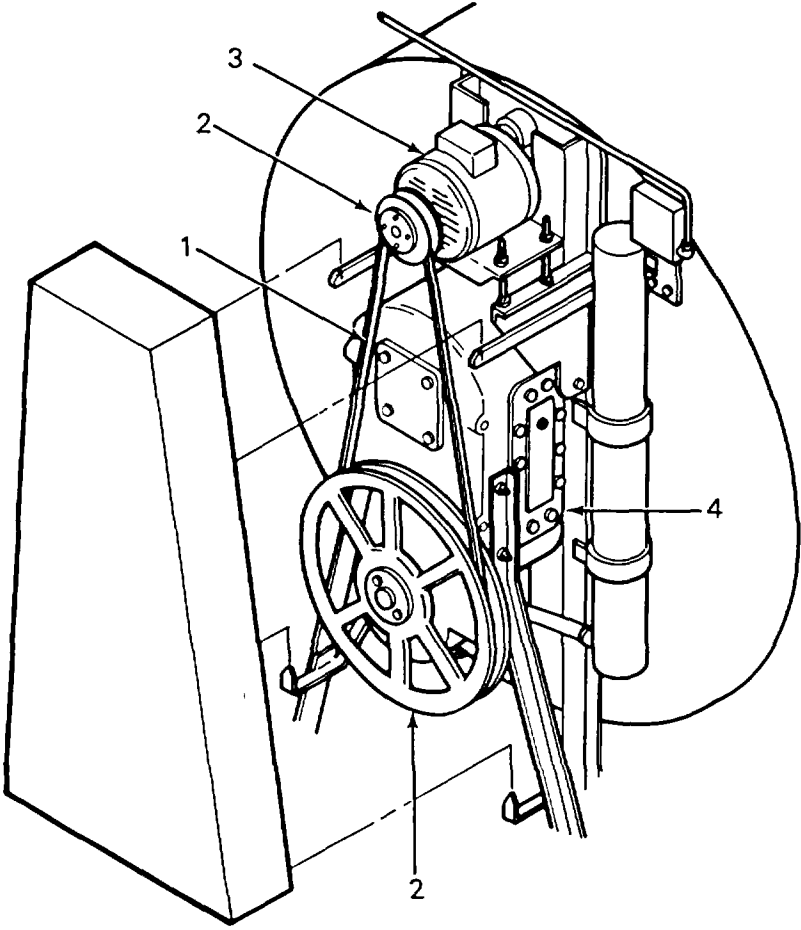
Item No.	Interval			Item to be inspected Procedures
	M	S	A	
2				<p>WASHER DRIVE UNIT</p>  <ul style="list-style-type: none"> • a. Check drivebelts (1) for fraying, wear, and improper tension. • b. Check pulleys (2) for breaks, cracks, and loose mounting. • c. Check electric motor (3) for signs of overheating, obstructions to ventilation, and loose mounting. • d. Check gearbox (4) for loose mounting, oil leaks, and improper operation. • e. Check for slipping belts. • f. Check for overheating of components.

Table 2-1. Unit Preventive Maintenance Checks and Services (Continued)

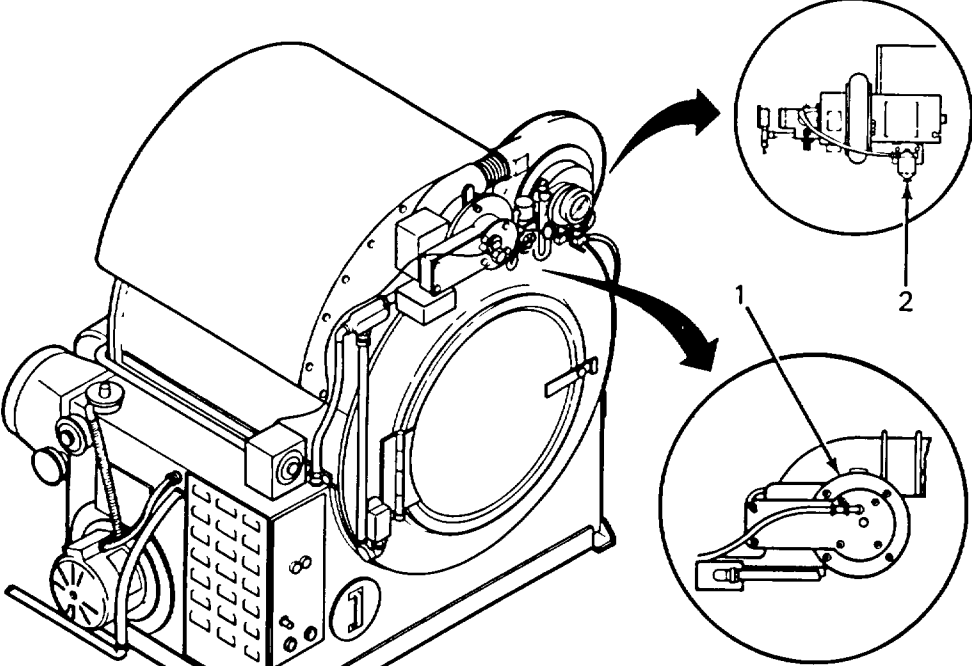
Item No.	Interval			Item to be inspected Procedures
	M	S	A	
3				<p>WASHER CONTROLLER</p> <ul style="list-style-type: none"> • a. Check control fingers for proper contact. • b. Check indicator lights and switches on control unit for proper operation.
4				<p>DRYER TUMBLER ASSEMBLY</p>  <ul style="list-style-type: none"> • a. Inspect burner assembly (1) for cracks, breaks, and loose mounting. • b. Inspect fuel filter for sediment in bowl (2). Bleed if needed. • c. Inspect controls and instruments for damage, loose wiring, and inoperative condition.

Table 2-1. Unit Preventive Maintenance Checks and Services (Continued)

Item No.	Interval			Item to be inspected Procedures
	M	S	A	
4 (cont)	•			<p>d. With unit operating, check for proper operation. Normal readings for instruments are as follows:</p> <ul style="list-style-type: none"> (1) Fuel Pressure Gage: 90 to 110 psi (621 to 758 kPa) (2) Exhaust Temperature Gage: Adjustable from 130 to 250°F (54 to 118°C) (3) Over Temperature Limit: 190°F (87°C) <p>e. Check gear reducer and couplings for loose mounting, oil leaks, and improper operation.</p> <p>f. Check electric motors for signs of overheating, obstructions to ventilation, and loose mounting.</p> <p>g. Replace filter element (4) by removing retainer bolt (5), washer (6), bowl (2), and gasket (7) from filter top (8). Remove element from bowl and replace with new element. Install gasket, bowl, and retainer bolt.</p>

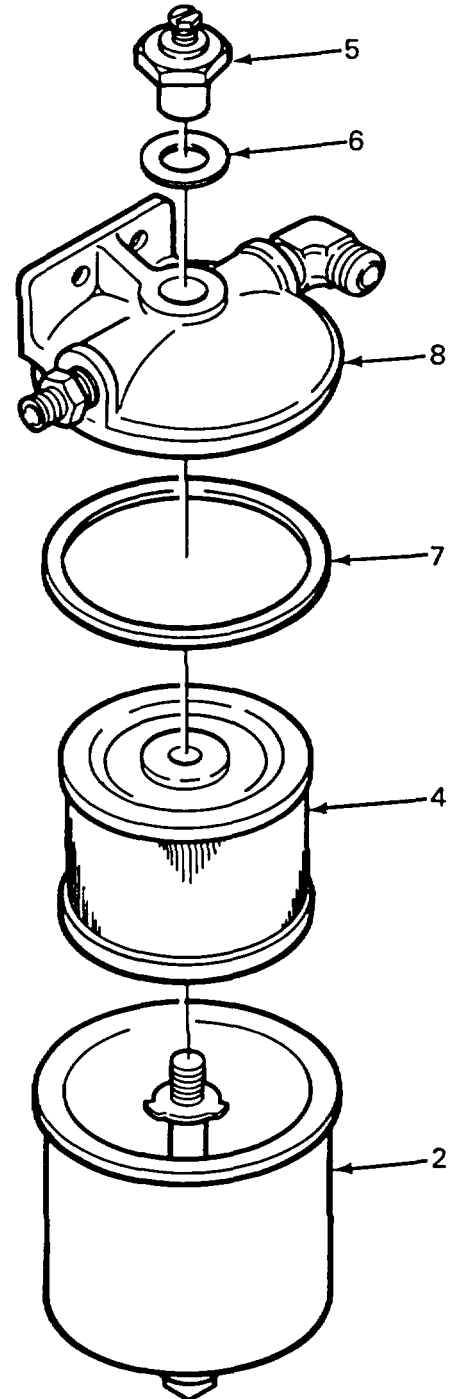


Table 2-1. Unit Preventive Maintenance Checks and Services (Continued)

M-Monthly

S-Semiannually

A-Annually

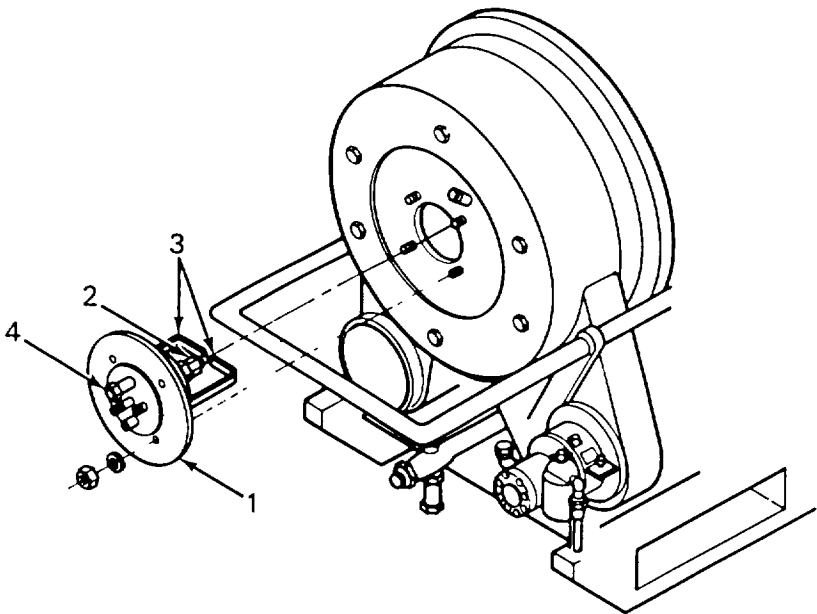
Item No.	Interval			Item to be inspected Procedures
	M	S	A	
5				<p>WATER HEATER BURNER HEAD AND NOZZLE ASSEMBLY</p>  <ul style="list-style-type: none"> • a. Inspect burner head (1) for cracks, breaks, and damage. • b. Inspect nozzle assembly (2) for carbon deposits, damage, and loose mounting. • c. Check electrodes (3) for carbon deposits and loose connections. • d. Look through sight glass (4) during operation and check for proper spark. • e. With unit operating, check for proper operation. • f. Check for proper temperature indication. Refer to FM 10-280. • g. Check gasket on control box for proper sealing.

Table 2-1. Unit Preventive Maintenance Checks and Services (Continued)

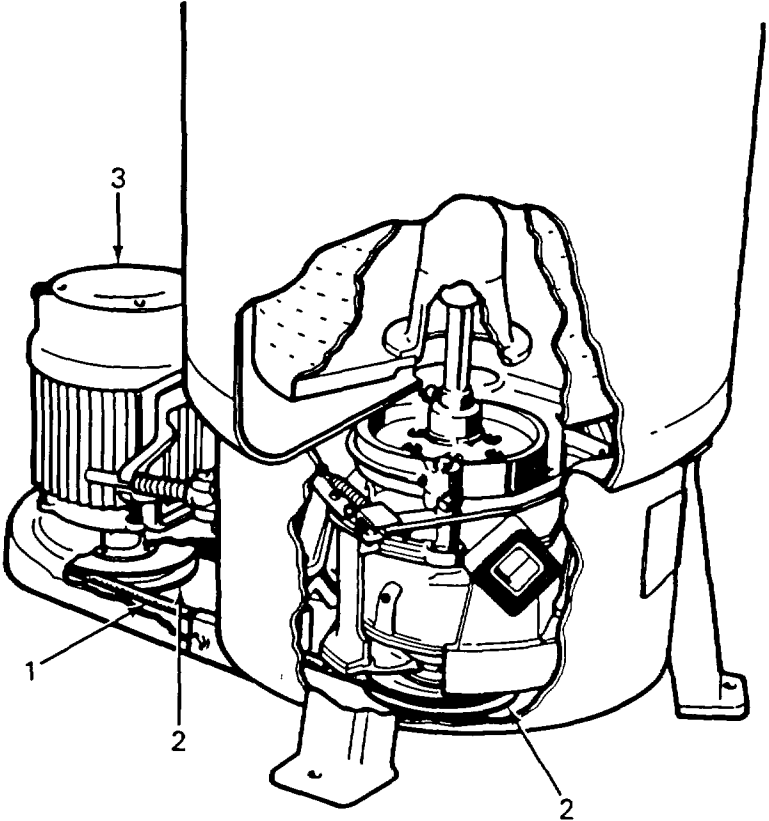
Item No.	Interval			Item to be inspected Procedures
	M	S	A	
6				<p>EXTRACTOR BRAKE AND DRIVE TRAIN</p>  <ul style="list-style-type: none"> • a. During operation observe for any unusual noise or vibration. Check for slipping belts and overheating of drive motor. • b. Check drivebelt (1) for fraying, wear, and improper tension. • c. Check pulleys (2) for breaks, cracks, and loose mounting. • d. Check electric motor (3) for signs of overheating, obstructions to ventilation, and loose mounting. • e. Check brake during operation (should slow load to a stop in 30 seconds or less).

Table 2-1. Unit Preventive Maintenance Checks and Services (Continued)

Item No.	Interval			Item to be inspected Procedures
	M	S	A	
6 (cont)		•		f. Inspect brakeshoe lining. If brake lining is worn to within 1/16 inch of shoe, replace with new brake shoe. Replace shoes worn to the rivets at once to avoid damage to the brake hub.
		•		g. Inspect trunnion rubbers and bumper rubbers for wear (replace if necessary). Refer to paragraph 3-17.
		•		h. Test the fall of the lid. It should not fall freely. Adjust lid hinge brake to control fall of lid. Refer to paragraph 3-18.
		•		i. Adjust lid lock lever adjusting screw if the lid can be raised above recessed area in curb assembly. Refer to paragraph 3-18.
7				AIR COMPRESSOR
		•		a. Check electric motor for signs of overheating, obstructions to ventilation, and for loose mounting.
8		•		b. Check air cleaner elements for dirt or clogged element.
		•		LAUNDRY, GENERAL
		•		a. Remove inspection caps on the two check valves, one in the drain for the extractor and one on the water heater. Clean out any obstructions and replace caps.
		•		b. Retorque all mounting bolts on equipment, bins, and frame assemblies (App D).

Section V. UNIT TROUBLESHOOTING

Para	Title	Page
2-9	General	2-23
2-10	Troubleshooting Procedures	2-23

2-9. GENERAL.

a. Refer to paragraph 2-10 for troubleshooting procedures of components of the laundry unit. For troubleshooting the generator and its components, refer to TM 5-6115-585-12, Operator, Organizational, Manual for Generator Set. For troubleshooting the trailer assembly, refer to TM 9-2330-376-14&P.

b. This section contains testing and troubleshooting information for locating and correcting most of the operating troubles which may develop in your laundry unit. Each malfunction for an individual component, unit, or system is followed by a list of tests or inspections which will help you determine corrective action to take. You should perform the test/inspection and corrective actions in the order listed.

2-10. TROUBLESHOOTING PROCEDURES.

a. The symptom index lists the common malfunctions which you may find during the operation or maintenance of the laundry unit or its components. Use the symptom index for quick access to the troubleshooting procedures in table 2-2.

b. This manual cannot list all possible malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed (except where malfunction and cause are obvious) or is not corrected by listed corrective actions, notify your supervisor.

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SYMPTOM INDEX (Cont)

Troubleshooting
Procedures
(Page)

WATER HEATER (CONT)

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39.	Water leaks around washer door	2-54

Table 2-2. Unit Troubleshooting

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
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NOTE

Before you use this table, be sure you have performed all applicable preventive maintenance checks and services.

WATER HEATER**1. WATER HEATER FAILS TO START.**

- Step 1. Use ac voltmeter and check for 208 V ac incoming voltage to water heater control box. Measure voltage between any two legs on the red (R), black (BK), or blue (BL) wires behind load limit switch. Refer to water heater wiring diagram (FIG. 2-5).
- a. If voltage is low or not present, check generator set for proper function. Refer to TM 5-6115-585-12.
 - b. If voltage is 208 ± 5 V ac, proceed to next step.
- Step 2. Check for defective overload switch heaters. With power off, measure for continuity across heater terminals.
- a. If continuity is not found, replace heater.
 - b. If continuity is found, go to next step.
- Step 3. Check low water probe for loose or corroded connection, broken insulator, or shorted circuit. Check for water leaks around base of water probe.
- a. Clean or replace probe as needed.
 - b. If probe is not defective, proceed to next step.
- Step 4. Check for defective low water relay. With power off, measure a low resistance between terminals 1 and 2. Make a similar measurement between terminals 9 and 10 on low water relay.
- a. If either measurement is open, notify your supervisor.
 - b. If continuity is indicated on both measurements and problem persists, notify your supervisor.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
2.	WATER HEATER FLAME FAILS DURING FIRING CYCLE.	
	Step 1. Check for low fuel supply in fuel container.	<ul style="list-style-type: none"> a. If container is low on fuel, fill container with fuel. b. If container fuel level is correct, proceed to next step.
	Step 2. Check for leaks in fuel hoses.	<ul style="list-style-type: none"> a. If fuel hoses are leaking, tighten couplings or replace fuel hoses. b. If fuel hoses are not leaking and couplings are tight, proceed to next step.
	Step 3. Check for clogged fuel hose.	<ul style="list-style-type: none"> a. If fuel hoses are clogged, disconnect fuel hose and clear foreign matter and clogs from line. b. If fuel hoses are clear, proceed to next step.
	Step 4. Check for dirt and clogs in fuel nozzle.	<ul style="list-style-type: none"> a. If fuel lines are clogged or dirty, clean or replace nozzle. Refer to paragraph 2-34. b. If nozzle is clean, proceed to next step.
	Step 5. Check for defective flame safeguard control. With power off, loosen thumb screw and remove fire eye cover. Check flame safeguard circuit board for damage, corrosion, and burnt, loose, or missing purge timing card.	<p>If any of these conditions are found, notify your supervisor. If these conditions are not found, proceed to next step.</p>
	Step 6. Check for clogged fuel pump strainer.	<ul style="list-style-type: none"> a. If strainer is clogged, clean strainer. Refer to paragraph 2-37. b. If strainer is clean, proceed to next step.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
2. WATER HEATER FLAME FAILS DURING FIRING CYCLE. (Cont)		
	Step 7. Check for a loose fuel pump drive coupling.	<ul style="list-style-type: none">a. If drive coupling is loose, tighten fuel pump drive coupling. Refer to paragraph 2-37.b. If drive coupling is tight, proceed to next step.
	Step 8. Check for defective fuel pump. Fuel pump pressure should be 75 to 80 psi (517 to 552 kPa).	<ul style="list-style-type: none">a. If fuel pressure is not between 75 to 80 psi (517 to 552 kPa), replace or adjust fuel pump. Refer to paragraph 2-37.b. If fuel pressure is correct and problem presents, notify your supervisor.
3. WATER HEATER FUEL PRESSURE GAGE INDICATES PRESSURE IS TOO LOW.		
	Step 1. Check for improper fuel pump pressure.	<ul style="list-style-type: none">a. If pressure is out of range, adjust fuel pump pressure to 75 to 80 psi (517 to 552 kPa). Refer to paragraph 2-37.b. If pressure is correct, proceed to next step.
	Step 2. Check for defective fuel shutoff valve. Close valve and check for leaks. Open valve and check for leaks.	<ul style="list-style-type: none">a. If valve leaks, replace fuel shutoff valve.b. If valve does not leak, proceed to next step.
	Step 3. Check for clogged fuel filter.	<ul style="list-style-type: none">a. If fuel filter is clogged, clean fuel filter. Refer to TM 10-3510-209-10.b. If fuel filter is not clogged, proceed to next step.
	Step 4. Check for breaks in fuel hoses and for loose couplings.	<ul style="list-style-type: none">a. If couplings are loose or hoses defective, tighten couplings or replace defective hoses.b. If couplings and hoses are serviceable and problem persists, notify your supervisor.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
4. WATER HEATER FUEL PRESSURE GAGE INDICATES PRESSURE IS TOO HIGH.		
	Step 1. Check for defective fuel pressure gage by substituting suspect gage with a known good gage.	<ul style="list-style-type: none">a. If gage is defective, replace fuel pressure gage. Refer to paragraph 2-37.b. If gage is serviceable, proceed to next step.
	Step 2. Check for improper adjustment of fuel pump pressure. Gage should read 75 to 80 psi (517 to 552 kPa).	<ul style="list-style-type: none">a. If pressure is incorrect, adjust fuel pump pressure. Refer to paragraph 2-37.b. If pressure is correct, proceed to next step.
	Step 3. Check fuel nozzle for dirt or defects.	<ul style="list-style-type: none">a. If nozzle is dirty, clean fuel nozzle. Refer to paragraph 2-34.b. If nozzle is defective, replace fuel nozzle. Refer to paragraph 2-34.
5. WATER HEATER FUEL PUMP IS NOISY.		
	Step 1. Check if fuel pump needs priming. If fuel pump indicates no pressure and fuel is available, then fuel pump has probably lost its prime.	<ul style="list-style-type: none">a. If pump has pressure, proceed to next step.b. If pump has lost its prime, prime fuel pump. Refer to TM 10-3510-209-10.
	Step 2. Check for air leaks in suction hose and for loose connections.	<ul style="list-style-type: none">a. If hoses are loose, tighten suction hose connections.b. If suction hoses are cracked, replace suction hoses. Refer to paragraph 2-33.c. If hoses and connections are serviceable, proceed to next step,

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION**

5. WATER HEATER FUEL PUMP IS NOISY. (Cont)

Step 3. Check for clogged fuel pump strainer.

- a. If fuel pump strainer is clogged, clean fuel pump strainer. Refer to paragraph 2-37.
- b. If strainer is clean, proceed to next step.

Step 4. Check for clogged fuel filter.

- a. If filter is clogged, remove and replace fuel filter. Refer to table 2-1, Unit PMCS.
- b. If filter is clean, proceed to next step.

Step 5. Check for overheating of fuel pump.

- a. If fuel pump is too hot to touch, replace fuel pump. Refer to paragraph 2-37.
- b. If fuel pump is not overheated and problem persists, notify your supervisor.

6. WATER HEATER PRESSURE GAGE INDICATES PULSATING PRESSURE.

Step 1. Check for air leaks in suction hose and for loose connections.

- a. If suction hoses are cracked, replace hoses. Refer to paragraph 2-33.
- b. If hose connections are loose, tighten suction hose connections. Refer to TM 10-3510-209-10.
- c. If hoses and connections are serviceable, proceed to next step.

Step 2. Check for clogged fuel pump strainer.

- a. If fuel pump strainer is clogged, clean or replace strainer. Refer to paragraph 2-37.
- b. If strainer is clean, proceed to next step.

Step 3. Check for clogged fuel filter.

- a. If fuel filter is clogged, remove and replace filter. Refer to paragraph 2-38.
- b. If filter is clean, proceed to next step.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
6. WATER HEATER PRESSURE GAGE INDICATES PULSATING PRESSURE. (Cont)		
	Step 4. Check for plugged burner nozzle.	<ul style="list-style-type: none">a. If nozzle is plugged, replace burner nozzle. Refer to paragraph 2-34.b. If nozzle is not plugged, proceed to next step.
	Step 5. Check for defective fuel pressure gage by substituting suspect gage with a known good gage.	<p>If gage is defective, replace fuel pressure gage. Refer to paragraph 2-37.</p>
7. WATER HEATER FUEL PUMP LEAKS.		
	Step 1. Check for loose strainer cover.	<ul style="list-style-type: none">a. If strainer cover is loose, tighten cover screws.b. If strainer cover is tight, proceed to next step.
	Step 2. Check for loose plugs.	<ul style="list-style-type: none">a. If plugs are loose, tighten plugs.b. If plugs are tight, proceed to next step.
	Step 3. Check for leaks in shaft seals.	<ul style="list-style-type: none">a. If shaft seals leak, repair or replace fuel pump. Refer to paragraph 2-37.b. If seals are not leaking, proceed to next step.
	Step 4. Check for cracks in fuel pump.	<ul style="list-style-type: none">a. If fuel pump has cracks, replace fuel pump. Refer to paragraph 2-37.b. If no cracks in fuel pump and problem persists, notify your supervisor.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
8.	WATER HEATER FUEL PUMP FAILS TO DELIVER FUEL TO BURNER.	
	Step 1.	Check for low fuel supply in fuel container. <ul style="list-style-type: none">a. If container is low on fuel, fill container with fuel. Refer to TM 10-3510-209-10.b. If container fuel level is correct, proceed to next step.
	Step 2.	Check for leaks in suction hose and for loose connections. <ul style="list-style-type: none">a. If hose or connections leak, tighten suction hose connections or replace leaking hose.b. If hoses or connections do not leak, proceed to next step.
	Step 3.	Check for a reversed pump rotation. Pump should rotate counterclockwise when viewed from the front. <p style="text-align: center;"><u>WARNING</u></p> <p>High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.</p> <ul style="list-style-type: none">a. If pump rotation is reversed, interchange any two of the three 208-volt, 3-phase electrical supply lines at the fuel pump motor.b. If pump rotation is not reversed, proceed to next step.
	Step 4.	Check for a reversal of supply and return fuel hoses. <ul style="list-style-type: none">a. If lines are reversed, disconnect fuel lines and connect in proper places.b. If lines are not reversed, proceed to next step.
	Step 5.	Check for dirt or clogs in fuel pump strainer. <ul style="list-style-type: none">a. If dirt or clogs are found, clean or replace strainer. Refer to paragraph 2-37.b. If strainer is clean, proceed to next step.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
8. WATER HEATER FUEL PUMP FAILS TO DELIVER FUEL TO BURNER. (Cont)	Step 6. Check for clogged fuel nozzle.	<ul style="list-style-type: none"> a. If fuel nozzle is clogged, remove and clean nozzle. Refer to paragraph 2-34. b. If fuel nozzle is not clogged, proceed to next step.
	Step 7. Check for looseness of fuel pump drive coupling.	<ul style="list-style-type: none"> a. If drive coupling is loose, tighten fuel pump drive coupling. Refer to paragraph 2-37. b. If drive coupling is not loose, proceed to next step.
	Step 8. Check for no activation of fuel solenoid or activation at wrong times.	<ul style="list-style-type: none"> a. If solenoid does not activate or activates at wrong time, notify your supervisor. b. If solenoid activates correctly, proceed to next step.
	Step 9. Check for restrictions in fuel hoses.	<ul style="list-style-type: none"> a. If fuel hose is restricted, disconnect fuel hose and remove restriction. b. If fuel hose is not restricted, proceed to next step.
	Step 10. Check for shaft seal leaks on fuel pump.	<ul style="list-style-type: none"> a. If pump leaks, repair pump. Refer to paragraph 2-37. b. If shaft seals are serviceable and problem persists, notify your supervisor.
9. WATER HEATER BURNER FAILS TO IGNITE OR IGNITION IS DELAYED.	Step 1. Check for low fuel supply in fuel container.	<ul style="list-style-type: none"> a. If container is low on fuel, fill container with fuel. b. If container fuel level is correct, proceed to next step.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
9. WATER HEATER BURNER FAILS TO IGNITE OR IGNITION IS DELAYED. (Cont)		
	Step 2. Check for restrictions in fuel hoses.	
		a. If fuel hose is restricted, disconnect hose and remove restriction.
		b. If fuel hose is not restricted, proceed to next step.
	Step 3. Check for proper fuel pressure.	
		a. If pressure is out of range, adjust fuel pump pressure to 75 to 80 psi (517 to 552 kPa). Refer to paragraph 2-37.
		b. If pressure is correct go to next step.
	Step 4. Check for clogged fuel nozzle.	
		a. If fuel nozzle is clogged, clean or replace fuel nozzle. Refer to paragraph 2-34.
		b. If nozzle is not clogged, proceed to next step.
	Step 5. Check for water in fuel by draining a small amount of fuel from filter into a clear container. Look for fuel/water separation.	
		a. If water is present, drain fuel supply and refill with proper fuel. Refer to paragraph 2-38.
		b. If water is not present, proceed to next step.
	Step 6. Check for carbon deposits on electrodes.	
		a. If electrodes have carbon, clean electrodes. Refer to paragraph 2-34.
		b. If electrode porcelain has breaks or cracks, replace electrode. Refer to paragraph 2-34.
		c. If electrodes are clean and unbroken, proceed to next step.
	Step 7. Check for proper adjustment of electrodes.	
		a. If electrodes are out of adjustment, adjust electrodes. Refer to paragraph 2-34.
		b. If electrodes are not out of adjustment, proceed to next step.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
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9. WATER HEATER BURNER FAILS TO IGNITE OR IGNITION IS DELAYED. (Cont)

Step 8. Check for no connection of cable assembly from transformer to burner.

- a. If cable is not connected, connect cable assembly.
- b. If cable is connected properly, proceed to next step.

Step 9. Check for proper operation of ignition transformer.

- a. Observe for blue spark in sight glass; if no spark is present, replace ignition transformer as follows:
 - (1) Tag and disconnect two transformer wires from contactor in control box. Refer to FIGURE 2-5.
 - (2) Disconnect two electrode leads (1) from transformer (7).

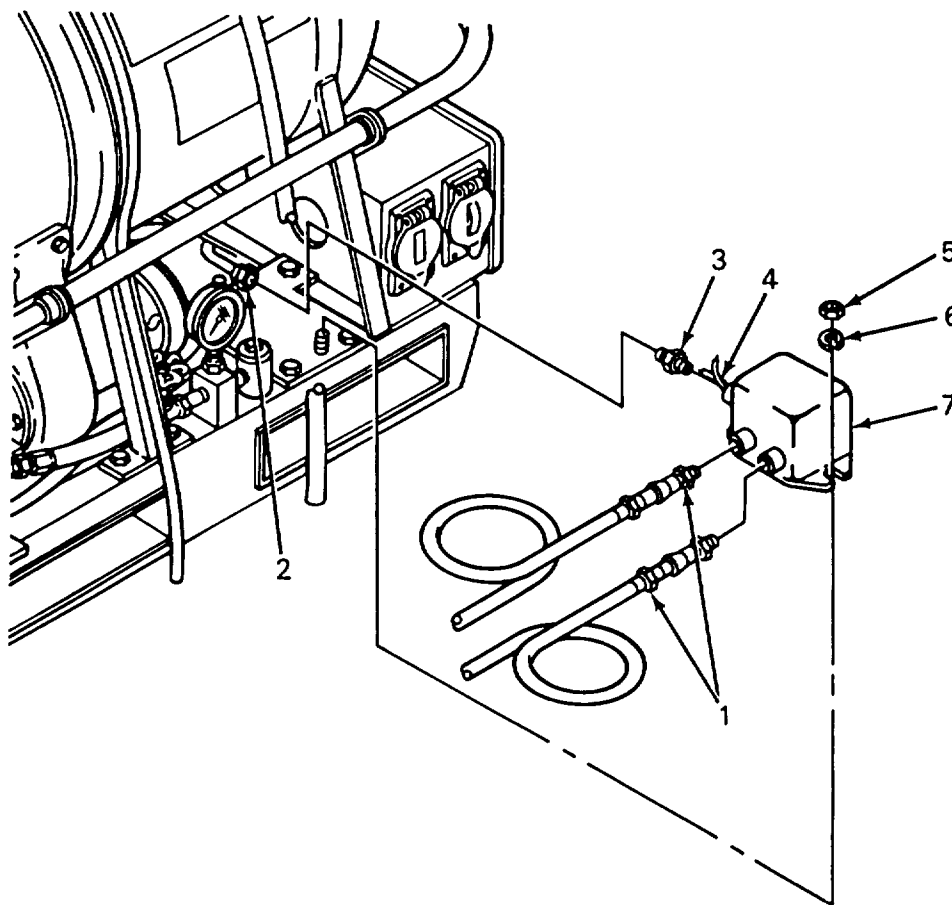


Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
9.	WATER HEATER BURNER FAILS TO IGNITE OR IGNITION IS DELAYED. (Cont)	<ul style="list-style-type: none"> (3) Remove conduit connector (2) and adapter (3) from transformer (7). Remove wires from conduit. (4) Remove two nuts (5), lockwashers (6), and transformer (7). (5) Install new transformer (7), two lockwashers (6), and nuts (5). (6) Install adapter (3) on transformer (7). Install wires (4) in conduit and install conduit connector (2) on adapter. (7) Connect two electrode leads (1) to transformer (7). (8) Connect two transformer wires to contactor in control box. Refer to FIGURE 2-5. Remove tags. b. If blue spark is present in sight glass, proceed to next step.
Step 10.	Check for breaks or cracks in electrode porcelain.	<ul style="list-style-type: none"> a. If electrode porcelain has breaks or cracks, replace electrode. Refer to paragraph 2-34. b. If porcelain does not have damage and problem persists, notify your supervisor.
10.	WATER HEATER BLOWER MOTOR CIRCUIT BREAKER SWITCH CONTINUES TO TRIP.	<ul style="list-style-type: none"> Step 1. Check fuel pump and motor for obstructions. <ul style="list-style-type: none"> a. If obstruction is found, clean or remove obstruction. b. If no obstruction is found, proceed to next step. Step 2. Loosen setscrew at fuel pump shaft and check for seized fuel pump or motor. Refer to paragraph 2-37. <ul style="list-style-type: none"> a. If motor or fuel pump is binding, replace fuel pump and/or motor. b. If motor and fuel pump are serviceable and problem persists, notify your supervisor.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
11. WATER HEATER EXHAUST GASES ARE SMOKEY.		
	Step 1. Check for intermittent burner electrode spark.	
		a. If spark is intermittent, adjust or replace electrodes. Refer to paragraph 2-34.
		b. If spark is steady, proceed to next step.
	Step 2. Check for contaminated fuel by draining a small sample into a clear container. Look for sediment or a fuel/water separation line.	
		a. If sediment or water is present, drain fuel supply and fill with proper fuel. Refer to TM 10-3510-209-10.
		b. If no sediment or water is present, proceed to next step.
	Step 3. Check for clogged nozzle.	
		a. If nozzle is clogged, clean or replace nozzle. Refer to paragraph 2-34.
		b. If nozzle is not clogged, proceed to next step.
	Step 4. Check for obstruction in blower.	
		a. If blower is obstructed, remove obstruction. Refer to paragraph 2-36.
		b. If blower is not obstructed, proceed to next step.
	Step 5. Check for low output voltage from power sources. Refer to TM 5-6115-585-12.	
		a. If power source is low, adjust output power of power source for proper voltage. Refer to TM 5-6115-585-12.
		b. If output voltage is correct and problem persists, notify your supervisor.
12. WATER HEATER SMOKE ESCAPES FROM AROUND BOILER BOX COVER.		
	Step 1. Check for excessive wear and deterioration of boiler box gasket.	
		a. If gasket is defective, replace gasket.
		b. If gasket is serviceable, proceed to next step.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****12. WATER HEATER SMOKE ESCAPES FROM AROUND BOILER BOX COVER. (Cont)**

Step 2. Check for loose nuts securing smoke box cover and burner head assembly.

- a. If nuts are loose, tighten nuts.
- b. If nuts are secure and problem persists, notify your supervisor.

13. WATER HEATER TEMPERATURE GAGE SHOWS WATER EXCEEDS SET TEMPERATURE.

Step 1. Check for improper setting of temperature control.

- a. If control is improperly set, adjust temperature control to a lower setting.
- b. If control is properly set, proceed to next step.

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Step 2. Check for defective temperature control. With power off, measure continuity between two control wires. As temperature setting is increased, the open circuit should abruptly change to a shorted circuit.

- a. If control is defective, replace temperature control.
- b. If control is not serviceable, proceed to next step.

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Step 3. Check for defective low water probe. With power off, measure continuity between probe wire and ground. As water is drained from full to low levels, meter will read as a short at first, then change abruptly to an open reading.

Notify Intermediate Direct Support Maintenance for replacement of low water probe.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
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14. WATER HEATER IS DISCHARGING THROUGH DRAIN TUBE WHILE IN USE.

Check for defective water pressure relief valve.

- a. Replace water pressure relief valve.
- b. If problem persists, notify your supervisor.

15. WATER HEATER BLOWER IS NOISY.

Step 1. Check for obstruction of blower.

- a. If blower is obstructed, clean blower or remove obstruction.
- b. If blower is not obstructed, proceed to next step.

Step 2. Loosen setscrew at fuel pump shaft and check for ease of blower rotation.

- a. If blower is not easy to rotate, replace blower assembly.
- b. If blower is serviceable and problem persists, notify your supervisor.

WATER PUMP**16. WATER PUMP SHAFT FAILS TO ROTATE.****WARNING**

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Step 1. Check for loose electrical connections.

- a. If connections are loose, tighten electrical connections.
- b. If connections are tight, proceed to next step.

Step 2. Use a multimeter and check for low or no voltage to water pump motor.

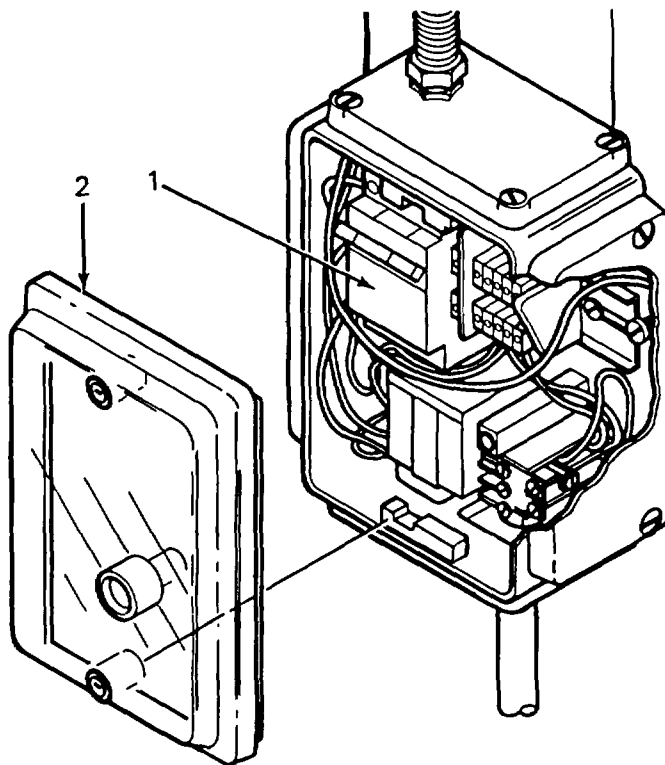
- a. If voltage is low or zero, check for tripped power panel circuit breaker and power source circuit breaker. Reset breakers.
- b. If voltage is correct and problem persists, notify your supervisor.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
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EXTRACTOR**17. EXTRACTOR FAILS TO START.**

Step 1. Check for tripped drive motor breaker (1). Remove box cover (2) on side of extractor. Circuit breaker should be on and not tripped.



- a. If breaker is tripped, set to OFF, then back to ON position.
- b. If breaker is not tripped, proceed to next step.

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Step 2. Check that power is available to motor. With power on, measure 120 V ac between ground (green wire) and each leg terminal (L1, L2, L3) on the motor starter relay.

- a. If voltage is present, and motor is not operating, replace motor. Refer to paragraph 2-30.
- b. If no voltage is present, notify your supervisor.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
18.	EXTRACTOR STARTS BUT BASKET FAILS TO TURN.	<p>Step 1. Check for slipping, broken, or missing drivebelt.</p> <ul style="list-style-type: none"> a. If drivebelt is slipping, adjust drivebelt. If drivebelt is broken or missing replace belt. Refer to paragraph 2-28. b. If drivebelt is adjusted correctly and not missing or damaged, proceed to next step. <p>Step 2. Check brake linkage, solenoid, and spring for improper adjustment and improper function. Refer to paragraph 2-28. Brake should release during spin cycle.</p> <ul style="list-style-type: none"> a. If brake assembly is improperly adjusted, adjust brake. Refer to paragraph 2-28. b. If brake assembly is correct, notify your supervisor.
<u>WARNING</u>		
<p>Components of this laundry are heavy and may be awkward to handle. Use correct lifting procedures, indicated lifting devices, and/or assistance from other personnel to avoid injury. Always follow safety instructions when using lifting devices.</p>		
Step 3.	Check for foreign material or clothing wrapped around shaft, above and below the basket.	<ul style="list-style-type: none"> a. If obstruction is found, remove clothing or foreign material. b. If basket and shaft are free and problem persists, notify your supervisor.
19.	EXTRACTOR RUNS ON TOO LONG.	<p>Check for improper function of timer. Observe movement of red pointer during spin cycle.</p> <ul style="list-style-type: none"> a. If pointer fails to move, notify your supervisor. b. If pointer moves normally and problem persists, notify your supervisor.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
20.	EXTRACTOR-ROTATES IN CLOCKWISE DIRECTION. (Extractor should turn in a counterclockwise direction when looking downward)	<p>Remove belt cover and observe pulley rotation.</p> <p>If rotating clockwise, reverse any two leads of the three incoming power leads to the extractor.</p>
21.	EXTRACTOR IS NOISY OR ACCELERATES TOO QUICKLY.	<p>Step 1. Check for top or bottom bearing failure. With curb and basket removed, push and pull on centerpost. A loud clicking noise with excessive play indicates a worn bearing.</p> <ul style="list-style-type: none"> a. If bearings are worn, notify your supervisor. b. If bearings are not worn, proceed to next step. <p>Step 2. Check for improper quantity of oil in center unit.</p> <ul style="list-style-type: none"> a. If oil is low, lubricate center unit. Refer to LO 10-3510-209-12. b. If oil level is correct and problem persists, notify your supervisor.
22.	EXTRACTOR HAS WATER ON OR AROUND BASE.	<p>Step 1. Check for restricted or clogged drain line.</p> <ul style="list-style-type: none"> a. If drain line is clogged, unclog the drain. b. If drain line is serviceable, proceed to next step. <p>Step 2. Check three curb to base gaskets for damage or improper installation.</p> <ul style="list-style-type: none"> a. If gaskets are damaged, replace gaskets. b. If gaskets are serviceable and problem persists, notify supervisor.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****DRYER ASSEMBLY****23. DRYER TUMBLER DOES NOT ROTATE.****WARNING**

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Step 1. Check for defective drive motor. With power off, remove motor connection box cover. Start dryer cycle and measure 120 V ac between each of three legs and ground.

- a. If voltage is present, notify your supervisor.
- b. If voltage is not present, go to next step.

Step 2. Check for improperly adjusted or defective door interlock safety switch. Refer to paragraph 2-41.

- a. If switch needs adjustment, adjust door interlock switch. Refer to paragraph 2-41.
- b. If switch is defective, replace door interlock switch. Refer to paragraph 2-41.
- c. If switch is serviceable and problem persists, notify your supervisor.

24. DRYER AIR IS NOT HEATED TO THE CORRECT TEMPERATURE.

Step 1. Check for defective thermo switch control. Temporarily substitute a good switch for the suspect one. Test operate dryer. Refer to paragraph 2-43.

- a. If switch is defective, replace thermo switch control.
- b. If switch is serviceable, proceed to next step.

Step 2. Check for dirty UV scanner lens.

- a. If lens is dirty, clean UV scanner lens. Refer to paragraph 2-47.
- b. If lens is clean, proceed to next step.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
24.	DRYER AIR IS NOT HEATED TO THE CORRECT TEMPERATURE. (Cont)	
	Step 3. Check for defective UV scanner. Temporarily substitute a known good scanner for the suspect scanner.	<ul style="list-style-type: none"> a. If scanner is defective, replace UV scanner. Refer to paragraph 2-47. b. If scanner is serviceable, proceed to next step.
	Step 4. Check for defective flame safeguard control. Temporarily substitute a known good flame safeguard control for the suspect control.	<p>If control is defective, replace flame safeguard control. Refer to paragraph 2-47.</p>
25.	DRYER BURNER FLAME FAILS.	
	Step 1. Check for clogged/dirty fuel lines.	<ul style="list-style-type: none"> a. If lines are clogged/dirty, clean fuel lines. Refer to paragraph 2-46. b. If lines are not clogged/dirty, proceed to next step.
	Step 2. Check for clogged fuel filter.	<ul style="list-style-type: none"> a. If fuel filter is dirty, service fuel filter. Refer to TM 10-3510-209-10 and/or unit PMCS, table 2-1. b. If problem persists, service fuel pump screen. Refer to paragraph 2-45.
	Step 3. Check for low fuel pump pressure. Pressure should be approximately 100 psi (690 kPa).	<ul style="list-style-type: none"> a. If pressure is incorrect, adjust fuel pump pressure. Refer to paragraph 2-45. b. If problem persists, proceed to next step.
	Step 4. Check for defective or noisy fuel pump.	<ul style="list-style-type: none"> a. If fuel pump is defective or noisy, repair or replace fuel pump. Refer to paragraph 2-45. b. If fuel pump is serviceable, proceed to next step.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
25.	DRYER BURNER FLAME FAILS. (Cont)	
	Step 5. Check for loose fuel pump coupling.	<ul style="list-style-type: none"> a. Tighten fuel pump coupling. Refer to paragraph 2-45. b. If fuel pump coupling is serviceable, proceed to next step.
	Step 6. Check for defective fuel solenoid. Replace suspect solenoid temporarily with a known good one.	<ul style="list-style-type: none"> a. If fuel solenoid is defective, replace fuel solenoid. Refer to paragraph 2-41. b. If solenoid is serviceable, proceed to next step.
	Step 7. Check for clogged or damaged burner nozzle.	<ul style="list-style-type: none"> a. Clean clogged burner nozzle or replace damaged nozzle. Refer to paragraph 2-42. b. If burner nozzle is serviceable, proceed to next step.
	Step 8. Check for defective combustion blower impeller. Check for loose coupling and for damaged or missing parts.	<ul style="list-style-type: none"> a. If combustion blower impeller is defective and/or parts are damaged or missing, replace combustion blower impeller. Tighten loose couplings. Refer to paragraph 2-44. b. If combustion blower impeller is serviceable, proceed to next step.
	Step 9. Check for defective combustion blower motor. Check for noisy or hot operation of motor.	<ul style="list-style-type: none"> a. If combustion blower motor is defective or if operation is noisy or hot, replace combustion blower motor. Refer to paragraph 2-44. b. If combustion-blower motor is serviceable and problem persists, notify your supervisor.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
26.	DRYER-TUMBLER BURNER DOES NOT OPERATE.	
	Step 1. Check for cracked, worn, or broken motor parts, damaged shaft threads, and bent shaft.	<ul style="list-style-type: none"> a. If motor is damaged, replace motor. Refer to paragraph 2-44. b. If motor is serviceable, proceed to next step.
	Step 2. Check for no ignition spark.	<ul style="list-style-type: none"> a. If there is no ignition spark, replace electrode cable from electrode to ignition transformer. b. If ignition spark is present, proceed to next step.
	Step 3. Check for reversed motor direction.	<ul style="list-style-type: none"> a. If motor direction is reversed, disconnect and reverse any two phase lines. b. If motor direction is correct, proceed to next step.
	Step 4. Check for missing bypass plug in fuel pump.	<ul style="list-style-type: none"> a. If bypass plug is missing, install bypass plug. Refer to paragraph 2-45. b. If bypass plug is present and problem persists, notify your supervisor.
27.	DRYER FUEL PRESSURE (AS INDICATED ON GAGE) PULSATES.	
	Step 1. Check for defective fuel pressure gage. Temporarily replace suspect gage with a known good gage.	<ul style="list-style-type: none"> a. If gage is defective, replace fuel pressure gage. Refer to paragraph 2-45. b. If gage is serviceable, proceed to next step.
	Step 2. Check for incorrect fuel pump pressure. Pressure should be approximately 100 psi (690 kPa).	<p>If pressure is incorrect, adjust fuel pump pressure. Refer to paragraph 2-45.</p>

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
28. DRYER FLAME PULSATES.		
	Step 1. Check for improper air shutter adjustment. Exhaust gases should be clear or light gray.	
		a. If exhaust gas is dark, adjust air shutter. Refer to TM 10-3510-209-10.
		b. If exhaust gas is proper color, proceed to next step.
	Step 2. Check for low fuel supply in fuel container.	
		a. If container is low on fuel, fill container with fuel. Refer to TM 10-3510-209-10.
		b. If container fuel level is correct, proceed to next step.
	Step 3. Check for water in fuel by draining a small amount of fuel into a clear container. Look for fuel/water separation.	
		a. If fuel/water is present, drain fuel supply and refill with proper fuel. Refer to TM 10-3510-209-10.
		b. If water is not present, proceed to next step.
	Step 4. Check for dirty burner assembly.	
		a. If burner is dirty, clean burner assembly. Refer to paragraph 2-42.
		b. If burner is serviceable and problem persists, notify your supervisor.
29. EXCESSIVE SMOKE FROM DRYER EXHAUST.		
	Step 1. Check for improper adjustment of air shutter. Exhaust gases should be light gray or clear.	
		a. If exhaust is too dark, adjust air shutter. Refer to TM 10-3510-209-10.
		b. If exhaust is proper color, proceed to next step.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
29. EXCESSIVE SMOKE FROM DRYER EXHAUST. (Cont)		
	Step 2. Check for improper fuel pressure. Pressure should be approximately 100 psi (690 kPa).	<ul style="list-style-type: none">a. If pressure is incorrect, adjust fuel pressure. Refer to paragraph 2-45.b. If fuel pressure is correct, proceed to next step.
	Step 3. Check for dirty burner.	<ul style="list-style-type: none">a. If burner is dirty, clean burner. Refer to paragraph 2-42.b. If burner is clean, proceed to next step.
	Step 4. Check for blocked air intake screen.	<ul style="list-style-type: none">a. If blockage is found, remove blockage from air intake screen.b. If air intake screen is serviceable, proceed to next step.
	Step 5. Check for worn or broken fuel pump parts.	<ul style="list-style-type: none">a. If pump is damaged, repair or replace fuel pump. Refer to paragraph 2-45.b. If fuel pump is serviceable and problem persists, notify your supervisor.
30. AIR LEAKS FROM DRYER DOOR.		
	Step 1. Check for loose door latch.	<ul style="list-style-type: none">a. If door latch is loose, adjust or replace door latch. Refer to paragraph 2-41.b. If door latch is serviceable, proceed to next step.
	Step 2. Check for bent door or hinge.	Straighten or replace door assembly. Refer to paragraph 2-41.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
<u>AIR COMPRESSOR</u>		
31. AIR COMPRESSOR DOES NOT OPERATE.	Step 1. Check for tripped main power supply and compressor circuit breaker.	<ul style="list-style-type: none"> a. If breaker is tripped, turn main power supply and compressor circuit breaker to ON. Refer to TM 10-3510-209-10. b. If circuit breakers are not tripped, proceed to next step.
	Step 2. Check for internal failure of air compressor. Listen for unusual noise or overheating.	<ul style="list-style-type: none"> a. If compressor operates but does not produce sufficient air volume or pressure, replace air compressor. Refer to paragraph 2-24. b. If air compressor is serviceable and problem persists, notify your supervisor.
32. AIR PRESSURE IS TOO LOW (BELOW 60 PSI [414 kPa]) or TOO HIGH (ABOVE 80 PSI [552 kPa]).	Step 1. Check for air leaks at fittings, lines, and tank.	<ul style="list-style-type: none"> a. If leaks are found, repair air leaks. Refer to paragraph 2-25. b. If leaks are not found, proceed to next step.
	Step 2. Check for clogged air compressor filters.	<ul style="list-style-type: none"> a. If filters are dirty, clean or replace air filters. Refer to paragraph 2-24. b. If filters are serviceable, proceed to next step.
	Step 3. Check for improperly adjusted pressure switch. Test run compressor: on at 60 psi (414 kPa); off at 80 psi (552 kPa).	<ul style="list-style-type: none"> a. If pressure is incorrect, adjust pressure switch. Refer to paragraph 2-24. b. If pressure is correct, proceed to next step.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
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32. AIR PRESSURE IS TOO LOW (BELOW 60 PSI [414 kPa]) or TOO HIGH (ABOVE 80 PSI [552 kPa]). (Cont)

- Step 4. Check for broken pressure switch. Temporarily substitute a known good switch for the suspect switch.
- a. If switch is defective, replace pressure switch. Refer to paragraph 2-24.
 - b. If switch is serviceable and problem persists, notify your supervisor.

WASHER ASSEMBLY

33. WASHER WILL NOT FILL AND CYLINDER WILL NOT ROTATE.

- Step 1. Check for improperly adjusted door safety switch. Door should be secured and watertight just as the switch is activated.
- a. If switch is improperly adjusted, adjust safety switch. Refer to paragraph 2-20.
 - b. If switch is serviceable, proceed to next step.
- Step 2. Check for failure of door safety switch. Perform continuity check with power off.
- a. If door safety switch is defective, replace switch.

- (1) Remove two screws (1) and switch top (2).
- (2) Tag and disconnect wire (4) from switch top (2).
- (3) Remove two screws (3). Tag and disconnect wire (5) and (6) from switch (7).
- (4) Remove conduit nut (8) at elbow (9) and remove wires from housing of switch (7).
- (5) Remove two allen head screws (10), lockwashers (11), plate (12), two nuts (13), and switch (7) from mounting bracket (14).

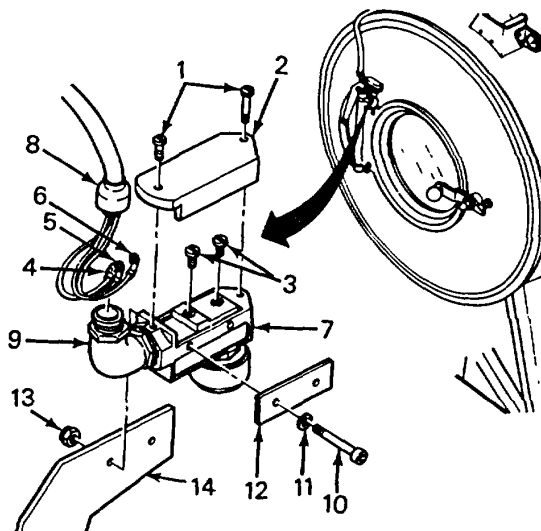


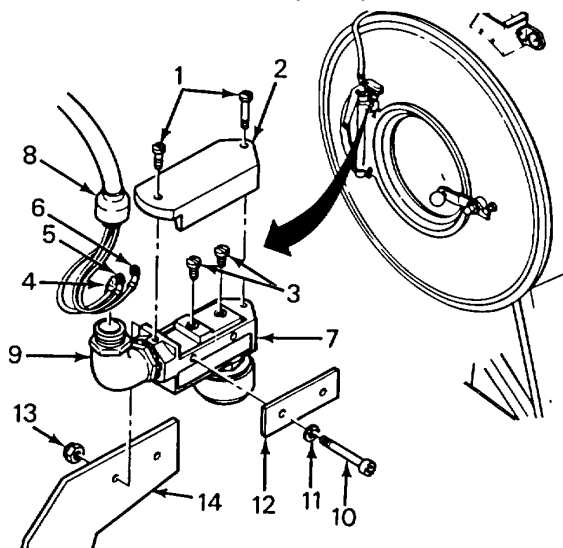
Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
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33. WASHER WILL NOT FILL AND CYLINDER WILL NOT ROTATE. (Cont)

(6) Position new switch (7) on mounting bracket (14) and install two allen head screws (10), lockwashers (11), plate (12), and two nuts (13).

(7) Install wires in housing of switch (7) and install conduit nut (8) on elbow (9).



(8) Connect wires (5) and (6) to switch (7) and remove tags. Install two screws (3).

(9) Connect wires (4) to switch top (2).

(10) Install switch top (2) and two screws (1).

b. If switch is serviceable and problem persists, notify your supervisor.

34. WASHER FILL LEVEL IS TOO LOW.

Step 1. Check for improperly adjusted water level control float. Low water level should be approximately 7 inches (17.8 cm) measured from bottom of cylinder.

a. If level is incorrect, adjust water level control float. Refer to paragraph 2-20.

b. If level is proper, proceed to next step.

Step 2. Check for stuck water level control float.

a. If control float is stuck, clean obstruction.

b. If control float is not stuck, proceed to next step.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
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34. WASHER FILL LEVEL IS TOO LOW. (Cont)

Step 3. Check for inoperative water level switch. With power off, remove switch cover and perform continuity check with switch in both positions.

- a. If switch is defective, replace water level switch.
 - (1) Remove screw (1) and cover (2) from switch box (3).
 - (2) Tag and disconnect wires (4) from defective high level switch (5) or low level switch (6).

NOTE

Both high level switch (5) and low level switch (6) are removed and replaced the same way. This procedure will cover the replacement of just one switch.

- (3) Remove two screws (7) and defective switch (5).

NOTES:

CONDUIT AND WIRES REMOVED FROM SWITCH BOX FOR CLARITY.

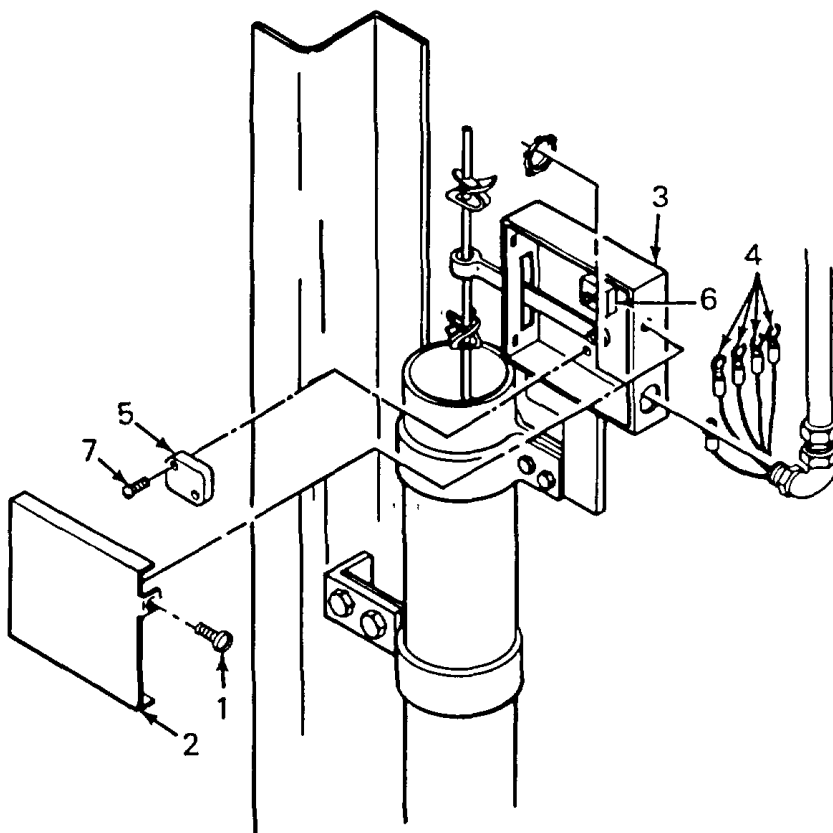
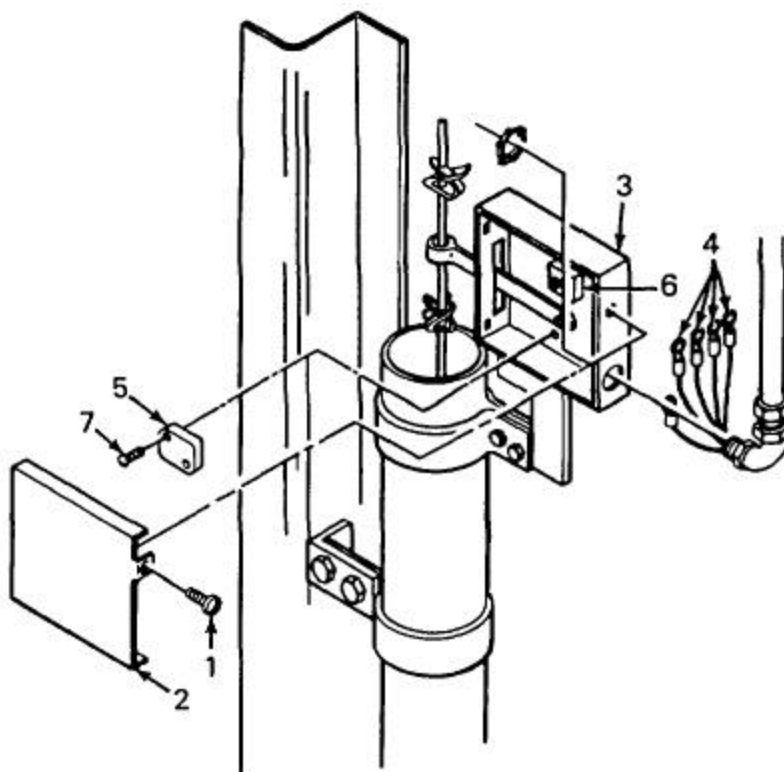


Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
-------------	--------------------	-------------------

34. WASHER FILL LEVEL IS TOO LOW. (Cont)

- (4) Position new high level switch (5) in switch box (3) and install two screws (7).
- (5) Connect wires (4) to high level switch (3) and remove tags.
- (6) Install cover (2) and screw (1) on switch box (3).



NOTES:

CONDUIT AND WIRES REMOVED FROM SWITCH BOX FOR CLARITY.

- b. If switch is serviceable, proceed to next step.

Step 4. Check for clogged drain valve during filling and check for low drain valve air supply (60 to 80 psi [414 to 552 kPa]).

- a. If drain valve is clogged, remove clog.
- b. If air supply is adequate (malfunction 32 above), replace drain valve. Refer to paragraph 2-21.
- c. If problem still persists, notify your supervisor.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
35.	WASHER FILL LEVEL IS TOO HIGH. (Above 11 inches [28 cm])	<p>Step 1. Refer to malfunction 34, and perform steps, 1, 2, and 3.</p> <p>Step 2. Check for inoperative water inlet valves. Operate manual program switches and observe valve operation. Ensure inlet valve air supply is adequate (60 to 80 psi [414 to 552 kPa]).</p> <ul style="list-style-type: none"> a. If air supply is adequate (malfunction 32 above), replace the defective valve. Refer to paragraph 2-21. b. If problem persists, notify your supervisor.
36.	WATER WILL NOT DRAIN FROM WASHER.	<p>Check for inoperative drain valve. Operate manual program switches and observe valve operation. Check that air pressure supply at tank is adequate (60 to 80 psi [414 to 552 kPa]).</p> <p>If air supply is adequate (malfunction 32 above), replace drain valve. Refer to paragraph 2-21.</p>
37.	WASHER DOES NOT FILL WITH COLD/HOT WATER (AUTOMATIC OR MANUAL MODE).	<p>Step 1. Check for blown fuse on controller assembly.</p> <ul style="list-style-type: none"> a. If fuse is blown, replace fuse. b. If fuse is serviceable, proceed to next step. <p>Step 2. Check for too low or too high air pressure. Normal is 60 to 80 psi (414 to 552 kPa).</p> <ul style="list-style-type: none"> a. If air pressure is incorrect, adjust air system for proper pressure. Refer to paragraph 2-24. b. If air pressure is correct, proceed to next step. <p>Step 3. Check for stuck cold/hot water inlet valve. Activate with washer operating manual program switches and observe valve operation.</p> <ul style="list-style-type: none"> a. If inlet valve is defective, replace inlet valve. Refer to paragraph 2-21. b. If valve is serviceable and problem persists, notify your supervisor.

Table 2-2. Unit Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
--------------------	---------------------------	--------------------------

38. WASHER CYLINDER WILL NOT ROTATE (AUTOMATIC OR MANUAL MODE).		
	Step 1. Check for blown fuse on controller assembly.	
		a. If fuse is blown, replace fuse.
		b. If fuse is serviceable, proceed to next step.
	Step 2. Check for loose or slipping drivebelt.	
		a. If drivebelt is loose or slipping, adjust drivebelt for proper tension. Refer to paragraph 2-22.
		b. If drivebelt is properly adjusted and problem persists, notify your supervisor.
39. WATER LEAKS AROUND WASHER DOOR.		
	Step 1. Check for damaged door gasket.	
		a. If door gasket is damaged and needs replacement, notify your supervisor.
		b. If door gasket is serviceable, proceed to next step.
	Step 2. Check for warped or damaged door.	
		a. If door is damaged and needs replacement, notify your supervisor.
		b. If door is serviceable, proceed to next step.
	Step 3. Check for damaged glass or glass gasket.	
		If glass or glass gasket is defective and needs replacement, notify your supervisor.

Section VI. UNIT MAINTENANCE PROCEDURES

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2-11. GENERAL. Instructions in this paragraph provide the general procedures to be followed in the removal, minor repair, replacement, or installation of components, and testing to the extent allowed at the unit maintenance level as authorized by the Maintenance Allocation Chart (MAC). When a special procedure is used in the removal, repair, or installation of a component, that procedure will be detailed in the section covering the component. If no special procedure is mentioned, then standard maintenance practices will apply.

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

a. Wiring.

- (1) General. Most wires on laundry units, whether run individually or in a harness, are marked or numbered. Be sure to tag any unnumbered wire upon disconnection to ensure proper installation.
- (2) Inspection. Inspect insulation for cracks or frayed material. Pay particular attention to wires passing through holes in the frame or over rough metal edges. If inspection reveals a cut or broken wire, and the break in the wire is exposed, the wire must be repaired (step (4) below). If the break in the wire is in a harness, conduit, or inaccessible area, replace the wire (step (5) below).
- (3) Testing. Test wires for continuity by disconnecting one end from the component to which it is attached, making an open circuit. Touch the test probes of a multimeter to each end of the wire. If the meter shows no indication, the wire is defective and should be repaired or replaced (steps (4) and (5) below).
- (4) Repair. Shave the insulation on the wire to expose 1/2 inch (1.27 cm) of bare wire at both ends of the break. Twist the bare wire together and solder the connection. Cover the break with electrical friction tape. Be sure to leave no bare wire exposed. If a terminal lug breaks off a wire, replace it with an exact duplicate.
- (5) Replacement. Replace a wire by disconnecting it from the component or components to which it is attached and remove the wire. Connect a new wire to the component or components. If a broken wire is part of a harness, disconnect the wire at each end and tape the loose ends with electrical tape. Install a new wire and attach it to the outside of the wiring harness.

b. Cleaning and Inspection of Antifriction Bearings. Refer to TM 9-214.

2-11. GENERAL. (CONT)c. Cleaning and Inspection of Mechanical Parts.**WARNING**

Drycleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point is 100 138°F (38 59°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

WARNING

Compressed air used for cleaning purposes will not exceed 30 psi (207 kPa). Use only with effective chip-guarding and personal-protective equipment (goggles, shield, gloves, etc.).

- (1) Clean metal parts in dry-cleaning solvent (Item 10, App C). Thoroughly dry the parts with compressed air, observing all safety precautions.
- (2) Fibrous or rubber parts can generally be cleaned with warm, soapy water and dried with compressed air.
- (3) Inspect metal parts for cracks, breaks, bends, worn edges, and rough bearing surfaces. Damage that alters the part or its function is cause for replacement of-that part.

d. General Repair.

- (1) Repair the laundry unit to normal operating condition by replacing or repairing a defective component and/or by needed adjustments.
- (2) Cleaning and lubrication is sometimes all that is needed to return an item to operating condition.
- (3) Remove and replace only those items necessary to make repairs. After replacing the defective components, ensure that the laundry operates correctly by making a visual inspection and by performing an operational check. Refer to TM 10-3510-209-10.

2-11. GENERAL. (CONT)

- e. Certification. Before welding any assembly of the laundry unit, the welder must be certified as a welder of ferrous metals. The certification is based on ASME Boiler and Pressure Vessel Code, Section IX, and meets or exceeds the intent of the following military specifications and standards:
- (1) MIL-W-52574 (ME), Welding, Steel
 - (2) MIL-STD-1261, Welding Procedures for Construction Steels
- f. Components Made of Steel. The following procedures provide instructions for repairing the air tank, frame assembly, and other components of the laundry that are made from steel.
- (1) Before welding, thoroughly clean surface to be welded. Do not use solvent for cleaning.
 - (2) Remove burrs and sharp edges.
 - (3) Weld damaged area in accordance with MIL-W-52574 (ME), Type I.
 - (a) Welding rods shall conform to Federal Specification E-15599, Class SA 233, 3/32-inch diameter.
 - (b) Power source can be ac or dc reverse polarity, 30 to 80 amperes.
 - (c) Penetration shall be full, at 14 inches (36 cm)/minute welding rate.
 - (d) Preheat material to be welded to 50°F (10°C).
 - (e) Avoid starts and stops when welding. Chip slag and restart the weld.
 - (4) Inspect weld joints for conformance with specification details and for surface uniformity.
 - (5) Grind welded seams smooth.
 - (6) Clean exposed metal surfaces.
 - (7) Apply one coat of primer (item 6, app C).
 - (8) Apply finish coat (item 7, app C) in accordance with FED STD 595.

2-12. DELETED.

2-13. COVER (TARP)

This task covers:

- a. Inspection
 - c. Replacement
-

INITIAL SETUPPersonnel Required

MOS 63J (1)

Materials/Parts

Tarp assembly

General Safety Instructions**WARNING**

Trailer bed can be cluttered and is slippery if wet. Use care when climbing on or around the mounted equipment.

INSPECTION

1. Inspect for tears, cuts, dry rot, and loose sewing.
2. Send tarp to intermediate direct support maintenance for repair.

REPLACEMENT

If cover is damaged beyond repair, replace with a new cover. Refer to TM 10-3510-209-10.

2-14. TARP FRAME ASSEMBLY

This task covers:

- | | | |
|---------------|----------------|-----------------|
| a. Inspection | c. Repair | e. Installation |
| b. Removal | d. Replacement | |

INITIAL SETUP

Tools

General mechanic's tool set,
 SC 5180-90
 Welding equipment (as needed)
 Painting equipment (as needed)

Personnel Required

MOS 63J (4)

Materials/Parts

Frame components (as required)
 General hardware (as required)
 Epoxy primer paint (Item 6, App C)
 Green 383 CARC paint
 (Item 7, App C)

General Safety Instructions

WARNING

Components of frame assembly are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

Equipment Condition

TM 10-3510-209-10, Tarp removed.
 TM 10-3510-209-10, Left beam assembly removed.
 TM 10-3510-209-10, Strut assembly removed.
 TM 10-3510-209-10, Ladder removed.
 TM 10-3510-209-10, Platform assemblies removed.
 Paragraph 2-17, Sound deadening panels removed.
 Paragraph 2-16, Hose bin assembly removed.
 Paragraph 2-15, Beam assemblies removed.

INSPECTION

Inspect frame assembly for cracks, breaks, bends, rust, missing hardware, and other damage that would weaken frame.

REMOVAL

WARNING

Components are heavy and may be awkward to handle. Use correct lifting procedures, indicated lifting devices, and/or assistance from other personnel to avoid injury.

WARNING

Trailer bed can be cluttered and is slippery if wet. Use care when climbing onto or walking around the mounted equipment.

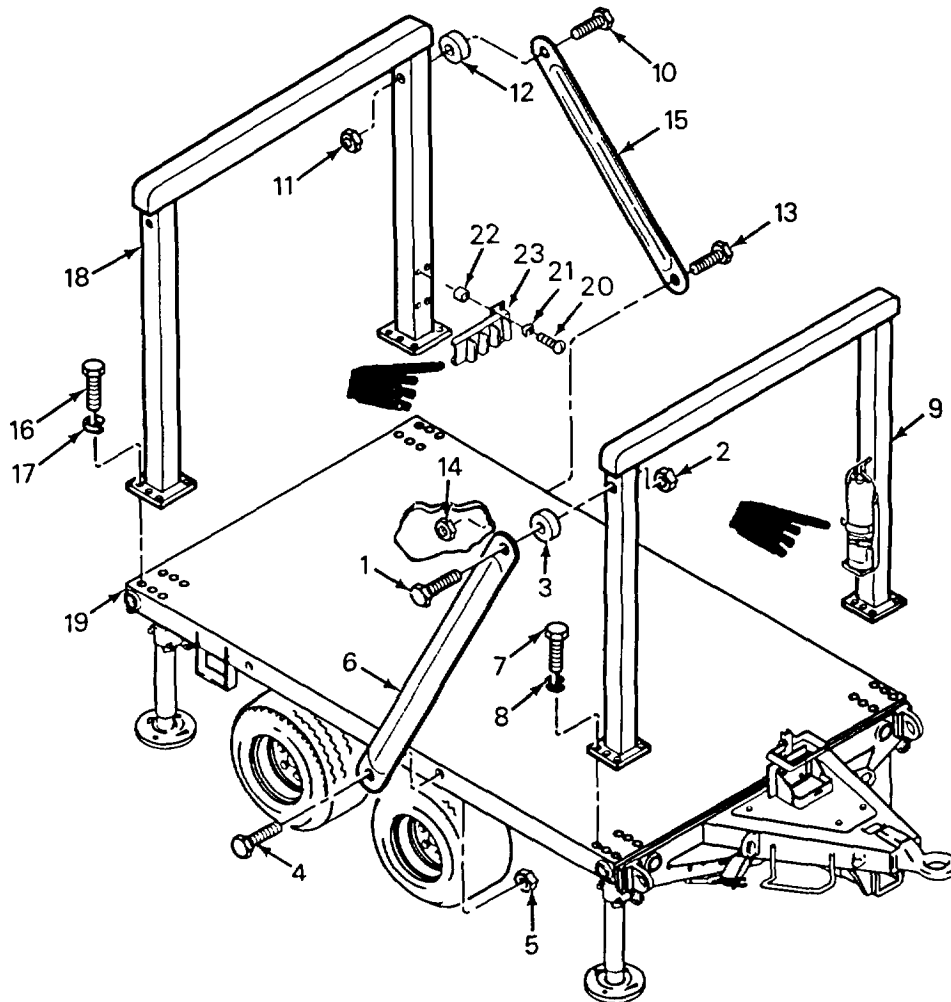
1. Remove bolt (4), locknut (5), bolt (1), locknut (2), spacer (3), and brace (6) from both sides of front frame (9) and trailer (19).
2. Remove fire extinguisher and bracket from front frame. Refer to paragraph 2-56.

2-14. TARP FRAME ASSEMBLY (CONT)

REMOVAL (Cont)

NOTE:

EQUIPMENT REMOVED FROM TRAILER FOR CLARITY.



NOTE

If you find shims under front frame (9) note their position for installation.

3. Support front frame (9) and remove 12 bolts (7) and washers (8). Remove front frame (9) from trailer (19).
4. Remove bolt (13), locknut (14), bolt (10), locknut (11), spacer (12), and brace (15) from both sides of rear frame (18) and trailer (19).
5. Remove screws (20) and washers (21 and 22) to remove platform anchor assembly (23) from rear frame (18).
6. Support rear frame (18) and remove 12 bolts (16) and washers (17). Remove rear frame (18) from trailer (19).

2-14. TARP FRAME ASSEMBLY (CONT)

REPAIR

Repair of broken welds or bent frame parts is performed by Intermediate General Support Maintenance.

REPLACEMENT

If frame assembly is damaged beyond repair, replace with new frame components.

INSTALLATION**WARNING**

Components are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

1. Use lifting device or correct lifting procedure and place rear frame (18) into position on trailer (19).
2. Install 12 bolts (16) and washers (17).
3. Secure platform anchor assembly (23) onto rear frame (18) using screws (20) and washers (21 and 22).
4. Position brace (15) on trailer (19) and rear frame (18) and install bolts (10), spacer (12), locknut (11), bolts (13), and locknut (14). Repeat procedure for brace on opposite side of frame.

NOTE

If shims were found under front frame (9) during disassembly, replace them as you found them.

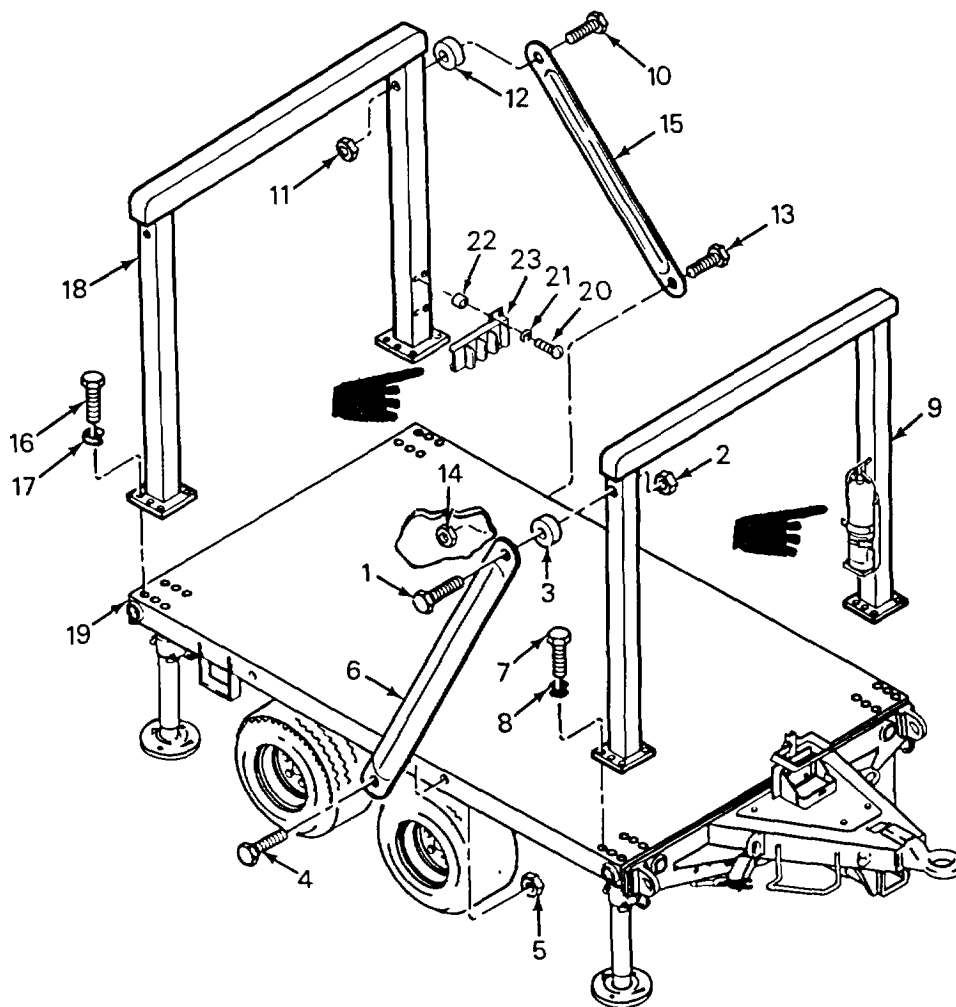
5. Use lifting device and place front frame (9) into position on trailer (19).

2-14. TARP FRAME ASSEMBLY (CONT)

INSTALLATION (Cont)

NOTE:

EQUIPMENT REMOVED FROM TRAILER FOR CLARITY.



6. Install 12 bolts (7) and washers (8).

7. Install fire extinguisher and bracket on front frame. Refer to paragraph 2-56.

8. Position brace (6) on trailer (19) and front frame (9) and install bolt (1), spacer (3), locknut (2), bolt (4), and locknut (5). Repeat procedure for brace on opposite side of frame.

NOTE

FOLLOW-ON MAINTENANCE: Install beam assembly and perform follow-on maintenance (para 2-16)

2-15. BEAM ASSEMBLY (CENTER AND RIGHT)

This task covers:

- | | | |
|---------------|----------------|-----------------|
| a. Inspection | c. Repair | e. Installation |
| b. Removal | d. Replacement | |

INITIAL SETUP

Tools

General mechanic's tool set,
 SC 5180-90
 Heli-arc welding equipment
 (as needed)
 Painting equipment (as needed)

Personnel Required

MOS 63J (2)

Materials/Parts

Beam assembly components
 (as needed)

General Safety Instructions

WARNING

Trailer bed can be cluttered and is slippery if wet. Use care when climbing onto or walking around the mounted equipment.

Equipment Condition

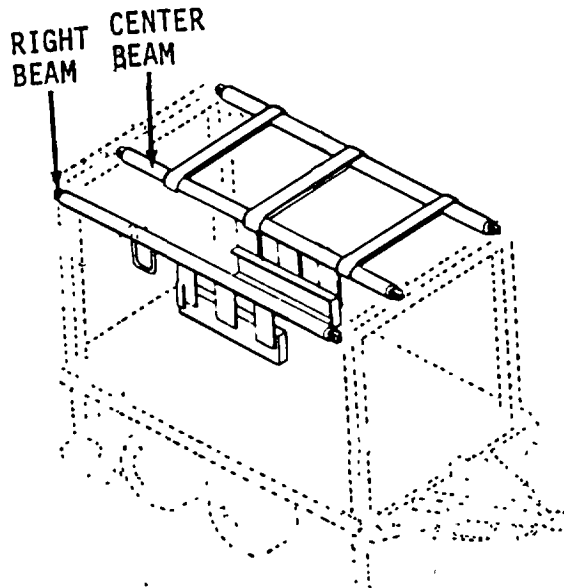
TM 10-3510-209-10. Tarp, ladder, struts, and left beam assembly removed.
 Paragraph 2-16, Hose bin assemblies removed.
 Paragraph 2-17, Upper and lower sound deadening panels removed.
 Remove air hoses from center beam by removing tie down straps as necessary.

INSPECTION

Inspect beam assembly for cracks, breaks, bends, corrosion, missing hardware, and other damage that weakens the metal.

REMOVAL

1. Remove two lanyard pins (1), one pin on each end from right beam (2) and beam holders (3).
2. Lift right beam (2) from beam holders (3) and remove beam from trailer.
3. Repeat steps 1 and 2 for center beam.



2-15. BEAM ASSEMBLY (CENTER AND RIGHT) (CONT)

REPAIR**WARNING**

Welding procedures specified may cause injury if safety precautions are not followed. Wear protective clothing and eye wear while performing welding operations. Serious injury could result.

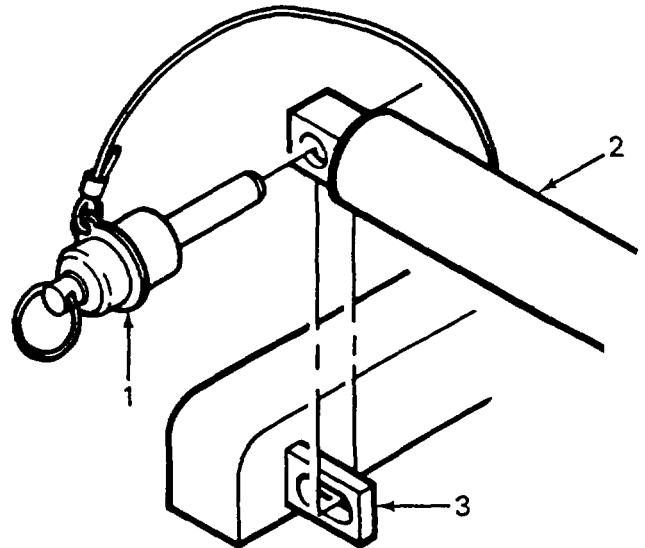
Repair by welding, bending, and cutting metal parts. File sharp edges until smooth. Repair by replacing damaged hardware and component parts.

REPLACEMENT

If beam assembly is damaged beyond repair, replace with a new beam assembly.

INSTALLATION

1. Install right beam (2) in holders (3) and install two lanyard pins (1).
2. Repeat step 1 for center beam.

**NOTE****FOLLOW-ON MAINTENANCE:**

**Install upper and lower sound deadening panels (para 2-17).
Install hose basket assemblies (para 2-16).
Position air hoses along center beam and secure with tiedown straps.
Install left beam, struts, ladder, and tarp assembly (TM 10-3510-209-10).**

2-16. HOSE BIN ASSEMBLY

This task covers:

- | | | |
|---------------|----------------|-----------------|
| a. Inspection | c. Repair | e. Installation |
| b. Removal | d. Replacement | |
-

INITIAL SETUP
Tools

General mechanic's tool set,
SC 5180-90
Rivet installation tool

Personnel Required

MOS 63J (2)

Materials/Parts

Rivets, blind, MS20600B6W6
Basket assembly, 6-1-9955

Equipment Condition

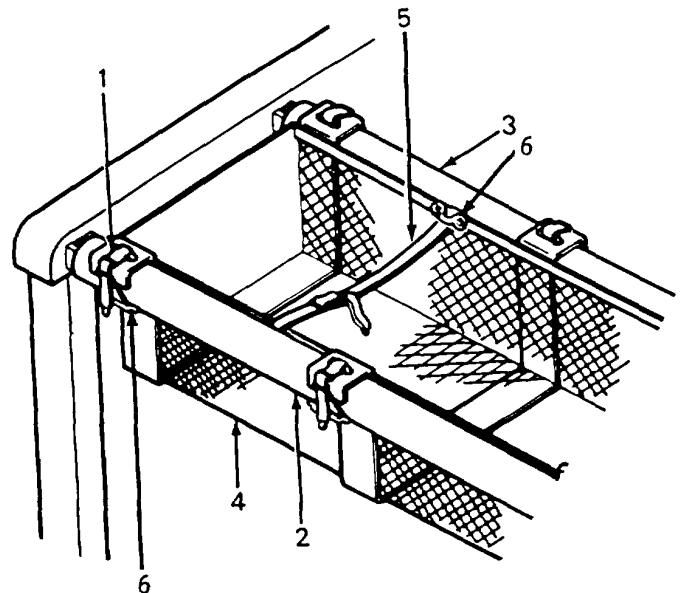
TM 10-3510-209-10, Tarp assembly removed.
Storage items removed from bins.
TM 10-3510-209-10, Strut assembly removed.
TM 10-3510-209-10, Left beam assembly removed.

INSPECTION

Inspect bins for cracks, breaks, corrosion, missing straps, and broken supports.

REMOVAL

1. Unhook eight straps (1) from right beam (2) and center beam (3).
2. Lift bin assembly (4) from right beam (2) and center beam (3) and remove from trailer.
3. Repeat steps 1 and 2 and remove remaining bin assembly.



2-16. HOSE BIN ASSEMBLY (CONT)**REPAIR**

Repair by replacing damaged or missing straps (1 and 5), rivets and footman loops (6).

REPLACEMENT

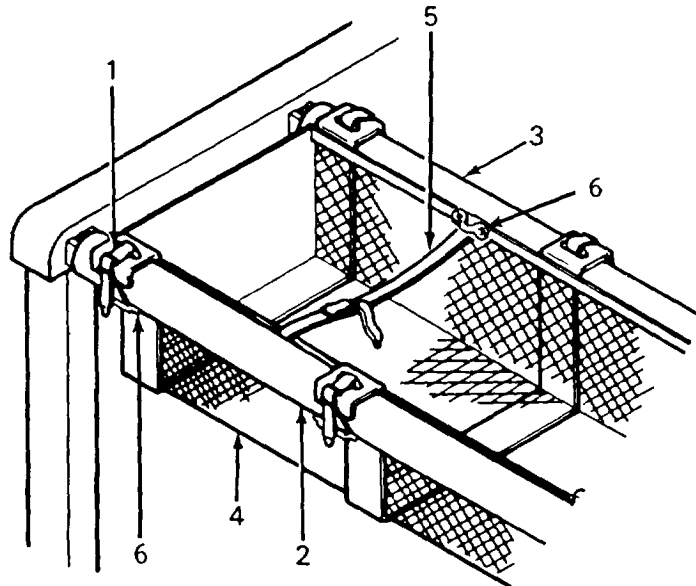
If bin assembly is damaged beyond repair, replace with a new bin assembly.

INSTALLATION

1. Install bin assembly (4) on right beam (2) and center beam (3) and secure bin assembly with straps (1).
2. Repeat step 1 and install remaining bin assembly.

NOTE**FOLLOW-ON MAINTENANCE:**

Install left beam assembly (TM 10-2510-209-10).
Install strut assembly (TM 10-2510-209-10).
Replace storage items in basket.
Install tarp assembly (TM 10-2510-209-10).



2-17. SOUND DEADENING PANELS

This task covers:

- a. Inspection
- b. Removal
- c. Replacement
- d. Installation

INITIAL SETUPTools

General mechanic's tool set,
SC 5180-90
Welding equipment (as needed)

Personnel Required

MOS 63J (1)

Materials/Parts

Rivets, blind, MS20600B6W6
Insulation, mineral fiber,
ASTM-C-764
Panel assembly (as needed)

General Safety Instructions**WARNING**

Welding procedures specified may cause injury if safety precautions are not followed. Wear protective clothing and eye wear while performing welding operations. Serious injury could result.

Equipment Condition

TM 10-2510-209-10, Tarp assembly removed.

INSPECTION

Inspect panels for cracks, breaks, dents, corrosion, missing parts, and damaged sound insulation.

REMOVAL

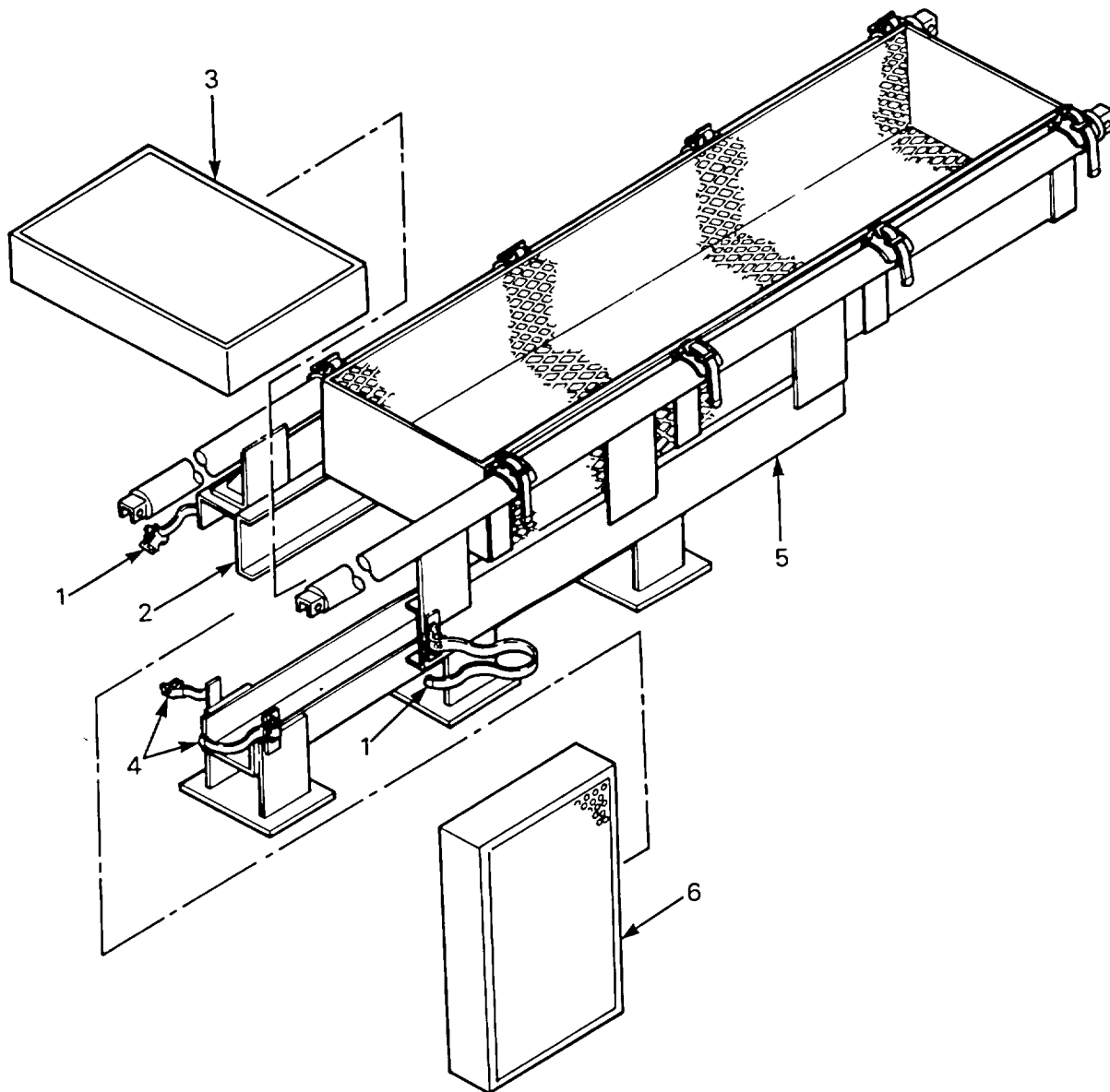
1. Unhook strap (1) from upper track assembly (2) and remove three panels (3).
2. Unhook strap (4) from lower track assembly (5) and remove three panels (6).

2-17. SOUND DEADENING PANELS (CONT)

REMOVAL (Cont)

NOTES:

- 1. BIN ASSEMBLY IS SHOWN EMPTY FOR CLARITY.
- 2. REMOVE LARGE SOUND PANEL FIRST.



2-17. SOUND DEADENING PANELS (CONT)

REPLACEMENT

If sound deadening panels are damaged beyond useful service, replace with new ones.

INSTALLATION

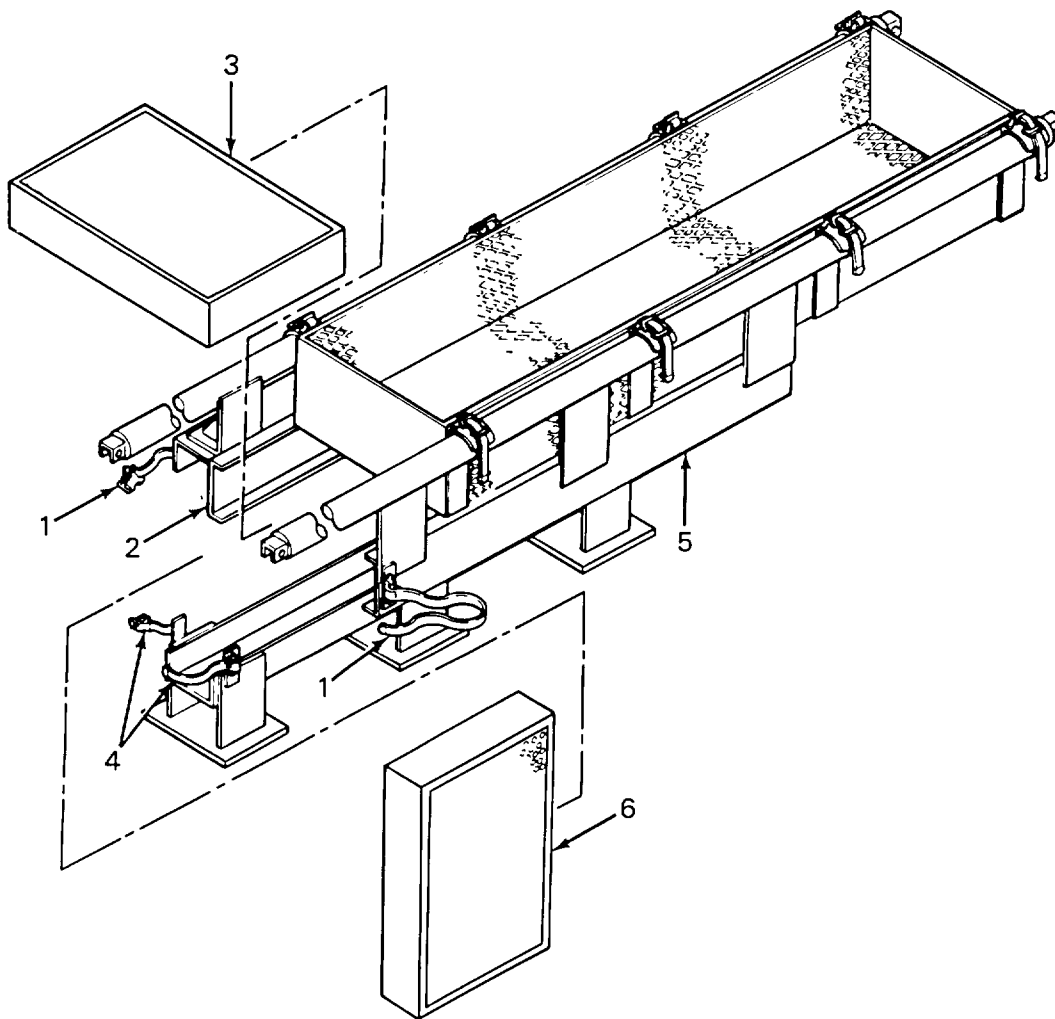
1. Install three panels (6) in lower track assembly (5) and secure with strap (4).
2. Install three panels (3) in top bracket (2) and secure with strap (1).

2-17. SOUND DEADENING PANELS (CONT)

INSTALLATION (Cont)

NOTES:

1. BIN ASSEMBLY IS SHOWN EMPTY FOR CLARITY.
2. INSTALL LARGE SOUND PANEL LAST.



NOTE

FOLLOW-ON MAINTENANCE:

Install tarp assembly (TM 10-3510-209-10).

2-18. LOWER SOUND DEADENING TRACK

This task covers:

- a. Inspection
- b. Removal
- c. Replacement
- d. Installation

INITIAL SETUP

Tools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Track assembly,
Blind, Rivets MS20600B6W6
Common hardware (as needed)

General Safety Instructions

WARNING

Trailer bed can be cluttered and is slippery if wet. Use care when climbing onto or walking around the mounted equipment.

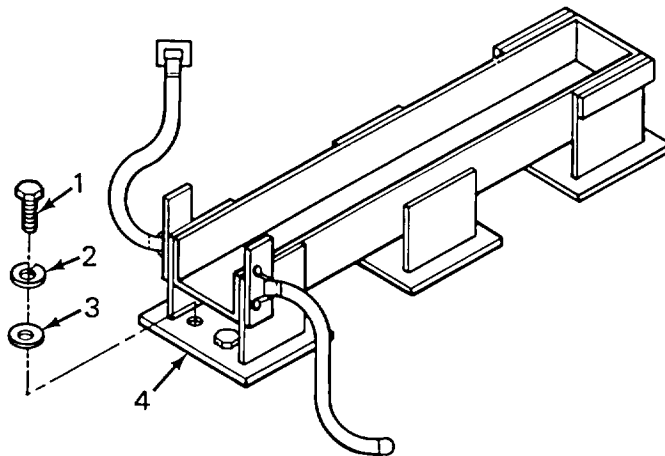
Equipment Condition

TM 10-3510-209-10, Tarp assembly removed.
Paragraph 2-17, Lower sound deadening panels removed.
TM 10-3510-209-10, Dry clothes bin removed.
Paragraph 2-55, Generator removed if necessary.

INSPECTION

Inspect for cracks, breaks, bends, missing hardware, corrosion, and other damage that prevents sound panel installation.

2-18. LOWER SOUND DEADENING TRACK (CONT)

REMOVAL

1. Remove six bolts (1), lockwashers (2), and flat washers (3) from track (4).
2. Remove track (4) from laundry unit.

REPLACEMENT

If lower sound deadening panel track is damaged beyond repair, replace with a new track.

INSTALLATION

1. Place track (4) on laundry trailer.
2. Install six bolts (1), lockwashers (2), and flat washers (3).

NOTE**FOLLOW-ON MAINTENANCE:**

Install tarp assembly (TM 10-3510-209-10).
Install lower sound deadening panels
(para 2-17).
Install dry clothes bin (TM 10-3510-209-10).
Install generator if removed (para 2-55).

2-19. PLATFORM ASSEMBLY

This tasks covers:

- | | | |
|---------------|----------------|-----------------|
| a. Inspection | c. Repair | e. Installation |
| b. Removal | d. Replacement | |

INITIAL SETUP

Tools

General mechanic's tool set,
SC 5180-90

General Safety Instructions

WARNING

Components of the platform assembly are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

Personnel Required

MOS 63J (2)

Materials/Parts

Common hardware (as needed)
Platform assembly, 6-1-9855,
6-1-8356

Equipment Condition

TM 10-3510-209-10, Tarp assembly removed.

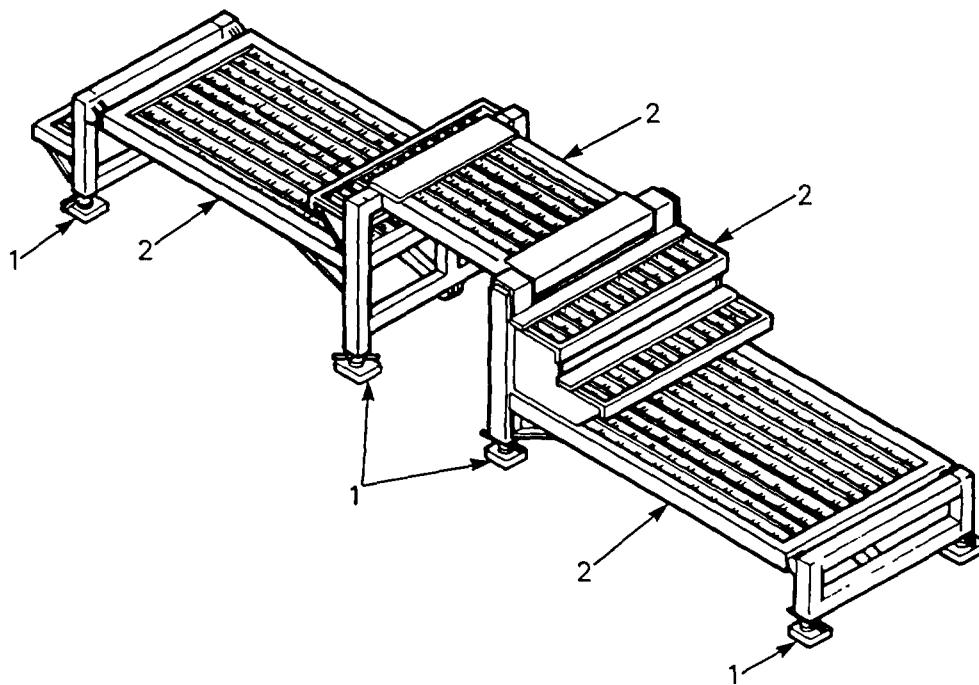
INSPECTION

Inspect for cracks, breaks, and missing hardware.

REMOVAL

Refer to TM 10-3510-209-10 for removal and disassembly of platform assembly.

2-19. PLATFORM ASSEMBLY (CONT)

REPAIR

Replace broken or damaged levelers (1), and missing hardware. Straighten bent grates (2) if damaged.

REPLACEMENT

If a platform section is damaged beyond repair, replace with a new section.

INSTALLATION

Refer to TM 10-3510-209-10 for assembly and installation of platform assembly.

NOTE**FOLLOW-ON MAINTENANCE:**

Install tarp assembly (TM 10-3510-209-10).

2-20. WASHER ASSEMBLY

This task covers:

- a. Service
- b. Inspection
- c. Repair
- d. Adjustment

INITIAL SETUP

Tools

General mechanic's tool set,
SC 5180-90

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Personnel Required

MOS 63J (1)

Materials/Parts

Lubricating oil (Item 17, App C)

Equipment Condition

TM 10-3510-209-10, Washer drained.

SERVICE

The only service required on the washer assembly is lubrication of the gear reduction unit. (Refer to LO 10-3510-209-12).

INSPECTION

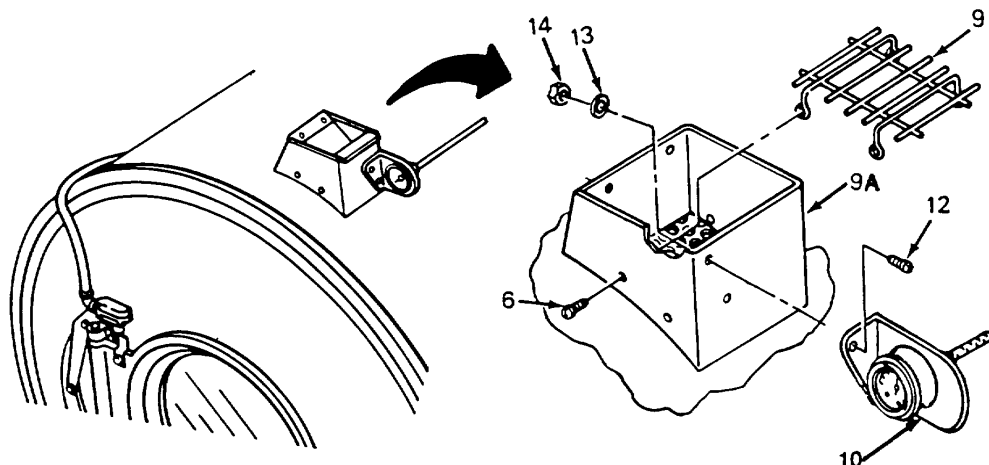
Inspect for dry lubrication points or misadjusted door interlock safety switch.

REPAIR

NOTE

Repair consists of replacing the washer thermometer.

1. Remove water pump (TM 10-3510-209-10) and washer drivebelt cover (para 2-22) for easy access to washer thermometer.
2. Remove four screws (6) securing soap chute guard (9) to soap chute (9A).
3. Remove soap chute guard (9).



2-20. WASHER ASSEMBLY (CONT)**NOTE**

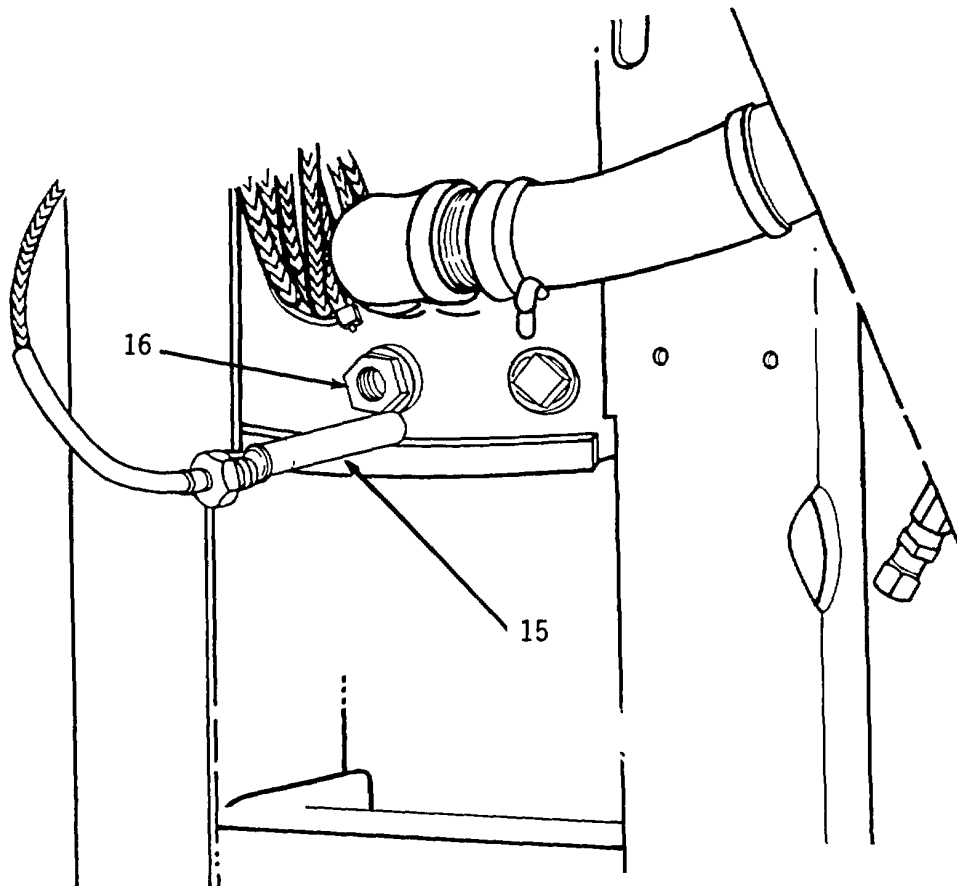
Take care not to drop loose hardware down into washer.

4. Remove two screws (12), nuts (14) and nylon washers (13) from mounting bracket (10).
5. Unscrew temperature probe (15) at bushing (16) from rear of washer. Feed temperature probe and cable out through hole and rear of washer frame.

NOTE

To help reassembly, note how the cable is routed through rear of washer frame before removal.

6. Route replacement temperature probe (15) with cable attached through hole in rear washer frame.
7. Screw temperature probe (15) into bushing (16) on rear of washer.
8. Secure mounting bracket (10) to soap chute (9A) using two screws (12), nuts (14) and nylon washers (13).
9. Reinstall soap chute guard (9) with four screws (6) to inside of soap chute (9A).
10. Install washer drivebelt cover (para 2-22) and water pump (TM 10-3510-209-10).



2-20. WASHER ASSEMBLY (CONT)

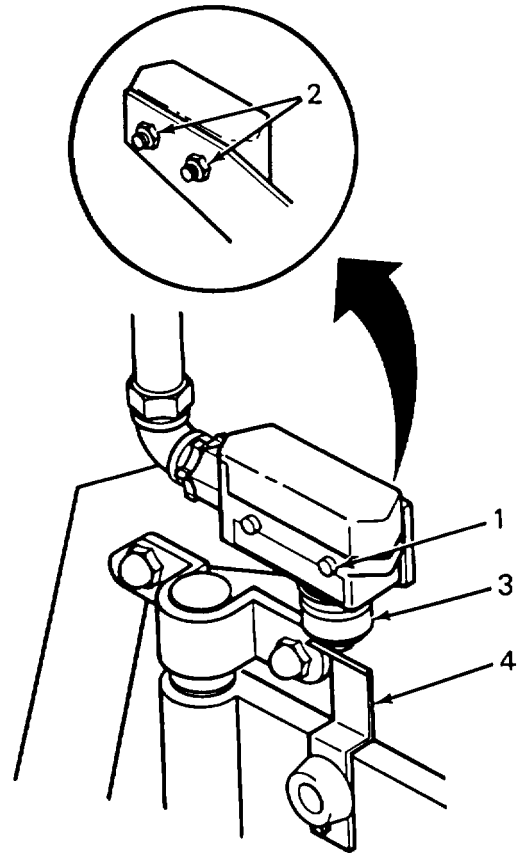
ADJUSTMENT

1. Adjust safety switch (3).

NOTE

Safety switch (3) is adjusted so that the door interlock cam is centered (left to right) on switch.

- a. Loosen two allen-head screws (1) and nuts (2) securing safety switch (3). Center the switch on the door interlock cam (4) and tighten the screws and nuts.



2-20. WASHER ASSEMBLY (CONT)**ADJUSTMENT (Cont)****NOTE**

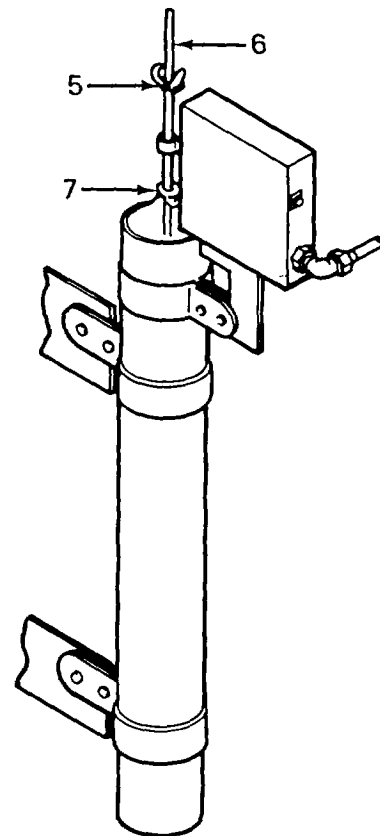
The door interlock cam is adjusted so that when the door is closed and secured, the contact button on the safety switch is pressed.

- b. Adjust the door interlock cam (4) by bending it in the desired direction (in or out).
 - c. Slowly open and close the door. Listen for safety switch (3) to click on and off just as the door begins to open.
 - d. Repeat steps b and c until safety switch (3) is adjusted correctly.
2. Adjust low water fill level.

CAUTION

Do not use tools to move speed nuts. Position by hand. Damage to equipment could result.

- a. Select low water level and allow washer to fill.
- b. Adjust low water level for a depth of approximately 7 inches (17.8 cm).
- c. To raise the low level, move low level speed nut (5) down on float rod (6). Do not position speed nut (5) closer than 1 inch (2.5 cm) to high level speed nut (7).
- d. To lower the low level, move low level speed nut (5) up on float rod (6). Do not position speed nut (5) closer than 1 inch (2.5 cm) to high level speed nut (7).
- e. Drain washer.
- f. Repeat steps (a) thru (e) until a low level of approximately 7 inches (17.8 cm) is reached.



2-20. WASHER ASSEMBLY (CONT)

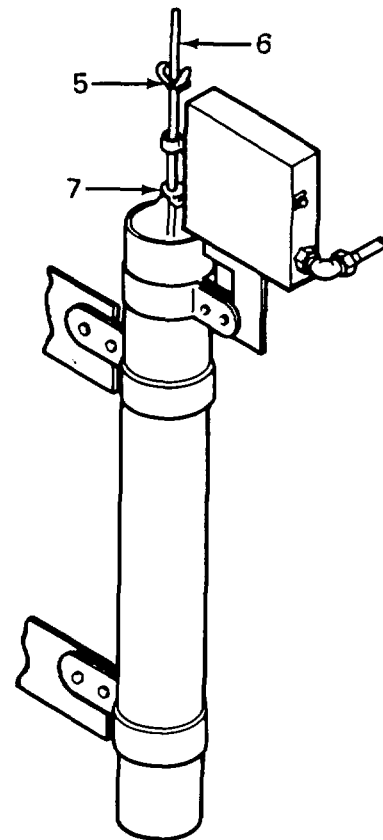
ADJUSTMENT (Cont)

3. Adjust high water fill level.

CAUTION

**Do not use tools to move speed nuts.
Position by hand. Damage to
equipment could result.**

- a. Select high water level and allow washer to fill.
- b. Adjust high water level for a depth of approximately 11 inches (28 cm).
- c. To raise the high level, move high level speed nut (7) down on float rod (6). Do not position speed nut (7) closer than 1 inch (2.5 cm) to low level speed nut (5).
- d. To lower the high level, move high level speed nut (5) up on float rod (6). Do not position speed nut (7) closer than 1 inch (2.5 cm) to low level speed nut (5).
- e. Drain washer.
- f. Repeat steps (a) thru (e) until a high level of approximately 11 inches (28 cm) is reached.



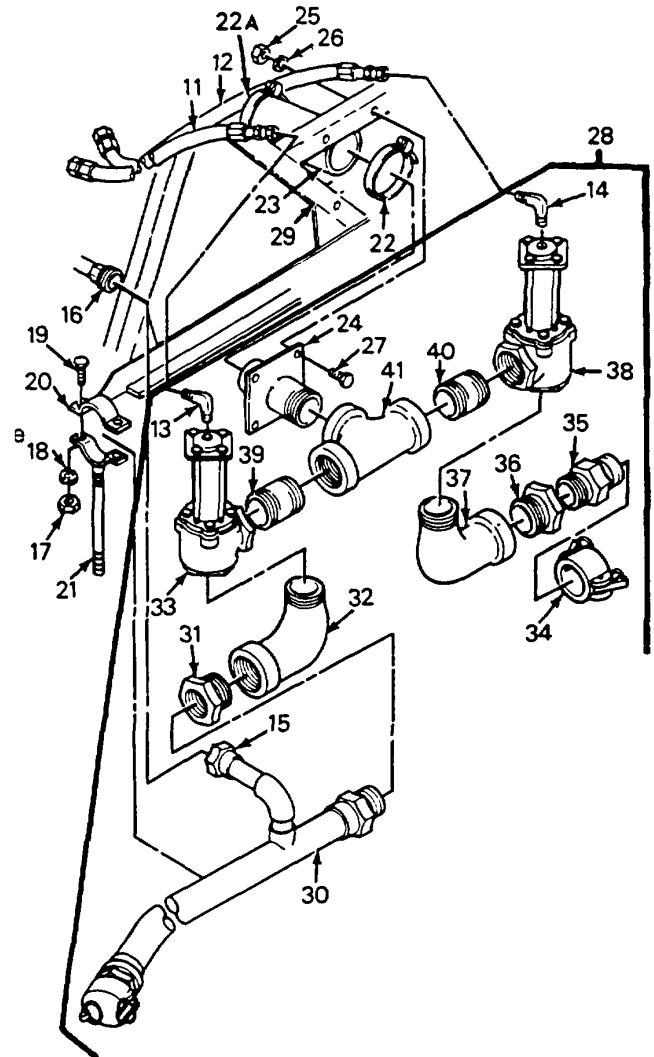
2-21. WASHER INTAKE PLUMBING AND DRAIN ASSEMBLY (CONT)**REMOVAL (Cont)**

2. Remove drain assembly.

NOTE

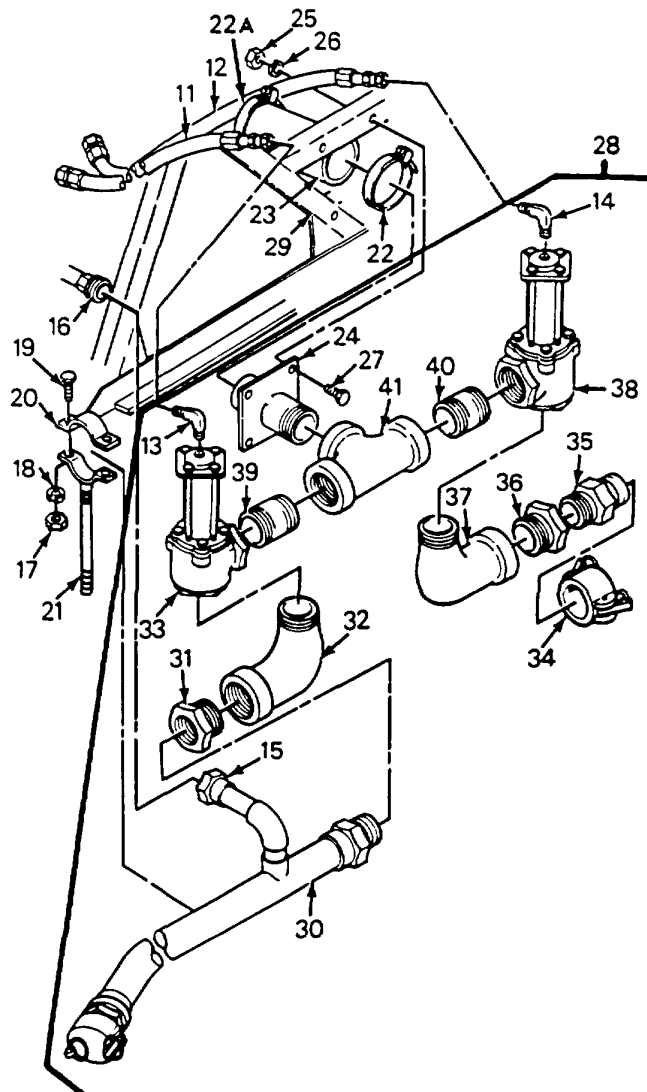
Disassemble drain pipe assembly only when evidence of damage is present.

- a. Tag and disconnect air hoses (11) and (12) from elbow (13) and (14).
- b. Disconnect union joint (15) from extractor drain pipe (16).
- c. Remove two nuts (17), lockwashers (18), screws (19), and clamp (20) from bracket (21).
- d. Remove hose clamp (22).
- e. Remove four nuts (25), lockwashers (26), screws (27), and drain assembly (28) from washer frame (29) and hose (23).
- f. Remove drain pipe assembly (30) from adapter (31).
- g. Remove adapter(31) and elbow(32) from dump valve (33).
- h. Remove elbow (13) from dump valve (33).
- i. Remove dump valve (33) from nipple (39).
- j. Remove cap (34), coupling (35), and adapter (36) from elbow (37).
- k. Remove elbow (37) from dump valve (38).
- l. Remove elbow (14) from dump valve (38).
- m. Remove dump valve (38) from nipple (40).
- n. Remove nipples (39) and (40) from tee pipe (41).
- o. Remove tee pipe (41) from drain pipe (24).



2-21. WASHER INTAKE PLUMBING AND DRAIN ASSEMBLY (CONT)**INSTALLATION**

1. Install washer drain assembly.
 - a. Install tee pipe (41) on drain pipe (24).
 - b. Install nipples (40) and (39) on tee pipe (41).
 - c. Install dump valve (38) on nipple (40).
 - d. Install elbows (37 and 14) on dump valve (38).
 - e. Install adapter (36), coupling (35), and cap (34) on elbow (37).
 - f. Install dump valve (33) on nipple (39).
 - g. Install elbows (13 and 32) and adapter (31) on dump valve (33).
 - h. Install drain pipe assembly (30) on adapter (31).
 - i. Check that rear clamp (22A) is secure on washer drain hose (23).
 - j. Place front clamp (22) loosely on front of washer drain hose (23).
 - k. Install drain pipe assembly (28) on washer frame (29) and into washer drain hose (23). Secure with four screws (27), lockwashers (26), and nuts (25).
 - l. Connect hose (23) to drain pipe (24) and secure with front clamp (22).
 - m. Install clamp (20), two screws (19), lockwashers (18), and nuts (17) securing drain pipe assembly (28) to bracket (21).
 - n. Connect union joint (15) to extractor drain pipe (16).
 - o. Connect air hose (11) and (12) to elbow(13) and (14). Remove tags.



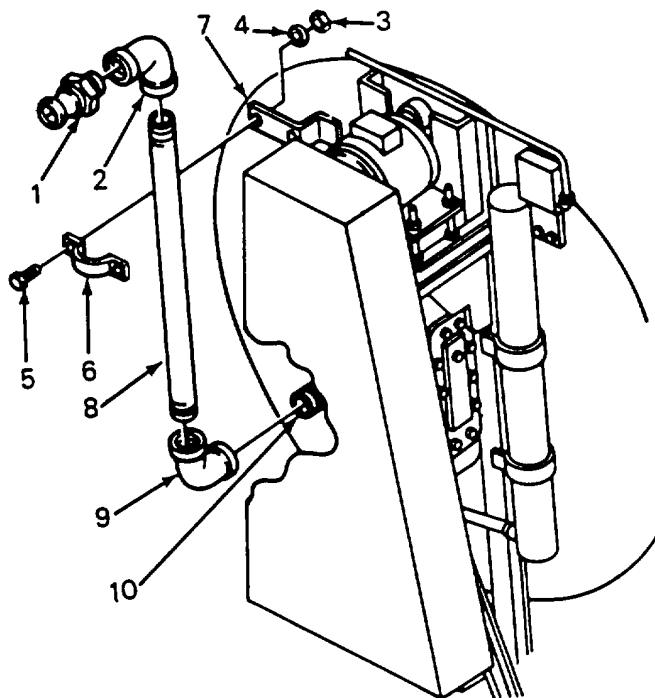
2-21. WASHER INTAKE PLUMBING AND DRAIN ASSEMBLY (CONT)**INSTALLATION (Cont)**

2. Install washer intake plumbing.

- a. Install elbow (9) on washer (10).
- b. Install pipe (8) on elbow (9).
- c. Install elbow (2) on pipe (8).
- d. Install clamp (6), two screws (5), lockwashers (4), and nuts (3) securing pipe (8) to bracket (7).
- e. Install intake coupling (1) on elbow (2).

NOTE

FOLLOW-ON MAINTENANCE:
Connect quick-disconnect hoses (TM 10-3510-209-10).



2-21.1. WASHER FLOAT LEVEL ASSEMBLY

This task covers:

- | | | |
|---------------|----------------|-----------------|
| a. Inspection | c. Disassembly | e. Installation |
| b. Removal | d. Repair | f. Adjustment |

INITIAL SETUP

Tools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Equipment Conditions

TM 10-3510-209-10, Water drained from washer.

TM 5-6115-585-12, Generator off.

TM 10-3510-209-10, Water pump removed.

Paragraph 2-22, Washer drivebelt cover removed.

INSPECTION

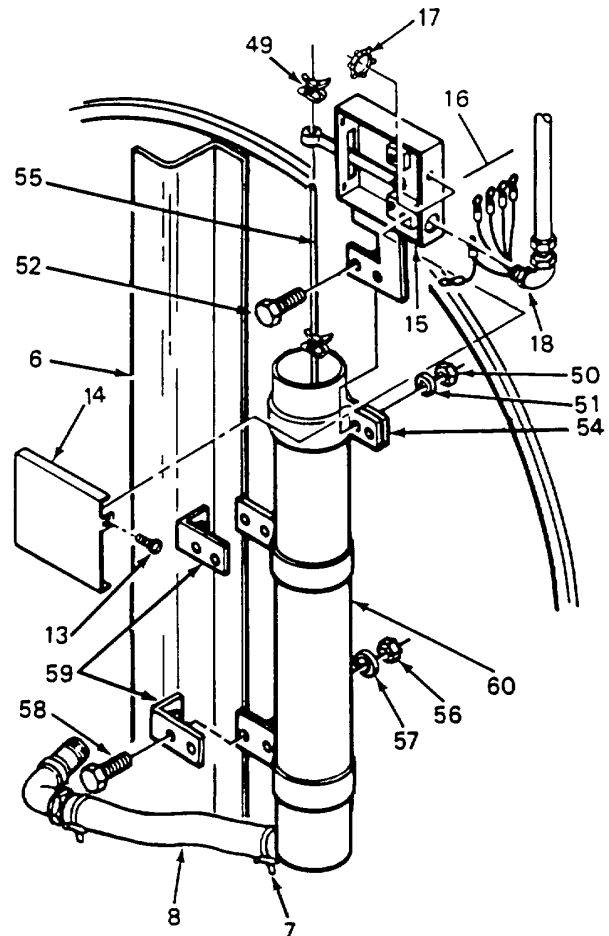
Inspect for cracks, freeze breaks, loose fittings, damaged hose or incorrect float operation.

REMOVAL

- a. Remove screw (13) and cover (14) from float switch (15).
2. Tag and disconnect wires (16) and remove nut (17) from electrical cable (18). Remove electrical cable from float switch (15).
3. Loosen clamp (7) to remove tube (8) from float chamber (60).
4. Remove four bolts (58), nuts (56) and washers (57) from support brackets (59).
5. Remove float chamber (60) from washer assembly (6).

DISASSEMBLY

1. Remove low-level speednut (49) from float rod (55) by pinching speednut ends together.
2. Remove hex nut (50), lock washer (51) and screw (52) from float switch assembly (15) and float chamber clamp (54).
3. Remove float switch assembly (15) from float rod (55).
4. Remove float rod (55) from float chamber (60).



2-21.1. WASHER FLOAT LEVEL ASSEMBLY (CONT)

REPAIR

Repair by replacing defective component(s).

ASSEMBLY

1. Install float rod (55) in float chamber (60).
2. Install float switch assembly (15) on float rod (55).
3. Install screw (52), lock washer (51), and hex nut (50) on float switch assembly (15) and float chamber clamp (54).
4. Install low-level speednut (49) on float rod (55).

INSTALLATION

1. Install float chamber (60) on washer assembly (6).
2. Install four bolts (58), washers (57) and nuts (56) on brackets (59).
3. Install electrical cable (18) in float switch (15). Install nut (17) and secure electrical cable. Connect wires (16) to float switch (15). Remove tags.
4. Install cover (14) and screw (13) on float switch (15).
5. Install tube (8) and clamp (7) on float chamber (60).

ADJUSTMENT

Refer to paragraph 2-20 for adjustment.

NOTE

FOLLOW-ON MAINTENANCE: Washer drivebelt cover installed (para 2-22).
Water pump installed (TM 10-3510-209-10).

2-22. WASHER DRIVEBELT

This task covers:

- | | | |
|---------------|------------|----------------|
| a. Inspection | b. Service | c. Replacement |
| d. Adjustment | | |

INITIAL SETUP

Tools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Lubricating oil (Item 17, App C)

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Equipment Condition

TM 10-3510-209-10, Washer drained.

TM 10-6115-585-12, Generator off.

TM 10-3510-209-10, Water pump removed.

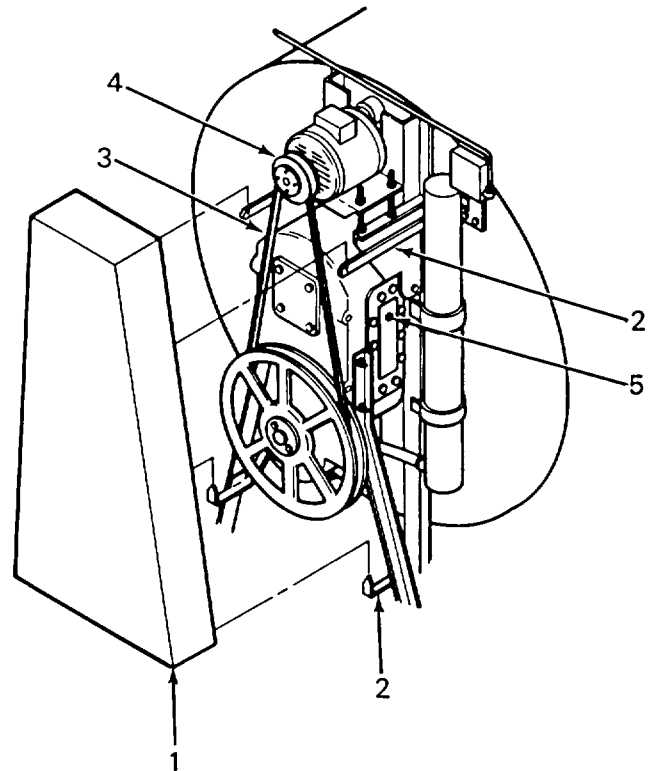
Paragraph 2-16, Front basket assembly removed.

INSPECTION

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

1. Remove electrical power from the washer.
2. Lift up on drivebelt cover (1), slide cover away from top mounting brackets (2), and remove cover.
3. Inspect drivebelt (3) for wear, fraying, signs of slipping, and incorrect tension. Refer to ADJUSTMENT, step 6.
4. Turn drive pulley (4) by hand. Feel for rough movement or binding of gears or motor bearings.
5. Remove oil level hole plug (5). Check oil level (even with bottom of hole). Replace plug (LO 10-3510-209-12).



2-22. WASHER DRIVEBELT (CONT)

INSPECTION (Cont)

6. Install drivebelt cover (1) on mounting bracket (2).

SERVICE

Lubricate gear reduction unit in accordance with LO 10-3510-209-12.

REPLACEMENT

1. Remove electrical power from the washer.
2. Lift up on the drivebelt cover (1), slide cover away from top mounting bracket (2) and remove cover.
3. Loosen the two locking nuts (6) that secure the adjustment bolts (7) to motor mounting plate (8).
4. Loosen two pivot bolts (9A) (front and rear).
5. Loosen two adjustment nuts (9) as necessary to remove drivebelt.
6. Drop motor and remove old drivebelt. Replace with new drivebelt.
7. Perform ADJUSTMENT procedures that follow.

ADJUSTMENT

WARNING

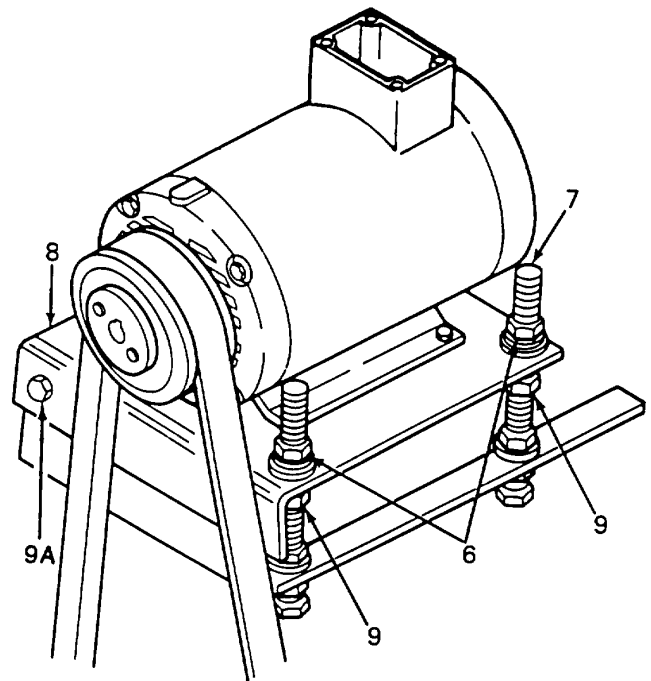
High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

1. Remove electrical power from the washer.
2. Lift up on drivebelt cover (1), slide cover away from top mounting bracket (2), and remove cover.
3. Loosen the two locking nuts (6) that secure the adjustment bolts (7) to motor mounting plate (8).
4. Loosen two pivot bolts (9A) (front and rear).

CAUTION

Motor must remain level throughout adjustment of belt tension to prevent excessive belt wear caused by an improperly aligned pulley.

5. Increase tension on the drivebelt by evenly turning two adjustment nuts (9) on the motor base plate counterclockwise.
6. Decrease tension on the drivebelt by evenly turning two adjustment nuts (9) on the motor base plate clockwise.



2-22. WASHER DRIVEBELT (CONT)

ADJUSTMENT (Cont)

NOTE

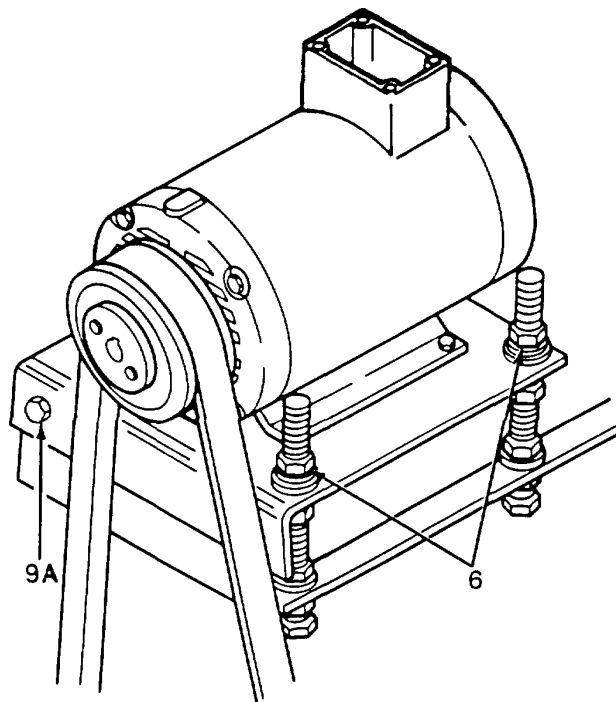
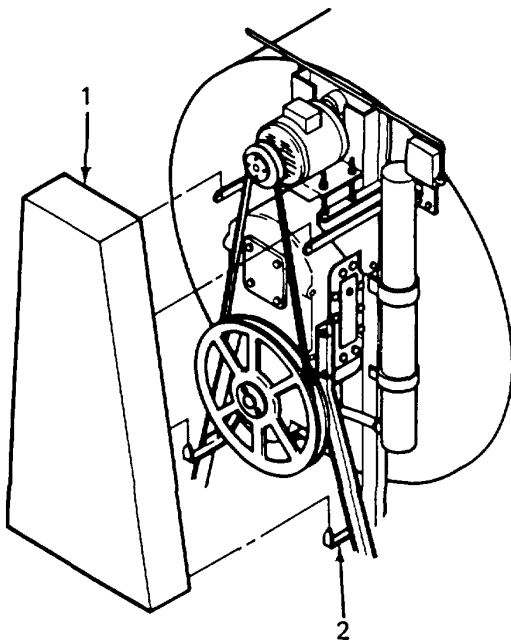
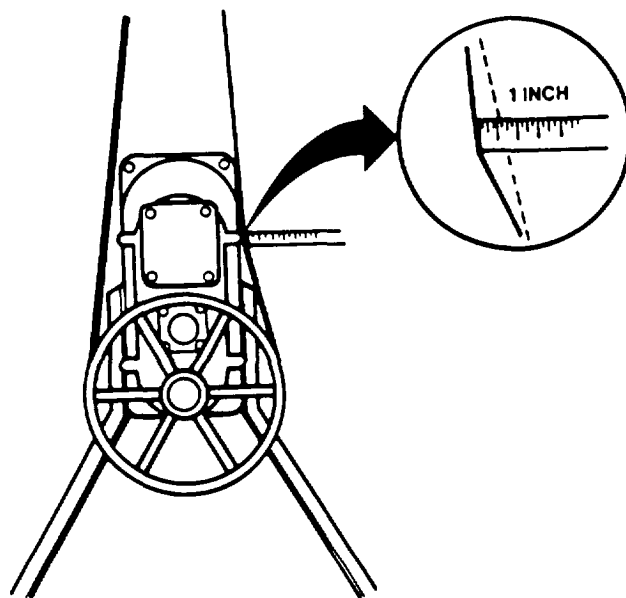
Drivebelt deflection is done by hand and is measured midway between the motor pulley and the gear drive pulley.

7. Adjust tension until the drivebelt can be deflected 1 inch (2.54 cm) from center, or until the drivebelt ceases to slip when the motor starts running.

8. Tighten two locking nuts (6).

9. Tighten two pivot bolts (9A) (front and rear).

10. Install drivebelt cover (1) on mounting brackets (2).



2-22.1. WASHER CONTROLLER ASSEMBLY

This task covers:

- a. Repair
- b. Removal
- c. Installation

INITIAL SETUP

Tools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Equipment Condition

TM 5-6115-585-12, Generator off.

REPAIR

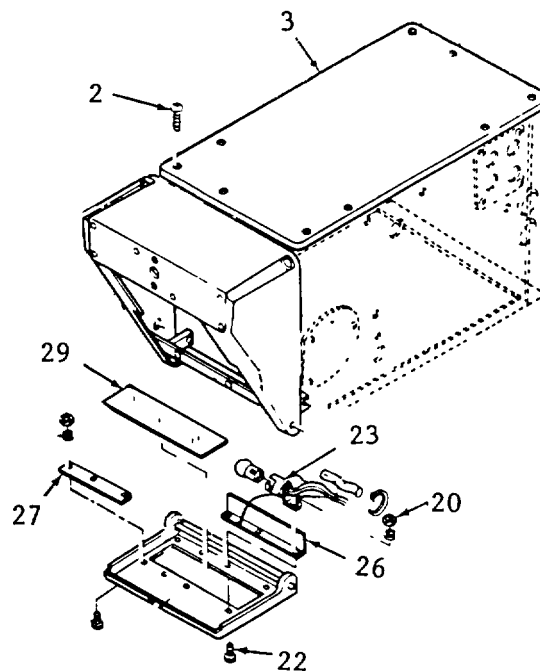
NOTE

At Unit level, repair is limited to replacement of the window, knob and knob shaft extension.

REMOVAL

1. Removal of window.

Remove eight screws (22), nuts (20), warning plate (27), lamp socket assembly (23), nameplate (26) and window (29).



2-22.1. WASHER CONTROLLER ASSEMBLY (CONT)

2. Removal of knob and knob shaft extension.

- a. Loosen set screw (11A) and remove knob (11) and rubber grommet (11B).
- b. Remove nine screws (2) from top panel (3) of washer controller and remove panel (3).
- c. Through open top of washer controller loosen alien set screw (11C) on knob shaft extension (11D) and remove knob shaft extension.

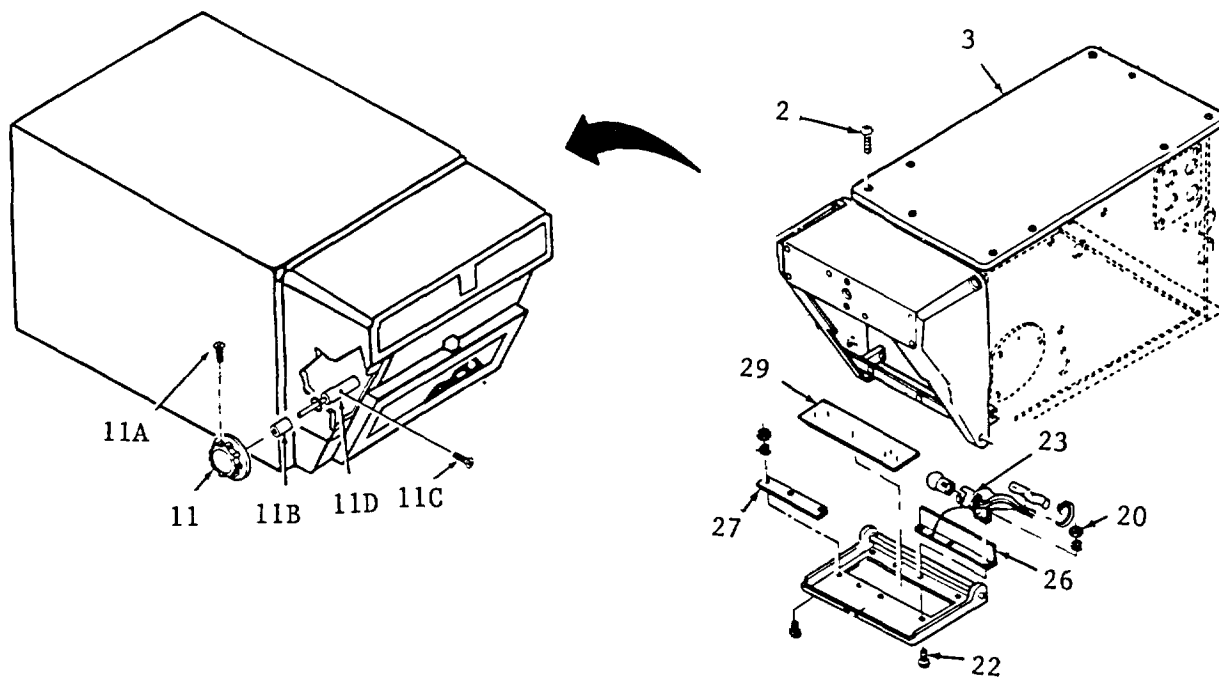
INSTALLATION

1. Installation of window.

Position new window (29), warning plate (27), nameplate (26) and lamp socket assembly (23) and secure with eight screws (22) and nuts (20).

2. Installation of knob and knob shaft extension.

- a. Position knob shaft extension (11D) on drum shaft and tighten allen set screw (11C) through open top of washer controller unit.
- b. Position rubber grommet (11B) on knob shaft extension (11D), halfway through hole in side of washer controller.
- c. Place knob (11) on shaft extension (11D) and tighten allen set screw (11A).
- d. Place top panel (3) on top of washer controller and secure with nine screws (2).



2-23. POWER DISTRIBUTION PANEL

This task covers:

- a. Test
- b. Repair

INITIAL SETUP

Tools

General mechanic's tool set,
SC 5180-90
Multimeter

Personnel Required

MOS 63J (1)

Materials/Parts

Identification tags
(Item 12, App C)
Circuit breaker switches

General Safety Instructions

WARNING

**High voltage is present on this equipment.
Do not perform maintenance with power on.
Death or serious injury may result.**

Equipment Condition

TM 5-6115-585-12, Generator turned on for testing.

TEST

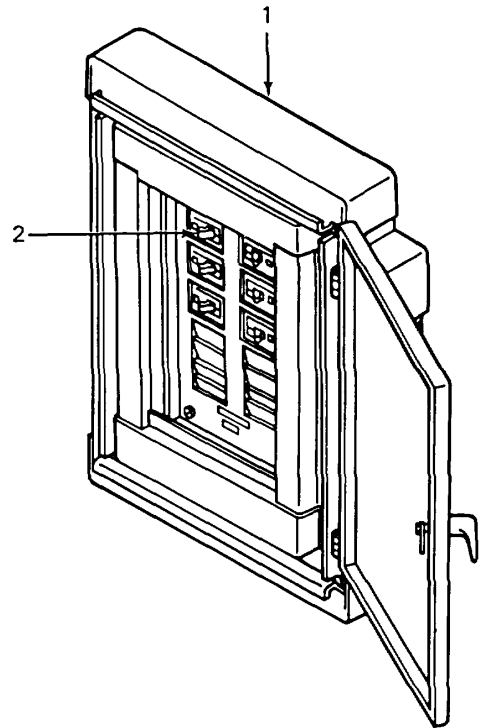
WARNING

High voltage is present on this equipment. Use care when performing maintenance with power on. Death or serious injury may result.

WARNING

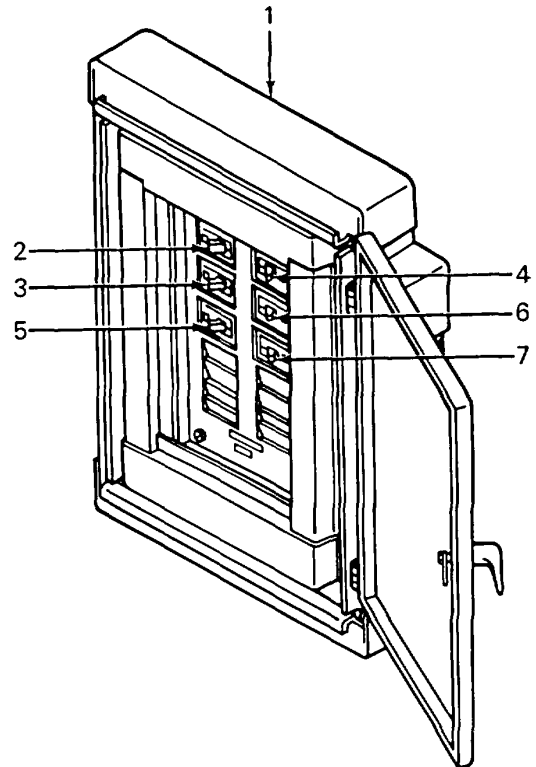
Remove rings, bracelets, wristwatches, and neck chains before working around or on the laundry unit. Jewelry can catch on equipment and cause injury, or may short across an electrical circuit and cause severe burns or electrical shock.

1. With power supplied to panel (1), switch main breaker (2) to OFF and all other breakers ON.



2-23. POWER DISTRIBUTION PANEL (CONT)**TEST (Cont)**

2. Check to see if electrical power to each area of the laundry is off by momentarily switching ON the washer, dryer, extractor, etc.
3. Switch main breaker (2) to ON.
4. Check to see if electrical power is supplied to each area of the laundry by momentarily switching on the washer, dryer, extractor, etc.
5. Switch each piece of equipment on and off by its appropriate breaker switch (3), (4), (5), (6), or (7).

**REPAIR****WARNING**

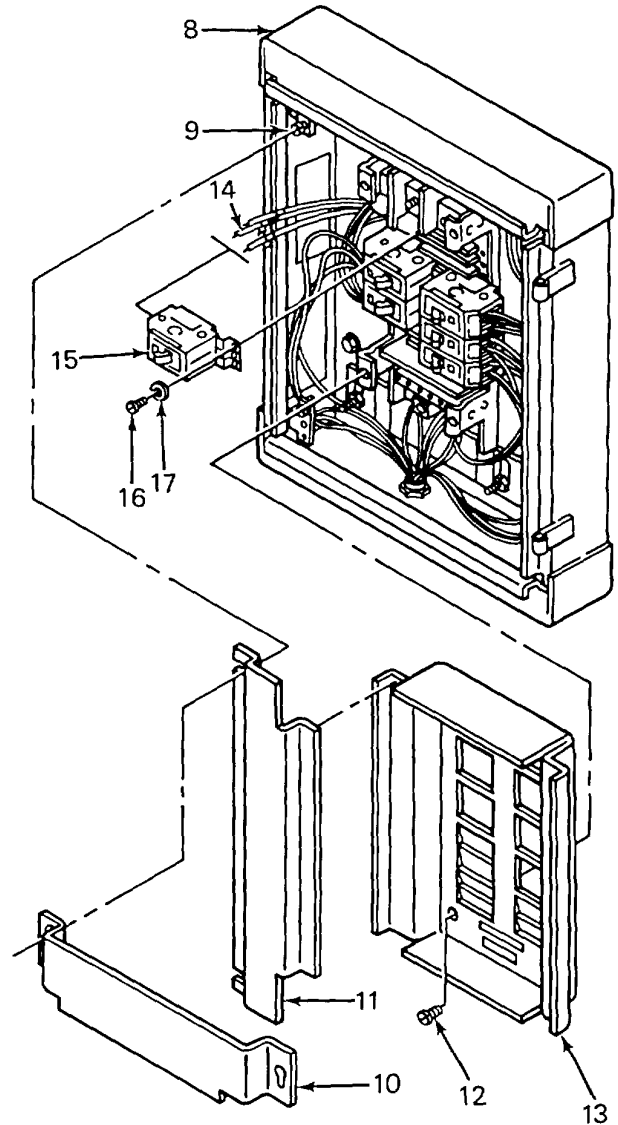
High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

1. Turn power off at source.
2. Repair panel box by replacing unserviceable breakers with new breakers of the same value. All circuit breakers are removed and replaced in similar manner. Only one circuit breaker is covered in these procedures.
 - a. Open breaker panel box (8).
 - b. Loosen four screws (9) and remove two border panels (10) and two border panels (11).
 - c. Remove four screws (12) and face plate (13).

2-23. POWER DISTRIBUTION PANEL (CONT)

REPAIR (Cont)

- d. Tag and disconnect three wires (14) from breaker (15).
 - e. Remove three screws (16) and lockwashers (17) and remove breaker (15).
 - f. Install new breaker (15) and secure with three screws (16) and lockwashers (17).
 - g. Connect three wires (14) to breaker (15). Remove tags. Refer to FIGURE 2-1 for proper connection.
 - h. Install face plate (13) and secure with four screws (12).
 - i. Install two border panels (11) and two border panels (10) and secure with four screws (9).
3. Remove corrosion, replace damaged wires, tighten loose junctions, and replace damaged sheet metal, hinges, or latch as necessary.



2-24. AIR COMPRESSOR

This task covers:

- | | | |
|---------------|---------------|-----------------|
| a. Inspection | c. Adjustment | e. Repair |
| b. Service | d. Removal | f. Installation |

INITIAL SETUP

Tools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Pressure switch
Identification tags (Item 12, App C)
Thread sealing compound (Item 5,
App C)

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Equipment Condition

Paragraph 2-27, Pre-extraction bin removed.

NOTE

SERVICE and ADJUSTMENT can be performed without removing pre- extraction bin.

INSPECTION

Inspect air compressor for damaged or missing parts.

NOTE

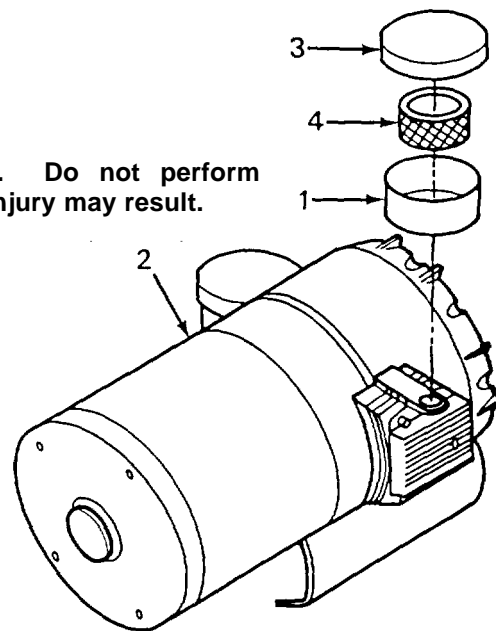
SERVICE and ADJUSTMENT can be performed without removing pre- extraction bin.

SERVICE

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

1. Remove two air filters (1) from air compressor (2).
2. Remove cap (3) of each air filter (1).
3. Remove and discard felt filter element (4) from each air filter (1).
4. Install new felt filter element (4) in each air filter (1).
5. Install cap (3) on each air filter (1).
6. Install two air filters (1) on air compressor (2).



2-24. AIR COMPRESSOR (CONT)

ADJUSTMENT

1. Turn on electrical power to air compressor.

WARNING

This adjustment is performed with power on. Proceed with extreme caution. Follow steps carefully. Death or serious injury could result.

2. Loosen captive acorn nut (5) and remove pressure switch cover (6).
3. Open bleeder valve (7) on bottom of air tank (8). Release air until compressor turns on. Note pressure on pressure gage (9). Close bleeder valve.
4. Watch pressure gage (9) on air tank (8) and note the pressure that the compressor cuts off.

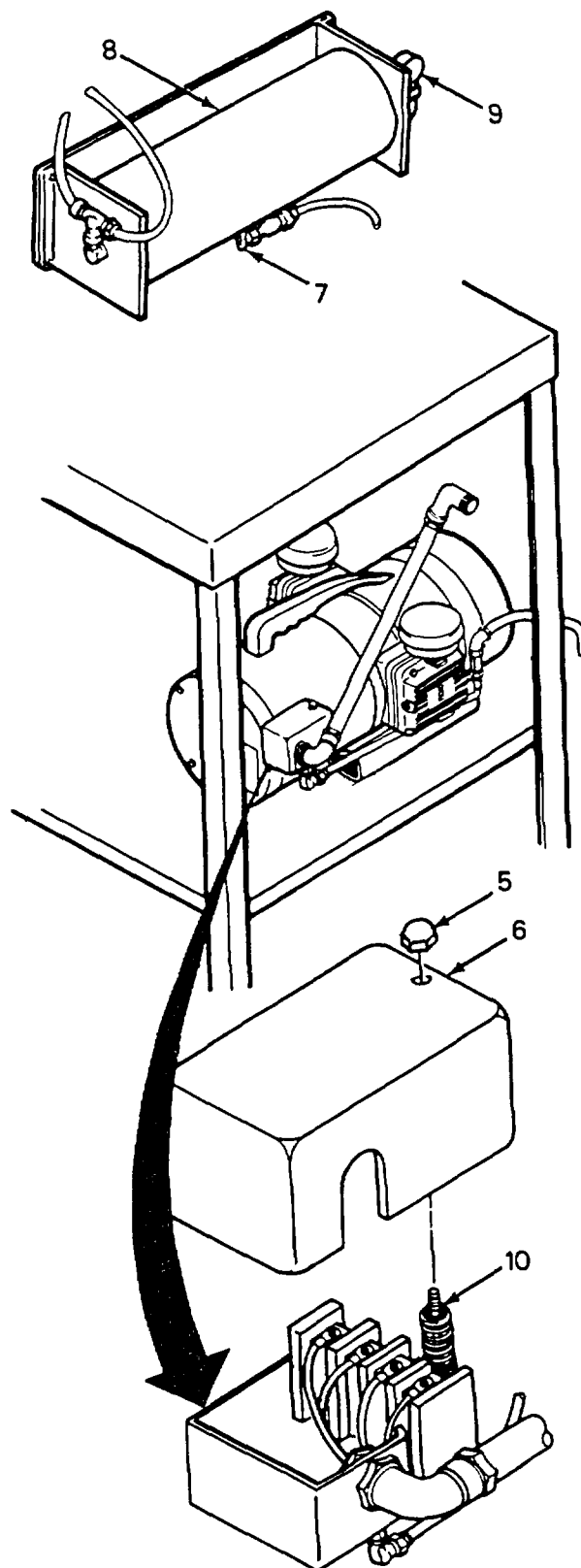
NOTE

The pressure switch has a differential of 20 psi (138 kPa) between compressor cut-on and cutoff. Adjustment of nut (10) changes the cutoff pressure. Tightening the nut (clockwise) increases cutoff pressure. Loosening the nut (counterclockwise) reduces cutoff pressure.

5. Make a one-quarter turn of nut (10) to increase or decrease cutoff pressure.

6. Repeat steps 3 thru 5 until the compressor cut-on/cutoff range is reached: ON-60 psi (414 kPa); OFF-80 psi (552 kPa).

7. Install pressure switch cover (6), tighten captive acorn nut (5), and turn off power to compressor.

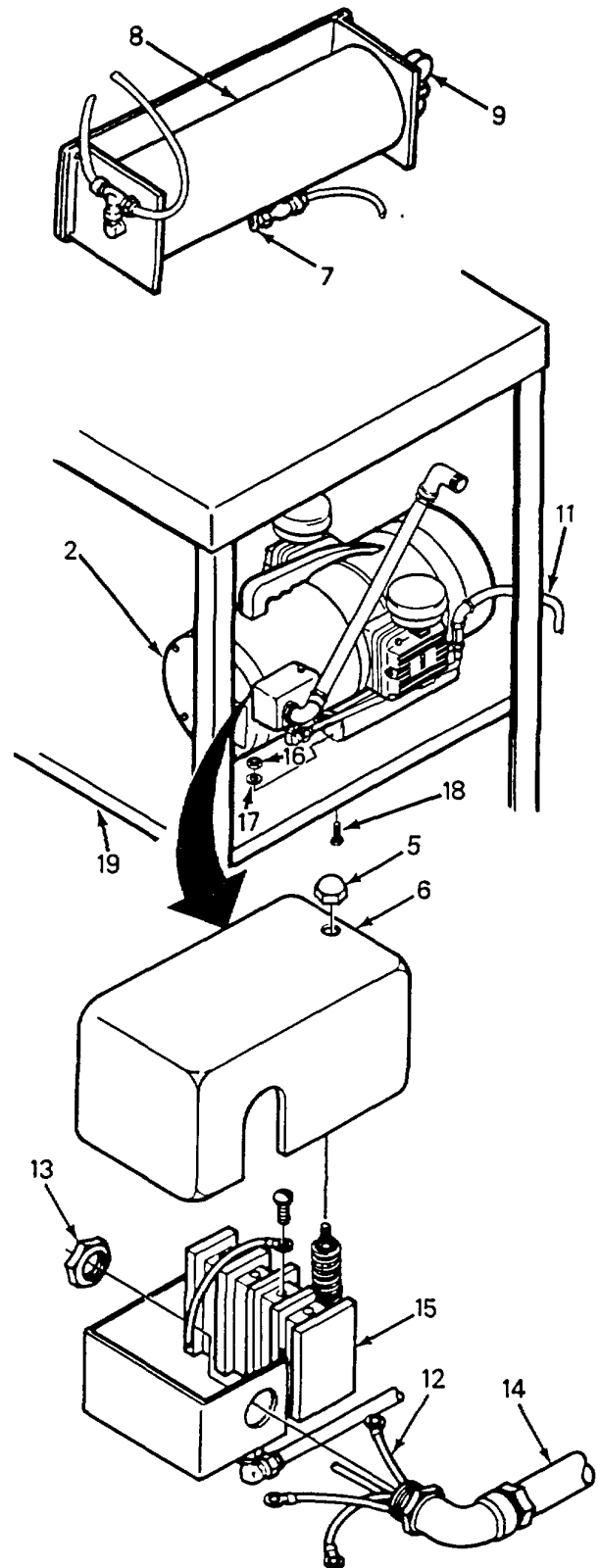


2-24. AIR COMPRESSOR (CONT)

REMOVAL**WARNING**

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

1. Turn off electrical power to air compressor (2).
2. Open bleeder valve (7) on air tank (8) and bleed air from system. Close bleeder valve.
3. Disconnect compressor-to-control unit manifold air line (11) from air compressor (2).
4. Loosen captive acorn nut (5) and remove pressure switch cover (6).
5. Tag and disconnect four input wires (12) coming from conduit (14).
6. Remove conduit nut (13) and conduit (14) from pressure switch (15).
7. Remove four nuts (16), lockwashers (17), and bolts (18).
8. Remove air compressor (2) from platform (19).



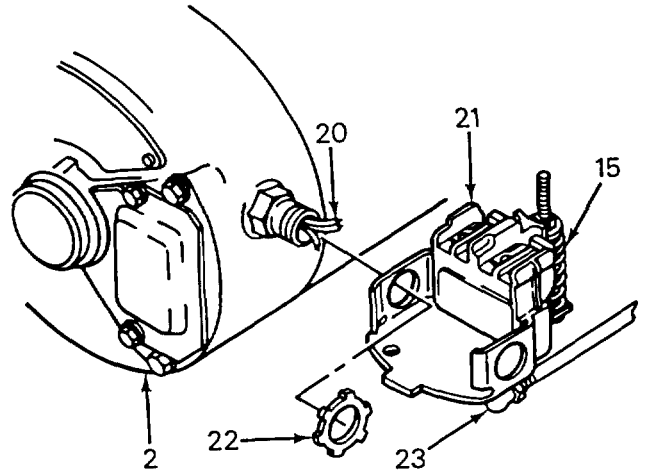
2-24. AIR COMPRESSOR (CONT)**REPAIR**

1. Repair air compressor by replacing the pressure switch.

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

- a. Remove air compressor (2) (REMOVAL, steps 1 thru 8).
- b. Tag and disconnect air compressor wires (20) from terminal block (21).
- c. Remove conduit nut (22) securing pressure switch (15) to air compressor (2). Remove pressure switch from air compressor.
- d. Disconnect air fitting (23) from the bottom of pressure switch (15).
- e. Connect air fitting (23) to bottom of new pressure switch (15).
- f. Position pressure switch (15) on air compressor (2) and secure with conduit nut (22).
- g. Connect air compressor wires (20) to terminal block (21). Remove tags.
- h. Install air compressor (2) (INSTALLATION, steps 1 thru 9).



2-24. AIR COMPRESSOR (CONT)

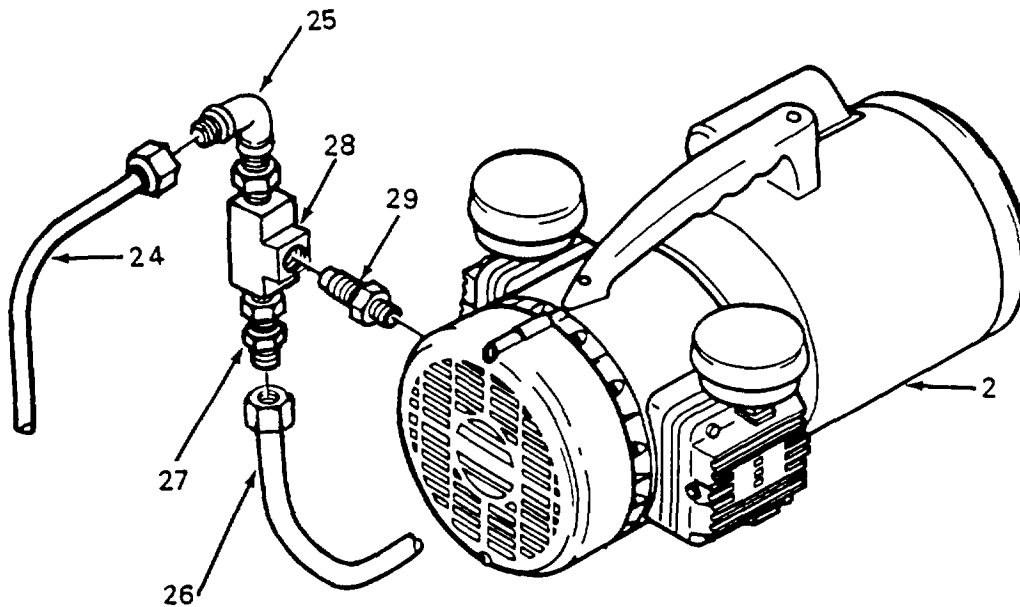
REPAIR (Cont)

2. Repair air compressor (2) by replacing check valve assembly (29).

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

- a. Remove air compressor (2). (REMOVAL, steps 1 thru 8).
- b. Disconnect air line (24) from elbow (25). Disconnect air line (26) from adapter (27). Remove tee (28) from check valve (29).
- c. Remove check valve assembly (29) from air compressor (2).
- d. Replace unserviceable check valve assembly (29) with a new one.
- e. One check valve assembly (29) and install on air compressor (2). Use thread sealing compound (item 5, app C).
- f. Install tee (28) on check valve assembly (29) and connect copper line (26) to adapter (27). Connect air line (24) to elbow (25).
- g. Install air compressor (2) (INSTALLATION, steps 1 thru 9).



2-24. AIR COMPRESSOR (CONT)

REPAIR (Cont)

3. Repair air compressor (2) by replacing safety relief valve (30).

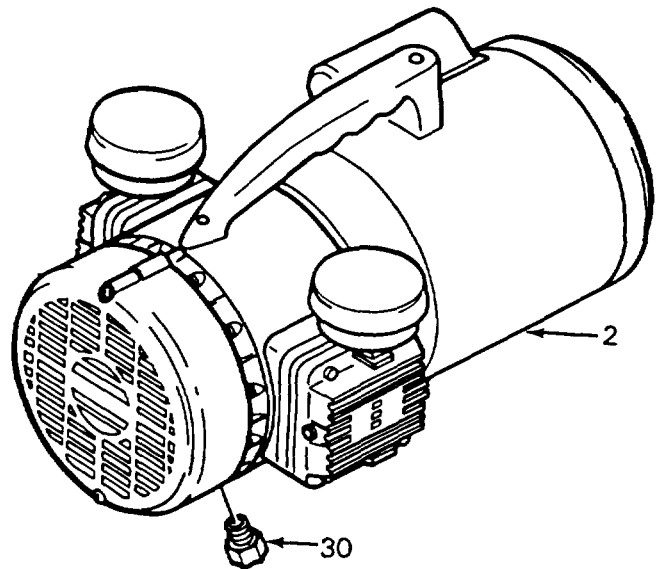
WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

a. Remove safety relief valve (30) from compressor (2).

b. Replace unserviceable safety relief valve (30) with a new one.

c. Install safety relief valve (30) using thread sealing compound (item 5, app C).



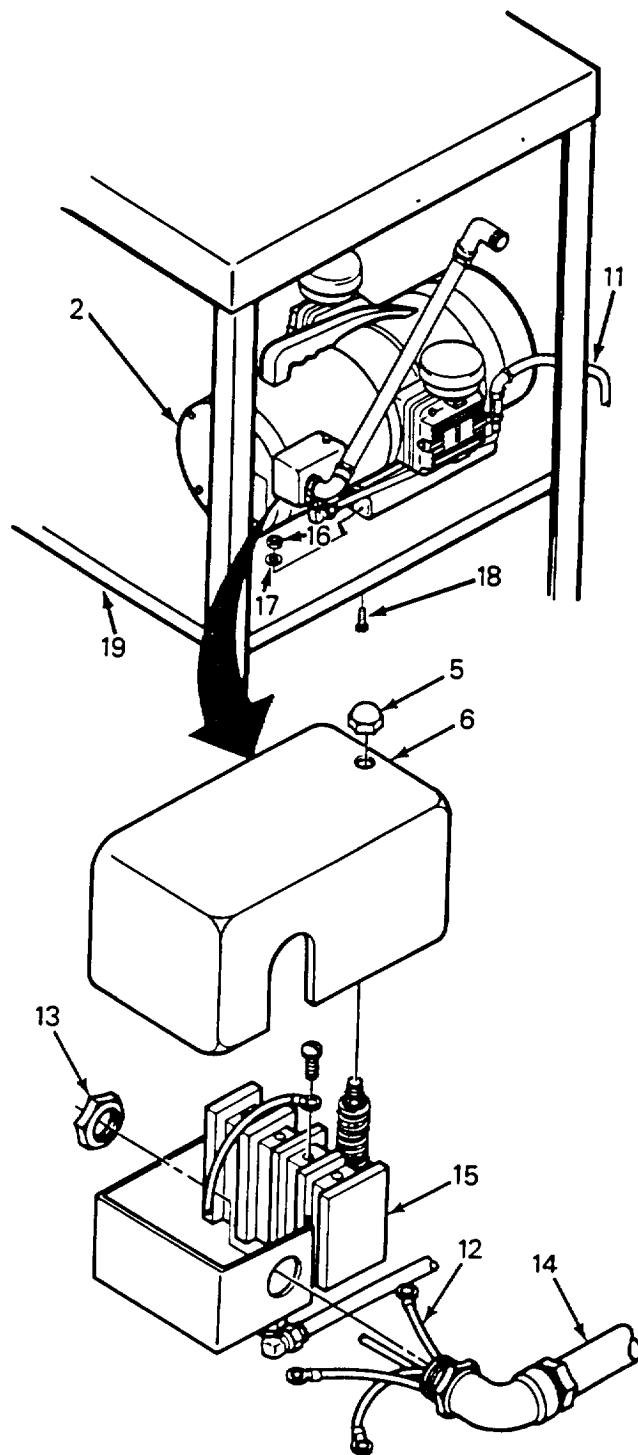
2-24. AIR COMPRESSOR (CONT)

INSTALLATION

1. Position air compressor (2) on platform (19).
2. Install four bolts (18), lockwashers (17), and nuts (16).
3. Install conduit (14) and conduit nut (13) on pressure switch (15).
4. Connect four input wires (12) coming from conduit (14). Remove tags. Refer to FIGURE 2-7.
5. Connect compressor-to-airtank air line (11) to air compressor (2).
6. Turn on power to compressor.
7. Check for proper rotation.
8. Perform ADJUSTMENT procedures.
9. Install pressure switch cover (6) and tighten captive acorn nut (5).

NOTE

FOLLOW-ON MAINTENANCE:
Install pre-extraction bin (para 2-27).



2-25. AIR TANK ASSEMBLY (CONT)

REMOVAL (Cont)

2. Remove twelve screws (10) in front cover (11) of washer base (12).

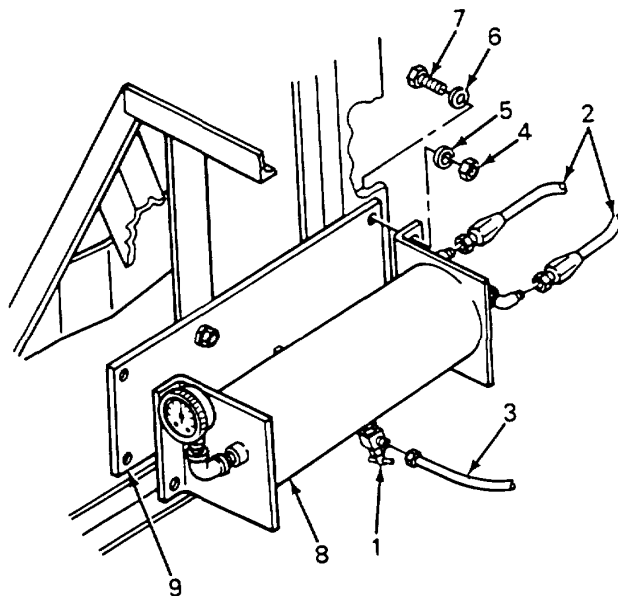
WARNING

Ensure all air pressure is released from tank before disconnecting air lines. Compressed air used in this equipment can cause death or serious injury if proper safety precautions are not followed.

3. Disconnect two air lines (2) and air line (3).

4. Remove four nuts (4), lockwashers (5), flat washers (6), and bolts (7) and remove air tank (8) from mounting plate (9).

5. Slip air tank through front of washer base.



INSTALLATION

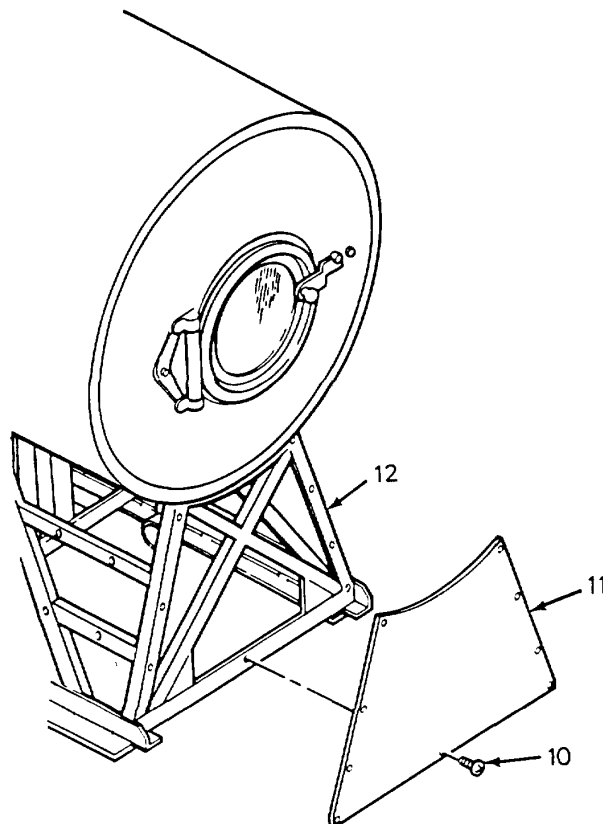
1. Install air tank (8) on mounting plate (9) and secure with four bolts (7), flat washers (6), lockwashers (5), and nuts (4).

2. Connect two air lines (2) and air line (3) to air tank (8).

3. Close petcock (1).

4. Install front cover (11) on washer base (12) using twelve screws (10).

5. Turn on power to air compressor.



2-27. PRE-EXTRACTION BIN

This task covers:

- a. Inspection
- b. Removal
- c. Installation

INITIAL SETUP

Tools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (2)

Equipment Condition

TM 10-3510-209-10, Drain hose disconnected from bin assembly.

INSPECTION

Inspect bin for corrosion, damage, missing drain bin plates (9 and 10) and drain fittings (6, 7 and 8).

REMOVAL

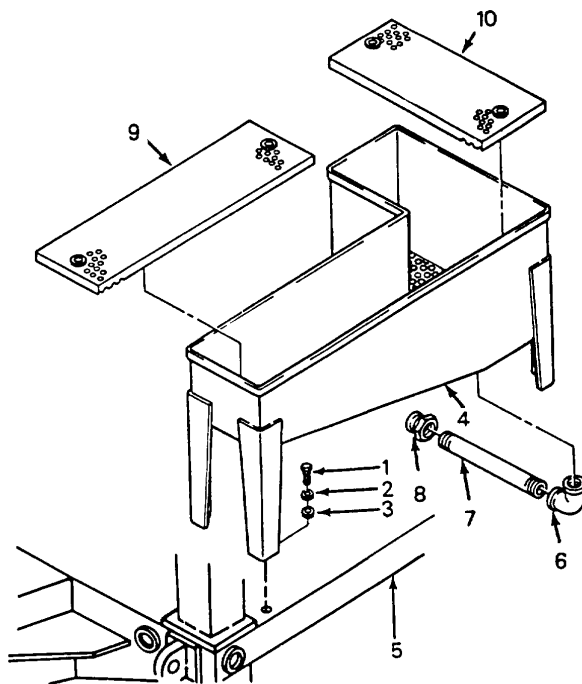
1. Remove five bolts (1), lockwashers (2), and flat washers (3).
2. Remove bin (4) from trailer (5).

INSTALLATION

Position bin (4) on trailer (5) and secure with five bolts (1), lockwashers (2), and flat washers (3).

NOTE

FOLLOW-ON MAINTENANCE:
Connect drain hose to bottom fitting of bin assembly (TM 10-3510-209-10).



2-28. EXTRACTOR ASSEMBLY

This task covers:

- | | |
|---------------|---------------|
| a. Inspection | c. Adjustment |
| b. Service | d. Repair |

INITIAL SETUPTools

General mechanic's tool set
SC 5180-90

General Safety Instructions**WARNING**

**High voltage is present on this equipment.
Do not perform maintenance with power on.
Death or serious injury may result.**

Personnel Required

MOS 63J (2)

Materials/Parts

Lubricating oil (Item 37, App C)
Lubricating oil, multipurpose
(Item 18, App C)
Ball bearing grease (Item 19, App C)

Equipment Condition

TM 10-3510-209-10, Work platform removed
from transport position.

INSPECTION

Inspect for corrosion, missing hardware, damaged controls and indicators, and leaks.

SERVICE**NOTE**

Servicing of extractor consists of lubrication only. Refer to LO 10-3510-209-12 for lubrication.

1. Disassemble for lubrication as follows:
 - a. Turn off power to extractor.

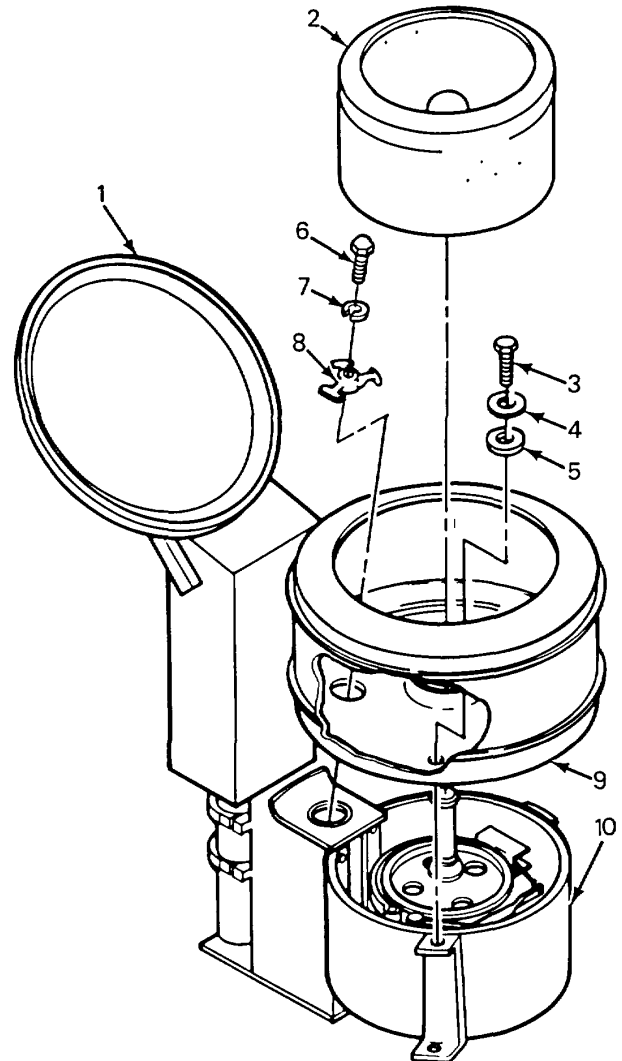
2-28. EXTRACTOR ASSEMBLY (CONT)**SERVICE (Cont)**

- b. Open lid (1).

WARNING

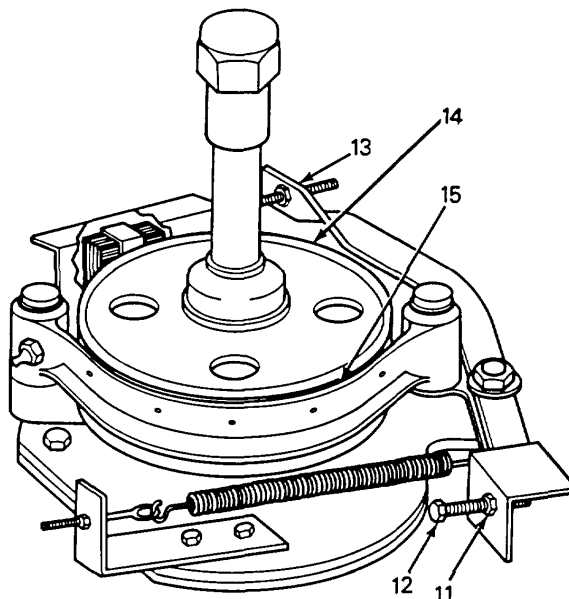
Extractor basket is heavy and awkward to handle. Use a sufficient number of personnel to lift extractor to avoid injury.

- c. Manually lift extractor basket (2) from extractor assembly and set aside.
 - d. Remove two capscrews (3), flatwashers (4), gaskets (5), capscrew (6), lockwasher (7), and drain clamp (8).
 - e. Remove curb (9) from base (10).
2. Lubricate in accordance with LO 10-3510-209-12.
 3. Assemble after lubrication as follows:
 - a. Install curb (9) on base (10) and secure with drain clamp (8), lockwasher (7), capscrew (6), two gaskets (5), flat washers (4), and capscrews (3).
 - b. Install extractor basket (2) and rotate until basket drops.
 - c. Close lid (1).



2-28. EXTRACTOR ASSEMBLY (CONT)**ADJUSTMENT**

1. Adjust brake shoe.
 - a. Disassemble extractor assembly (SERVICE, step 1).
 - b. Loosen brake adjusting locknut (11).
 - c. Adjust brake by turning adjusting screw (12) in or out.
 - d. Manually press in solenoid plunger (13) and turn brake hub (14).
 - e. If brake hub (14) turns freely, turn adjusting screw (12) out, (counterclockwise) until brakeshoe (15) touches brake hub.
 - f. Turn adjusting screw (12) in (clockwise) until brake hub (14) just turns freely (about three-fourths of a turn).

**NOTE**

If brake is adjusted correctly, the solenoid plunger will travel only 3/8 to 1/2 inch (9.5 to 12.7 mm) to release the brake.

NOTE

Brake will need more frequent adjustment during the first 30 days of operation, or when a new brakeshoe is installed.

- g. Tighten brake adjusting locknut (11) until adjusting screw (12) is held in place.
- h. Assemble extractor assembly (SERVICE, step 3).

2-28. EXTRACTOR ASSEMBLY (CONT)

ADJUSTMENT (CONT)

2. Adjust drivebelt.

- a. Remove screw (16), lockwasher (17), and slide belt guard (18) away from machine.
- b. Pull motor hanger (19) away from machine and relieve tension on spring (20). Swing tension bolt (21) and spring away from motor hanger.

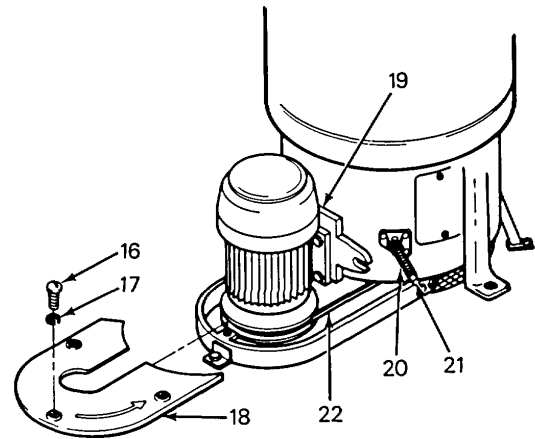
CAUTION

Do not overtighten belt. It should be as loose as possible without slipping during startup.

- c. If drivebelt (22) is slipping, add two or three flat washers (1/2-inch [12.7 mm] inside diameter) behind spring (20).

- d. If drivebelt (22) is too tight, remove two or three flat washers from behind spring (20).

- e. Position motor hanger (19) and swing tension bolt (21) with spring (20) into slot of hanger. Ensure drivebelt (22) stays in correct position.

**NOTE**

A new drivebelt will usually eliminate slipping without an adjustment for tension.

- f. Slide belt guard (18), back into position and secure with screw (16) and lockwasher (17).

REPAIR**NOTE**

Repair at this level consists only of drivebelt replacement and adjustment.

1. Remove drivebelt (22) as follows:

- a. Remove screw (16) and lockwasher (17) and slide belt guard (18) away from machine.
- b. Pull motor hanger (19) away from machine and relieve tension on spring (20). Swing tension bolt (21) and spring away from motor hanger.

2-28. EXTRACTOR ASSEMBLY (CONT)

REPAIR (Cont)

- c. Remove drivebelt (22).
2. Install new drivebelt (22) as follows:
 - a. Install drive belt (22) in correct position.
 - b. Position motor hanger (19) and swing tension bolt (21) with spring (20) into slot of hanger.
 - c. Check for proper belt tracking and tension.
 - d. Slide belt guard (18) back into position and secure with lockwasher (17) and screw (16).

NOTE**FOLLOW-ON MAINTENANCE:**

**Install work platform in transport position
(TM 10-3510-209-10).**

2-29. EXTRACTOR DRIVE UNIT

This task covers:

Service

INITIAL SETUP
Tools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (3)

General Safety Instructions
WARNING

**High voltage is present on this equipment.
Do not perform maintenance with power on.
Death or serious injury may result.**

Equipment Condition

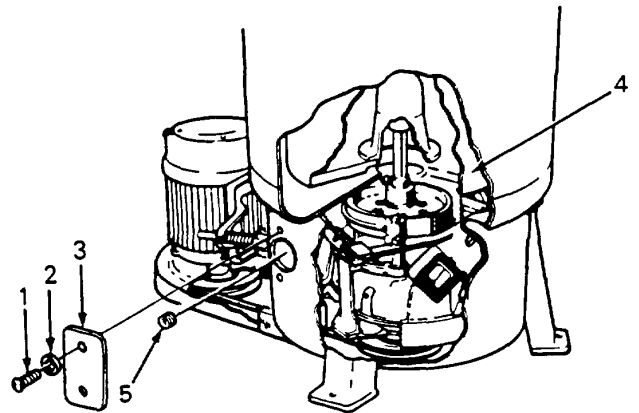
TM 10-3510-209-10, Extractor empty.

SERVICE
WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

NOTE

Servicing of drive unit consists of checking oil level or adding oil to the turbine clutch.



1. Remove two screws (1) and flat washers (2) and remove inspection cover (3).
2. Rotate extractor basket (4) until oil level/fill plug (5) is visible. Remove plug. Oil level should be even with bottom of hole when extractor is on a level surface.

CAUTION

Too much or too little oil could damage equipment.

3. Refer to Direct Support Maintenance and LO 10-3510-209-12 for turbine oil instructions.
4. Replace oil level/fill plug (5). Install cover (3) and secure with two flat washers (2) and screws (1).

2-30. EXTRACTOR DRIVE MOTOR (CONT)

REMOVAL (Cont)

2. Tag and disconnect four electrical wires (3) from motor switch (4).
3. Remove plastic nut (5), conduit nut (6), and conduit (7) from box (8).

WARNING

Electric motor is heavy and awkward to handle. Use correct lifting procedures, indicated lifting devices, and/or assistance from other personnel to avoid injury.

4. Lift motor (9) with mount (10) upward and out of hinge pin holes in rear leg (11).
5. Remove two capscrews (12), lockwashers (13), and mount (10) from motor (9).

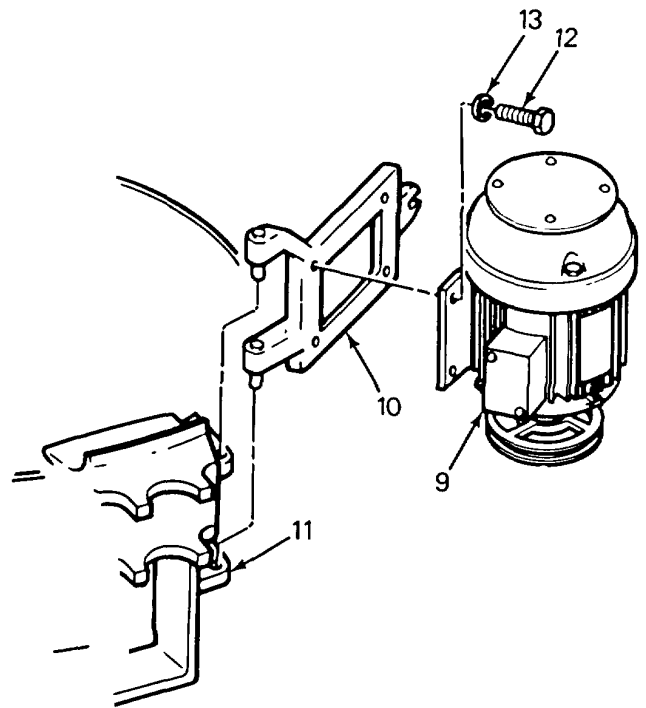
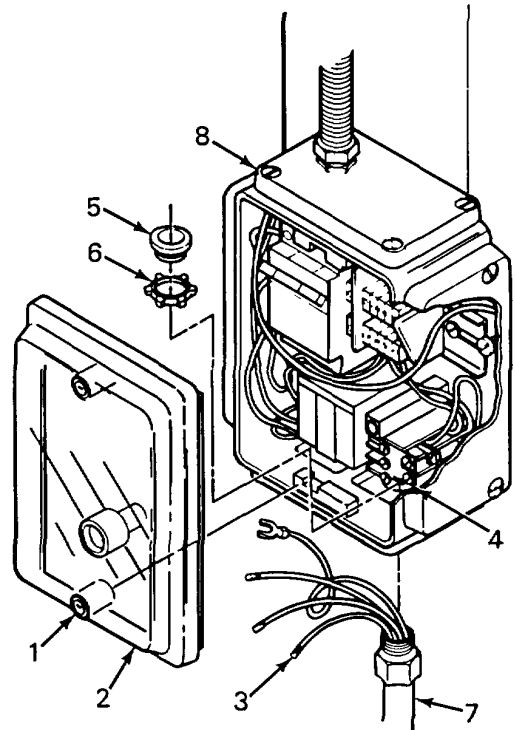
INSTALLATION

1. Install mount (10) on motor (9) and secure with two capscrews (12) and lockwashers (13).
2. Lift motor (9) with mount (10) and install in hinge pin holes of rear leg (11).
3. Install conduit (7) with electrical wires (3) in box (8). Install conduit nut (6) and plastic nut (5).
4. Connect four electrical wires (3) to motor switch (4). Remove tags.
5. Install electrical box cover (2) on box (8) and twist two cam locks (1).

NOTE

FOLLOW-ON MAINTENANCE:

Install drivebelt (para 2-28).



2-31. EXTRACTOR CONTROL BOX

This task covers:

- a. Service
-

INITIAL SETUP

Tools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Lubrication grease (Item 17,
App C)
Pipe thread compound (Item 5,
App C)

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Equipment Condition

Paragraph 2-17, First side sound deadening panel removed.

SERVICE

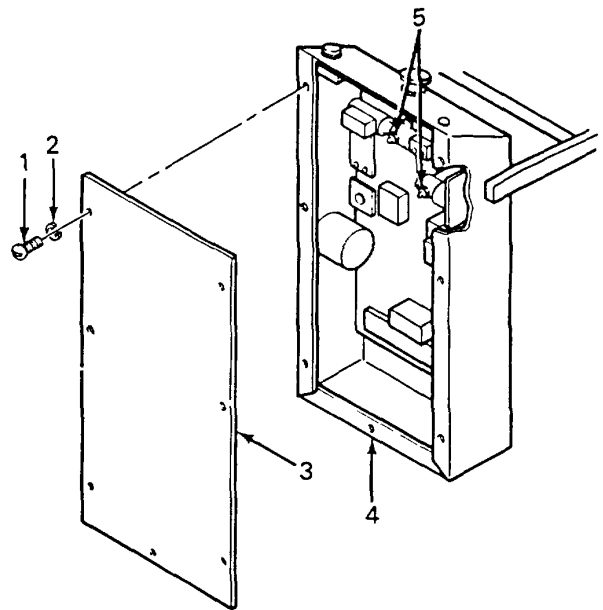
WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

1. Remove 12 screws (1), lockwashers (2), and cover (3) from control box (4).
2. Lubricate two fittings (5). Refer to LO 10-3510-209-12.
3. Install cover (3), 12 screws (1), and lockwashers (2) on control box (4).

NOTE

FOLLOW-ON MAINTENANCE:
Install side sound deadening panel
(para 2-17).



2-31.1. EXTRACTOR DRAIN PIPE ASSEMBLY

This task covers:

- | | | |
|---------------|----------------|-----------------|
| a. Inspection | c. Disassembly | e. Assembly |
| b. Removal | d. Repair | f. Installation |
-

INITIAL SETUP

Tools
General mechanic's tool set,
SC 5180-90

Personnel Required
MOS 63J (1)

Materials/Parts

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Equipment Condition

TM 10-3510-209-10, Water pump removed.
Paragraph 2-22, Washer drivebelt cover removed.
TM 10-3510-209-10, Extractor drain hose disconnected.
TM 10-3510-209-10, Water drained from washer.

INSPECTION

1. Inspect extractor drain pipe assembly for cracks, freeze breaks, corrosion, loose fittings and loose mountings.
2. Remove inspection cap (1) on check valve (2). Remove any debris and obstructions from inside valve. Insure interior gate swings freely.

REMOVAL

1. Disconnect union joint (3) from extractor drain pipe assembly.
2. Remove tie down straps from extractor drain pipe (7) as necessary.
3. Remove extractor drain pipe by removing nut (5) that attaches bracket (4) to washer base.

DISASSEMBLY

1. Remove coupling (6) and check valve (2) from extractor drain pipe (7).
2. Remove two screws (8), and bracket (4) from extractor drain pipe (7).

REPAIR

WARNING

CARC produces toxic fumes when flame is applied. It is necessary to remove CARC in area where flame is to be applied. Death can result.

1. Solder or tighten fittings to stop leaks.
2. Remove corrosion or foreign material from threaded joints.
3. Replace broken or defective parts.

2-31.1. EXTRACTOR DRAIN PIPE ASSEMBLY (CONT)

ASSEMBLY

1. Install bracket (4) and two screws (8) on extractor drain pipe (7).
2. Install check valve (2). Arrow on valve must point towards extractor drain pipe (7).
3. Install coupling (6) onto end of check valve (2).

INSTALLATION

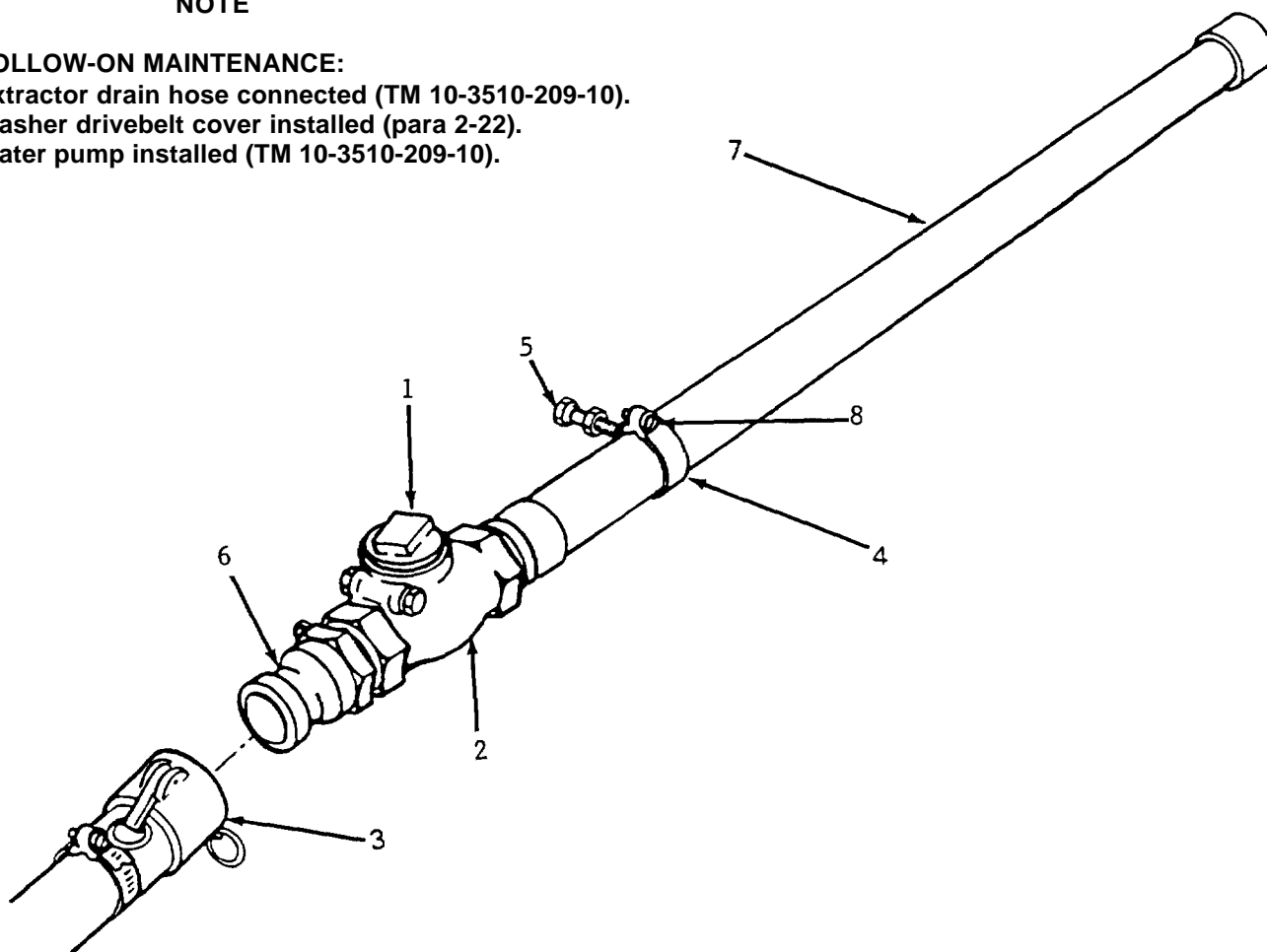
1. Secure extractor drain pipe assembly to washer base with bracket (4) and nut(5).
2. Connect union joint (3) from extractor drain pipe to washer drain assembly.
3. Use tie downs to reattach and support air lines.

NOTE**FOLLOW-ON MAINTENANCE:**

Extractor drain hose connected (TM 10-3510-209-10).

Washer drivebelt cover installed (para 2-22).

Water pump installed (TM 10-3510-209-10).



2-31.2 EXTRACTOR PIPING

This task covers:

- a. Removal
- b. Repair
- c. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit (App B, Item 1)

General Safety Instructions

WARNING

Materials/Parts

Antiseize Compound (App C, Item 26)

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Equipment Condition

Laundry Unit shut down (TM 10-3510-209-10)

REMOVAL

1. Remove coupling half (1) from adapter (2).
2. Remove four bolts (3).
3. Remove flange (4) with attached piping (6) and gasket (5) from extractor (7).
4. Remove flange (4) from piping (6).
5. Remove adapter (2) from piping (6).

REPAIR

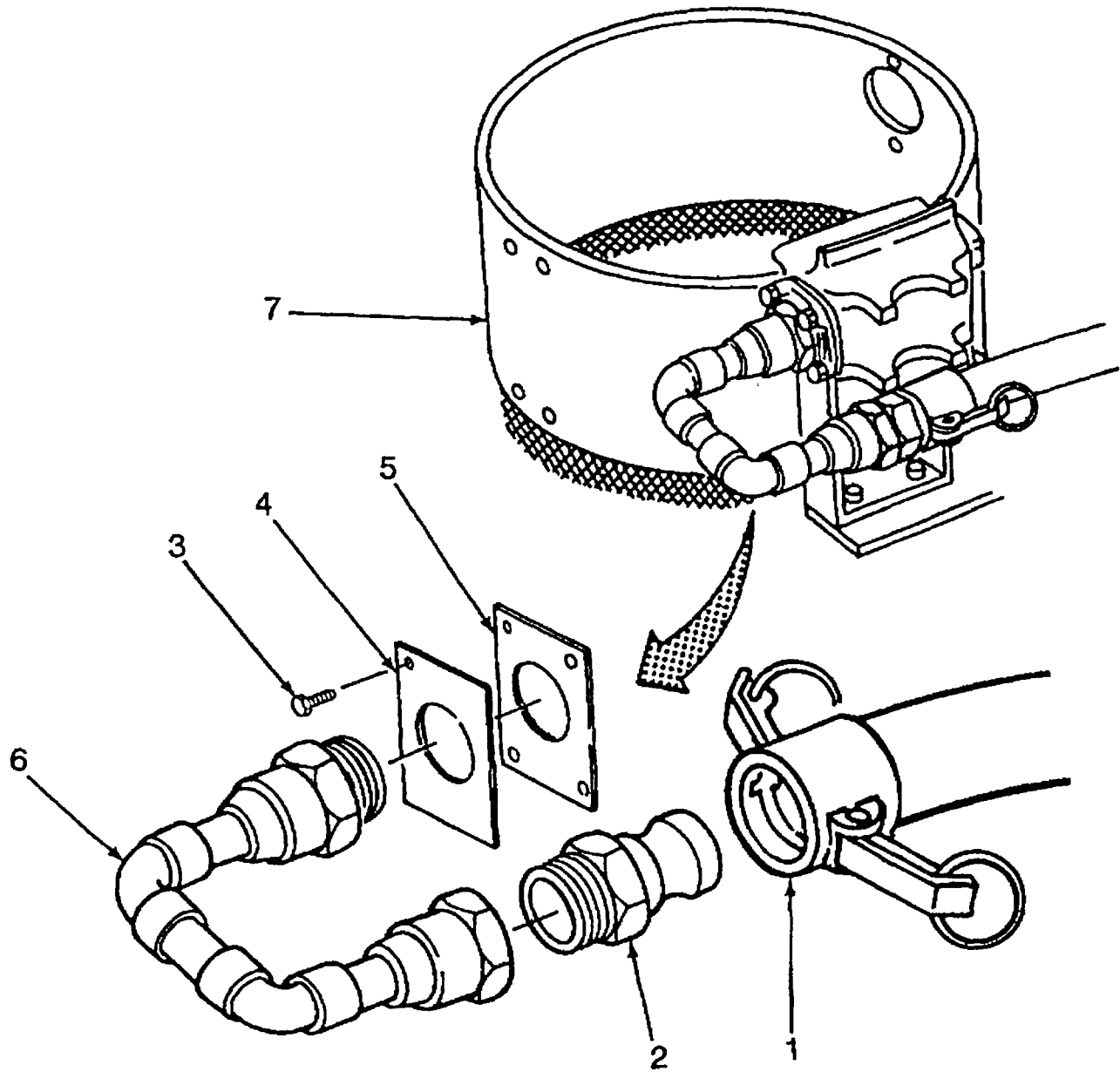
1. Repair consists of replacing damaged or missing components of the extractor piping.

INSTALLATION

1. Clean threads and apply antiseize compound to all male threads.
2. Install flange (4) on piping (6).
3. Install adapter (2) on piping (6).
4. Install gasket (5) and flange (4) on extractor (7) with four bolts (3).
5. Install coupling half (1).

2-110.2 Change 4

3-31.2 EXTRACTOR PIPING- (CONT)



2-32. WATER HEATER ASSEMBLY

This task covers:

- a. Service b. Test c. Adjustment d. Repair
-

INITIAL SETUP

Tools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Lubricating grease (Refer to
LO 10-3510-209-12)

General Safety Instructions

WARNING

Fuel is toxic and flammable. Spilled fuel is a fire hazard and eye irritant. Wipe up spilled fuel to avoid injury and fire.

WARNING

Exhaust duct is hot and can cause injury to personnel if hand protection is not worn when handling. Wear protective gloves for maximum protection.

Equipment Condition

TM 10-3510-209-10, Tarp assembly removed.

SERVICE

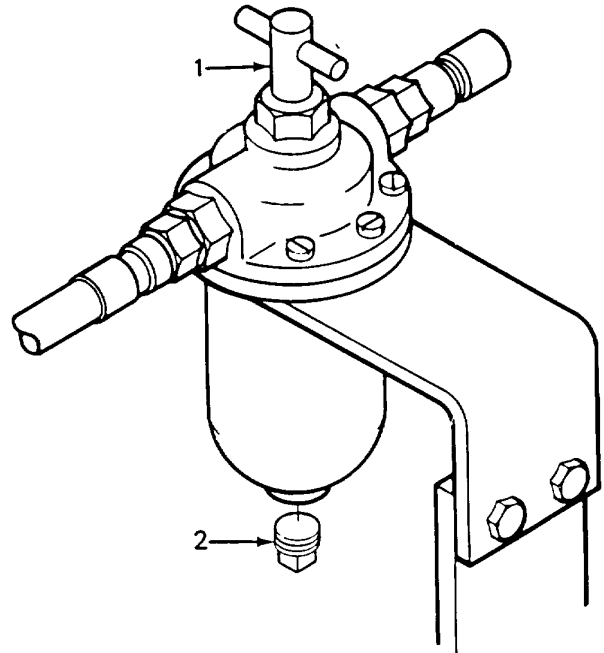
WARNING

Fuel is toxic and flammable. Spilled fuel is a fire hazard and eye irritant. Wipe up spilled fuel to avoid injury and fire.

NOTE

Servicing of water heater consists of cleaning the fuel filter and draining water and sediment from fuel filter bowl.

1. Rotate handle (1) 360 degrees about 10 times to clean the permanent element.



2-32. WATER HEATER ASSEMBLY (CONT)

SERVICE (Cont)

2. Remove drain plug (2) and drain water, sediment, and contaminated fuel. Discard contaminated fuel.

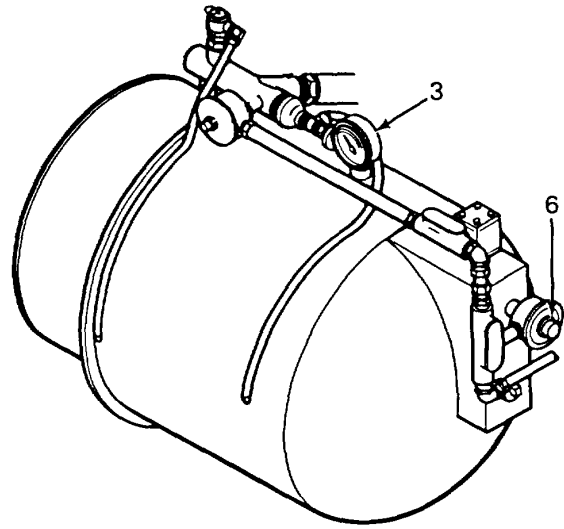
3. Install drain plug (2).

TEST

1. Test operate water heater.

a. Operate water heater. (Refer to TM 10-3510-209-10).

b. Observe temperature gage (3). Water heater burner should shut down automatically when temperature gage reads temperature set on operating temperature control (6) $\pm 10^{\circ}\text{F}$.



NOTE

Water temperature will continue to rise after burner shutdown due to heat transferred to water from burner chamber.

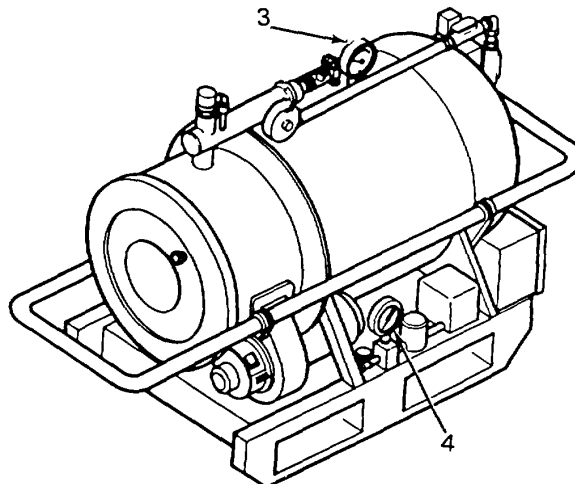
c. Observe fuel pressure gage (4) for normal indication of 75 to 80 psi (517 to 552 kPa).

2. Shut down water heater after test.

ADJUSTMENT

WARNING

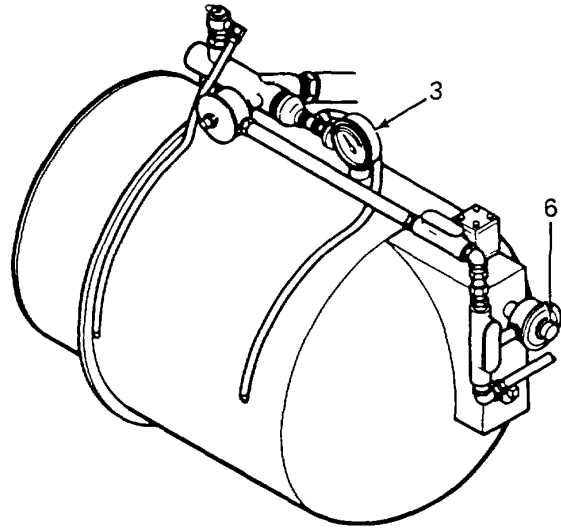
Exhaust duct is hot and can cause injury to personnel if hand protection is not worn when handling. Wear protective gloves for maximum protection. Wear protective gloves when handling ducts.



2-32. WATER HEATER ASSEMBLY (CONT)

ADJUSTMENT (Cont)

1. For adjustment of fuel pump, refer to para 2-37.
2. For adjustment of burner electrodes, refer to para 2-34.
3. Adjust operating temperature control (6). Turn knob from 0 to 250 degrees and check pointer calibration. Adjust position by loosening setscrew and moving knob to correct position. Tighten setscrew.

**REPAIR****NOTE**

Remove and replace only those items necessary to make repair.

1. Repair of water heater assembly consists of replacing defective components and making needed adjustments. Refer to individual water heater component paragraphs.
2. After replacing the defective components, ensure that the water heater is operating correctly by making a visual inspection and performing an operational check. (Refer to TM 10-3510-209-10.)

NOTE

**FOLLOW-ON MAINTENANCE:
Install tarp assembly (TM 10-3510-209.10).**

2-33. DRUM FILL AND HOSE ASSEMBLY

This task covers:

- a. Inspection
 - b. Repair
 - c. Replacement
-

INITIAL SETUPTools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Threaded pipe (as required)
Pipe thread compound
(Item 5, App C)

General Safety Instructions**WARNING**

Fuel is toxic and flammable. Spilled fuel is a fire hazard and eye irritant. Wipe up spilled fuel to avoid injury and fire.

Equipment Condition:

TM-3510-209-10, Tarp assembly removed.

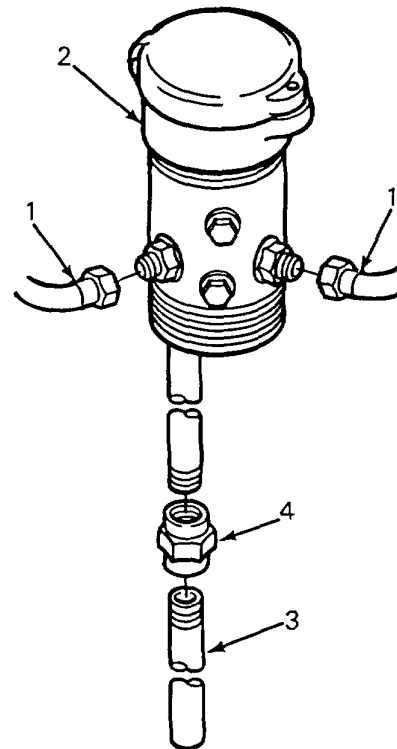
INSPECTION

Inspect hose (1) and drum fill adapter (2) for leaks, breaks, cracks, and damaged fittings.

REPAIR**NOTE**

Drum fill adapters and hoses are repaired by replacing the defective component(s) or by tightening loose fittings.

1. Disassembly.
 - a. Remove extension adapter (3) from pipe connector (4).
 - b. Remove pipe connector (4).



■ 2-33. DRUM FILL AND HOSE ASSEMBLY (CONT)

REPAIR (Cont)

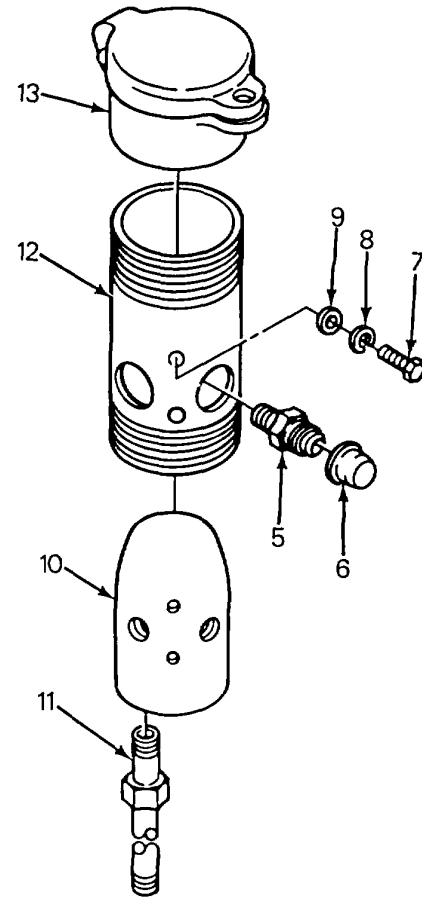
- c. Remove two male connectors (5) and remove caps (6) from connectors.
 - d. Remove two screws (7), two lockwashers (8), and two flat washers (9). Remove block (10) with adapter pipe (11) from nipple (12).
 - e. Remove adapter pipe (11) from block (10).
 - f. Remove cover (13) from nipple (12).
2. Repair drum fill adapters by replacing defective components.
 3. Assembly.

- a. Install cover (13) on nipple (12).

NOTE

Use pipe thread compound (Item 5, App C) on pipe threads before installation.

- b. Install adapter pipe (11) in block (10).
- c. Install block (10) and adapter pipe (11) in nipple (12) and secure with two screws (7), two lockwashers (8), and two flat washers (9).
- d. Install two male connectors (5) in nipple (12) and snap two caps (6) on connectors.
- e. Install pipe connector (4) on adapter pipe (11) and install extension adapter (3) on pipe connector.



2-33. DRUM FILL AND HOSE ASSEMBLY (CONT)

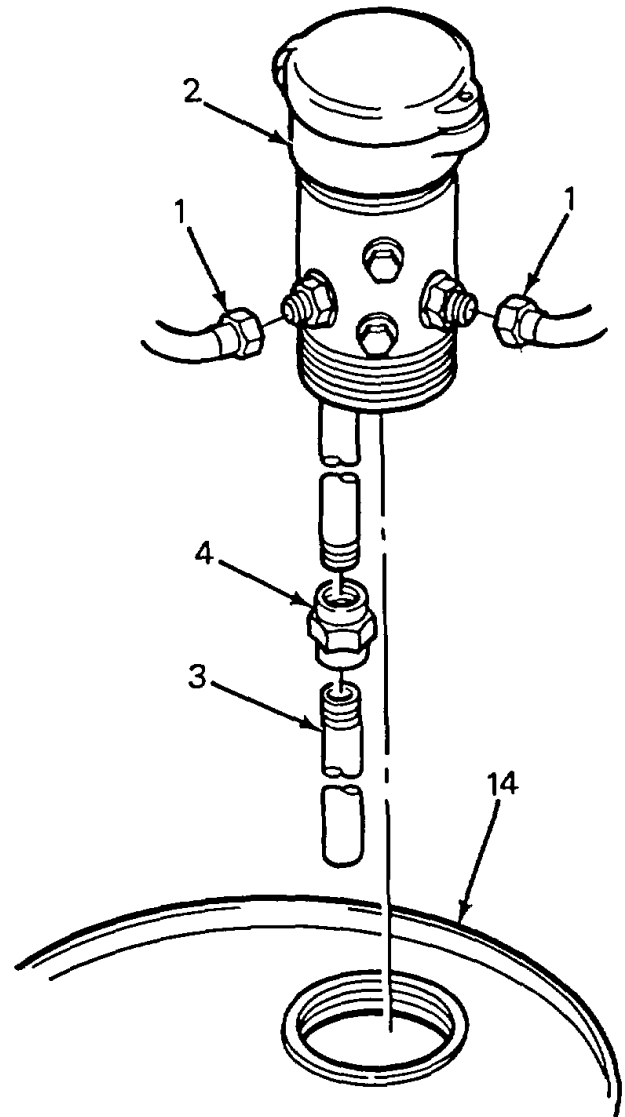
REPLACEMENT

1. Disconnect hoses (1) and remove old drum fill adapter (2) from fuel container (14).

2. Install new drum fill adapter (2) onto fuel container (14) and connect hoses (1).

NOTE

FOLLOW-ON MAINTENANCE: Install tarp assembly (TM 10-3510209-10).



2-34. WATER HEATER BURNER HEAD AND NOZZLE ASSEMBLY

This task covers:

- | | | |
|----------------|-------------|-----------------|
| a. Removal | d. Repair | f. Adjustment |
| b. Disassembly | e. Assembly | g. Installation |
| c. Inspection | | |
-

INITIAL SETUP

Tools

General mechanic's tool set,
SC 5180-90

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Personnel Required

MOS 63J (1)

WARNING

Materials/Parts

Drycleaning solvent P-D-680
(Item 10, App C)

Fuel is toxic and flammable. Spilled fuel is a fire hazard and eye irritant. Wipe up spills to avoid injury and fire.

WARNING

Water heater is hot after being used and may cause injury to personnel if safety precautions are not followed. Allow heater to cool before maintenance is performed.

Equipment Condition

TM 10-3510-209-10, Tarp assembly removed.

2-34. WATER HEATER BURNER HEAD AND NOZZLE ASSEMBLY (CONT)**REMOVAL****WARNING**

Water heater is hot after being used and may cause injury to personnel if safety precautions are not followed. Allow heater to cool before maintenance is performed.

WARNING

Fuel is toxic and flammable. Spilled fuel is a fire hazard and eye irritant. Wipe up spilled fuel to avoid injury and fire.

CAUTION

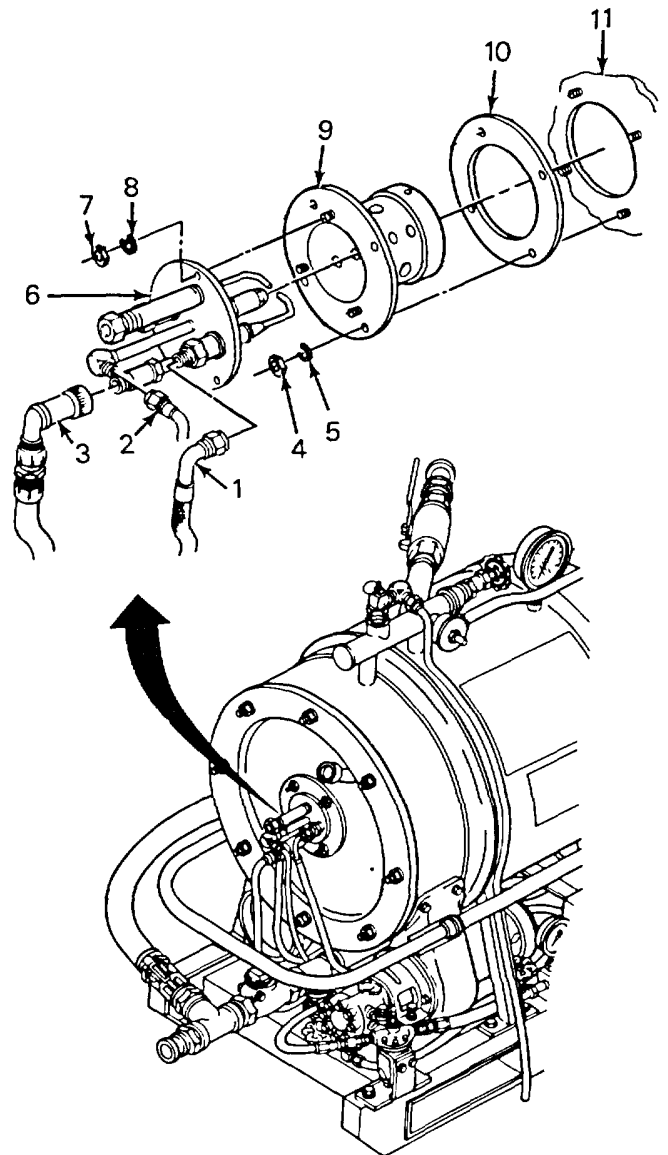
The scanner is a sensitive device. Rough handling can damage the scanner and result in possible failure of flame safeguard control.

1. Disconnect two ignition cables (1), fuel line (2), and scanner (3).
2. Remove three nuts (4), lockwashers (5), and nozzle and electrode assembly (6) from burner tube (9).

NOTE

Do not remove the burner tube unless it is necessary.

3. Remove four nuts (7), lockwashers (8), burner tube (9), and gasket (10) from water heater (11).



2-34. WATER HEATER BURNER HEAD AND NOZZLE ASSEMBLY (CONT)**DISASSEMBLY**

1. Remove two spark plugs (12) with gaskets (13) from nozzle and electrode holder (27).

2. Remove nozzle (14) and adapter (15) from nipple (17).

3. Matchmark position of nipple (17) and electrode holder (27). Loosen setscrew (16) and remove nipple.

4. Remove elbow (18) from nipple (17).

5. Remove ignition sight tube (19) from electrode holder (27).

6. Remove peep sight cap (20) from ignition sight tube (19).

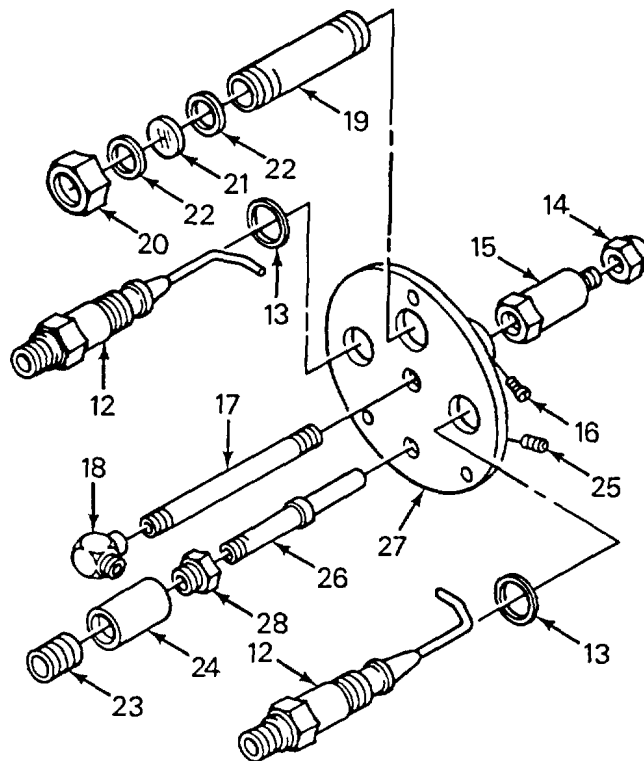
7. Remove peep sight glass (21) and two gaskets (22).

8. Remove close nipple (23) from coupling (24).

9. Remove coupling (24) from bushing (28).

10. Loosen two setscrews (25) and remove scanner tube (26) from electrode holder (27).

11. Remove bushing (28) from scanner tube (26).

**INSPECTION**

1. Inspect electrode holder (27) for breaks, cracks, and distortion and for damaged threads. Inspect spark plugs (12) for burned spots. Inspect insulation for cracks, breaks, and carbon lines. Check gaskets (13) for breaks or distortion.

2. Inspect nozzle (14) for clogs, cracks, and excessive wear. Inspect for carbon deposits and damaged threads.

3. Inspect for broken or cracked sight glass (21), stripped or damaged threads on cap (20), and damaged gaskets (22). Inspect sight tube (19) for damaged threads.

2-34. WATER HEATER BURNER HEAD AND NOZZLE ASSEMBLY (CONT)

INSPECTION (Cont)

4. Inspect scanner tube (26), bushing (28), coupling (24), and close nipple (23) for damaged threads. Inspect scanner tube for clogs or obstruction.
5. Inspect scanner tube (26) for dirt or foreign matter. Clean with a soft cloth if necessary. If scanner tube is broken or damaged, notify intermediate direct support maintenance.

REPAIR

1. Repair burner head and nozzle by replacing the defective components and making needed adjustments. Remove and replace only those items necessary to make repair. Clean other components as needed.
2. Wash electrode of spark plugs (12) with soapy water, rinse in clean water, and dry thoroughly.

WARNING

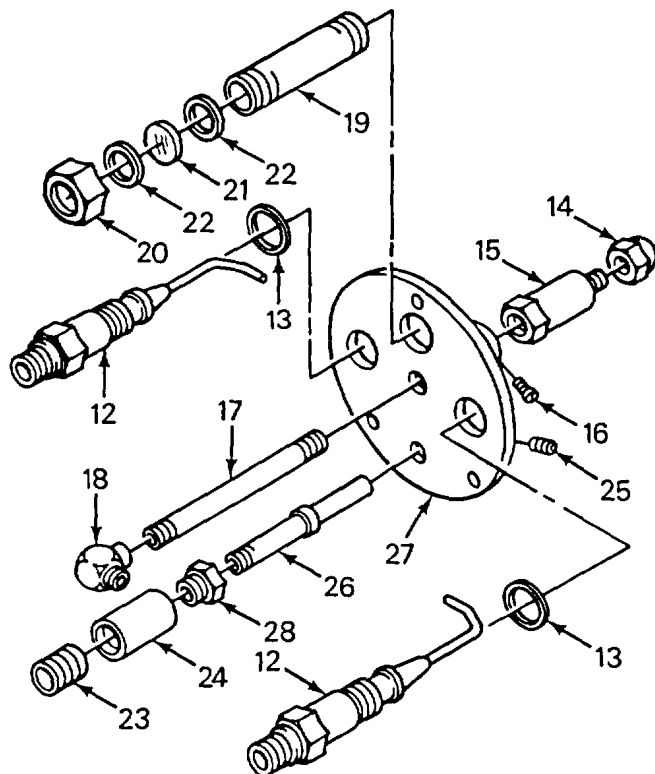
Drycleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point is 100 138°F (38 - 59°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

3. Wash nozzle (14) and adapter (15) in drycleaning solvent (Item 10, App C). Scrub nozzle with small brush. Dry parts thoroughly.
4. Wash peep sight glass (21) in soapy water, rinse in clean water, and dry thoroughly.
5. Wash scanner tube (26) in drycleaning solvent (Item 10, App C) to remove deposits in tube and dry thoroughly.
6. Clean scanner (3) with soft cloth.

2-34. WATER HEATER BURNER HEAD AND NOZZLE ASSEMBLY (CONT)

ASSEMBLY

1. Install close nipple (23) and bushing (28) into coupling (24).
2. Install scanner tube (26) into bushing (28). Install scanner tube in electrode holder (27) and tighten two setscrews (25).
3. Assemble two gaskets (22) and peep sight glass (21) and install on ignition sight tube (19).
4. Install peep sight cap (20) on ignition sight tube (19).
5. Install ignition sight tube (19) in electrode holder (27).
6. Install elbow (18) on nipple (17). Install nipple in electrode holder (27). Align matchmarks and tighten setscrew (16).
7. Install adapter (15) on end of nipple (17) and install nozzle (14) on adapter.



NOTE

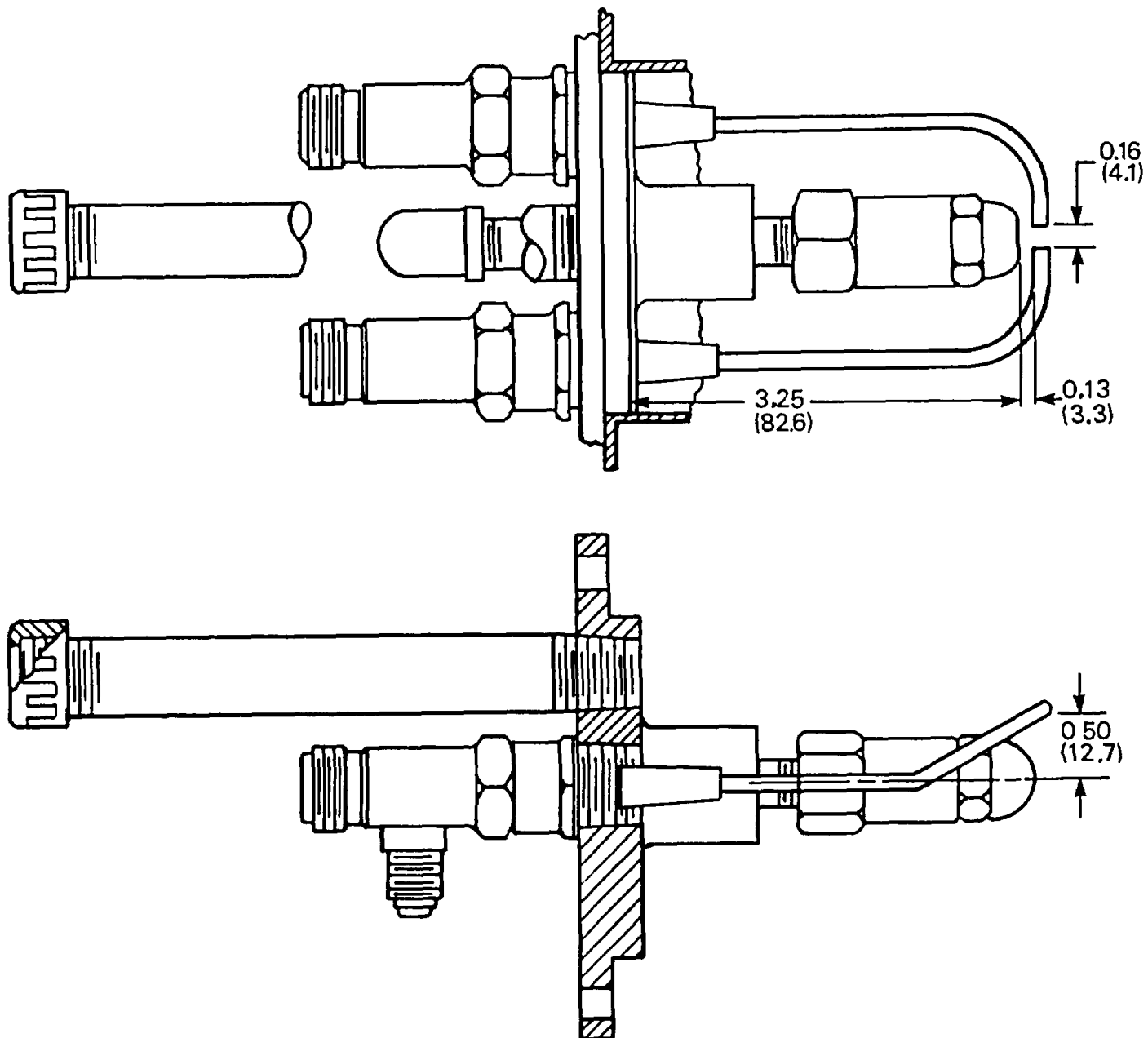
Spark plugs (12) are designed left-handed and right-handed. Be sure to install spark plug in correct position.

8. Place gasket (13) over electrodes of spark plug (12) and install spark plug. Repeat procedure for other spark plug.
9. Adjust electrodes. Refer to ADJUSTMENT.

2-34. WATER HEATER BURNER HEAD AND NOZZLE ASSEMBLY (CONT)

ADJUSTMENT

Adjust electrodes according to figure. Bend electrode on spark plug (12) until spark gap is 5/32 inch (4 mm) and electrode is located 1/8 inch (3.2 mm) outward and 1/2 inch (12.7 mm) upward from hole in burner nozzle. Repeat procedure for other spark plug.



2-34. WATER HEATER BURNER HEAD AND NOZZLE ASSEMBLY (CONT)

INSTALLATION

1. Install burner tube (9) and gasket (10) on water heater (11) and secure with four lockwashers (8) and nuts (7). Tighten nuts evenly.
2. Install nozzle and electrode assembly (6) in burner tube (9) and secure with three lockwashers (5) and nuts (4).

CAUTION

The water heater burner head and nozzle assembly is a sensitive device. Rough handling can damage the scanner and result in possible failure of flame safeguard control.

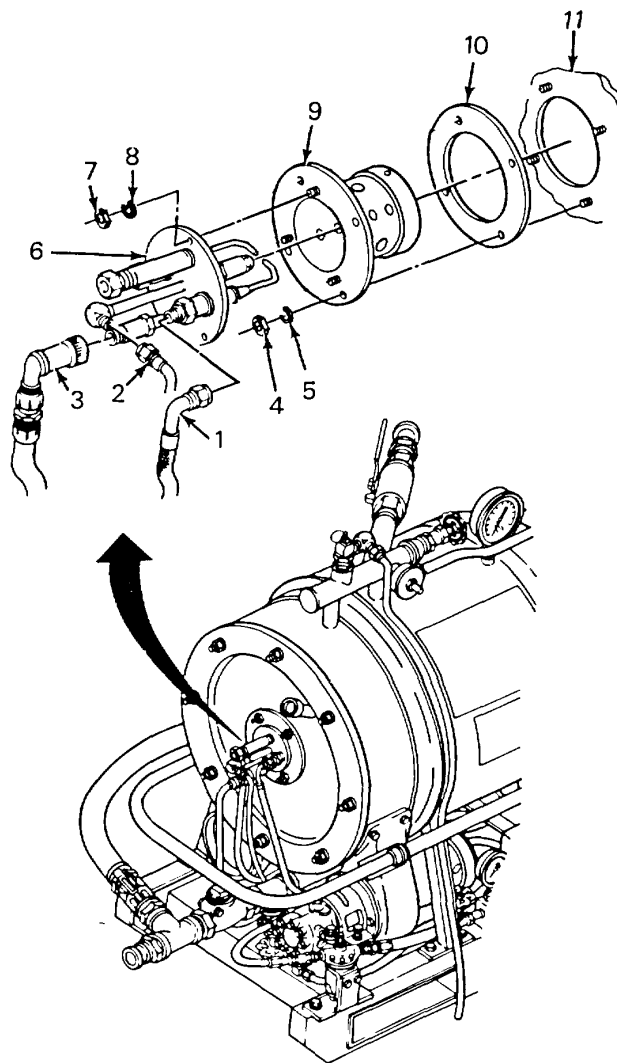
3. Connect scanner (3) to nipple (23) and tighten firmly.
4. Connect two ignition cables (1) to two spark plugs (12).
5. Connect fuel line (2) to elbow (17).

NOTE

FOLLOW-ON MAINTENANCE:

Check water heater for proper operation (TM 10-3510-209-10).

Install tarp assembly (TM 10-3510-209-10).



2-35. WATER HEATER ELECTRIC CONTROL ASSEMBLY

This task covers:

- | | | |
|---------------|------------|-----------|
| a. Inspection | c. Service | d. Repair |
| b. Test | | |

INITIAL SETUPTools

General mechanic's tool set,
SC 5180-90

General Safety Instructions**WARNING**

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Personnel Required

MOS 63J (1)

Equipment Condition

TM 10-3510-209-10, Tarp assembly removed.

Materials/Parts

Wiping cloth (Item 3, App C)
Thread sealing compound
(Item 5, App C)
Drycleaning solvent
(Item 10, App C)
Replacement parts as required

INSPECTION

Inspect control assembly for loose, broken, or damaged wires and connectors.

TEST**NOTE**

Water heater will shut down and alarm will sound if power fails, water temperature is too high, water level is too low, fuel runs out or is cut off, or ignition fails.

1. Prepare water heater for operation. (Refer to TM 10-3510-209-10.)
2. Turn on fuel and power.
3. Wait about 20 seconds. If audible alarm sounds, press reset button and repeat procedure or refer to troubleshooting.
4. Observe unit for proper temperature rise and regulation as water is heated.
5. Observe that temperature gage indicates proper temperature when shut down occurs after maximum temperature is reached.

2-35. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)

SERVICE

1. Open control box cover and wipe flat surfaces with a dry cloth.

WARNING

Compressed air used for cleaning purposes will not exceed 30 psi (207 kPa). Use only with effective chip-guarding and personal protective equipment (goggles, shield, gloves, etc.).

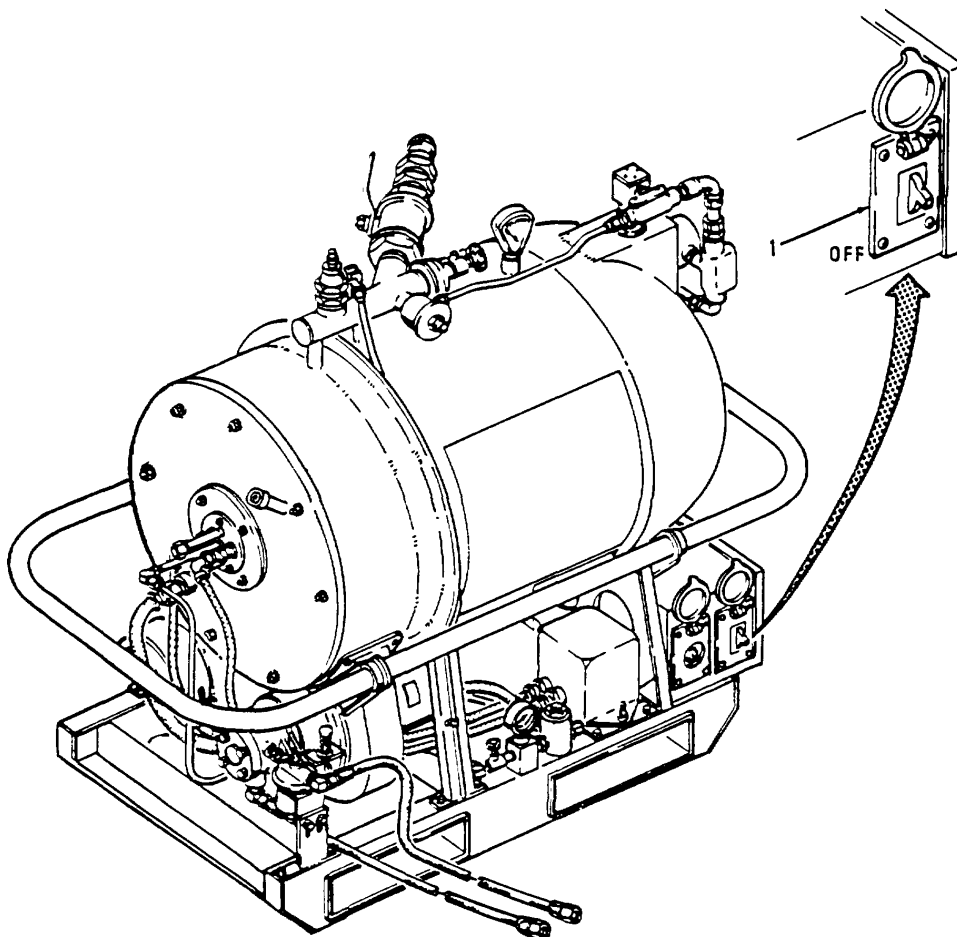
2. Use compressed air and remove dust and contaminants from inside box.

REPAIR

1. Repair by replacing ignition transformer.

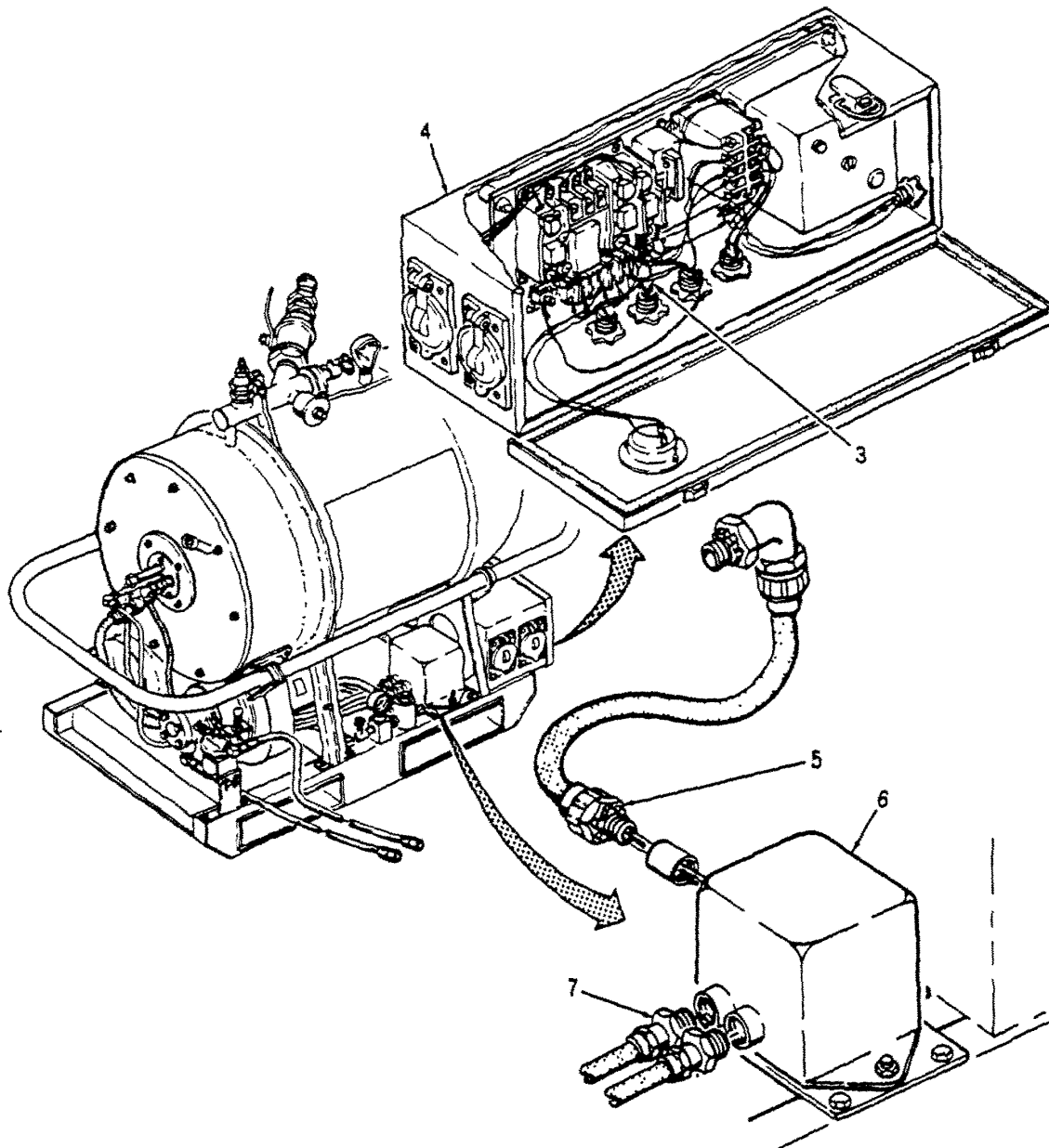
- a. Remove ignition transformer as follows:

- (1) Turn off load limit switch (1) then turn off water heater breaker switch at main power panel.



2-35. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)**REPAIR (Cont)**

- (2) Disconnect and tag two transformer wires (3) in control box assembly (4).
- (3) Disconnect conduit connector (5) at ignition transformer (6).
- (4) Disconnect two ignition cables (7).



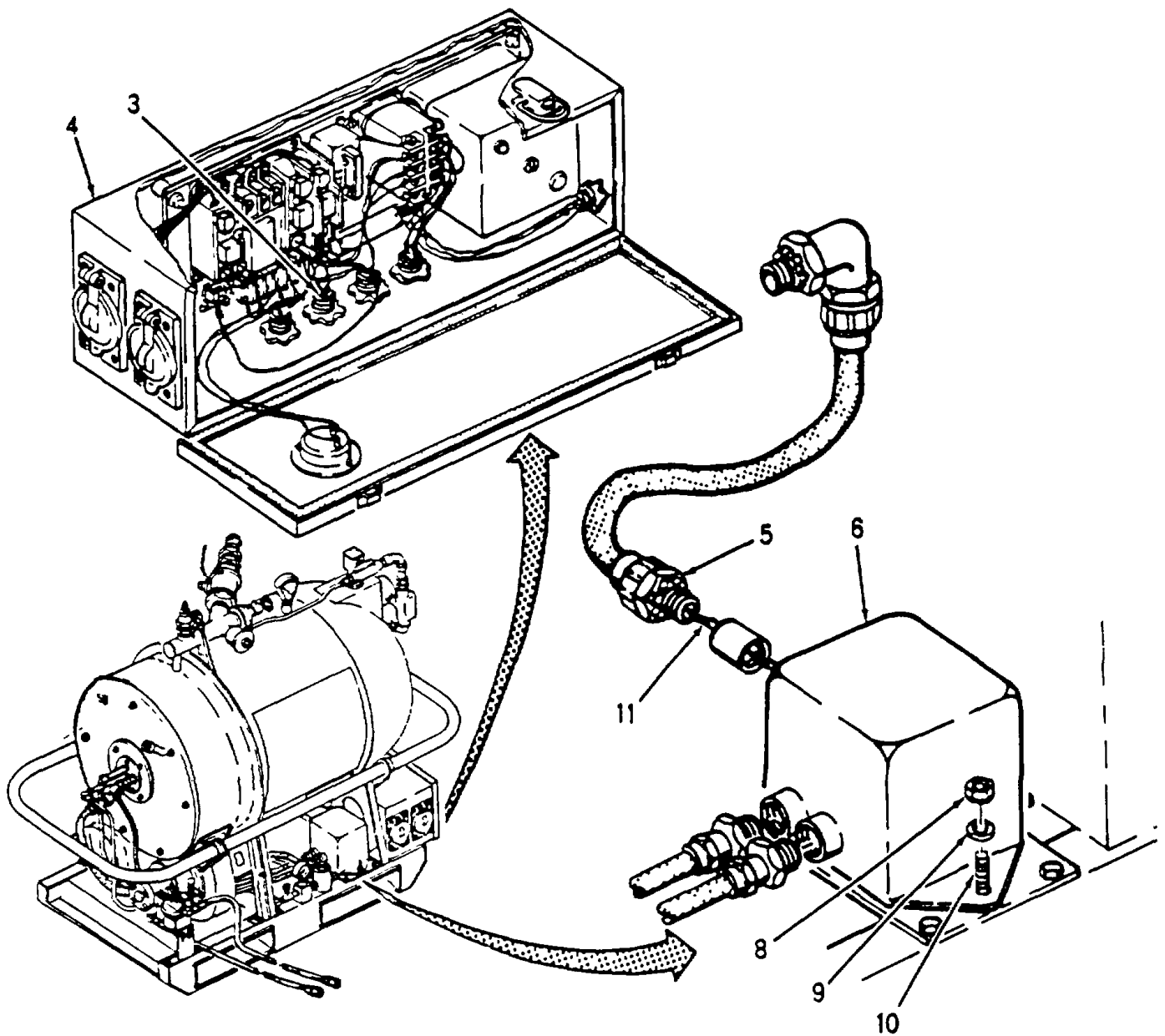
2-35. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)**REPAIR (Cont)**

(5) Remove two nuts (8) and two washers (9) and lift ignition transformer up to clear studs (10) and pull wires (11) out of conduit.

b. Install new Ignition transformer (6) as follows:

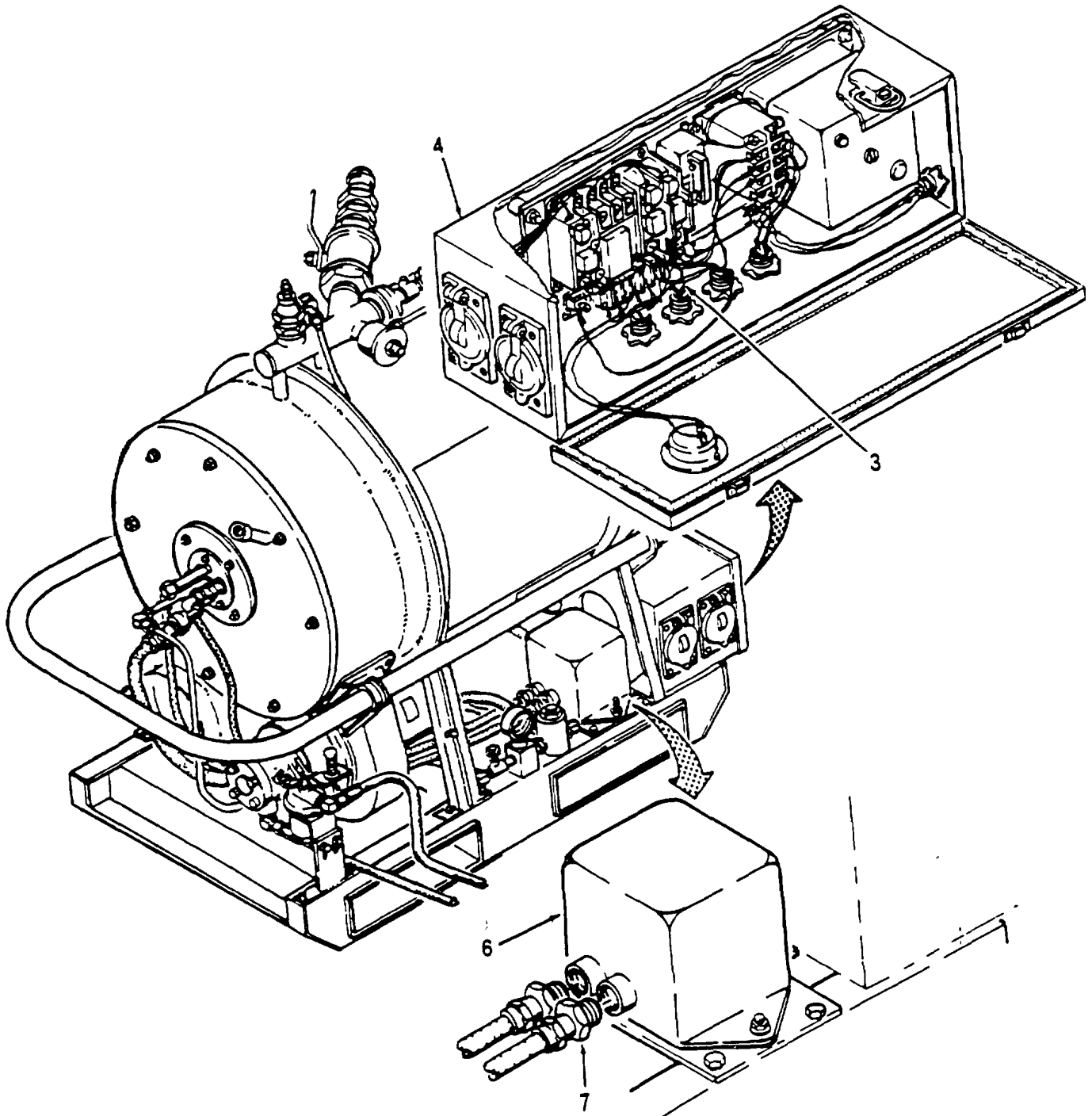
(1) Feed two wires (3) through conduit (5).

(2) Set ignition transformer (6) in place on studs (10) and secure with two washers (9) and two nuts (8).



2-35. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)**REPAIR (Cont)**

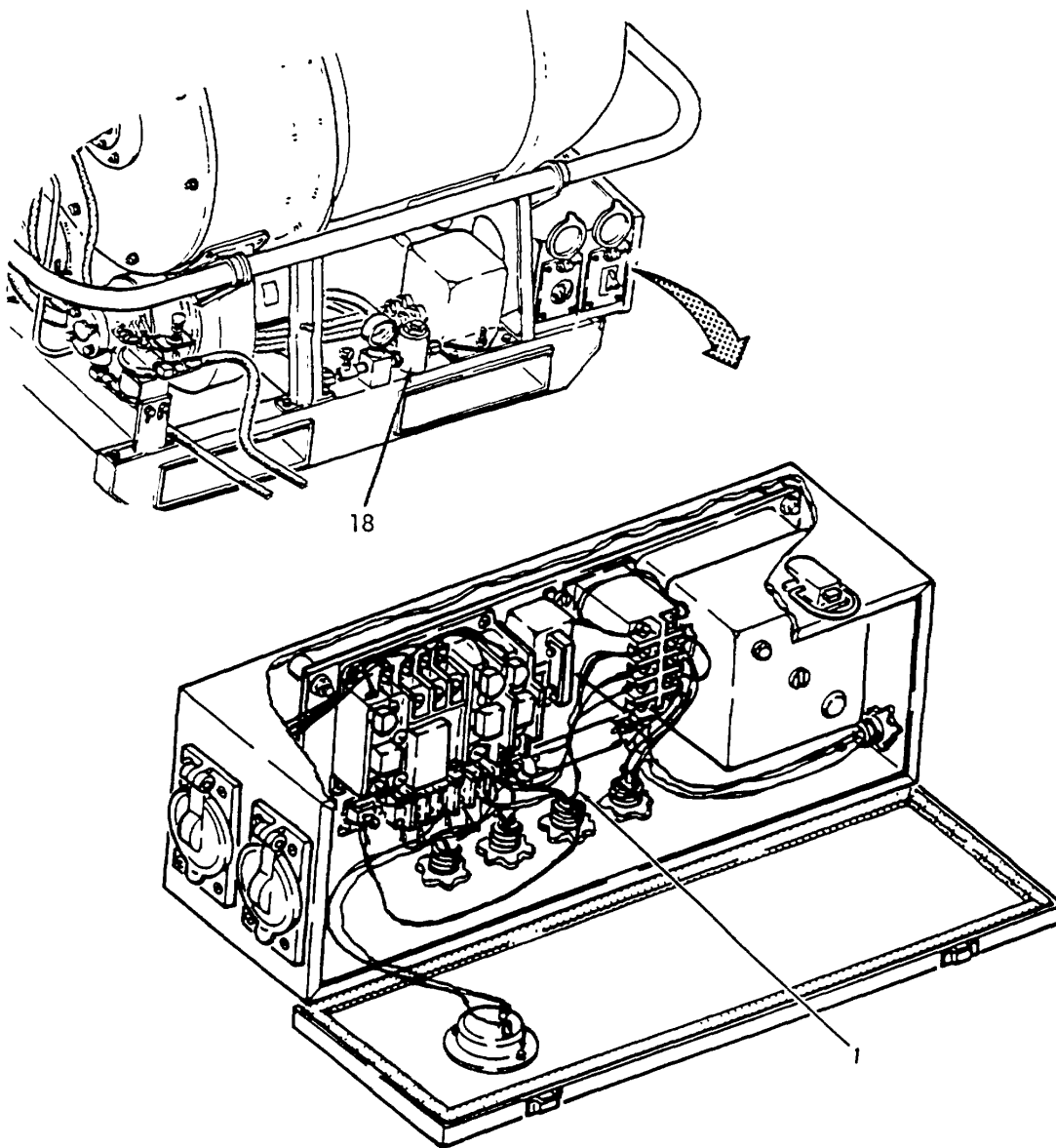
- (3) Connect ignition cables (7) to ignition transformer (6) by turning connectors clockwise.
- (4) Connect two wires (3) as tagged in control box (4).



2-35. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)

REPAIR (Cont)

2. Repair by replacing components of the fuel supply control assembly.
 - a. Disassemble fuel supply control assembly as follows:
 - (1) At master control box, tag and disconnect wires (1) to fuel solenoid valve (18).



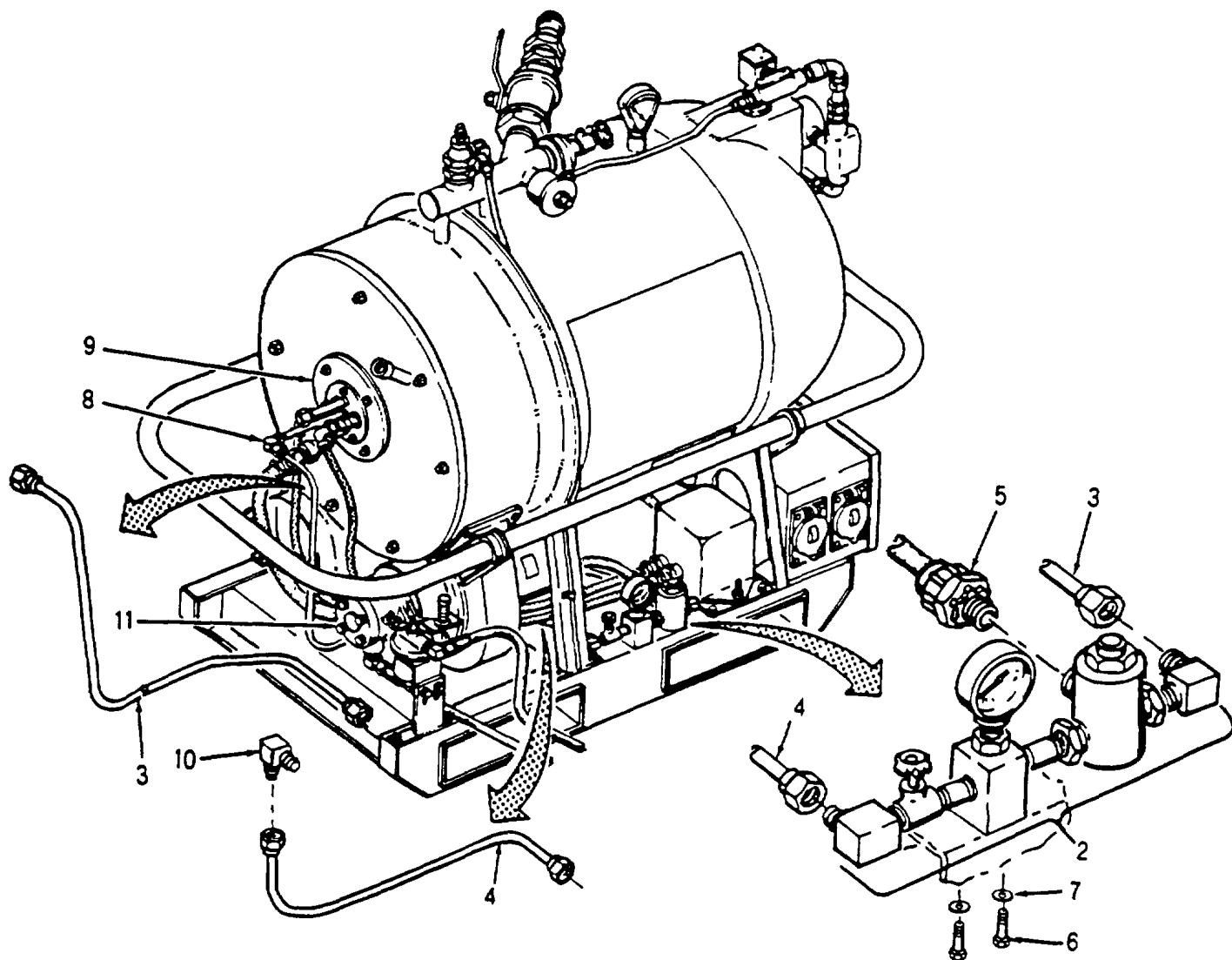
2-35. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)

REPAIR (Cont)

(2) To remove fuel supply control assembly (2), disconnect fuel line couplings (3 and 4), disconnect coupling (5), remove two screws (6) and two washers (7). Remove fuel supply control assembly by pulling fuel solenoid wires out of conduit (5).

(3) To disconnect fuel line (3), disconnect coupling at adapter (8) and remove fuel line. Unscrew adapter (8) from burner head (9).

(4) To disconnect fuel line (4), disconnect coupling at elbow (10). Unscrew elbow (10) from fuel pump (11).



2-35. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)**REPAIR (Cont)**

- (5) To remove control valve (13), unscrew elbow (12) and unscrew valve from nipple (14).
- (6) To remove fuel line tee (15), repeat steps 5, 6, and 7 if necessary, unscrew two nipples (14).
- (7) To remove gage (16), unscrew gage from snubber (17).
- (8) To remove solenoid valve (18) unscrew elbow (19), two reducers (20), and unscrew solenoid valve.

b. Assemble fuel supply control assembly as follows:

- (1) Inspect components for damaged threads and broken gage. Replace defective components.

WARNING

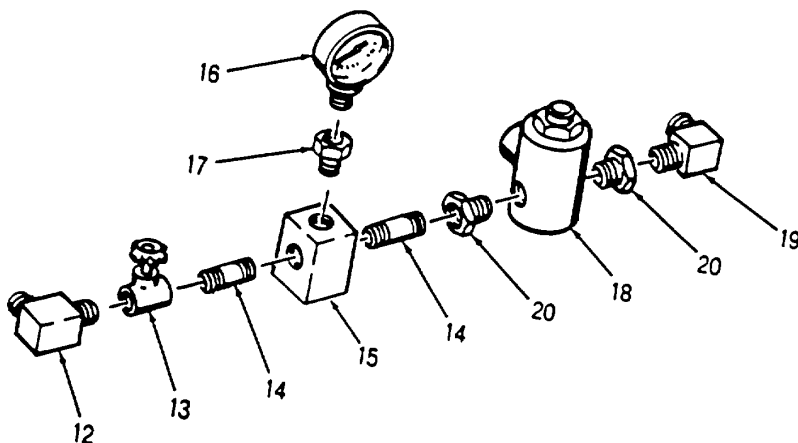
Drycleaning solvent, (Item 10, App C) is potentially dangerous. Avoid repeated or prolonged breathing of vapors and skin contact with liquid. Do not use near open flame, arcing equipment, or other ignition sources. Use in well ventilated places.

- (2) Clean all used components and fittings with solvent (Item 10, App C).

NOTE

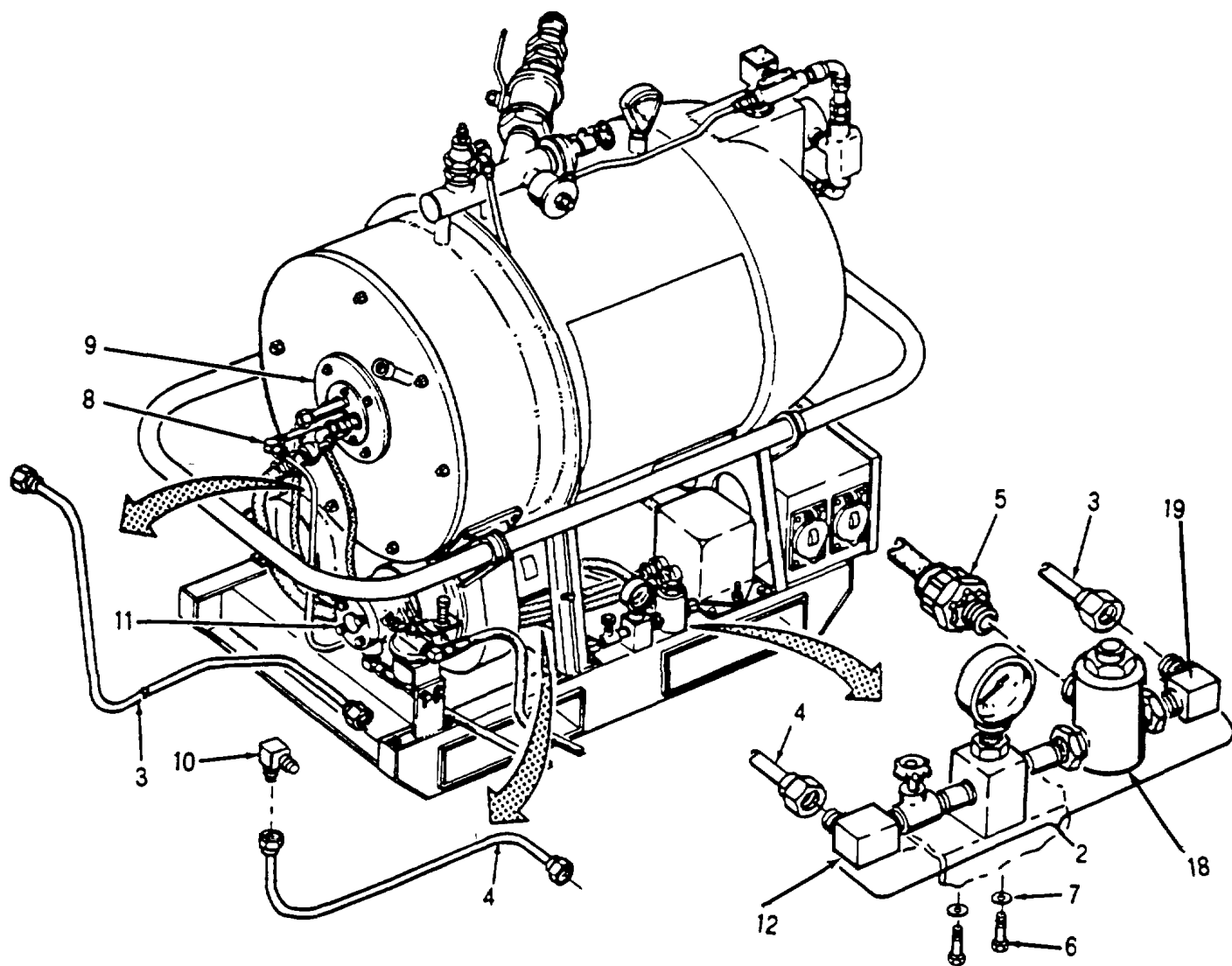
Use thread sealing compound (Item 5, App C) when joining pipes and fittings.

- (3) Install two nipples (14) and snubber (17) in fuel line tee (15) by turning clockwise.
- (4) Install gage (16) in snubber (17) by turning clockwise.
- (5) Attach control valve (13) to nipple (14) by turning clockwise.
- (6) Install elbow (12) to control valve (13) by turning clockwise.
- (7) Install two reducers (20) in solenoid valve (18) and install assembled components to nipple (14). Install elbow (19) to reducer (20).



2-35. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)

REPAIR (Cont)



(8) Insert fuel solenoid valve wires in conduit and install fuel supply control assembly (2) to water heater skid using two screws (6) and two washers (7). Tighten screws.

(9) Connect conduit coupling (5) to solenoid valve (18).

(10) Connect elbow (10) to fuel pump (11).

(11) Connect fuel line (4) to elbow (10) and other end to elbow (12) on fuel supply control assembly (2).

(12) Connect adapter (8) to burner head (9).

(13) Connect fuel line (3) to adapter (8) and to elbow (19) on fuel supply control assembly. Tighten all couplings.

2-35. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)

REPAIR (Cont)

- (14) Reconnect two fuel solenoid wires as tagged.
- (15) Close door on electrical control box.
- (16) Perform start-up procedures (TM 10-3510-209-10) to ensure proper operation of water heater.
- (17) Check for leaks.

NOTE

FOLLOW-ON MAINTENANCE:
Install tarp assembly (TM 10-3510-209-10).

2-36. WATER HEATER BLOWER AND MOTOR ASSEMBLY

This task covers:

a. Inspection

b. Removal

c. Installation

INITIAL SETUP
Tools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Identification tags (Item 12,
App C)

General Safety Instructions
WARNING

**High voltage is present on this equipment.
Do not perform maintenance with power on.
Death or serious injury may result.**

Equipment Condition:

TM 10-3510-209-10, Tarp assembly removed.
Paragraph 2-38, Fuel filter removed.

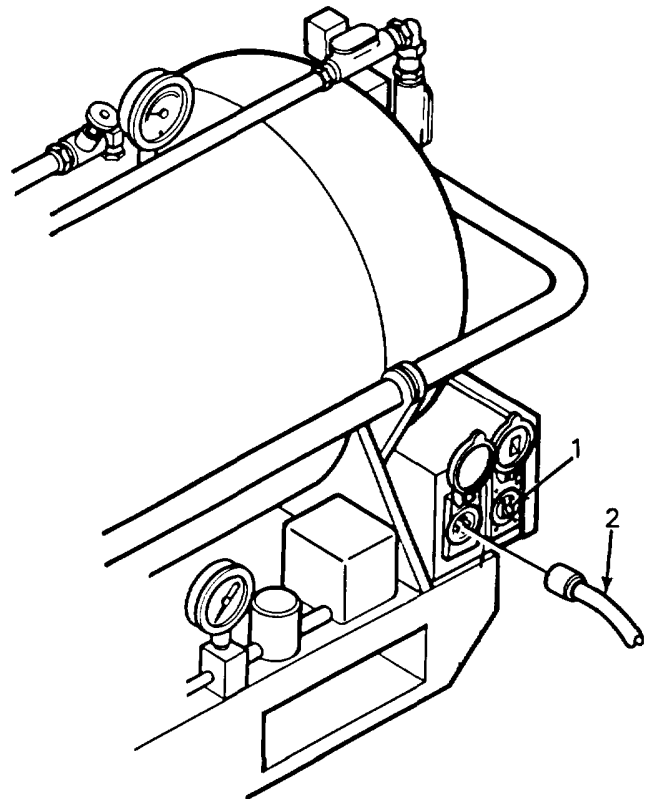
INSPECTION

Inspect blower and motor assembly for damage and unusual noise or vibration.

REMOVAL
WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

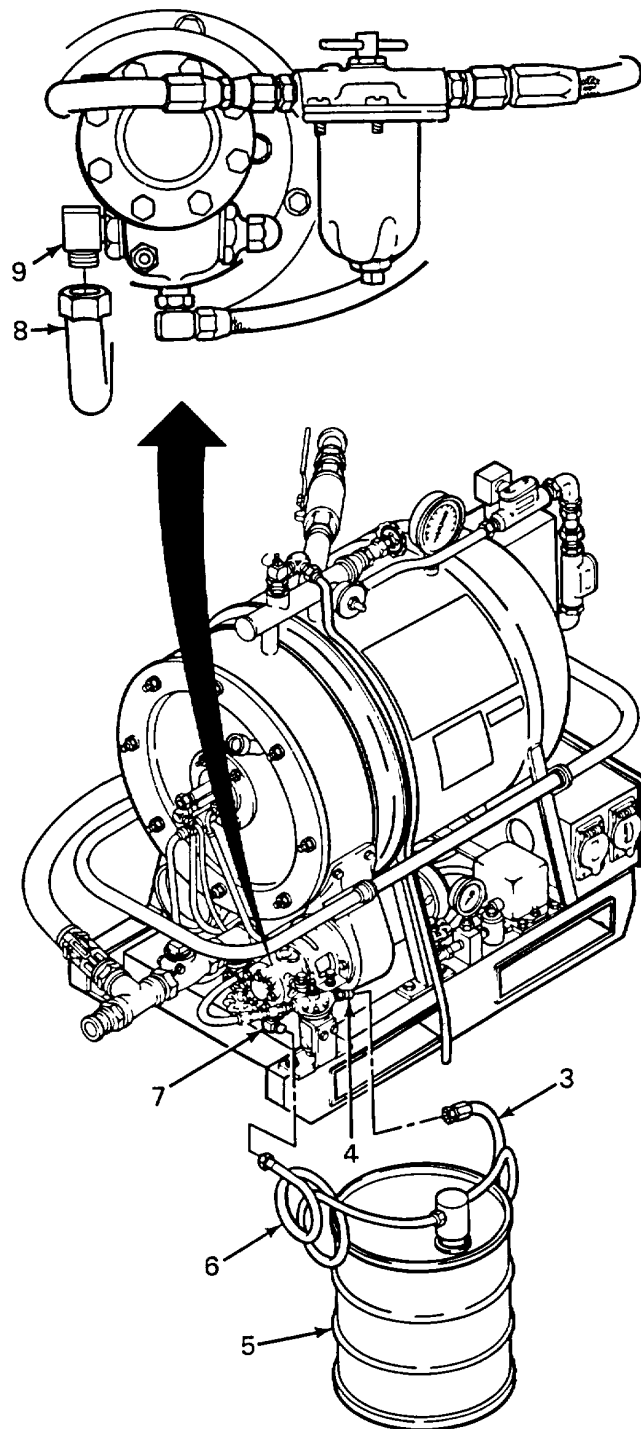
1. Turn load limit switch (1) to OFF and disconnect power cable (2).



2-36. WATER HEATER BLOWER AND MOTOR ASSEMBLY (CONT)**REMOVAL (Cont)****WARNING**

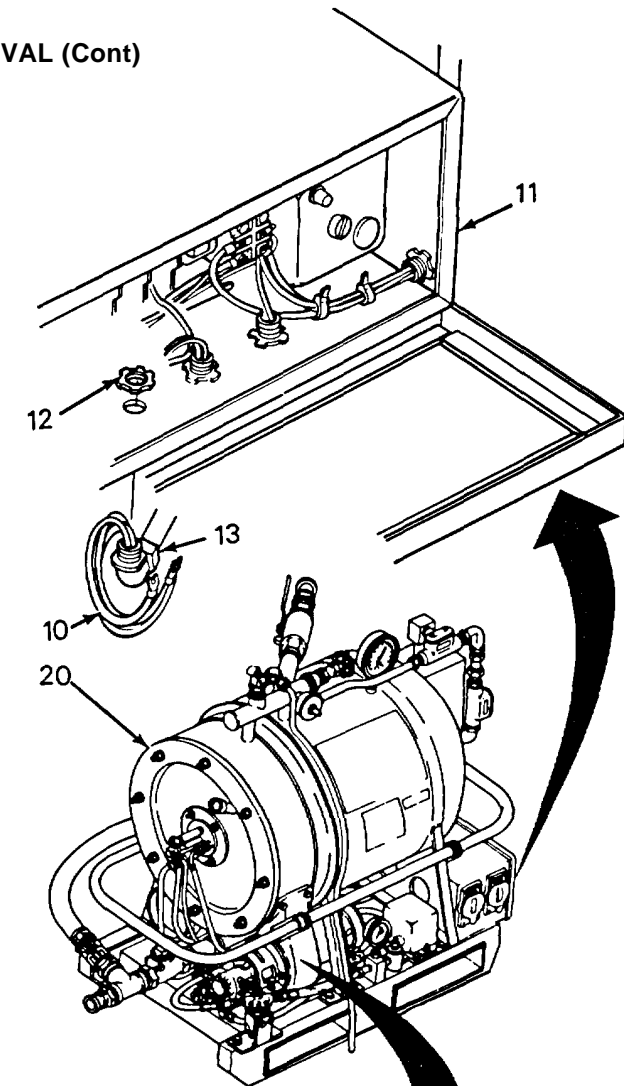
Exposed fuel and fuel vapor can ignite or explode resulting in possible serious injury and even death. Observe proper safety precautions when servicing fuel system. Ensure water heater is cold before servicing fuel system.

2. Disconnect fuel supply hose (3) from nipple (4). Elevate hose to allow fuel to drain back into container (5) and rest hose on container.
3. Disconnect fuel return hose (6) from elbow (7). Elevate hose to allow fuel to drain back into container (5) and rest hose on container.
4. Disconnect fuel line (8) from elbow (9).
5. Tag and disconnect motor wiring (10) from control box (11).
6. Remove nut (12) and conduit (13) from control box (11).
7. Remove two capscrews (14), lockwashers (15), and handle assembly (16) from blower housing (19).
8. Remove six screws (17), lockwashers (18), and blower housing (19) from water vessel (20).
9. Remove blower housing (19) and motor (21) with conduit (13) from water vessel (20).
10. Remove gasket (22) from blower housing (19).
11. Remove two screws (23) and cover plate (24) from back side of blower assembly.
12. Tag and disconnect wires (25). Remove nut (26) and push conduit connector (27) from junction box (28).



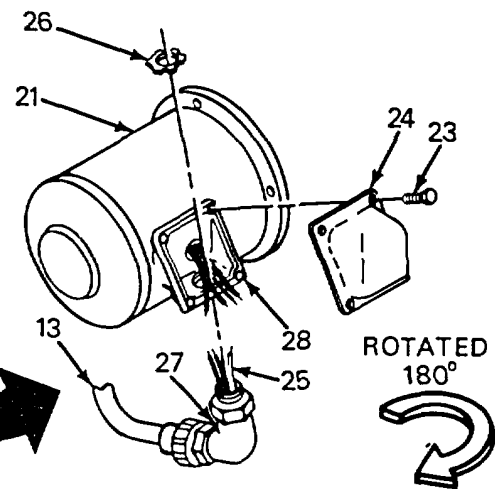
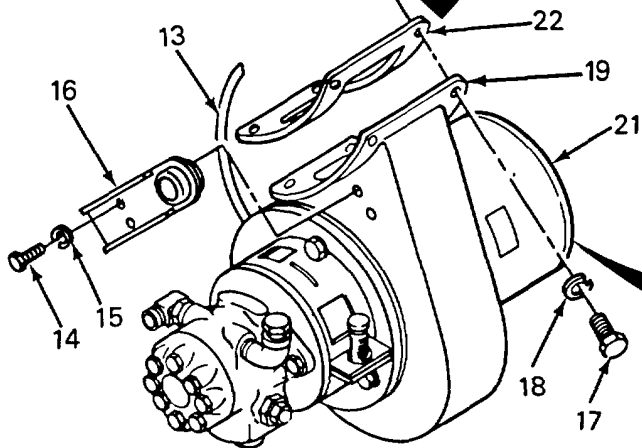
2-36. WATER HEATER BLOWER AND MOTOR ASSEMBLY (CONT)

REMOVAL (Cont)



INSTALLATION

1. Install conduit connector (27) in junction box (28) and secure with nut (26).
2. Connect wires (25) in junction box (28). Removes tags. See FIGURE 2-5.
3. Install cover plate (24) on back side of blower assembly and secure with two screws (23).
4. Install gasket (22) on blower housing (19).
5. Install motor (21) and blower housing (19) on water vessel (20) and secure with six lockwashers (18) and screws (17).
6. Install conduit (13) in control box (11) and secure with nut (12).
7. Connect motor wiring (10) to control box (11) and remove tags. See FIGURE 2-5.
8. Install handle assembly (16) on blower housing (19) and secure with two lockwashers (15) and capscrews (14).



2-36. WATER HEATER BLOWER AND MOTOR ASSEMBLY (CONT)

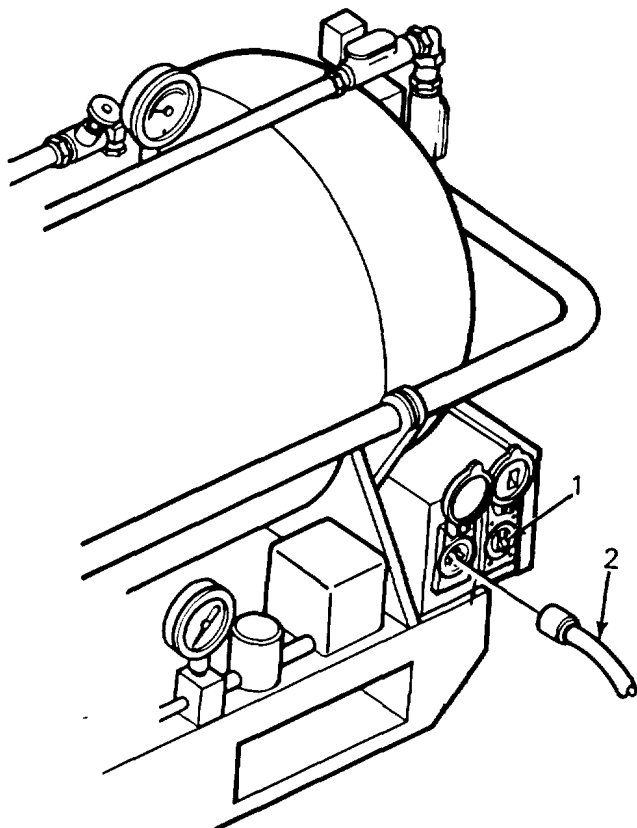
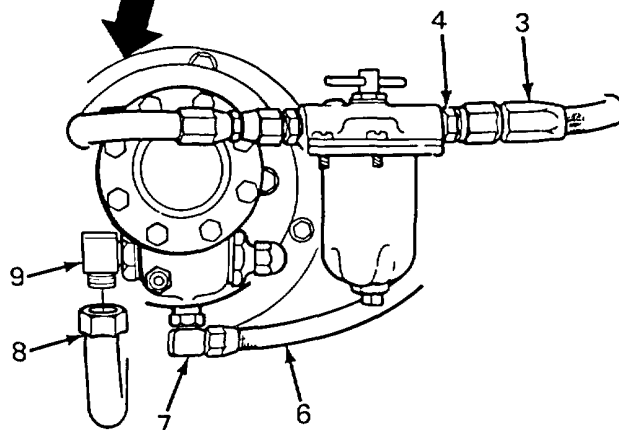
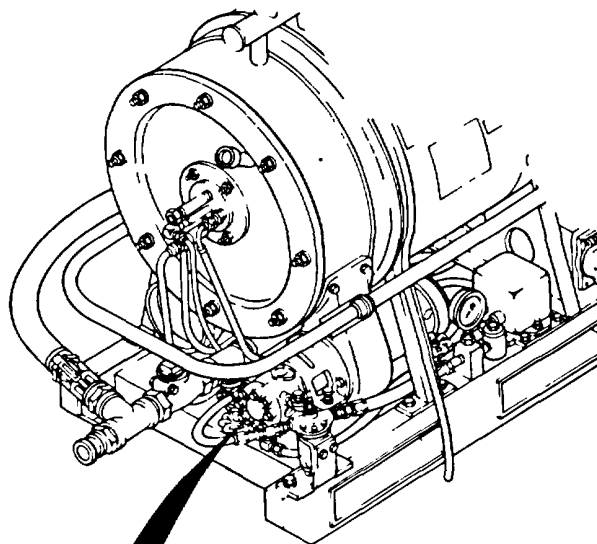
INSTALLATION (Cont)

9. Connect fuel line (8) to elbow (9).
10. Connect fuel return hose (6) to elbow (7) and connect fuel supply line (3) to nipple (4).
11. Connect power plug (2).
12. Turn load limit switch (1) to ON and check for proper rotation. Refer to TM 10-3510-209-10.

NOTE

FOLLOW-ON MAINTENANCE:

Install tarp assembly (TM 10-3510-209-10).
Install fuel filter (para 2-38).



2-37. WATER HEATER FUEL PUMP ASSEMBLY

This task covers:

- a. Inspection b. Removal c. Repair d. Installation e. Adjustment
-

INITIAL SETUP

Tools

General mechanic's tool set,
SC 5180-90
Wrench, pin, 1-inch

Personnel Required

MOS 63J (1)

Materials/Parts

Drycleaning solvent
(Item 10, .App C)

General Safety Instructions

WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point is 100-138° (38--59°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

Equipment Condition

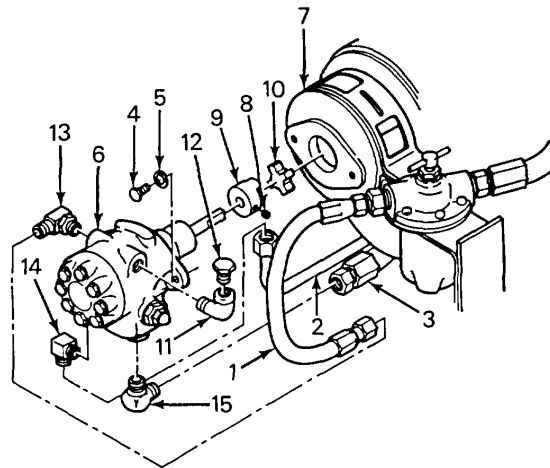
TM 10-3510-209-10, Tarp assembly removed.

INSPECTION

Inspect fuel pump for leaks, noise, and unusual vibration during operation.

2-37. WATER HEATER FUEL PUMP ASSEMBLY (CONT)**REMOVAL**

1. Disconnect hose (1) from elbow (13).
2. Disconnect fuel line (2) from elbow (14).
3. Disconnect hose (3) from elbow (15).
4. Remove two screws (4), lockwashers (5), and fuel pump (6) from shutter assembly (7).
5. Loosen setscrew (8) and remove coupling (9) and bushing (10) from shaft of fuel pump (6).
6. Remove elbow (11) from fuel pump (6) and remove plug (12) from elbow.
7. Remove elbows (13), (14), and (15) from fuel pump (6).

**REPAIR****NOTE**

A fuel pump failure may be caused by a clogged strainer or worn or broken parts. Repair of the fuel pump consists of complete disassembly, cleaning of parts, inspection, and replacement of kit items as well as other parts that may be defective.

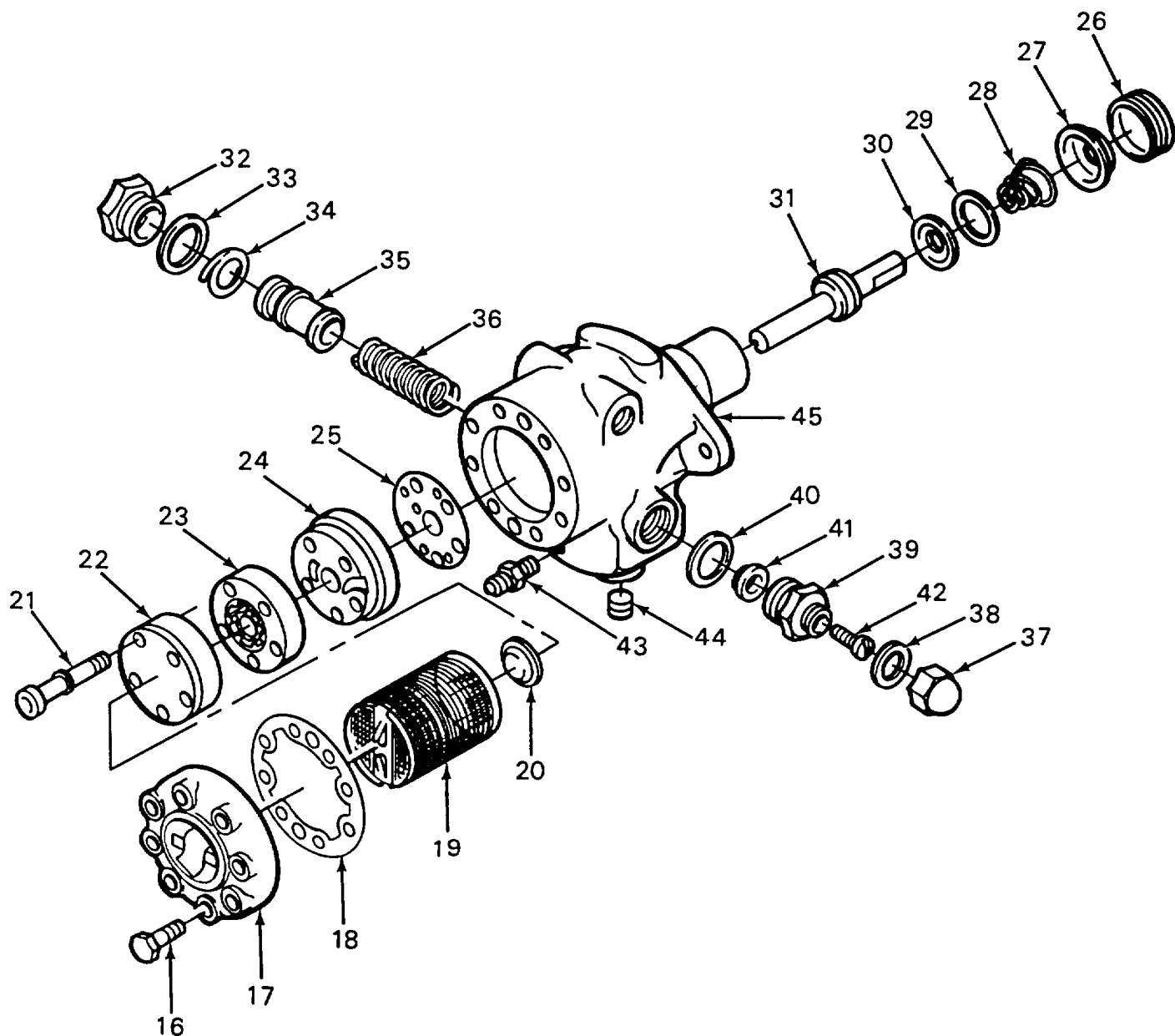
NOTE

Early units of this laundry may come equipped with a single stage pump (J3BA). For these units, refer to TM 10-3510-208-34P and TM 10-3510208-34 for maintenance.

1. Remove eight screws (16), cover (17), and gasket (18) from fuel pump body (45).
2. Remove strainer (19) and anti-hum wafer (20) from fuel pump body (45).
3. Remove five screws (21), end plate assembly (22), spacer plate assembly (23), port housing (24), and gasket (25) from fuel pump body (45).
4. Remove seal cap (26), seal cup (27), seal spring (28), seal washer (29), and seal (30) from fuel pump body (45).
5. Remove shaft assembly (31) from fuel pump body (45).

2-37. WATER HEATER FUEL PUMP ASSEMBLY (CONT)

REPAIR (Cont)



6. Remove end plug (32), gasket (33), sleeve retainer (34), sleeve (35), and spring (36) from fuel pump body (45).
7. Remove acorn nut (37), gasket (38), end plug assembly (39), gasket (40), and spring seat (41) from fuel pump body (45).
8. Remove pressure adjusting screw (42) from end plug assembly (39).
9. Remove bleed valve (43) and plug (44) from fuel pump body (45).

2-37. WATER HEATER FUEL PUMP ASSEMBLY-(CONT)

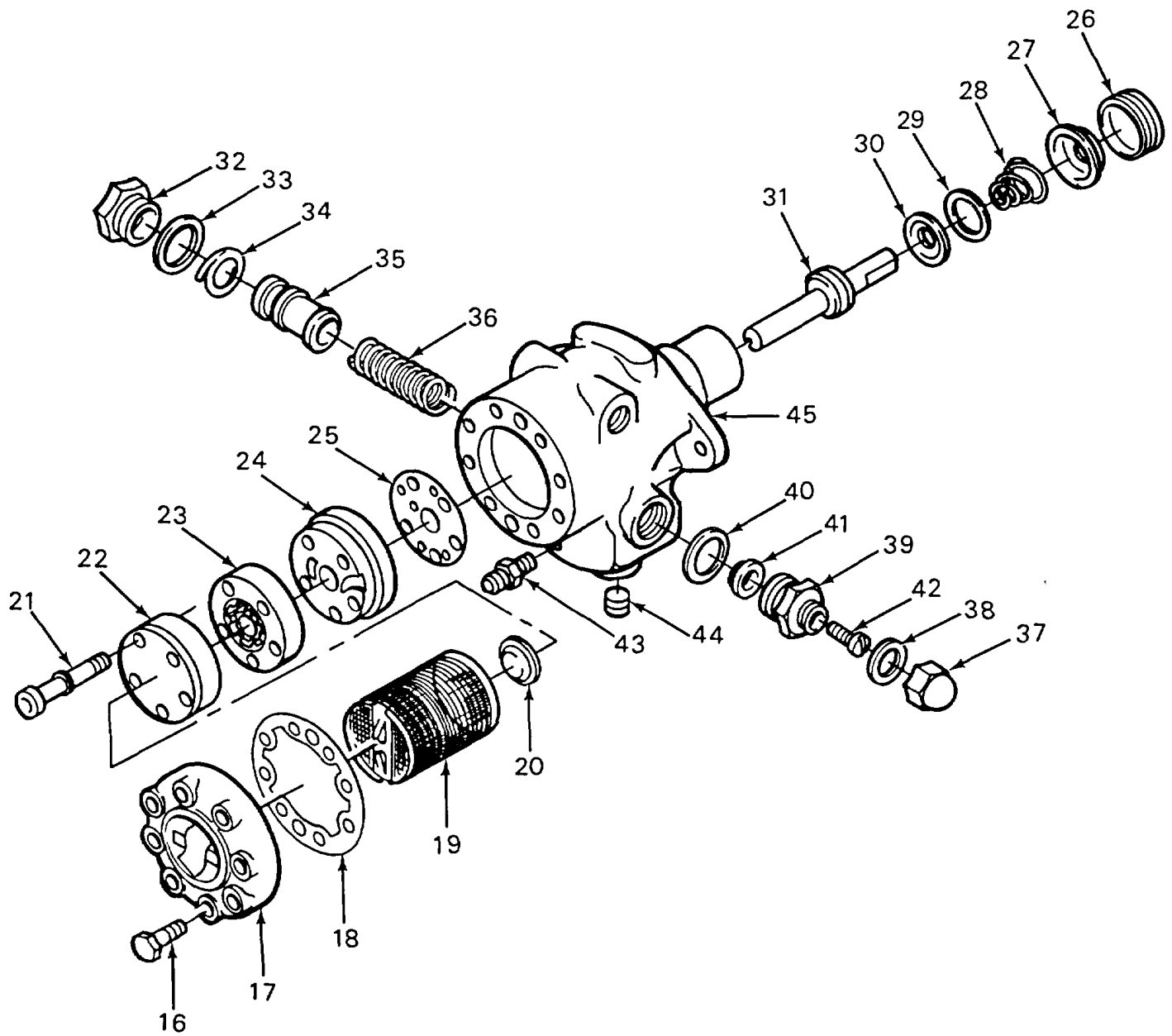
REPAIR (Cont)**WARNING**

Drycleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point is 100-138°F (38-59°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, flush your eyes with clear water and get medical aid immediately.

10. Clean all parts in drycleaning solvent.
11. Inspect for burred, nicked, broken, scratched, or excessively worn parts. Replace defective parts.
12. Install bleed valve (43) and plug (44) in fuel pump body (45).
13. Install pressure adjusting screw (42) in end plug assembly (39).
14. Install spring (36), sleeve (35), sleeve retainer (34), gasket (33), and end plug (32) on fuel pump body (45).
15. Install spring seat (41), gasket (40), end plug assembly (39), gasket (38), and acorn nut (37) on fuel pump body (45).
16. Install gasket (25) and port housing (24) in fuel pump body (45).
17. Install shaft assembly (31) in fuel pump body (45).
18. Install seal (30), seal washer (29), seal spring (28), seal cup (27), and seal cap (26) in fuel pump body (45).
19. Install spacer plate assembly (23) and end plate assembly (22) in fuel pump body (45) and secure with five screws (21).

2-37. WATER HEATER FUEL PUMP ASSEMBLY (CONT)

REPAIR (Cont)



20. Install strainer (19) along with anti-hum wafer (20) in fuel pump body (45).

21. Install gasket (18) and cover (17) on fuel pump body (45) and secure with eight screws (16).

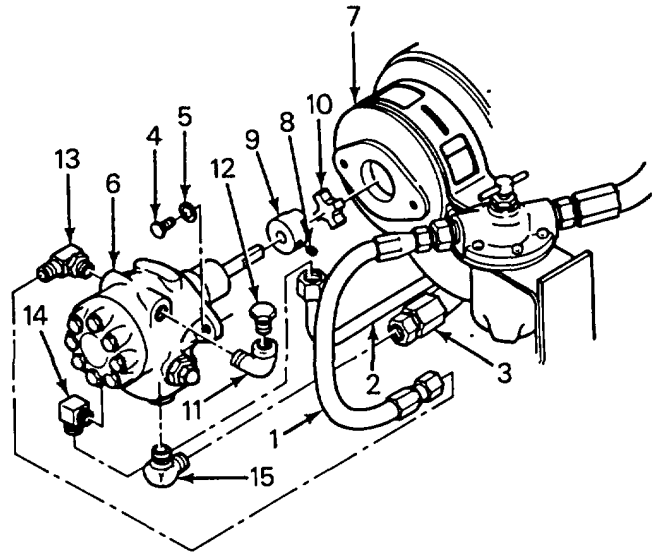
2-37. WATER HEATER FUEL PUMP ASSEMBLY (CONT)

INSTALLATION

NOTE

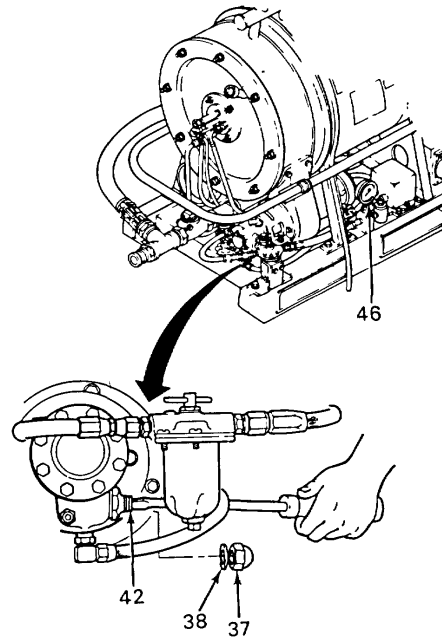
Replacement fuel pump may have pipe plugs installed to protect pump while in transit or storage. Remove pipe plugs from replacement pump and install them on defective pump to protect it from dirt and foreign matter.

1. Install elbows (15), (14), and (13) on fuel pump (6).
2. Install plug (12) in elbow (11) and install elbow in fuel pump (6).
3. Install coupling (9) and bushing (10) on shaft of fuel pump (6) and secure with setscrew (8).
4. Install fuel pump (6) on shutter assembly (7) and secure with two lockwashers (5) and screws (4).
5. Connect hose (3) to elbow (15).
6. Connect fuel line (2) to elbow (14).
7. Connect hose (1) to elbow (13).



ADJUSTMENT

1. Turn on load limit switch (refer to TM 10-3510-209-10) and inspect water heater for normal operation. Check for fuel leaks and tighten any connection where leaks occur.
2. Remove acorn nut (37) and gasket (38) from side of fuel pump.
3. Turn fuel pressure adjust screw (42) clockwise to increase and counterclockwise to decrease fuel pump pressure. Adjust until pressure gage (46) indicates 75 to 80 psi (517 to 552 kPa).
4. Install gasket (38) and acorn nut (37) on fuel pump.
5. Turn off power limit switch.



NOTE

FOLLOW-ON MAINTENANCE:
Install tarp assembly (TM 10-3510-209-10).

2-37.1. WATER MANIFOLD ASSEMBLY

This task covers:

- | | | |
|----------------|-------------|-----------------|
| a. Inspection | d. Repair | f. Installation |
| b. Removal | e. Assembly | g. Adjustment |
| c. Disassembly | | |
-

INITIAL SETUPTools

General mechanic's tool set,
SC 5180-90

General Safety Instructions**WARNING**

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Personnel Required

MOS 63J (1)

Equipment Condition

TM 10-3510-209-10, Water heater off and cooled.

Materials/Parts

Repair parts as required
Antiseizing tape (teflon)
(Item 23, App C)
Thread sealing compound
(Item 5, App C)

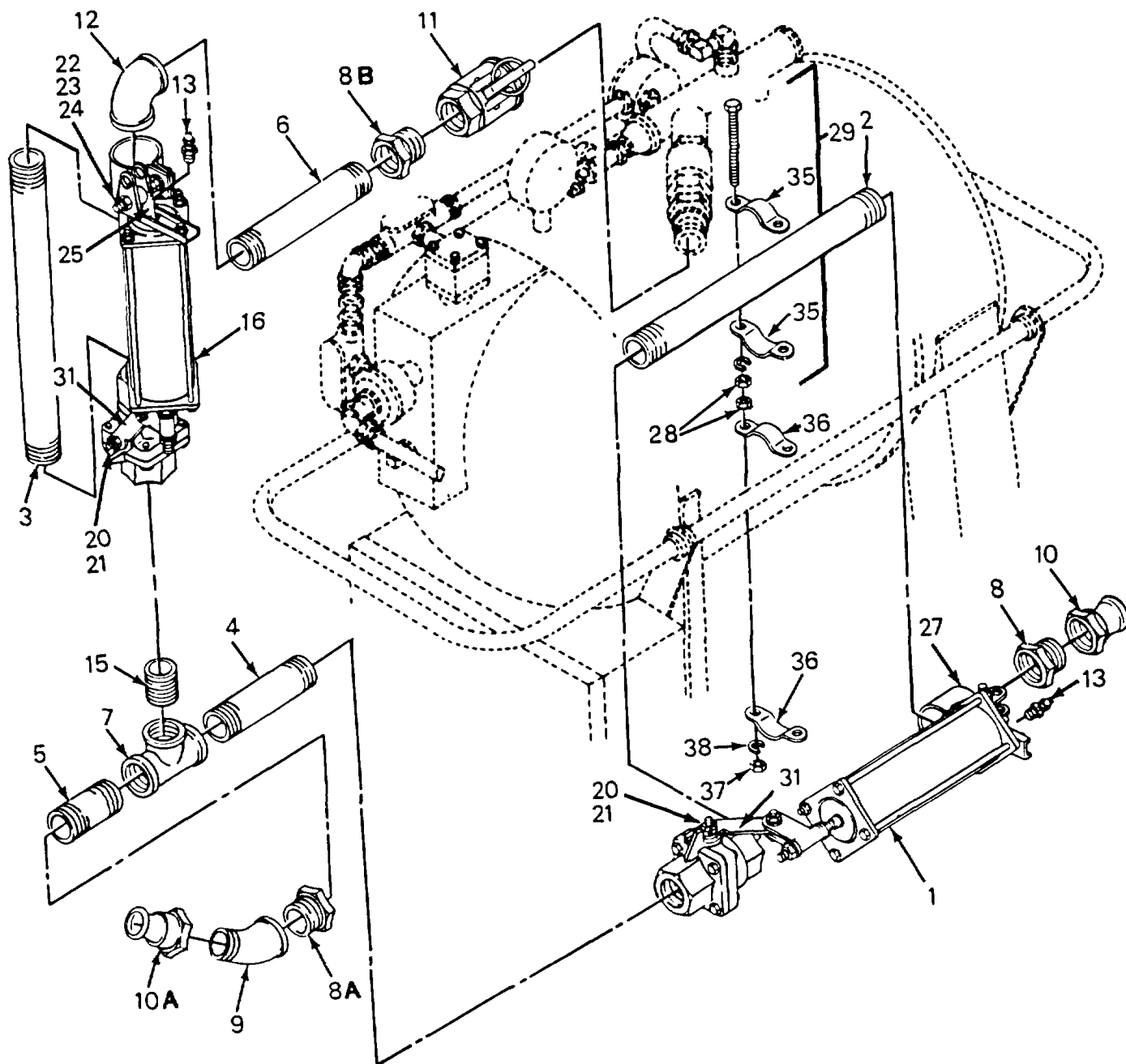
INSPECTION

1. Inspect fittings, connections and valve assemblies for leaks
2. Check for proper valve operation (valve opens as required; valve fittings not loose).

REMOVAL

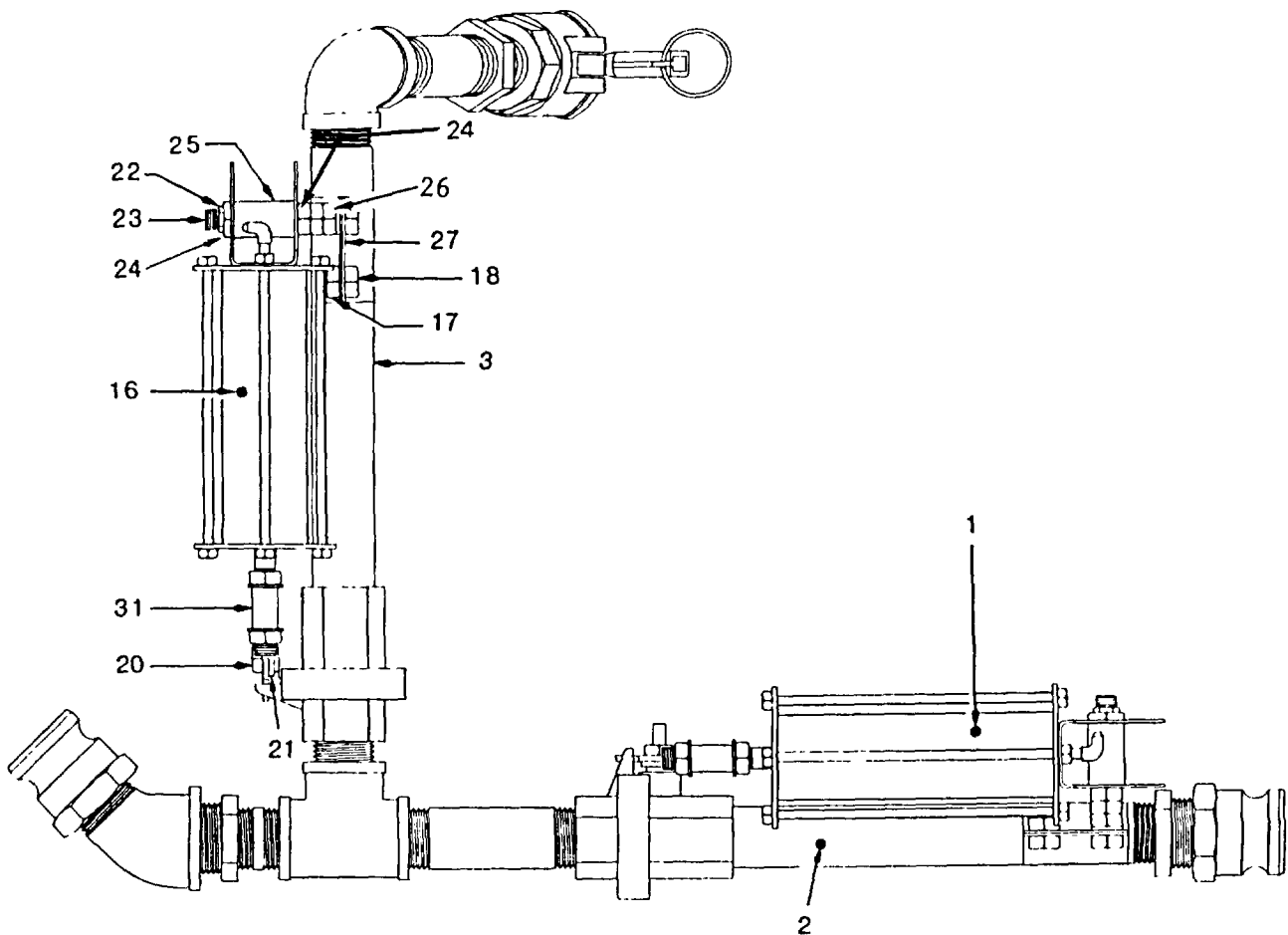
1. Tag air lines and disconnect from two hose fittings (13) located on the two air actuated ball valve assemblies (1 and 16).
2. Disconnect washer water intake hose.
3. Disconnect short water hose from manifold assembly and water heater tee and remove.
4. Remove four nuts (37), four lockwashers (38) and two lower clamps (36).
5. Disconnect coupling (11) on top of manifold assembly. Remove manifold assembly with two upper clamps (35) from water heater.

2-37.1. WATER MANIFOLD ASSEMBLY (CONT)



2-37.1. WATER MANIFOLD ASSEMBLY (CONT)**DISASSEMBLY**

1. Remove quick disconnect coupling (10) and bushing (8).
2. Loosen four nuts (28) and remove two clamp assemblies (29).
3. Remove air actuated ball valve assembly (1), hose fitting (13) and steel pipe (2) as an entire assembly by unscrewing from nipple (4).
4. Remove nipple (4), coupling (10A), street elbow (9), bushing (8A) and nipple (5) from tee (7).
5. Remove tee (7) and remove close nipple (15) from air actuated ball valve assembly (16).
6. Remove coupling (11), bushing (8B), nipple (6) and elbow (12) from steel pipe (3).
7. To remove pipe (2 or 3) from the air actuated ball valve assembly (1 or 16), perform the following steps:



2-37.1. WATER MANIFOLD ASSEMBLY (CONT)

DISASSEMBLY (CONT)

- a. Loosen nut (20) and lock washer (21) from crank (31).
- b. Remove lock nut (22). Slide air actuated ball valve assembly (16 or 1), two teflon bushings (24) and spacer (25) off of bolt (23).
- c. Loosen nuts (26 and 18) and remove anchor bracket (27) from pipe (3 or 2).
- d. Remove pipe (3 or 2) from air actuated ball valve assembly (1 or 16).

REPAIR

Replace any broken or defective fittings or parts.

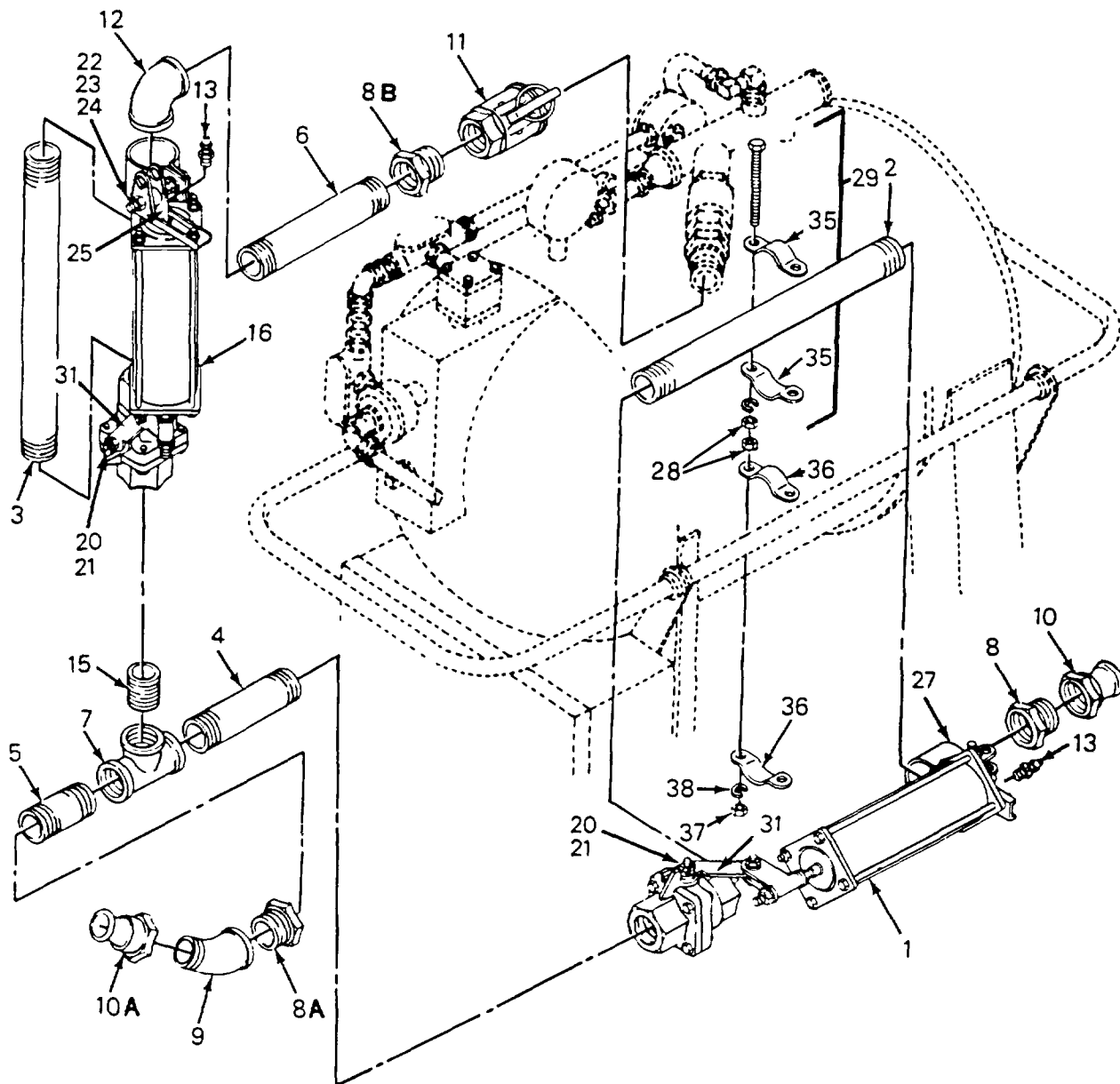
ASSEMBLY

NOTE

Use thread sealing compound on all connections to prevent leaks.

1. To assemble pipe (2 or 3) onto the air actuated ball valve assembly (1 or 16), perform the following steps:
 - a. Install pipe (2 or 3) into air actuated ball valve assembly (1 or 16).
 - b. Install anchor bracket (27) on pipe (2 or 3). Do not tighten bolts (23 and 17) or nuts (26 and 18) until adjustment procedures are complete.
 - c. Place air actuated ball valve assembly (16 or 1) with two teflon bushings (24) and spacer (25) onto bolt (23) and install lock nut (22). Nut (22) tightened in next step.
 - d. Tighten nut (20) and lock washer (21) to secure crank (31). Tighten nut (22).
 - e. Perform adjustment procedures then tighten bolts (23 and 17) and nuts (26 and 18).

2-37.1. WATER MANIFOLD ASSEMBLY (CONT)



2-37.1. WATER MANIFOLD ASSEMBLY (CONT)

ASSEMBLY (Cont)

2. Install elbow (12), nipple (6), bushing (8B) and coupling (11) onto steel pipe (3).
3. Install nipple (15) and tee (7) onto air actuated ball valve assembly (16).
4. Install nipple (5), bushing (8A), street elbow (9) and coupling (10A) onto tee (7).
5. Install nipple (4) onto tee (7) and place one clamp assembly (29) on nipple (4). Nuts (28) tightened during installation.
6. Install air actuated ball valve assembly (1) onto nipple (4). Place another clamp assembly (29) on steel pipe (2). Install bushing (8) and coupling (10) onto pipe (2).

INSTALLATION**NOTE**

If manifold assembly has been disassembled or repaired the assembly may require adjustment to mate with water heater attachment points. Make adjustments by turning fittings or pipes as required.

1. Connect coupling (11) to fitting on top of water heater. Make alignment adjustments if necessary.
2. Install two upper clamps (35) onto clamp assemblies (29). Install two lower clamps (36), four lock washers (38) and four nuts (37) onto clamp assemblies. When manifold is in desired position, tighten four nuts (28) and four nuts (37).
3. Connect short water hose to water heater tee then connect opposite end to manifold assembly.
4. Connect washer water intake hose to manifold.
5. Connect the two air lines to hose fittings (13) as marked during removal.

2-37.1. WATER MANIFOLD ASSEMBLY (CONT)**ADJUSTMENT****NOTE**

Ball valve crank (31) and anchor bracket (27) must be exactly in line. The air actuator must not be slanted or cocked with relation to the plane of crank movement. Binding between the crank and anchor bracket will occur if they are misaligned.

1. Check clearance after piping the machine. Maintain $1/16" \pm 1/32"$ clearance between the open and closed crank stop (30) positions to prevent valve stem damage when closed and ball overtravel when opened.

NOTE

Overtravel will cause the valve to throttle the flow of incoming water. This has a detrimental effect on valve life and also increases filling time.

2. To adjust both the alignment and clearance, loosen the anchor bracket (27) and perform the following as needed:

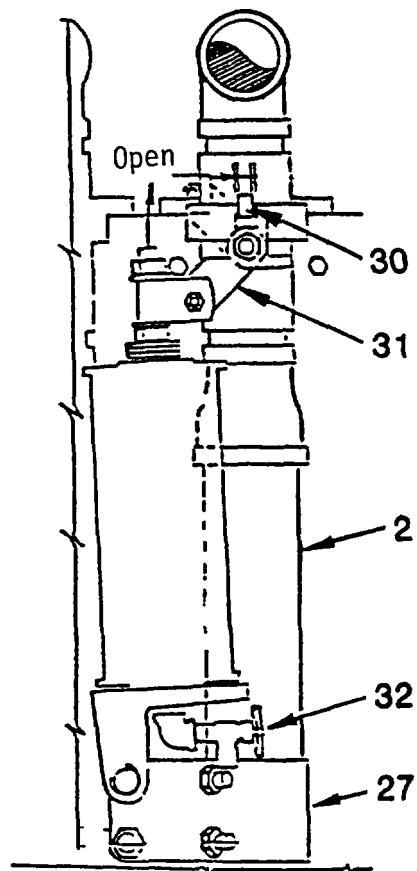
- a. Rotate the anchor bracket (27) around the pipe (2) to adjust alignment.
- b. Slide the anchor bracket (27) up or down the pipe (2) to adjust clearance.

3. Adjust the needle valve (32) (if equipped) to slow the opening and closing of the air actuated ball valve assembly. One quarter to one half turn is normal.

4. Ensure that all air actuated ball valve assemblies close at the same speed.

NOTE**FOLLOW-ON MAINTENANCE:**

Water heater installed (TM 10-3510-209-10).



2-38. WATER HEATER FUEL FILTER ASSEMBLY

This task covers:

a. Inspection

b. Removal

c. Repair

d. Installation

INITIAL SETUP
Tools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Fuel filter strainer
assembly (81337) 6-1-8359
Dry cleaning solvent
(Item 10, App C)

General Safety Instructions
WARNING

**High voltage is present in this equipment.
Do not perform maintenance with power on.
Death or serious injury may result.**

WARNING

**Failure to cap disconnected fuel lines could
result in fuel being siphoned onto the
ground and equipment.**

Equipment Condition:

TM 10-3510-209-10, Tarp assembly removed.

INSPECTION

1. Inspect fuel filter for leaks, damage, and missing hardware.
2. Turn handle on self cleaning filter rough movement or excessive play.

2-38. WATER HEATER FUEL FILTER ASSEMBLY (CONT)**REMOVAL****WARNING**

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

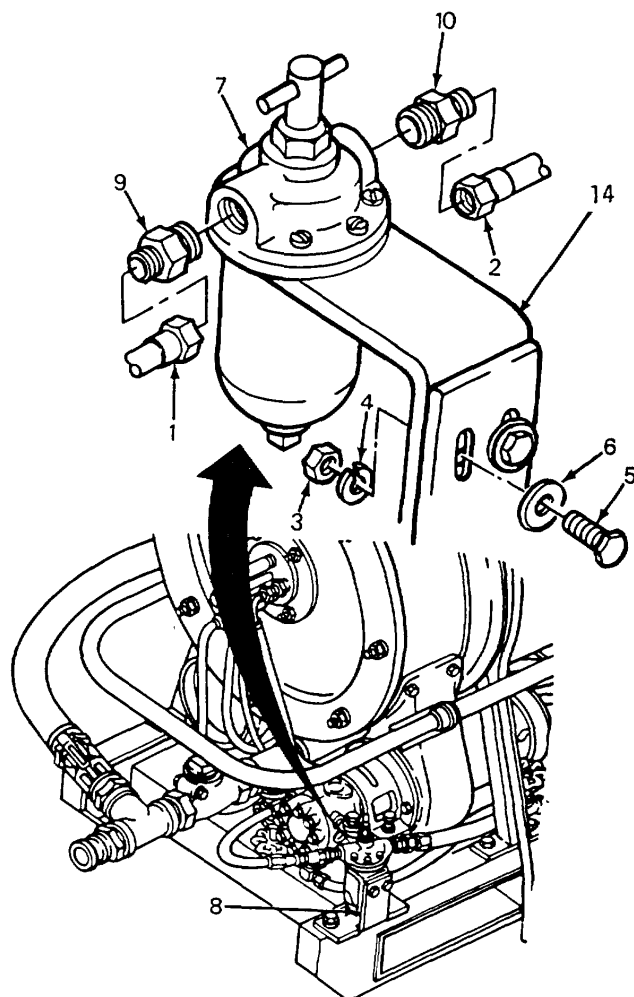
WARNING

Failure to cap disconnected fuel lines could result in flammable fuel being siphoned onto the ground and equipment.

1. Disconnect hose (1) from small nipple (9).
2. Disconnect hose (2) from large nipple (10).
3. Remove two nuts (3), lockwashers (4), screws (5), flat washers (6), fuel filter (7), and brace (14) from mounting bracket (8).
4. Remove nipples (9) and (10) from fuel filter (7).

REPAIR

1. Remove two nuts (11), lockwashers (12), screws (13), and brace (14) from fuel filter (7).
2. Remove four screws (15) securing plate (16), filter bowl (17), and gasket (18), from fuel filter (7).
3. Remove handle (19), nipple (20), and two preformed packings (21) from fuel filter (7).



2-38. WATER HEATER FUEL FILTER ASSEMBLY (CONT)**REPAIR (Cont)****WARNING**

Drycleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point is 100-138°F (38-59°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

4. Clean all parts in dry-cleaning solvent.
5. Install two preformed packings (21), nipple (20), and handle (19) on fuel filter (7).
6. Install gasket (18), filter bowl (17), and securing plate (16) and secure to fuel filter (7) with four screws (15).
7. Install brace (14) on fuel filter (7) and secure with two screws (13), lockwashers (12), and nuts (11).

INSTALLATION

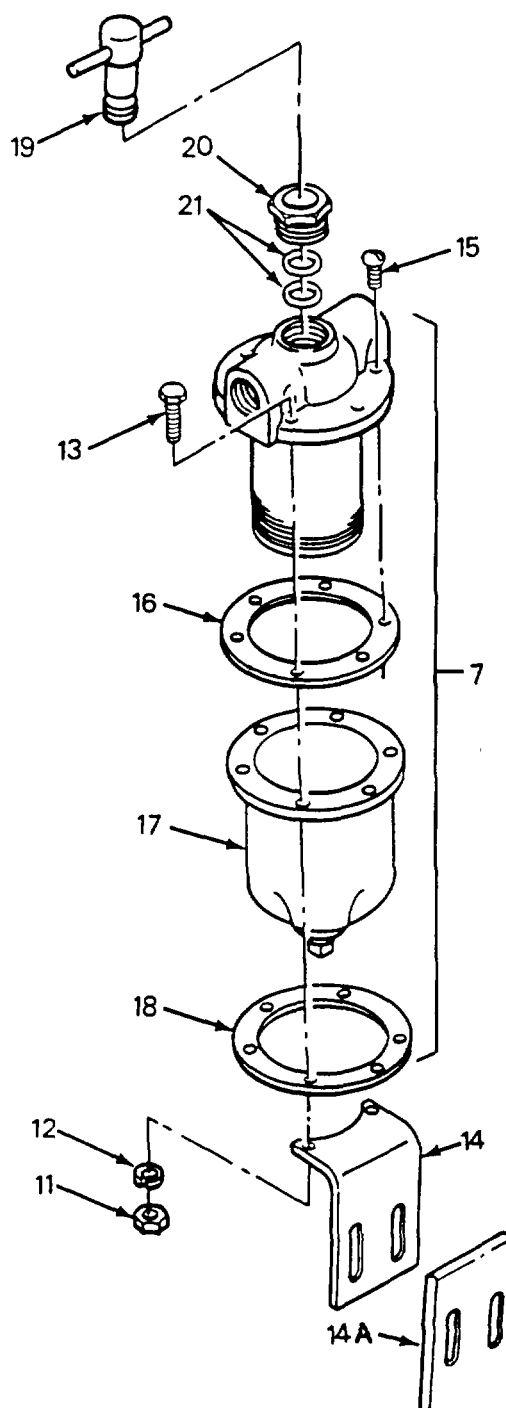
1. Install large nipple (10) on filter (7) inlet side and small nipple (9) in fuel filter outlet side.
2. Position fuel filter (7) on water heater brace (14A) and secure with two screws (5), flat washers (6), lockwashers (4), and nuts (3).
3. Connect hose (2) to large nipple (10).
4. Connect hose (1) to small nipple (9).

NOTE

If bowl and gasket were replaced, ensure there are no fuel leaks.

NOTE

FOLLOW-ON MAINTENANCE:
Install tarp assembly (TM 9-3510-209-10).



2-39. WATER HEATER AIR SHUTTER ASSEMBLY

This task covers:

a. Inspection

b. Removal

c. Repair

d. Installation

INITIAL SETUP
Tools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Air shutter assembly

General Safety Instructions
WARNING

**High voltage is present on this equipment.
Do not perform maintenance with power on.
Death or serious injury may result.**

Equipment Condition:

TM 10-2510-209-10, Tarp assembly removed.
Paragraph 2-37, Fuel pump removed.
Paragraph 2-38, Fuel filter removed.

INSPECTION

Inspect air shutter for binding, damage, and unusual noise or vibration.

REMOVAL
WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

1. Remove three capscrews (1) and washers (2). Remove air shutter assembly (3) from blower housing (4).
2. Remove cotter pin (5), two washers (6), spring (7), pin (8), and air band (9).

2-39. WATER HEATER AIR SHUTTER ASSEMBLY (CONT)**REPAIR****NOTE**

Remove and replace only those items necessary to make repair.

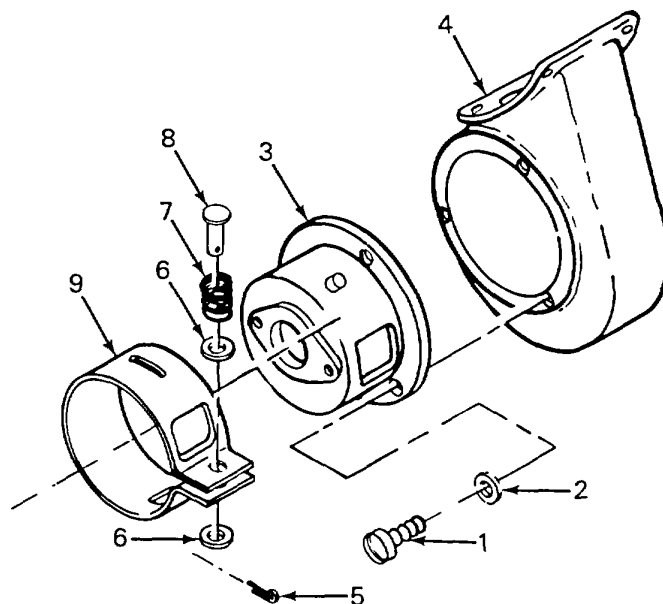
Repair of air shutter assembly is limited to the replacement of component parts.

INSTALLATION

1. Place air band (9) over shutter assembly (3) and secure with pin (8), spring (7), two washers (6), and cotter pin (5).
2. Position air shutter assembly (3) on blower housing (4) and secure with three capscrews (1) and washers (2).

NOTE**FOLLOW-ON MAINTENANCE:**

Install tarp assembly (TM 10-3510- 209-10).
Install fuel filter (para 2-38).
Install fuel pump (para 2-37).



2-40. WATER HEATER PRESSURE RELIEF VALVE

This task covers:

a. Inspection

b. Removal

c. Installation

INITIAL SETUP
Tools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Pressure relief valve
Pipe joint compound
(Item 5, App C)

Equipment Condition:

TM 10-3510-309-10, Tarp assembly
removed.
Water heater cool down.

General Safety Instructions
WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

WARNING

The water vessel becomes hot during operation and injury may result from contact with the water heater before it cools. Allow water heater to cool before servicing the high-limit temperature control.

INSPECTION

Inspect water pressure relief valve for damage and unusual leaks.

REMOVAL
WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

WARNING

The water vessel becomes hot during operation and injury may result from contact with the water heater before it cools. Allow water heater to cool before servicing the high-limit temperature control.

1. Turn off power limit switch (1) and disconnect power cable.

2-40. WATER HEATER PRESSURE RELIEF VALVE

REMOVAL (Cont)

2. Ensure water has cooled to a safe temperature.
3. Disconnect overflow tube (2) and elbow (3) from relief valve (4).
4. Remove relief valve (4) and bushing (5) from heater manifold (6).

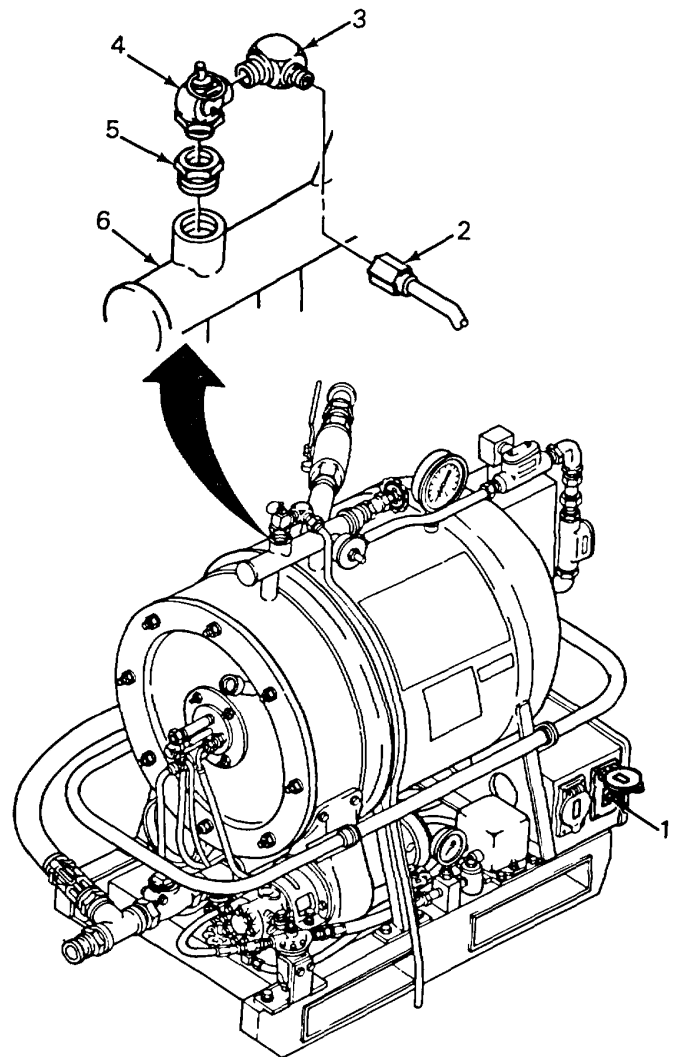
INSTALLATION

1. Coat threads of bushing (5) relief valve (4), and elbow (3) with pipe joint compound (Item 5, App C).
2. Install bushing (5) and new relief valve (4) in heater manifold (6).
3. Install elbow (3) in relief valve (4) and connect overflow tube (2) to elbow.
4. Reconnect power cable. Turn on power switch (1).

NOTE

FOLLOW-ON MAINTENANCE:

Install tarp assembly (TM 10-2510-209-24).



2-41. DRYER ASSEMBLY

This task covers:

- a. Service
- b. Test
- c. Adjustment
- d. Repair

INITIAL SETUP

Tools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Dryer assembly
Identification tags (Item 12,
App C)

General Safety Instructions

WARNING

High temperature exhaust is dangerous during dryer operation. Allow dryer to cool after use before performing maintenance.

WARNING

Fuel is toxic and flammable. Spilled fuel is a fire hazard and eye irritant. Wipe up spilled fuel to avoid injury and fire.

Equipment Condition:

TM 10-3510-209-10, Tarp assembly removed.
Dryer cooled down after use.

SERVICE

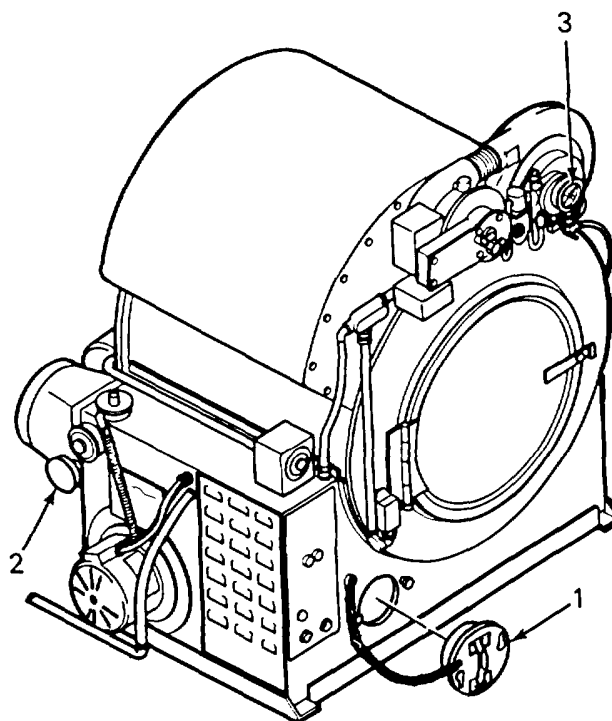
WARNING

High temperature exhaust is dangerous during dryer operation. Allow dryer to cool after use before performing maintenance.

1. Clean lint from dryer.
 - a. Remove lint door (1).
 - b. Remove accumulation of lint from inside unit.
 - c. Install lint door (1).
 - d. Wipe the outside surface of unit with a damp cloth.
2. Replace fuel filter cartridge. (Refer to paragraph 2-46.)

TEST

1. Test operate tumbler dryer. (Refer to TM 10-3510-209-10 for operation.)
2. Operate dryer; and after 5 minutes of operation, check temperature gage (2) for an indication of between 130 and 250°F (54 and 121°C).
3. Check fuel pressure gage (3) for an indication of approximately 100 psi (690 kPa).



2-41. DRYER ASSEMBLY (CONT)**TEST (Cont)**

4. Shut down dryer after use.

ADJUSTMENT

1. Adjust door interlock safety switch.

NOTE

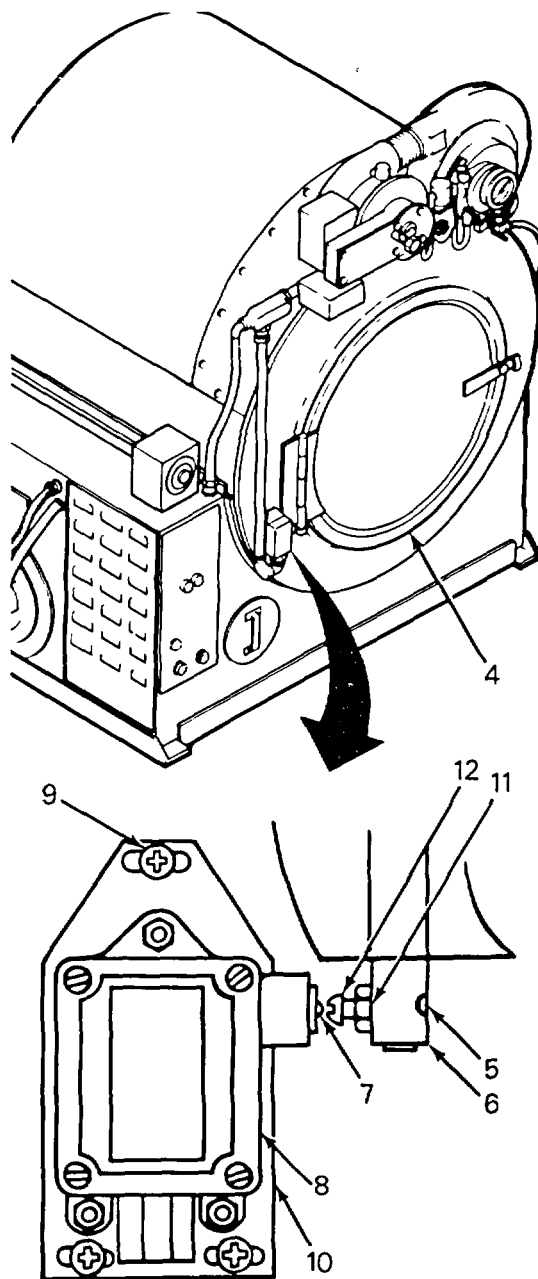
The door interlock safety switch is adjusted so that when the door is closed and secured, the cam on the door hinge presses the button on the switch. When the door is opened, the button should be released.

- a. Close and secure dryer door (4).
- b. Loosen setscrew (5) on safety switch cam (6).

CAUTION

Do not force the cam into position with the safety switch.

- c. Turn switch cam (6) until it is directly centered on or directly in front of button (7) on safety switch (8).
- d. If switch cam (6) cannot be centered on button (7), perform step f; then repeat step c.
- e. Tighten setscrew (5).
- f. Loosen three screws (9) on door switch mounting plate (10).
- g. Position the switch (8) so that switch cam (6) presses button (7). If the switch cannot be positioned so that the cam presses the button, perform steps h and i.

**CAUTION**

Extending the cam unnecessarily can damage the safety switch.

- h. Loosen locknut (11) and adjust cam bolt (12) until safety switch button (7) is pressed.
- i. Tighten locknut (11) and secure cam bolt (12) in position.
- j. Tighten three screws (9) on door switch mounting plate (10).

2-41. DRYER ASSEMBLY (CONT)

ADJUSTMENT (Cont)

2. Adjust drive chain tension.

WARNING

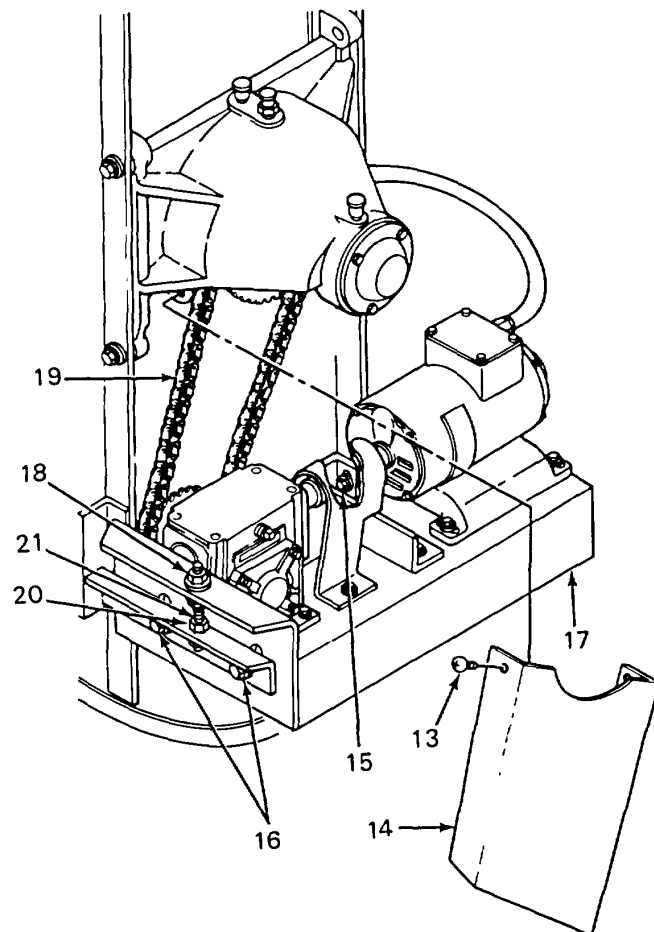
Disconnect electrical power from the dryer before adjusting the drive chain tension. Personal injury could result from exposed mechanical parts if dryer is accidentally turned on.

- a. Disconnect electrical power from the dryer.
- b. Remove three screws (13) and drive chain guard (14).
- c. Loosen two securing nuts (15) and securing nuts (16) on adjusting platform (17).

NOTE

The adjusting platform should be fully lowered so that the slack is removed from the drive chain.

- d. Loosen two tension nuts (18) and release tension on drive chain (19). Adjust two locknuts (20) toward the center of threaded rod (21) until adjusting platform (17) is fully lowered.



CAUTION

Use care not to overtighten chain. A small amount of slack is necessary to prevent excessive wear.

- e. Tighten two tension nuts (18) so that slack is removed from drive chain (19).
- f. Tighten two locknuts (20) in place to secure tension nuts (18).
- g. Tighten two securing nuts (16) and securing nuts (15).
- h. Install drive chain guard (14) and secure with three screws (13).

2-41. DRYER ASSEMBLY (CONT)

ADJUSTMENT (Cont)

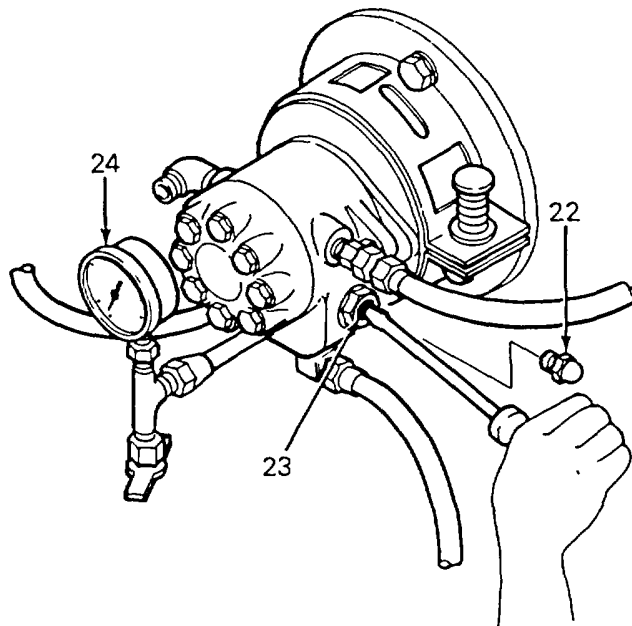
3. Adjust fuel pump pressure.

NOTE

Power must be applied to the dryer, and the dryer and fuel pump must be operating, before the fuel pump pressure can be adjusted.

- a. Remove end cap (22) from adjusting screw (23).
- b. Turn adjusting screw (23) until pressure gauge (24) indicates approximately 100 psi (690 kPa).
- c. Install end cap (22) on adjusting screw (23).
- d. Shut down dryer (Refer to TM 10-3510-209-10).

4. Adjust burner electrodes and nozzle.

**WARNING**

Allow burner area to cool before any maintenance actions are performed on the burner assembly. Personal injury could result if burner is hot.

WARNING

Fuel is toxic and flammable. Close fuel shutoff valve before performing any maintenance actions on the burner assembly.

- a. Close dryer fuel shutoff valve by turning handle in a clockwise direction.

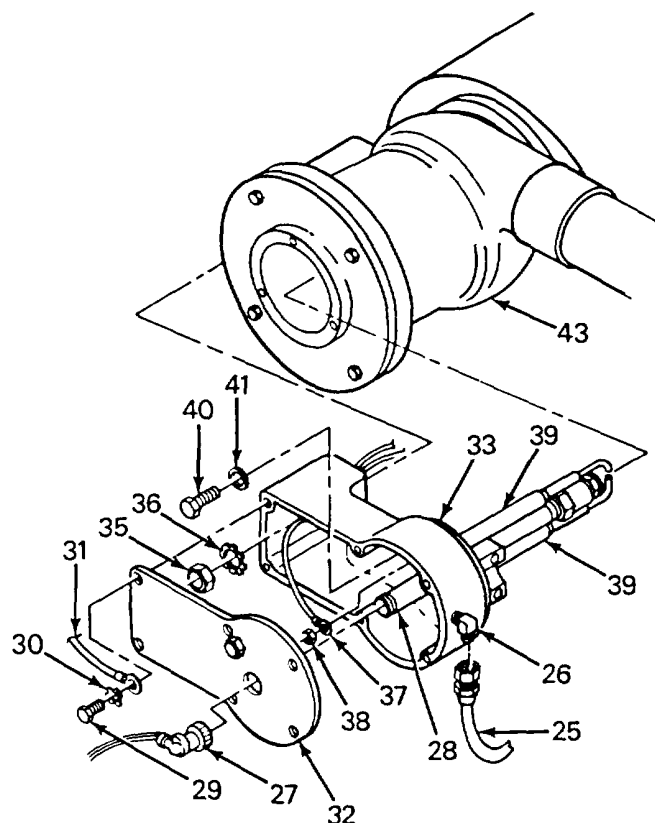
2-41. DRYER ASSEMBLY (CONT)**ADJUSTMENT (Cont)**

- b. Remove fuel line (25) from nipple (26).

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

- c. Disconnect electrical power from the dryer.
- d. Disconnect cable (27) from UV scanner (28).
- e. Remove six screws (29), washers (30), and ground strap (31) from burner cover (32).
- f. Remove burner cover (32), with sight glass attached, from burner base (33).
- g. Remove two wire protectors (35) and conduit nuts (36).



- h. Tag two electrical wires (37) and pull from transformer end. Remove nuts (38) from the base of electrodes (39) and remove electrical wires.

CAUTION

Use care when removing burner base (33) from plenum (43) so that the porcelain base and metal tips of the electrodes are not damaged.

- i. Remove three screws (40), washers (41), and burner base (33) from plenum (43).
- j. Check the electrode gap setting of the two electrodes and fuel nozzle as shown in figure.
- k. Adjust the electrodes and fuel nozzle setting, if required.

- (1) Loosen two setscrews (44) at the base of each electrode (45).

CAUTION

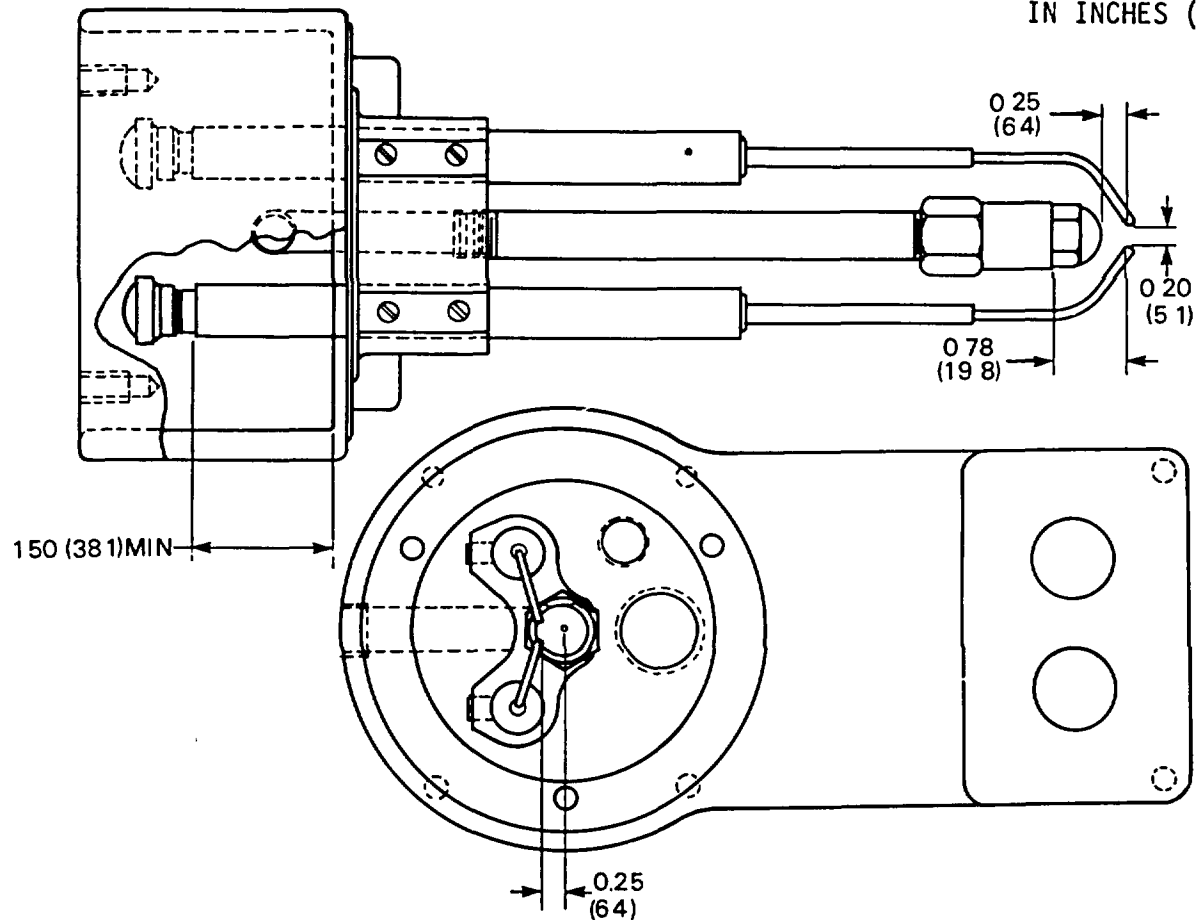
The electrodes are fragile. Avoid damage to the porcelain base of metal tips.

- (2) Adjust the position of electrodes (45) as shown in figure.

2-41. DRYER ASSEMBLY (CONT)

ADJUSTMENT (Cont)

NOTE:

DIMENSIONS ARE
IN INCHES (MM).

(3) Tighten two setscrews (44) at the base of each electrode (45).

- l. Install burner base (33) in plenum (43) and secure with three screws (40) and washers (41). Install two conduit nuts (36) and wire protectors (35).
- m. Connect two electrical wires (37) with nuts (38). Push transformer end of wires into position. Remove tags.
- n. Install burner cover (32) and ground strap (31) on burner base (33), and secure with six screws (29) and washers (30). Install cable (27) on UV scanner (28). Install fuel line (25) on nipple (26).
- o. Open the fuel shutoff valve.

2-41. DRYER ASSEMBLY (CONT)**REPAIR****NOTE**

Refer to paragraphs 2-42 thru 2-49 for repair of individual dryer components.

- I. Repair door interlock safety switch.

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

NOTE

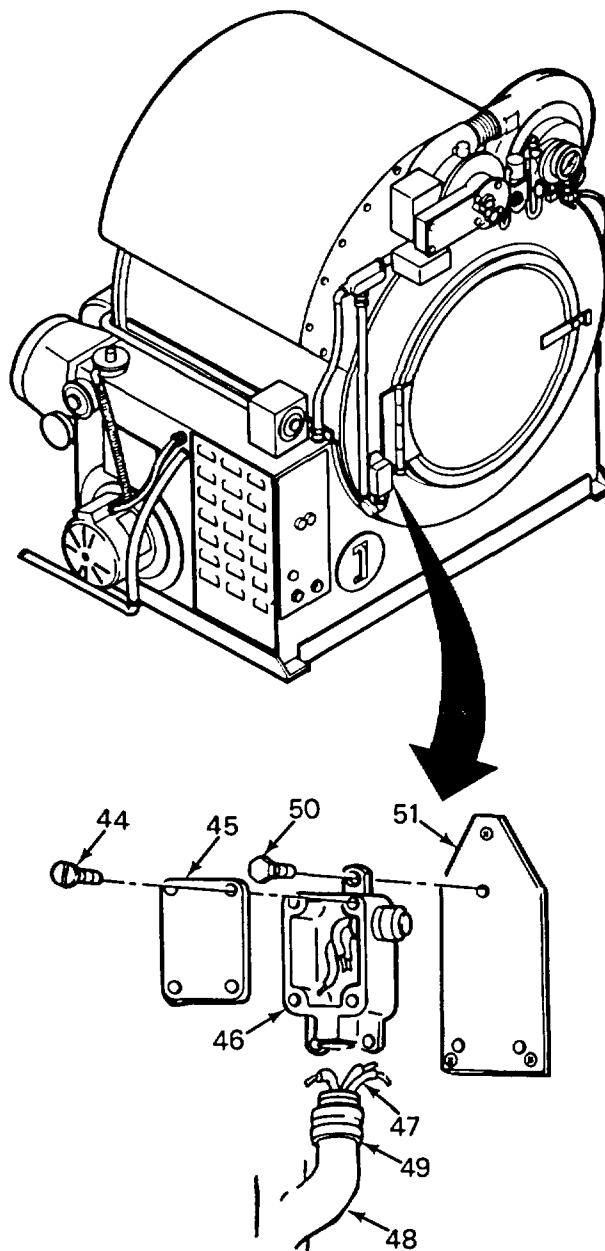
Repair door interlock safety switch by replacing switch with a new one.

- a. Remove electrical power from the dryer.
- b. Remove four screws (44) and remove cover (45) from safety switch (46).

NOTE

Record wire removal so that installation of wires on the replacement switch is exactly duplicated.

- c. Tag and disconnect electrical wires (47) from safety switch (46).
- d. Remove nut (48) and conduit connector (49) from safety switch (46).
- e. Remove three bolts (50) and safety switch (46) from mounting plate (51).
- f. Remove four screws (44) and remove cover (45) from new safety switch (46).
- g. Install wires (47) and conduit connector (48) into housing of safety switch (46).
- j. Secure safety switch (46) to mounting plate (51) with three bolts (50).
- i. Connect electrical wires (47) to safety switch (46) and remove tags.



2-41. DRYER ASSEMBLY (CONT)**REPAIR (Cont)**

- j. Install cover (45) on safety switch (46) and secure with four screws (44).
- k. Adjust safety switch (46). Refer to ADJUSTMENT paragraph for adjustment.

2. Replace thermometer.

WARNING

Serious burns can be caused by handling hot items. The thermometer probe extends into the lint exhaust duct and may be hot.

NOTE

Repair of the thermometer consists of removal and replacement.

- a. Loosen locknut (52) and remove thermometer (53) from exhaust duct (54).

CAUTION

The probe on the gage can be damaged during installation. Use care not to overtighten locknut.

- b. Install thermometer (53) into exhaust duct (54) and secure with locknut (52).

3. Repair fuel solenoid.

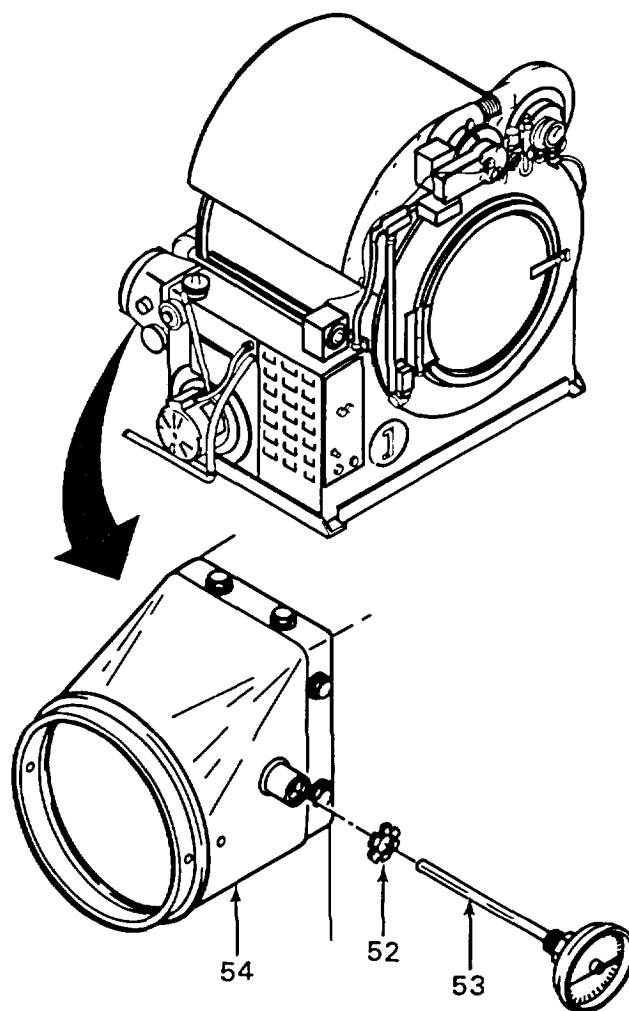
WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

NOTE

Repair of fuel solenoid consists of removing the old solenoid and replacing it with a new one.

- a. Disconnect electrical power from the dryer.



2-41. DRYER ASSEMBLY (CONT)

REPAIR (Cont)

WARNING

Fuel is toxic and flammable. Pressurized fuel is released when valve is opened. Personal injury can result if adequate precautions are not taken. Wear protective eyewear and keep open flame and sparks away.

- b. Close fuel shutoff valve (55).
- c. Open fuel drain valve (56) on fuel pump (57) and relieve pressure. Close the valve.
- d. Disconnect two fuel lines (58) from nipples (59).
- e. Loosen two screws (60) and remove cover (61) from junction box (62).

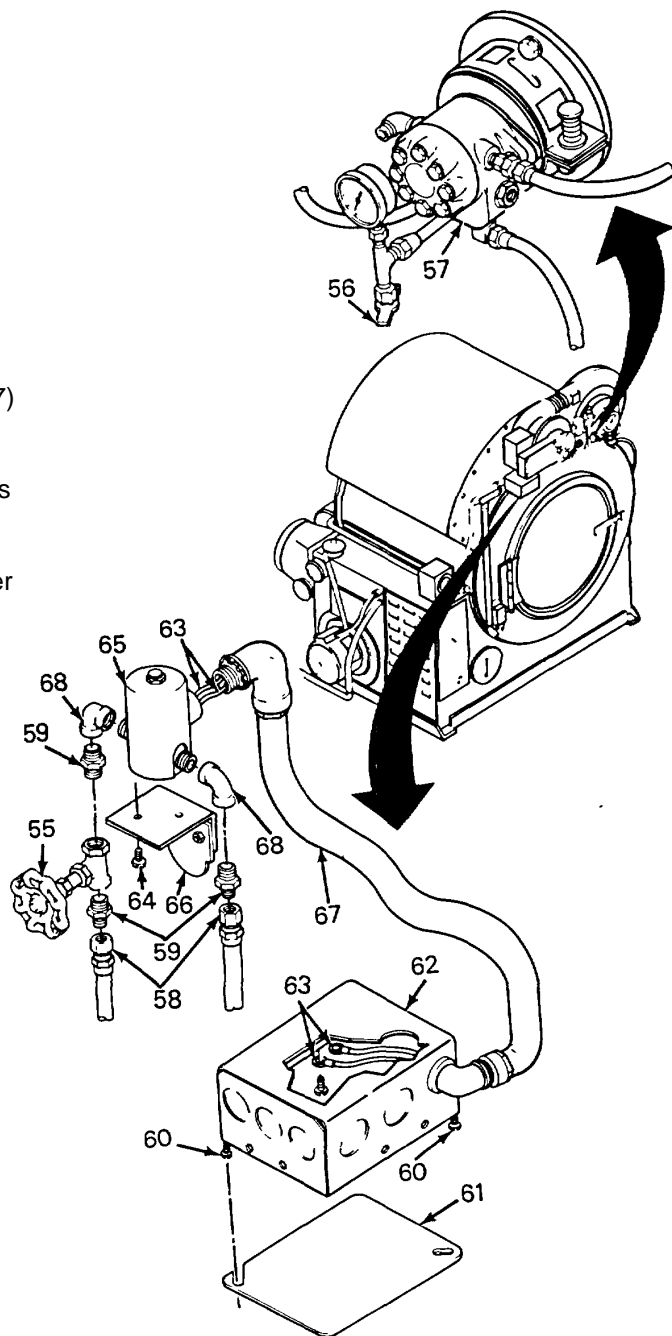
NOTE

Record wire removal so that installation of wires on the replacement solenoid is exactly duplicated.

NOTE

The solenoid is solid state. The wires are already installed.

- f. Tag and disconnect two wires (63) coming from junction box (62).
- g. Remove two mounting screws (64).
- h. Remove solenoid (65), with attached parts, and conduit (67) from bracket (66).
- i. Remove two elbows (68), with attached parts, from solenoid (65).
- j. Remove conduit (67) from new solenoid (65) and wires (63).
- k. Install two elbows (68), with attached parts, on solenoid (65).



2-41. DRYER ASSEMBLY (CONT)**REPAIR (Cont)**

- l. Pull wires (63) through conduit (67) and install conduit in solenoid (65).
 - m. Install solenoid (65) on bracket (66) and secure with two mounting screws (64).
 - n. Connect wires (63) to terminals in junction box (62).
 - o. Install cover (61) on junction box (62) and tighten with two screws (60).
 - p. Connect two fuel lines (58) to nipples (59).
 - q. Open fuel shutoff valve (55).
4. Repair dryer door assembly.

NOTE

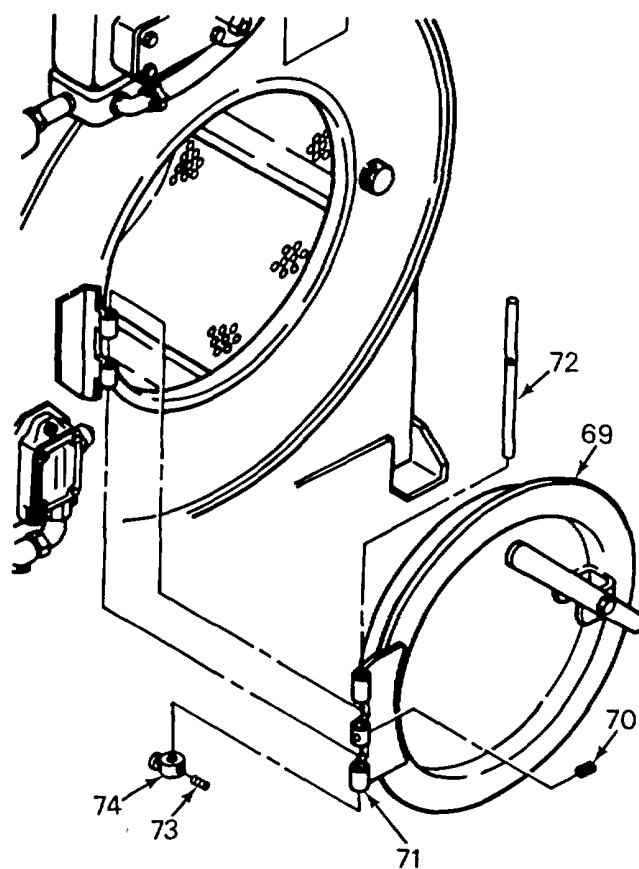
Repair door assembly by replacing the unserviceable door with a new one.

- a. Open dryer door (69).
- b. Remove pin (70) from center of door hinge (71).

CAUTION

Support the door while removing the hinge rod.

- c. Drive hinge rod (72) down through door hinge (71).
- d. If hinge rod (72) is being replaced, loosen setscrew (73) and remove door switch cam (74) from the bottom of the hinge rod and install it on the new hinge rod.
- e. Position new dryer door (69) on the dryer, align door hinge (71), and drive hinge rod (72) into the hinge from the bottom.



2-41. DRYER ASSEMBLY (CONT)**REPAIR (Cont)**

- f. Install pin (70) into center of door hinge (71).
5. Repair thermostatic high temperature switch.

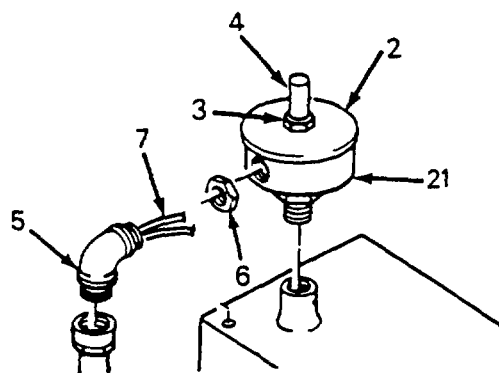
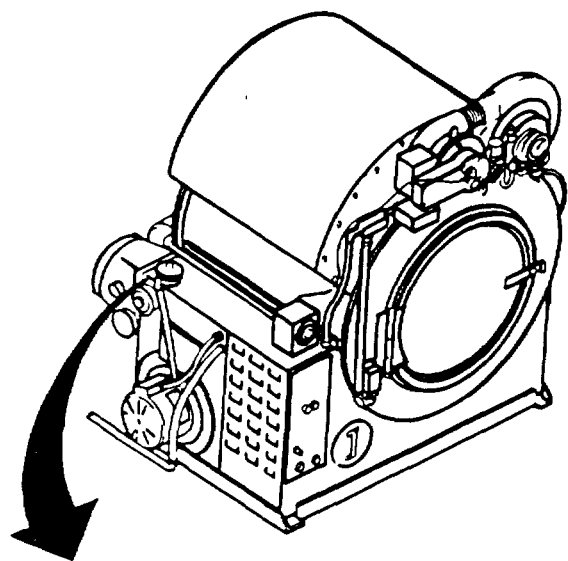
WARNING

High voltage is present on this equipment. Do not perform maintenance on thermostatic high temperature switch with power on. Death or serious injury may result.

NOTE

Repair thermostatic high temperature switch by replacing the unserviceable switch with a new one.

- a. Disconnect electrical power from the dryer.
- b. Inspect thermostatic high temperature switch (21) for damage and loose connections.
- c. Remove sleeve (4), washer (3) and cover (2) from the thermostatic high temperature switch (21).
- d. Tag and remove two wires (7) from the thermostatic high temperature switch (21).
- e. Remove the lock nut (6) and the conduit (5) from the thermostatic high temperature switch (21).
- f. Remove the thermostatic high temperature switch (21) from the dryer by turning it counterclockwise.
- g. Install the new thermostatic high temperature switch (21) by turning the switch clockwise into the dryer.
- h. Install the conduit (5) and the lock nut (6) onto the thermostatic high temperature switch (21).
- i. Connect two wires (7) to the thermostatic high temperature switch (21).
- j. Replace the cover (2), washer (3) and the sleeve (4) to the thermostatic high temperature switch (21).

**NOTE****FOLLOW-ON MAINTENANCE:**

Install tarp assembly (TM 10-3510-209-10).

2-42. DRYER BURNER ASSEMBLY

This task covers:

- a. Removal b. Inspection c. Service d. Repair e. Installation
-

INITIAL SETUPTools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Burner assembly
Identification tags
(Item 12, App C)

General Safety Instructions**WARNING**

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

WARNING

Allow burner area to cool before any maintenance actions are performed on the burner assembly. Failure to do so can result in serious burns.

WARNING

Fuel is toxic and flammable. Spilled fuel is a fire hazard and eye irritant. Wipe up spilled fuel to avoid injury and fire.

Equipment Condition

Dryer cooled down after operation.
TM 10-3510-209-10, Tarp assembly removed.

REMOVAL**WARNING**

Fuel is toxic and flammable. Close fuel shutoff valve before performing any maintenance on the burner assembly.

1. Close fuel shutoff valve.

WARNING

Remove electrical power from the dryer before any maintenance actions are performed on the burner assembly.

2. Disconnect electrical power to the dryer.

2-42. DRYER BURNER ASSEMBLY (CONT)**REMOVAL (Cont)****WARNING**

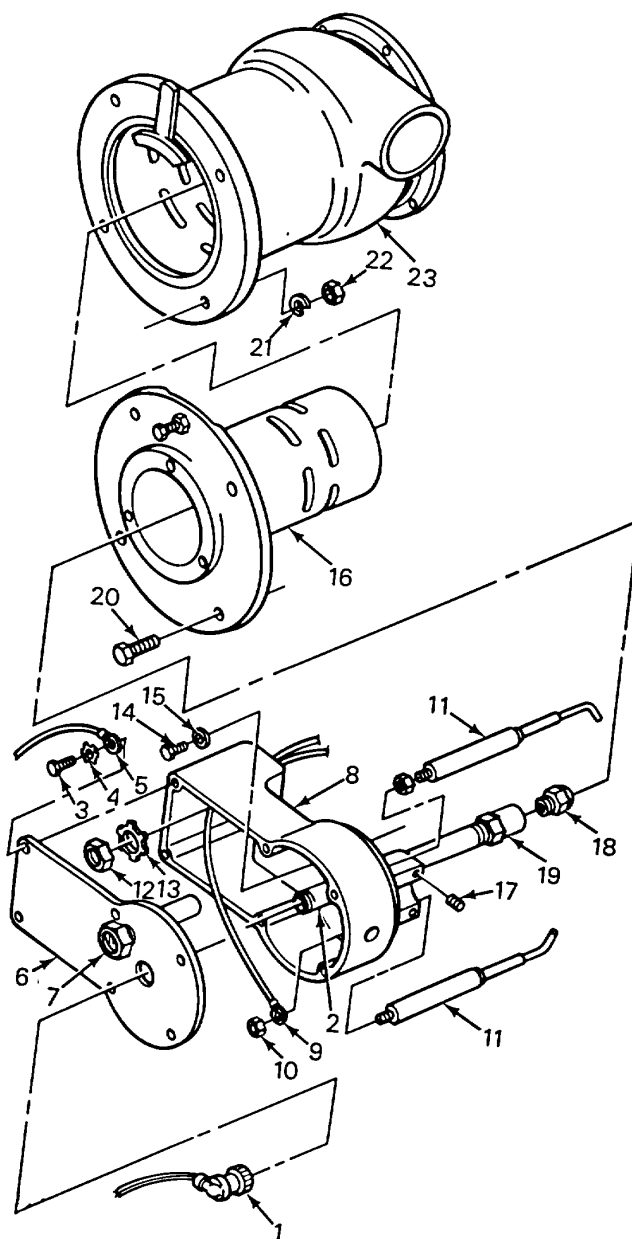
Allow burner area to cool before any maintenance actions are performed on the burner assembly.

3. Remove UV scanner cable (1) from UV scanner (2).
4. Remove six screws (3), washers (4), and grounding strap (5) from burner cover (6).
5. Remove burner cover (6), with sight glass (7) attached, from burner base (8).
6. Remove two nuts (10) and electrical wires (9) from base of electrodes (11).

CAUTION

Remove the burner base from the plenum carefully so that the porcelain base and metal tips of the electrodes are not damaged.

7. Remove two wire protectors (12) and conduit nuts (13).
8. Remove three screws (14), washers (15), and burner base (8) from plenum (16).
9. Loosen two setscrews (17) at the base of each electrode (11).
10. Remove two electrodes (11) from the burner base (8).
11. Remove fuel nozzle (18) from adapter (19).



2-42. DRYER BURNER ASSEMBLY (CONT)

REMOVAL (Cont)

12. Remove four bolts (20), lockwashers (21), and nuts (22) from plenum (16).
13. Remove plenum (16) from housing (23).

INSPECTION

1. Inspect burner electrodes, base, nozzle, shutter housing, and plenum for deposits of carbon and soot.
2. Inspect for broken, cracked, bent, and missing components.

SERVICE

1. Use wire brush and carefully remove carbon and soot from burner base, nozzle, electrodes, shutter housing, and plenum.

WARNING

Compressed air used for cleaning purposes will not exceed 30 psi (207 kPa). Use only with effective chip-guarding and personal protective equipment (goggles, shield, gloves, etc.).

2. Use compressed air and clean remainder of soot and carbon from components.

REPAIR

1. Repair burner assembly by cleaning, adjusting, or replacing the defective component. Remove and replace only those items necessary to make repair.
2. Repair transformer.

WARNING

High voltage is present on this equipment. Do not perform maintenance on transformer with power on. Death or serious injury may result.

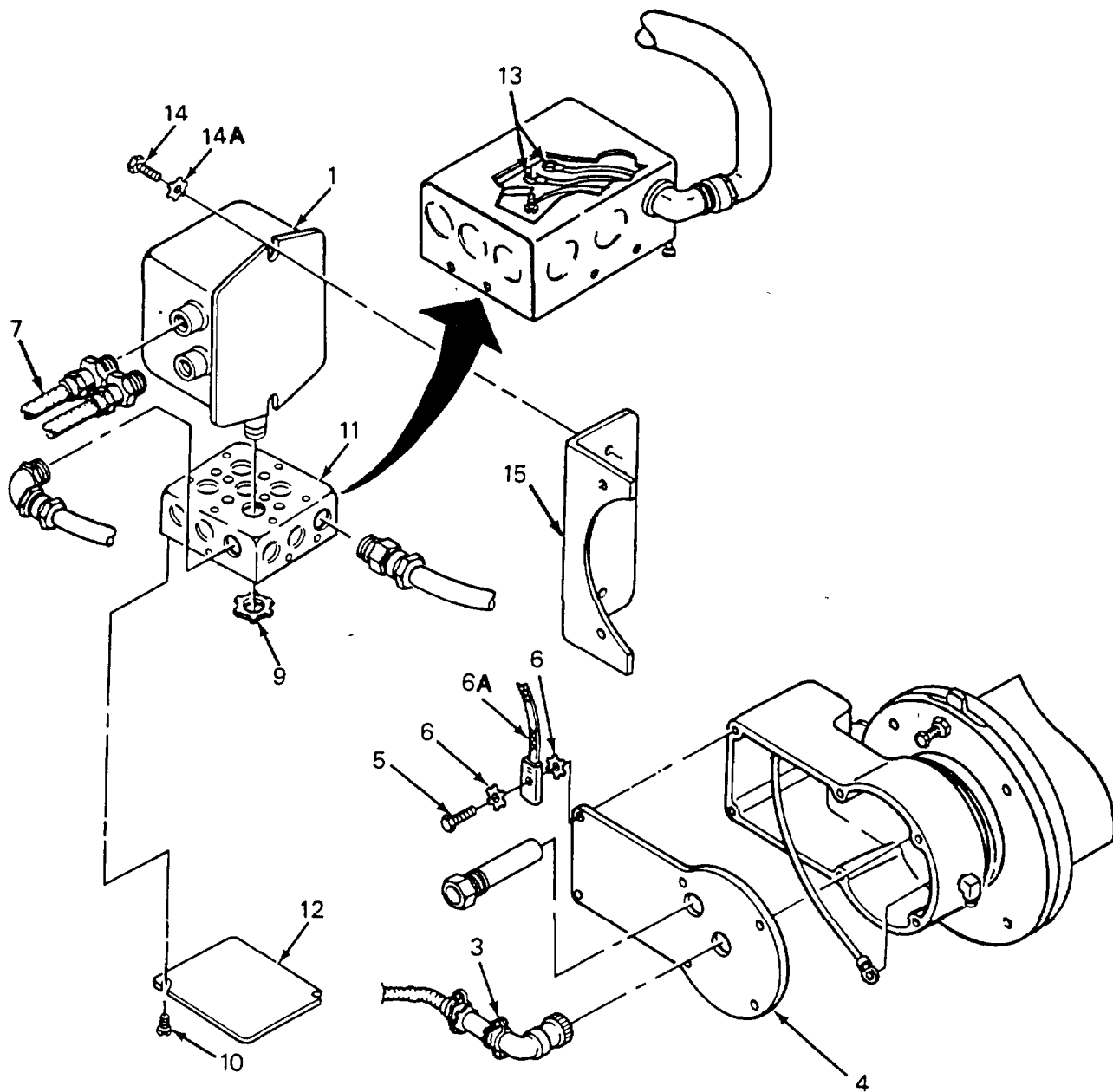
WARNING

Allow burner area to cool before any maintenance actions are performed on the burner assembly. Failure to do so can result in serious burns.

NOTE

Repair transformer by replacing the unserviceable transformer with a new one.

2-42. DRYER BURNER ASSEMBLY (CONT)



2-42. DRYER BURNER ASSEMBLY (CONT)

REPAIR (Cont)

- a. Disconnect electrical power from the dryer.
- b. Remove the scanner (3) from the burner cover (4).

NOTE

The scanner is a sensitive device and should be handled with care.

- c. Remove the six bolts (5), lockwashers (6) and bonding strap (6A) from the burner cover (4). Remove the cover (4).
- d. Remove two high voltage leads (7) by pulling out of the transformer (1).
- e. Remove the two screws (10) from the connector box cover (12) and remove cover.
- f. Remove the two conduit nuts (9) and remove the connector box (11).
- g. Tag the wires (13) and disconnect the leads to the transformer (1).
- h. Remove the two bolts (14) and lockwashers (1 4A) attaching the transformer (1) to the transformer bracket (15). Remove the transformer (1).
- i. Install the new transformer (1) and the two bolts (14) and lock washers (14A) to the transformer bracket (15).
- j. Connect the transformer leads (13) to their connections in the connector box (11) and remove tags.
- k. Install the two conduit nuts (9) inside the connector box (11).
- l. Install the cover (12) and the two screws (10) to the connector box (11).
- m. Replace the two high voltage leads (7) to the transformer (1).
- n. Install burner cover (4) and bonding strap (6A) using six bolts (5) and lockwashers (6).

INSTALLATION

1. Install plenum (16) into housing (23).
2. Install four bolts (20), lockwashers (21), and nuts (22).
3. Install new fuel nozzle (18) onto adapter (19).
4. Install two new electrodes (11) into base (8).
5. Tighten two setscrews (17) at the base of each electrode (11).

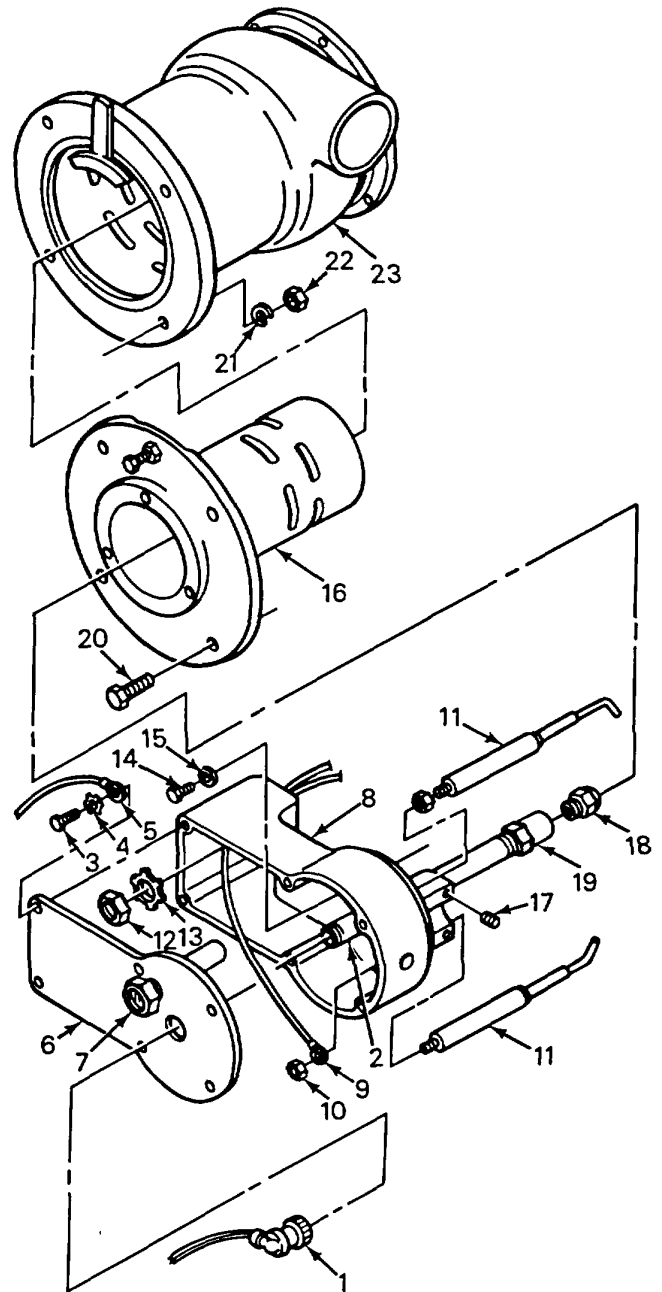
2-42. DRYER BURNER ASSEMBLY (CONT)

6. Adjust the burner electrode and fuel nozzle setting. Refer to ADJUSTMENT, paragraph 2-41.
7. Install burner base (8) in plenum (16) and secure with three screws (14) and washers (15).
8. Install two conduit nuts (13) and two wire protectors (12).
9. Connect electrical wires (9) to base of electrode (11) and secure with two nuts (10).
10. Install burner cover (6), with sight glass (7) attached, on burner base (8) and secure with five screws (3) and washers (4).
11. Position grounding strap (5) to burner cover (6) and secure with screw (3) and washer (4).
12. Install UV scanner cable (1) on UV scanner (2). Open the fuel shutoff valve.

NOTE

FOLLOW-ON MAINTENANCE:

Install tarp assembly (TM 10-3510209-10).



2-43. DRYER ELECTRIC CONTROL ASSEMBLY (CONT)

SERVICE

1. Open control box access panel (1).

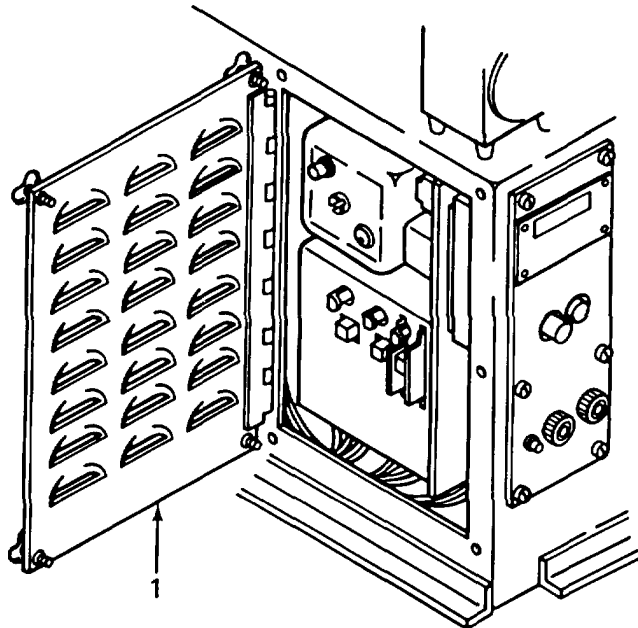
WARNING

Compressed air used for cleaning purposes will not exceed 30 psi (207 kPa). Use only with effective chip-guarding and personal-protective equipment (goggles, shield, gloves, etc).

2. Clean electrical components with compressed air.
3. Close control box door (1).

NOTE**FOLLOW-ON MAINTENANCE:**

Install tarp assembly (TM 10-3510-209-10).



2-44. DRYER COMBUSTION BLOWER AND MOTOR ASSEMBLY

This task covers:

- a. Inspection b. Removal c. Repair c. Installation
-

Initial Setup:Tools

General mechanic's tool set,
SC 5180-90

General Safety Instructions**WARNING**Personnel Required

MOS 63J (1)

**High voltage is present on this equipment.
Do not perform maintenance with power on.
Death or serious injury may result.**

Materials/Parts

Blower assembly
Identification tags
(Item 12, App C)

Equipment Condition:

TM 10-3510-209-10, Tarp assembly removed.

INSPECTION**WARNING**

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Inspect blower and motor assembly for proper operation and look for damage.

REMOVAL

1. Disconnect electrical power from the dryer.
2. Loosen two screws (1) and remove electrical cover (2) from the back of motor (3).

NOTE

Record wire removal so that installation of wires on the replacement motor is exactly duplicated.

3. Tag and disconnect electrical wires from terminals and connectors.
4. Remove conduit (4) with wires and conduit connector from motor (3).

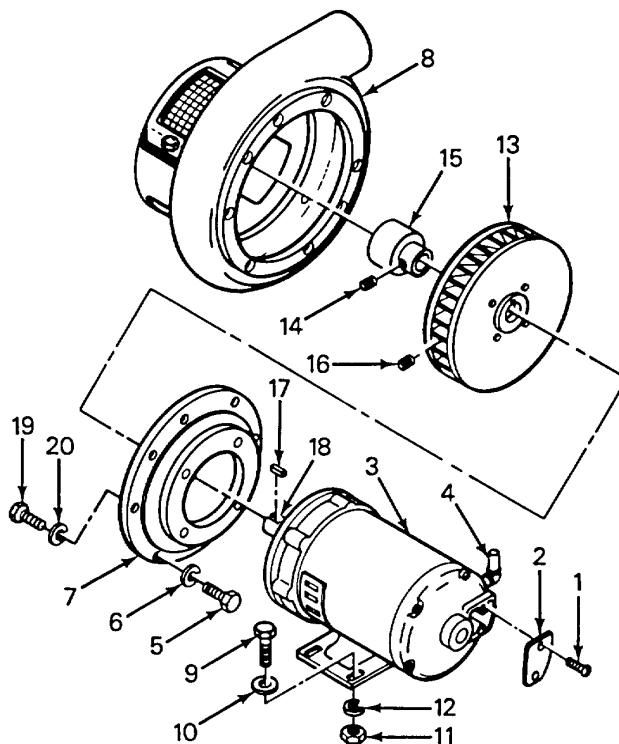
2-44. DRYER COMBUSTION BLOWER AND MOTOR ASSEMBLY (CONT)**REMOVAL (Cont)**

5. Remove eight bolts (5), lockwashers (6) and motor plate (7) from blower housing (8).
6. Remove four bolts (9), washers (10), nuts (11), lockwashers (12), and motor (3) from the dryer.

NOTE

Support the blower housing and fuel pump while the motor is removed.

7. Remove motor (3), motor plate (7), and impeller (13) from blower housing (8).
8. Loosen setscrew (14) and remove coupling (15) from the impeller shaft.
9. Loosen setscrew (16) and remove impeller (13) from shaft of motor (3).
10. Remove key (17) from keyway (18) on shaft of motor (3).
11. Remove four bolts (19), lockwashers (20) and motor plate (7) from motor (3).

**REPAIR**

Repair the combustion blower and motor assembly by replacing damaged or defective components.

INSTALLATION

1. Position motor plate (7) on new motor (3) and secure with four lockwashers (20) and bolts (19).
2. Position key (17) in keyway (18) on the shaft of motor (3).
3. Align motor key (17) and impeller keyway and slide impeller (13) onto the shaft of motor (3).

2-44. DRYER COMBUSTION BLOWER AND MOTOR ASSEMBLY (CONT)

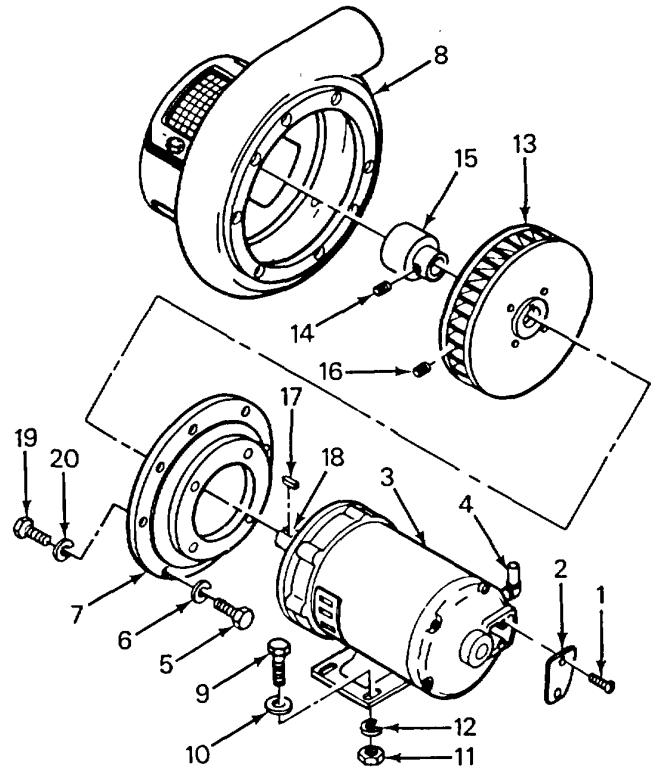
INSTALLATION (Cont)

4. Tighten setscrew (16) and secure impeller (13).
5. Align and install coupling (15) on the impeller shaft. Tighten setscrew (14).

NOTE

It may be necessary to turn the motor shaft by hand to align the coupling and the fuel pump shaft.

6. Align fuel pump coupling (15) with the fuel pump shaft in blower housing (8). Insert impeller motor plate (7) and motor (3) into housing.
7. Secure motor plate (7) with lockwashers (6) and bolts (5).
8. Loosen two screws (1) and remove electrical cover (2) from the back of motor (3).
9. Route the electrical wires into the motor and install conduit (4) on motor (3).
10. Connect the electrical wires to the terminals and connectors on the motor. Remove tags.
11. Install electrical cover (2) on the back of motor (3) and secure with two screws (1).
12. Check for proper direction of rotation.



NOTE

FOLLOW-ON MAINTENANCE:

Install tarp assembly (TM 10-3510-209-10).

2-45. DRYER FUEL PUMP ASSEMBLY

This task covers:

- | | | | |
|---------------|----------------|-------------|-----------------|
| a. Inspection | c. Disassembly | e. Service | g. Installation |
| b. Removal | d. Repair | f. Assembly | h. Adjustment |
-

Initial Setup:**Tools**

General mechanic's tool set
SC 5180-90
Pin wrench, 1-inch

Personnel Required

MOS 63J (1)

Materials/Parts

Drycleaning solvent
(Item 10, App C)

General Safety Instructions**WARNING**

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

WARNING

Fuel is toxic and flammable. Spilled fuel is a fire hazard and eye irritant. Wipe up spilled fuel to avoid injury and fire.

Equipment Condition:

TM 10-3510-209-10, Tarp assembly removed.

INSPECTION

Inspect fuel pump for leaks, damage, and unusual noise or vibration.

REMOVAL**WARNING**

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

1. Remove electrical power from the dryer.
2. Obtain two fuel line caps from the storage bin.

2-45. DRYER FUEL PUMP ASSEMBLY (CONT)

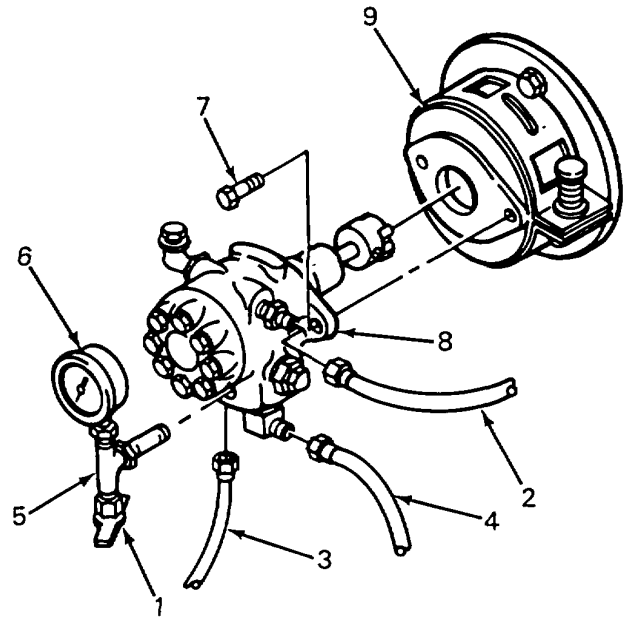
REMOVAL (Cont)

3. Open fuel drain valve (1) and relieve fuel pressure. Close the valve.

WARNING

Failure to cap disconnected fuel lines could result in fuel being siphoned onto the ground and equipment.

4. Remove input fuel line (2) from the fuel filter.
5. Remove output fuel line (3) and fuel return line (4). Install line cap in return line.
6. Remove tee (5) with pressure gage (6) and drain valve (1) attached.
7. Remove two bolts (7) and fuel pump (8) from air intake housing (9).

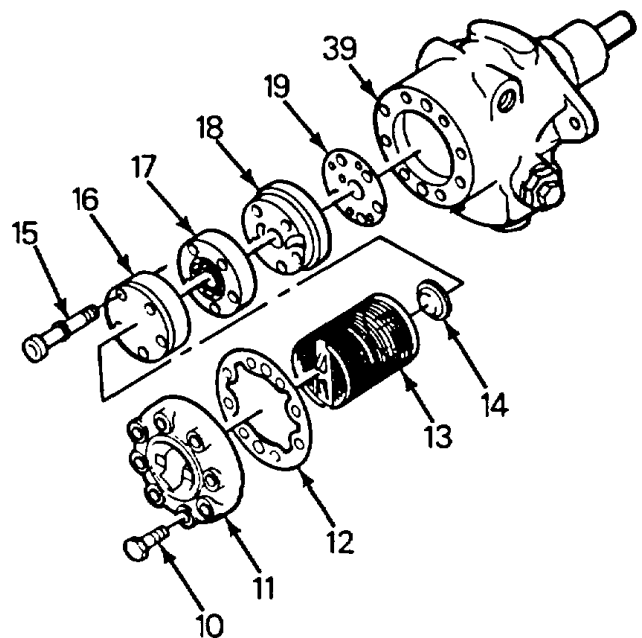


DISASSEMBLY

NOTE

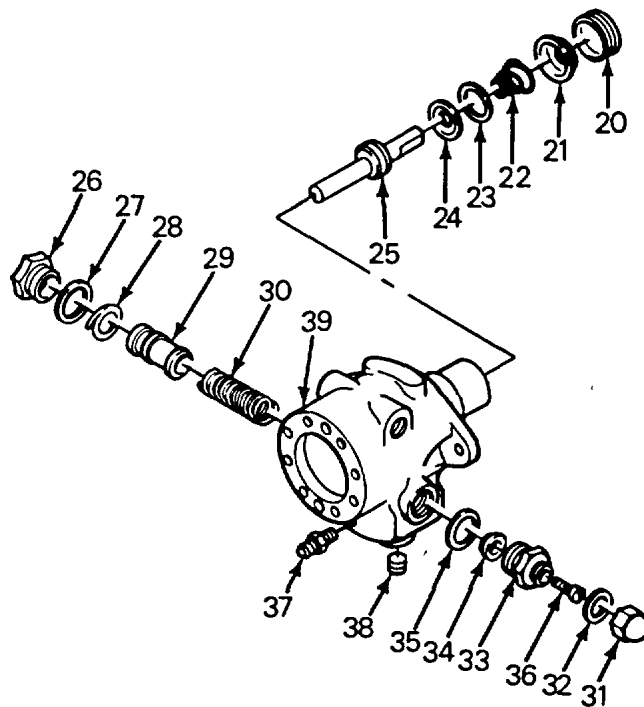
Early units of this laundry may come equipped with a single-stage pump (J3BA). For those units, refer to TM 10-3510-208-34 and TM 103510-208-34P for maintenance.

1. Remove eight capscrews (10), cover (11), and gasket (12).
2. Remove strainer (13) and anti-hum wafer (14).
3. Remove five screws (15), end plate assembly (16), spacer plate assembly (17), port housing (18) and gasket (19).



2-45. DRYER FUEL PUMP ASSEMBLY (CONT)**DISASSEMBLY (Cont)**

4. Remove seal cap (20), seal cup (21), seal spring (22), seal washer (23), and seal (24). Remove shaft assembly (25).
5. Remove end plug (26), gasket (27), sleeve retainer (28), sleeve (29), and spring (30) from fuel pump body (39).
6. Remove acorn nut (31), gasket (32), end plug assembly (33), gasket (34), and spring seat (35) from fuel pump body (39).
7. Remove pressure adjusting screw (36) from end plug assembly (33).
8. Remove bleed valve (37) and plug (38) from fuel pump body (39).

**REPAIR**

1. Inspect all parts for wear and damage.
2. Use replacement kit to replace parts that are damaged, defective, or excessively worn. If replacement of parts is not practical, replace pump.

SERVICE**WARNING**

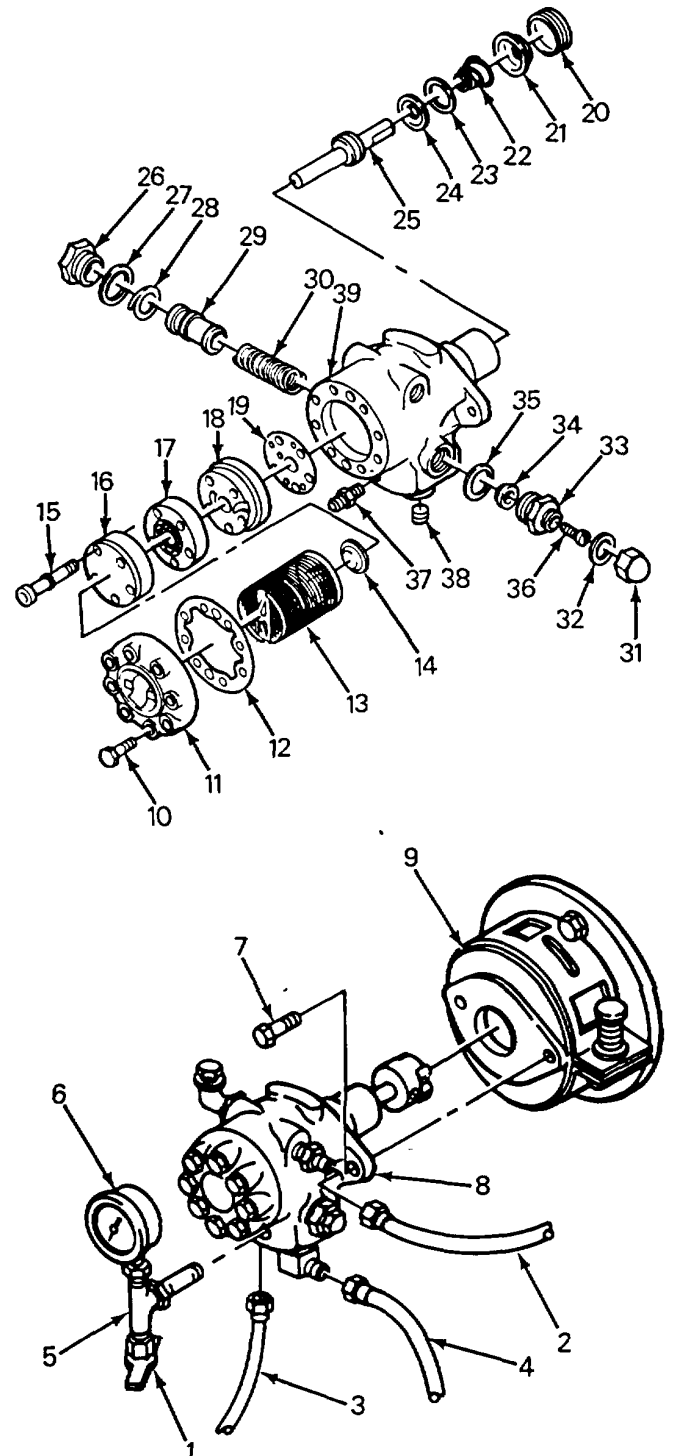
Drycleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point is 100 138°F (38 59°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

Clean strainer (13) with drycleaning solvent (Item 10, App C) and dry thoroughly.

2-45. DRYER FUEL PUMP ASSEMBLY (CONT)

ASSEMBLY

1. Install bleed valve (37) and plug (38) in fuel pump body (39).
2. Install pressure adjusting screw (36) in end plug assembly (33).
3. Install spring (30), sleeve (29), sleeve retainer (28), gasket (27), and end plug (26), or fuel pump body (39).
4. Install spring seat (35), gasket (34), end plug assembly (33), gasket (32), and acorn nut (31) on fuel pump body (39).
5. Install gasket (19) and port housing (18).
6. Install shaft assembly (25) and then install seal (24), seal washer (23), seal spring (22), seal cup (21), and seal cap (20).
7. Install spacer plate assembly (17) and end plate assembly (16) and secure with five screws (15).
8. Install strainer (13) and anti-hum wafer (14).
9. Install gasket (12) and cover (11) and secure with eight capscrews (10).



2-45. DRYER FUEL PUMP ASSEMBLY (CONT)

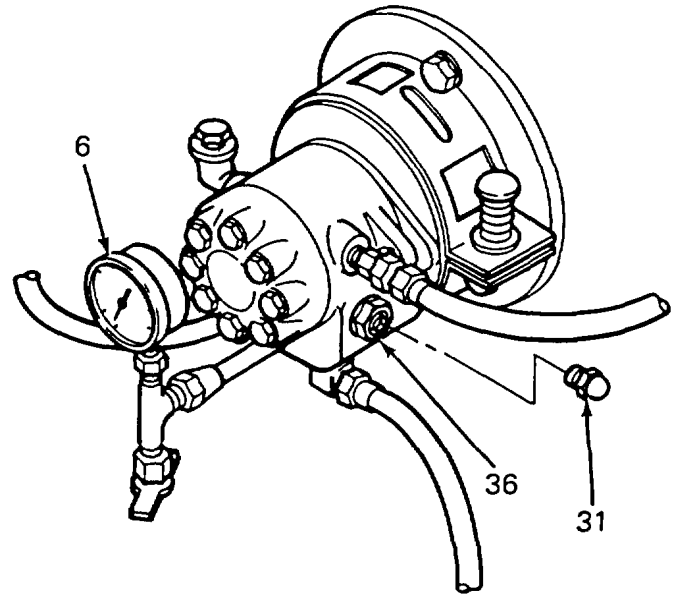
INSTALLATION

1. Install fuel pump (8) on air intake housing (9) and secure with two bolts (7).

NOTE

The fuel pump shaft must be aligned with the fuel pump impeller coupling before assembling the air intake and blower housings.

2. Install tee (5), with pressure gage (6) and drain valve (1) attached, on fuel pump (8).
3. Uncap and install input fuel line (2), output fuel line (3), and fuel return line (4).
4. Return the fuel line caps to the storage bins.
5. Close fuel drain valve (1).
6. Adjust fuel pump pressure.



ADJUSTMENT

NOTE

Power must be applied to the dryer, and the dryer and fuel pump must be operating before fuel pump pressure can be adjusted.

1. Remove acorn nut (31) from pressure adjusting screw (36).
2. Turn pressure adjusting screw (36) until pressure gage (6) indicates 120 ± 5 psi (827 ± 34 kPa).
3. Install acorn nut (31) on pressure adjusting screw (36).

NOTE

FOLLOW-ON MAINTENANCE:

Install tarp assembly (TM 10-3510-209-10).

2-46. DRYER FUEL FILTER ASSEMBLY

This task covers:

- a. Inspection b. Removal c. Repair d. Installation
-

Initial Setup:
Tools

General mechanics tool set
SC 5180-90

Personnel Required

MOS 63J (1)

General Safety Instructions
WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

WARNING

Fuel is toxic and flammable. Spilled fuel is a fire hazard and eye irritant. Wipe up spilled fuel to avoid injury and fire.

Materials/Parts

Filter assembly

Equipment Condition

TM 10-3510-209-10, Tarp assembly removed.

INSPECTION

Inspect fuel filter for leaks and damage.

REMOVAL
WARNING

High voltage is present in this equipment. Do not perform maintenance with power on. Death or serious injury may result.

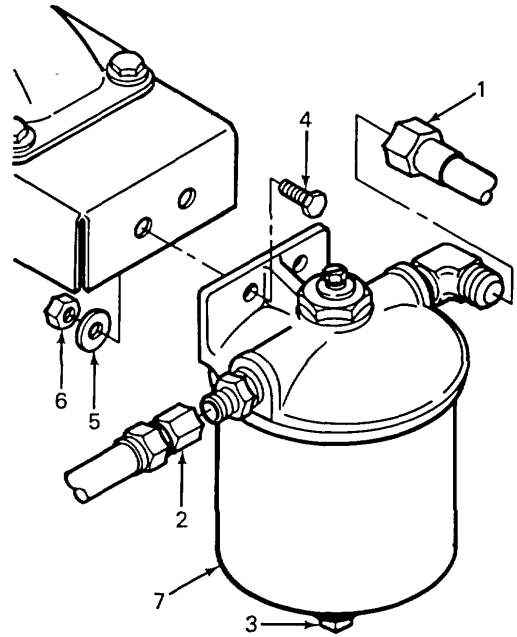
1. Remove electrical power from the dryer.
2. Obtain two fuel line caps from the storage bin.

2-46. DRYER FUEL FILTER ASSEMBLY (CONT)

REMOVAL (Cont)**WARNING**

Fuel is toxic and flammable. Failure to cap disconnected fuel lines could result in flammable fuel being siphoned onto the ground and equipment.

3. Disconnect input fuel line (1) and output fuel line (2) from fuel filter (7).
4. Install fuel line caps on input fuel line (1) and output fuel line (2).
4. Remove drain plug (3) and drain fuel into a fuel container.
6. Install drain plug (3).
7. Remove two bolts (4), washers (5), nuts (6), and fuel filter (7) from dryer.

**REPAIR**

1. Repair of fuel filter consists of replacing defective components. Remove and replace only those items necessary to make repair.
2. If replacement of individual parts is not practical, replace the fuel filter.

INSTALLATION

1. Install fuel filter (7) on the dryer and secure with two bolts (4), washers (5), and nuts (6).
2. Connect output fuel line (2) to the outlet of fuel filter (7).
3. Install input fuel line (1) to the inlet of fuel filter (7).
4. Return two fuel line caps to the storage bin.

CAUTION

Support the fuel bowl while loosening the servicing screw to prevent damage to the bowl.

5. Loosen the servicing screw until the fuel bowl can be removed.
6. Replace the fuel filter cartridge.
7. Place the fuel bowl on the fuel filter (7) and tighten the servicing screw.

NOTE

**FOLLOW-ON MAINTENANCE:
Install tarp assembly (TM 10-3510-209-10).**

2-47. DRYER UV SCANNER AND FLAME SAFEGUARD ASSEMBLY

This task covers:

- a. Inspection b. Test c. Removal d. Service e. Repair f. Installation
-

Initial Setup:
Tools

General Mechanics Tool Set
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Scanner parts as needed.
Identification tags
(Item 12, App C)
Wiping cloths (Item 3, App C)

General Safety Instructions
WARNING

**High voltage is present on this equipment.
Do not perform maintenance with power on.
Death or serious injury may result.**

Equipment Condition:

TM 10-3510-209-10, Tarp assembly removed.
TM 10-3510-209-10, Dryer bin removed.

INSPECTION

Inspect UV scanner and flame safeguard assembly for broken, missing, or damaged wires and connectors.

TEST
NOTE

The ultra violet scanner and flame safeguard assembly is a fail-safe item that protects against excessive fuel build-up when a flame-out or ignition failure problem exists. The fuel solenoid and pump is automatically shut down if the scanner doesn't see a flame after a maximum of 20 seconds during a regular start cycle. The blower will continue to run for 30 seconds to purge fumes from the combustion chamber.

1. Operate dryer for a warm-up period of 5 minutes.
2. Close fuel valve. Pump and solenoid should shut down approximately 20 seconds after the fuel valve is closed.

2-47. DRYER UV SCANNER AND FLAME SAFEGUARD ASSEMBLY (CONT)

REMOVAL

WARNING

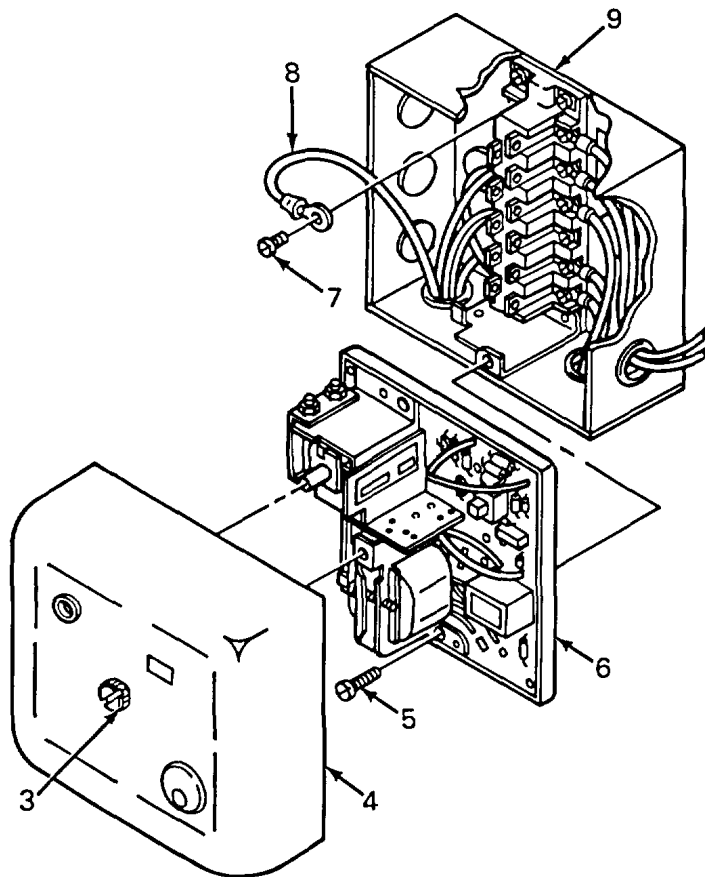
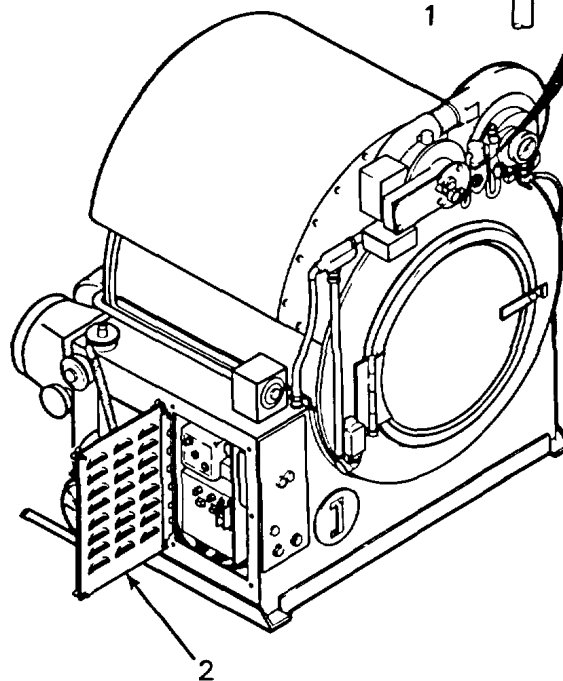
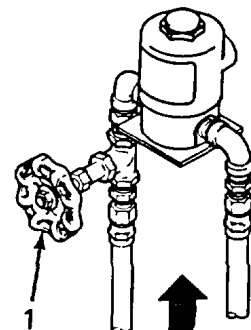
Fuel is toxic and flammable. Spilled fuel is a fire hazard and eye irritant.

1. Close fuel shutoff valve (1).

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

2. Remove electrical power from the dryer.

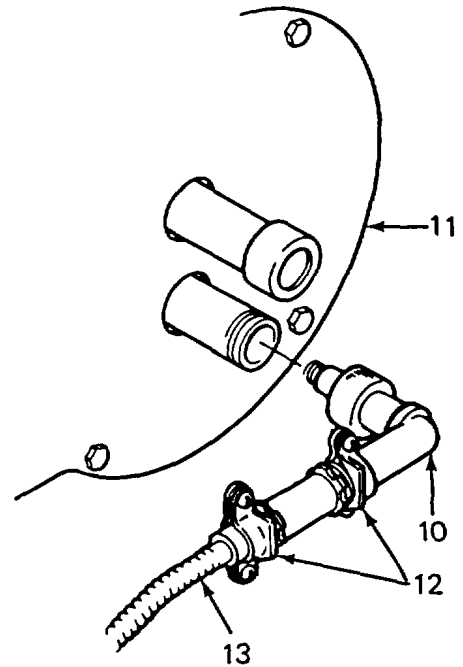


3. Remove cover (2) from the dryer electrical panel.
4. Loosen screw (3) and remove cover (4) from flame safeguard control chassis (6).
5. Loosen two screws (5) and remove flame safeguard control chassis (6) from base (9). Remove screws (7).
6. Tag and disconnect electrical wires (8) from terminal in base (9).

2-47. DRYER UV SCANNER AND FLAME SAFEGUARD ASSEMBLY (CONT)**REMOVAL (Cont)****WARNING**

Heated parts may cause injury to personnel if safety precautions are not followed. Allow burner area to cool before any maintenance actions are performed on the burner assembly.

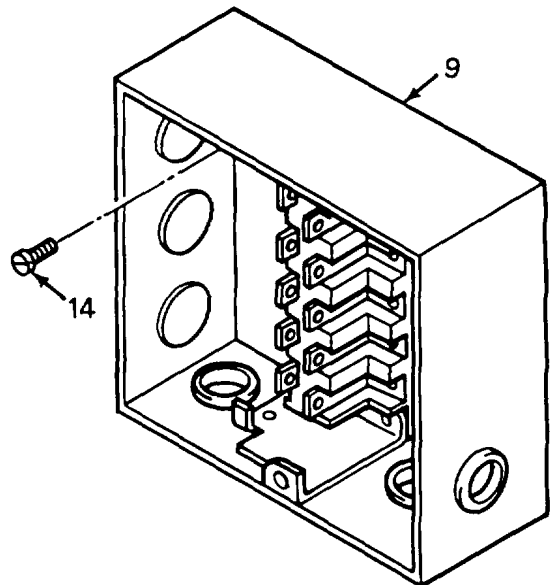
7. Remove UV scanner (10) from burner cover (11).
8. Loosen two clamps (12) and remove UV scanner (10) and attached wires from conduit connector (13).
9. Remove four mounting screws (14) and base (9) from the electrical panel.

**SERVICE**

1. Clean lens of UV scanner with a soft cloth (Item 3, App C) moistened with water. Dry lens with a dry, soft cloth.
2. Use a small brush to clean carbon deposits from the inside of scanner tube.

REPAIR

Repair of the UV scanner and flame safeguard assembly consists of replacing the defective components. Remove and replace only those items necessary to make repair. If replacement of individual parts is not practical, then replace the next higher assembly.

INSTALLATION**NOTE**

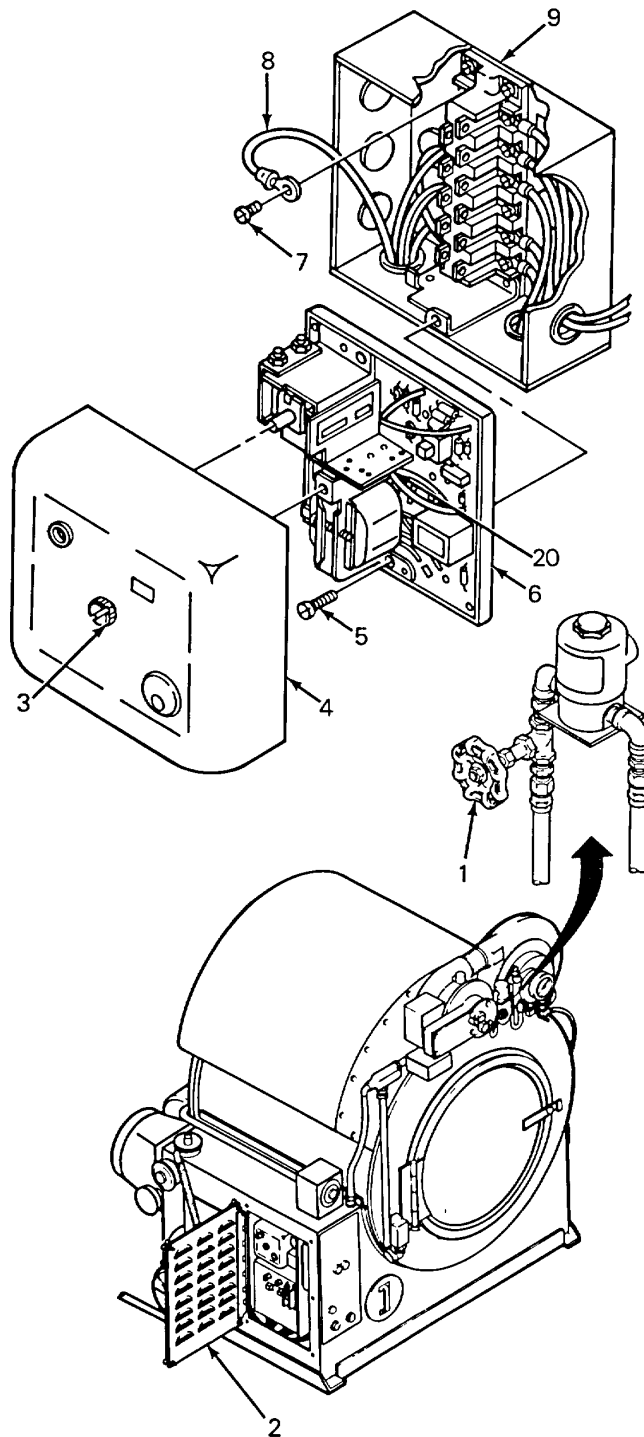
UV scanner wires are 72 inches (1.83 m) long and are routed through the entire length of the conduit to the flame safeguard control.

1. Install base (9) and secure with four mounting screws (14).

2-47. DRYER UV SCANNER AND FLAME SAFEGUARD ASSEMBLY (CONT)

INSTALLATION (Cont)

2. Route the wires of UV scanner (10) through the conduit to the electrical panel.
3. Install UV scanner (10) in conduit connector (13) and tighten two clamps (12).
4. Install UV scanner (10) on burner cover (11).
5. Connect electrical wires (8) to the terminals on the electrical panel and install screws (7). Remove tags.
6. Install purge timing card (20) on flame safeguard control chassis (6) if the card is packed separately.
7. Install flame safeguard control chassis (6) in base (9) and tighten two screws (5).
8. Install cover (4) on flame safeguard control chassis (6) and secure with screw (3) in center of cover (4).
9. Install cover (2) on the dryer electrical panel.
10. Open fuel shutoff valve (1).



NOTE

FOLLOW-ON MAINTENANCE:

- Install dryer bin (TM 10-2510-209-10).
- Install tarp assembly (TM 10-3510-209-10).

2-48. DRYER AIR SHUTTER ASSEMBLY

This task covers:

- a. Inspection b. Removal c. Repair d. Installation
-

Initial Setup:
Tools

General mechanic's tool set
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Air shutter assembly

General Safety Instructions
WARNING

**High voltage is present on this equipment.
Do not perform maintenance with power on.
Death or serious injury may result.**

Equipment Condition:

TM 10-3510-209-10, Tarp assembly removed.

INSPECTION

Inspect air shutter for binding, damage and unusual noise or vibration.

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

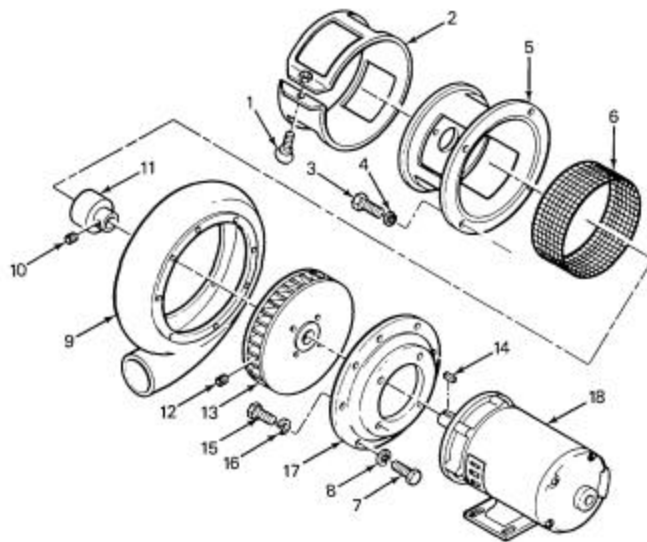
REMOVAL

1. Remove thumbscrew (1) and shutter (2) from air intake housing (5).
2. Remove four capscrews (3), lockwashers (4), and air intake housing (5) with filter screen (6) from blower housing (9).
3. Remove eight fan capscrews (7), lockwashers (8), and blower housing (9) from flange (17).
4. Loosen setscrew (10) and remove coupling (11) from shaft of motor (18).
5. Loosen setscrews (12) and remove blower impeller (13) from shaft of motor (18).
6. Remove key (14) from shaft of motor (18).
7. Remove four capscrews (15), lockwashers (16), and flange (17) from motor (18).

2-48. DRYER AIR SHUTTER ASSEMBLY (CONT)**REPAIR****NOTE**

A cracked housing or flange can be repaired by proper welding procedures.

1. Replace shutter (2) and/or blower impeller (13) if damaged.
2. Use a wire brush and remove accumulated matter from filter screen (6).
3. Replace missing or damaged hardware.

**INSTALLATION**

1. Install flange (17) on motor (18) and secure with four lockwashers (16) and capscrews (15).
2. Install key (14) on shaft of motor (18).
3. Install blower impeller (13) on shaft of motor (18) and tighten setscrews (12).
4. Install coupling (11) on shaft of motor (18) and tighten setscrew (10).
5. Position blower housing (9) on flange (17) and secure with eight lockwashers (8) and fan capscrews (7).
6. Install filter screen (6) and air intake housing (5) onto blower housing (9) and secure with four lockwashers (4) and capscrews (3).
7. Install shutter (2) on air intake housing (5) and secure with thumbscrew (1).

NOTE**FOLLOW-ON MAINTENANCE:**

Install tarp assembly (TM 10-2510-209-10).

2-49. DRYER TUMBLER DRIVE MOTOR AND GEARBOX ASSEMBLY

This task covers:

- a. Service
 - b. Adjustment
-

Initial Setup:Tools

General mechanic's tool set,
SC 5180-90

General Safety Instructions**WARNING**

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Personnel Required

MOS 63J (1)

Equipment Condition

TM 10-3510-209-10, Tarp assembly removed.

Materials/Parts

Lubricating oil
(Item 17, App C)
Lubricating oil, multipurpose
(Item 18, App C)

SERVICE**NOTE**

See LO 10-3510-209-12 for lubrication figures.

- 1. Change gearbox oil.

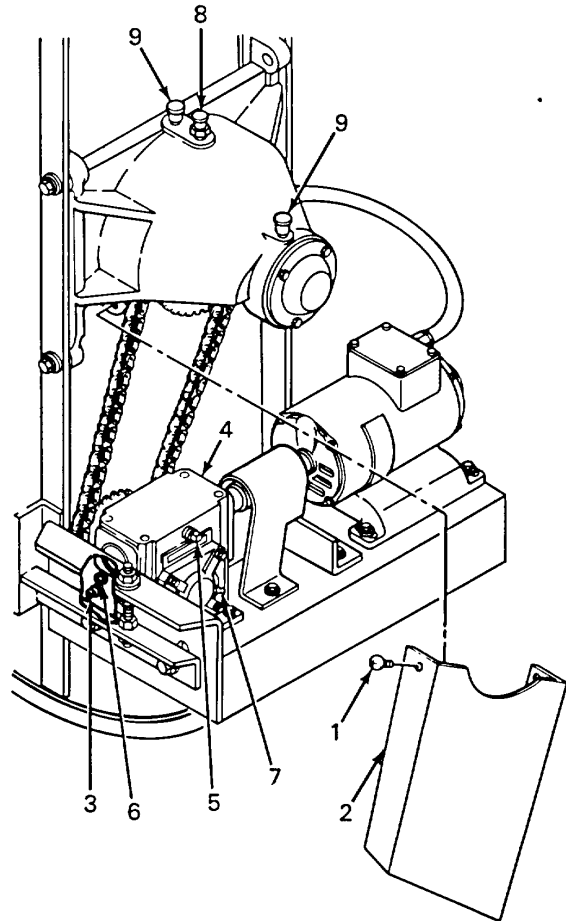
WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

- a. Remove electrical power from dryer.
- b. Remove three screws (1) and drive chain guard (2).
- c. Position a container under drain plug (3) on the bottom side of gear reduction unit (4).
- d. Remove drain plug (3) from gear reduction unit (4).
- e. Remove filler plug (5) from top front of gear reduction unit (4).
- f. Remove level plug (6) from gear reduction unit (4).
- g. Clean drain plug (3).
- h. After all oil is drained from gear reduction unit (4), install drain plug (3) in bottom of unit.

2-49. DRYER TUMBLER DRIVE MOTOR AND GEARBOX ASSEMBLY (CONT)**SERVICE (Cont)**

- i. Refer to LO 10-3510-209-12 and fill gear reduction unit (4) through hole for filler plug (5) with oil until oil begins to run out of the hole for level plug (6).
 - j. Install level plug (6) and filler plug (5).
 - k. Apply grease to grease fitting (7) on center front of gear reduction unit (4).
2. Lubricate dryer drive chain and sprocket with oil. Refer to LO 10-3510-209-12.
 - a. Lift cap on drive chain oil cup (8) and fill with oil.
 - b. Apply grease to the two upper drive chain sprocket bearings by turning the cap on grease cups (9) down (clockwise) 1/4 turn.
 - c. If the cap cannot be turned down 1/4 turn, perform the following:
 - (1) Remove the cap from grease cups (9).
 - (2) Fill the grease cups (9) with grease.
 - (3) Place the cap on grease cups (9).
 - (4) Repeat step b above.
 - d. Install drive chain guard (2) and secure with three screws (1).

**ADJUSTMENT****WARNING**

Disconnect electrical power from the dryer before adjusting the drive chain tension.

1. Remove electrical power from the dryer.
2. Refer to paragraph 2-41 and adjust the drive tension.

NOTE**FOLLOW-ON MAINTENANCE:**

Install tarp assembly (TM 10-3510-209-10).

2-50. WATER PUMP AND MOTOR ASSEMBLY

This task covers:

- a. Inspection b. Service c. Repair d. Replacement
-

Initial Setup:Tools

General mechanic's tool set
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Thread sealer compound
(Item 5, App C)

General Safety Instructions**WARNING**

**High voltage is present on this equipment.
Do not perform maintenance with power on.
Death or serious injury may result.**

Equipment Condition:

TM 10-3510-209-10, Water pump removed from
trailer assembly.

INSPECTION

Inspect water pump and motor assembly for damage and loose mounting.

SERVICE**WARNING**

**High voltage is present on this equipment. Do not perform maintenance with
power on. Death or serious injury may result.**

Remove inlet water strainer for inspection and cleaning. Remove other defective components and replace. For item service and replacement, proceed as follows:

1. Loosen nut (1) and remove bolt (2) and clamp (3).

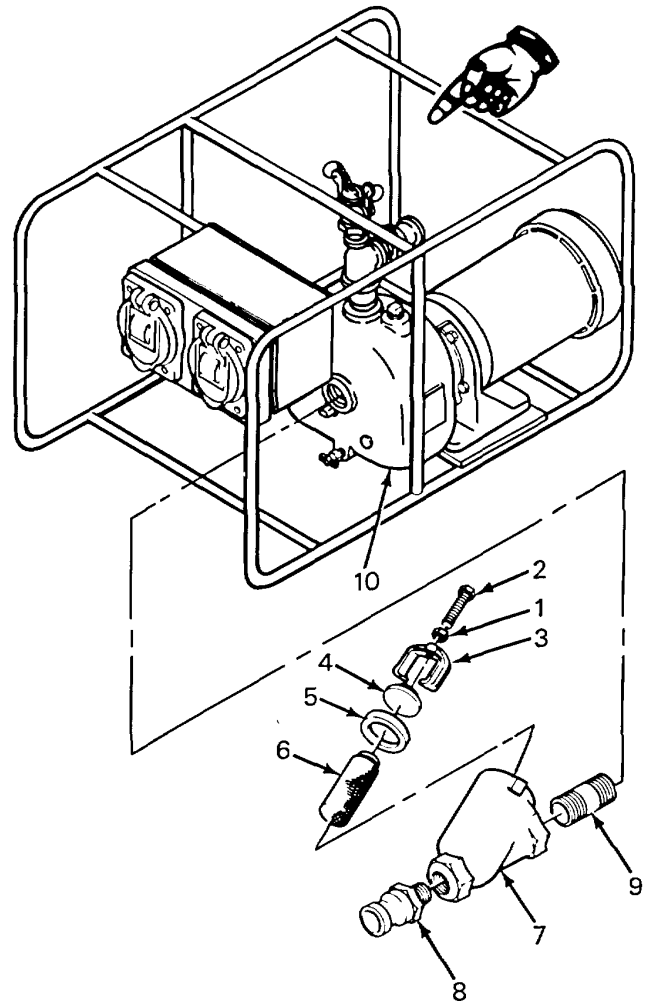
2-50. WATER PUMP AND MOTOR ASSEMBLY (CONT)**SERVICE (Cont)**

2. Remove strainer cap (4), washer (5), and strainer (6) from strainer housing (8).
3. Remove half coupling (7) from strainer housing (8).
4. Remove strainer housing (8) and nipple (9) from pump (10).

NOTE

Use thread sealer compound (Item 5, App C) when joining pipes and fittings.

5. Wash strainer thoroughly with clear water. Replace strainer if damaged or missing.
6. Install nipple (9) and strainer housing (8) on pump (10).
7. Install half coupling (7) on strainer housing (8).
8. Install strainer (6), washer (5), and strainer cap (4) in strainer housing (8).



9. Install bolt (2) and clamp (3) and tighten nut (1) to lock bolt.

REPAIR

1. Repair water outlet assembly by replacing the defective component. Use these procedures in preparation for replacing the water pump. Disassemble only as necessary.

2-50. WATER PUMP AND MOTOR ASSEMBLY (CONT)

REPAIR (Cont)

- a. Deleted.
- b. Remove half coupling (16) and nipple (18) from tee (22).
- c. Remove plug (19), gasket (20), half coupling (21), tee (22), and nipple (23) from pump (10).

NOTE

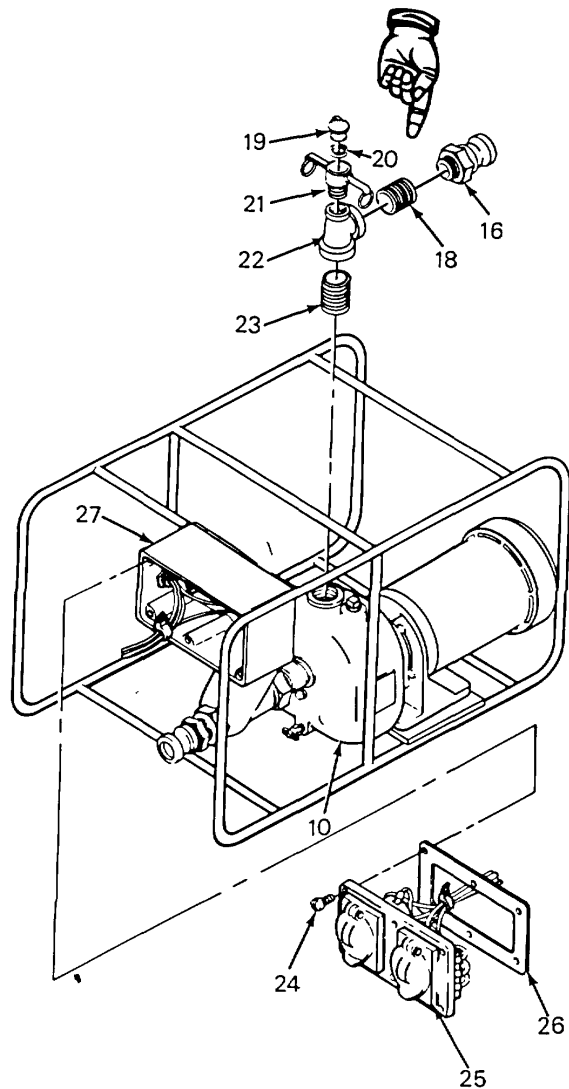
Use thread sealer compound (Item 5, App C) when joining pipes and fittings.

- d. Install plug (19), gasket (20), half coupling (21), tee (22), and nipple (23) in pump (10).
 - e. Install nipple (18) and half coupling (16) in tee (22).
 - f. Deleted.
2. Repair electrical plug, limit switch receptacles, and limit switch by removing and replacing them. Remove the receptacle and limit switch as follows:

CAUTION

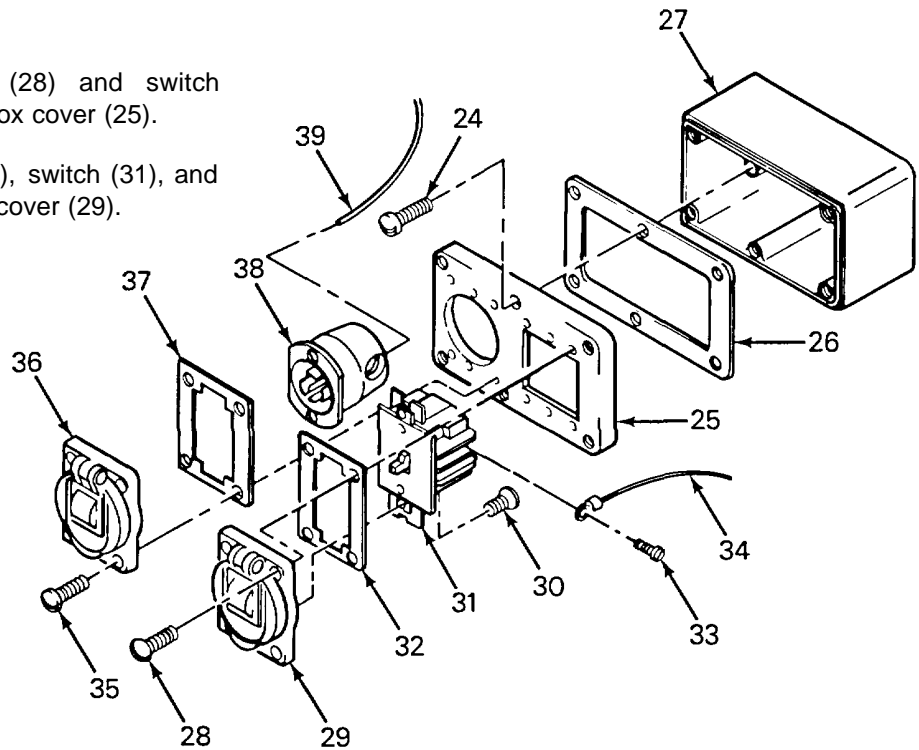
Be careful not to damage gasket (26).

- a. Remove six screws (24), switch box cover (25), and gasket (26) from switch box (27). Gasket will remain with cover or box until wires have been disconnected.



2-50. WATER PUMP AND MOTOR ASSEMBLY (CONT)**REPAIR (Cont)**

- b. Remove four screws (28) and switch cover (29) from switch box cover (25).
- c. Remove two screws (30), switch (31), and gasket (32) from switch cover (29).

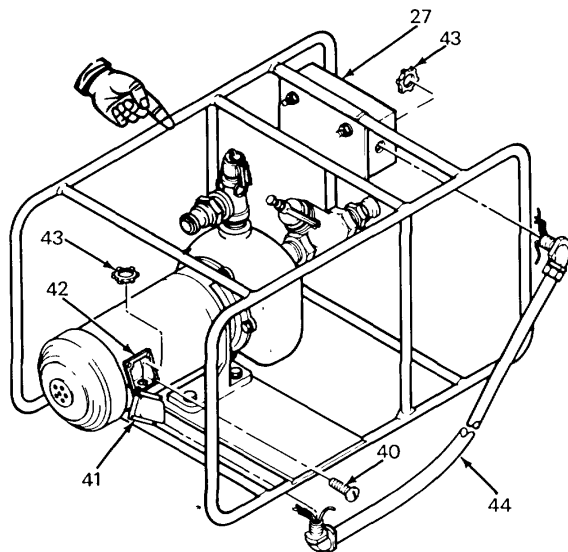


- d. Tag six wires (34), remove six screws (33), and disconnect wires from switch (31).
- e. Remove four screws (35), receptacle cover (36), gasket (37), and receptacle (38) from switch box cover (25).
- f. Tag and remove five wires (39) from receptacle (38). Replace unserviceable parts with new parts.
- g. Position five wires (39) through gasket (26) and switch box cover (25) and connect to receptacle (38). Remove tags.
- h. Position receptacle (38), gasket (37), and receptacle cover (36) on switch box cover (25) and secure with four screws (35).
- i. Position six wires (34) through gasket (26) and switch box cover (25). Connect wires to switch (31) and secure with six screws (33). Remove tags.
- j. Position gasket (32) and switch (31) on switch cover (29) and secure with two screws (30).
- k. Position switch cover (29) on switch box cover (25) and secure with four screws (28).
- l. Install gasket (26) and switch box cover (25) on switch box (27) and secure with four screws (24).

2-50. WATER PUMP AND MOTOR ASSEMBLY (CONT)**REPAIR (Cont)****NOTE**

Replace only components that are defective.

3. Replace electrical fittings, conduit, or wiring if defective. Repair or replace conduit if it is not sealed against moisture.
 - a. Remove three screws (40) and loosen the fourth screw. Turn cover plate (41) and expose wires.
 - b. Disconnect wires on limit switch and/or receptacle (refer to REPAIR paragraph 2, steps a thru g).
 - c. Disconnect wire nut on same color wire at motor power junction box (42). Remove wire.
 - d. Tag and disconnect all wires in motor power junction box (42).
 - e. Remove locknut (43) on each end of conduit (44). Bend conduit and lift out. Remove four wires from conduit.
 - f. Thread four wires through conduit (44) and insert conduit ends into switch box (27) and motor power junction box (42).
 - g. Install locknuts (43) on each end of conduit (44).
 - h. Connect wires in switch box (27) (refer to REPAIR paragraph 2, steps h thru l).
 - i. Connect wires in motor power junction box (42). Remove tags.
 - j. Position cover plate (41) on motor power junction box (42) and install three screws (40). Tighten the fourth screw.
 - k. Check for proper direction of rotation.

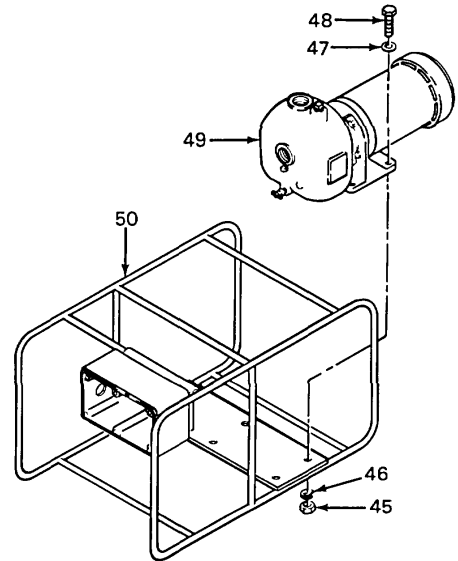


2-50. WATER PUMP AND MOTOR ASSEMBLY (CONT)**REPAIR (Cont)****NOTE**

The water pump and motor is an integral part of the water pump assembly, making it necessary to replace both assemblies if a defect occurs to either assembly.

4. Repair water pump and motor.

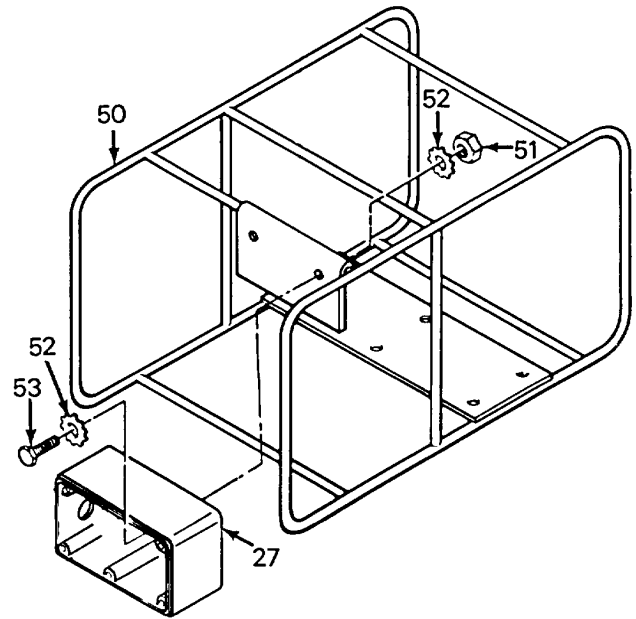
- a. Disconnect wires in motor power junction box (refer to REPAIR paragraph 3).
- b. Disconnect conduit at motor power junction box (refer to REPAIR paragraph 3).
- c. Remove inlet water strainer (refer to SERVICE).
- d. Remove water outlet assembly (refer to REPAIR paragraph 1).
- e. Remove four nuts (45), lockwashers (46), flat washers (47), and screws (48). Remove water pump assembly (49) from frame (50).



- f. Position water pump assembly (49) on frame (50) and secure with four screws (48), flat washers (47), lockwashers (46), and nuts (45).
- g. Install water outlet assembly (refer to REPAIR paragraph 1).
- h. Install inlet water strainer (refer to SERVICE).
- i. Connect conduit to motor power junction box (refer to REPAIR paragraph 3).
- j. Connect wires in motor power action box (refer to REPAIR paragraph 3).

2-50. WATER PUMP AND MOTOR ASSEMBLY (CONT)**REPAIR (Cont)**

5. Replace water pump frame if bent or broken.
 - a. Remove receptacle and limit switch (refer to REPAIR paragraph 2).
 - b. Remove conduit from switch box (refer to REPAIR paragraph 3).
 - c. Remove water pump and motor (refer to REPAIR paragraph 4).
 - d. Remove two nuts (51), four lockwasher (52), two screws (52), and switch box (27) from frame (50).
 - e. Position switch box (27) on frame (50) and secure with two screws (53), four lockwashers (52), and two nuts (51).
 - f. Install water pump and motor (refer to REPAIR paragraph 4).
 - g. Install conduit in switch box (refer to REPAIR paragraph 3).
 - h. Install receptacle and limit switch (refer to REPAIR paragraph 2).

**REPLACEMENT**

Replace water pump and motor, if damaged beyond repair.

NOTE**FOLLOW-ON MAINTENANCE:**

Install water pump (TM 10-3510-209-10).

2-51. WATER PUMP TIEDOWN ASSEMBLY

This task covers:

- a. Inspection
- b. Removal
- c. Replacement
- d. Installation

Initial Setup:

Tools

General mechanic's tool set
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Water pump tiedown assembly

General Safety Instructions

WARNING

Components of the water pump are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

Equipment Condition

TM 20-3510-209-10, Tarp assembly removed, and water pump assembly removed.

INSPECTION

Inspect bracket assembly (2) for damage and missing hardware.

REMOVAL

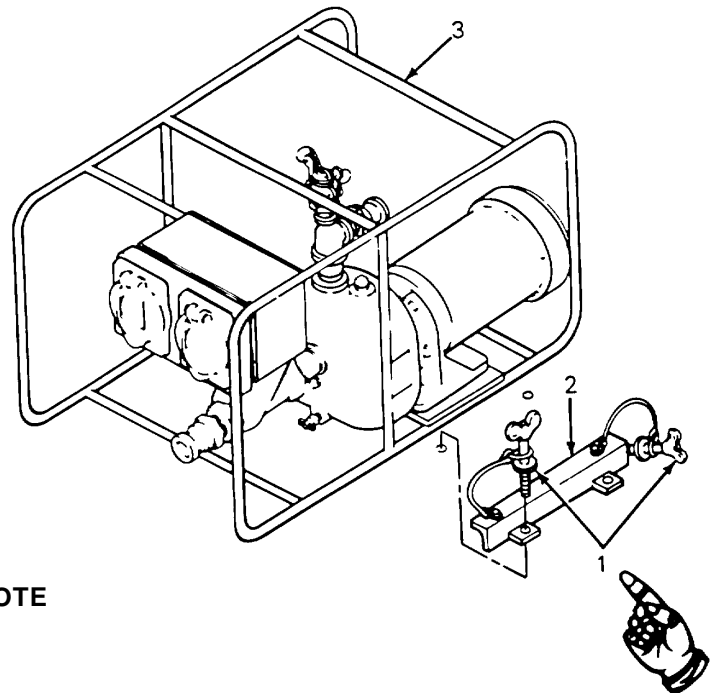
Remove two bolts (1) and bracket assembly (2) from water pump assembly (3).

REPLACEMENT

Replace bracket assembly (2) if defective or damaged.

INSTALLATION

Install bracket assembly (2) and two bolts (1) on water pump assembly (3).



NOTE

FOLLOW-ON MAINTENANCE:

Install tarp assembly and water pump assembly (TM-10-3510-209-10).

2-52. WATER HOSE ASSEMBLY

This task covers:

- a. Inspection
- b. Repair
- c. Replacement

Initial Setup:

Tools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Rubber hose and clamps as
required
Petrolatum (Item 8, App C)

General Safety Instructions

WARNING

Flying debris can damage eyes and cause blindness. Wear protective eyewear when cutting or grinding metal parts.

Equipment Condition

TM 10-3510-209-10, Hoses removed from laundry unit.

INSPECTION

Inspect hoses for cracks, cuts, and leaking or loose couplings.

REPAIR

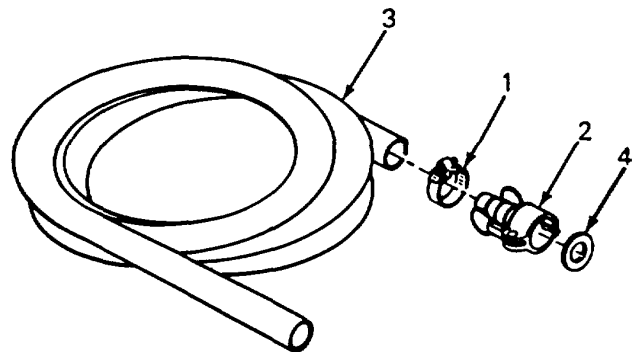
WARNING

Flying debris can damage eyes and cause blindness. Wear protective eyewear when cutting or grinding metal parts.

NOTE

These procedures tell how to repair all water hoses. If the hose is broken near the coupling, repair can be done by cutting off the damaged hose end and replacing the coupling.

1. Loosen hose clamp (1) and remove coupling (2) from hose (3).
2. Cut off damaged section of water hose (3).
3. Slide hose clamps (1) over end of water hose (3).
4. Insert couplings (2) and tighten hoe clamps (1).
5. Ensure gasket (4) is inside coupling (2).



REPLACEMENT

If hose damage is near the center of the hose, replace with new hose of the same length.

NOTE

FOLLOW-ON MAINTENANCE:
Install hose in laundry unit (TM 10-3501-209-10).

2-53. SUCTION STRAINER

This task covers:

- a. Inspection
 - b. Replacement
-

INITIAL SETUP:

Tools

General mechanic's tool set,
SC 5180-90

Materials/Parts

Thread sealer compound (Item 5, App C)

Personnel Required

MOS 63J (1)

Equipment Condition

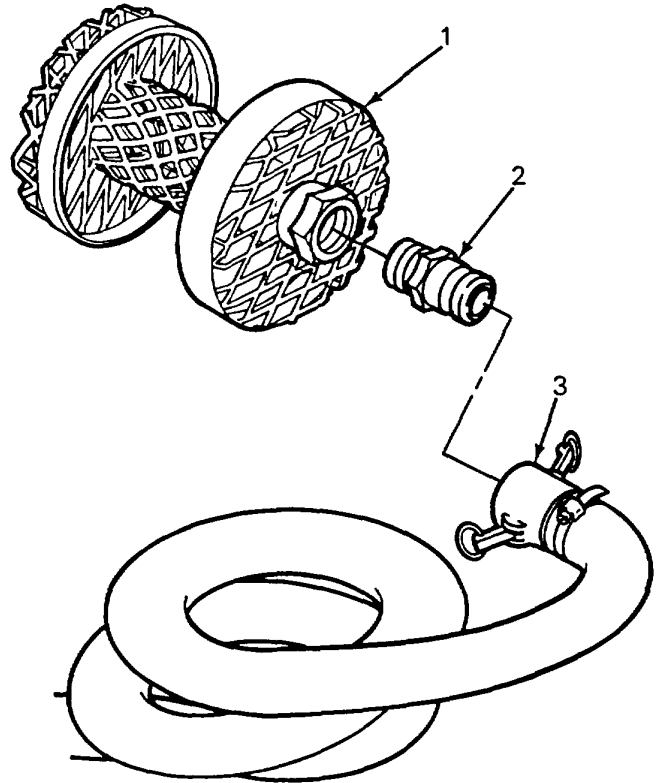
TM 10-2510-209-10, Hose removed from water source.

INSPECTION

Inspect suction strainer for cracks, breaks, and damage.

REPLACEMENT

1. Remove strainer (1) from water pump suction hose assembly (3).
2. Remove coupling (2) from strainer (1).
3. Coat threads of bushing (2) with thread sealer compound (Item 5, App C) and install half coupling (2) in strainer (1).
4. Install strainer (1) with coupling (2) on water pump suction hose (3).



2-54. EXHAUST DUCTS

This task covers:

- a. Inspection
- b. Repair

INITIAL SETUP

Tools

General mechanic's tool set
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Thread sealer compound
(Item 5, App C)

General Safety Instructions

WARNING

Flying debris can damage eyes and cause blindness. Wear protective eyewear when cutting or grinding metal parts.

Equipment Conditions:

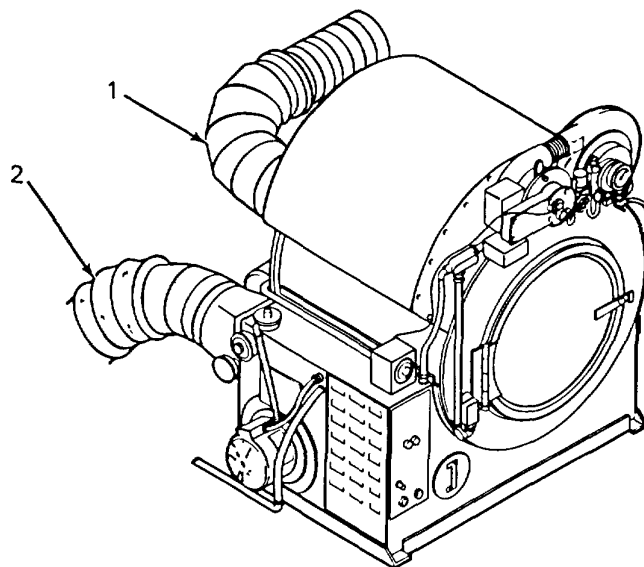
TM 10-3510-209-10, Exhaust ducts removed from laundry unit.

INSPECTION

Inspect exhaust ducts (1) for rough edges, burrs, and dents.

REPAIR

1. The repair of metal exhaust ducts (1) is limited to grinding and filing burrs and rough edges and straightening dents. If duct is damaged beyond repair, replace with a new one. The repair of canvas duct (2) is limited to patching or replacing.



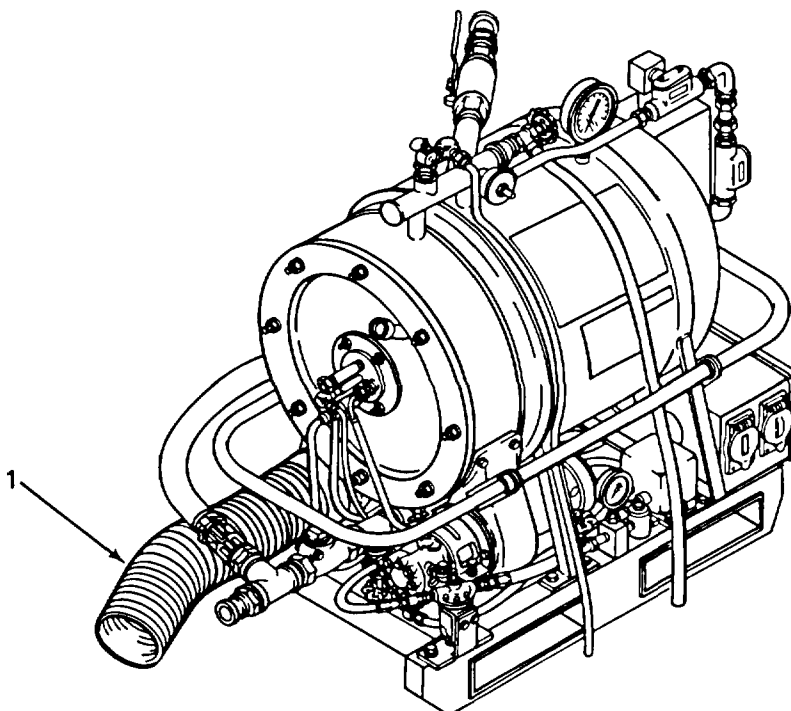
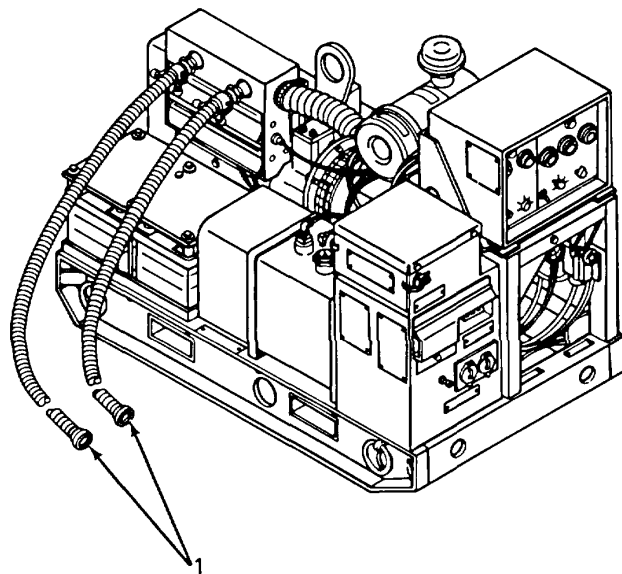
2-54. EXHAUST DUCTS (CONT)

REPAIR (Cont)

- If exhaust ducts are damaged beyond repair, replace exhaust ducts with new ones. When replacing generator exhaust ducts use thread sealer (Item 5, App C).

**NOTE
FOLLOW-ON MAINTENANCE:**

Install exhaust ducts on laundry unit
(TM 10-3510209-10).



2-55. GENERATOR TIEDOWN

This task covers:

- a. Inspection b. Removal c. Replacement d. Installation
-

INITIAL SETUPTools

General mechanic's tool set
SC 5180-90
Hoist, crane, or forklift

Personnel Required

MOS 63J (2)

Materials/Parts

Generator tiedown assembly

General Safety Instructions**WARNING**

**High voltage is present on this equipment.
Do not perform maintenance with power on.
Death or serious injury may result.**

Equipment Condition:

TM 10-2520-209-10, Tarp assembly removed.

INSPECTION

Inspect for missing or loose generator tiedowns.

REMOVAL**WARNING**

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

1. Remove eight capscrews (1), lockwashers (2), flat washers (3), and tapered washers (4) from generator (5).
2. Disconnect laundry power cable (6) from generator (5). Refer to TM 5-6115-585-12.

WARNING

The generator is heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

3. Remove generator (5) from trailer.

2-55. GENERATOR TIEDOWN (CONT)

REPLACEMENT

Replace damaged or missing hardware as necessary.

INSTALLATION

WARNING

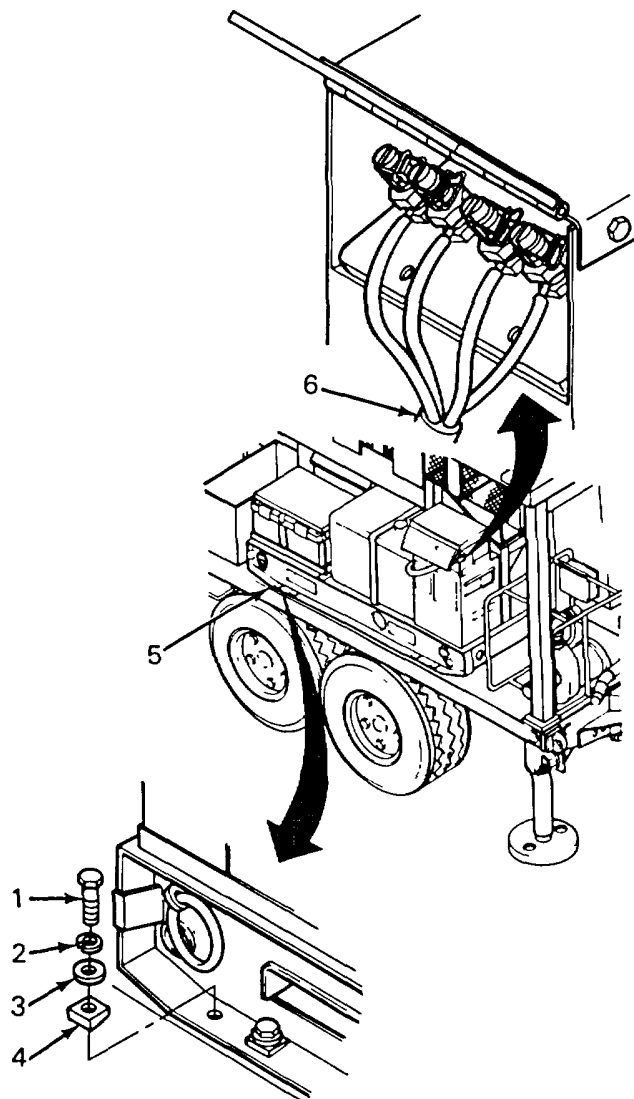
The generator is heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

1. Lift generator skid (5) and position on trailer bed so that holes in generator line up with mounting holes on trailer.
2. Install eight capscrews (1), lockwashers (2), flat washers (3), and tapered washers (4) in generator (5).

NOTE

FOLLOW-ON MAINTENANCE:

Connect main power cable to generator (TM 5-6115-585-12).
 Check laundry unit generator for proper direction of rotation (TM 10-3510-209-10).
 Install tarp assembly (TM 10-3510209-10).



2-56. FIRE EXTINGUISHER

This task covers:

- a. Inspection b. Removal c. Replacement d. Installation

INITIAL SETUPTools

General mechanic's tool set
SC 5180-90

Personnel Required
MOS 63J (1)

Materials/Parts

Fire extinguisher

Equipment Condition:

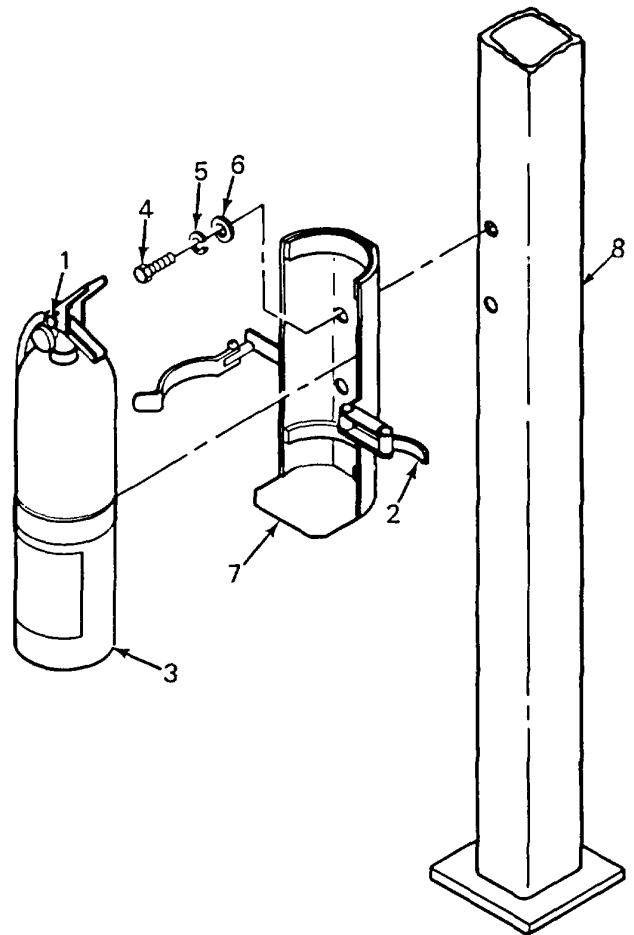
TM 10-3510-209-10, Tarp assembly removed.

INSPECTION

Inspect fire extinguisher (3) for damage, missing pin (1), and not being fully charged.

REMOVAL

1. Unhook spring-loaded clamp (2) and remove fire extinguisher (3) from mounting bracket (7).
2. Remove two capscrews (4), lockwashers (5), flat washers (6), and mounting bracket (7) from frame assembly (8).

**REPLACEMENT**

Replace fire extinguisher if not fully charged or if fire extinguisher is damaged or inoperative.

INSTALLATION

1. Position mounting bracket (7) and secure with two flat washers (6), lockwashers (5), and capscrews (4).
2. Install fire extinguisher (3) on mounting bracket (7) and secure with spring-loaded clamp (2).

NOTE

FOLLOW-ON MAINTENANCE:
Install tarp assembly (TM 10-3510-209-10).

2-57. TOOLBOX

This task covers:

- a. Inspection b. Removal c. Installation

INITIAL SETUP

Tools
 General mechanic's tool set
 SC 5180-90

Materials/Parts
 Toolbox
 Common hardware

Personnel Required
 MOS 63J (1)

Equipment Condition:
 TM 10-3510-209-10, Tarp assembly removed.

INSPECTION

Inspect for bends, dents, breaks, cuts, broken welds and broken or missing hinges and hasp assembly.

REMOVAL

1. Open lid of box (5) and remove four bolts (1), lockwashers (2), and flat washers (3). Remove nuts (4) from underneath trailer.
2. Remove box (5) and four spacers (6).

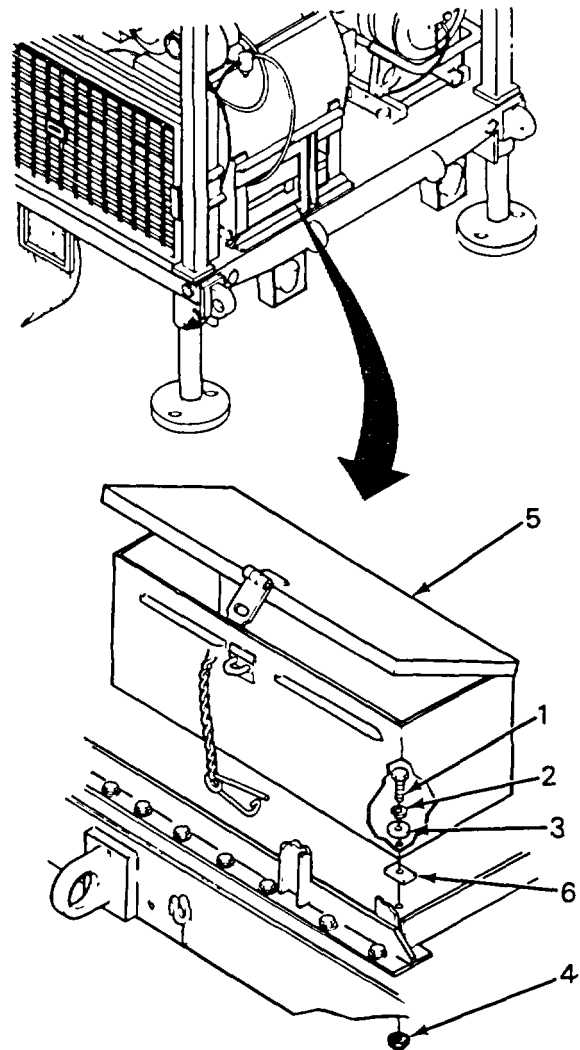
INSTALLATION

1. Position four spacers (6) and box (5) beneath dryer and open lid of box.
2. Install four bolts (1), flat washers (3), lockwashers (2), and nuts (4).

NOTE

FOLLOW-ON MAINTENANCE:

Install tarp assembly (TM 10-3510-209-10).



2-58. M13 DECONTAMINATION APPARATUS BRACKET

This task covers:

a. Inspection

b. Removal

c. Installation

INITIAL SETUPToolsGeneral mechanic's tool set
SC 5180-90Materials/PartsM13 bracket assembly
Common hardwarePersonnel Required

MOS 63J (1)

Equipment Condition:

TM 10-3510-209-10, Tarp assembly removed.

INSPECTION

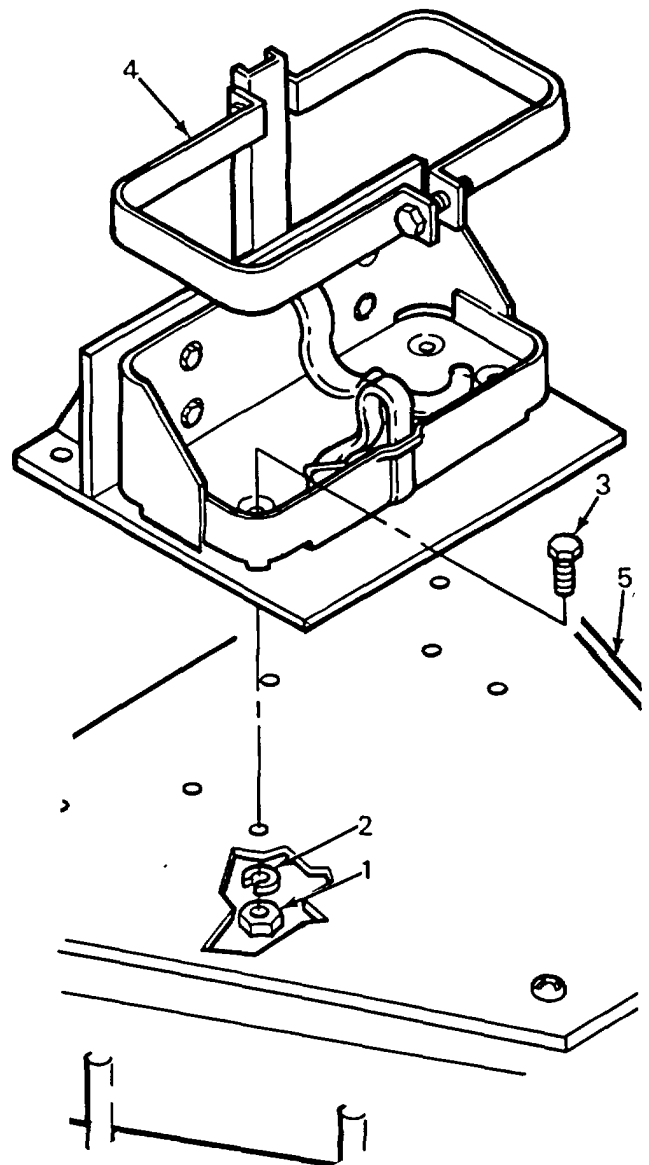
Inspect bracket and tray for bends, dents, breaks, cuts, broken welds, and broken or missing strap assembly.

REMOVAL

1. Remove seven nuts (1), lockwashers (2), and bolts (3) from bracket and tray assembly (4).
2. Remove bracket and tray assembly (4) from trailer (5).

INSTALLATION

1. Place bracket and tray assembly (4) on trailer (5).
2. Install seven bolts (3), lockwashers (2) and nuts (1).

NOTE**FOLLOW-ON MAINTENANCE:**Install tarp assembly
(TM 10-3510209-10).

CHAPTER 3

INTERMEDIATE DIRECT SUPPORT MAINTENANCE PROCEDURES

Section I. GENERAL

Para	Title	Page
3-1	Introduction.....	3-1
3-2	Scope.....	3-1
3-3	Common Tools and Equipment	3-1
3-4	Special Tools, TMDE, and Support Equipment	3-1
3-5	Repair Parts	3-1

3-1. INTRODUCTION. This chapter contains some important information that you need to know about the intermediate direct support maintenance requirements of the unit. This information includes but is not limited to:

Maintenance of the various systems and subsystems which the unit comprises.

Troubleshooting of the various systems and subsystems.

Refer to TM 5-6115-585-12 for troubleshooting and maintenance of the generator.

3-2. SCOPE This chapter contains maintenance instructions for removing, installing, and repairing the laundry unit at the intermediate direct support maintenance level. Maintenance personnel should become familiar with the information in this section.

3-3. COMMON TOOLS AND EQUIPMENT. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

3-4. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT. Refer to appendix B (Maintenance Allocation Chart) and TM 10-3510-209-24P, Repair Parts and Special Tools List, for a list of special tools, TMDE, and support equipment.

3-5. REPAIR PARTS. Repair parts are listed and illustrated in the repair parts and special tools list, TM 10-3510-209-24P, covering intermediate direct support maintenance repair parts for this equipment.

Section II. INTERMEDIATE DIRECT SUPPORT TROUBLESHOOTING PROCEDURES

Para	Title	Page
3-6	Scope.....	3-2

3-6. SCOPE.

- a. The symptom index lists the common malfunctions which you may find during the operation or maintenance of the laundry unit or its components. Use the symptom index for quick access to the troubleshooting procedures in table 3-1.
- b. This manual cannot list all possible malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed (except where malfunction and cause are obvious) or is not corrected by listed corrective actions, notify your supervisor.
- c. For troubleshooting the generator and its components, refer to TM 5-6115-585-12.

Table 3-1. Symptom Index

Symptom	Troubleshooting Procedure Page
WASHER ASSEMBLY	
1. Washer will not operate.....	3-3
2. Washer will not fill with cold/hot water (automatic mode)	3-3
3. Washer cylinder will not rotate (automatic mode)	3-3
4. Washer cylinder rotates only in one direction.....	3-4
5. Washer cylinder rotates but automatic functions do not operate.....	3-4
EXTRACTOR ASSEMBLY	
6. Extractor fails to start	3-4
7. Extractor starts but basket fails to turn	3-5
8. Extractor will not operate properly.....	3-5
9. Extractor runs too long.....	3-6
10. Extractor will not operate after power surge.....	3-7
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11. Dryer cylinder does not operate.....	3-7
12. Dryer exhaust fan does not operate.....	3-8
13. Drying takes too long.....	3-9
14. Dryer's heated air is not drawn through tumbler.....	3-9
15. Dryer fails to operate for selected time	3-9

Table 3-1. Intermediate Direct Support Troubleshooting

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
-------------	--------------------	-------------------

WASHER ASSEMBLY

1. WASHER WILL NOT OPERATE.

Step 1. Check for broken wiring. Use a multimeter and test wiring for continuity.

- a. If wire is broken, replace defective wire. (Refer to paragraph 3-7.)
- b. If wire is not damaged, proceed to next step.

Step 2. Check for cracked, worn, or broken motor parts, damaged shaft, threads, and bent shaft.

- a. If motor is damaged, repair or replace drive motor. (Refer to paragraph 3-13.)
- b. If motor is not damaged, proceed to next step.

Step 3. Check for motor overload.

If motor overloads, repair or replace bearing as required. (Refer to paragraph 3-13.)

2. WASHER WILL NOT FILL WITH COLD/HOT WATER (AUTOMATIC MODE).

Check for dirty contact fingers between controller drum and hot water control finger No. 15 or cold water finger No. 16.

- a. Clean contact finger and drum screen. (Refer to paragraph 3-11.)
- b. If problem persists, notify your supervisor.

3. WASHER CYLINDER WILL NOT ROTATE (AUTOMATIC MODE).

Step 1. Check for dirty contact fingers and/or dirty drum.

- a. Clean contact fingers and drum screen. (Refer to paragraph 3-11.)
- b. If problem persists, proceed to next step.

Table 3-1. Intermediate Direct Support Troubleshooting (Continued)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

3. WASHER CYLINDER WILL NOT ROTATE (AUTOMATIC MODE). (Cont)

Step 2. Check for improper adjustment of tension of contact fingers.

- a. Adjust for proper tension of contact fingers. (Refer to paragraph 3-11.)
- b. If problem persists, go to next step.

Step 3. Check for broken drivebelt.

- a. Replace drivebelt. Refer to paragraph 3-10.
- b. If problem persists, proceed to next step.

Step 4. Check for defective drive motor. Check for rough, noisy, or overheating condition.

- a. Replace drive motor. Refer to paragraph 3-13.
- b. If problem persists, proceed to next step.

Step 5. Check for defective gear reduction unit. Check for rough or high-friction turning of shafts.

- a. Repair or replace gear reduction unit. Refer problem to Intermediate Direct Support Maintenance.
- b. Proceed to next step.

Step 6. Check for internal failure of controller assembly.

- a. Refer controller assembly problem to Intermediate Direct Support Maintenance.
- b. If problem persists, notify your supervisor.

4. WASHER CYLINDER ROTATES ONLY IN ONE DIRECTION.

Check for defective reversing switch inside controller assembly.

- a. Replace reversing switch. (Refer to paragraph 3-11.)
- b. If problem persists, notify your supervisor.

Table 3-1. Intermediate Direct Support Troubleshooting (Continued)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

5. WASHER CYLINDER ROTATES BUT AUTOMATIC FUNCTIONS DO NOT OPERATE.

Step 1. Check for blown fuse on controller assembly.

- a. If fuse is blown, replace fuse.
- b. If fuse is not blown, proceed to next step.

Step 2. Check for inoperative transformer or relay in controller assembly. (See FIGURE 2-2.)

- a. Replace transformer or relay. (Refer to paragraph 3-11.)
- b. If problem persists, notify your supervisor.

EXTRACTOR ASSEMBLY**6. EXTRACTOR FAILS TO START.**

Step 1. Check for improper function and/or improper adjustment of lid-closed microswitch. With power off, measure continuity of lid-closed microswitch as lid is opened and closed.

- a. If switch does not work, replace or adjust lid-safety switch. (Refer to paragraph 3-18.)
- b. If switch works properly, proceed to next step.

Table 3-1. Intermediate Direct Support Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
-------------	--------------------	-------------------

6. EXTRACTOR FAILS TO START. (Cont)

Step 2. Check for improper function and sticking of lid lock solenoid and/or cam.

- a. If solenoid or cam is defective, replace lid lock solenoid and tighten or replace cam. (Refer to paragraph 3-18.)
- b. If solenoid and cam are serviceable, proceed to next step.

Step 3. Check for improper operation of timer. Observe red needle movement from set time toward zero on the scale.

- a. If red needle fails to move, replace timer. (Refer to paragraph 3-18.)
- b. If problem persists, notify your supervisor.

7. EXTRACTOR STARTS BUT BASKET FAILS TO TURN.

Check to see if basket is not fully engaged and is slipping on the hex drive ball. Rotate basket by hand and replace hex drive ball if play is excessive. (Refer to paragraph 3-16.) Basket should not rotate more than one-eighth turn on hex drive ball.

- a. If basket rotates too far on hex drive ball, replace hex drive ball and cap. (Refer to paragraph 3-16.)
- b. If basket still rotates too far, replace basket. (Refer to paragraph 3-16.)

8. EXTRACTOR WILL NOT OPERATE PROPERLY.

Step 1. Check for cracked, worn, or broken motor parts and bent shaft.

- a. If motor is damaged, replace extractor motor as required. (Refer to paragraph 2-28.)
- b. If motor is not damaged, proceed to next step.

Step 2. Check drive unit for damage and oil leak(s).

- a. If drive unit is damaged or leaking, replace drive unit. (Refer to paragraph 3-17.)
- b. If drive unit is not damaged, proceed to next step.

Table 3-1. Intermediate Direct Support Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
-------------	--------------------	-------------------

8. EXTRACTOR WILL NOT OPERATE PROPERLY. (Cont)

Step 3. Check for broken wiring. Use a multimeter and test wiring for continuity.

- a. If wiring is broken, repair or replace defective wiring. (Refer to paragraph 3-7.)
- b. If wiring is not damaged, proceed to next step.

Step 4. Check for low generator output voltage or disconnected phase line.

- a. If voltage is low, adjust generator output or reconnect phase line. (Refer to TM 5-6115-585-12.)
- b. If problem persists, notify your supervisor.

9. EXTRACTOR RUNS TOO LONG.

Step 1. Check for improper function of timer. Observe movement of red pointer during spin cycle.

- a. If pointer fails to move, replace timer. (Refer to paragraph 3-18.)
- b. If pointer moves normally, proceed to next step.

Step 2. Check for improper brake adjustment and worn lining. The basket should come to a complete stop within 30 seconds after the motor shuts off. Replace brake lining if it is worn to within 1/8 inch (3.2 mm) of the shoe.

If lining is worn or extractor takes too long to stop, adjust brake or replace brakeshoe. (Refer to paragraph 2-28.)

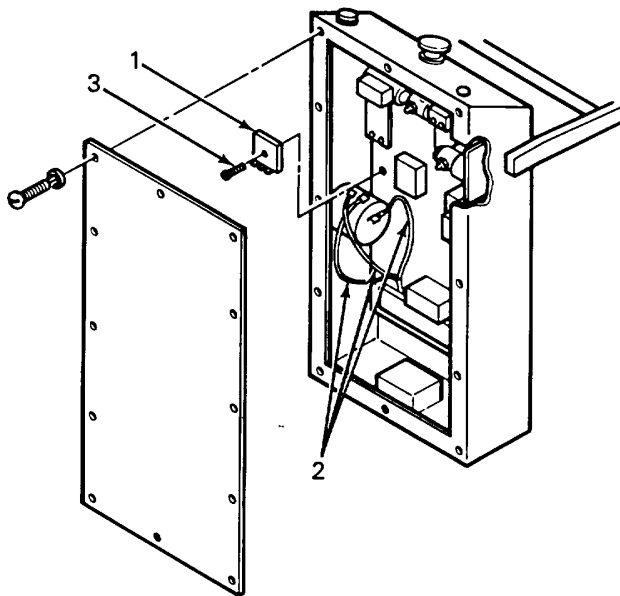
Table 3-1. Intermediate Direct Support Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
-------------	--------------------	-------------------

10. EXTRACTOR WILL NOT OPERATE AFTER POWER SURGE.

Check time delay relay (1) in extractor control box. Substitute a known good relay for the suspected relay.

- a. If relay is defective, replace relay:



- (1) Tag and disconnect wires (2) from relay terminals.
- (2) Remove relay mounting bolt (3).
- (3) Remove time delay relay (1).
- (4) Install new time delay relay (1).
- (5) Install relay mounting bolt (3).
- (6) Connect wires (2) to their respective terminals and remove tags.

- b. If problem persists, notify your supervisor.

DRYER ASSEMBLY**11. DRYER CYLINDER DOES NOT OPERATE.**

Step 1. Check for defective starter circuit wiring. Use a multimeter and test wiring for continuity.

- a. If wiring is damaged, repair or replace defective wiring. (Refer to paragraphs 3-7 and 3-25.)
- b. If wiring is not damaged, proceed to next step.

Table 3-1. Intermediate Direct Support Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
-------------	--------------------	-------------------

11. DRYER CYLINDER DOES NOT OPERATE. (Cont)

Step 2. Check for cracked, worn, or broken cylinder drive motor parts, damaged shaft threads, and bent shaft.

- a. If motor is damaged, replace motor. (Refer to paragraph 3-27.)
- b. If motor is not damaged, proceed to next step.

Step 3. Check for defective reduction gearbox. Check for rough rotation of shafts and sprockets.

- a. If gearbox is damaged, replace gearbox. Notify your supervisor.
- b. If gearbox is not defective, proceed to next step.

Step 4. Check for defective drive motor coupling. Check for looseness, broken parts, and slipping.

- a. If drive coupling is defective, replace drive motor coupling. Notify your supervisor.
- b. If drive coupling is not defective, proceed to next step.

Step 5. Check for damaged drive chain.

- a. If drive chain is damaged, replace drive chain. Notify your supervisor.
- b. If problem persists, notify your supervisor.

12. DRYER EXHAUST FAN DOES NOT OPERATE.

Step 1. Check for broken starter wiring. Use a multimeter and test wiring for continuity.

- a. If starter wiring is defective, repair or replace defective wiring. (Refer to paragraphs 3-7 and 3-26.)
- b. If starter wiring is not defective, proceed to next step.

Step 2. Check for cracked, broken, or worn exhaust motor parts and bent shaft.

- a. If exhaust motor is damaged, replace motor. (Refer to paragraph 3-27.)
- b. If problem persists, notify your supervisor.

Table 3-1. Intermediate Direct Support Troubleshooting (Continued)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
13. DRYING TAKES TOO LONG.		
	Step 1. Check for reversed motor direction.	<ul style="list-style-type: none"> a. If motor direction is reversed, disconnect and reverse any two phase lines. b. If motor direction is correct, proceed to next step.
	Step 2. Check for cracked, worn, or broken exhaust motor parts.	<ul style="list-style-type: none"> a. If motor is damaged, replace motor. (Refer to paragraph 3-27.) b. If problem persists, notify your supervisor.
14. DRYER'S HEATED AIR IS NOT DRAWN THROUGH TUMBLER.		
	Step 1. Check for defective dryer blower impeller. Check for loose coupling and for missing or damaged parts.	<ul style="list-style-type: none"> a. If impeller is defective replace impeller. (Refer to paragraph 3-27.) b. If impeller is not defective, proceed to next step.
	Step 2. Check for defective dryer exhaust motor. With power off, remove exhaust motor connection box cover. With power on, measure 120 V ac between each leg and ground.	<ul style="list-style-type: none"> a. If exhaust motor voltage is present and motor does not turn, replace exhaust motor. (Refer to paragraph 3-27.) b. If problem persists, notify your supervisor.
15. DRYER FAILS TO OPERATE FOR SELECTED TIME.		
	Check for defective dryer timer. Compare operating time of dryer to a known standard.	If timer is defective, replace dryer timer. (Refer to paragraph 3-25.)

Section III. INTERMEDIATE DIRECT SUPPORT MAINTENANCE PROCEDURES

Para	Title	Page
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3-8	Tarp Cover Assembly.....	3-13
3-9	Lower Sound Deadening Track.....	3-14
3-10	Washer Assembly	3-15
3-11	Washer Controller Assembly.....	3-31
3-12	Controller Stand.....	3-40
3-13	Washer Drive Motor Maintenance	3-42
3-14	Power Distribution Panel.....	3-46
3-15	DELETED.....	3-55
3-16	Extractor Assembly	3-59
3-17	Extractor Drive Unit.....	3-69
3-18	Extractor Control Box	3-76
3-19	Water Heater	3-83
3-20	Water Heater Electric Control Assembly	3-88
3-21	Water Heater Blower Motor Assembly	3-101
3-22	Water Heater UV Scanner and Flame Safeguard Assembly.....	3-104
3-23	Water Heater Operating Limit and High-Limit Controls.....	3-108
3-24	Dryer Assembly	3-112
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3-26	Dryer UV Scanner and Flame Safeguard Assembly.....	3-118
3-27	Dryer Exhaust Motor and Fan Assembly.....	3-123
3-28	Dryer Tumbler Drive Motor and Gearbox	3-126
3-29	Water Pump.....	3-134

3-7. GENERAL MAINTENANCE PROCEDURES.

- a. Electric Motor and Generator Repair. Repair electric motors and generators in accordance with TM 5-764.
- b. Wiring.

(1) General. Wires on laundry units, whether run individually or in a harness, are marked or numbered. Be sure to tag any unnumbered wire upon disconnection to ensure proper installation.

(2) Inspection. Inspect insulation for cracks or frayed material. Pay particular attention to wires passing through holes in the frame or over rough metal edges. If wire is cut or broken and the break in the wire is exposed, the wire must be repaired as in step (4) below. If the break in the wire is in a harness, conduit, or inaccessible area, replace the wire as in step (5) below.

3-7. GENERAL MAINTENANCE PROCEDURES. (CONT)**WARNING**

High voltage is present on this equipment. Do not perform continuity (resistance) tests with power on. Death or serious injury may result.

- (3) Testing for broken wires. Set multimeter to low ohms scale and zero the meter. Isolate the wire to be tested by disconnecting at least one end. Connect the multimeter probes to each end of the wire. A measurement of zero ohms indicates continuity (wire is unbroken). A measurement of high resistance (infinity) indicates no continuity (wire is defective). If the wire is defective, repair or replace it in accordance with step (5) or (6) below.
 - (4) Testing for grounded wires. Set multimeter to high ohms scale and zero the meter. Isolate the wire to be tested by disconnecting both ends. Connect the multimeter probe to frame ground, and connect remaining probe to either end of the wire. A measurement of high resistance (infinity) indicates no continuity (wire is not grounded). A measurement of low resistance indicates a grounded wire (wire is defective). If the wire is defective, replace it in accordance with step (6) below.
 - (5) Repair. Use electrical repair kit or shave the insulation on the wire to expose 1/2 inch (1.27 cm) of bare wire at both ends of the break. Twist the bare wire together and solder the connection. Cover the break with electrical friction tape. Be sure to leave no bare wire exposed. If a terminal lug breaks off a wire, replace it with an exact duplicate.
 - (6) Replacement. Replace a wire by disconnecting it from the component or components to which it is attached and remove the wire. Connect a new wire to the component or components. If a broken wire is part of a harness, disconnect the wire at each end and tape the loose ends with electrical tape. Install a new wire and attach it to the outside of the wiring harness.
- c. Bearings. For cleaning and inspection of antifriction bearings, refer to TM 9-214.

3-7. GENERAL MAINTENANCE PROCEDURES. (CONT)d. Cleaning and Inspection of Mechanical Parts.**WARNING**

Drycleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point is 100-138°F (38-59°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

WARNING

Compressed air used for cleaning purposes will not exceed 30 psi (207 kPa). Use only with effective chip-guarding and personal-protective equipment (goggles, shield, gloves, etc.).

- (1) Clean metal parts in drycleaning solvent (Item 10, App C). Thoroughly dry the parts with compressed air, observing all safety precautions.
- (2) Clean fibrous or rubber parts with warm, soapy water and dry with compressed air.
- (3) Inspect metal parts for cracks, breaks, bends, worn edges, and rough bearing surfaces. Replace the part if damage alters the part or its function.

e. General Repair.

- (1) Repair the laundry unit by replacing or repairing a defective component and/or by making needed adjustments.
- (2) Clean and lubricate the laundry unit as needed to return the item to operating condition.
- (3) Remove and replace those items necessary to make repairs. After replacing the defective components, ensure that the laundry operates correctly by making a visual inspection. Refer to TM 10-3510-209-10.

3-8. TARP COVER ASSEMBLY

This task covers:

Repair

INITIAL SETUP

Tools

Sewing equipment

Equipment Condition

TM 10-3510-209-10, Tarp Assembly removed from trailer

Personnel Required

MOS 63J (2)

Materials/Parts

Thread (Item 14, App C)

Glue (Item 22, App C)

Grommets

Rope, 5/16 dia

Canvas body

REPAIR

NOTE

Refer to FM 10-16, General Repair of Tents, Canvas, and Webbing, for repair procedures of canvas and webbing items.

1. Remove torn or damaged areas of canvas.
2. Patch, sew, glue, or otherwise repair damaged areas.
3. Replace damaged or missing ropes, grommets, and Velcro fasteners.

NOTE

FOLLOW-ON MAINTENANCE:

Install tarp assembly (TM 10-3510-209-10).

3-9. LOWER SOUND DEADENING TRACK

This task covers:
Repair

INITIAL SETUP

Tools

General mechanic's tool set
SC 5180-90
Heli-arc welding equipment

Personnel Required

MOS 63J (1)

Materials/Parts

Primer (Item 19, App C)

General Safety Instructions

Wear protective glasses while-grinding, welding, and cleaning lower track.

Equipment Condition

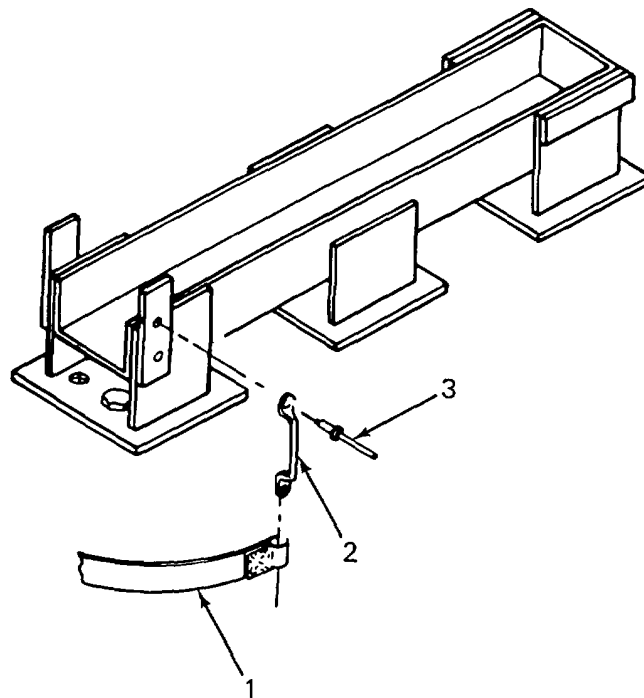
TM 10-3510-209-10, Tarp assembly removed.
Paragraph 2-17, Sound deadening panels removed.
Paragraph 2-18, Lower track removed from trailer.

REPAIR

1. Repair track by replacing damaged or missing straps (1), footman loops (2), and pop rivets (3).
2. Straighten track if bent. Weld track if broken or cracked.
3. File rough or burred edges and remove corrosion as necessary.
4. Clean unpainted areas and apply one coat of primer to all metal surfaces.

NOTE
FOLLOW-ON MAINTENANCE:

Install lower track to trailer (para 2-18).
Install sound deadening panels (para 2-17).
Install tarp assembly (TM 10-351-209-10).



3-10. WASHER ASSEMBLY

This task covers:

- | | | |
|----------------|-------------|-----------------|
| a. Removal | c. Repair | e. Installation |
| b. Disassembly | d. Assembly | |

INITIAL SETUP

Tools

General mechanic's tool set
SC 5180-90

Personnel Required

MOS 63J (2)

Materials/Parts

Washer assembly

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

WARNING

Components of the washer assembly are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

Equipment Condition

TM 10-3510-209-10, Tarp assembly removed.

REMOVAL

WARNING

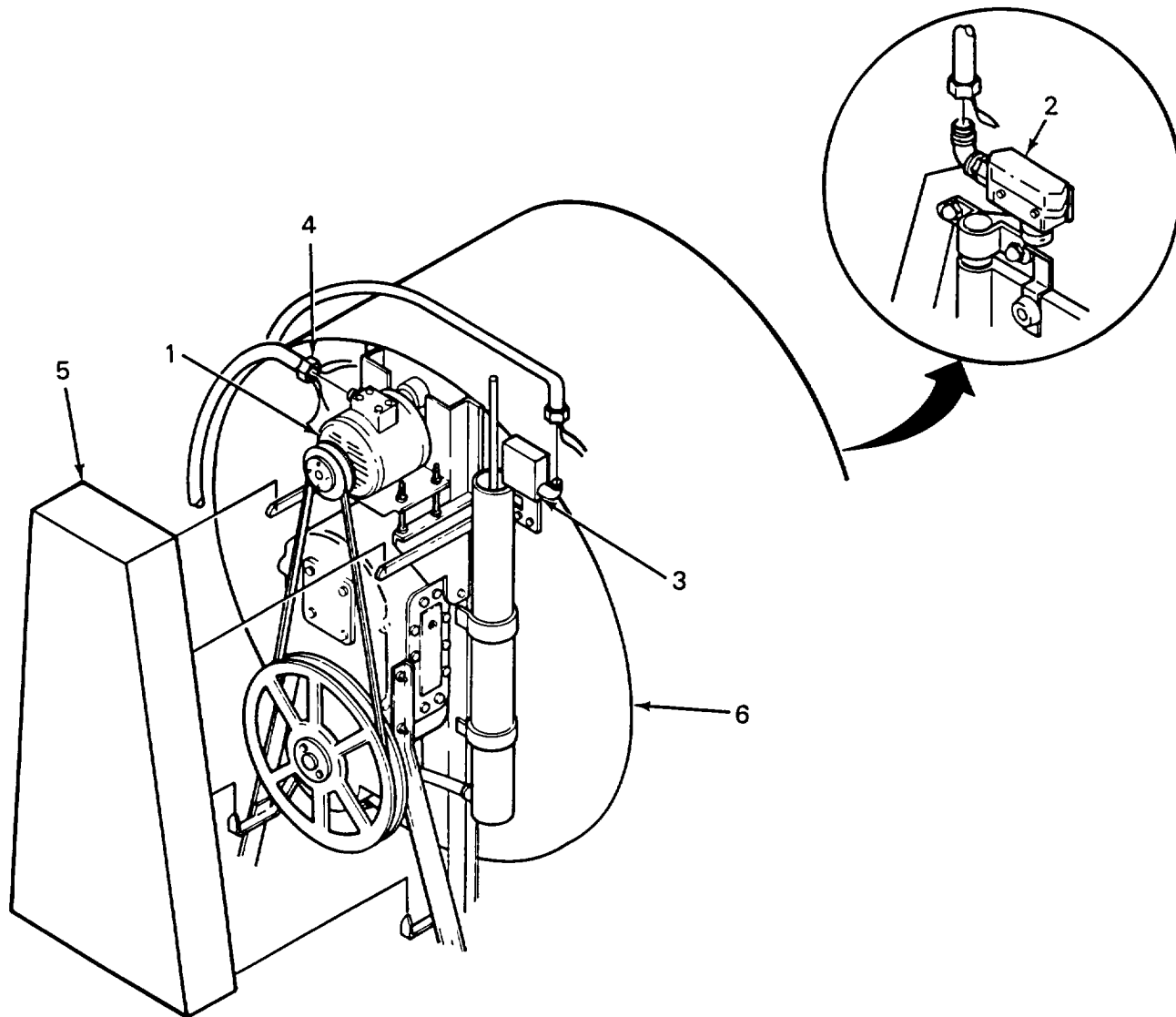
High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

1. Remove electrical power from the washer and the control assembly.

3-10. WASHER ASSEMBLY (CONT)

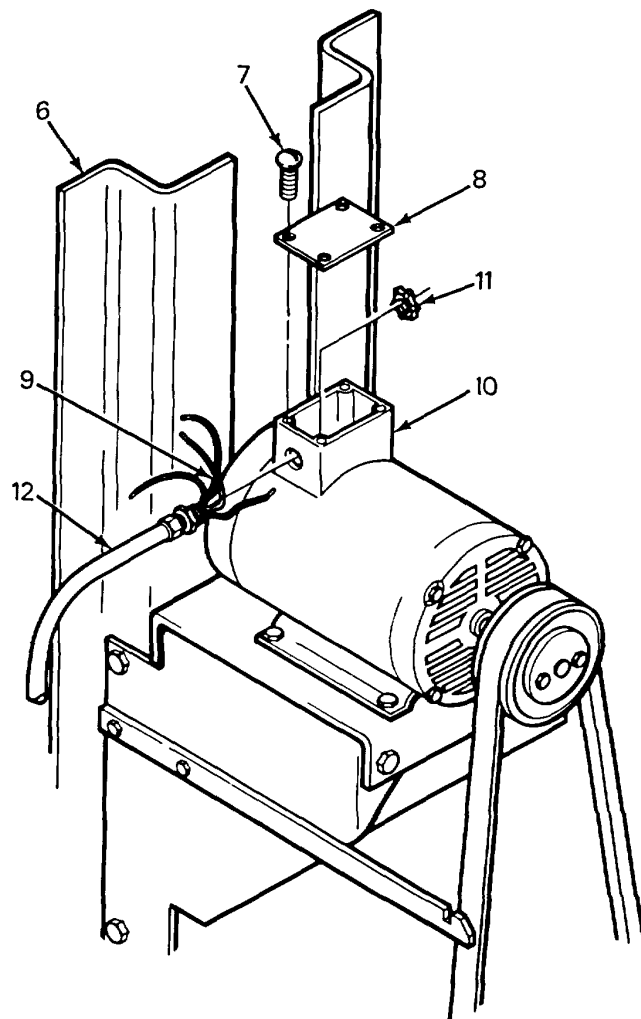
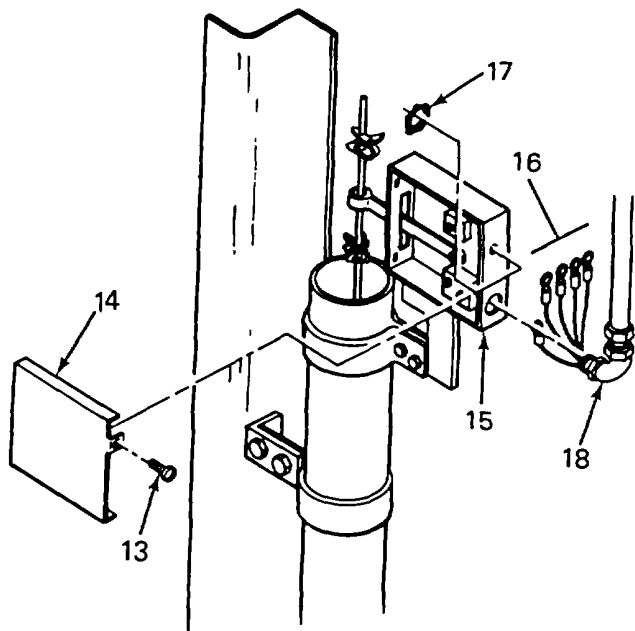
REMOVAL (Cont)

2. The five electrical cables on the rear of the control assembly are part of the control; disconnect them from the units to which they are connected: motor (1), door interlock safety switch (2), water level switch assembly (3), and input power source (4).
3. Remove drivebelt cover (5) from washer assembly (6) by pulling out on the bottom and lifting upward.



3-10. WASHER ASSEMBLY (CONT)**REMOVAL (Cont)**

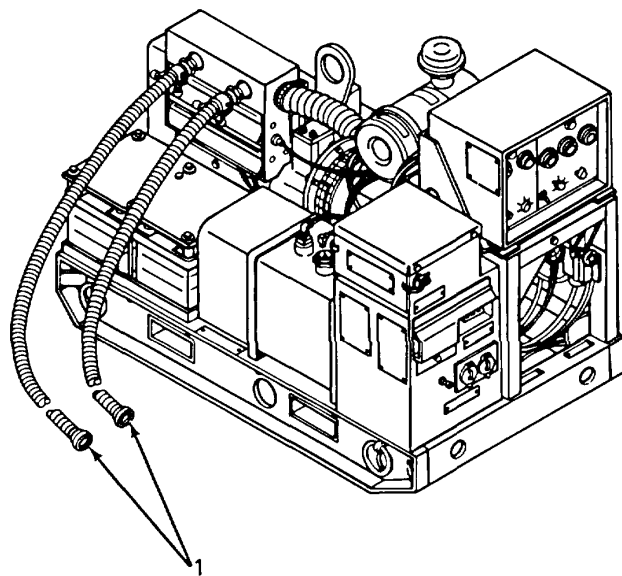
4. Remove four screws (7) from cover (8) and remove cover. Tag and disconnect wires (9) from motor junction box (10).
5. Remove nut (11) and electrical cable (12) from junction box (10). Remove electrical cable from washer assembly (6).
6. Remove screw (13) and cover (14) from water level switch (15).
7. Tag and disconnect wires (16) and remove nut (17) from electrical cable (18). Remove electrical cable from water level switch (15).



3-10. WASHER ASSEMBLY (CONT)

REMOVAL (Cont)

- 8. Remove two screws (19) and cover (20) from door interlock safety switch (2) and remove cover.
- 9. Tag and disconnect wires (21) and loosen nut (22) from electrical cable (23). Remove electrical cable from door interlock safety switch (2).

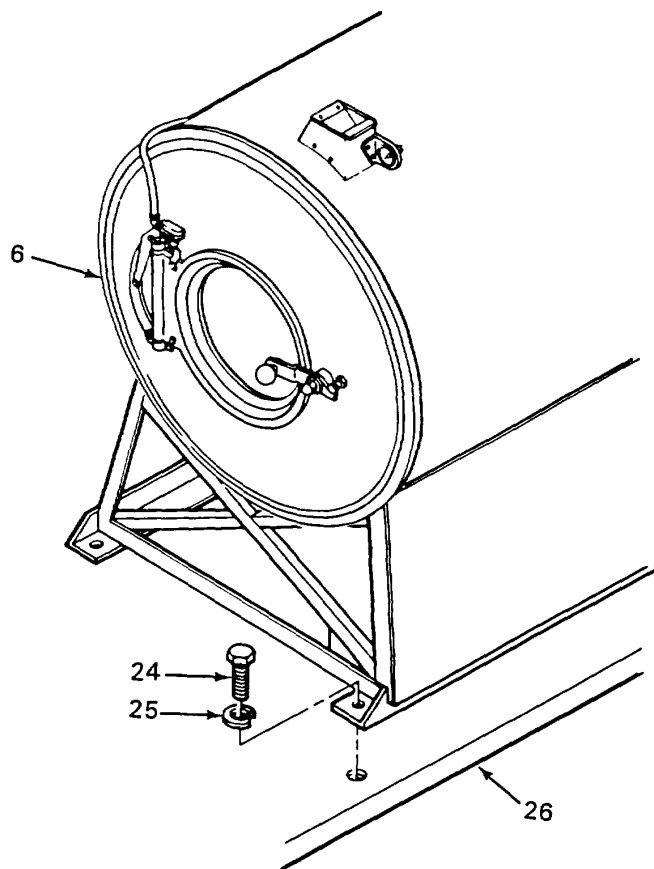


- 10. Remove 16 bolts (24) and 16 washers (25) from trailer assembly (26).

WARNING

Components of the washer assembly are heavy and may be awkward to handle. Use correct lifting procedures, indicated lifting devices, and/or assistance from other personnel to avoid injury.

- 11. Remove washer assembly (6) from trailer assembly (26).



3-10. WASHER ASSEMBLY (CONT)**DISASSEMBLY**

1. Remove drive motor.

NOTE

To remove belt cover and electrical connections refer to **REMOVAL, steps 3 and 4.**

- a. Loosen two adjusting bolts (27) on the side of adjusting tray (28) and release tension on drivebelt (32).

- b. Remove four bolts (29), lockwashers (30), and nuts (31).

- c. Remove drivebelt (32) from pulley (36) and remove motor (33) from adjusting tray (28).

- d. Remove two bolts (39), lockwashers (35), pulley (36), and key (37) from motor (33).

- e. Remove drivebelt (32) from pulley (4b).

2. Remove gear reduction unit.

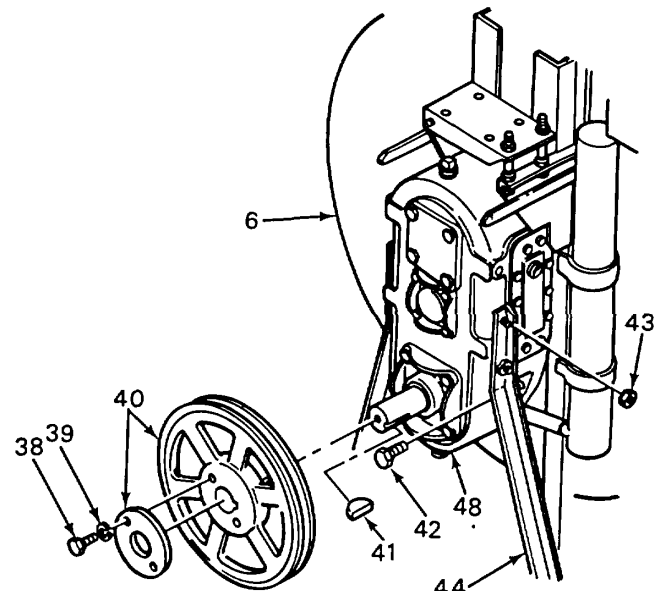
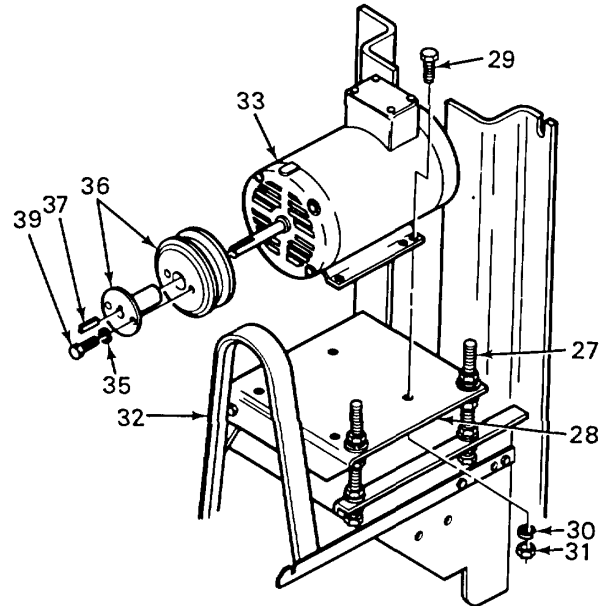
- a. Remove two bolts (38), lockwashers (39), pulley (40), and key (41) from gear reduction unit (48).

- b. Remove four bolts (42) from gear reduction unit (48).

WARNING

Components of the washer assembly are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and or assistance from other personnel to avoid injury.

- c. Support gear reduction unit (48). Remove four nuts (43) from side braces (44).



3-10. WASHER ASSEMBLY (CONT)

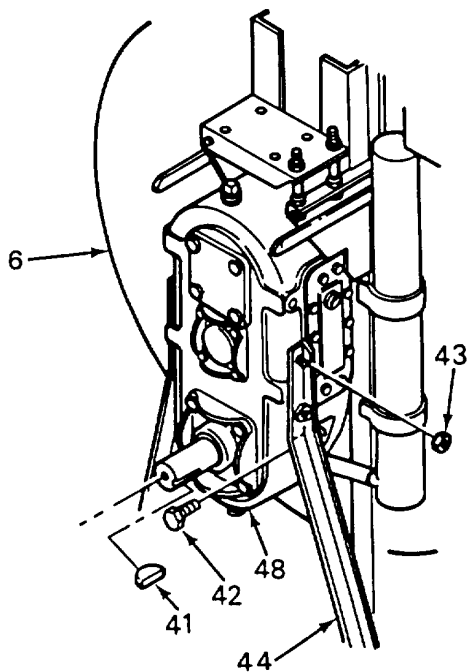
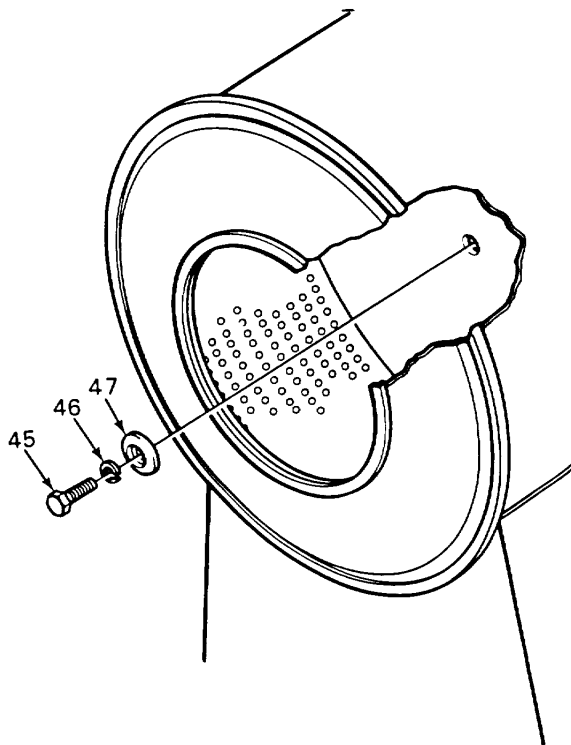
DISASSEMBLY (Cont)

d. Remove drive shaft retaining bolt (45), lockwasher (46), and plate (47) located on the inside rear of the washer cylinder.

NOTE

It may be necessary to partially install drive shaft retaining bolt (45) and drive gear reduction unit (48) out of the washer cylinder by striking the bolt with a plastic mallet.

e. Remove gear reduction unit (48) from washer assembly (6) by pulling straight toward the rear.

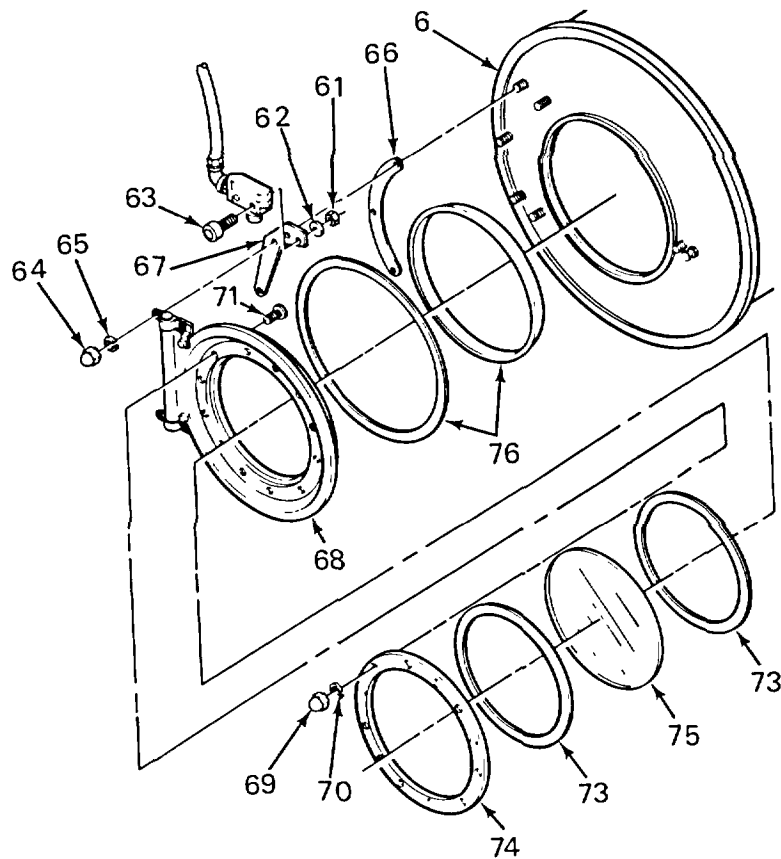


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3-10. WASHER ASSEMBLY (CONT)

DISASSEMBLY (Cont)

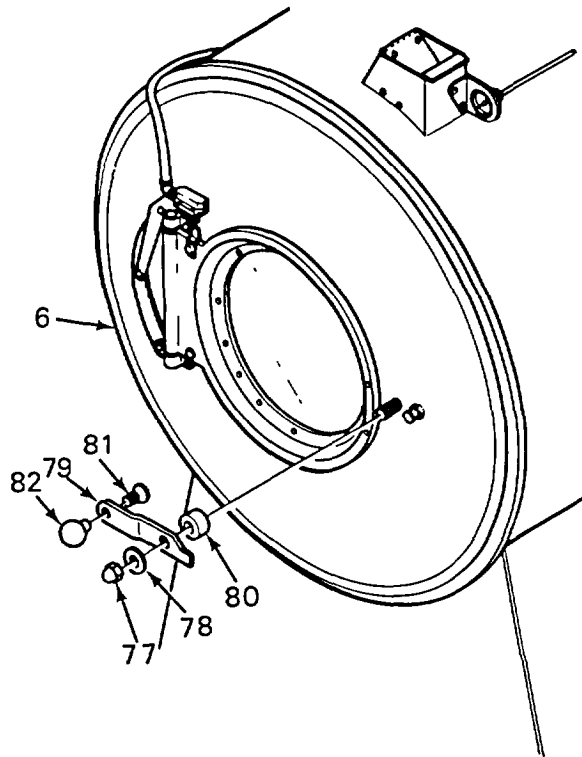
3. Remove door and door safety switch.
 - a. Remove two nuts (61), washers (62), and allen-head screws (63) from bracket (67).
 - b. Remove five nuts (64), lockwashers (65), spacer (66), bracket (67), and door (68) from washer assembly (6).
 - c. Remove 12 nuts (69), lockwashers (70), allen-head screws (71), 2 gaskets (73), frame (74), glass (75), and seal (76) from door (68). Discard gaskets.



3-10. WASHER ASSEMBLY (CONT)

DISASSEMBLY (CONT)

- d. Remove nut (77), spacer (78), handle (79), and spacer (80) from washer assembly (6).
- e. Remove screw (81) and doorknob (82) from handle (79).

**REPAIR**

Repair of the washer assembly restores the unit to normal operating condition by replacing the defective component and making needed adjustments. Remove and replace only those items necessary to make repair. After replacing the defective component, ensure that the washer operates correctly by making a visual inspection or by performing an operational check.

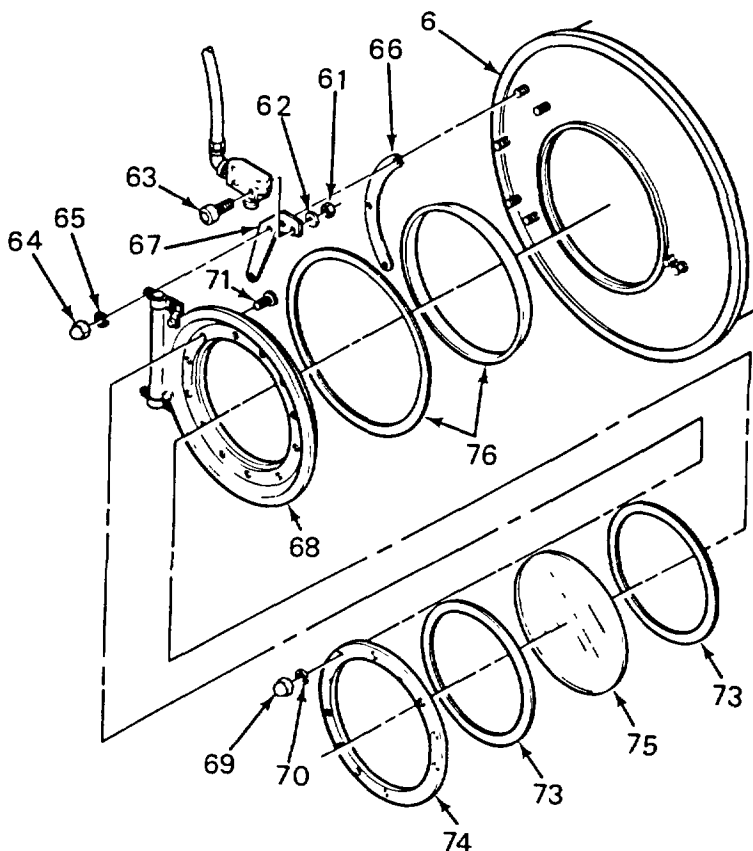
ASSEMBLY

1. Assemble door and door safety switch.
 - a. Install doorknob (82) and screw (81) on handle (79).
 - b. Install spacer (80), handle (79), spacer (78), and nut (77) on washer assembly (6).

3-10. WASHER ASSEMBLY (CONT)

ASSEMBLY (CONT)

- c. Install frame (74), glass (75), 2 gaskets (73), 12 allen-head screws (71), lockwashers (70), nuts (69), and seal (76) on door (68).
- d. Install door (68), bracket (67), spacers (66), five lockwashers (65), and nuts (64) on washer assembly (6).
- e. Install two allen-head screws (63), washers (62), and nuts (61) on bracket (67).



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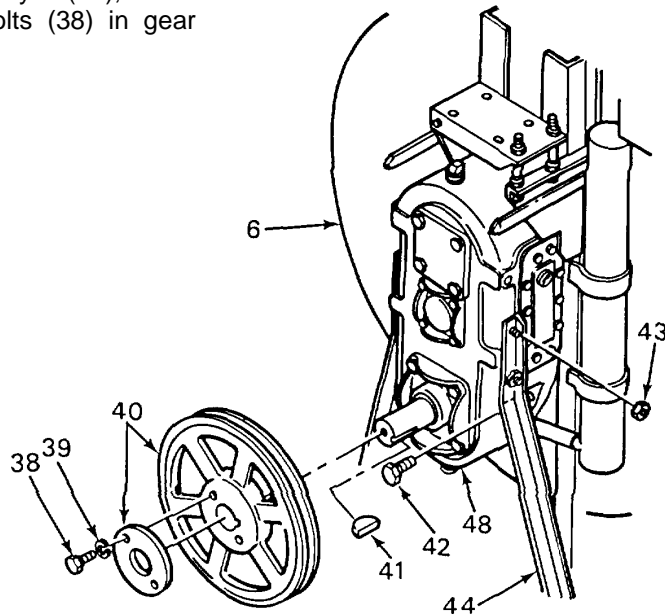
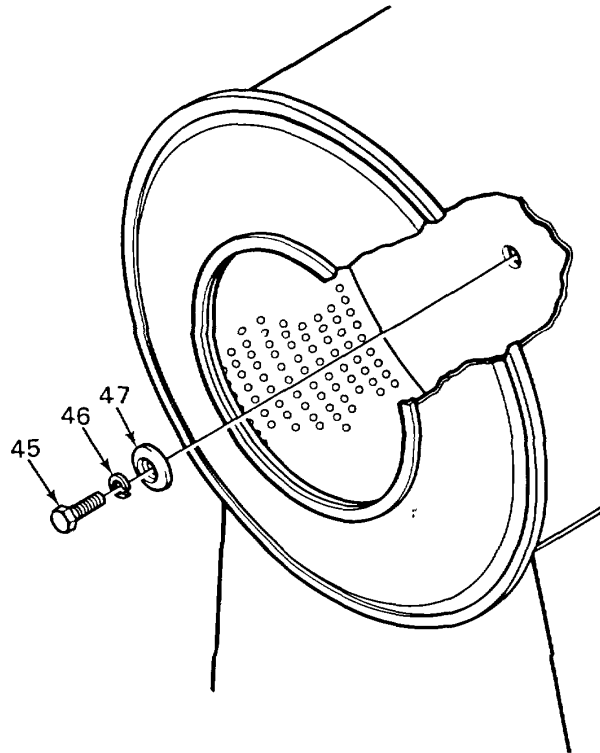
3-10. WASHER ASSEMBLY (CONT)

ASSEMBLY (Cont)

WARNING

Components of the washer assembly are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

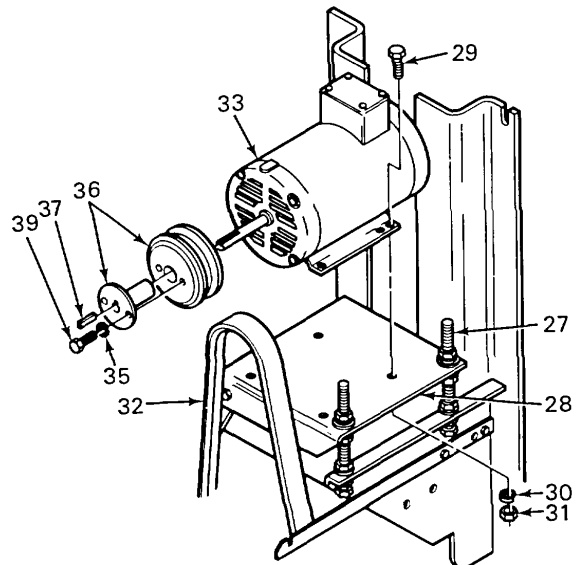
2. Install gear reduction unit.
 - a. Position gear reduction unit (48) in place on rear of washer unit (6).
 - b. Install plate (47), lockwasher (46), and drive shaft retaining bolt (45) on inside rear of washer cylinder.
 - c. Install four nuts (43) on side braces (44).
 - d. Install four bolts (42) in gear reduction unit (48).
 - e. Install key (41), pulley (40), two lockwashers (39), and bolts (38) in gear reduction unit (48).



3-10. WASHER ASSEMBLY (CONT)

ASSEMBLY (Cont)

3. Install drive motor.
 - a. Install key (37), pulley (36), two lockwashers (35), and bolts (39) on motor (33).
 - b. Position motor (33) on adjusting tray (28) and install four bolts (29), lockwashers (30), and nuts (31).
 - c. Install drivebelt (32) on pulleys (40) and (36).
 - d. Adjust drivebelt. (Refer to para 2-22.)

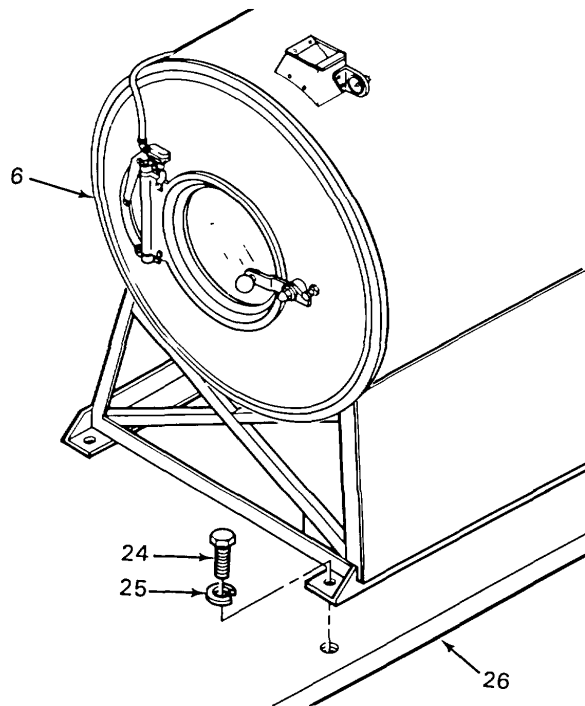


INSTALLATION

WARNING

Components of the washer assembly are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

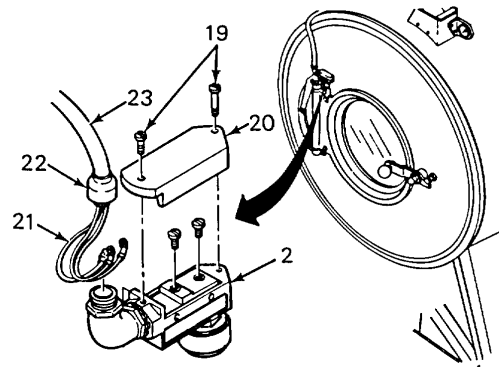
1. Position washer assembly (6) on trailer assembly (26) and install 16 bolts (24) and washers (25).



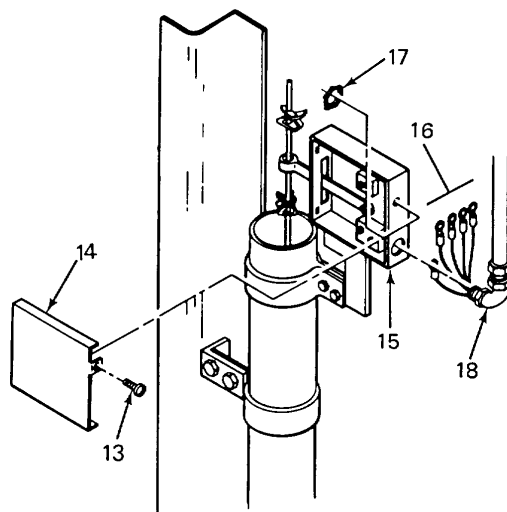
3-10. WASHER ASSEMBLY (CONT)

INSTALLATION (Cont)

2. Install electrical cable (23) on door interlock safety switch (2). Tighten nut (22) to secure electrical cable. Connect wires (21) to door safety switch (2). Remove tags.
3. Install cover (20) and two screws (19).



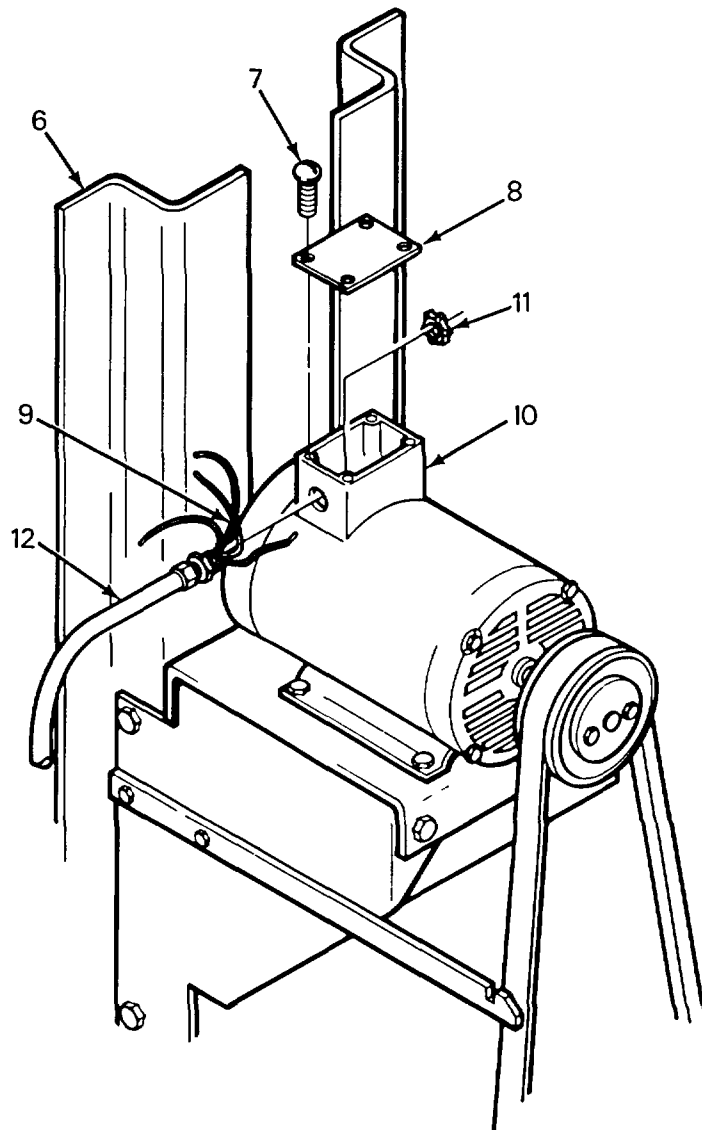
4. Install electrical cable (18) in water level switch (15). Install nut (17) and secure electrical cable. Connect wires (16) to water level switch (15). Remove tags.
5. Install cover (14) and screw (13) on water level switch (15).



3-10. WASHER ASSEMBLY (CONT)

INSTALLATION (Cont)

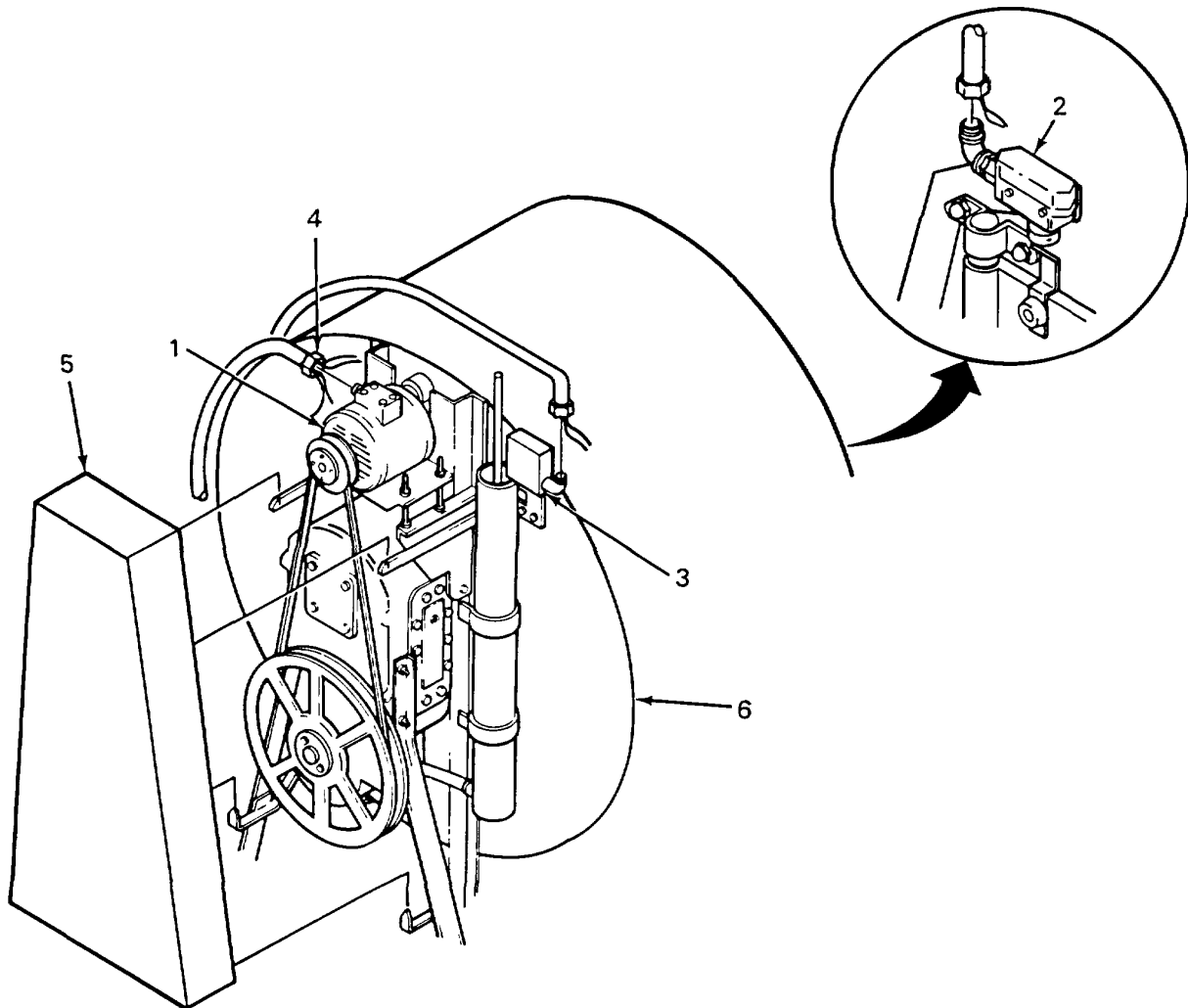
6. Install electrical cable (12) and nut (11) on junction box (10).
7. Connect wires (9) and remove tags. Install cover (8) and four screws (7) on junction box (10).



3-10. WASHER ASSEMBLY (CONT)

INSTALLATION (Cont)

8. Install drivebelt cover (5) on washer assembly (6).



9. Ensure electrical connections are properly connected to input power source (4), water level switch assembly (3), door safety switch (2), and motor (1).

NOTE**FOLLOW-ON MAINTENANCE:**

Install tarp assembly (TM 10-3510-209-10).

3-11. WASHER CONTROLLER ASSEMBLY

This task covers:

- | | | |
|------------|---------------|-----------------|
| a. Test | c. Adjustment | e. Removal |
| b. Service | d. Repair | f. Installation |

INITIAL SETUP

Tools

Multimeter
 General mechanic's tool set
 SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Tiedown strap (Item 11, App C),
 Cleaning solvent (Item 10,
 App C)
 Wiping cloth (Item 3, App C)

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Equipment Condition

TM 10-3510-209-10, Tarp assembly removed.

TEST

NOTE

A standardized test has not been developed for the military design of the washer.

1. Test operate all cycles and functions, both manual and automatic, of washer. Refer to TM 10-3510-209-10.
2. Observe each function for proper and complete action.
3. Check for incorrect timing or water temperature.
4. Refer to malfunctions in troubleshooting section, (para 3-6) and perform corrective action.

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

5. Use a multimeter and check each wire run from end to end. Check continuity of wound coils on each relay or magnetic switch. Replace defective wires or coils. Refer to FIGURE 2-2.

3-11. WASHER CONTROLLER ASSEMBLY (CONT)

TEST (Cont)

6. Inspect each component and wire for burns or breaks and replace defective items.
7. Check continuity of timer, drum motor, reversing motor, and transformers. Replace defective items.
8. Inspect terminal strips for corrosion, loose screws, frayed wires, and insulation breaks.

SERVICE**WARNING**

Compressed air used for cleaning purposes will not exceed 30 psi (207 kPa). Use only with effective chip-guarding and personal-protective equipment (goggles, shield, gloves, etc.).

1. Clean interior of controller with compressed air.
2. Wipe exterior of controller with a damp cloth (Item 3, App C).
3. Refer to LO 10-3510-209-12 for lubrication of the controller.

WARNING

Dry-cleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point is 100-138°F (38-59°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

4. Clean metal parts with dry-cleaning solvent (Item 10, App C).
5. Clean electrical parts with dry compressed air and a clean, dry cloth.

3-11. WASHER CONTROLLER ASSEMBLY (CONT)

ADJUSTMENT

Adjust controller contact fingers (1) by laying a straightedge (2) along the middle of fingers and bend the free ends up or down to provide the proper tension against drum (3).

REPAIR

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on, death or serious injury may result.

1. Inspect for cracks, breaks, dents, or other damage.

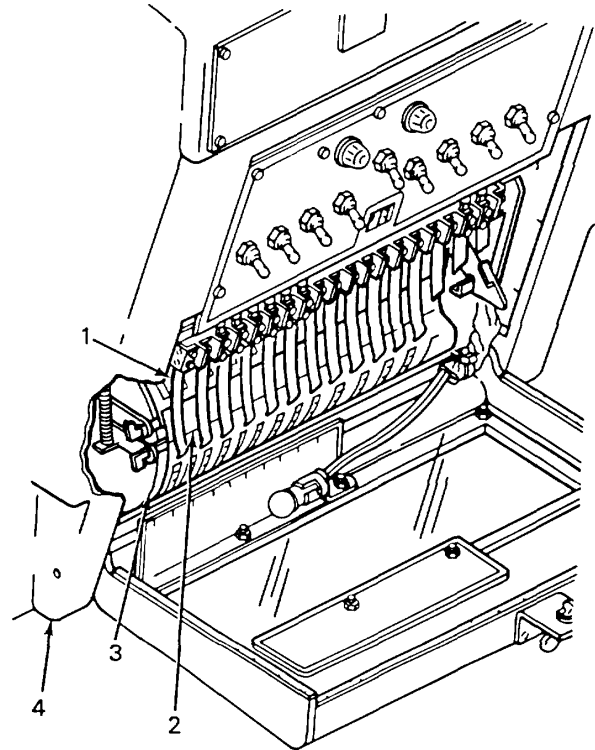
WARNING

Welding procedures specified may cause injury if safety precautions are not followed. Wear protective clothing and eyewear while performing welding operations. Serious injury could result.

2. Weld minor cracks or breaks, straighten dents, and replace missing or damaged hardware.
3. Replace controller box (4) if damaged beyond repair.

NOTE

A record of wire removal is needed so that installation hookup is exactly duplicated. Refer to FIGURE 2-2 for wiring connections.



3-11. WASHER CONTROLLER ASSEMBLY (CONT)

REPAIR (Cont)

4. The following items (magnetic controls and switches) can be removed individually and replaced for repair of the controller. Replace only those items that have been tested and found defective.
 - a. Reversing controller (5). Refer to FIGURE 2-2 and repair by replacement.
 - b. 208 V to 24 V transformer (6). Refer to FIGURE 2-2 and repair by replacement.
 - c. Signal buzzer (7). Refer to FIGURE 2-2 and repair by replacement.
 - d. Signal light (8). Refer to FIGURE 2-2 and repair by replacement.
 - e. Terminal strips (10). Refer to FIGURE 2-2 and repair by replacement.
 - f. Circuit breaker for drive motor (11). Refer to FIGURE 2-2 and repair by replacement.
 - g. Drain contactor switch (12). Refer to FIGURE 2-2 and repair by replacement.
 - h. Reuse drain contactor (13). Refer to FIGURE 2-2 and repair by replacement.
 - i. Air solenoids consisting of:
 - (1) Drain (14). Refer to FIGURE 2-2 and repair by replacement.
 - (2) Hot water inlet (15). Refer to FIGURE 2-2 and repair by replacement.
 - (3) Cold water inlet (16). Refer to FIGURE 2-2 and repair by replacement.
 - (4) Reuse drain (17). Refer to FIGURE 2-2 and repair by replacement.
 - (5) Extra water (18). Refer to FIGURE 2-2 and repair by replacement.

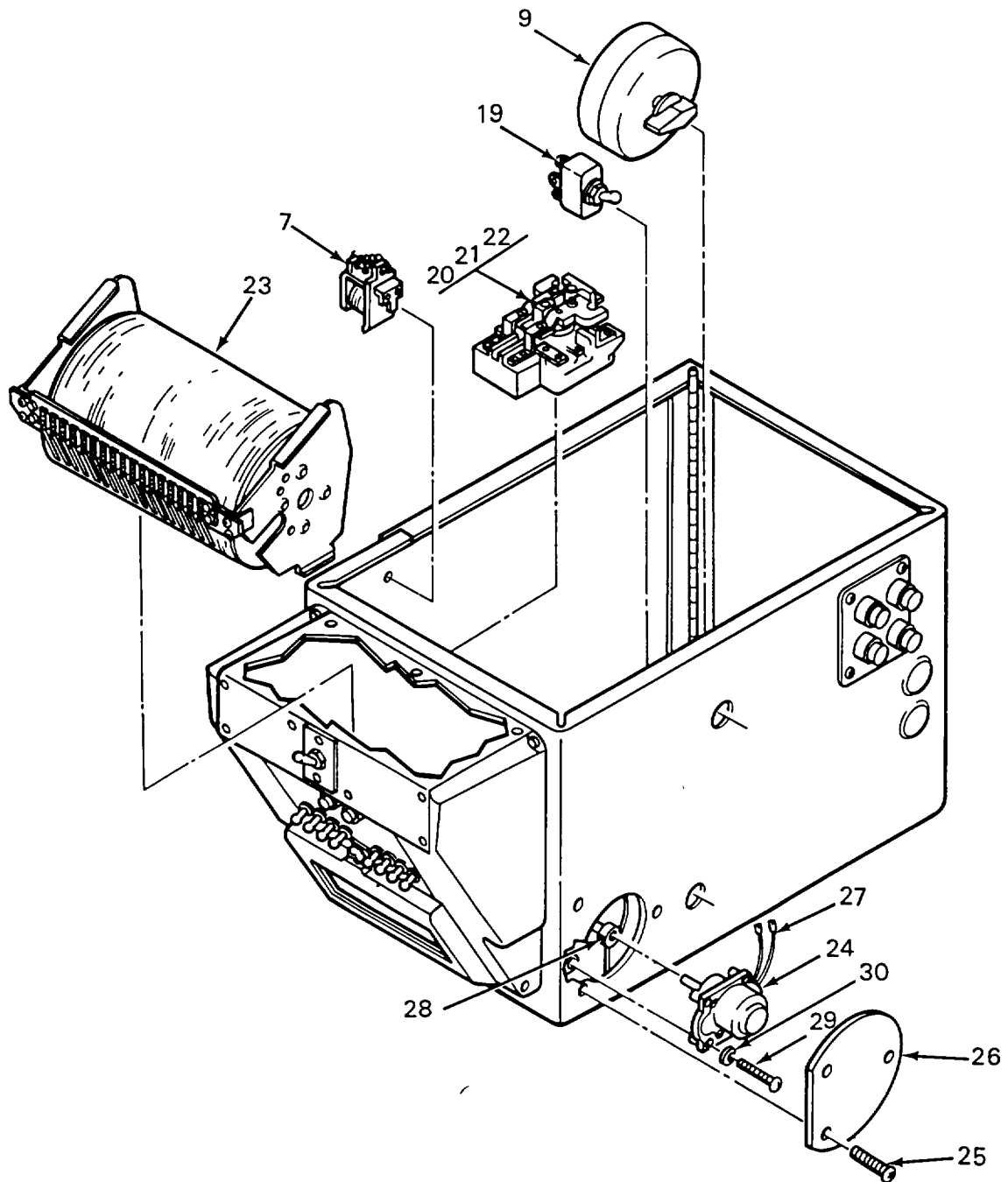
3-11. WASHER CONTROLLER ASSEMBLY (CONT)

REPAIR (Cont)

- j. Timer enable switch (19). Refer to FIGURE 2-2 and repair by replacement.
 - k. Timer (9). Refer to FIGURE 2-2 and repair by replacement.
 - l. Drum relays (20), (21), and (22). Refer to FIGURE 2-2 and repair by replacement.
 - m. Drum and finger assembly (23). Refer to FIGURE 2-2 and repair by replacement.
5. Drum motor replacement. Refer to FIGURE 2-2 and replace drum motor (24) as follows:
- a. Remove three screws (25) and cover (26).
 - b. Disconnect two wires (27).
 - c. Loosen setscrew (28) on shaft of motor (24).
 - d. Remove four screws (29), four lockwashers (30), and motor (24).
 - e. Replace unserviceable motor with new motor.
 - f. Install new motor (24), four lockwashers (30), and four screws (29).
 - g. Tighten setscrew (28) on shaft of motor (24).
 - h. Connect two wires (27).
 - i. Install cover (26) and three screws (25).

3-11. WASHER CONTROLLER ASSEMBLY (CONT)

REPAIR (Cont)



3-11. WASHER CONTROLLER ASSEMBLY (CONT)

REMOVAL**WARNING**

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

1. Remove six screws (31) and remove top panel (32) from controller (33).

NOTE

A record of wire removal is needed so that installation hookup is exactly duplicated. See FIGURE 2-2.

2. Locate wires coming from four conduits (34) on inside of controller (33). Tag and disconnect each wire individually.
3. Cut nylon wire ties as needed.
4. Remove four locknuts (35) from conduit fittings on inside of controller (33). Remove conduit, fittings, and wires from controller.
5. Remove four locknuts (36), eight washers (37), and four screws (38) from controller (33) and stand (39).
6. Remove controller (33) from stand (39).

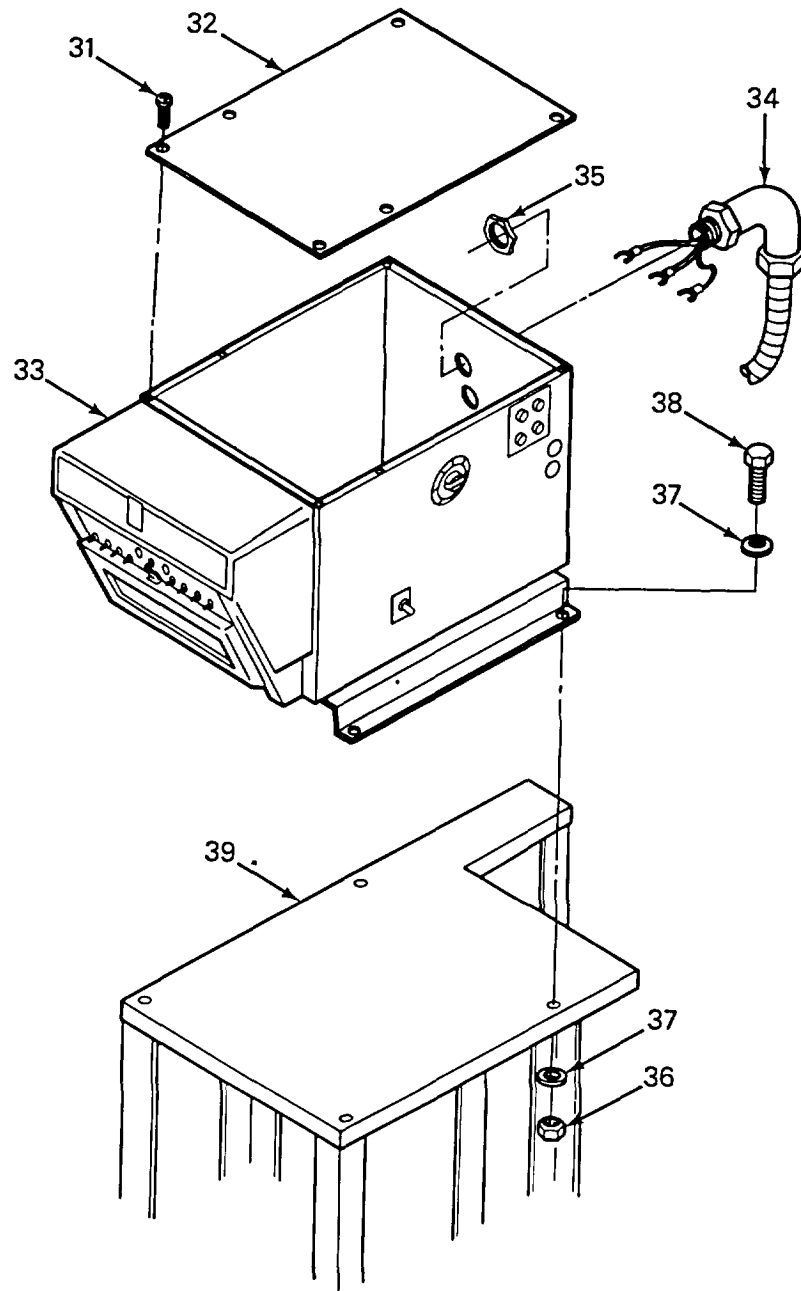
INSTALLATION**WARNING**

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

1. Position controller (33) on stand (39). Install four screws (38), eight washers (37), and four locknuts (36).
2. Install wires and fittings of four conduits through holes of controller (33). Install four locknuts (35) on conduit fittings.
3. Connect each wire to its proper connector and remove tags. Tie wire bundles with wire ties (Item 11, App C) as needed.
4. Position top panel (32) on controller (33) and install six screws (31).

3-11. WASHER CONTROLLER ASSEMBLY (CONT)

INSTALLATION (Cont)



NOTE

FOLLOW-ON MAINTENANCE:

Install tarp assembly (TM-10-3510-209-10).

3-12. CONTROLLER STAND

This task covers:

- a. Removal
 - b. Installation
-

INITIAL SETUP

Tools

General mechanic's tool set
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

General hardware (as required)

General Safety Instructions

WARNING

**High voltage is present on this equipment.
Do not perform maintenance with power on.
Death or serious injury may result.**

Equipment Conditions:

TM 10-3510-209-10, Tarp assembly removed.
Paragraph 2-27, Pre-extraction bin removed.
Paragraph 3-11, Washer controller removed.
Paragraph 2-24, Air compressor removed.
Paragraph 3-14, Power distribution panel removed.

REMOVAL

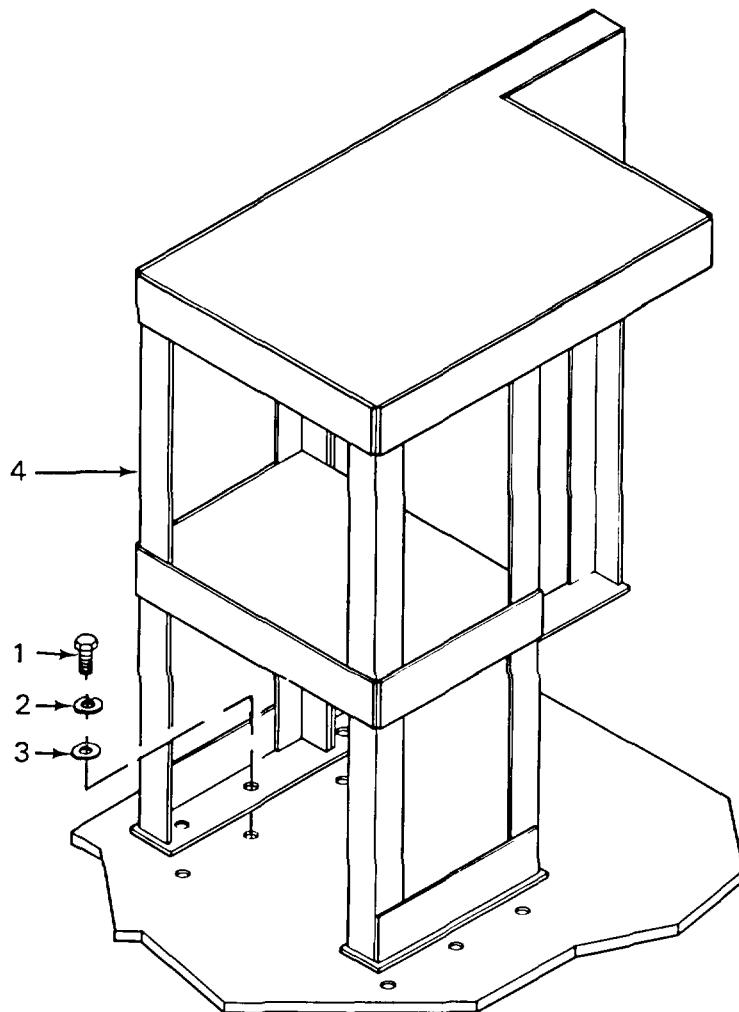
1. Remove six bolts (1), lockwashers (2), and flat washers (3) from controller stand (4).
2. Remove controller stand (4) from trailer.

INSTALLATION

1. Install controller stand (4) on trailer.
2. Install six bolts (1), lockwashers (2), and six flat washers (3).

3-12. CONTROLLER STAND (CONT)

INSTALLATION (Cont)



NOTE

FOLLOW-ON MAINTENANCE:

- Install power distribution panel (para 3-14).
- Install air compressor (para 2-24).
- Install washer controller (para 3-11).
- Install pre-extraction bin (para 2-27).
- Install tarp assembly (TM 10-3510-209-10).

3-13. WASHER DRIVE MOTOR MAINTENANCE

This task covers:

- a. Removal b. Disassembly c. Repair d. Assembly e. Installation
-

INITIAL SETUPTools

General mechanic's tool set
SC 5180-90
Lifting device (forklift or crane)

Personnel Required

MOS 63J (2)

Materials/Parts

Washer repair parts (as required)

General Safety Instructions**WARNING**

Components of drive unit are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

Equipment Condition

TM 10-3510-209-10, Tarp assembly removed
Paragraph 3-10, Drivebelt removed.

REMOVAL

Refer to paragraph 3-10 and remove drive motor and gear reduction unit in accordance with DISASSEMBLY procedures, steps 1 and 2.

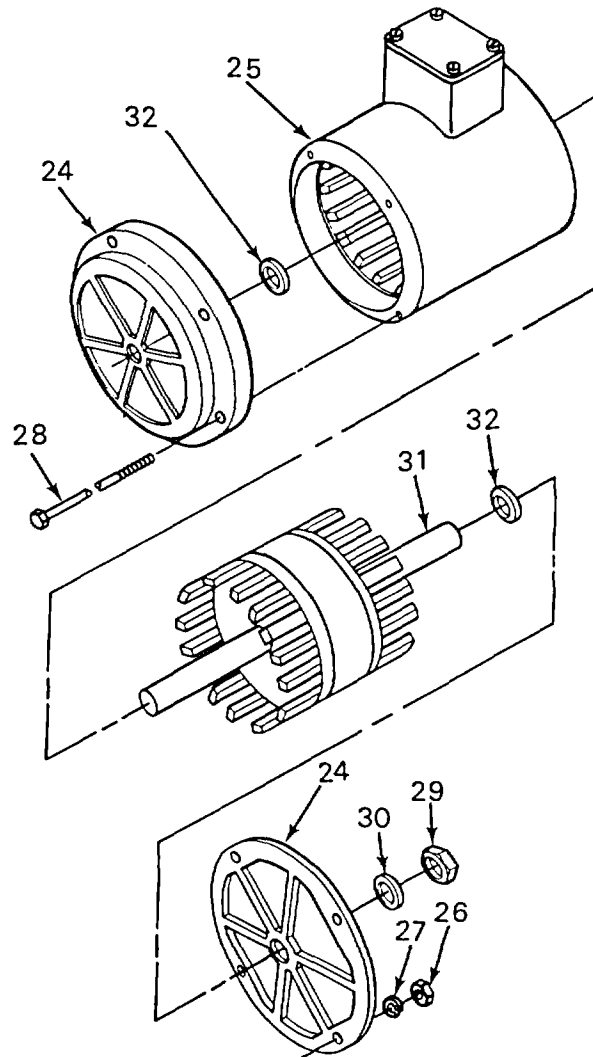
DISASSEMBLY

Disassemble drive motor.

- a. Match mark each end cap (24) to motor frame (25) for assembly purposes.
- b. Remove four nuts (26), four lockwashers (27), and bolts (28) from motor frame (25).
- c. Remove end nut (29) and washer (30).
- d. Separate end caps (24) from motor frame (25).
- e. Remove armature (31) from motor frame (25).
- f. Remove end bearings (32) from end caps (24).

3-13. WASHER DRIVE MOTOR MAINTENANCE (CONT)

DISASSEMBLY (Cont)



3-13. WASHER DRIVE MOTOR MAINTENANCE (CONT)

REPAIR

1. Refer to TM 5-764 for inspection and repair of the electric motors.
2. Inspect the drive unit gearbox by rotating input shaft and listening/feeling for grinding, binding, or rough movement.

WARNING

Dry-cleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point is 100 to 138°F (38 to 59°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If Contact with eyes is made, wash your eyes with water and get medical aid immediately.

3. Repair drive unit gearbox by cleaning the exterior with solvent (Item 10, App C) or by replacing gearbox.

WARNING

Compressed air used for cleaning purposes will not exceed 30 psi (207 kPa). Use only with effective chip-guarding and personal-protective equipment (goggles, shield, gloves, etc.).

4. Use compressed air and blow dry the gear case.
5. Inspect drain plug threads and bearing cap threads for damage and broken studs. Repair threads as needed. Installation of threaded insert is permissible.

ASSEMBLY

Assemble drive motor.

- a. Install end bearings (32) in each end cap (24).
- b. Install armature (31) in motor frame (25).
- c. Install end caps (24) on motor frame (25). Aline matchmarks.

3-13. WASHER DRIVE MOTOR MAINTENANCE (CONT)

ASSEMBLY (Cont)

- d. Install four bolts (28), lockwashers (27), and nuts (26) in motor frame (25).
- e. Install washer (30) and end nut (29) on armature (31).

INSTALLATION

WARNING

Components of this washer assembly are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

NOTE

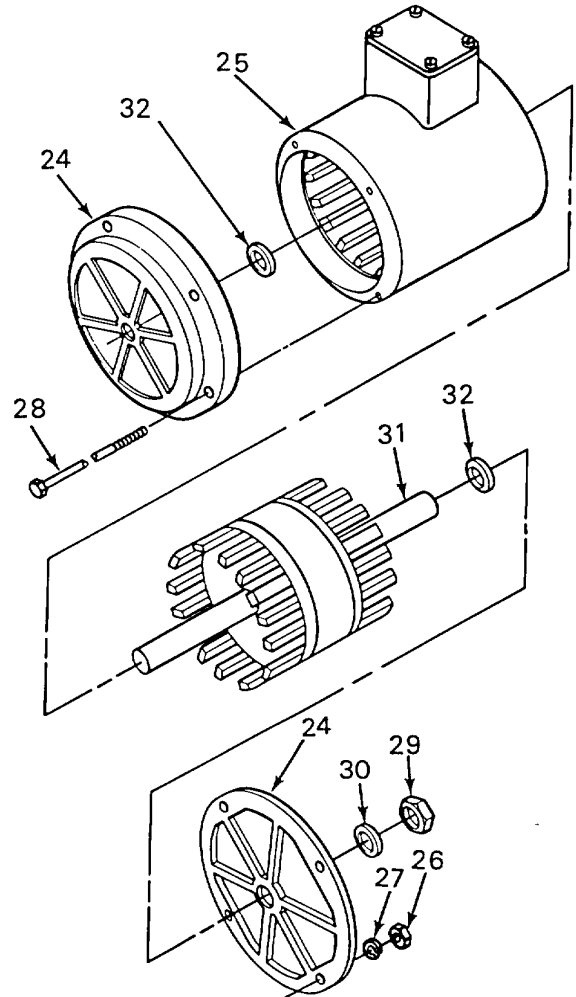
Gear reduction unit should be installed before the drive motor is installed.

1. Refer to paragraph 3-10 and install gear reduction unit in accordance with ASSEMBLY, step 3.
2. Refer to paragraph 3-10 and install drive motor in accordance with ASSEMBLY, step 4.
3. Refer to paragraph 3-10 INSTALLATION, steps 6 and 7 and connect electrical wires to motor.

NOTE

FOLLOW-ON MAINTENANCE:

Install drivebelt guard (para 3-10).
 Install tarp assembly
 (TM 10-3510-209-10).



3-14. POWER DISTRIBUTION PANEL

This task covers:

- a. Removal
- b. Replacement
- c. Installation

INITIAL SETUP

Tools

General mechanic's tool set
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Tags, identification
(Item 12, App C)

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Equipment Condition

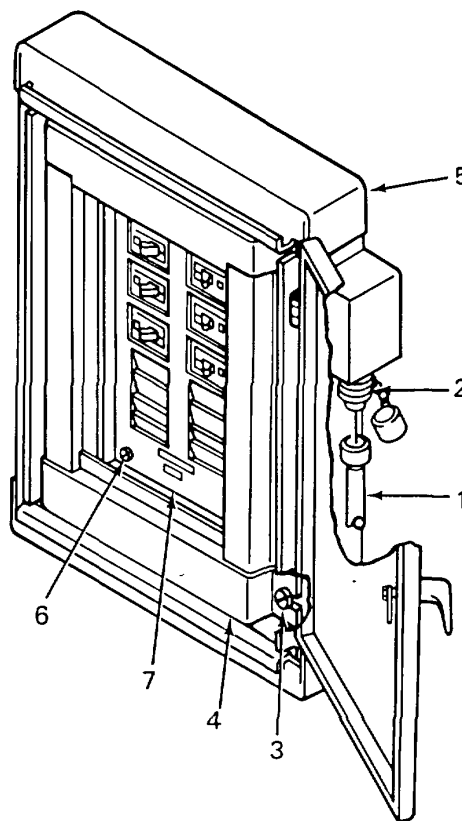
TM 10-3510-209-10, Tarp assembly removed.

REMOVAL

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

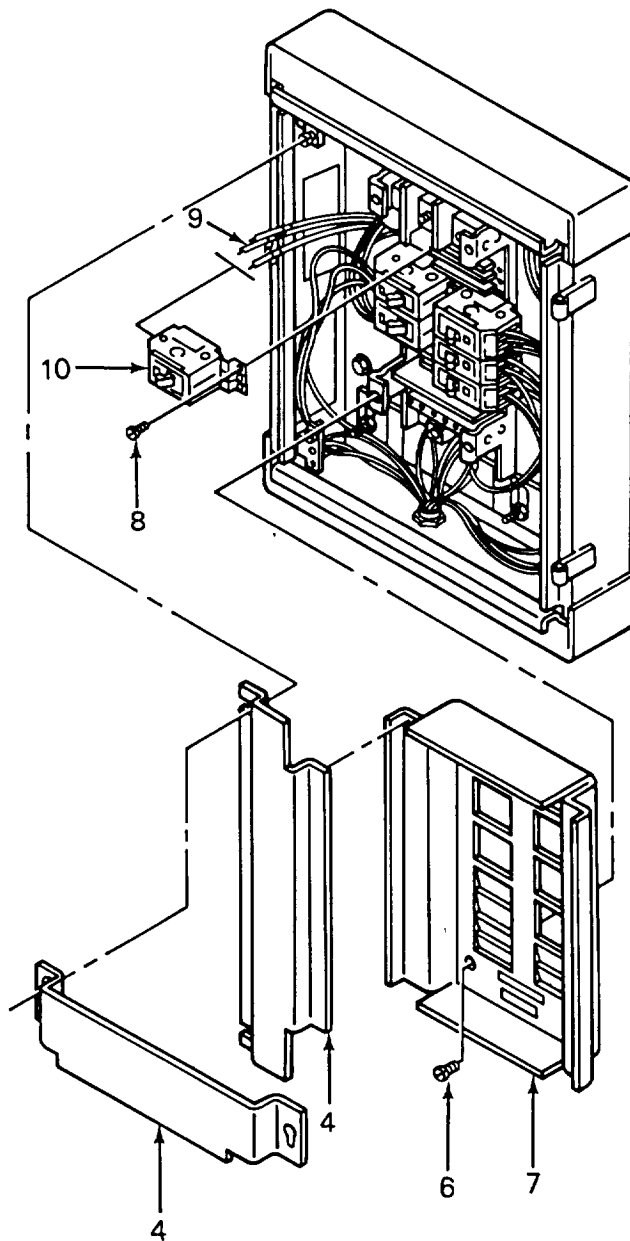
1. Disconnect main power cable (1) from receptacle (2).
2. Loosen four screws (3) and remove four panels (4) from panel box assembly (5).
3. Remove four screws (6) and circuit breaker cover (7).



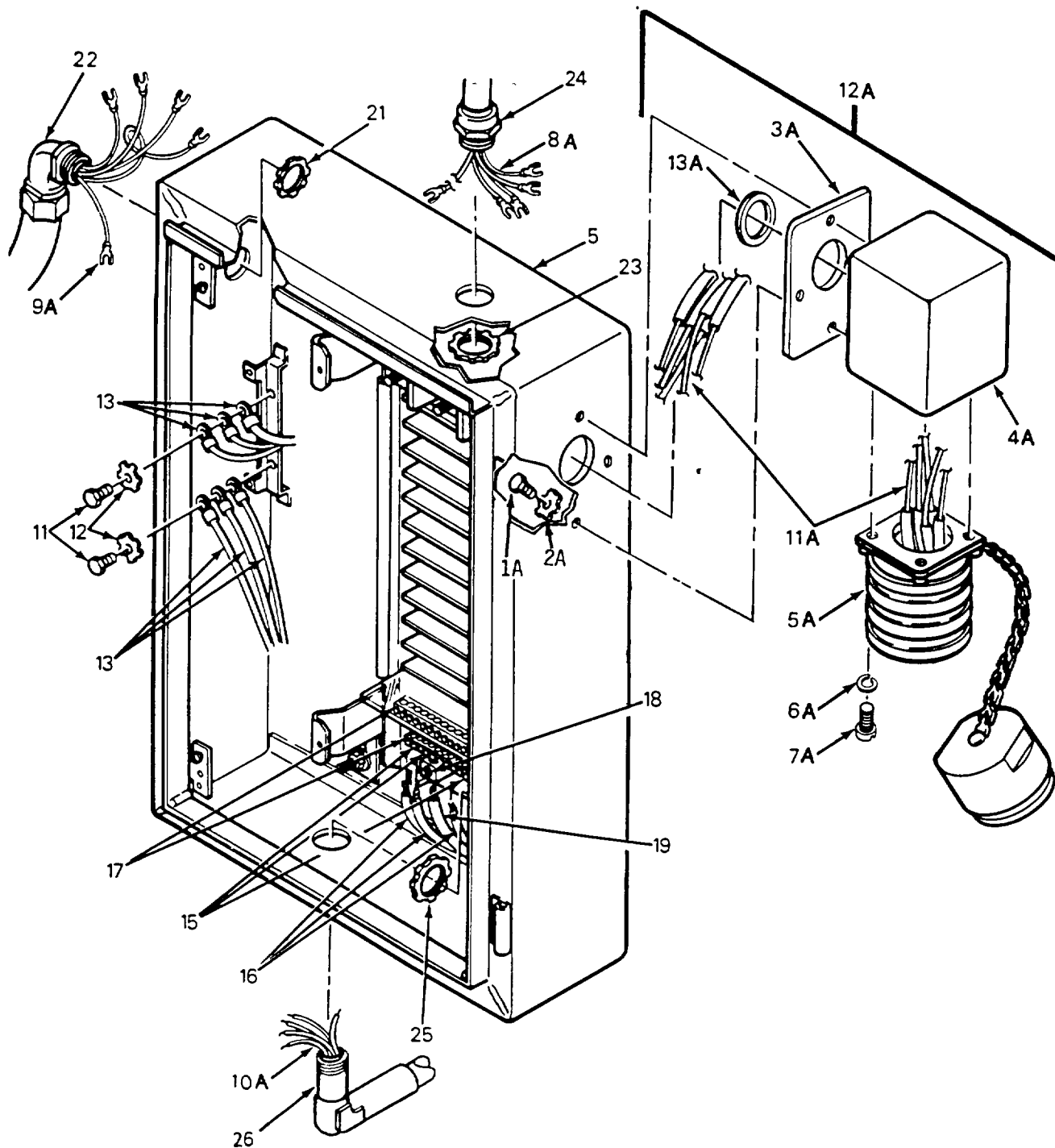
3-14. POWER DISTRIBUTION PANEL (CONT)

REMOVAL (Cont)

4. Loosen three screws (8). Tag and disconnect three wires (9) from circuit breaker (10). Remove circuit breaker (10).
5. Repeat step 4 for remaining circuit breakers.



3-14. POWER DISTRIBUTION PANEL (CONT)



3-14. POWER DISTRIBUTION PANEL (CONT)

REMOVAL (Cont)**NOTE**

Tag wires before removal.

6. Tag six ground wires (13). Remove two screws (11), two lockwashers (12), and six ground wires from panel box (5).

7. Loosen screws (15). Tag and remove neutral wires (16) from connector strips (17).

8. Loosen large allen-head set screw on connector block (18). Tag and remove neutral wire (19) from connector blocks.

CAUTION

Carefully remove cable assemblies from panel box to prevent stripping insulation from the wires.

9. Remove nut (21) and cable assembly (22) from panel box (5). Tag and remove associated wires (9A) from panel box (5).

10. Remove nut (23) and cable assembly (24) from panel box (5). Tag and remove associated wires (8A) from panel box (5).

11. Remove nut (25) and conduit assembly (26) from panel box (5). Tag and remove associated wires (10A) from panel box (5).

12. Remove four screws(1A) and four lockwashers (2A). Remove connector box assembly (12A) including gasket (3A). Tag and remove associated wires (11A) from panel box (5). Remove rubber grommet (13A) from panel box (5).

13. Remove four screws (7A) and four lockwashers (6A) to separate connector (5A) from connector box (4A). Feed wires (11A) through connector box (4A).

3-14. POWER DISTRIBUTION PANEL (CONT)

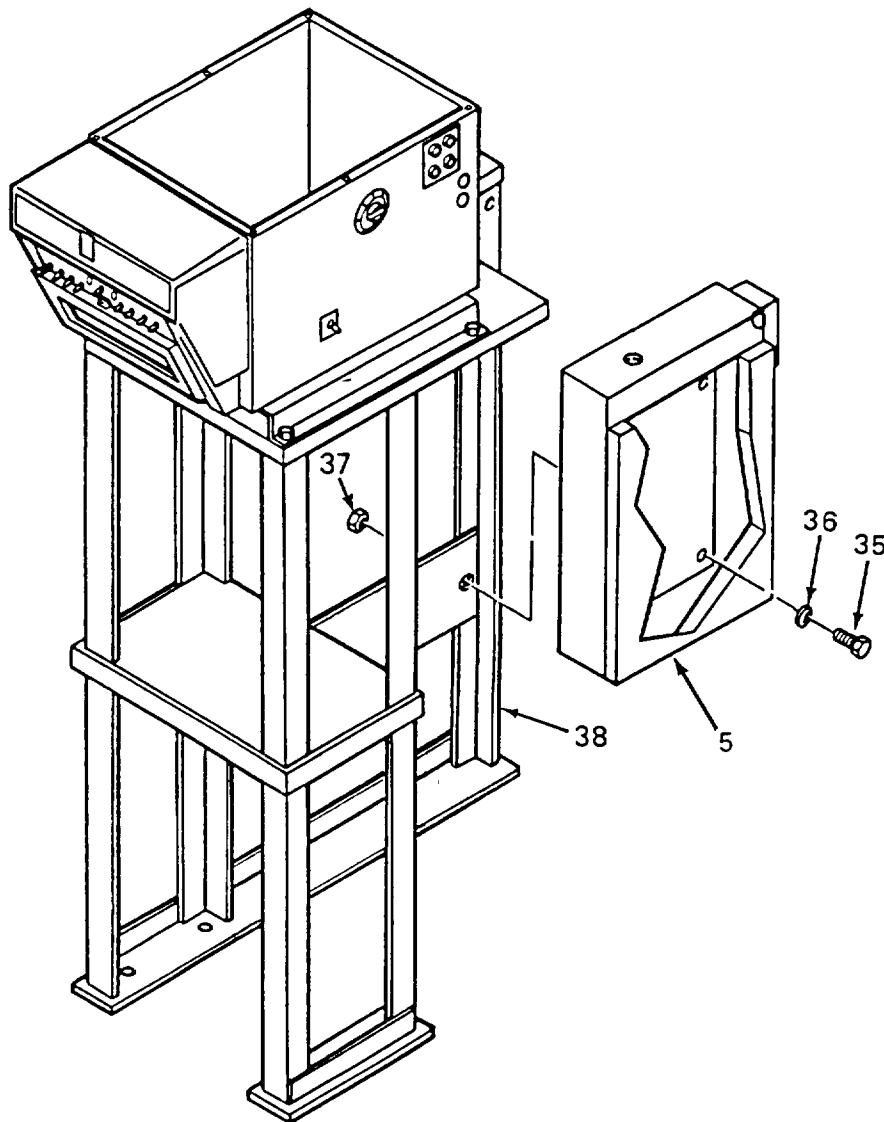
14. Remove four capscrews (35), flat washers (36) and locknuts (37) from panel box (5) and control stand (38). Remove panel box.

REPLACEMENT

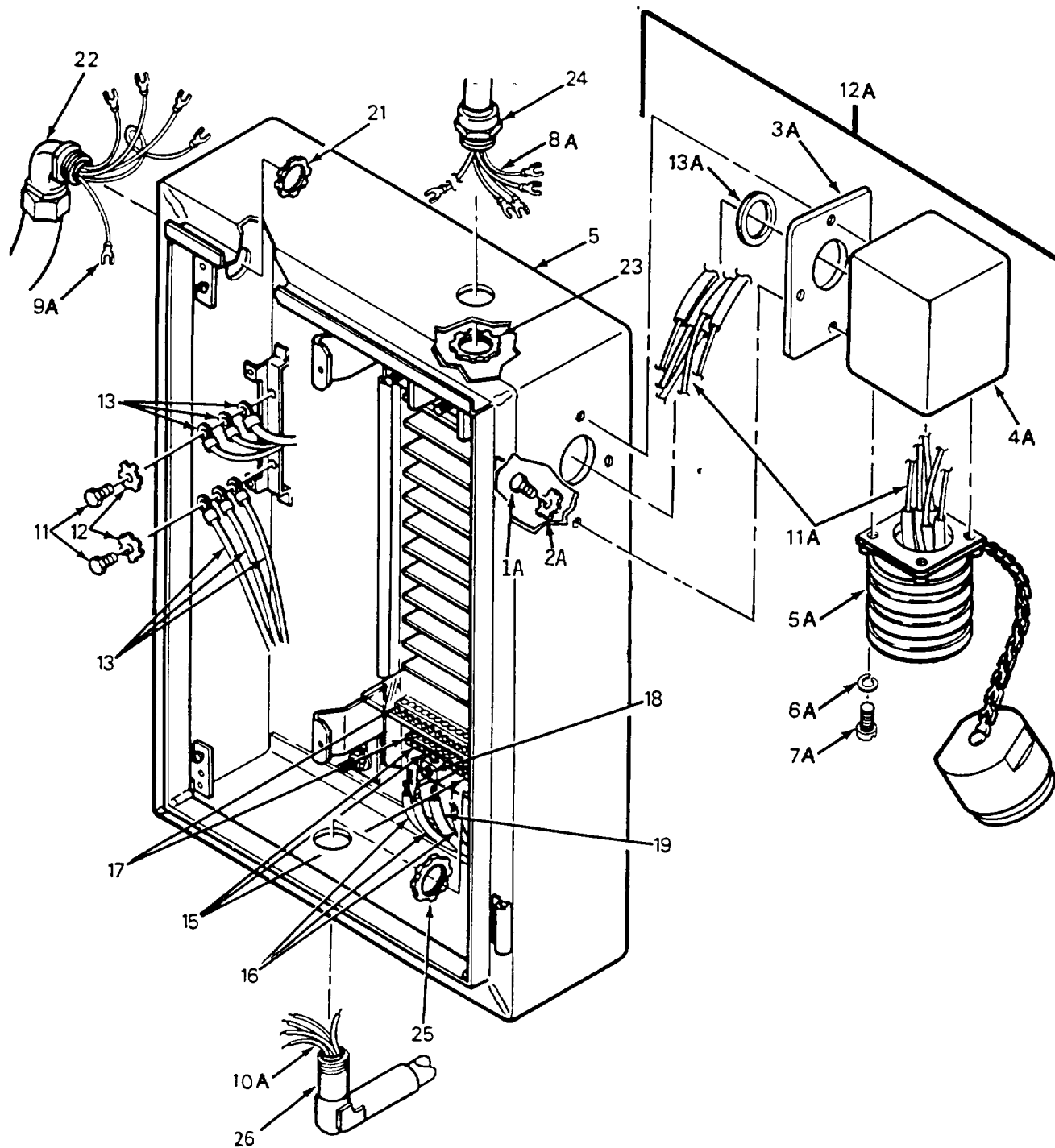
Replace the defective component with new or serviceable items. Remove and replace only those items necessary to make repair. After replacing the defective component, make a visual inspection or perform an operational check. If replacing whole panel new conduit holes may have to be put in panel. Match holes with old panel.

INSTALLATION

1. Position panel box (5) and install four capscrews (35), flat washers (36) and locknuts (37).



3-14. POWER DISTRIBUTION PANEL (CONT)



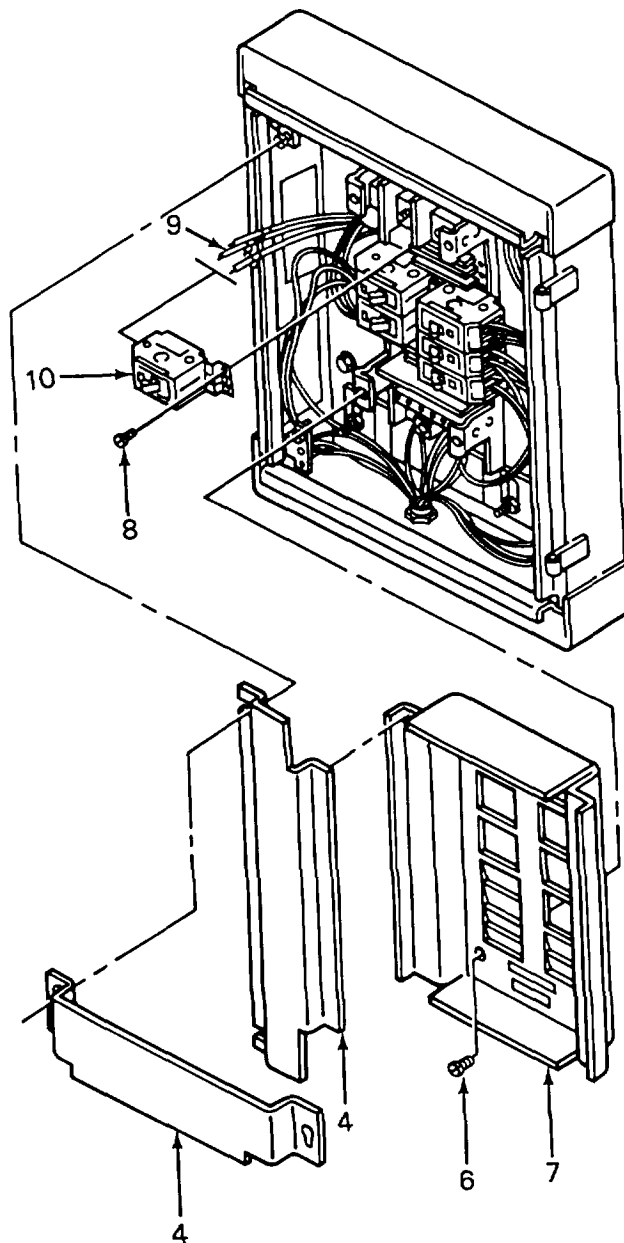
3-14. POWER DISTRIBUTION PANEL (CONT)

INSTALLATION (CONT)

2. Feed wires (11A) from connector (5A) through connector box (4A). Attach connector (5A) to connector box (4A) using four screws (7A) and four lockwashers (6A).
3. Insert rubber grommet (13A) into hole on side of panel box (5). Feed wires (11A) through gasket (3A) and rubber grommet (13A) into panel box (5). Position connector box (4A) and gasket (3A) and secure from inside panel box with four screws (1A) and four lockwashers (2A).
4. Reconnect wires (11A) to panel box (5). Remove tags.
5. Feed wires (10A) into panel box (5). Install conduit assembly (26) and conduit nut (25) on panel box.
6. Reconnect wires (10A) to panel box (5). Remove tags.
7. Feed wires (8A) into panel box (5). Install cable assembly (24) and nut (23) on panel box.
8. Reconnect wires (8A) to panel box (5). Remove tags.
9. Feed wires (9A) into panel box (5). Install cable assembly (22) and nut (21) on panel box (5).
10. Reconnect wires (9A) to panel box (5). Remove tags.
11. Install neutral wire (19) on connector block (18) and tighten large allen-head set screw. Remove tag.
12. Install neutral wires (16) on connector strip (17) and tighten screws (15). Remove tags.
13. Install six ground wires (13) on panel box (5) and secure with two screws (11) and lockwashers (12). Remove tags.

3-14. POWER DISTRIBUTION PANEL (CONT)**INSTALLATION (CONT)**

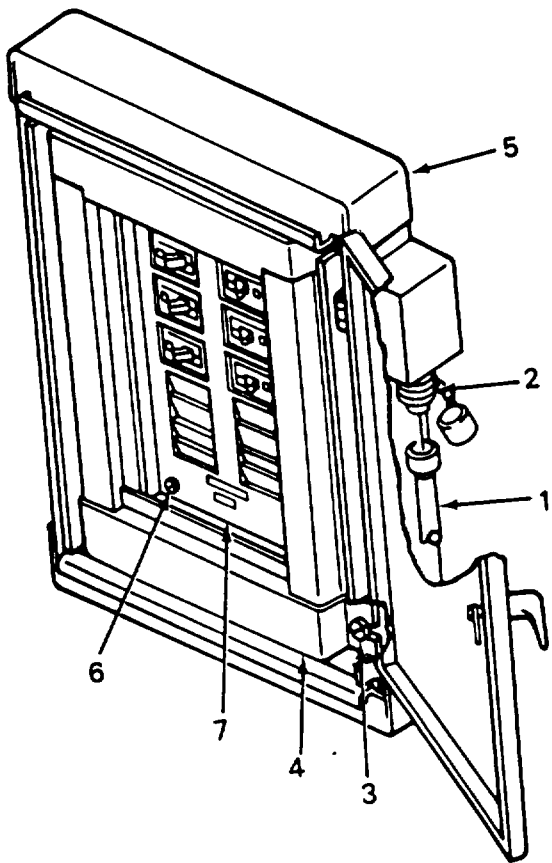
14. Install circuit breaker (10) and three wires (9). Tighten three screws (8). Remove tags.
15. Repeat step 14 for remaining circuit breakers.
16. Install circuit breaker cover (7) and four screws (6).



3-14 POWER DISTRIBUTION PANEL (CONT)

INSTALLATION (Cont)

17. Install four panels (4) on panel box assembly (5) and tighten four screws (3).



18. Connect main power cable (1) to receptacle (2).
19. Check for proper operation of all equipment and check for proper motor rotation (TM 10-3510-209-10).

NOTE
FOLLOW-ON MAINTENANCE:
Install tarp assembly (TM 10-3510-209-10).

3-15. EXTRACTOR PIPING

This task covers:

Repair

INITIAL SETUP

Materials/Parts

Solder (App C, Item 9)

Flux (App C, Item 25)

Antiseize Compound (App C, Item 26)

Tools

General Mechanics Tool Kit (App B, Item 1)

Automotive Vehicle Shop Equipment

(App B, Item 6)

Equipment Condition

Extractor piping removed (Para 2-31.2)

General Safety Instructions

WARNING

Chemical Agent Resistance Coating (CARC) produces toxic fumes when flame is applied. It is necessary to remove CARC in area where flame is to be applied.

REPAIR

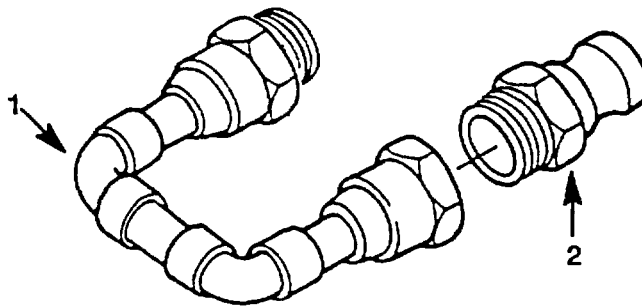
1. Copper fittings(s).

Remove damaged sections of copper tubing on extractor piping (1) using torch. Refer to TM 10-3510-209-24P for breakdown of copper tubing.

2. Threaded coupling.

Remove damaged coupling (2). Before installing coupling, apply antiseize compound to male threads.

3. Install extractor piping (1) (Para 2-31.2).



Pages 3-57 and 3-58 deleted

Change 4 3-55/(3-56 blank)

3-16. EXTRACTOR ASSEMBLY

This task covers:

- a. Removal
 - b. Repair
 - c. Installation
-

INITIAL SETUP

Tools

General mechanic's tool set,
SC 5180-90

Personnel Required

MOS 63J (3)

Materials/Parts

Extractor assembly
(parts as needed)
Lubricating oil (Item 17, App C)
Lubricating oil, multipurpose
(Item 18, App C)
Turbine oil (Item 20, App C)

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

WARNING

Components of the extractor are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

Equipment Condition

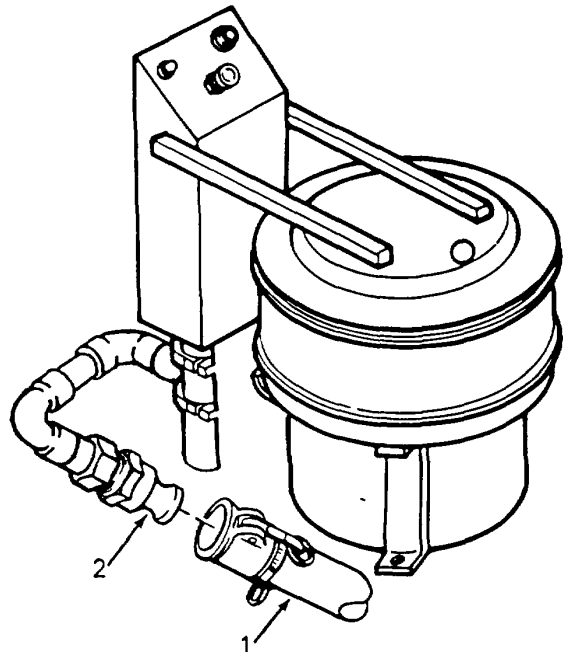
TM 5-6115-585-12, Generator off.
TM 10-3510-209-10, Tarp assembly and platform removed.
Paragraph 2-27, Pre-extraction bin removed.
TM 10-3510-209-10, Left beam assembly removed.
TM 10-3510-209-10, Strut assembly removed.

REMOVAL

WARNING

Components of the extractor are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

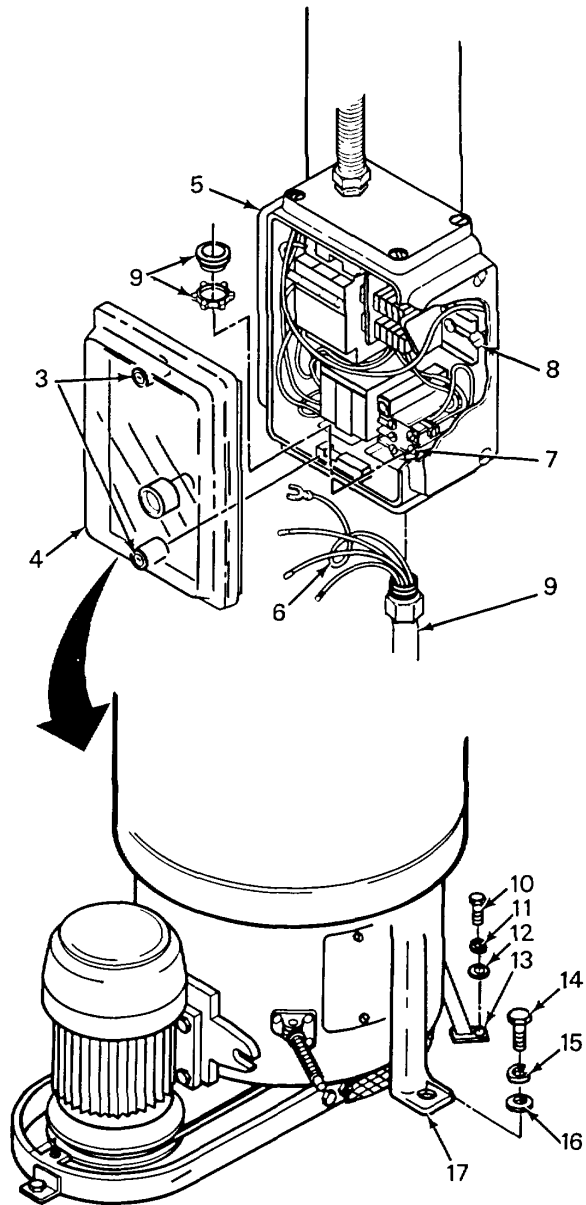
1. Disconnect drain hose (1) from quick-disconnect fitting (2).



3-16. EXTRACTOR ASSEMBLY (CONT)

REMOVAL (Cont)

2. Loosen two screws (3) and remove cover (4) from electrical box (5).
3. Tag and disconnect three wires (6) from circuit breaker (7) and one wire from ground screw (8). Remove nut (9), conduit, and wires from electrical box (5).
4. Remove five capscrews (10), lockwashers (11), and flat washers (12) from small legs (13).
5. Remove four capscrews (14), lockwashers (15), and flat washers (16) from large legs (17).
6. Use lifting straps and hoist and remove the extractor from the laundry trailer.



3-16. EXTRACTOR ASSEMBLY (CONT)**REPAIR**

1. Remove and replace brakeshoe.

WARNING

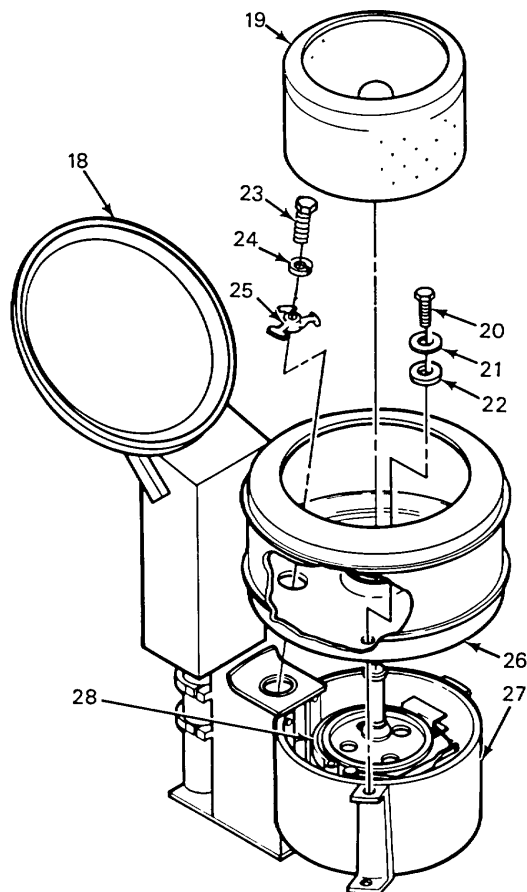
High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

- a. Place extractor circuit breaker on electrical panel in OFF position.
- b. Open extractor lid (18).

WARNING

Components of the extractor are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

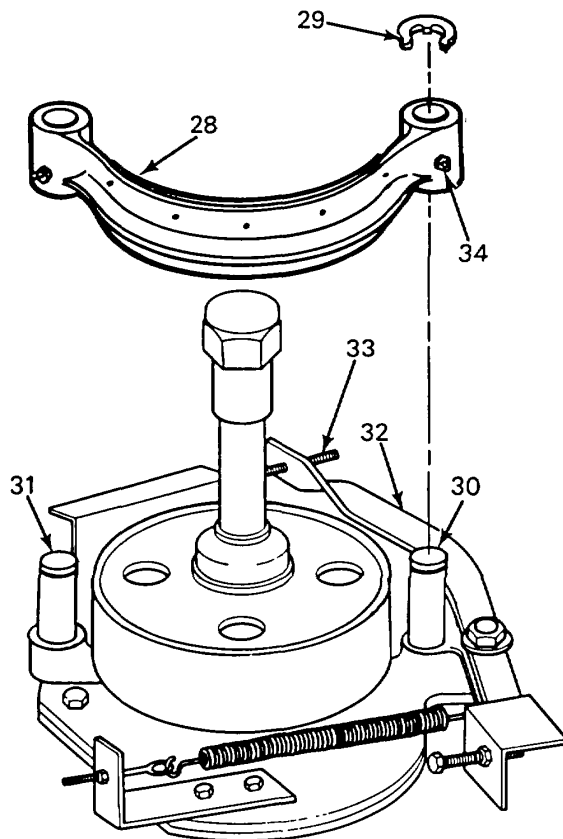
- c. Remove extractor basket (19).
- d. Remove two brass bolts (20), flat washers (21), and gaskets (22). Remove capscrew (23), lockwasher (24), and drain clamp (25). Remove curb (26) from base (27).
- e. Measure thinnest part of brake shoe (28) lining. Replace brakeshoe if lining thickness measures less than 1/8 inch (3.2 mm).



3-16. EXTRACTOR ASSEMBLY (CONT)

REPAIR (Cont)

- f. Remove two snaprings (29) from brake arm pivot (30) and anchor stud (31).
- g. Use brake arm (32) and manually push in brake solenoid plunger (33), releasing brake pressure.
- h. Pry off brakeshoe (28) at pivot points and clean the pivot points with a clean cloth.
- i. Install new brakeshoe (28) with lubrication points (34) aligned in the direction shown and install snaprings (29).
- j. Lubricate the brakeshoe pivot points. Refer to LO 10-3510209-12.
- k. Adjust brakeshoe. Refer to paragraph 2-28.
- l. Install curb (26) on base (27). Secure with capscrew (23), lockwasher (24), drain clamp (25), two brass bolts (20), flat washers (21), and gaskets (22).



3-16. EXTRACTOR ASSEMBLY (CONT)

REPAIR (Cont)

- m. Lift basket (19) and gently install in extractor. Turn basket slightly until it engages with hex drive.
- n. Connect extractor drain line. Refer to TM 10-3510-209-10.
- o. Lower extractor lid (18) to operating position.

- 2. Remove and replace brake solenoid.

WARNING

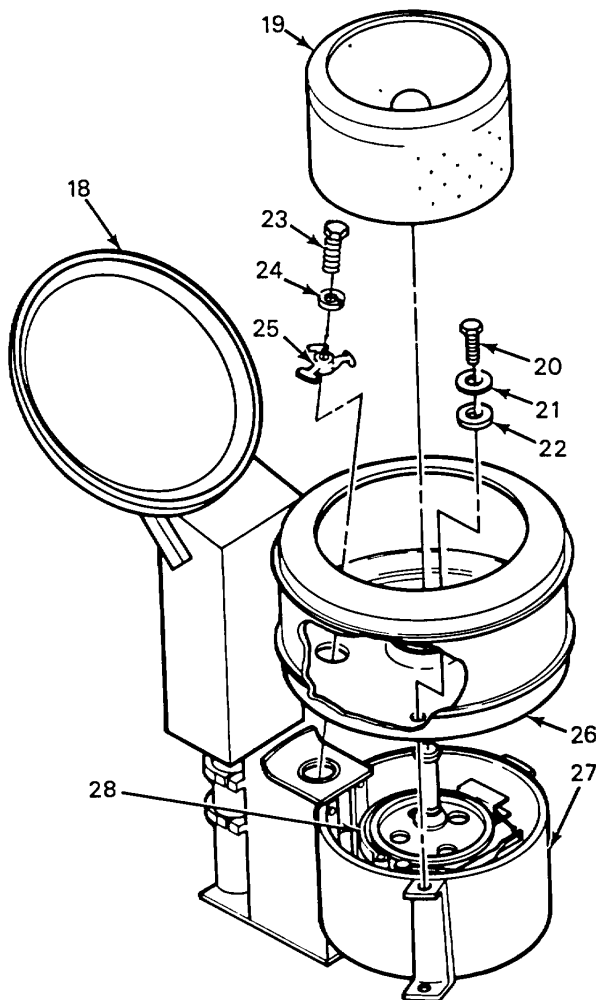
High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

- a. Set extractor circuit breaker on the electrical panel to the OFF position.
- b. Open extractor lid (18).
- c. Disconnect extractor drain. Refer to TM 10-3510-209-10.

WARNING

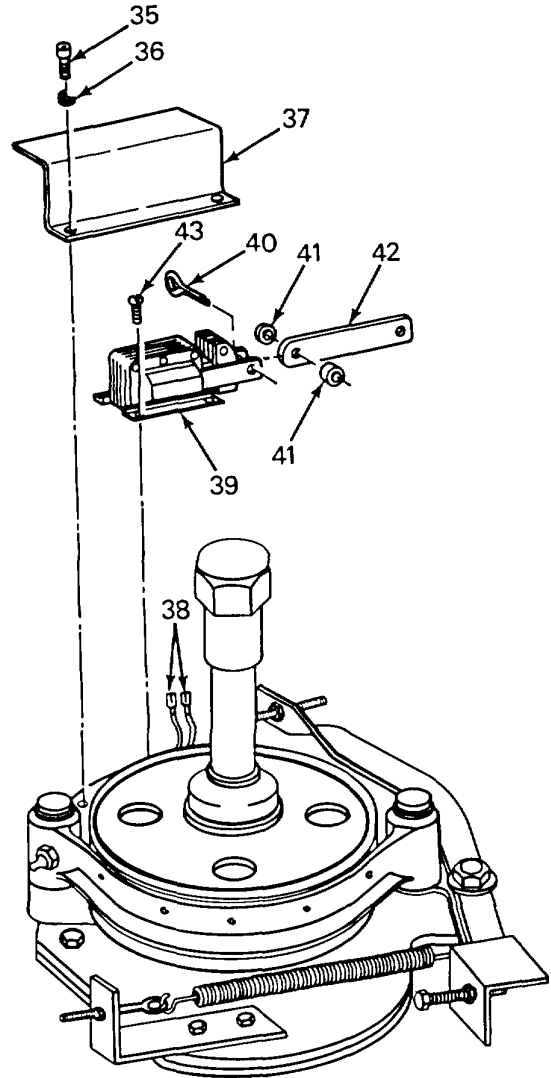
Components of the extractor assembly are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

- d. Manually lift out basket (19).
- e. Refer to REPAIR, step 1d, and remove curb from base.



3-16. EXTRACTOR ASSEMBLY (CONT)**REPAIR (Cont)**

- f. Remove two allen-head screws (35), washers (36), and solenoid shield (37).
- g. Tag and disconnect wires (38) on brake solenoid (39).
- h. Straighten and remove cotter pin (40), three spacers (41), and connector link (42) from brake solenoid (39).
- i. With a multimeter on the low ohms scale, measure across the brake solenoid (39). Multimeter should indicate approximately 12.5 ohms.
- j. Remove four screws (43) and brake solenoid (39).
- k. Install new brake solenoid (39) and secure with four screws (43).
- l. Install connector link (42) on new brake solenoid (39), and secure with three spacers (41) and cotter pin (40). Bend end of cotter pin.
- m. Connect wires (38) to brake solenoid (39). Remove tags.
- n. Install solenoid shield (37) and secure with two allen-head screws (35) and washers (36).
- o. Refer to paragraph 2-28 and adjust the brake.
- p. Refer to REPAIR, step 11, and install curb on base.



3-16. EXTRACTOR ASSEMBLY (CONT)

REPAIR (Cont)**WARNING**

Components of the extractor are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

NOTE

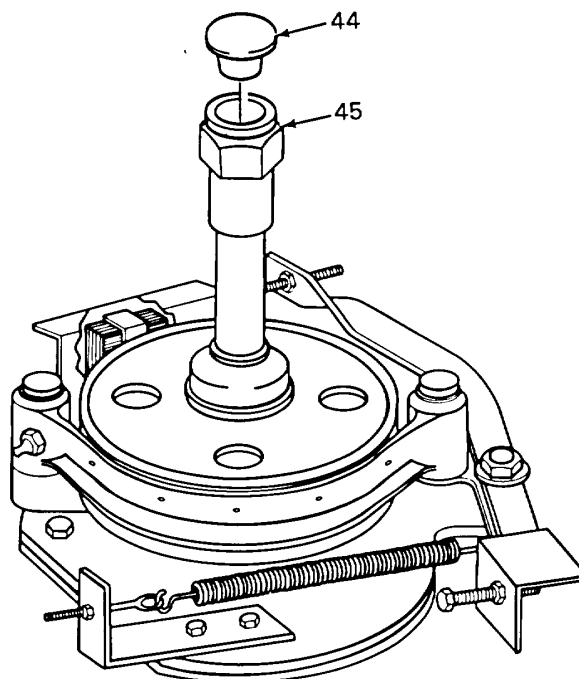
Lubricate gyro ball (45) in accordance with LO 10-3510-209-12.

- q. Refer to REPAIR, step lm, and install basket in extractor.
 - r. Connect extractor drain line. Refer to TM 10-3510-209-10.
 - s. Lower extractor lid to operating position.
3. Test extractor. Refer to TM 10-3510-209-10.
 4. Remove and replace gyro ball cap.

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

- a. Set extractor circuit breaker on electrical power panel to the OFF position.
- b. Open extractor lid. Remove basket.



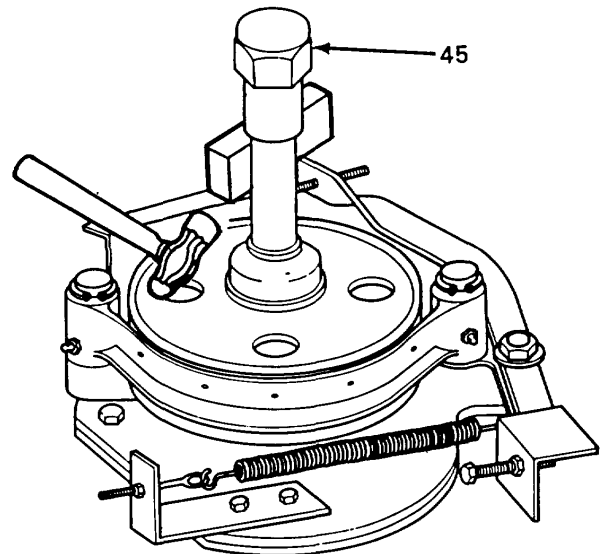
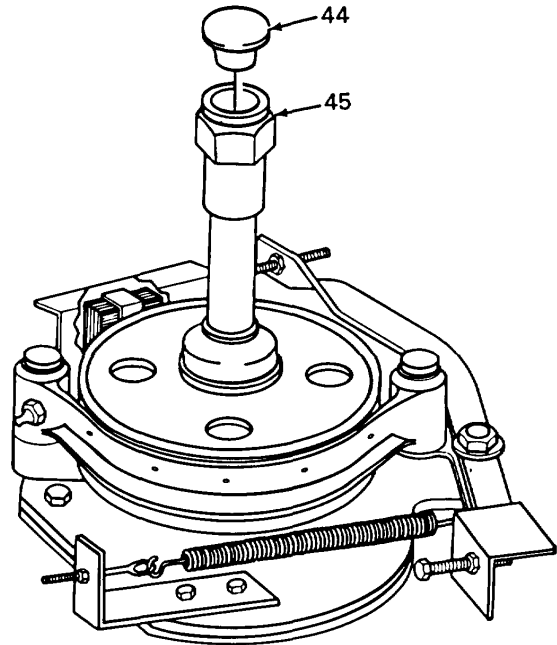
3-16. EXTRACTOR ASSEMBLY (CONT)**REPAIR (Cont)**

- c. Remove gyro ball cap (44) from the top of gyro ball (45).
 - d. Install new gyro ball cap (44) on gyro ball (45) and tap into place with plastic mallet. If the ball cap does not easily fit in place, soak it in warm water for a few minutes.
 - e. Lubricate gyro ball (45). Refer to LO 10-3510-209-12.
 - f. Install extractor basket and lower lid to operating position. (Refer to step 2q above.)
5. Remove and replace gyro ball (45).

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

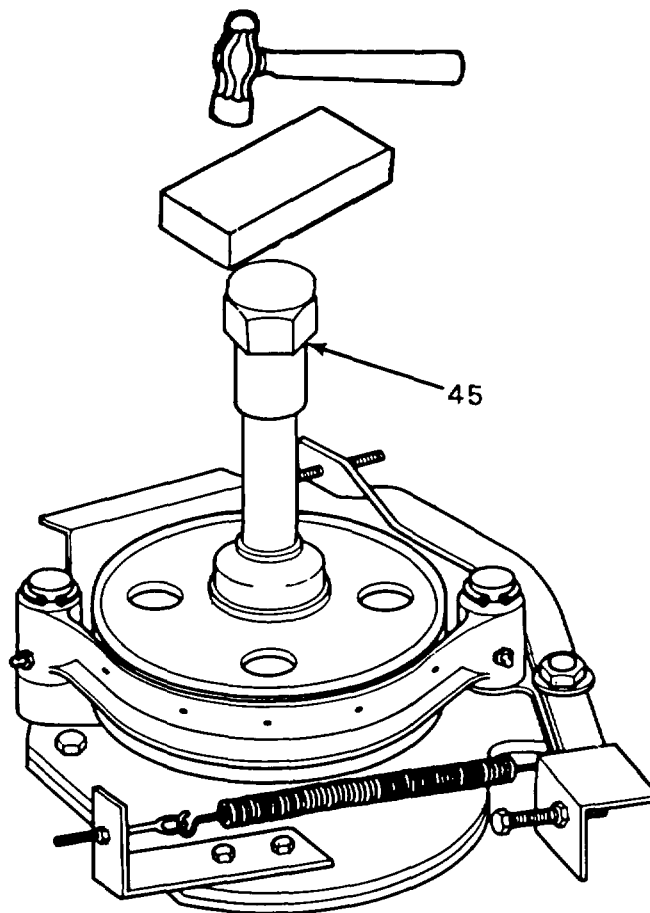
- a. Remove ball cap (44) from the top of gyro ball (45). (Refer to step 4 above.)
- b. Use a block of wood and a hammer and remove gyro ball (45) from the shaft. Place the block under the gyro ball and drive the ball from the shaft.



3-16. EXTRACTOR ASSEMBLY (CONT)

REPAIR (Cont)

- c. Use a block of wood and drive new gyro ball (45) into position.
- d. Install ball cap (44) on top of gyro ball (45). (Refer to step 4d above.)
- e. Lubricate gyro ball (45). Refer to LO 10-3510-209-12.
- f. Refer to REPAIR, step 1m, and install basket in extractor. Lower lid to operating position.



3-16. EXTRACTOR ASSEMBLY (CONT)

INSTALLATION

WARNING

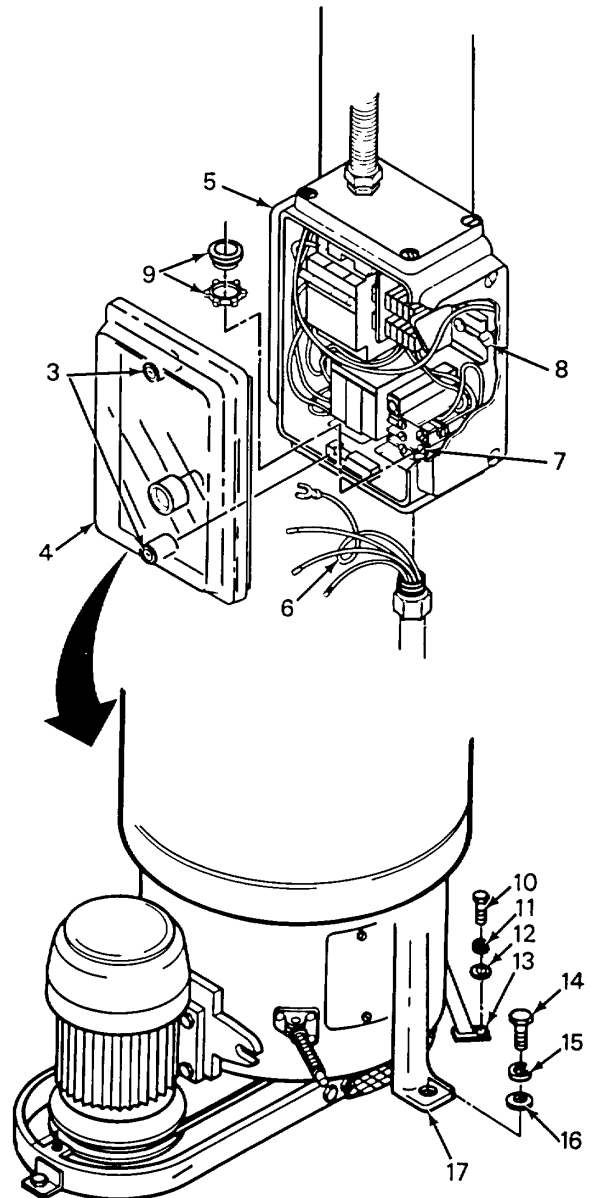
Components of the extractor are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

1. Use lifting straps and hoist and place extractor in position on trailer.
2. Install four capscrews (14), lockwashers (15), and flat washers (16) in large legs (17).
3. Install five capscrews (10), lockwashers (11), and flat washers (12) in small legs (13).
4. Install conduit and three wires (6) in electrical box (5). Secure with nuts (9).
5. Connect three wires (6) to circuit breaker (7) and one green wire to ground screw (8). Remove tags.
6. Install cover (4) and two screws (3) on electrical box (5).
7. Refer to REMOVAL, step 1, and connect drain hose to quick disconnect fitting.

NOTE

FOLLOW-ON MAINTENANCE:

Install tarp assembly
(TM 10-3510-209-10).



3-17. EXTRACTOR DRIVE UNIT

This task covers:

- a. Removal
 - b. Adjustment
 - c. Installation
-

INITIAL SETUP

Tools

General mechanic's tool set
SC 5180-90

Personnel Required

MOS 63J (2)

Materials/Parts

Center unit assembly
Ball bearing grease (Item 19,
App C)
Turbine oil (Item 20, App C)

General Safety Instructions

WARNING

**High voltage is present on this equipment.
Do not perform maintenance with power on.
Death or serious injury may result.**

Equipment Condition

TM 10-3510-209-10, Tarp assembly removed.

REMOVAL

NOTE

The center unit is an assembly that contains the turbine drive unit and its associated mounting trunnions.

NOTE

The center unit is replaced as a unit and returned to the manufacturer or depot for repair or exchange.

1. Remove center unit.

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

- a. Place extractor circuit breaker on electrical panel to OFF position.

3-17. EXTRACTOR DRIVE UNIT (CONT)

REMOVAL (Cont)

- b. Disconnect extractor drain line. Refer to TM 10-3510-209-10.

WARNING

Components of the extractor are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

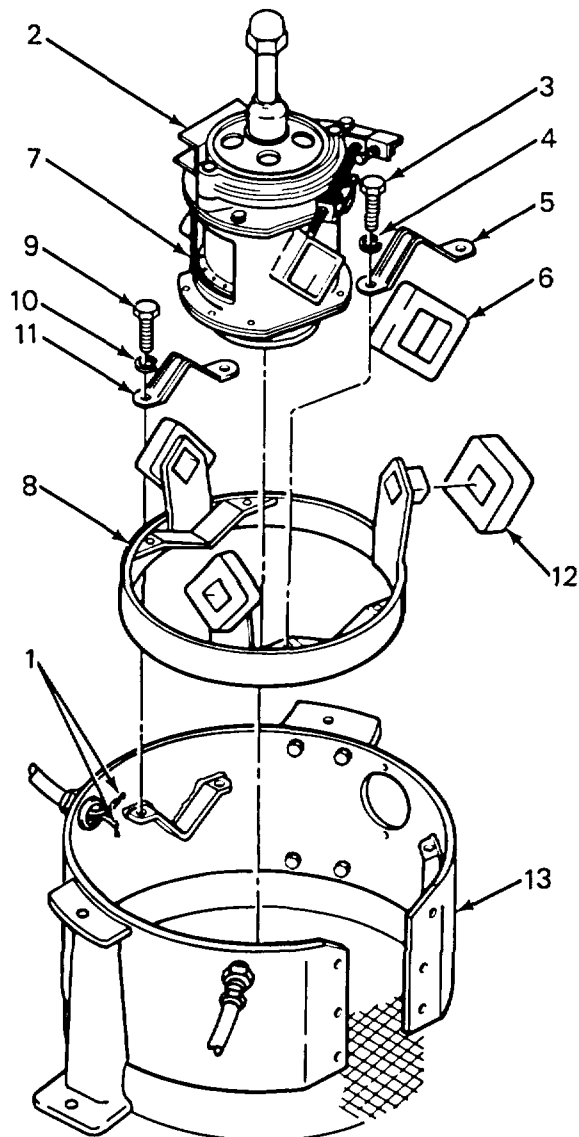
- c. Refer to paragraph 3-16, REPAIR, step 1, and remove extractor basket.
- d. Refer to paragraph 3-16, REPAIR, step 1, and remove curb from base.
- e. Tag and disconnect two brake solenoid electrical wires (1) from brake solenoid (2).
- f. Refer to paragraph 2-28 and disconnect drivebelt.

NOTE

Matchmark the positions of base (13), trunnion ring (8), and drive unit (7) in relation to each other as an aid for assembly.

NOTE

If flat washers are found under trunnion caps, mark location and number as an aid for assembly.



3-17. EXTRACTOR DRIVE UNIT (CONT)

REMOVAL (Cont)

- g. Remove four bolts (3) and lockwashers (4) securing two trunnion caps (5) over trunnion rubbers (6). Remove the trunnion caps.

WARNING

The center unit is heavy and awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

- h. Lift out drive unit (7) from trunnion ring (8). Set drive unit on blocks to protect brake solenoid and brake components from damage.
- i. Remove six bolts (9) and lockwashers (10) securing three bumper caps (11) over bumper rubbers (12). Remove three bumper caps and lift out trunnion ring (8).

NOTE

Replace trunnion rubbers and/or bumper rubbers at this time if they show signs of wear.

2. Remove drive unit.

The center unit is replaced as a complete assembly, with the drive unit intact. The only maintenance available on the drive unit is the runner gap adjustment.

ADJUSTMENT**NOTE**

Adjustment consists of increasing or decreasing the runner gap of the drive unit.

1. Refer to REMOVAL above and remove drive unit (7).

3-17. EXTRACTOR DRIVE UNIT (CONT)

ADJUSTMENT (Cont)**CAUTION**

Do not rest drive unit on brake components or the brake solenoid.

2. Lay drive unit (7) on its side with fill plug (14) up to prevent oil from spilling.
3. Remove fill plug (14).

CAUTION

If oil is spilled, drain old oil and replace in accordance with LO 10-3510-209-12. Too much or too little oil will result in damage to drive unit.

NOTE

If 1000 hours have elapsed since last oil change, refer to LO-3510-209-12 and change oil.

4. Use feeler gage through fill hole and measure runner gap (15). Runner gap should be 0.090 inch (2.29 mm).

CAUTION

A runner gap that is too wide or too narrow will damage drive unit and motor.

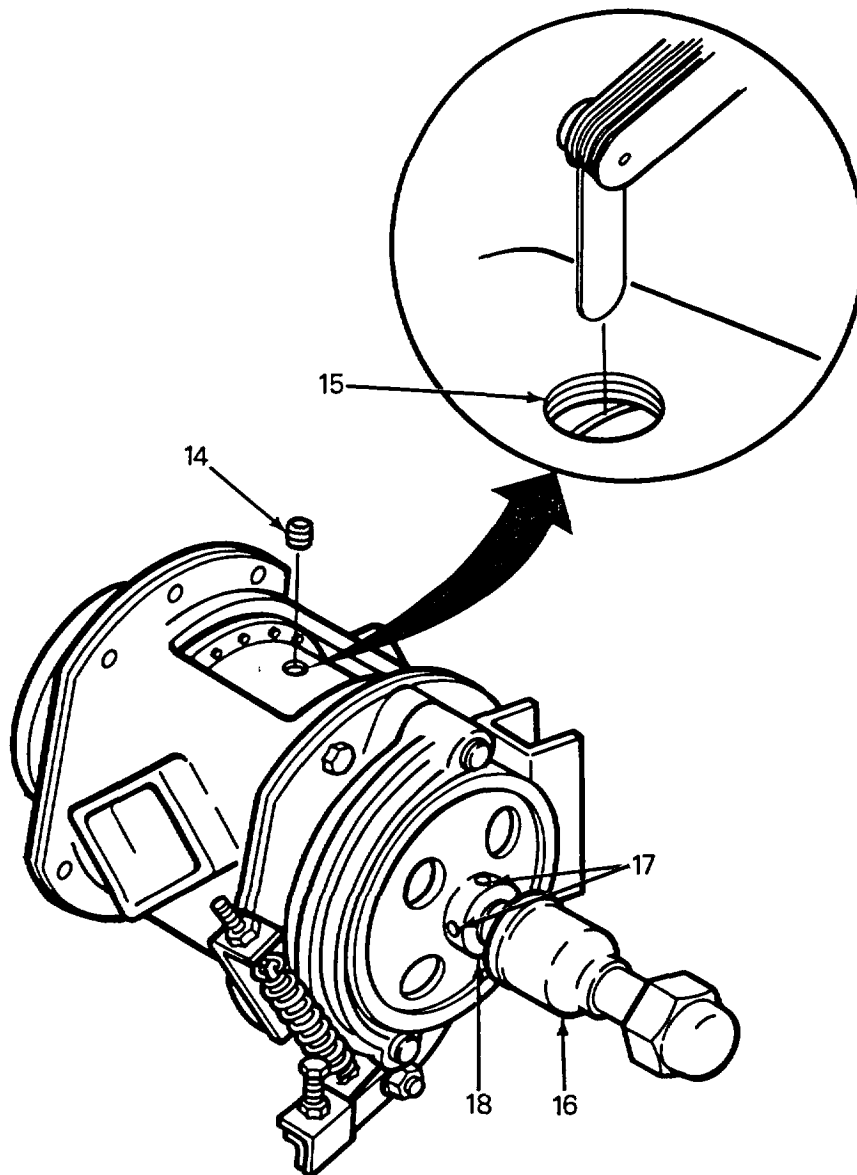
5. Adjust runner gap.
 - a. Remove rubber shaft seal (16).
 - b. Loosen four setscrews (17) on shaft nut (18).
 - c. Loosen or tighten shaft nut (18). Tighten nut to widen the runner gap. Loosen nut and strike shaft with plastic hammer to make gap smaller.
 - d. Tighten four setscrews (17) on shaft nut (18).
 - e. Measure the runner gap to see if it changed. Adjust again if necessary.
 - f. Install rubber shaft seal (16).
6. Install fill plug (14).

NOTE

If turbine oil was lost during adjustment, refer to LO 10-3510-209-12 for servicing.

3-17. EXTRACTOR DRIVE UNIT (CONT)

ADJUSTMENT (Cont)



3-17. EXTRACTOR DRIVE UNIT (CONT)**INSTALLATION**

1. Install center unit in extractor.

NOTE

Refer to matchmarks on base, trunnion ring, and drive unit made in step 1 above for proper positioning of these parts in relation to each other.

- a. Place trunnion ring (8) inside base (13).
- b. Place three bumper caps (11) over bumper rubbers (12) with raised lips facing away from the center of the extractor. Secure bumper caps with six lockwashers (10) and bolts (9).

WARNING

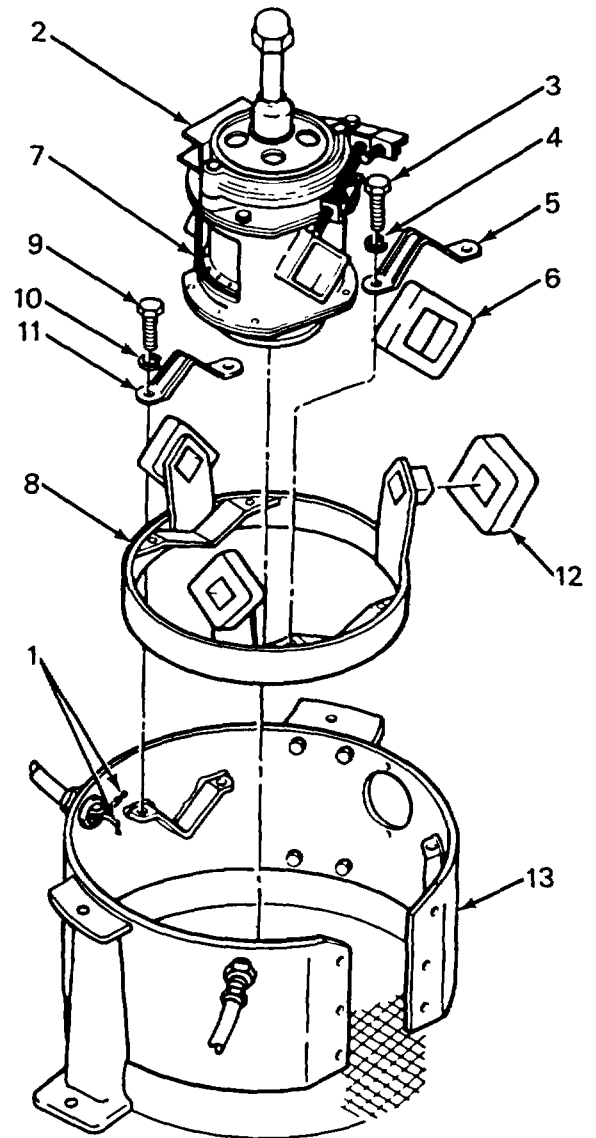
The drive unit is heavy and awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

- c. Place drive unit (7) inside trunnion ring (8).

NOTE

If flat washers were located under trunnion caps, install at this time in the same location.

- d. Place two trunnion caps (5) over trunnion rubbers (6) with raised lips facing away from center of the extractor. Secure with four lockwashers (4) and bolts (3).



3-17. EXTRACTOR DRIVE UNIT (CONT)

INSTALLATION (Cont)**NOTE**

You should be able to pull/push the top of the drive shaft approximately 1/2 inch (12.7 mm) off center. If movement is less than 1/2 inch (12.7 mm), add a flat washer under the trunnion caps. If movement is more than 1/2 inch (12.7 mm), remove flat washer from under the trunnion caps.

2. Lubricate brake mechanism and gyro ball. Refer to LO 10-3510-209-12.
3. Connect three brake solenoid wires (1) to brake solenoid (2). Remove tags.
4. Refer to paragraph 3-16 REPAIR, step 1, and install curb on base.

WARNING

Components of the extractor are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

5. Refer to paragraph 3-16 REPAIR, step 1m, and install extractor basket.
6. Connect extractor drain line. Refer to TM 10-3510-209-10.
7. Place extractor circuit breaker on electrical panel to ON position.
8. Operate extractor to test. Refer to TM 10-3510-209-10.

NOTE**FOLLOW-ON MAINTENANCE:**

Install tarp assembly (TM 10-3510-209-10.)

3-18. EXTRACTOR CONTROL BOX

This task covers:

- a. Adjustment
 - b. Repair
-

INITIAL SETUP

Tools

General mechanic's tool set
SC 5180-10

Personnel Required

MOS 633 (Z)

Materials/Parts

Control Box Assembly

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Equipment Condition

TM 10-3510-209-24, Tarp assembly removed.
Paragraph 2-17, Sound deadening panel removed.

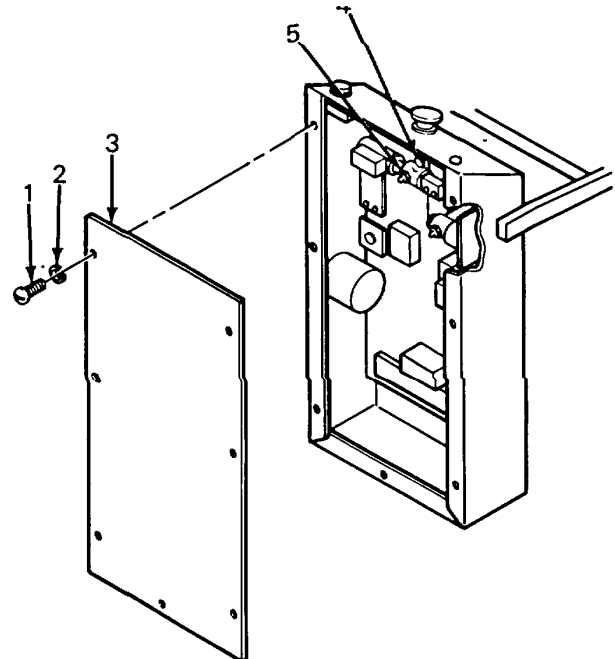
ADJUSTMENT

1. Adjust lid free fall.

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

- a. Check lid closure. The lid should not fall freely from the full open position. The lid must require downward pressure to close.
- b. Set extractor circuit breaker on electrical panel to the OFF position.
- c. Remove twelve screws (1), lockwashers (2), and extractor control panel cover (3) from rear of unit.



3-18. EXTRACTOR CONTROL BOX (CONT)**ADJUSTMENT (Cont)**

- d. Adjust lid hinge brake adjusting bolt (4), located on the center of hinge brake (5), for proper lid tension.
- e. Install extractor control panel cover (3), twelve lockwashers (2), and screws (1).

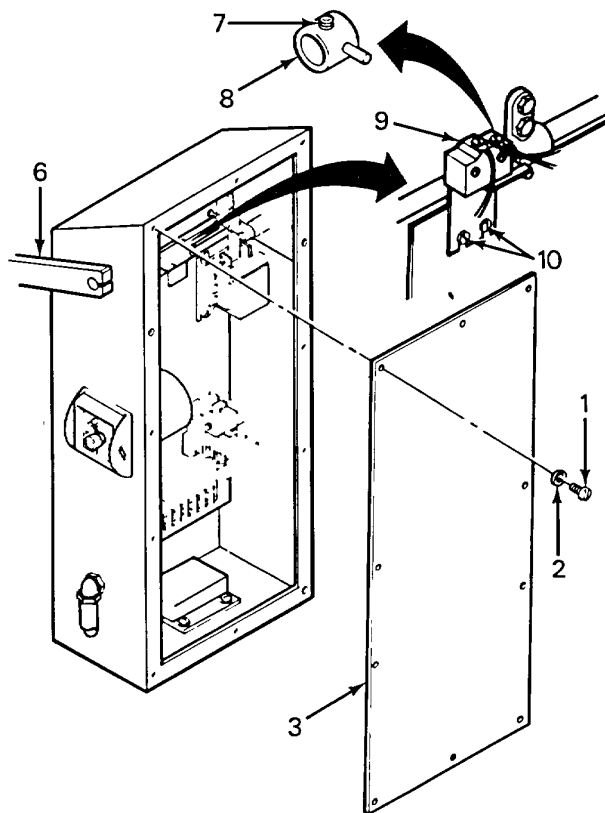
WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

WARNING

Failure to properly adjust the lid safety switch could result in injury to personnel.

2. Adjust lid safety switch (9).
 - a. Set extractor circuit breaker on electrical panel to the OFF position.
 - b. Remove twelve screws (1), lockwashers (2), and extractor control panel cover (3) from rear of unit.
 - c. Ensure lid (6) is closed.
 - d. Use allen wrench and loosen lid safety cam screw (7).
 - e. Rotate lid safety cam (8) until lid safety switch (9) is pressed.



3-18. EXTRACTOR CONTROL BOX (CONT)

ADJUSTMENT (Cont)

- f. If lid safety switch (9) cannot be pressed, perform the following:
 - (1) Loosen two screws (10) that secure lid safety switch (9).
 - (2) Adjust lid safety switch (9) against lid safety cam (8) until switch is pressed.
 - (3) Tighten two screws (10) securing lid safety switch (9).
 - (4) Repeat steps e and f until safety switch (9) is pressed.
- g. Tighten lid safety cam screw (7).
- h. Install extractor control panel cover (3), twelve lockwashers (2), and screws (1). Set extractor circuit breaker in power panel to the ON position.

WARNING

Keep clear of the extractor basket when checking operation of the lid safety switch.

- i. Open lid and try to start extractor to ensure unit does not operate with lid open. Refer to TM 10-3510-209-10.

- 3. Adjust solenoid safety switch.

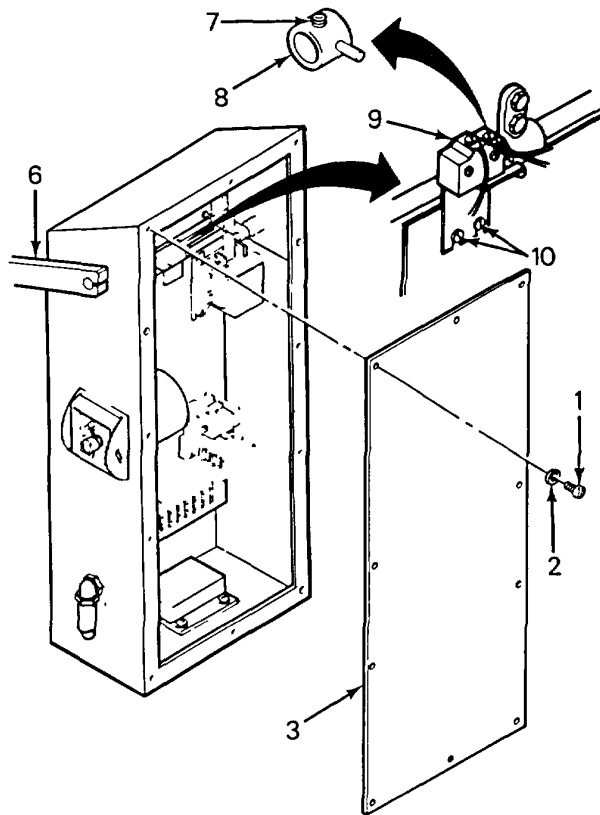
WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

WARNING

Failure to adjust the solenoid safety switch properly could result in injury to personnel.

- a. Set extractor circuit breaker on electrical panel to the OFF position.



3-18. EXTRACTOR CONTROL BOX (CONT)

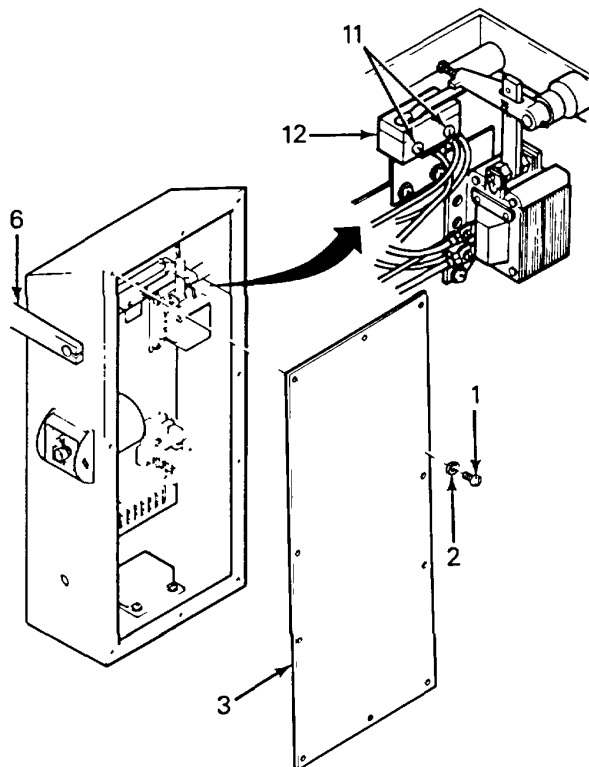
ADJUSTMENT (Cont)

- b. Remove twelve screws (1), lockwashers (2), and extractor control panel cover (3).
- c. Ensure lid (6) is closed.
- d. Loosen two solenoid screws (11) and slide solenoid safety switch (12) upward. A small amount of adjustment is necessary to prevent sliding the switch upward too far and damaging the lid solenoid.
- e. Tighten safety switch screws (11).

WARNING

High Voltage is present on this equipment. Use extreme caution while power is on and control box components are exposed.

- f. Connect power to the extractor.
- g. Start the extractor. Refer to TM 10-3510-209-10.
- h. If the extractor motor fails to run, repeat steps d thru g above.
- i. Turn off extractor.
- j. Install extractor control panel cover (3), twelve lockwashers (2), and screws (1).



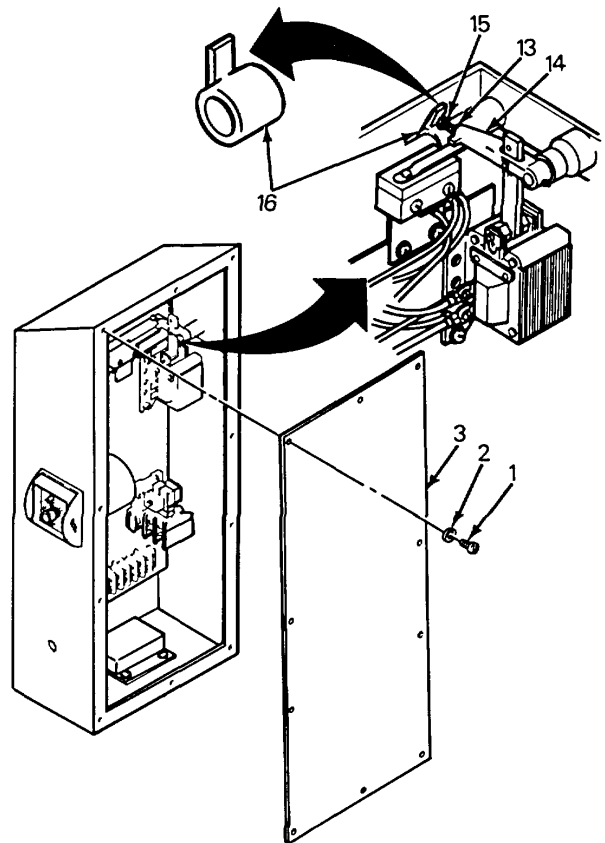
3-18. EXTRACTOR CONTROL BOX (CONT)**ADJUSTMENT (Cont)**

4. Adjust lid lock lever.

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

- a. Set extractor circuit breaker on electrical panel to the OFF position.
- b. Remove twelve screws (1), lockwashers (2), and extractor control panel cover (3).
- c. Loosen locknut (13) on the end of lid lock lever (14).
- d. Rotate lid lock lever adjusting screw (15) until it is within 1/16 inch (1.58 mm) of the face on the lid lock cam (16). Tighten locknut (13).
- e. Attempt to lift lid. Lid is properly adjusted when gap between lid and curb is no more than 1/2 inch (1.27 mm) when closed and locked.
- f. Install extractor control panel cover (3), twelve lockwashers (2), and screws (1).
- g. Turn extractor circuit breaker in power panel to ON.



3-18. EXTRACTOR CONTROL BOX (CONT)**REPAIR**

1. Remove and replace lid safety switch and/or solenoid safety switch,

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

WARNING

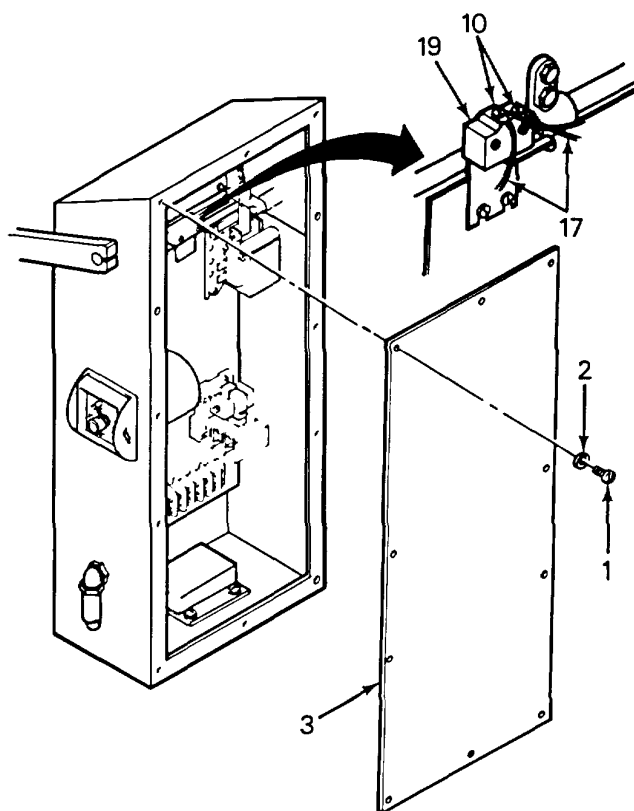
Failure to adjust the lid safety switch and/or solenoid safety switch could result in injury to personnel.

- a. Set extractor circuit breaker to the OFF position.
- b. Remove twelve screws (1), lockwashers (2), and extractor control panel cover (3).

NOTE

A record of wire removal is needed so that installation of wires on the replacement switch is exactly duplicated.

- c. Tag and disconnect electrical wires (17) from lid safety switch (19).
- d. Remove two screws (10) and lid safety switch (19).
- e. Install lid safety switch (19) and two screws (10).
- f. Connect wires (17) to lid safety switch (19). Remove tags.
- g. Refer to ADJUSTMENT, step 2, and adjust lid safety switch (19).
- h. Install twelve screws (1), lockwashers (2), and extractor control panel cover (3).



3-18. EXTRACTOR CONTROL BOX (CONT)

REPAIR (Cont)

- i. Set extractor circuit breaker to the ON position.
2. Remove and replace timer control.

WARNING

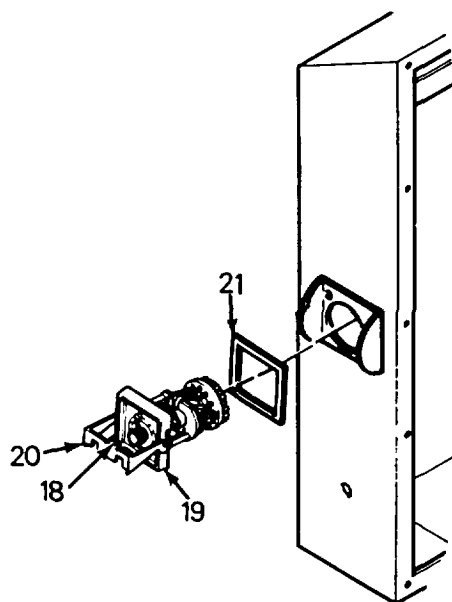
High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

- a. Set extractor circuit breaker to the OFF position.
- b. Loosen screw (18) on timer (19).
- c. Lift locking clamp (20) to horizontal position.
- d. Slide timer (19) and gasket (21) outward and remove it from its housing.
- e. Insert new timer (19) and gasket (21).
- f. Push locking clamp (20) down to vertical position.
- g. Tighten screw (18).
- h. Set extractor circuit breaker to the ON position.

NOTE**FOLLOW-ON-MAINTENANCE:**

Install sound deadening panel (para 2-17).

Install tarp assembly (TM 10-3510-209-10).



3-19. WATER HEATER

This task covers:

- a. Removal
 - b. Installation
-

INITIAL SETUP

Tools

General mechanic's tool set
SC 5180-90

Personnel Required

MOS 63J (2)

Materials/Parts

Mounting hardware (as required)

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

WARNING

The water heater becomes hot during operation. Burns or bodily injury may result from contact with the water heater before it cools if safety precautions are not followed.

Equipment Condition

TM 10-3510-209-10, Tarp assembly removed and water heater drained.

3-19. WATER HEATER

REMOVAL

1. Unlatch and open cover on circuit box (2).
2. Cut and remove wire ties (1) on inside of circuit box (2) as required.
3. Loosen thumbscrew (3) and remove cover (4).
4. Loosen two screws (5) and remove PC board (6).
5. Remove two screws (7) and remove limit switch (8) from circuit box (2).

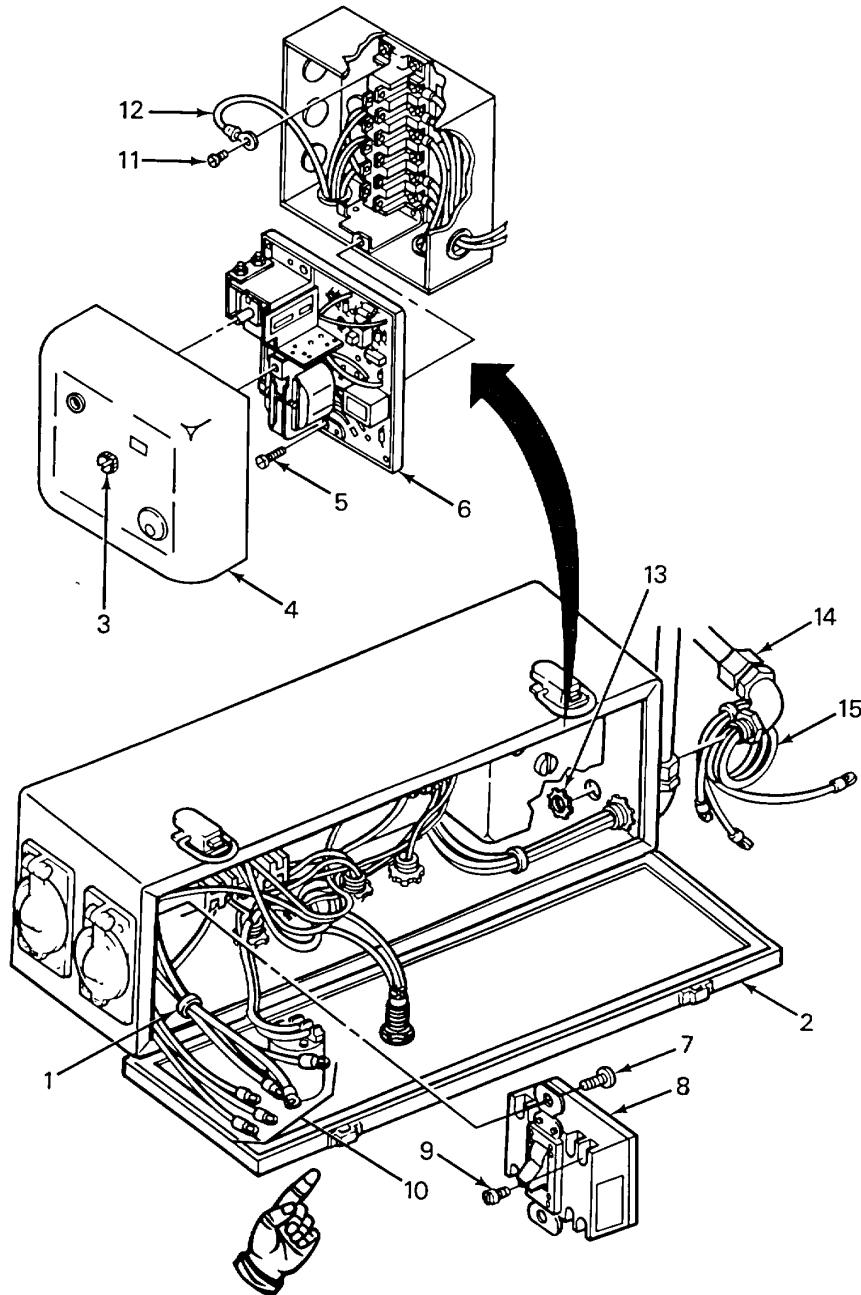
NOTE

A record of wire removal is needed so that installation hookup is exactly duplicated. See FIGURE 2-5.

6. Remove screws (9) and tag and disconnect six wires (10).
7. Remove screw (11) and tag and disconnect wire (12).
8. Remove conduit nut (13), conduit (14), and wires (15) from control box (2).
9. Install PC board (6) and tighten two screws (5).
10. Install cover (4) and tighten thumbscrew (3).

3-19. WATER HEATER (CONT)

REMOVAL (Cont)



3-19. WATER HEATER (CONT)

REMOVAL (Cont)

11. Remove eight capscrews (16), lockwashers (17), flat washers (18), and four brackets (19).

WARNING

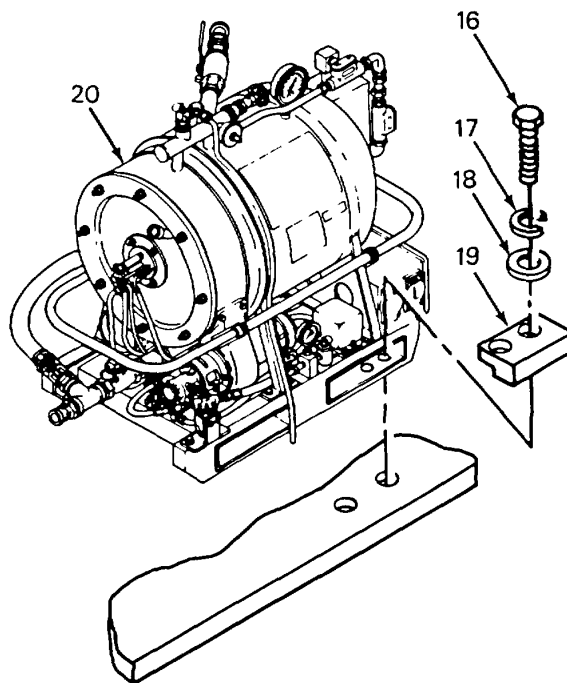
Components of the water heater are heavy and may be awkward to handle. Use correct lifting devices and/or assistance from other personnel to avoid injury.

12. Remove-water heater (20) from trailer.

INSTALLATION

WARNING

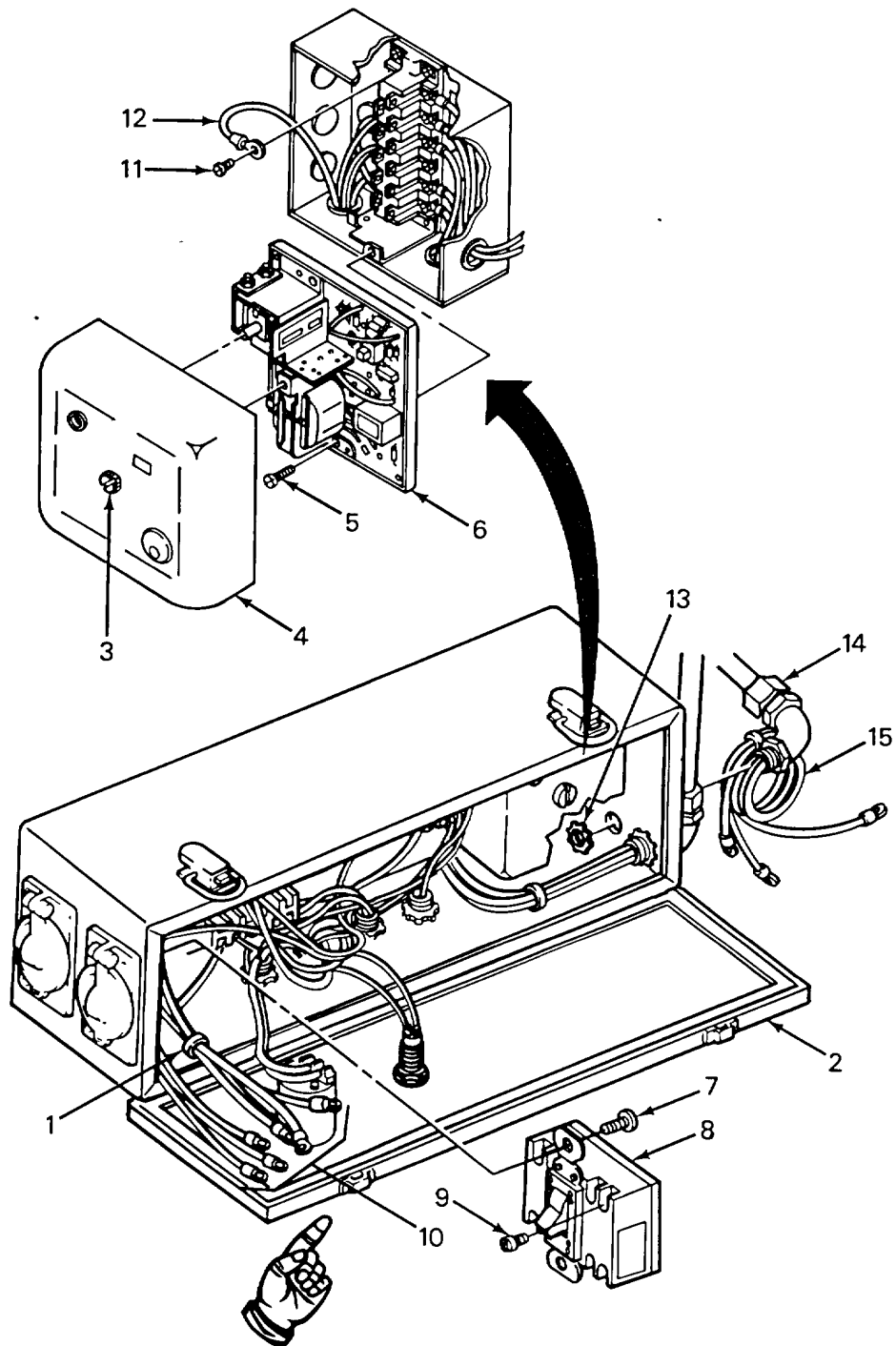
Components of the water heater are heavy and may be awkward to handle. Use correct lifting devices and/or assistance from other personnel to avoid injury.



1. Install water heater (20) on trailer bed. Line up holes of heater skid with threaded holes in trailer.
2. Install eight capscrews (16), lockwashers (17), flat washers (18), and four brackets (19).
3. Install conduit nut (13), conduit (14), and wires (15) in control box (2).
4. Loosen thumbscrew (3) and remove cover (4).
5. Loosen two screws (5) and remove PC board (6).
6. Connect wire (12) and install screw (11). Remove tags.
7. Connect six wires (10), install screws (9), and remove tags. See FIGURE 2-5.
8. Install limit switch (8) in control box (2) and secure with two screws (7).
9. Install PC board (6) and tighten two screws (5).
10. Install cover (4) and tighten thumbscrew (3).
11. Install new wire ties (1) as needed and bundle wires neatly in circuit box (2).
12. Close and latch cover on circuit box (2).

3-19. WATER HEATER (CONT)

INSTALLATION (Cont)



NOTE

FOLLOW-ON MAINTENANCE:

Install tarp assembly (TM 10-3510-209-10).

3-20. WATER HEATER ELECTRIC CONTROL ASSEMBLY

This task covers:

- a. Test
- b. Disassembly
- c. Assembly

Initial Setup:

Tools

General mechanic's tool set
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Control box

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Equipment Condition

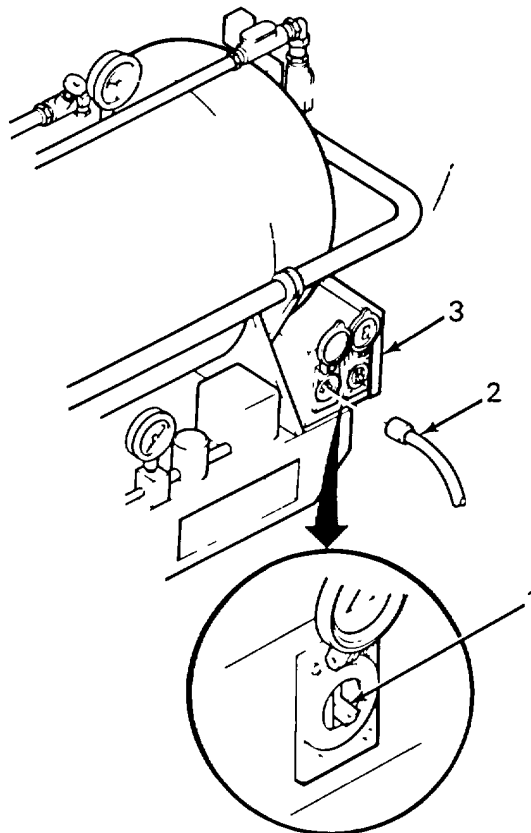
TM 10-2510-209-10, Tarp and dry clothes bin removed.

TEST

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

1. Set water heater circuit breaker to OFF at distribution panel box.
2. Set power limit switch (1) to OFF and disconnect power cable (2) from circuit box (3).
3. Unlatch and open cover on circuit box (3).
4. Inspect components and wires for burns and breaks and replace defective components or wires.

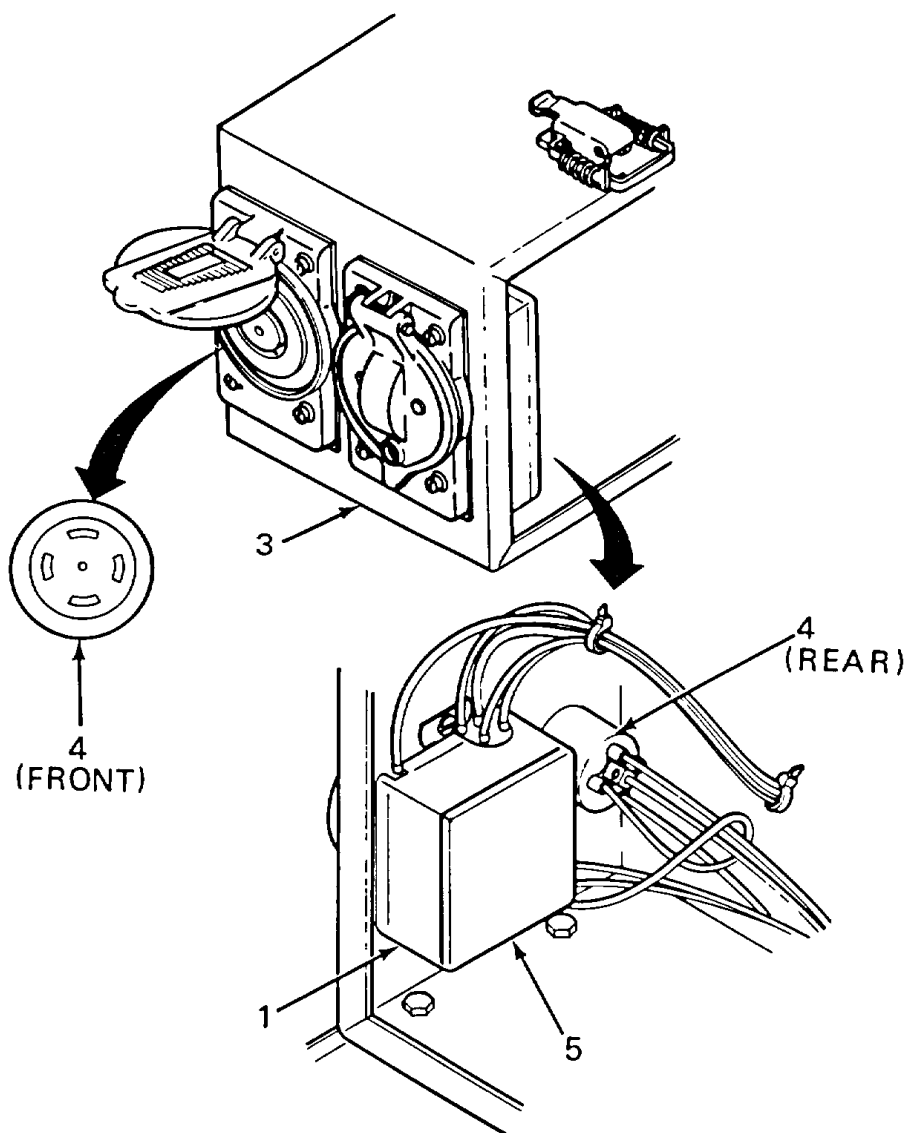


3-20. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)

TEST (Cont)**NOTE**

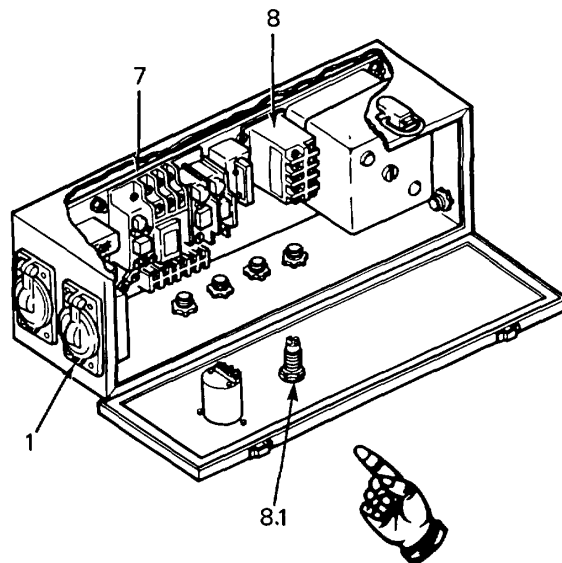
It may be necessary to remove receptacle (4) from circuit box (3) to contact rear output pins.

5. Use multimeter on low ohms scale and check continuity from the front of receptacle (4) to rear output on each pin. Replace receptacle (DISASSEMBLY, step 1, and ASSEMBLY, step 11) if continuity is not indicated on any pin.
6. Remove cover (5) on power limit switch (1) and inspect overload heaters for damage. Replace overload heaters (DISASSEMBLY, step 3, and ASSEMBLY, step 9) if defective.



3-20. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)**TEST (Cont)**

7. Check power limit switch (1) as follows:
 - a. Set power limit switch (1) to OFF.
 - b. Use multimeter on high ohms scale and measure from receptacle (4) to input terminals of the motor contactor (7). Meter should indicate open circuit.
 - c. Set power limit switch (1) to ON.
 - d. Use multimeter on low ohms scale and repeat measurements in step b above. Meter should indicate continuity for points connected by same color of wire.
 - e. Replace power limit switch (1) if defective (DISASSEMBLY, steps 2 and 3).
8. Check motor contactor (7) as follows:
 - a. Use multimeter on high ohms scale and measure from the three input terminals to the three corresponding output terminals of motor contactor (7). Meter should indicate open circuit.
 - b. Use multimeter on low ohms scale, push up motor contractor solenoid, and repeat measurements in step a above. Meter should indicate continuity.
 - c. Replace motor contactor (7) if defective (DISASSEMBLY, step 5).



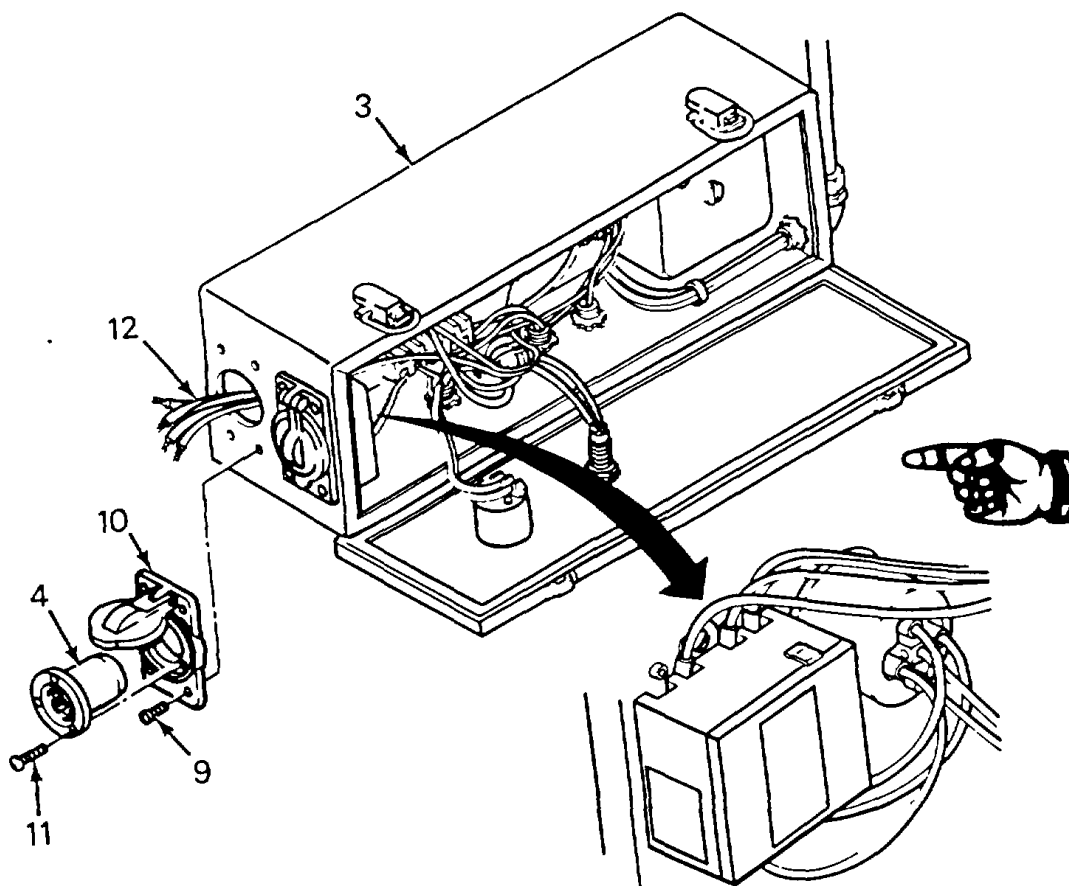
3-20. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)

TEST (Cont)

9. Check low water relay (8) as follows:
 - a. Tag and disconnect wires from terminals 1 and 2 of low water relay (8).
 - b. Use multimeter on high ohms scale and measure between terminals 1 and 2. Meter should indicate open.
 - c. Measure between terminal 1 and chassis ground. Meter should indicate open.
 - d. Measure between terminal 2 and chassis ground. Meter should indicate open.
 - e. If meter indicates continuity for steps b thru d above replace low water relay (8) (DISASSEMBLY, step 4, and ASSEMBLY, step 8).
 - f. Connect wires to terminals 1 and 2 of low water relay (8). Remove tags.
 - g. Tag and disconnect wires from terminals 9 and 10 of low water relay (8).
 - h. Repeat measurements on terminals 9 and 10 in accordance with step h thru d above. If continuity is indicated, replace low water relay (8) (DISASSEMBLY, step 4, and ASSEMBLY, step 8).
 - i. Connect wires to terminals 9 and 10 of low water relay (8). Remove tags.
 - j. Use a multimeter on low ohms scale and measure between terminals 3 and 4 of low water relay (8). Meter should indicate continuity. If continuity is not indicated, replace low water relay (DISASSEMBLY, step 4, and ASSEMBLY, step 8).
 - k. Turn temperature control to zero. Use multimeter on high ohms scale and measure between terminals 7 and 8 of low water relay (8). Meter should indicate open. If continuity is indicated, replace low water relay (DISASSEMBLY, step 4, and ASSEMBLY, step 8).
10. Check alarm (8.1) as follows:
 - a. Close fuel shut off valve on the water heater (TM 10-3510-209-10) to simulate a low fuel an loss of flame condition.
 - b. Ensure that alarm (8.1) sounds and water heater shuts down.
 - c. Open fuel shut off valve and reset water heater (TM-10-3510-209-10).

3-20. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)**DISASSEMBLY**

1. Remove receptacle (4) from circuit box (3).
 - a. Tag and disconnect five wires (12) connected to the rear of receptacle (4).
 - b. Remove four screws (9) and cover plate (10) with receptacle (14).
 - c. Remove three screws (11) under the receptacle cap and separate receptacle (14) from cover plate (10).

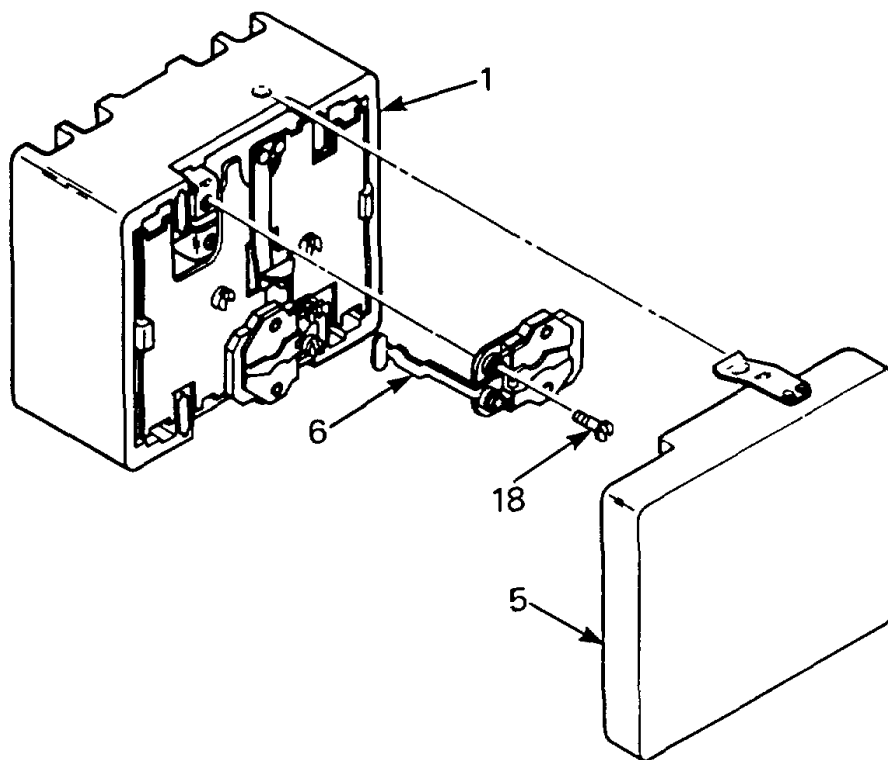
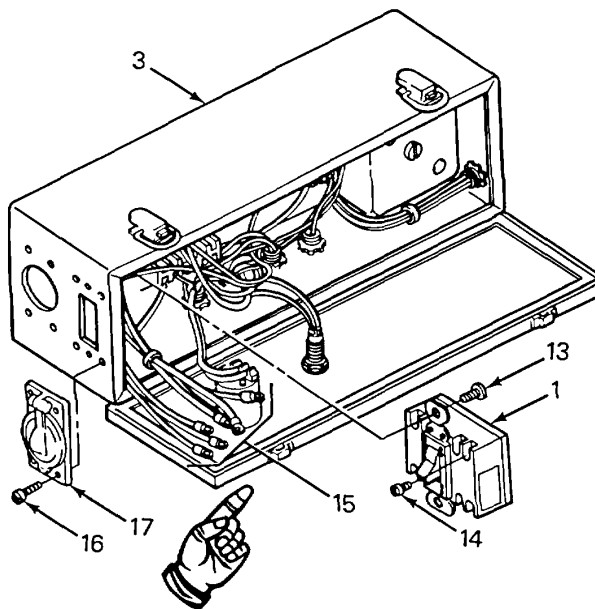


3-20. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)

DISASSEMBLY (Cont)

2. Remove power limit switch (1).
 - a. Remove two screws (13).
 - b. Turn power limit switch (1) over.
 - c. Tag all wires (15). Remove six screws (14), wires, and power limit switch (1) from circuit box (3).
 - d. Remove four screws (16) and cover plate (17).

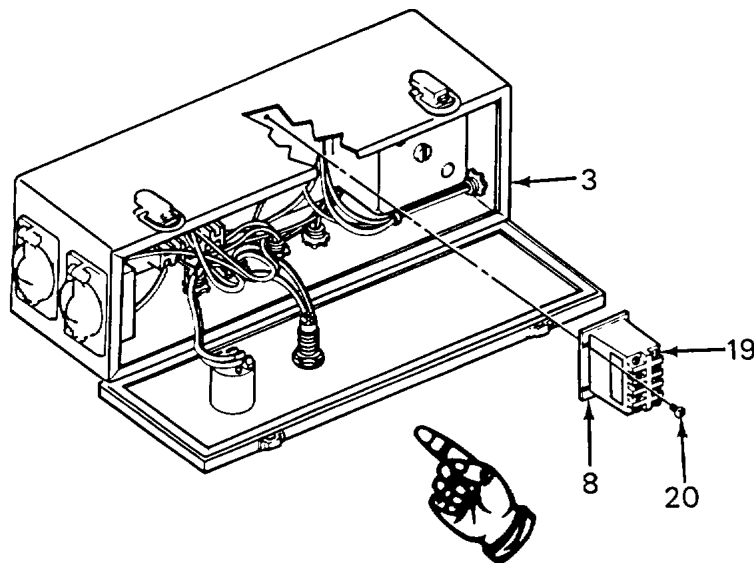
3. Remove cover (5) from back of power limit switch (1). Remove four screws (18) and remove overload heaters (6) from power limit switch.



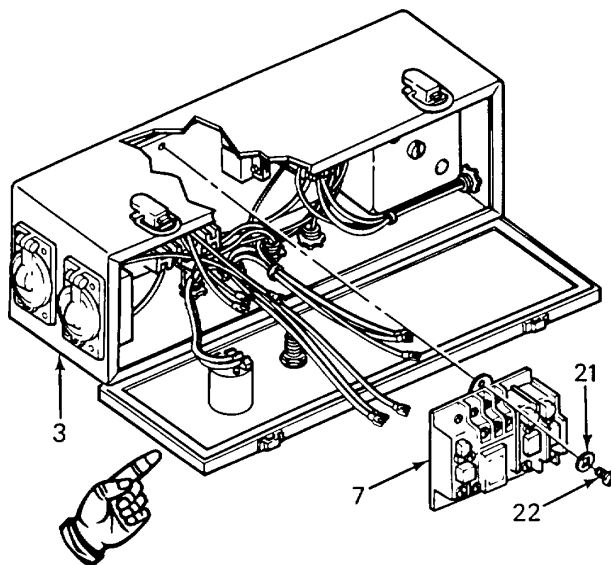
3-20. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)

DISASSEMBLY (Cont)

4. Tag wires connected to low water relay (8). Remove eight screws (19) securing wire lugs to terminals. Loosen three screws (20) and raise up and remove low water relay from circuit box (3).



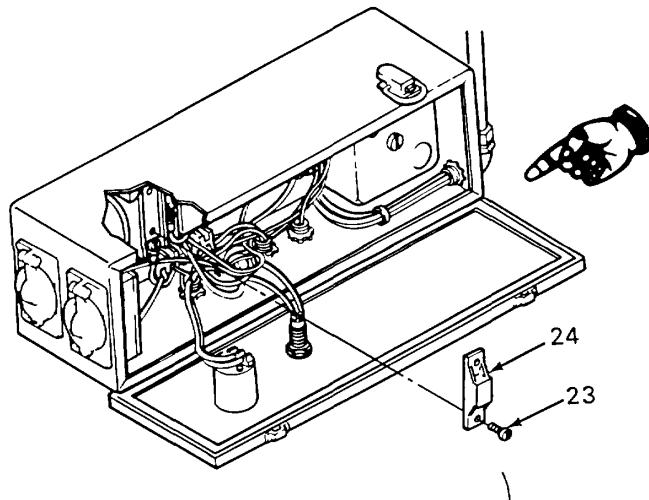
5. Tag and disconnect 10 wires at output and input terminals of motor contactor (7). Refer to FIGURE 2-5. Remove three screws (22) and washers (24). Remove motor contactor from circuit box (3).



3-20. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)

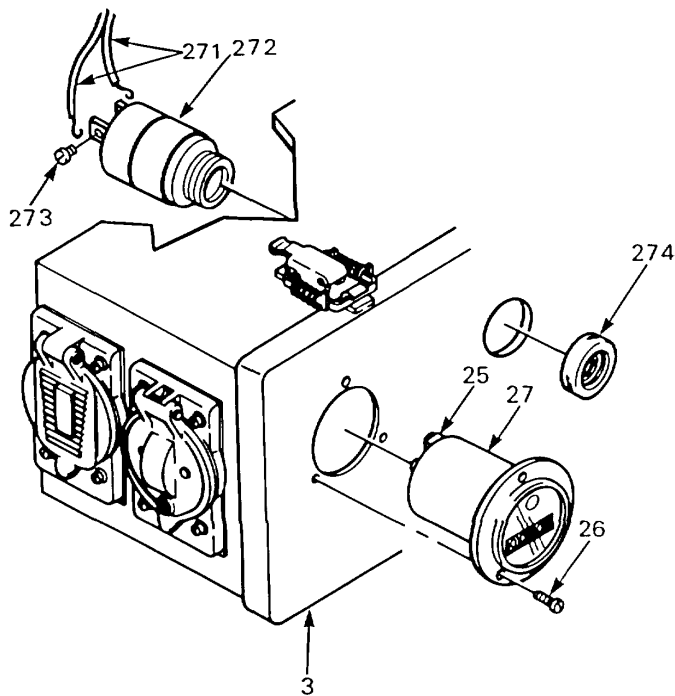
DISASSEMBLY (Cont)

6. Remove four screws (23) and remove two contactor heaters (24).



7. Tag and disconnect two terminal lugs (25). Remove three screws (26) and hour meter (27) from front of circuit box (3).

- 7.1 Tag two wires (27.1) on buzzer (27.2), remove two screws (27.3), and disconnect wires. Remove nut (27.4) and buzzer from front of circuit box (3).



3-20. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)

DISASSEMBLY (Cont)

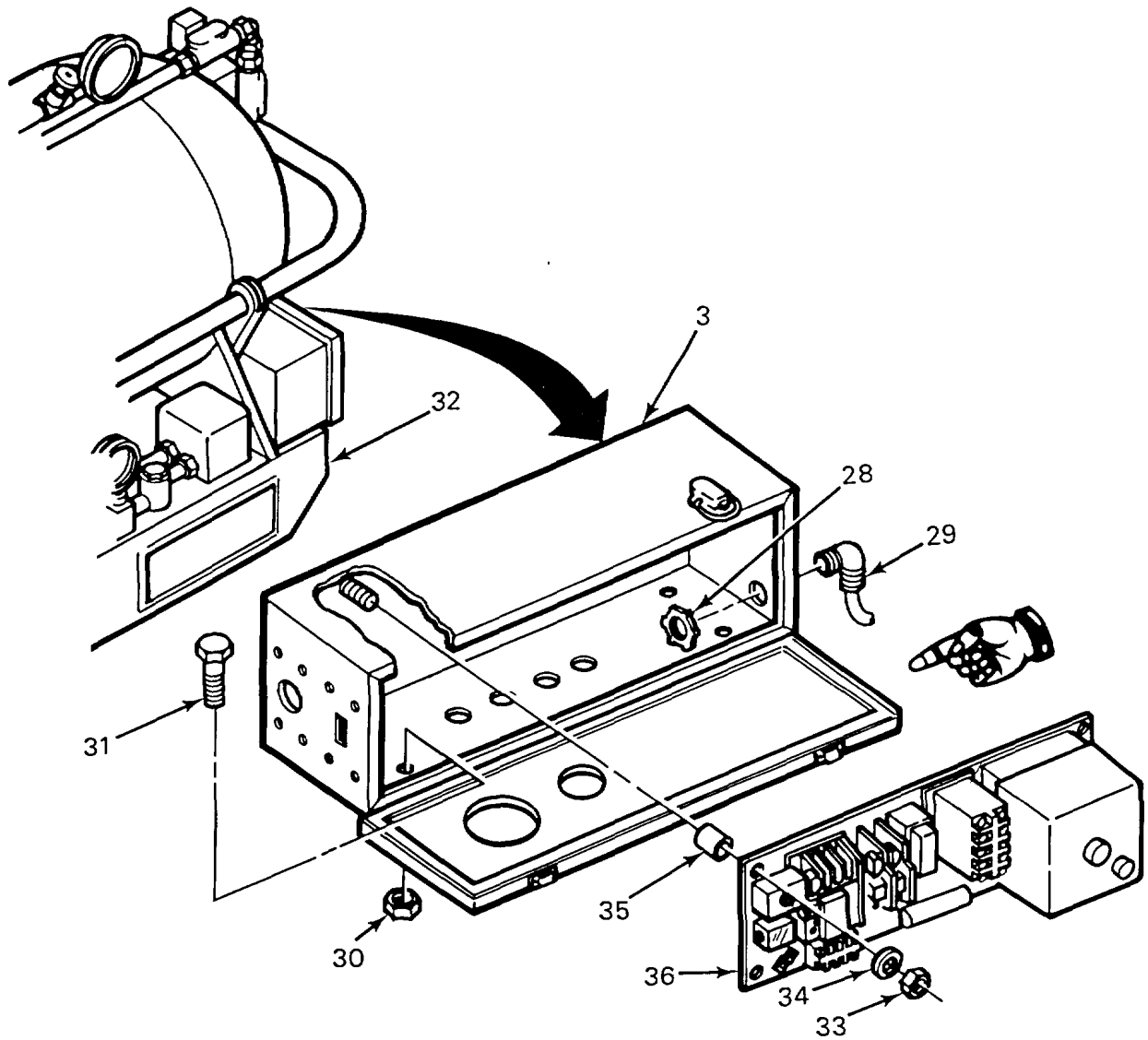
8. Tag and disconnect all wires from panel-mounted components.
9. Remove five conduit locknuts (28) and conduit fittings (29) from circuit box (3).
10. Remove four nuts (30), screws (31), and circuit box (3) from skid assembly (32).
11. Remove four nuts (33), washers (34), spacers (35), and mounting panel (36).

ASSEMBLY

1. Install mounting panel (36), four spacers (35), washers (34), and nuts (33) in circuit box (3).
2. Install circuit box (3), four screws (31), and nuts (30) on skid assembly (32).
3. Install five conduit fittings (29) and conduit locknuts (28) in circuit box (3).
4. Connect all wires to panel-mounted components. Remove tags.

3-20. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)

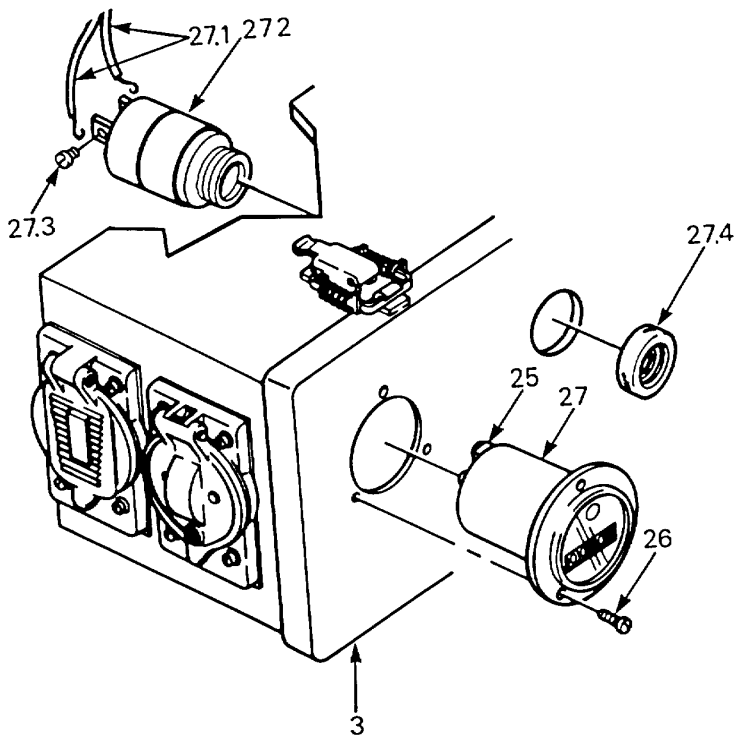
ASSEMBLY (Cont)



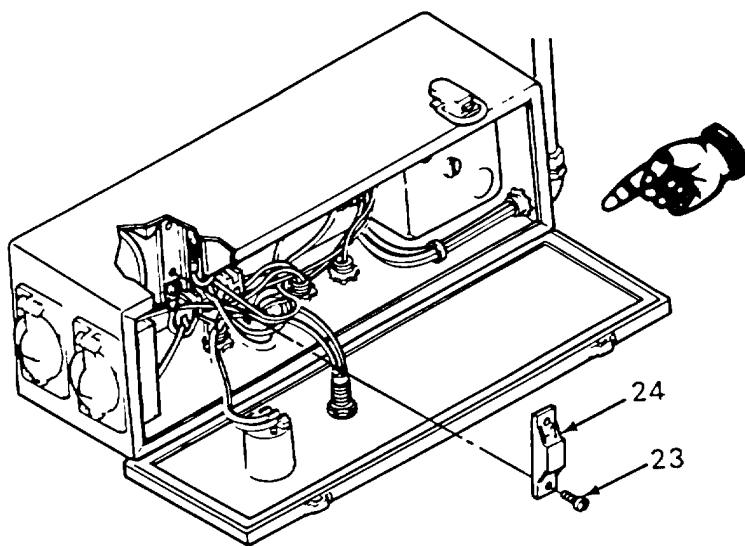
3-20. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)

ASSEMBLY (Cont)

- 4.1 Install buzzer (27.2) and nut (27.4) on circuit box (3) connect and secure two wires (27.1) with two screws (27.3).
5. Install hour meter (27) and three screws (26) on circuit box (3). Connect two terminal lugs (25) and remove tags.



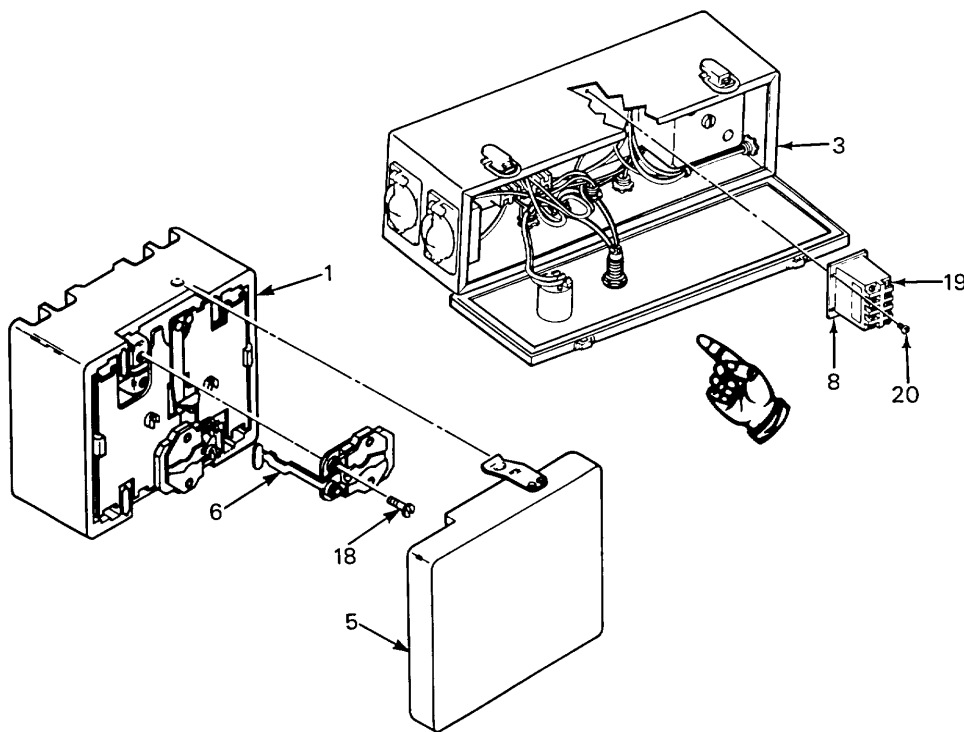
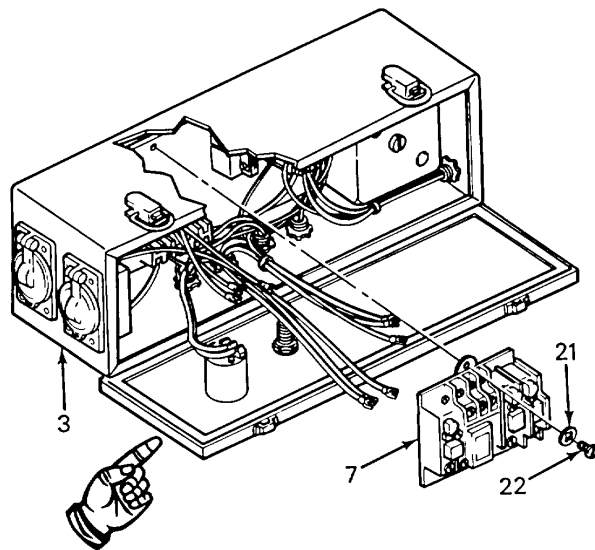
6. Install two contactor heaters (24) and secure with four screws (23).



3-20. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)

ASSEMBLY (Cont)

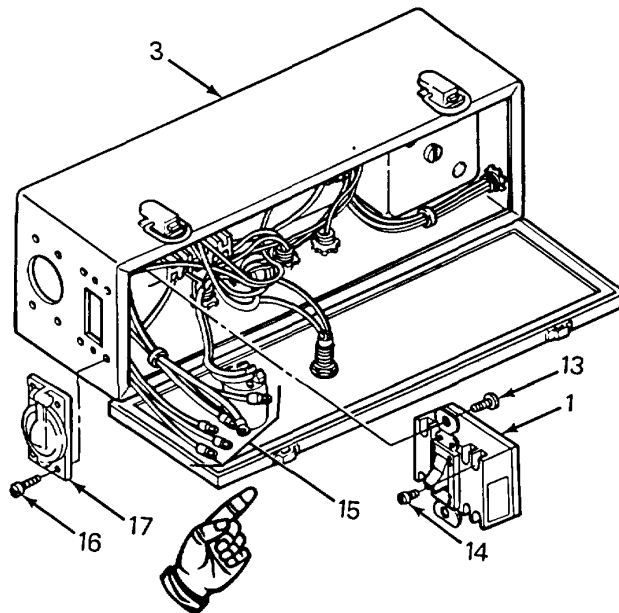
7. Install motor contactor (7) and three screws (21) and washers (22) on control box. Connect 10 wires at input and output terminals of motor contactor. Remove tags.
8. Install low water relay (8) and tighten three screws (20). Connect wire lugs to terminals with eight screws (19). Remove tags.
9. Install overload heaters (6) and four screws (18) on power limit switch (1). Install cover (5) on back of power limit switch.



3-20. WATER HEATER ELECTRIC CONTROL ASSEMBLY (CONT)

ASSEMBLY (Cont)

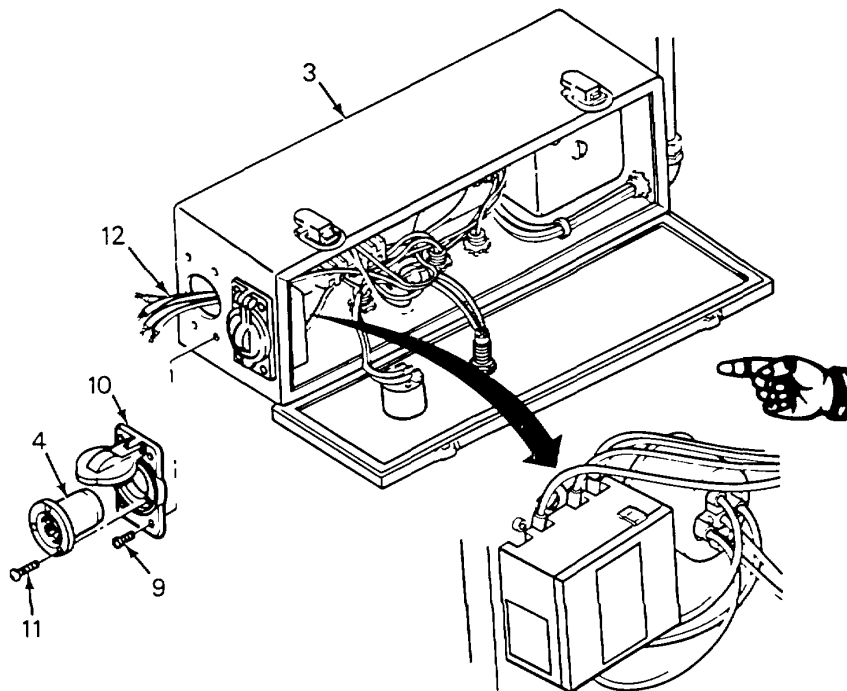
10. Connect wires (15) to power limit switch (1) and secure with six screws (14). Remove tags. Install power limit switch and two screws (13) on circuit box (3).
11. Install receptacle (4).
 - a. Insert receptacle (4) inside circuit box (3) and secure with three screws (11) under receptacle cap.
 - b. Connect five wires (12) to rear of receptacle (4). Remove tags.
 - c. Install cover plate (10) and secure with four screws (9).



NOTE

FOLLOW-ON-MAINTENANCE:

Install tarp and dry clothes bin assemblies (TM 10-3510-209-10).



3-21. WATER HEATER BLOWER MOTOR ASSEMBLY

This task covers:

- a. Disassembly
- b. Repair
- c. Assembly

Initial Setup:

Tools

General mechanic's tool set
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Blower motor assembly

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Equipment Condition

TM 10-3510-209-10, Tarp assembly removed. Paragraph 2-36, Water heater blower motor removed.

DISASSEMBLY

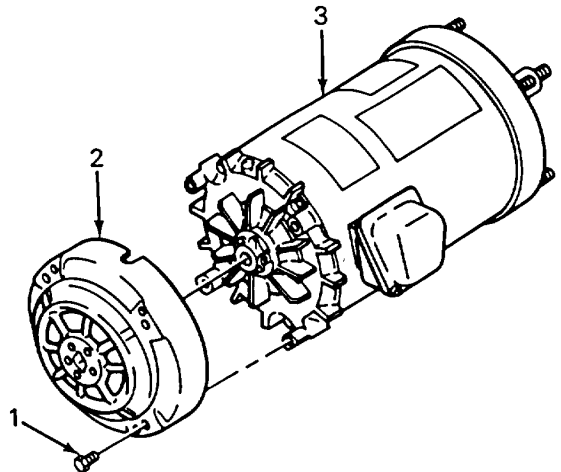
WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

NOTE

Matchmark cover and motor housing before disassembly for ease in assembly.

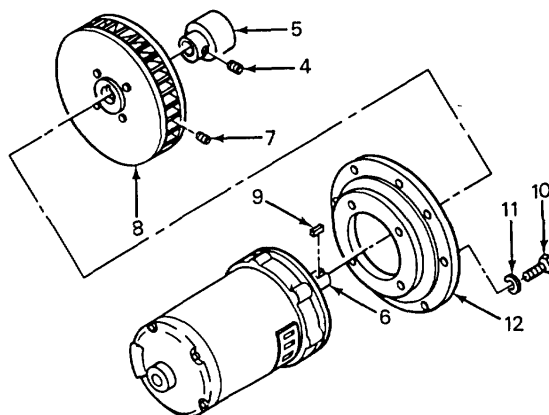
1. Remove three screws (1) and cover (2) from housing (3).



3-21. WATER HEATER BLOWER MOTOR ASSEMBLY (CONT)

DISASSEMBLY (Cont)

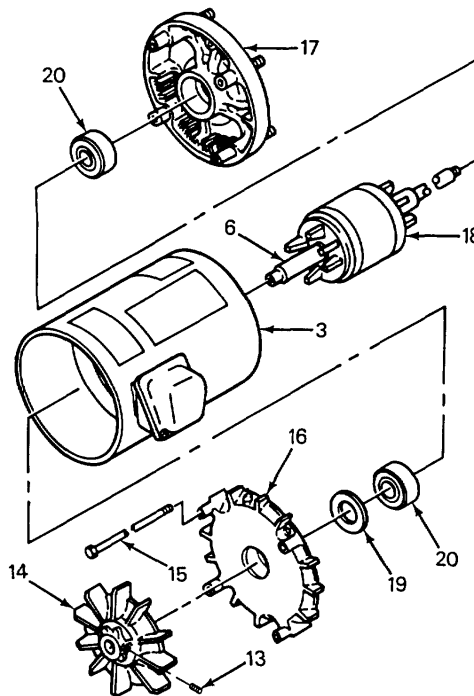
2. Loosen two setscrews (4) and remove yoke (5) from shaft (6).
3. Loosen two setscrews (7) and remove squirrel cage (8) and key (9) from shaft (6).
4. Remove four capscrews (10), lockwashers (11), and mounting flange (12).
5. Loosen setscrew (13) and remove impeller (14) from shaft (6).



NOTE

Matchmark end plates and housing before disassembly for ease in assembly.

6. Remove four screws (15) and end plate (16) from shaft (6).
7. Remove end plate (17) from shaft (6).
8. Remove armature (18) from housing (3).
9. Remove shims (19) and bearings (20) from armature (18).
10. Inspect for broken or cracked motor, bent shaft, burned armature, bent fins, damaged mounting plate, and damaged wiring. If any of these conditions exist, replace motor.
11. Replace bearings if they are rough or excessively worn.



REPAIR

Repair of the motor blower assembly consists of replacing damaged and/or defective components.

3-21. WATER HEATER BLOWER MOTOR ASSEMBLY (CONT)**ASSEMBLY****NOTE**

Align matchmarks during assembly.

1. Install bearings (20) and shims (19) on armature (18).
2. Install armature (18) in housing (3).
3. Install end plate (17) on shaft (6).
4. Install end plate (16) on shaft (6) and install four screws (15).
5. Install impeller (14) on shaft (6) and tighten setscrew (13).
6. Install mounting flange (12), four lockwashers (11), and four capscrews (10).
7. Install key (9) and squirrel cage (8) on shaft (6) and tighten two setscrews (7).
8. Install yoke (5) on shaft (6) and tighten two setscrews (4).

NOTE

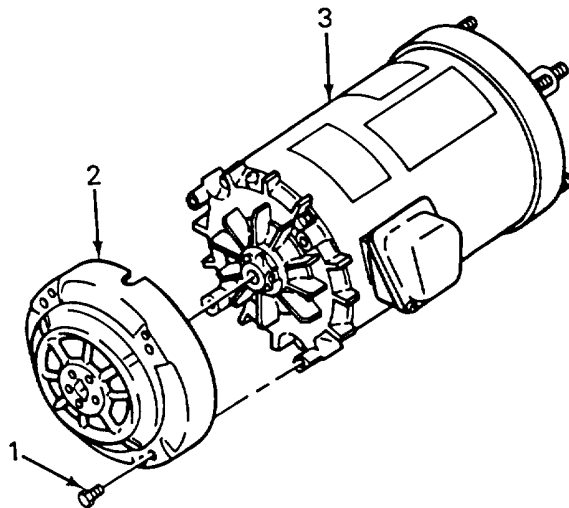
Align matchmarks during assembly.

9. Install cover (2) and four screws (1) on housing (3).

NOTE**FOLLOW-ON MAINTENANCE:**

Install tarp assembly (TM 10-3510209-10).

Install water heater blower motor (para 2-36).



3-22. WATER HEATER UV SCANNER AND FLAME SAFEGUARD ASSEMBLY

This task covers:

- a. Test b. Service c. Repair d. Replacement

INITIAL SETUP:

Tools

General mechanic's tool set

Personnel Required

MOS 63J (1)

Materials/Parts

Flame controller
Wiping cloth,
(Item 3, App C)

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Equipment Condition

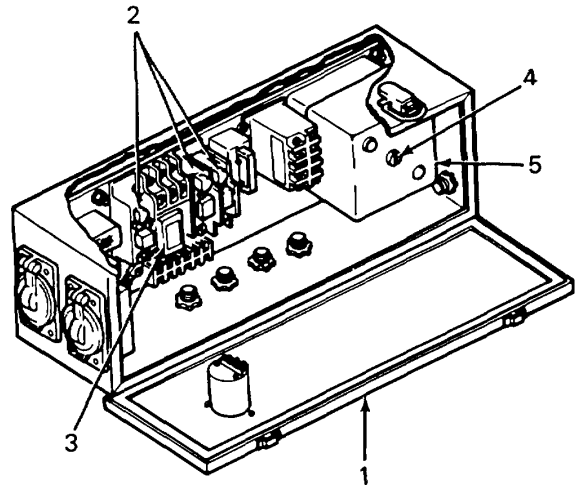
TM-10-3510-209-10, Tarp assembly removed.

TEST

WARNING

High voltage is present on this equipment. Use extreme caution when performing the following test with power ON. Death or serious injury may result.

1. Prepare water heater for operation (TM 10-3510-209-10).
2. Turn on fuel and power.
3. Wait approximately 20 seconds. If audible alarm sounds, go to step 10. If blower motor does not come on and ignition does not occur, go to next step.
4. Open water heater control box lid (1) and check motor contactors (2). If contactors are tripped, reset contactors and check for normal operation. If contactors continue to trip, test motor contactor operation (step 5). If contactors are not tripped, go to step 6.



3-22. WATER HEATER UV SCANNER AND FLAME SAFEGUARD ASSEMBLY (CONT)**TEST (Cont)****CAUTION**

Ensure that power is off before making continuity check. Damage to test equipment could result.

5. Use a multimeter and check continuity from input terminals to output terminals on motor contactor solenoid (3). Meter should indicate open circuit at each set of terminals. Push up on motor contactor solenoid. Meter should indicate continuity at each set of terminals.
6. Loosen screw (4) and remove cover (5) on flame safeguard control.

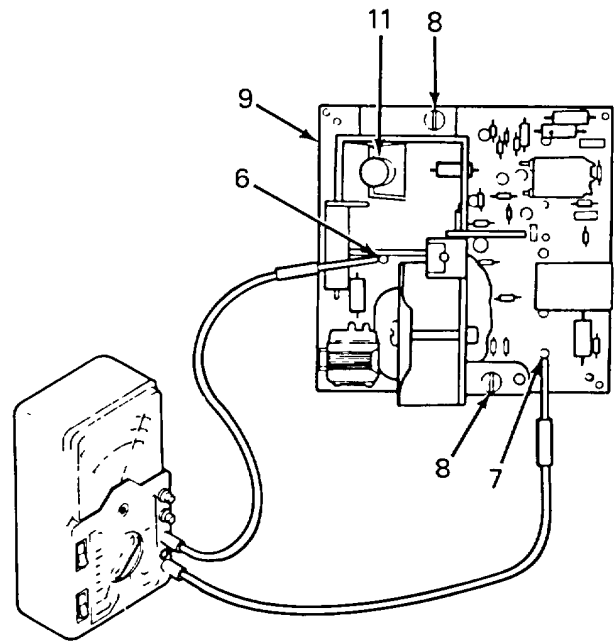
WARNING

Remove rings, bracelets, wristwatches, and neck chains before working around or on the laundry unit. Jewelry can catch on equipment and cause injury, or may short across an electrical circuit and cause severe burns or electrical shock.

WARNING

Use extreme caution when performing the following test with power ON.

7. Set load limit switches to ON and check for 120 V ac at test points (6) and (7) with multimeter. If voltage is not normal, test load limit switch (step 9). If voltage is normal, go to next step.
8. Turn off load limit switch and remove two screws (8) and flame safeguard control circuit card (9).



3-22. WATER HEATER UV SCANNER AND FLAME SAFEGUARD ASSEMBLY (CONT)

TEST (Cont)

9. Turn on load limit switch and check for 120 V ac on terminals (23) and (24) of base terminal board (10). If voltage is not normal, disconnect power source and replace load limit switch (para 3-20, DISASSEMBLY, step 2). If voltage at terminals 2 and 7 is normal, install flame safeguard control circuit card (9) and two screws (8).

NOTE

If the buzzer sounds, an ignition failure is indicated.

NOTE

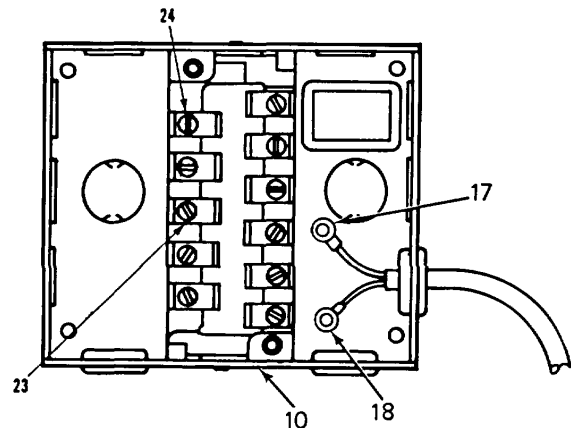
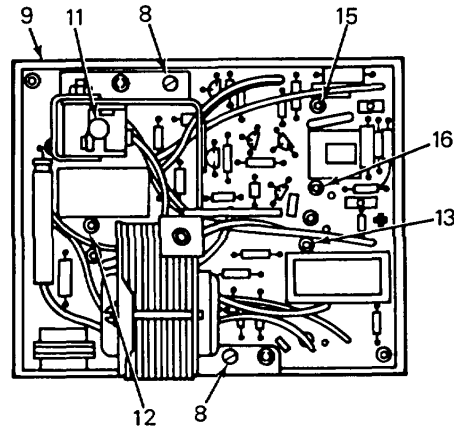
Unit maintenance has determined that ignition takes place momentarily but system shuts down immediately after ignition.

10. With multimeter set for dc operation, set load limit switch to ON and press reset pushbutton (11) and check voltage at test points (15) and (16). If voltage is not 5 to 6 V dc, replace UV scanner.

NOTE

Unit maintenance has determined that ignition does not occur after pressing reset pushbutton but buzzer sounds.

11. With multimeter set for ac operation, set load limit switch to ON and check for 120 V ac at test points (12) and (13) after pressing reset pushbutton (11). If voltage is zero, replace flame safeguard control circuit card (9).



NOTE

Callouts (23) and (24) are actually terminals 2 and 7 respectively.

3-22. WATER HEATER UV SCANNER AND FLAME SAFEGUARD ASSEMBLY (CONT)**SERVICE**

1. Disconnect UV scanner (19) at burner head assembly (20) and clean scanner lens with a clean dry cloth (Item 3, App C).
2. Connect UV scanner (19) to burner head assembly.

REPAIR**NOTE**

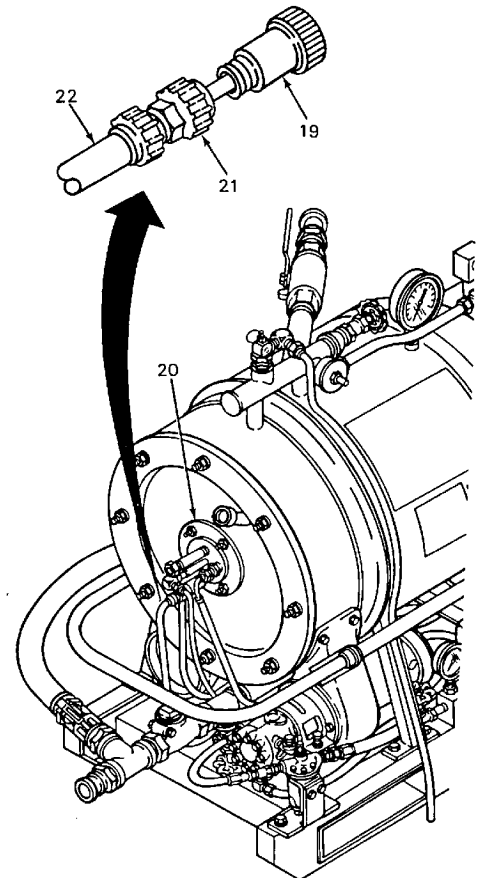
Repair the UV scanner and flame safeguard assembly by replacing defective components.

REPLACEMENT

1. Remove two screws (8) and flame safeguard control circuit card (9).
2. Tag and disconnect two wires (17) and (18) from terminals S1 and S2 on base terminal board (10).
3. Disconnect UV scanner (19) at burner head assembly (20) and remove conduit nut (21). Pull UV scanner and wires from conduit (22).
4. Install UV scanner (19) with wires in conduit (22) and secure with conduit nut (21). Install UV scanner on burner head assembly (20).
5. Connect wires (17) and (18) to terminals S1 and S2 on base terminal board (10). Remove tags.
6. Install flame safeguard control circuit card (9) and secure with two screws (8).

NOTE**FOLLOW-ON-MAINTENANCE:**

**Install tarp assembly
(TM 10-3510-209-10).**



3-23. WATER HEATER OPERATING LIMIT AND HIGH-LIMIT CONTROLS

This task covers:

- a. Replacement
 - b. Adjustment
-

INITIAL SETUP:

Tools

General mechanic's tool set
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Operating/high limit relay
Thread sealer compound
(Item 5, App C)

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

WARNING

Ensure water heater is cold before servicing the high-limit temperature control. The water vessel becomes hot during operation and burns or bodily injury may result from contact with the water heater before it cools. Allow water heater to cool before servicing the high-limit temperature control.

Equipment Condition

TM 10-3510-209-10, Tarp assembly removed.

REPLACEMENT

1. Remove cap (1), retainer (2), and cover plate (3) from high-limit control (4).
2. Tag and disconnect two wires (5).
3. Loosen conduit nut (6) on each end of conduit (7) and slide nuts toward center of conduit.
4. Open inspection plate (8) and pull wires until wires do not extend beyond end of conduit (7).

3-23. WATER HEATER OPERATING LIMIT AND HIGH-LIMIT CONTROLS (CONT)

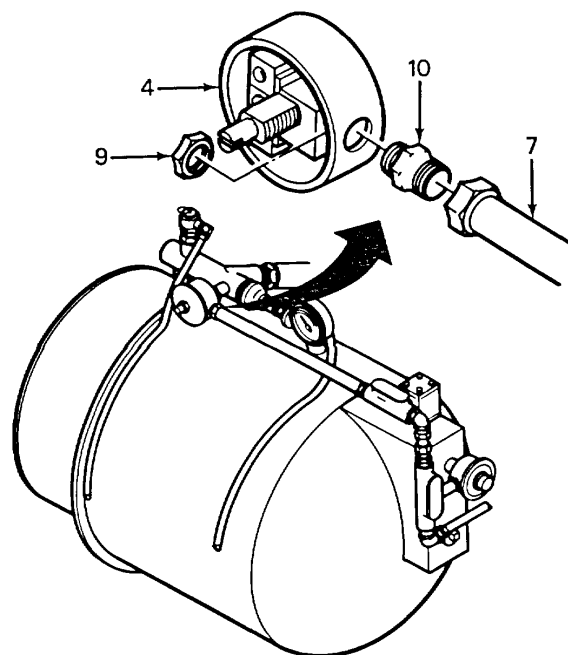
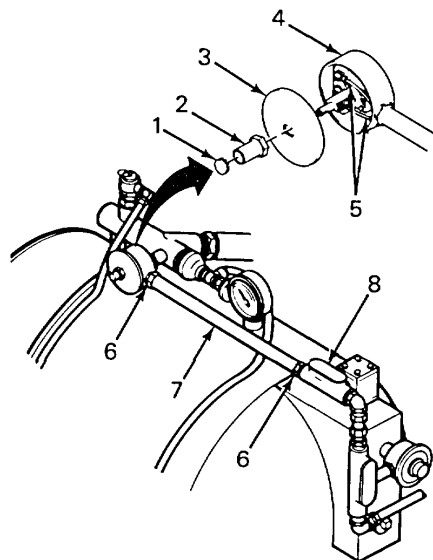
REPLACEMENT (Cont)

5. Push conduit (7) to the right while turning high-limit control (4) counterclockwise until control is clear of manifold. Remove limit control from manifold by continuing to turn counterclockwise.
6. Remove nut (9) and remove raintight connector (10).

NOTE

Before installing the replacement high-limit control (4), coat threads with thread sealer compound (Item 5, App C).

7. Install raintight connector (10) and nut (9) in high-limit control (4).
8. Install high-limit control (4) in manifold and turn clockwise. On last turn insert end of conduit (7) into control housing and push conduit into housing.
9. Install conduit nuts (6) on raintight connectors (10).
10. Pull two wires (5) out of end of conduit (7). Connect wires and remove tags.
11. Close inspection plate (8).
12. Install cover plate (3) on high-limit control (4) and install retainer (2) and cap (1).



3-23. WATER HEATER OPERATING LIMIT AND HIGH-LIMIT CONTROLS (CONT)

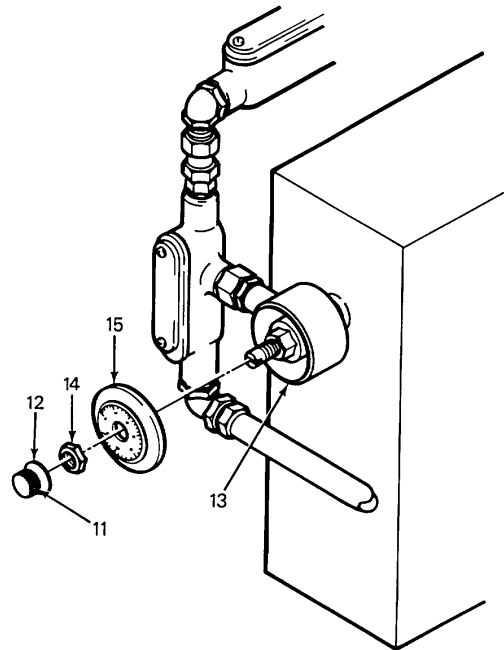
REPLACEMENT (Cont)

13. Loosen setscrew (11) and remove control knob (12) from operating control (13).
14. Remove nut (14) and cover plate (15).
15. Tag and disconnect two wires (16). Remove nut (17) from end of conduit.
16. Remove screw (18), inspection plate (19), and wires (20) from operating control (13).
17. Push lower wire (20) down in conduit.
18. Remove nut (21) and turn conduit assembly at elbow (22) to the left until conduit (23) is free of operating control (13).
19. Remove operating control (13) by turning counterclockwise.

NOTE

Before installing the replacement operating limit control, coat the threads with pipe joint compound (Item 5, App C).

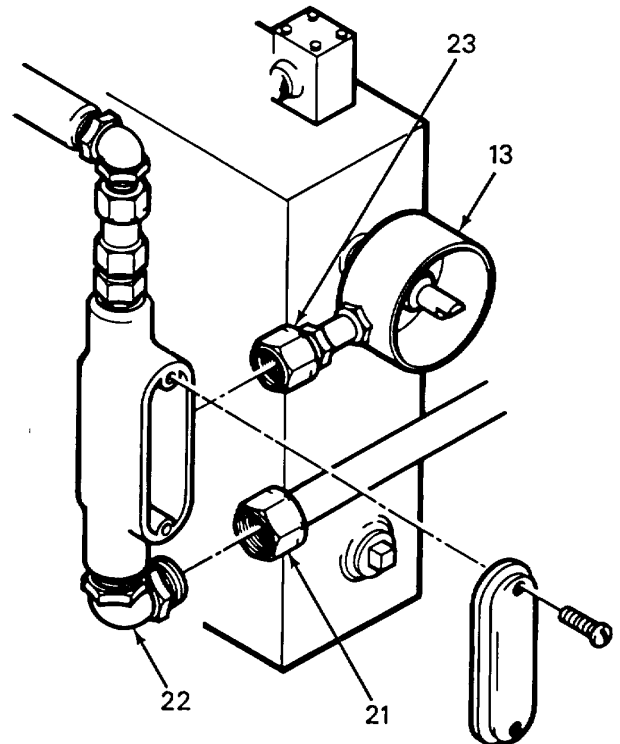
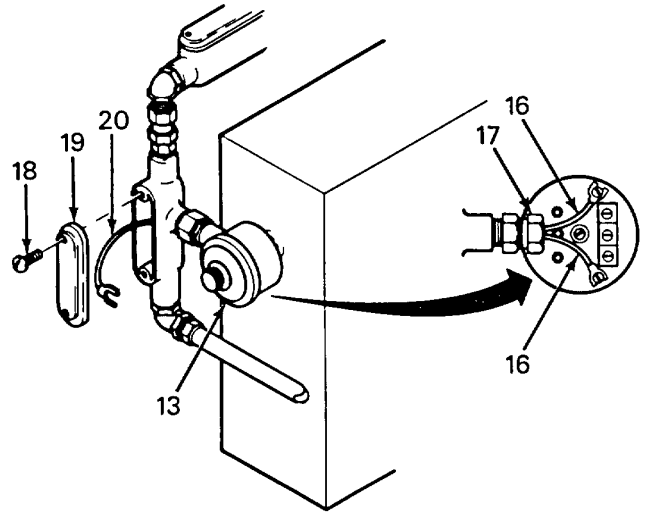
20. Install new operating control (13) by turning clockwise. Align hole in housing with conduit (23).



3-23. WATER HEATER OPERATING LIMIT AND HIGH-LIMIT CONTROLS (CONT)

REPLACEMENT (Cont)

21. Turn conduit assembly at elbow (22) until conduit (23) fits inside operating control (13).
22. Connect nut (21) to elbow (22).
23. Match wire colors and connect wires (20).
24. Push wires (20) into operating control housing (13) and install inspection plate (19) with screw (18).
25. Install conduit nut (17) on end of conduit.
26. Connect two wires (16) to operating control (13). Remove tags.
27. Place cover plate (15) over operating control (13) and install nut (14).
28. Install control knob (12) on control shaft on operating control (13) and tighten setscrew (11).



ADJUSTMENT

Turn knob from 0 to 250 degrees and check pointer calibration. Adjust position by loosening setscrew and moving knob to correct position. Tighten setscrew.

NOTE

FOLLOW-ON-MAINTENANCE:

Install tarp assembly (TM 10-3510209-10).

3-24. DRYER ASSEMBLY

This task covers:

- a. Removal
 - b. Installation
-

INITIAL SETUP:Tools

General mechanic's tool set
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Mounting hardware
(as needed)
Plastic wire ties,
(Item 11, App C)

General Safety Instructions**WARNING**

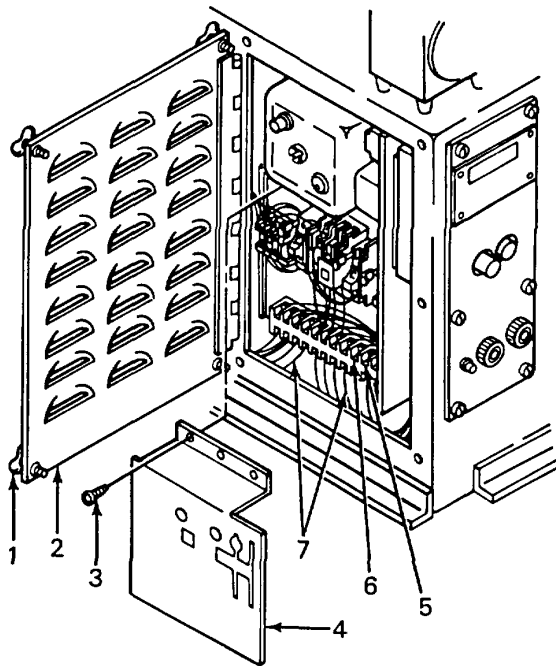
Dryer tumbler is heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

Equipment Condition

TM 10-3510-209-10, Tarp assembly removed.
Paragraph 2-15, Left beam removed.
TM 10-3510-209-10, Platform removed.

REMOVAL

1. Loosen three screws (1) and open control panel door (2).
2. Remove four screws (3) and cover plate (4).
3. Loosen screws (5) on terminal board (6). Tag and disconnect five incoming wires (7) from terminal board.
4. Cut and remove plastic wire ties as required.



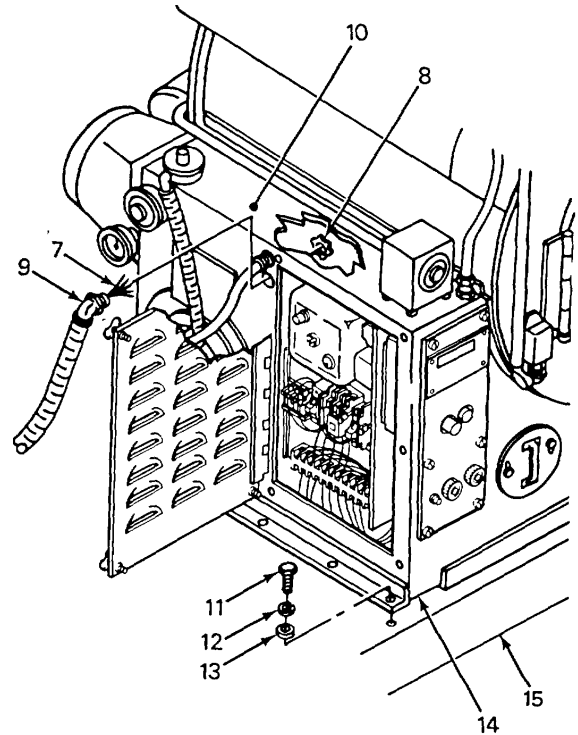
3-24. DRYER ASSEMBLY (CONT)**REMOVAL (Cont)**

- Remove conduit nut (8) from elbow (9) and wires (7). Remove elbow and wires from control box (10).

WARNING

Components of the dryer are heavy and may be awkward to handle. Use correct lifting procedures, lifting devices, and/or assistance from other personnel to avoid injury.

- Remove 16 bolts (11), lockwashers (12), flat washers (13), and dryer (14) from trailer (15).

**INSTALLATION****WARNING**

Components of the dryer are heavy and may be awkward to handle. Use correct lifting procedures, indicated lifting devices, and/or assistance from other personnel to avoid injury.

- Install dryer (14), 16 bolts (11), flat washers (13), and lockwashers (12) on trailer (15).
- Install wires (7) and elbow (9) in control box (10) and install conduit nut (8).
- Connect wires (7) to terminal board (6) and tighten screws (5). Remove tags.
- Install plastic wire ties (Item 11, App C) as required.
- Install cover plate (4) and three screws (3).
- Close control panel door (2) and tighten three screws (1).

NOTE**FOLLOW-ON MAINTENANCE:**

Install platform (TM 10-3510-209-10).
 Install left beam (para 2-15).
 Install tarp assembly (TM 10-3510-209-10).

3-25. DRYER ELECTRIC CONTROL ASSEMBLY

This task covers:

- a. Removal
- b. Repair
- c. Installation

INITIAL SETUP:

Tools

General mechanic's tool set
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Dryer assembly
Plastic wire ties
(Item 11, App C)

General Safety Instructions

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Equipment Condition

TM 10-3510-209-10, Tarp assembly and platform removed

REMOVAL

- 1. Remove thermostat control assembly.

WARNING

High voltage is present on the equipment. Do not perform maintenance with power on. Death or serious injury may result.

- a. Remove electrical power from the dryer.
- b. Remove two screws (1) and cover (2) from electrical connector box (3) on dryer blower motor (4).
- c. Remove plastic wire ties as required.
- d. Tag and disconnect electrical wires (5) from the terminals and connectors in electrical connector box (3).

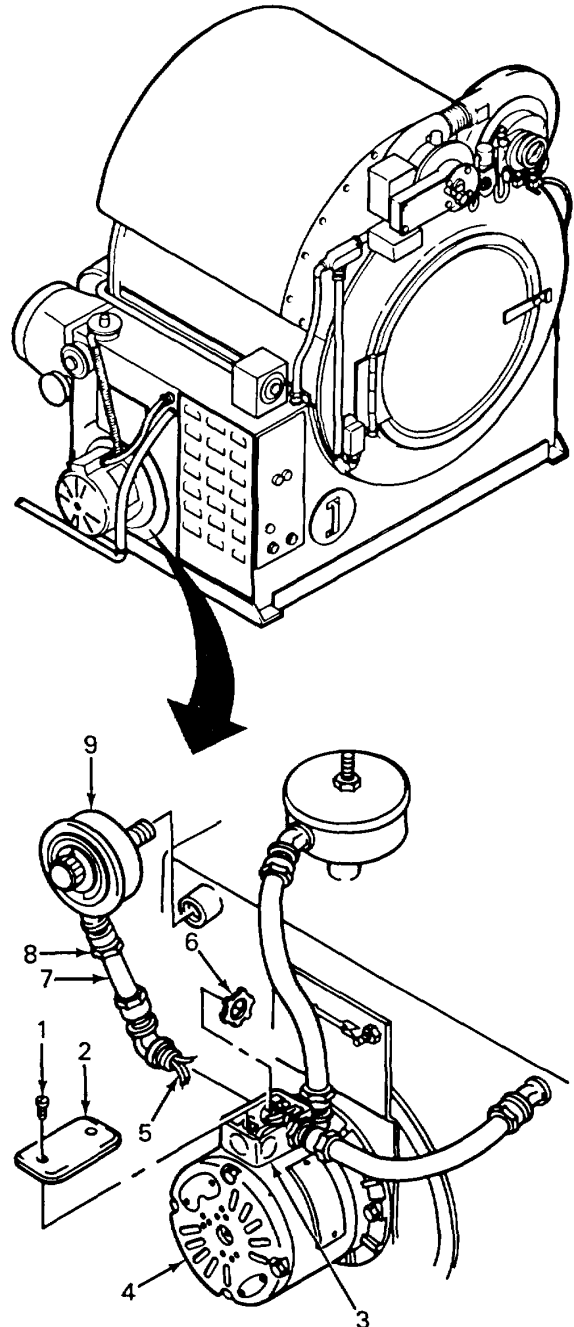
3-25. DRYER ELECTRIC CONTROL ASSEMBLY (CONT)**REMOVAL (Cont)**

- e. Remove thermostatic switch conduit nut (6) from electrical connector box (3). Remove conduit (7) and wires (5).
 - f. Remove conduit connector (8) and conduit (7) from thermostatic switch (9).
 - g. Remove thermostatic switch (9) from the dryer.
2. Remove dryer timer.

WARNING

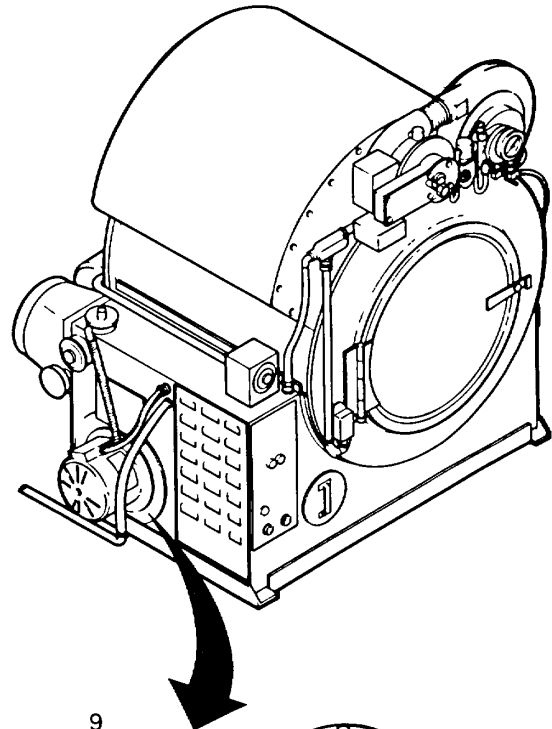
High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

- a. Remove electrical power from the dryer.



3-25. DRYER ELECTRIC CONTROL ASSEMBLY (CONT)**REMOVAL (Cont)**

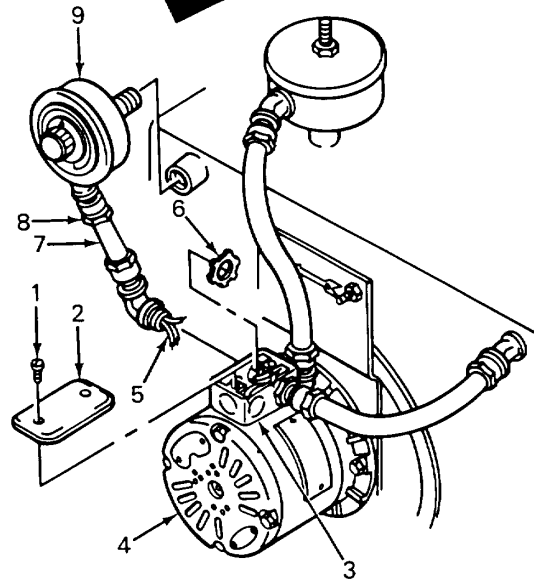
- b. Open dryer electrical panel cover (10) and remove plastic wire ties as required.
- c. Tag and disconnect wires (11) from electrical panel (12).
- d. Remove four nuts (13), washers (14), conduit nut (15), and timer (16) from dryer.
- e. Remove conduit (17) from the base of timer (16).

**REPAIR**

1. Repair of the thermostwitch control assembly is limited to replacement with a new assembly.
2. Repair of the dryer timer is limited to replacement with a new item.

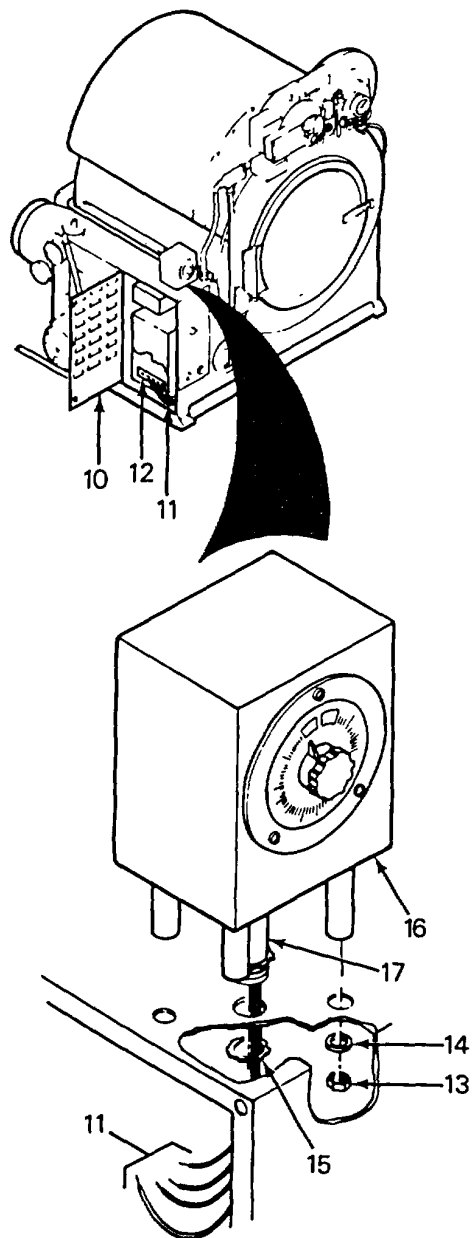
INSTALLATION

1. Install thermostwitch control assembly.
 - a. Install thermostwitch (9) on the dryer.
 - b. Route wires (5) through conduit (7) and install the conduit on thermostwitch (9).
 - c. Install conduit connector (8) on the electrical connector box (3).
 - d. Connect wires (5) to terminals and connectors in electrical connector box (3). Remove tags.
 - e. Install plastic wire ties (Item 11, App C) as required.
 - f. Position cover (2) on electrical connector box (3) on dryer blower motor (4) and secure with two screws (1).



3-25. DRYER ELECTRIC CONTROL ASSEMBLY (CONT)**INSTALLATION (Cont)**

2. Install dryer timer.
 - a. Route wires (11) of replacement timer (16) through conduit (17) and to electrical panel (12).
 - b. Secure the conduit (17) on the base of timer (16). Install conduit nut (15) on inside of control box.
 - c. Install timer (16), four nuts (13), and washers (14) on the dryer.
 - d. Connect wires (11) on electrical panel (12). Remove tags.
 - e. Install plastic wire ties (Item 11, App C) as required.
 - f. Close dryer electrical panel cover (10) on electrical panel (12).

**NOTE****FOLLOW-ON MAINTENANCE:**

Install tarp assembly and platform
(TM 10-3510-209-10).

3-26. DRYER UV SCANNER AND FLAME SAFEGUARD ASSEMBLY

This task covers:

- a. Test
- b. Service
- c. Repair
- d. Replacement

INITIAL SETUP

Tools

General mechanic's tool set

Personnel Required

MOS 63J (1)

Materials/Parts

Flame controller
Wiping cloth, (Item 3, App C)

General Safety Instructions

WARNING

**High voltage is present on this equipment.
Do not perform maintenance with power on.
Death or serious injury may result.**

Equipment Condition

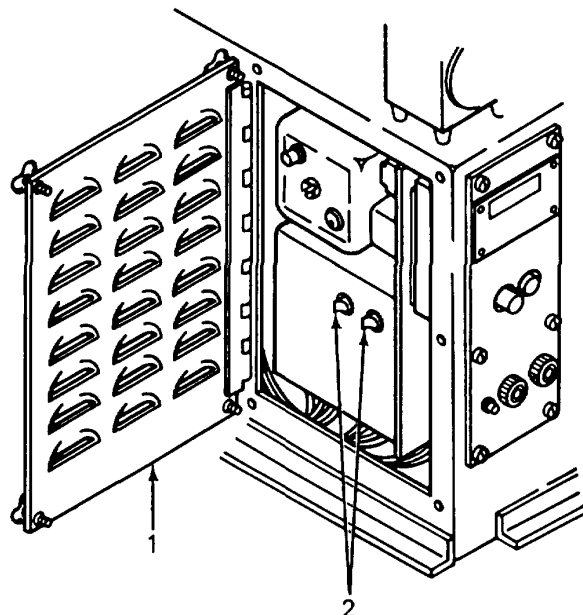
TM-10-3510-209-10, Tarp assembly and platform removed.

TEST

WARNING

High voltage is present on this equipment. Use extreme caution when performing the following test with power ON. Death or serious injury may result.

1. Prepare dryer for operation (TM 10-3510-209-10).
2. Turn on fuel and power.
3. Wait approximately 20 seconds. If audible alarm sounds, go to step 10. If blower motor does not come on and ignition does not occur, go to next step.
4. Open dryer control box door (1) and check motor contactors (2). If contactors are tripped, reset contactors and check for normal operation. If contactors continue to trip, test motor contactor operation (step 5). If contactors are not tripped, go to step 6.



3-26. DRYER UV SCANNER AND FLAME SAFEGUARD ASSEMBLY (CONT)**TEST (Cont)**

- Remove three screws (3) and cover plate (4).

CAUTION

Ensure that power is off before making continuity check. Damage to test equipment could result.

- Use a multimeter and check continuity from input terminals to output terminals on motor contactor solenoid (5). Meter should indicate open circuit at each set of terminals. Push up on motor contactor solenoid. Meter should indicate continuity at each set of terminals.
- Loosen screw (6) and remove cover (7) on flame safeguard control.

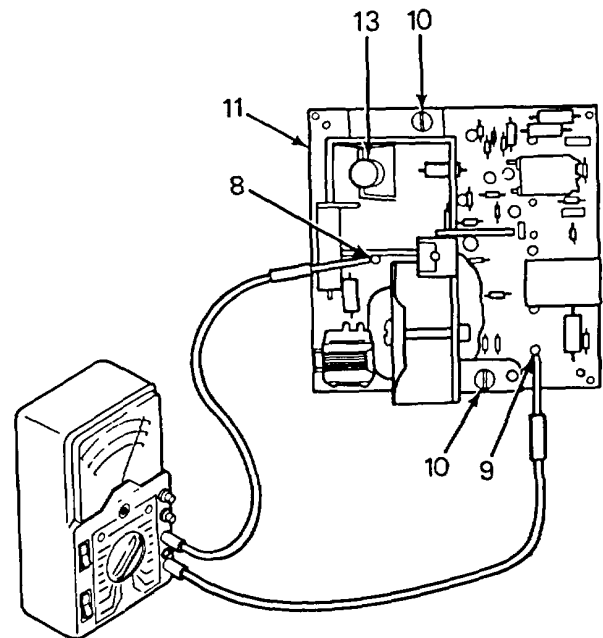
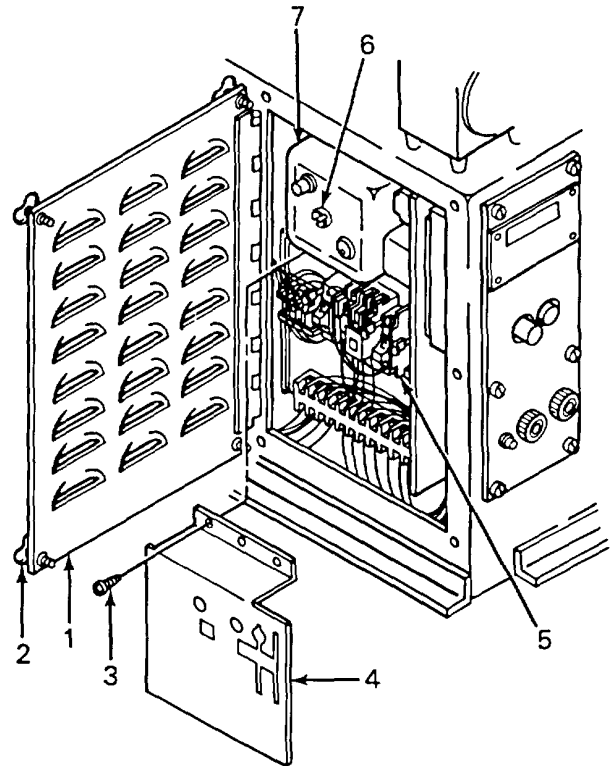
WARNING

Remove rings, bracelets, wristwatches, and neck chains before working around or on the laundry unit. Jewelry can catch on equipment and cause injury, or may short across an electrical circuit and cause severe burns or electrical shock.

WARNING

Use extreme caution when performing the following test with power ON.

- Push dryer start switch and check for 120 V ac at test points (8) and (9) with multimeter. If voltage is not normal, test for 120 V ac input to dryer (FIG. 2-4). If voltage is normal, go to next step.
- Push dryer stop switch and remove two screws (10) and flame safeguard control circuit card (11).



3-26. DRYER UV SCANNER AND FLAME SAFEGUARD ASSEMBLY (CONT)

TEST (Cont)

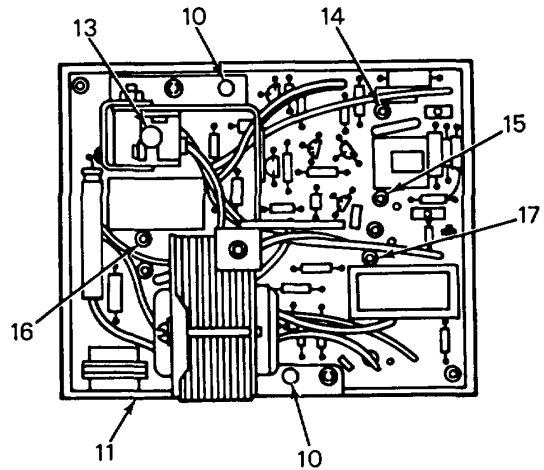
10. Push dryer start switch and check for 120 V ac on terminals (24) and (25) of base terminal board (12). If voltage is not normal, check incoming power source (FIG. 2-4). If voltage at terminals 2 and 7 is normal, install flame safeguard control circuit card (11) and two screws (10).

NOTE

If the buzzer sounds, an ignition failure is indicated.

NOTE

Unit maintenance has determined that ignition takes place momentarily but system shuts down immediately after ignition.

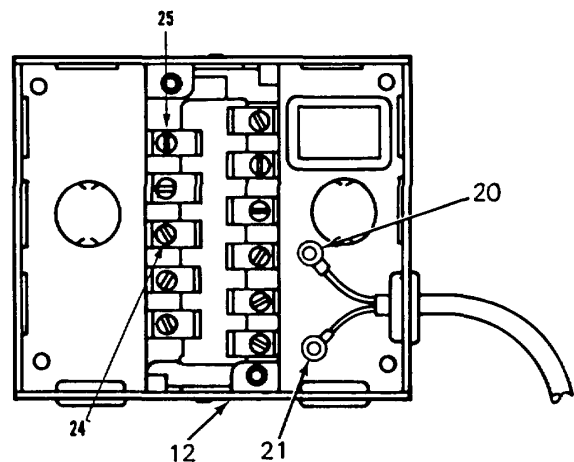


11. With multimeter set for dc operation, press dryer start switch, press reset pushbutton (13), and check voltage at test points (14) and (15). If voltage is not 5 to 6 V dc, replace UV scanner.

NOTE

Unit maintenance has determined that ignition does not occur after pressing reset pushbutton but buzzer sounds.

12. With multimeter set for ac operation, press dryer start switch and check for 120 V ac at test points (16) and (17) after pressing reset pushbutton (13). If voltage is zero, replace flame safeguard control circuit card (11).



NOTE

Callouts (24) and (25) are actually terminals 2 and 7 respectively.

3-26. DRYER UV SCANNER AND FLAME SAFEGUARD ASSEMBLY (CONT)**SERVICE**

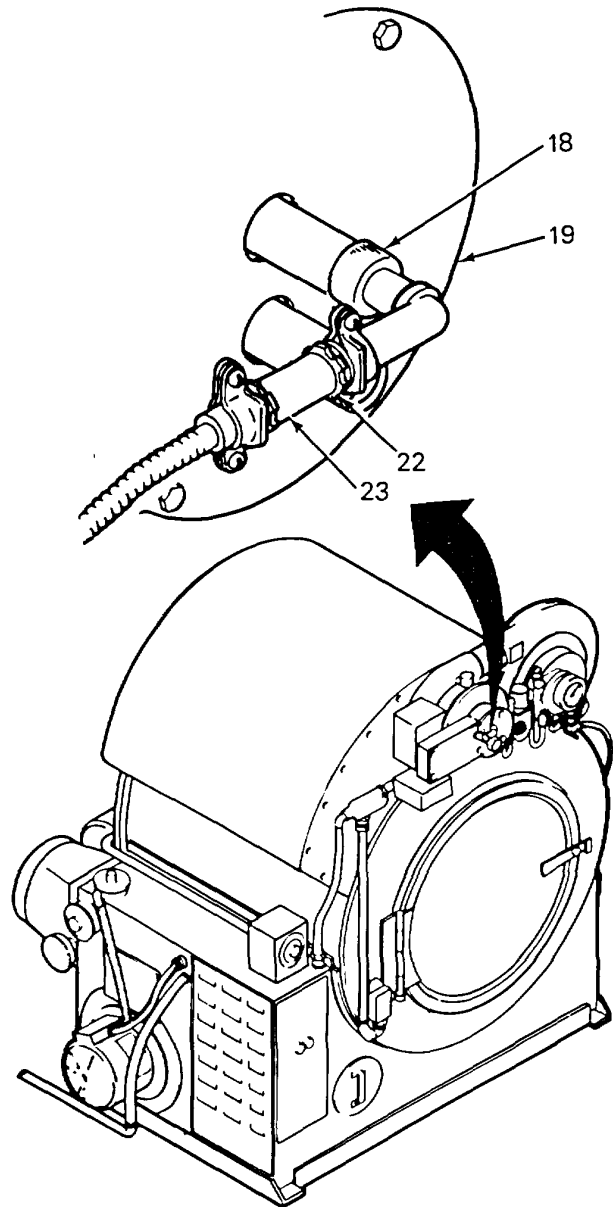
1. Disconnect UV scanner (18) at burner head assembly (19) and clean scanner lens with a clean dry cloth (Item 3, App C).
2. Connect UV scanner (18) to burner head assembly (19).

REPAIR**NOTE**

Repair the UV scanner and flame safeguard assembly by replacing defective components.

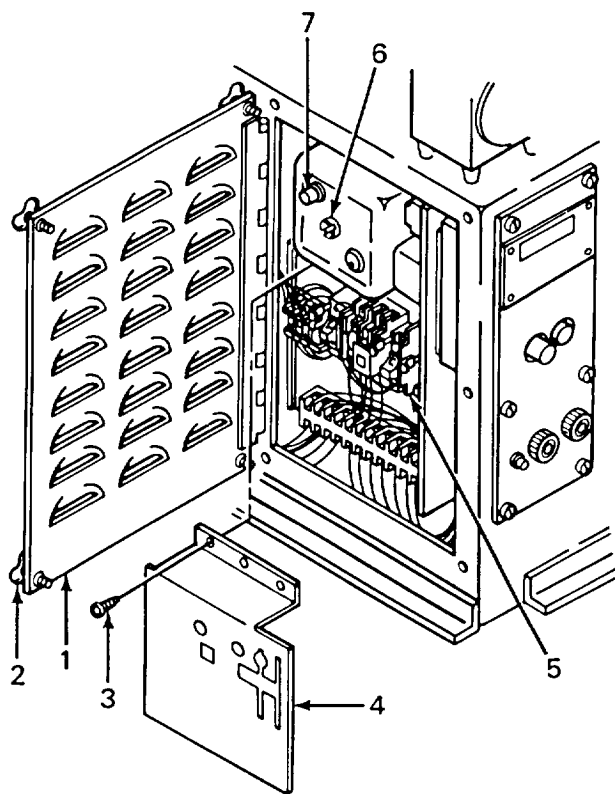
REPLACEMENT

1. Remove two screws (10) and flame safeguard control circuit card (11).
2. Tag and disconnect two wires (20) and (21) from terminals S1 and S2 on base terminal board (12).
3. Disconnect UV scanner (18) at burner head assembly (19) and remove conduit nut (22). Pull UV scanner and wires from conduit (23).
4. Install UV scanner (18) with wires in conduit (23) and secure with conduit nut (22). Install UV scanner on burner head assembly (19).
5. Connect wires (20) and (21) to terminals S1 and S2 on base terminal board (12).
6. Install flame safeguard control circuit card (11) and secure with two screws (10).



3-26. DRYER UV SCANNER AND FLAME SAFEGUARD ASSEMBLY (CONT)**REPLACEMENT (Cont)**

7. Install cover (7) on flame safeguard control and tighten screw (6).
8. Install cover plate (4) with three screws (3).
9. Close dryer control box door (1) and tighten four screws (2).

**NOTE****FOLLOW-ON-MAINTENANCE:**

Install tarp assembly and platform (TM 10-3510-209-10).

3-27. DRYER EXHAUST MOTOR AND FAN ASSEMBLY

This task covers:

- a. Removal
- b. Repair
- c. Installation

INITIAL SETUP

Tools

General mechanic's tool set
SC 5180-90

Personnel Required

MOS 63J (1)

Materials/Parts

Blower motor assembly

General Safety Instructions

WARNING

Components of the dryer are heavy and may be awkward to handle. Use correct lifting procedures, devices, and/or assistance from other personnel to avoid injury.

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

Equipment Condition

TM 10-3510-209-10, Tarp assembly removed.

REMOVAL

WARNING

Components of the dryer are heavy and may be awkward to handle. Use correct lifting procedures, devices, and/or assistance from other personnel to avoid injury.

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

1. Remove electrical power from the dryer tumbler.

3-27. DRYER EXHAUST MOTOR AND FAN ASSEMBLY (CONT)

REMOVAL (Cont)

2. Remove two screws (1) and cover (2) from connector box (3).
3. Tag and disconnect motor wires (4) from inside connector box (3).
4. Remove two screws (5) and connector box (3) from motor (6).
5. Remove conduit nut (7) from elbow (8) and remove conduit (9) from connector box (3).
6. Remove four nuts (10), washers (11), and motor (6) from dryer (12).

REPAIR

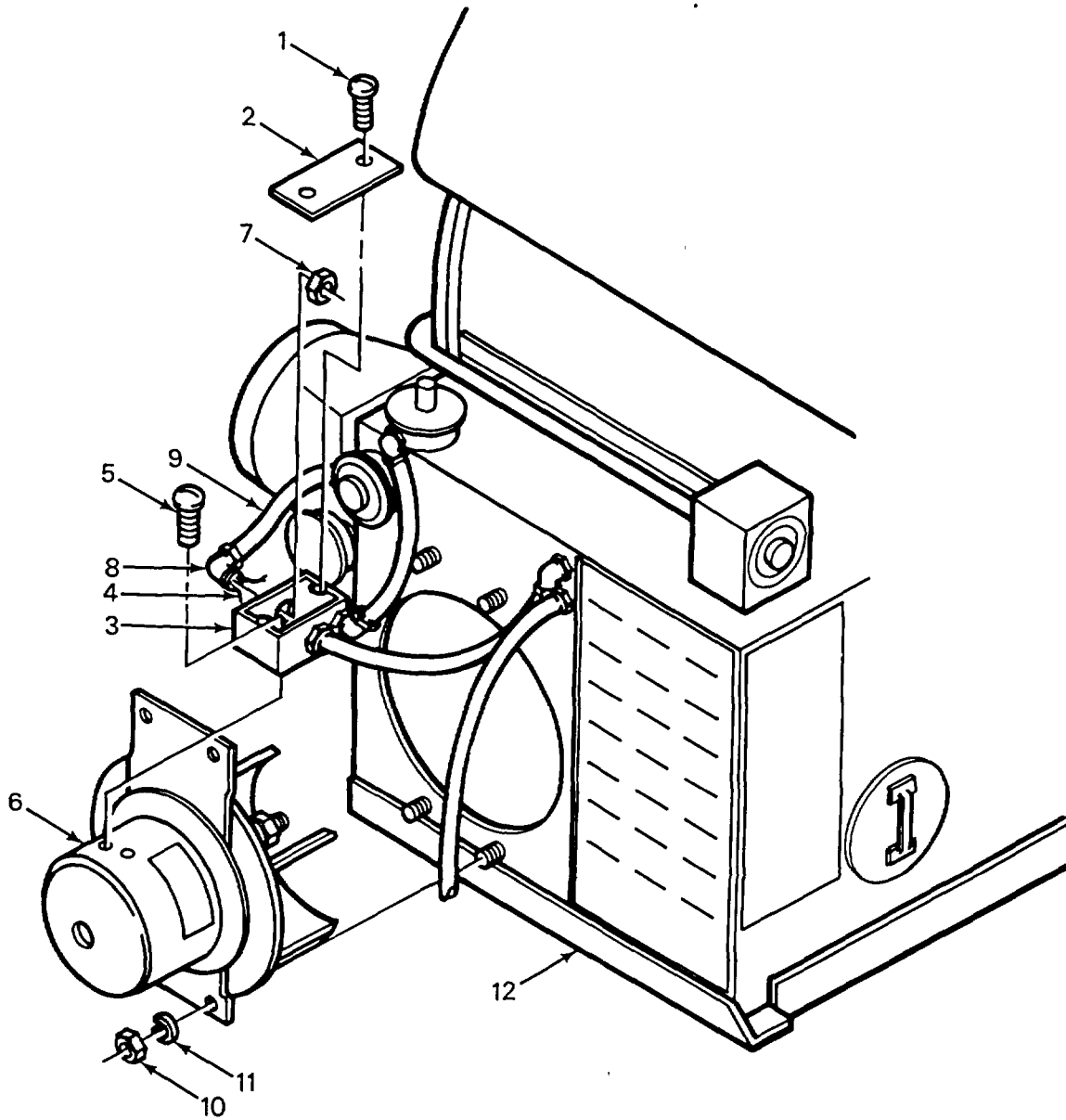
Repair of the motor consists of replacing damaged or defective components.

INSTALLATION

1. Install motor (6) on dryer (12) and secure with four nuts (10) and washers (11).
2. Install elbow (8), conduit (9), and conduit nut (7) in connector box (3).
3. Install connector box (3) and two screws (5) on motor (6).
4. Connect wires (4) inside connector box (3). Remove tags.
5. Install cover (2) and two screws (1) on connector box (3).

3-27. DRYER EXHAUST MOTOR AND FAN ASSEMBLY (CONT)

INSTALLATION (Cont)



NOTE

FOLLOW-ON-MAINTENANCE:

Install tarp assembly (TM 10-3510-209-10).

3-28. DRYER TUMBLER DRIVE MOTOR AND GEARBOX

This task covers:

a. Removal

c. Repair

c. Installation

INITIAL SETUP**Tools**

General mechanic's tool set
SC 5180-90

Personnel Required

MOS 63J (2)

Materials/Parts

Tumbler motor
Tumbler gear box

General Safety Instructions**WARNING**

**High voltage is present on this equipment.
Do not perform maintenance with power on.
Death or serious injury may result.**

Equipment Condition

TM 10-3510-209-10, Tarp assembly removed.

REMOVAL

1. Remove drive motor.

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

- a. Remove electrical power from the dryer.
- b. Remove four screws (1) and cover (2) from connector box (3).

NOTE

A record of wire removal is needed so that installation of wires on the replacement motor is exactly duplicated. See FIGURE 2-4.

- c. Tag and disconnect electrical wires (4) from the terminals and connectors. Remove conduit nut (5) and conduit (6) from connector box (3).
- d. Remove two bolts (7), flat washers (8), nuts (9), and coupling guard (10).

3-28. DRYER TUMBLER DRIVE MOTOR AND GEARBOX (CONT)

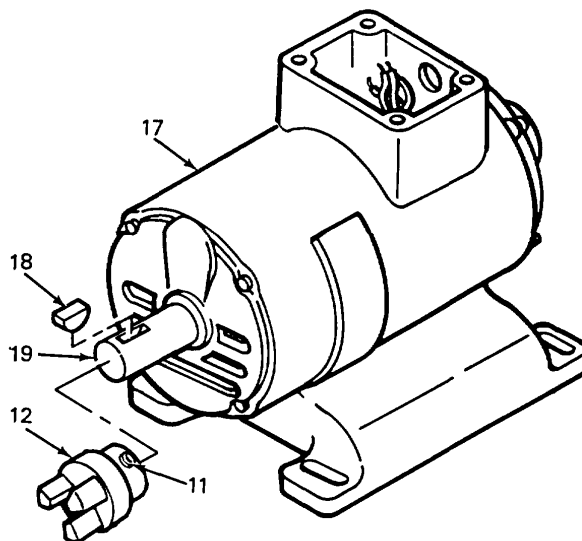
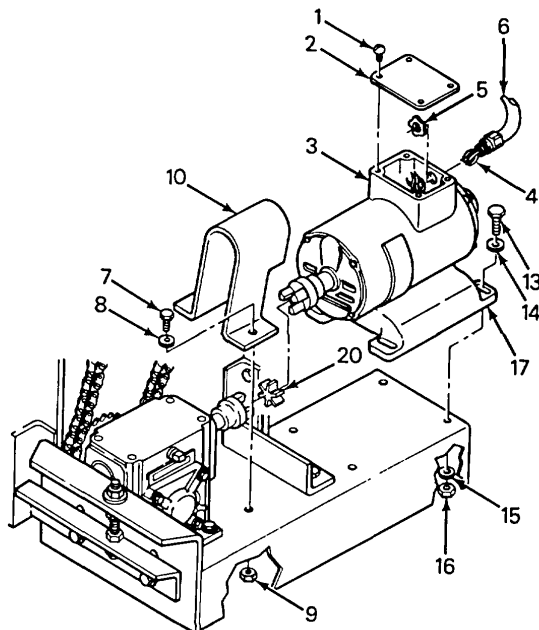
REMOVAL (Cont)

- e. Loosen setscrew (11) on the motor side of coupling (12).
 - f. Remove four bolts (13), flat washers (14), lockwashers (15), nuts (16), and motor (17) with bracket.
 - g. Remove key (18) from motor shaft (19) and slide motor (17) away from coupling (12).
 - h. Save coupling cushion (20) for future use.
2. Remove gear box.

WARNING

High voltage is present on this equipment. Do not perform maintenance with power on. Death or serious injury may result.

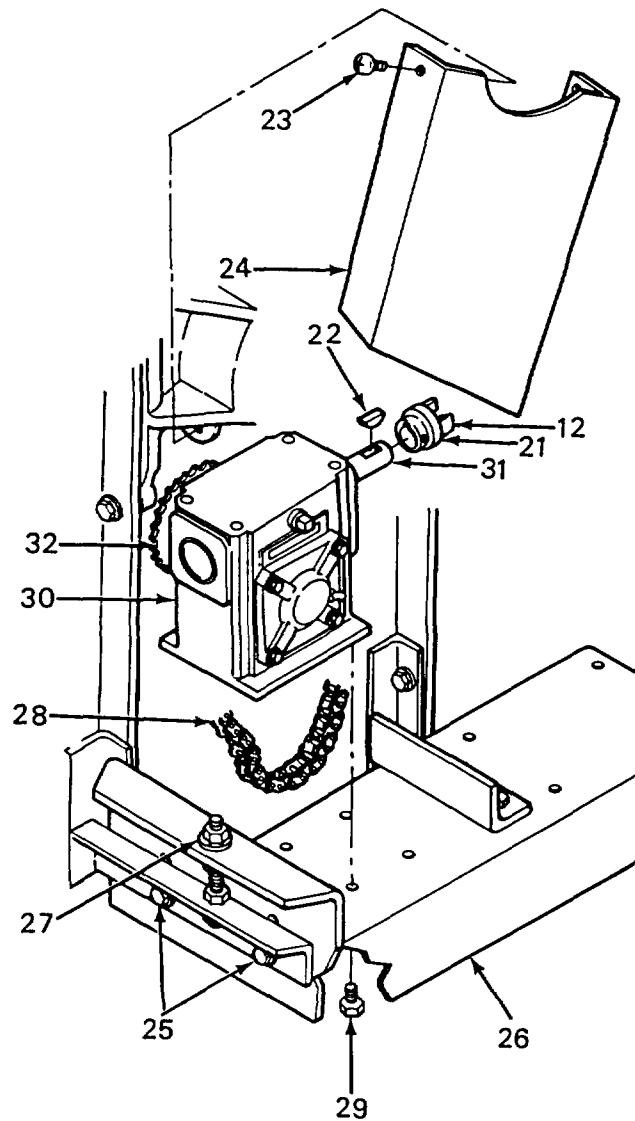
- a. Remove electrical power from the dryer.
- b. Remove two bolts (7), flat washers (8), nuts (9), and coupling guard (10).



3-28. DRYER TUMBLER DRIVE MOTOR AND GEARBOX (CONT)

REMOVAL (Cont)

- c. Loosen setscrew (21) on the gear unit side of coupling (12). Remove coupling and key (22).
- d. Remove three screws (23) and chain guard (24).



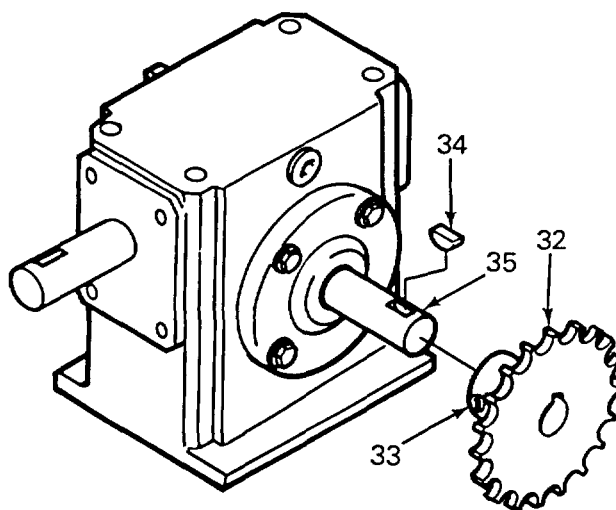
3-28. DRYER TUMBLER DRIVE MOTOR AND GEARBOX (CONT)

REMOVAL (Cont)

- e. Loosen four mounting bolts (25) on platform (26).
- f. Loosen tension nut (27) and release tension on drive chain (28).
- g. Remove four bolts (29) and washers on the bottom of gear reduction unit (30).
- h. Remove gear reduction unit (30) by withdrawing shaft (31) from coupling (12) and removing chain sprocket (32) from drive chain (28).
- i. Loosen setscrew (33) from chain sprocket (32) and remove chain sprocket and sprocket key (34) from shaft (35).

REPAIR

1. No repair is authorized on the tumbler motor. Replace the motor, if damaged or defective, with a new motor.
2. No repair is authorized on the gear reduction unit. Replace unit if damaged or defective.



3-28. DRYER TUMBLER DRIVE MOTOR AND GEARBOX (CONT)

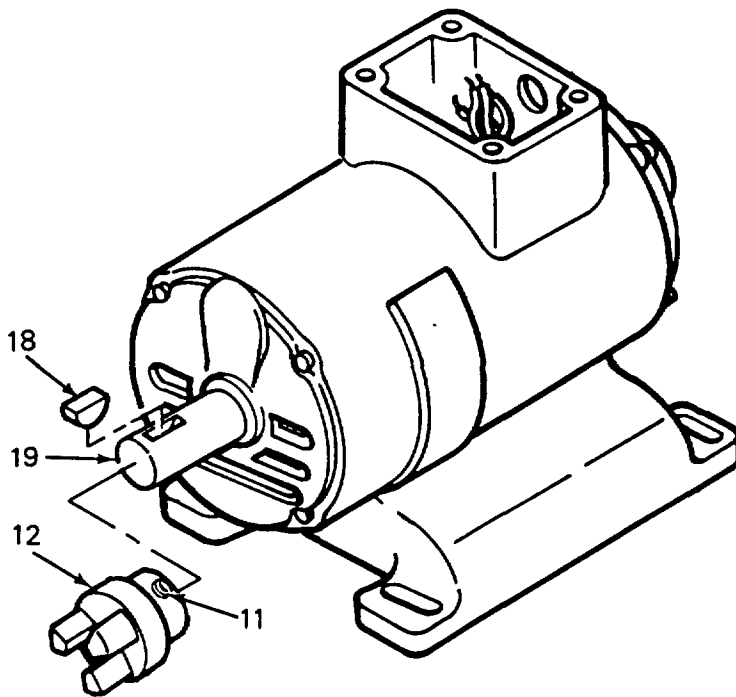
INSTALLATION

1. Install drive motor.

NOTE

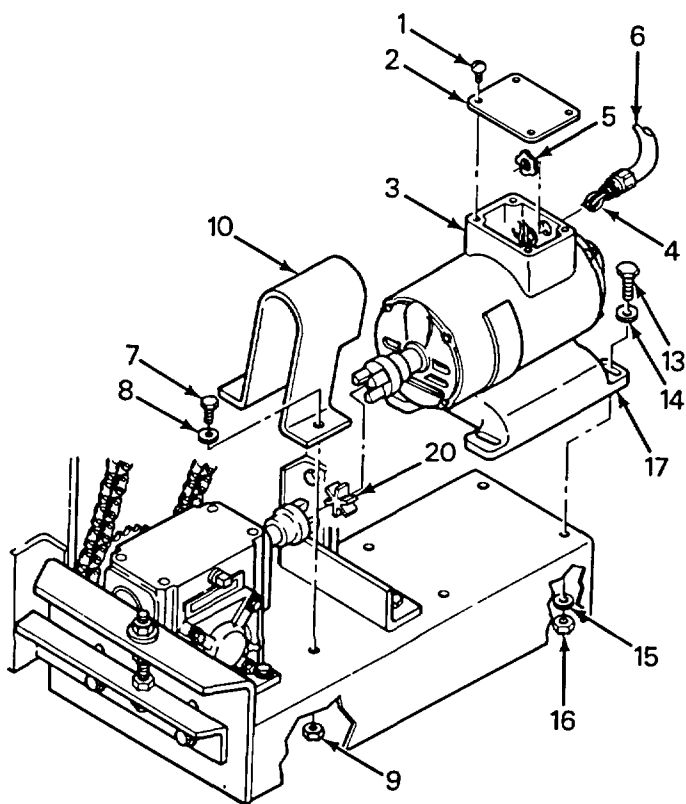
Align the key and keyway on the motor shaft with the keyway in the coupling before installing the replacement motor.

- a. Install key (18) on motor shaft (19) and slide motor shaft into coupling (12). Place coupling cushion (20) inside coupling.
- b. Install motor with bracket (17), four bolts (13), flat washers (14), lockwashers (15), and nuts (16).
- c. Tighten setscrew (11) on the motor side of coupling (12).



3-28. DRYER TUMBLER DRIVE MOTOR AND GEARBOX (CONT)**INSTALLATION (Cont)**

- d. Install coupling guard (10), two bolts (7), flat washers (8), and nuts (9).
- e. Install conduit (6), conduit nut (5), and electrical wires (4) in connector box (3).
- f. Connect electrical wires (4) to terminals and connectors. Remove tags.
- g. Install cover (2) and four screws (1) on connector box (3).



3-28. DRYER TUMBLER DRIVE MOTOR AND GEARBOX (CONT)

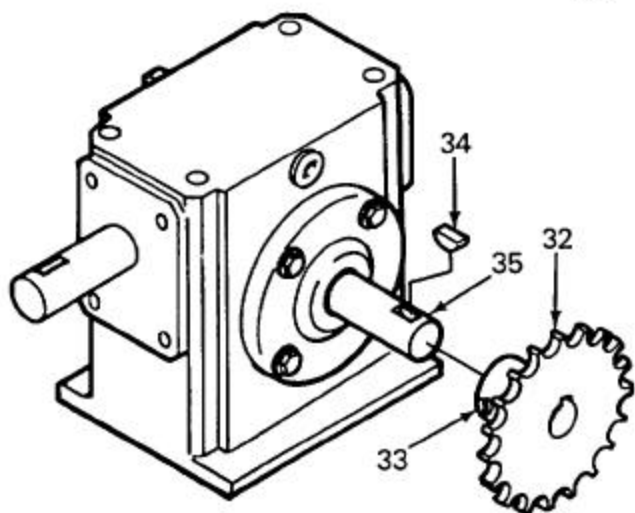
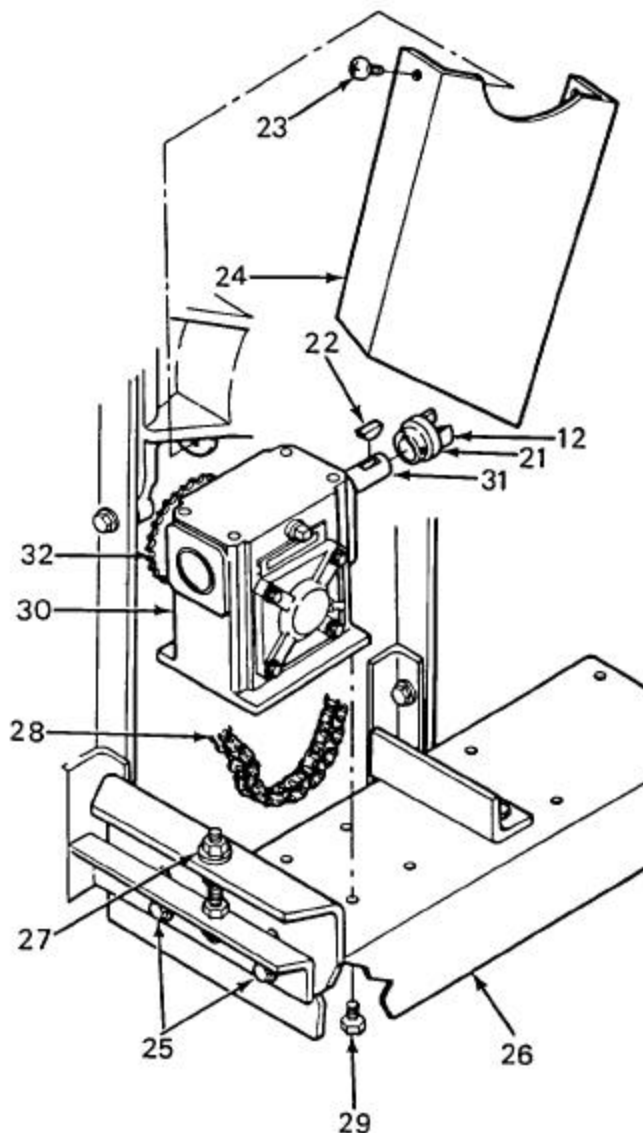
INSTALLATION (Cont)

2. Install gearbox.
 - a. Install sprocket key (34) and chain sprocket (32) on shaft (35) and tighten setscrew (33) in chain sprocket.
 - b. Place drive chain (28) on chain sprocket (32).

NOTE

Align the keyways on shaft and coupling before installing gear reduction unit.

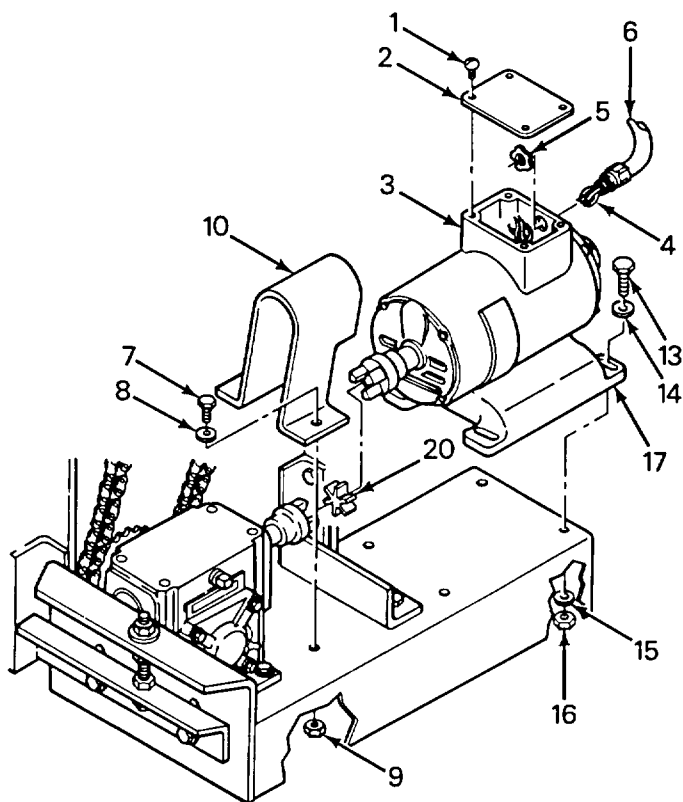
- c. Align keyways on shaft (31) and coupling (12) and install key (22) and coupling on shaft.
- d. Install gear reduction unit (30) and four bolts (29) and washers on platform (26). Tighten four mounting bolts (25).



3-28. DRYER TUMBLER DRIVE MOTOR AND GEAR BOX (CONT)

INSTALLATION (Cont)

- e. Tighten setscrew (21) on the gear box side of coupling (12).
- f. Tighten tension on drive chain (28) and tighten tension nut (27).
- g. Install chain guard (24) and three screws (23).
- h. Install coupling guard (10), two flat washers (8), nuts (9), and bolts (7).

**NOTE****FOLLOW-ON MAINTENANCE:**

Install tarp assembly (TM 10-3510-209-10).

3-29. WATER PUMP (CONT)

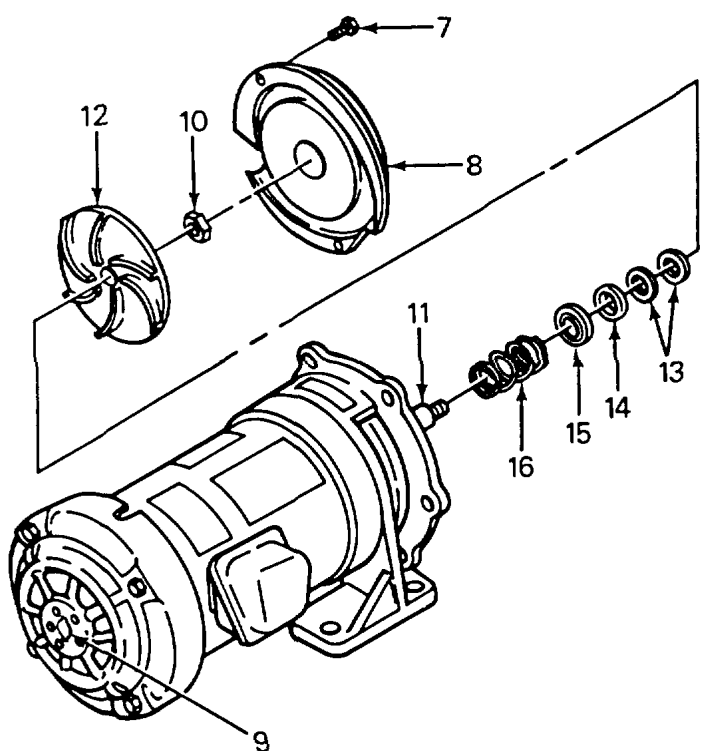
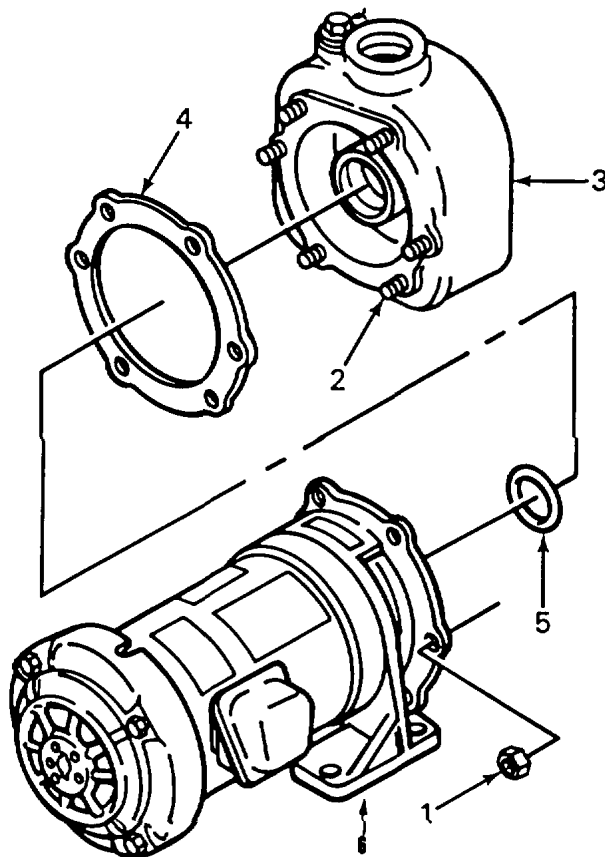
DISASSEMBLY (Cont)

2. Remove two machine screws (7) and vane plate (8).
3. Place screwdriver in slot (9) and hold motor from turning. Remove impeller jam nut (10) from motor shaft (11).
4. Place screwdriver in slot (9) and hold a block of wood on edge of impeller blade and strike sharply with hammer. Remove impeller (12) from motor shaft (11).

NOTE

Tag and tie seal assembly when removed.

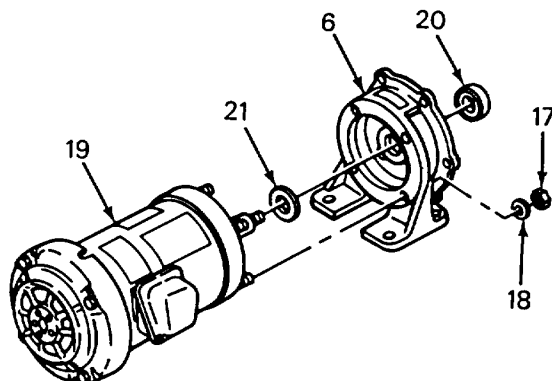
5. Remove impeller shims (13), seal washer (14), spring cup (15), and spring (16) from motor shaft (11).



3-29. WATER PUMP (CONT)

DISASSEMBLY (Cont)

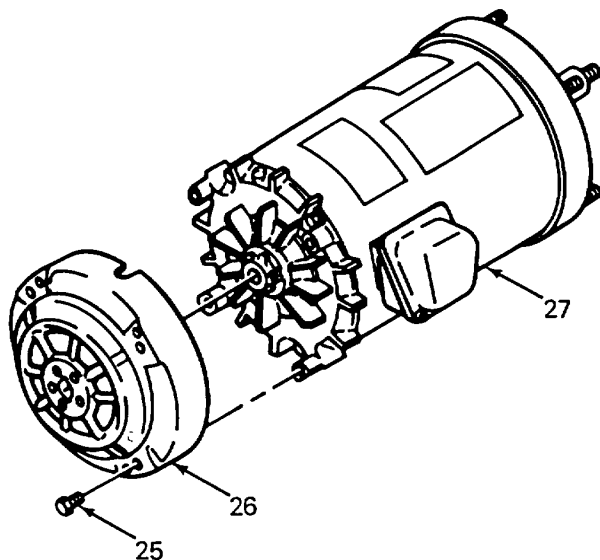
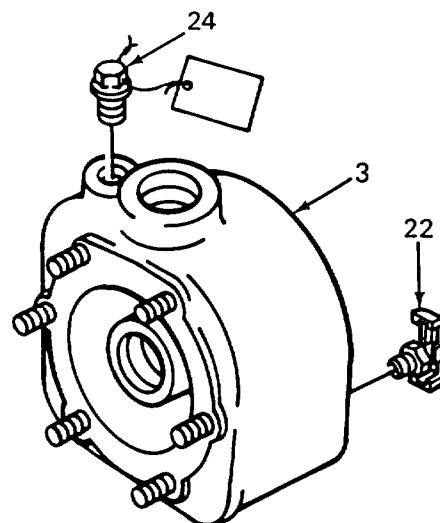
6. Remove four nuts (17), lockwashers (18), and motor (19) from motor adapter (6). Remove mechanical seal (20) from pump side of adapter. Remove stationary seal (21) from motor side of adapter.
7. Remove suction port drain plug (22) from casing (3).
8. Remove fill plug (24) from casing (3).



NOTE

Matchmark motor housing and end plate for ease in assembly.

9. Remove four bolts (25) and end plate (26) from motor housing (27).

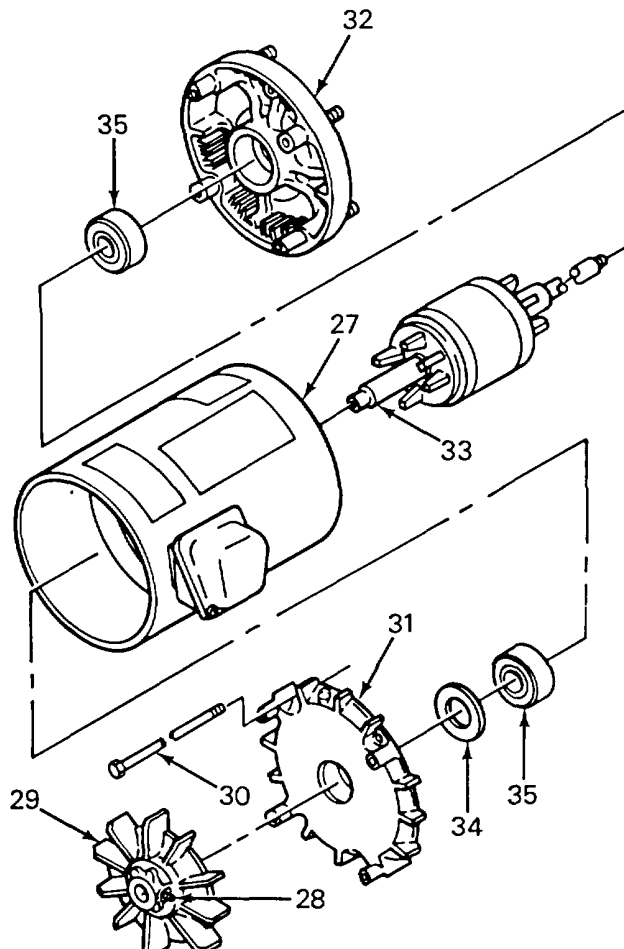


3-29. WATER PUMP (CONT)**DISASSEMBLY (Cont)**

10. Loosen screw (28) and remove impeller (29) from shaft (33).
11. Remove four fan bolts (30) and end plates (31) and (32) from motor housing (27) and shaft (33).
12. Remove shaft (33) from motor housing (27).
13. Remove shims (34) and two bearings (35) from shaft (33). Replace bearings if rough or excessively worn.

REPAIR

Repair of water pump assembly restores the unit to normal operating condition by replacing the defective component and making needed adjustments. Remove and replace only those items necessary to make repair. After replacing the defective component, ensure that the water pump operates correctly by making a visual inspection or by performing an operational check.



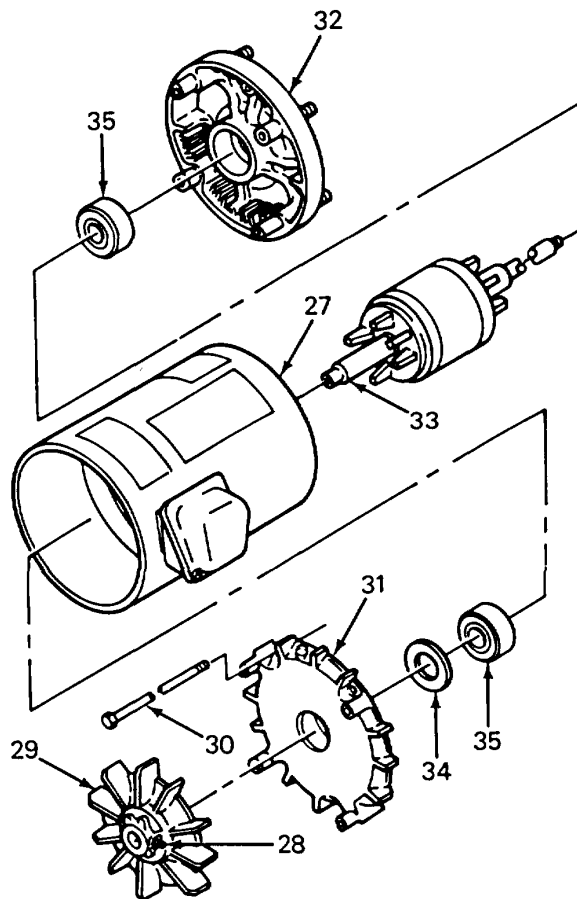
3-29. WATER PUMP (CONT)

ASSEMBLY

NOTE

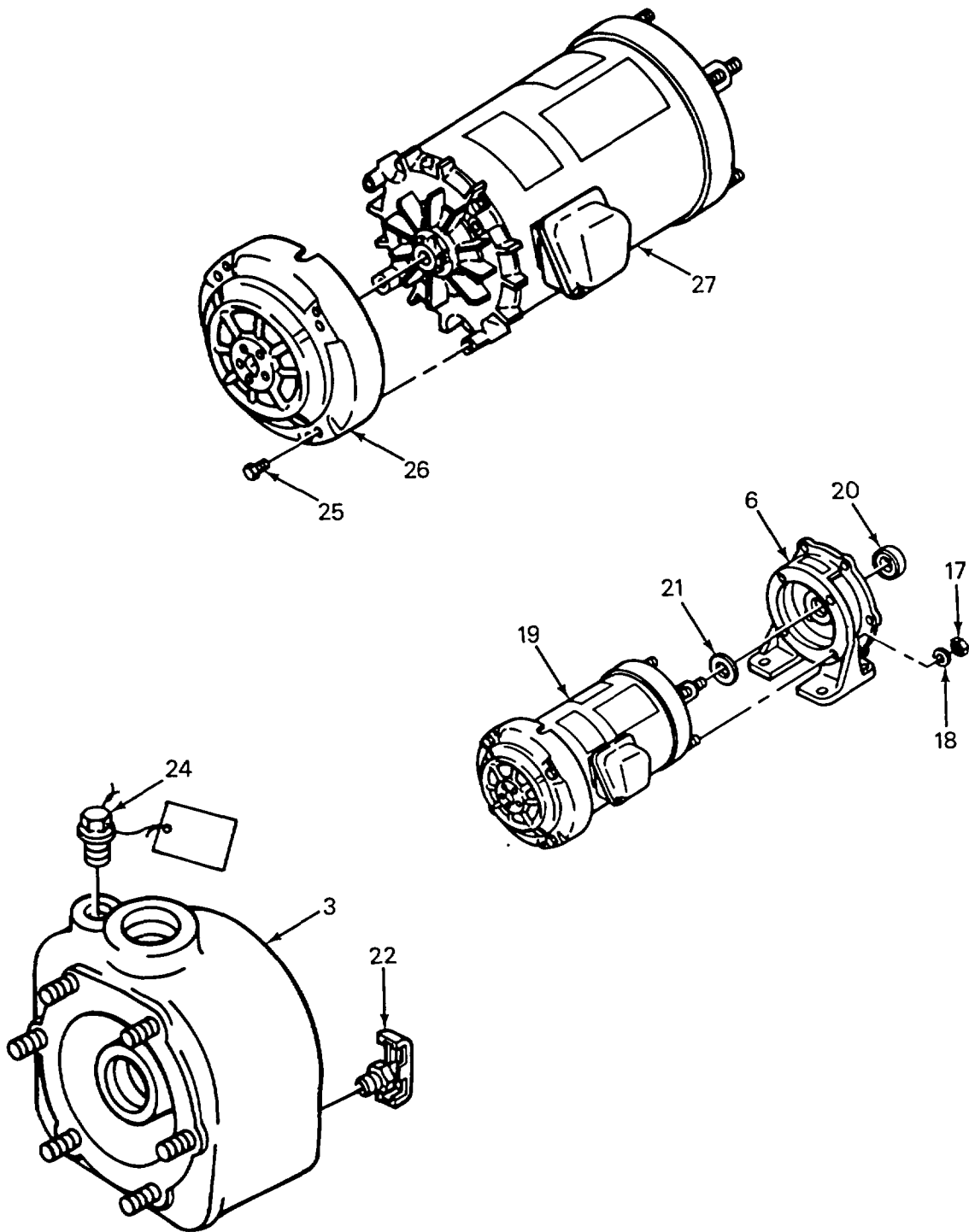
Align matchmarks for ease in assembly.

1. Install two bearings (35) and shims (34) on shaft (33).
2. Install shaft (33) in motor housing (27).
3. Install end plates (32) and (31) and four bolts (30) on shaft (33) and motor housing (27).
4. Install impeller (29) on shaft (33) and tighten screw (28).
5. Install end plate (26) and four bolts (25) on motor housing (27).
6. Install fill plug (24) and suction port drain plug (22) in housing (3).
7. Install stationary seal (21) on motor shaft. Install mechanical seal (20) on pump side of motor adapter (6).
8. Install motor (19), four lockwashers (18), and nuts (17) on motor adapter (6).



3-29. WATER PUMP (CONT)

ASSEMBLY (Cont)



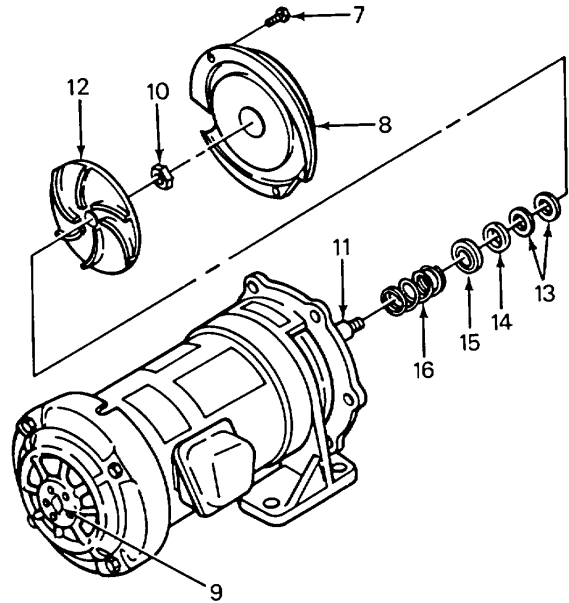
3-29. WATER PUMP (CONT)

ASSEMBLY (Cont)

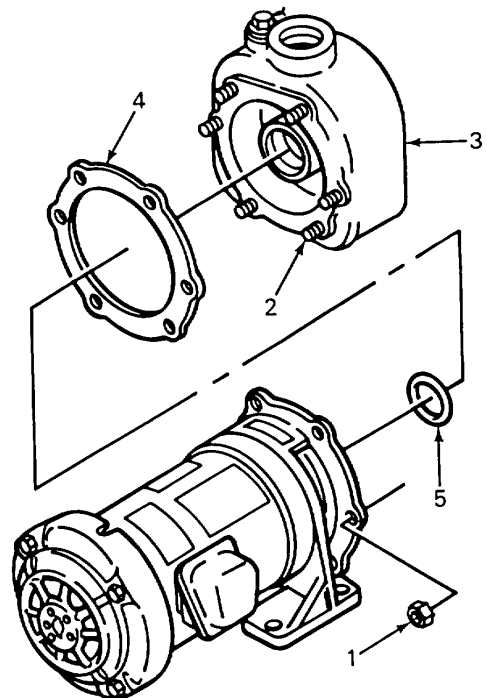
NOTE

Ensure that the proper shims (13) are used to provide approximately 0.004 inch (0.1 mm) clearance between impeller (12) and vane plate (8) when water pump is fully assembled.

9. Install spring (16), spring cup (15), seal washer (14), impeller shims (13), and impeller (12) on motor shaft (11).
10. Install impeller jam nut (10) on motor shaft (11). Place screwdriver in slot (9) and hold motor from turning.
11. Install vane plate (8) and two machine screws (7).



12. Install O-ring (5) and gasket (4) on housing (3).
13. Install housing (3) and six hex nuts (1) on studs (2).



NOTE

FOLLOW-ON MAINTENANCE:

Install water pump on trailer (TM 10-3510-209-10).

CHAPTER 4
INTERMEDIATE GENERAL SUPPORT MAINTENANCE PROCEDURES

Section I. GENERAL

Para	Title	Page
4-1	Scope	4-1
4-2	Common Tools and Equipment	4-1
4-3	Special Tools, TMDE, and Support Equipment	4-1
4-4	Repair Parts	4-1

4-1. SCOPE. This chapter contains maintenance instructions for repairing the laundry unit components at the general support maintenance level.

4-2. COMMON TOOLS AND EQUIPMENT. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

4-3. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT. Refer to appendix B, Maintenance Allocation Chart, and TM 10-3510-209-24P, Repair Parts and Special Tools List, for a list of special tools, TMDE, and support equipment.

4-4. REPAIR PARTS. Repair parts are listed and illustrated in the repair parts and special tools list (TM 10-3510-209-24P) covering unit through intermediate general support maintenance for this equipment.

Section II. INTERMEDIATE GENERAL SUPPORT MAINTENANCE PROCEDURES

Para	Title	Page
4-5	Scope	4-1
4-6	General Repair	4-2
4-7	Welding Certification	4-4
4-8	Welding Repair	4-4

4-5. SCOPE. This section contains procedures that involve welding, cleaning, and painting assemblies to repair the laundry unit. General procedures to be followed in the removal, repair, replacement, or installation of components and testing are also included. When a special procedure is used in the removal, repair, or installation of a component, that procedure will be detailed in the section covering the component. If no special procedure is mentioned, then standard maintenance practices will apply.

4-6. GENERAL REPAIR.

WARNING

High voltage is present on this equipment. Do not perform maintenance with the power on. Death or serious injury may result.

a. Wiring.

- (1) General. Most wires on laundry units, whether run individually or in a harness, are marked or numbered. Be sure to tag any unnumbered wire upon disconnection to ensure proper installation.
- (2) Inspection. Inspect insulation for cracks or frayed material. Pay particular attention to wires passing through holes in the frame or over rough metal edges. If inspection reveals a cut or broken wire, and the break in the wire is exposed, the wire must be repaired (step (4) below). If the break in the wire is in a harness, conduit, or inaccessible area, replace the wire (step (5) below).
- (3) Testing. Test wires for continuity by disconnecting one end from the component to which it is attached, making an open circuit. Touch the test probes of a multimeter to each end of the wire. If the meter shows no indication, the wire is defective and should be repaired or replaced (steps (4) and (5) below).
- (4) Repair. Shave the insulation on the wire to expose 1/2 inch (1.27 cm) of bare wire at both ends of the break. Twist the bare wire together and solder the connection. Cover the break with electrical friction tape. Be sure to leave no bare wire exposed. If a terminal lug breaks off a wire, replace it with an exact duplicate.
- (5) Replacement. Replace a wire by disconnecting it from the component or components to which it is attached and remove the wire. Connect a new wire to the component or components. If a broken wire is part of a harness, disconnect the wire at each end and tape the loose ends with electrical tape. Install a new wire and attach it to the outside of the wiring harness.

b. Cleaning and Inspection of Antifriction Bearings. Refer to TM 9-214.

4-6. GENERAL REPAIR. (CONT)

c. Cleaning and Inspection of Mechanical Parts.

WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point is 100-138°F (38-59°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

WARNING

Compressed air used for cleaning purposes will not exceed 30 psi (207 kPa). Use only with effective chip-guarding and personal-protective equipment (goggles, shield, gloves, etc.).

- (1) Clean metal parts in dry-cleaning solvent (item 10, app C). Thoroughly dry the parts with compressed air, observing all safety precautions.
- (2) Fibrous or rubber parts can generally be cleaned with warm, soapy water and dried with compressed air.
- (3) Inspect metal parts for cracks, breaks, bends, worn edges, and rough bearing surfaces. Damage that alters the part or its function is cause for replacement of that part.

d. General Repair.

- (1) Repair the laundry unit to normal operating condition by replacing or repairing a defective component and/or by needed adjustments.
- (2) Cleaning and lubrication is sometimes all that is needed to return an item to operating condition.
- (3) Remove and replace only those items necessary to make repairs. After replacing the defective components, ensure that the laundry operates correctly by making a visual inspection and by performing an operational check. Refer to TM 10-3510-209-10.

4-7. WELDING CERTIFICATION. Before welding any assembly of the laundry unit, the welder must be certified as a welder of ferrous metals, aluminum, and stainless steel. The certification is based on ASME Boiler and Pressure Vessel Code, Section IX, and meets or exceeds the intent of the following military specifications and standards:

- a. MIL-W-52574 (ME), Welding, Steel
- b. MIL-STD-1261, Welding Procedures for Construction Steels
- c. MIL-W-45206A, Welding, Aluminum

4-8. WELDING REPAIR. Assemblies of the laundry unit that require general support maintenance are made up of two types of material: stainless steel and aluminum. Repair of assemblies containing these types of materials require separate processes and procedures for welding, cleaning, and painting. Use these procedures to make the repairs.

- a. Components Made of Steel. The following procedures provide instructions for repairing the air tank, frame assembly, and other components of the laundry that are made of steel.
 - (1) Before welding, thoroughly clean surface to be welded. Do not use solvent for cleaning.
 - (2) Remove burrs and sharp edges.
 - (3) Weld damaged area in accordance with MIL-W-52574 (ME), Type I.
 - (a) Weld rods shall conform to Federal Specification E-15599, Class SA 233, 3/32-inch diameter.
 - (b) Power source can be ac or dc reverse polarity, 30 to 80 amperes.
 - (c) Penetration shall be full, at 14 inches (36 cm)/minute welding rate.
 - (d) Preheat material to be welded to 50°F (10°C).
 - (e) Avoid starts and stops when welding. Chip the slag and restart the weld.
 - (4) Inspect weld joints for conformance with specification details and for surface uniformity.
 - (5) Grind welded seams smooth.
 - (6) Clean exposed metal surfaces.
 - (7) Apply one coat of primer (item 6, app C).
 - (8) Apply finish coat (item 7, app C) in accordance with FED STD 595.
 - (9) Apply finish coat (item 24, app C) to high temperature areas of laundry components (dryer hood) in accordance with FED STD 595.

4-8. WELDING REPAIR. (CONT)

- b. Components Made of Aluminum. The following procedures provide instructions for repairing assemblies of the laundry unit that are made of aluminum. Those assemblies are: hose bin assembly, sound deadening panel assemblies, lower panel track, pre-extraction bin assembly, platform assembly, controller stand, and ground rod holder assembly.
 - (1) Before welding, use a stainless steel wire brush and thoroughly clean surface to be welded.
 - (2) Weld damaged area in accordance with MIL-W-45206A (MR), Class B.
 - (a) Use welding rods that conform to AWS AS 10-61T, Federal Specification QQ-R-566A, Class 4043, 3/32-inch diameter.
 - (b) Use ac power source, 25 to 115 amperes.
 - (c) Use argon inert shielding gas at 20 cubic feet per hour (0.57 cubic meters per hour), 3/8-inch (9.5 mm) gas cup, and short arc to ensure good gas coverage.
 - (d) Ensure penetration is to full depth, at 10 inches (25 cm) per minute welding rate.
 - (e) Preheat material to be welded to 50°F (10°C).
 - (3) Inspect weld joints for conformance with specification details and for surface uniformity.
 - (4) Grind welded surfaces-smooth.
 - (5) Use compound (item 4, app C) and clean exposed metal surfaces.
 - (6) Apply one coat of primer (item 6, app C).
 - (7) Apply finish coat (item 7, app C) in accordance with FED STD 595.

Section III. AUXILIARY EQUIPMENT

Para	Title	Page
4-9	Generator Maintenance.....	4-5
4-10	Trailer Maintenance	4-5

4-9. GENERATOR MAINTENANCE. Refer to TM 5-6115-585-12 for maintenance of generator and its major components.

4-10. TRAILER (M10-61E1) MAINTENANCE. Refer to TM 9-2330-376-14&P for maintenance of M10 trailer.

APPENDIX A

REFERENCES

A-1. SCOPE. This appendix lists forms and publications pertinent to the laundry unit and associated equipment.

A-2. FORMS.

DA Form 2028-2	Recommended Changes to Equipment Technical Publications
DA Form 2404	Equipment Inspection and Maintenance Work Sheet
SF 364	Report of Item Discrepancy
SF 368	Quality Deficiency Report

A-3. FIELD MANUALS.

FM 5-20	Camouflage
FM 9-207	Operation and Maintenance of Ordnance Materiel in Cold Weather (0 Deg to Minus 65 Deg F)
FM 10-16	Repair of Tents, Canvas, and Webbing
FM 10-280	Field Laundry Clothing Exchange and Bath Operations
FM 21-11	First Aid for Soldiers
FM 31-70	Basic Cold Weather Manual
FM 31-71	Northern Operations
FM 43-2	Metal Body Repair and Related Operations

A-4. TECHNICAL BULLETINS.

TB 740-97-2	Preservation of USAMECOM Mechanical Equipment for Shipment and Storage (US Army)
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A-5. TECHNICAL MANUALS.

TM 5-764	Repair of Electric Motors and Generators
TM 9-214	Inspection, Care, and Maintenance of Antifriction Bearings
TM 9-237	Operators Manual for Welding Theory and Application
TM 9-247	Materials Used for Cleaning, Preserving, Abrading, and Cementing Ordnance Materiel and Related Materials Including Chemicals
TM 10-3510-208-34P	Direct Support and General Support Maintenance Repair Parts and Special Tools List: Laundry Unit, Single Trailer Mounted.

A-5. TECHNICAL MANUALS. (CONT)

TM 10-3510-208-34	Direct Support and General Support Maintenance Manual: Laundry Unit, Single Trailer Mounted.
TM 10-3510-209-10	Operator's Manual for: Laundry Unit, Trailer Mounted, Model M85
TM 10-3510-209-10-HR	Hand Receipt Covering Contents of Components of End Item (COEI), Basic Issue Items (BII) and Additional Authorization List (AAL) for Laundry Unit, Trailer Mounted, M85
TM 10-3510-209-24P	Unit, Intermediate Direct Support, and Intermediate General Support Maintenance Repair Parts and Special Tools List: Laundry Unit, Trailer Mounted, M85
TM 9-2330-376-14&P	Unit, Intermediate Direct Support, and Intermediate General Support Maintenance Manual Including Repair Parts and Special Tools List: Trailer, 5-Ton, Tandem Axle, Flatbed, M10-61E1
TM 5-6115-585-12	Operator's and Organizational Maintenance Manual for Generator Set, Diesel, 10 kW
TM 38-230-1	Packaging of Material: Preservation (VOL I)
TM 38-230-2	Packaging of Material: Preservation (VOL II)
TM 38-236	Preparation of Freight for Air Shipment
TM 55-2200-001-12	Transportability Guidance for Application of Blocking, Bracing, and Tiedown Materials for Rail Transport
TM 740-90-1	Administrative Storage of Equipment
TM 743-200-1	Storage and Materials Handling
TM 743-200-2	Storage Modernization
TM 743-200-3	Storage and Materials Handling
TM 750-244-6	Destruction of Tank-Automotive Equipment to Prevent Enemy Use

A-6. MISCELLANEOUS PUBLICATIONS.

AR 385-40	Accident Reporting and Records
DA PAM 738-750	The Army Maintenance Management System (TAMMS)
LO 10-3510-209-12	Lubrication Order: Laundry Unit, Trailer Mounted, M85
MIL-STD-1261	Welding, Construction Metals

A-6. MISCELLANEOUS PUBLICATIONS. (CONT)

MIL-W-52574	Welding, Steel
MIL-W-45206A	Welding, Aluminum
SB 38-100	Preservation, Packaging, Packing, and Marking Materials, Supplies, and Equipment Used by the Army

APPENDIX B

MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. GENERAL.

- a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance categories.
- b. The Maintenance Allocation Chart (MAC) in section II designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component will be consistent with the capacities and capabilities of the designated maintenance categories.
- c. Section III lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from section II.
- d. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

B-2. MAINTENANCE FUNCTIONS. Maintenance functions will be limited to and defined as follows:

- a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (i.e., by sight, sound, or feel).
- b. Test. To verify serviceability by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.
- c. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (includes decontamination, when required), to preserve, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.
- d. Adjust. To maintain or regulate, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.
- e. Aline. To adjust specified variable elements of an item to bring about optimum or desired performance.
- f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test, measuring, and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

B-2. MAINTENANCE FUNCTIONS. (Cont)

- g. Remove/Install. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.
- h. Replace. To remove an unserviceable item and install a serviceable counterpart in its place. Replace is authorized by the MAC and is shown as the 3rd position code of the SMR code.
- i. Repair. The application of maintenance services or other maintenance actions to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.
- j. Overhaul. That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications (i.e., DMWR). Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.
- k. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like-new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours/miles, etc.) considered in classifying Army equipment and components.

B-3. EXPLANATION OF COLUMNS IN THE MAC, Section II.

- a. Column 1 - Group Number. Column 1 lists functional group code numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the next higher assembly.
- b. Column 2 - Component/Assembly. Column 2 contains the names of components, assemblies, subassemblies, and modules for which maintenance is authorized.
- c. Column 3 - Maintenance Function. Column 3 lists the functions to be performed on the item listed in column 2. (For detailed explanation of these functions, see paragraph B-2.)

B-3. EXPLANATION OF COLUMNS IN THE MAC, Section II. (Cont)

d. Column 4 - Maintenance Category. Column 4 specifies, by the listing of a work time figure in the appropriate subcolumn(s), the category of maintenance authorized to perform the function listed in Column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance categories, appropriate work time figures will be shown for each category. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various maintenance categories are as follows:

- COperator or Crew
- OUnit Maintenance
- F.....Intermediate Direct Support Maintenance
- HIntermediate General Support Maintenance
- DDepot Maintenance

e. Column 5 - Tools and Equipment. Column 5 specifies, by code, those common tool sets (not individual tools) and special tools, TMDE, and support equipment required to perform the designated function.

f. Column 6 - Remarks. This column shall, when applicable, contain a letter code, in alphabetic order, which shall be keyed to the remarks contained in section IV.

B-4. EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, Section III.

a. Column 1 - Reference Code. The tool and test equipment reference code correlates with a code used in the MAC, section II, column 5.

b. Column 2 - Maintenance Category. The lowest category of maintenance authorized to use the tool or test equipment.

c. Column 3 - Nomenclature. Name or identification of the tool or test equipment.

d. Column 4 - National Stock Number. The National stock number of the tool or test equipment.

e. Column 5 - Tool Number. The manufacturer's part number.

B-5. EXPLANATION OF COLUMNS IN REMARKS, Section IV.

a. Column 1 - Reference Code. The code recorded in column 6, section II.

b. Column 2 - Remarks. This column lists information pertinent to the maintenance function being performed as indicated in the MAC, section II.

**Section II. MAINTENANCE ALLOCATION CHART
FOR
LAUNDRY, TRAILER MOUNTED**

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT	(6) REMARKS
			UNIT		INTERMEDIATE		DEPOT		
			C	O	F	H	D		
00	Laundry Unit							A, B	
01	Cover Assembly, Tarp	Inspect Repair Replace	0.5		2.0			1, 2	
				0.5					
02	Frame Assembly, Tarp	Inspect Repair Replace		0.5 1.0 2.0				1	
	Beam Assemblies, Center and Right	Inspect Repair Replace		0.5 1.0 1.0				1	
	Bin Assemblies, Hoses	Inspect Repair Replace		0.5 1.0 1.0		2.0		1, 2	
03	Panel Assemblies, Sound Deadening	Inspect Replace		0.5 0.5					
	Track, Lower Sound Deadening	Inspect Repair Replace		0.5 1.0	1.0	2.0		1, 2	
04	Platform, Assemblies	Inspect Repair Replace		0.5 1.0 0.5		2.0		1, 2	
05	Washer Assembly	Inspect Service Adjust Repair Replace	0.5	0.5 1.0 2.0	4.0 8.0			1, 2, 3	
	Controller	Inspect Test Adjust Service Repair Replace	0.5		1.0 1.0 1.0 2.0 2.0			1, 2, 3	

Section II. MAINTENANCE ALLOCATION CHART (CONT)

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT	(6) REMARKS
			UNIT		INTERMEDIATE		DEPOT		
			C	O	F	H	D		
06	Stand, Controller	Repair Replace			1.0	1.0		1, 2	
	Intake Plumbing Assembly	Inspect Replace		0.5 1.0					
	Drain Assembly	Inspect Replace		0.5 2.0					
	Float Level Assembly, Washer	Inspect Repair Replace Adjust		0.5 2.0 1.0 0.5					
	Drive Unit, Washer	Inspect Service Adjust Repair Replace		1.5 1.0 1.0 1.0 1.0	3.0 5.0			1, 2, 3	
	Panel, Power Distribution	Inspect Test Repair Replace		0.5 1.0 1.0				1, 2	
	Compressor Assembly	Inspect Service Adjust Repair Replace		0.5 1.0 1.0 1.0 1.0				1	
	Air Tank Assembly	Inspect Repair Replace		0.5 1.0		1.0		1, 2	
	Ground Rods	Inspect Clean Repair Replace		0.5 1.0 1.0		1.5		1, 2	
	Bin Assembly, Pre-Extract	Inspect Repair Replace		0.5 1.0		2.0		1, 2	
10	DELETED								

Section II. MAINTENANCE ALLOCATION CHART (CONT)

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT	(6) REMARKS
			UNIT		INTERMEDIATE		DEPOT		
			C	O	F	H	D		
11	Extractor Assembly	Inspect		0.5				1,2,3	
		Service		1.0					
		Adjust		1.0					
		Repair		0.5	1.0				
		Replace				1.5			
	Drive Unit	Inspect		0.5				1,2	
		Service		1.5					
Repair				2.0					
Replace				1.0					
Drive Motor	Inspect		0.5				1		
	Replace		1.0						
Control Box	Service		0.5				1,2,3		
	Adjust			1.0					
	Repair			2.0					
Extractor Piping	Replace		0.5				1 1,6		
	Repair		0.5	1					
Drain Pipe Assembly	Inspect		0.5						
	Repair		2.0						
	Replace		1.0						
12	Heater Assembly, Water	Inspect	0.5				1,2,3		
		Service		1.0					
		Test		1.0					
		Adjust		1.0					
		Repair		2.0	2.0				
		Replace							
	Drum Fill and Hose Assembly	Inspect		0.5			1		
		Repair		1.0					
		Replace		1.0					
		Inspect		1.0					
Burner Head and Nozzle Assembly	Repair		2.0						
	Adjust		1.0						
	Replace		1.0						
	Inspect		0.5						
Electric Control Assembly	Test		1.0	1.0		1,2,3			
	Service		1.0						
	Repair		2.0	2.0					
	Replace			2.0					
	Inspect		0.5						
Blower and Motor Assembly	Repair		0.5	2.0		1,2,3			
	Replace		2.0						

Section II. MAINTENANCE ALLOCATION CHART (CONT)

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT	(6) REMARKS
			UNIT		INTERMEDIATE		DEPOT		
			C	O	F	H	D		
13	Fuel Pump Assembly	Inspect	0.5					1, 4, 5	
		Service		1.0					
		Adjust		1.0					
		Repair		1.5					
		Replace		1.0					
	Manifold Assembly, Water	Inspect		0.5					
		Repair		2.0					
		Replace		1.0					
		Adjust		0.5					
	Fuel Filter Assembly	Service	0.5					1	
		Repair		1.0					
		Replace		1.0					
	UV Scanner and Flame Safe- guard Assembly	Test			1.0			1, 2, 3	
		Service			1.0				
Repair				1.0					
Replace				2.0					
High Limit Control	Adjust			1.0			1, 2, 3, 4		
	Replace			2.0					
Air Shutter Assembly	Inspect	0.5					1		
	Adjust	0.5							
	Repair		1.0						
	Replace		2.0						
Water Pressure Relief Valve	Inspect		0.1				1		
	Replace		0.5						
Dryer Assembly	Inspect	0.5					1,2, 3, 4		
	Service		1.0						
	Test		1.0						
	Adjust		1.0						
	Repair		2.0						
	Replace			2.0					
Dryer Burner Assembly	Inspect		1.0				1		
	Service		1.0						
	Repair		2.0						
	Replace		1.0						
Dryer Electric Control Assembly	Inspect		0.5				1, 2, 3		
	Test		1.0						
	Service		1.0						
	Repair			2.0					
	Replace			2.0					
Dryer Combustion Blower and Motor Assembly	Inspect		0.5				1		
	Repair		2.0						
	Replace		2.0						

Section II. MAINTENANCE ALLOCATION CHART (CONT)

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT	(6) REMARKS
			UNIT		INTERMEDIATE		DEPOT		
			C	O	F	H	D		
14	Dryer Fuel Pump Assembly	Inspect	0.5					1, 4, 5	
		Service		1.0					
		Repair		1.5					
		Replace		1.0					
	Dryer Fuel Filter Assembly	Adjust		0.5				1	
		Inspect	0.5						
		Service		0.5					
	Dryer UV Scanner and Flame Safeguard Assembly	Repair			1.0			1, 2, 3	
		Replace			1.0				
		Test		0.5	1.0				
Service			1.0	1.0					
Dryer Air Shutter Assembly	Repair			1.0			1		
	Replace		0.5	2.0					
Dryer Exhaust Motor and Fan Assembly	Inspect	0.5					1, 2, 3		
	Adjust	0.5							
Dryer Tumbler Drive Motor and Gear Box	Repair			1.0			1, 2, 3		
	Replace			1.0					
	Service		1.0						
	Adjust		1.0						
Water Pump and Motor Assembly	Repair			1.0			1, 2, 3		
	Replace			1.0	2.0				
	Inspect	0.5	0.5						
Water Pump Tie-down Assembly	Service			1.0			1		
	Replace			1.0					
15	Hose Assemblies, Water	Inspect	0.5				1		
		Replace		0.5					
	Repair		1.5						
Suction Strainer	Inspect			0.5					
	Replace			0.5					

Section II. MAINTENANCE ALLOCATION CHART (CONT)

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT	(6) REMARKS
			UNIT		INTERMEDIATE		DEPOT		
			C	O	F	H	D		
16	Exhaust Duct Assemblies	Inspect Repair Replace	0.5	1.0 1.5				1	
17	Generator Tiedown	Inspect Replace		0.5 1.0				1	
18	Fire Extinguisher	Inspect Replace	0.5	0.5				1	
19	Tool Box	Inspect Replace		0.5 0.5				1	
20	M13 Decontamination Apparatus Bracket	Inspect Replace		0.5 0.5				1	

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/ NATO STOCK NUMBER	TOOL NUMBERS
1	O	Tool Kit, General Mechanics Automotive	5180-00-177-7033	SC5180-90 CL-N26
2	F	Tool Kit, Master Mechanics	5180-00-699-5273	SC5180-90-CL-NO5
3	F	Multimeter, Digital	6625-01-139-2512	AN/PSM-45
4	O	Wrench, Torque 6063 or Equivalent	5120-00-177-7328	6063
5	O	Wrench, Pin, 1 in. (2.54 cm)	4910-00-754-0654	SC4910-95-CL-A74-HR
6	O	Shop equipment, Automotive Maintenance and Repair		

Section IV. REMARKS

REFERENCE CODE	REMARKS
A	Refer to TM 5-6115-585-12 for Generator MAC items.
B	Refer to TM 9-2330-376-14&P for Trailer MAC items.

APPENDIX C

EXPENDABLE/DURABLE MATERIALS AND SUPPLIES LIST

Section I. INTRODUCTION

C-1. SCOPE. This appendix lists expendable/durable supplies and materials you will need to operate and maintain the M85 laundry unit. This listing is for informational purposes only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

C-2. EXPLANATION OF COLUMNS

- a. Column 1 - Item Number. This number is assigned to the entry in the listing and is referenced in the Materials/Parts portion of Initial Setup to identify the material, e.g., Use cleaning compound, (item 5, app C).
- b. Column 2 - Level. This column identifies the lowest level of maintenance that requires the listed item.
 - C - Operator or Crew
 - O - Unit Maintenance
 - F - Direct Support Maintenance
 - H - General Support Maintenance
- c. Column 3 - National Stock Number. This is the National stock number assigned to the item; use it to request or requisition the item.
- d. Column 4 - Description. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Government and Commercial Entity (CAGE) in parentheses followed by the part number.
- e. Column 5 - Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two character alphabetical abbreviation (e.g., ea, in., pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II. EXPENDABLE/DURABLE MATERIALS AND SUPPLIES

(1) Item No.	(2) Level	(3) National stock number	(4) Description	(5) U/M
1	O	8040-00-273-8697	Cement, gasket, 8 oz (237 cc) (81349) MIL-C-4003	oz
2	O	5350-00-187-6289	Cloth, crocus abrasive, 50 yd (45.7 m) (58536) A-A-1048	ro

Section II. EXPENDABLE/DURABLE MATERIALS AND SUPPLIES (CONT)

(1) Item No.	(2) Level	(3) National stock number	(4) Description	(5) U/M
3	C	7920-00-292-9204	Cloth, wiping, 100 ea (58536) A-A-162	ea
4	O	6850-00-656-1292	Compound, cleaning 5-gl (19 L) drum (81349) MIL-C-5546	gl
5	O	8030-01-104-5392	Compound, thread sealing, 10-cc bottle (05972) 242-21	cc
6	O	8010-01-193-0518	Paint, epoxy primer, kit (81349) MIL-P-53022	ea
7	O	8010-01-229-9561	Paint, green 383 CARC, 5-gl (19 L) can (81349) MIL-C-53039	gl
8	O	9150-00-250-0926	Petrolatum, technical (PET), 1.75-lb (0.8 kg) can (41857) DEF2333PX7	lb
9	O	3439-00-043-3623	Solder, SN60, 1-lb (0.45 kg) roll (81348) QQ-S-571	lb
10	F	6850-00-281-1985	Solvent, drycleaning (SD-I), 1-gl (3.8 L) can (81348) P-D-680, Type I	gl
11	O	9905-00-027-4577	Strap, tiedown, adjustable, plastic, 50 ea (96906) MS3367-2	pg
12	O	9905-00-537-8954	Tags, identification, 50 ea (81349) MIL-T-12755	pg
13	O	5970-00-644-3167	Tape, electrical, 85-ft (25.9 m) (58536) A-A-2094	ft
14	F	8310-00-227-1244	Thread, polyester, 1362.5 yd (1 245.9 m) (81348) V-T-295	yd
15	O	5350-00-224-7203	Paper, abrasive (320 Gr) (58536) A-A-1 047	pg

Section II. EXPENDABLE/DURABLE MATERIALS AND SUPPLIES (CONT)

(1) Item No.	(2) Level	(3) National stock number	(4) Description	(5) U/M
16	F	8040-00-843-0802	Adhesive - sealant, silicone RTV, general-purpose 108 3 ounce tube (88.7 cc) (01139) MIL-A-46106A	oz
17	O	9150-01-040-2236	Oil, lubricating, engine, OE/HDO 30 (81349) MIL-L-2104C	gl
18	O	9150-00-851-0181	Oil, lubricating, gear, multipurpose (81349) MIL-L-2105	gt
19	O	9150-01-024-6469	Grease, ball bearing (81349) MIL-G-18709	qt
20	F	9150-01-144-3808	Oil, turbine (81349) MIL-L-23699	oz
21	O	9150-00-265-9428	Oil, lubricating, engine OE10, 5 gallon pail (81349) MIL-L-2104	gl
22	O		Glue (51135) 08080	oz
23	O	8030-00-889-3535	Tape, antiseizing (81349) MIL-T-27730	ro
24	O		Paint, green, CARC, high temperature 1-gl (3.8 L) kit (81349) MIL-P-14105 (80100) 12354164	ea
25			Flux, paste ASTM B-486 grade 77, allow comp SN 50, type OA	lb
26	O	8030-01-009-2590	Compound antiseize, SLIC-TITE (thread compound) (08845)	pt

APPENDIX D

TORQUE LIMITS

D-1. GENERAL. This appendix provides general torque limits for fasteners. Special torque values are indicated in the maintenance procedures for applicable components. The general torque values given in this appendix shall be used when specific torque values are not indicated in the maintenance procedures.

D-2. TORQUE LIMITS. Torque limits are listed in table D-1 for fasteners. Dry fasteners are defined as fasteners on which no lubricants are applied to the threads; wet fasteners are defined as fasteners on which special graphite or molydisulphide greases or other extreme-pressure lubricants are applied to the threads. Table D-2 lists minimum breakaway torque values for locknuts.

*Table D-1. General Torque Requirements for Dry Fasteners**

Bolt/screw size	Torque requirement in lb ft (N•m)			
	SAE grade 1 or 2	SAE grade 5	SAE grade 6 or 7	SAE grade 8
1/4 - 20 UNC	5 (7)	8 (11)	10 (14)	12 (16)
1/4 - 28 UNF	6 (8)	10 (14)	12 (16)	14 (19)
5/16 - 18 UNC	11 (15)	17 (23)	19 (26)	24 (33)
5/16 - 24 UNF	13 (18)	19 (26)	23 (31)	27 (37)
3/8 - 16 UNC	18 (24)	31 (42)	34 (46)	44 (60)
3/8 - 24 UNF	20 (27)	35 (47)	42 (57)	49 (66)
7/16 - 14 UNC	28 (38)	49 (66)	55 (75)	70 (95)
7/16 - 20 UNF	30 (41)	55 (75)	67 (91)	78 (106)
1/2 - 13 UNC	39 (53)	75 (102)	85 (115)	105 (142)
1/2 - 20 UNF	41 (56)	85 (115)	102 (138)	120 (163)
9/16 - 12 UNC	51 (69)	110 (149)	120 (163)	155 (210)
9/16 - 18 UNF	55 (75)	120 (163)	145 (197)	170 (231)
5/8 - 11 UNC	63 (85)	150 (203)	167 (226)	210 (285)
5/8 - 18 UNF	95 (129)	170 (231)	205 (278)	240 (325)
3/4 - 10 UNC	105 (142)	270 (366)	280 (380)	375 (509)
3/4 - 16 UNF	115 (156)	295 (400)	357 (484)	420 (570)
7/8 - 9 UNC	160 (217)	395 (536)	440 (597)	605 (820)
7/8 - 14 UNF	175 (237)	435 (590)	555 (753)	675 (915)
1 - 8 UNC	235 (319)	590 (800)	660 (895)	910 (1234)
1 - 14 UNF	250 (339)	660 (895)	825 (1119)	990 (1342)

*See footnote at end of table.

Table D-1. General Torque Requirements for pry Fasteners* (Continued)

Bolt/screw size	Torque requirement in lb ft (N•m)			
	SAE grade 1 or 2	SAE grade 5	SAE grade 6 or 7	SAE grade 8
1-1/8 - 7 UNC	350 (475)	800 (1085)	1000 (1356)	1280 (1736)
1-1/8 - 12 UNF	400 (542)	880 (1193)	1050 (1424)	1440 (1953)
1-1/4 - 7 UNC	500 (678)	1080 (1464)	1325 (1797)	1820 (2468)
1-1/4 - 12 UNF	550 (746)	1125 (1526)	1500 (2034)	2000 (2712)
1-3/8 - 6 UNC	660 (895)	1460 (1980)	1800 (2441)	2380 (3227)
1-3/8 - 12 UNF	740 (1003)	1680 (2278)	1960 (2658)	2720 (3688)
1-1/2 - 6 UNC	870 (1180)	1940 (2631)	2913 (3950)	3160 (4285)
1-1/2 - 12 UNF	980 (1329)	2200 (2983)	3000 (4068)	3560 (4827)

*Torque given is for clean, dry threads. Reduce torque by 10 percent when engine oil is used as a lubricant.

Table D-2. Locknut Breakaway Torque Values

NOTE

To determine breakaway torque, thread locknut onto screw or bolt until at least two threads stick out. Locknut shall not make contact with a mating part. Stop the locknut. Torque necessary to begin turning locknut again is the breakaway torque. Do not reuse locknuts that do not meet minimum breakaway torque.

Thread size	Minimum break-away torque	
	lb-in.	(N•m.)
10-32	2.0	(0.23)
1/4-28	3.5	(0.40)
5/16-24	6.5	(0.73)
3/8-24	9.5	(1.07)
7/16-20	14.0	(1.58)
1/2-20	18.0	(2.03)
9/16-18	24.0	(2.71)
5/8-18	32.0	(3.62)
3/4-16	50.0	(5.65)
7/8-14	70.0	(7.91)
1-12	90.0	(10.17)
1-1/8-12	117.0	(13.22)
1-1/4-12	143.0	(16.16)

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By Order of the Secretary of the Army:

CARL E. VUONO
General, United States Army
Chief of Staff

Official:

R.L. DILWORTH
Brigadier General, United States Army
The Adjutant General

DISTRIBUTION:

To be distributed in accordance with DA Form 12-25A, Unit, Intermediate Direct Support, and Intermediate General Support Maintenance requirements for Laundry Unit, Single Trailer Mounted, with Canvas Cover, Type M532

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



THEN... JOT DOWN THE DOPE ABOUT IT ON THIS FORM, CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL!

SOMETHING WRONG WITH THIS PUBLICATION?

FROM (PRINT YOUR UNIT'S COMPLETE ADDRESS)
PFC JOHN DOE
COA, 3d ENGINEER BN
FT. LEANARDWOOD, MO 63108
 DATE SENT

PUBLICATION NUMBER: **TM 10-3510-209-24**
 PUBLICATION DATE: **17 March 1988**
 PUBLICATION TITLE: **LAUNDRY UNIT, TRAILER MOUNTED**

BE EXACT PIN-POINT WHERE IT IS				IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:
PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO	
6	2-1 a			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.
B1		4-3		Callout 16 on figure 4-3 is pointing at a <u>bolt</u>. In key to figure 4-3, item 16 is called a <u>shim</u> - Please correct one or the other.
125	line 20			I ordered a gasket, item 19 on figure B-16 by NSN 2 910-05-762-3001. 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

To change	To	Multiply by	To change	To	Multiply by
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

