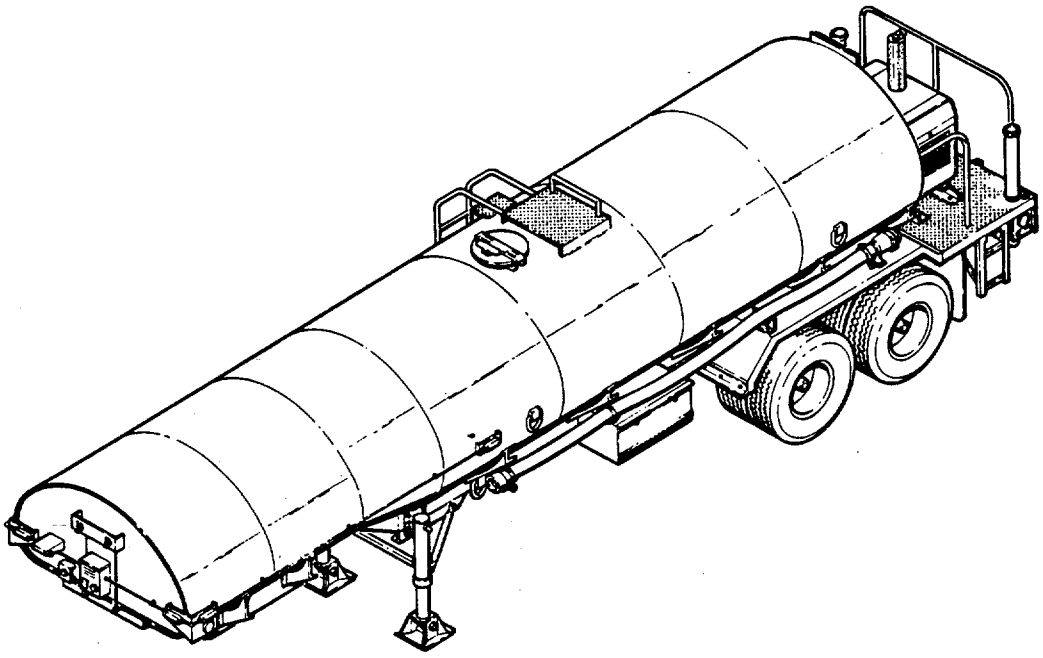
TECHNICAL MANUAL
OPERATOR'S, UNIT, DIRECT SUPPORT, AND
GENERAL SUPPORT MAINTENANCE MANUAL
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS)

FOR

DISTRIBUTOR, WATER, SEMITRAILER MOUNTED
6000 GALLON, MACLEOD MODEL WD6S
(NSN 3825-01-065-6221)



This copy is a reprint which includes current pages from Change 1.

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HEADQUARTERS, DEPARTMENT OF THE ARMY

28 DECEMBER 1990

FOR FIRST AID INFORMATION, REFER TO FM 21-11.

WARNING

CARBON MONOXIDE (EXHAUST GAS) WILL KILL YOU

- Carbon monoxide does not have any color and it does not have a smell. If it is breathed it will cause headaches, dizziness, sleepiness, and you may lose control of your arms and legs. Carbon monoxide is present in the exhaust fumes of the water distributor engine.
- Do not operate the water distributor engine in enclosed areas.
- BE ALERT at all times during operation of the water distributor for exhaust odors or exposure symptoms. If symptoms are evident in any personnel, remove them to fresh air and keep them warm. DO NOT PERMIT PHYSICAL EXERCISE. Give artificial respiration if necessary.

WARNING

DRY CLEANING SOLVENT

Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F-130°F (38°C-59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

WARNING

ASBESTOS HAZARD

DO NOT handle brakeshoes, brakedrums, or other brake components unless area has been properly cleaned. There may be asbestos dust on these components which can be dangerous if you touch it or breathe it. Wear an approved filter mask and gloves. Never use compressed air or a dry brush to clean brake components. Dust may be removed using an industrial-type vacuum cleaner. Clean dust or mud away from brake components with water and a wet, soft brush or cloth. Failure to follow this warning may result in serious illness or death to personnel.

WARNING

CARELESS WORKING HABITS WILL CAUSE SEVERE INJURIES, SOMETIMES DEATH

- Follow all instructions before operating the water distributor. Ensure that the water distributor is ready for operation before starting it.
- Use proper lifting devices when removing heavy components.
- Do not rush through or skip any of the instructions.

WARNING

WATER DISTRIBUTOR PUMP

Drain the water distributor pump tank before removing the water distributor pump. Sometimes after prolonged operation, when the pump is not operating correctly, water in pump tank will become hot and can cause severe bums.

CHANGE

NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington D.C., *26 May 1993*

**OPERATOR'S, UNIT, DIRECT SUPPORT, AND
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FOR
DISTRIBUTOR, WATER, SEMITRAILER MOUNTED
6000 GALLON, MACLEOD MODEL WD6S
NSN 3825-01-065-6221**

Current as of 19 February 1993

TM 5-3825-225-14&P, dated 28 December 1990, is changed as follows:

1. Remove old pages and insert new pages.
2. New or changed material is indicated by an asterisk or by a vertical bar in the margin of the page.

Remove Pages	Insert Pages
1-1 and Figure 2	*1-1 and Figure 2*
9-1 through Figure 12	*9-1 through Figure 12*
14-1 through 15-2	*14-1 through 15-2*
16-1 and 16-2	*16-1 and 16-2*
20-1 through 22-2	*20-1 through 22-2*
23-1 through Figure 26	*23-1 through Figure 26*
27-1 through Figure 30	*27-1 through Figure 30*
32-1 and 32-2	*32-1 and 32-2*
38-1 through Figure 41	*38-1 through Figure 41*
46-1 through Figure 52	*46-1 through Figure 52*
53-1 and Figure 54	*53-1 and Figure 54*
55-1 and Figure 56	*55-1 and Figure 56*
57-1 through Figure 60	*57-1 through Figure 60*
64-1 through Figure 66	*64-1 through Figure 66*
67-1 through Figure 74	*67-1 through Figure 74*
78-1 and Figure 79	*78-1 and Figure 79*
82-1 through Figure 86	*82-1 through Figure 86*
Bulk-1	*Bulk-1*
I-1 through 1-66	*I-1 through I-66*

3. File this change sheet in front of the publication for reference purposes.

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By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

MILTON H. HAMILTON
Administrative Assistant to the
Secretary of the Army
04325

Distribution:
To be distributed in accordance with DA Form 12-25-E, Block 5650, requirements for TM 5-3825-225-14&P.

TECHNICAL MANUAL

TM 5-3825-225-14&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington D.C., *28 December 1990*

OPERATOR'S, UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS) FOR DISTRIBUTOR, WATER, SEMITRAILER MOUNTED 6000 GALLON, MACLEOD MODEL WD6S NSN 3825-01-065-6221

Current as of 17 August 1990

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 *(Recommended Changes to Publications and Blank Forms),* or DA Form 2028-2, located in the back of this manual, direct to: Commander, U.S. Army Tank-Automotive Command, ATTN: AMSTA-MB, Warren, MI 48397-5000. A reply will be furnished to you.

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CHAPTER 1
INTRODUCTION

Section I. GENERAL INFORMATION

1-1. DESCRIPTION.

a. The 6000 Gallon, Semitrailer Mounted Water Distributor (Model WD6S) is designed to spray large quantities of water over a wide area. It can be used in fire fighting operations. It is equipped with a Marlow 4CF pump which is driven by a Perkins 4.108 diesel engine.

b. The water distributor has its tank mounted on a main frame to which the springs and tandem axle are attached. The tank is elliptical with surge plates on 4 ft. (1.2 m) centers. The inside of the tank is coated with asphalt to prevent corrosion. The tank has a 20 in. (50.8 cm) diameter manhole to allow for intake of water, inspection, cleaning, and repair of tank. A ladder is provided to allow personnel to access the manhole.

c. The water pumping system is powered by a Perkins 4.108 liquid-cooled, diesel engine located at the rear of the water distributor. The centrifugal pump is self-priming, and after initial filling has a pumping capacity of 600 gpm (2271 1pm) at 40 psi (276 kPa). The spray system has two fan-type nozzles that will deliver water 35 ft. (10.7 m) to each side of the centerline of the water distributor.

d. A unique feature of the water distributor is that it can be operated by the tractor operator from an auxiliary control box panel. The auxiliary control box can be removed from the tractor and stored on the water distributor when the units are separated.

e. The water distributor has a fifth wheel height of 62 in. (157.5 cm), which makes it compatible with the *M123AlC, 10* Ton, *6X6 Truck,* Tractor; the *XM920; and* the XM916.

f. The water distributor has a fire fighting capability and is equipped with a 1.5 in. (3.8 cm) fire hose and nozzle.

1-2. OPERATIONAL CONCEPT.

The water distributor is designed to be used in support of road, airfield, and berm construction, dust control, soil stabilization, and firefighting.

1-3. PERSONNEL.

MOS requirements are as follows:

a. Operator. MOS 62J20, General Construction Machine Operator.

b. Unit Maintenance. MOS 62B20, Construction Equipment Repairman.

c. Direct Support and General Support Maintenance.

(1) MOS 62B30, Construction Equipment Repairman.

(2) MOS 63G20, Fuel and Electrical Systems Repairman.

(3) MOS 44B20, Metal Body Repairman.

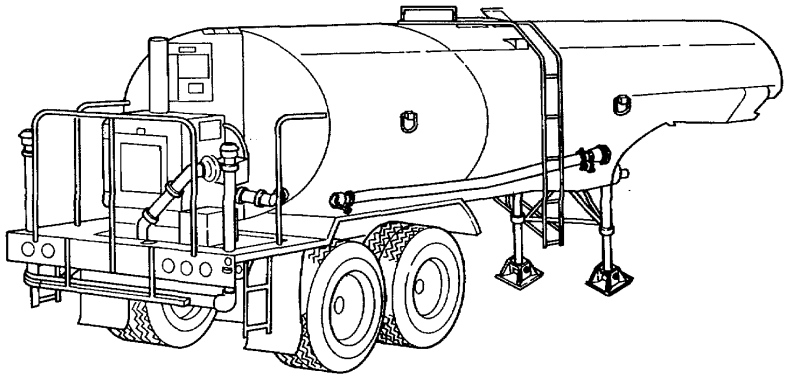

Figure 1-1. Water Distributor.

1-4. MAINTENANCE CONCEPT.

The water distributor does not require any new or special maintenance considerations. All maintenance functions can be accomplished within the current maintenance concepts established for construction equipment.

a. Operator/Crew Maintenance. Operator and crew maintenance is limited to daily preventive maintenance checks and services.

b. Unit Maintenance. Unit maintenance consists of scheduled preventive maintenance checks and services, minor repairs, and adjustments.

c. Direct Support Maintenance. Direct support maintenance consists of repairs on-site or in a direct support unit shop. Repairs are accomplished with a mini- mum of tools and test equipment. The assemblies and end items are repaired and returned to their users.

d. General Support Maintenance. General sup- port maintenance overhauls selected assemblies and re- pairs items designated by the area support command for return to stock.

e. Depot Maintenance. Depot maintenance overhauls end items and selected major assemblies when they are required to satisfy overall Army requirements. Overhaul of the end item may also be performed by contract with the manufacturer.

1-5. MAINTENANCE ALLOCATION CHART (MAC).

a. Maintenance will be performed as necessary by the category indicated in the Maintenance Allocation Chart (MAC) (Appendix B) to retain or restore service- ability. All authorized maintenance within the capability of a using organization will be accomplished before refer- ring the item to support maintenance.

b. Higher categories will perform the maintenance functions of lower categories when required or directed by the appropriate commanders.

c. Using and support units may exceed their authorized scope and functions in the MAC when approval is granted by the next higher support maintenance commander.

1-6. REPORTING EQUIPMENT IM- PROVEMENT RECOMMENDATIONS (EIRs).

If your water distributor 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 *(Quality Deficiency Report).* Mail it to us at: Commander, U.S. Army Tank-Automotive Command, ATTN: AMSTA-MP, Warren, MI 48397-5000. We'll send you a reply.

1-7. SHIPMENT AND STORAGE.

Refer to TB 740-97-2 for procedures covering preservation of equipment for shipment and storage.

1-8. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE.

Refer to TM 750-244-6 for procedures covering destruction of Army equipment to prevent enemy use.

1-9. BASIC ISSUE ITEMS LIST (BIIL).

Refer to Appendix C for a list of items that accompany the end item or are required for operation or operator maintenance.

1-10. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST.

Refer to Appendix D for expendable/durable supplies and materials required for initial operation.

1-11. SPECIAL TOOLS AND EQUIPMENT.

No special tools or equipment are required.

1-12. MAINTENANCE FORMS, RECORDS, AND REPORTS.

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750, *The Army Maintenance Management System (TAMMS).*

1-13. FABRICATION OF WIRE AND HOSE ASSEMBLIES.

Refer to Appendix E for fabrication instructions.

1-14. MAINTENANCE EXPENDITURE LIMITS.

The average life expectancy for the water distributor is 15 years.

Table 1-1. Maintenance Expenditure Limits.

Percentage of Repair	Year
65	80
60	82
55	84
50	86
45	88
40	90
35	92
30	93
20	94
10	95

Section II. TABULATED DATA

1-15. GENERAL.

a. Manufacturer ..... Macleod Co.
b. Model WD6S

1-16. WATER PUMP

a. Manufacturer. ..... Marlow
b. Model 4C7
c. Type ..... Self-priming Centrifugal

1-17. ENGINE DATA.

a. Manufacturer ..... Perkins
b. Model 4.108
c. Bore (Nominal) ..... 3.125 in. (7.94 cm)
d. Stroke . . .. 3.5 in. (8.9 cm)
e. Number of Cylinders 4
f Cubic Capacity ..... 107.4 cu. in. (1.760 1)
g. Compression Ratio 22:1
h. Firing Order 1,3,4,2
i. Cycle ..... Four-stroke
j. Combustion System ..... Indirect Injection

1-18. RATING DETAILS.

a. Maximum Gross Rated Output .....55 bhp at 4000 rpm

b. Maximum Gross Torque Output ..... 83 lb.-ft. (112.5 N•m) at 2200 rpm

1-19. ENGINE WEIGHTS (DRY).

NOTE

Approximate dry weight of a bare engine Includes fuel injection equipment, pressed steel oil sump, alternator, and water pump; it does not Include starter motor, air cleaner, fan, flywheel or flywheel housing.

a. Bare Engine .....330 lb (150 kg)

b. Engine (with All Accessories) ..... 450 lb (204 kg)

1-20. DE-RATING FOR ALTITUDE.

a. Engines operating in rarefied atmospheres, due to altitude, should be de-rated.

b. Table 1-2 is a general guide, which may be applied on a percentage basis, where specific figures for a particular engine rating are not available.

Table 1-2. Engine De-rating Specifications.

Altitude	Maximum Fuel Delivery De-rating*
0-2000 ft. (0-610 m)	no change
2000-4000 ft. (610-1220 m)	6%
4000-6000 ft. (1220-1830 m)	12%
6000-8000 ft. (1830-2440 m)	18%
8000-10000 ft. (2440-3050 m)	24%
10000-12000 ft. (3050-3660 m)	30%

* Measured at setting speed given in pump setting code.

1-21. RECOMMENDED TORQUE TENSIONS.

The following torque values apply with the components lightly oiled before assembly.

a. Cylinder Head Nuts** ..... 60 lb.-ft. (81 N•m)

b. Connecting Rod Setscrews ..... 42 lb.-ft. (57 N•m)

c. Main Bearing Setscrews*** .....85 lb.-ft. (115 N•m)

d. Flywheel Setscrews .....60 lb.-ft. (81 N•m)

e. Idler Gear Hub Setscrews..... 32 lb.-ft. (43 N•m)

f: Crankshaft Pulley Setscrews .....150 lb.-ft. (203 N•m)

g. Injector Nozzle ..... 12 lb.-ft. (16 N•m)

h. Alternator Pulley Retaining Nut ..... 20 lb.-ft. (27 N•m)

** Refer to Figure 5-9 for torque sequence.

*** The tab and shim washers may be discarded where used on earlier engines, but the setscrews must be tightened to the torque loading indicated.

1-22. SERVICE WEAR LIMITS.

The following wear limits indicate the conditions when the respective items should be serviced or replaced.

a. Cylinder Head Flatness (Lengthwise)..... 0.006 in. (0.15 mm)

b. Cylinder Head Flatness (Crosswise) ..... 0.003 in. (0.08 mm) Concave
0.005 in. (0.13 mm) Convex

c. Maximum Bore Wear (When New Liners Are Necessary) ..... 0.006 in. (0.15 mm)

d. Crankshaft Main Journals (Wear) ..... 0.001 in. (0.03 mm)

e. Crankshaft Main Journals (Ovalness) ..... 0.0005 in. (0.01 mm)

f Maximum Crankshaft End Float ..... 0.020 in. (0.51 mm)

g. Valve Stem to Guide Clearance.

(1) Inlet ..... 0.005 in. (0.13 mm)

(2) Exhaust ..... 0.006 in. (0.15 mm)

h. Valve Head Thickness at Outer Edge ..... 0.025 in. (0.64 mm)

i. Rocker Clearance on Shaft ..... 0.005 in. (0.13 mm)

j. Camshaft Journals (Ovalness and Wear) ..... 0.002 in. (0.05 mm)

k Camshaft End Float ..... 0.020 in. (0.51 mm)

l. Idler Gear End Float ..... 0.010 in. (0.25 mm)

m. Valve Head Depth Below Head Face (Inlet and Exhaust) ..... 0.048 in. (1.22 mm)

1-23. CYLINDER BLOCK.

a. Total Height of Cylinder Block Between
Top and Bottom Faces ..... 9.936-9.939 in. (252.374-252.451 mm)

b. Parent Bore Diameter for Cylinder Liner..... 3.249-3.250 in. (82.525-82.550 mm)

c. Main Bearing Parent Bore ..... 2.395-2.3955 in. (60.83360.846 mm)

d. Camshaft Bore Diameter No. 1 ..... 1.794-1.7955 in. (45.56845.606 mm)

e. Camshaft Bore Diameter No. 2 ..... 1.784-1.787 in. (45.314-45.390 mm)

f: Camshaft Bore Diameter No. 3 ..... 1.784-1.787 in. (45.314-45.390 mm)

g. Tappet Bore Diameter ..... 0.562-0.56325 in. (14.275-14.307 mm)

h. Injector Pump Drive Hub Bearing Bore Diameter ..... 1.8125-1.8141 in. (46.037-46.078 mm)

1-24. CYLINDER LINER.

a. Type .....Cast Iron Dry Interference Fit
b. Interface Fit of Liners .....0.003-0.005 in. (0.076-0.127 mm)
c. Inside Diameter of Liner After Finish Boring and Honing .....3.125-3.126 in. (79.375-79.40 mm)
d. Height of Liner in Relation to Cylinder Block Top Face .....0.023-0.027 in. (0.584-0.686 mm) Above
e. Overall Length of Liner ..... 6.495-6.505 in. (164.973-165.227 mm)

1-25. PISTONS.

a. Type ..... Flat Topped
b. Center Line of Piston Pin to Piston Skirt ..... 1.157 in. (29.388 mm)
c. Piston Height in Relation to Cylinder Block Top Face .....0.002-0.006 in. (0.051-0.152 mm)
d. Bore Diameter for Piston Pin . ..... 1.06255-1.06275 in. (26.989-26.994 mm)

NOTE

There is a steel insert fitted above the top groove.

e. Compression Ring Groove Width (Top) .....0.0805-0.0815 in. (2.045-2.070 mm)
f. Compression Ring Groove Width (No. 2) .....0.0645-0.0655 in. (1.638-1.664 mm)
g. Compression Ring Groove Width (No. 3) .....0.0645-0.0655 in. (1.638-1.664 mm)
h. Oil Control Ring Groove Width (No. 4) . ..... 0.126-0.127 in. (3.200-3.226 mm)
i. Oil Control Ring Groove Width (No. 5) .....0.190-0.191 in. (4.826-4.851 mm)

1-26. PISTON RINGS.

NOTE

Piston ring gaps quoted are measured in a ring gage of 3.125 in. (79.38 mm) bore. In practice, for every 0.001 In. **(0.0254 mm) difference In cylinder bore diameter from gage size, 0.003 in. (0.076 mm) should be allowed.**

a. Compression (Top) ..... Parallel Faced
b. Compression (No. 2 & No. 3)..... Internally Stepped
c. Oil Control (No. 4) ..... Laminated Segment
d. Oil Control (No. 5) ..... Slotted Scraper
e. Compression Ring Width (Top) ..... 0.0771-0.0781 in. (1.958-1.984 mm)
f. Ring Clearance in Groove .....0.0024-0.0044 in. (0.061-0.112 mm)
g. Compression Ring Width (No. 2 & No. 3) .....0.0615-0.0625 in. (1.562-1.587 mm)
h. Ring Clearance in Groove ..... 0.002-0.004 in. (0.051-0.102 mm)
i. Scraper Ring Width (No. 5) .....0.1865-0.1875 in. (4.737-4.762 mm)

j. Ring Clearance in Groove . ..... 0.0025-0.0045 in. (0.063-.114 mm)
k. Compression Ring Gap (Top) ..... 0.009-0.014 in. (0.229-0.356 mm)
I. Compression Ring Gap (No. 2 & No. 3) ..... 0.009-0.014 in. (0.229-0.356 mm)
m. Scraper Ring Gap (No. 5) ..... 0.009-0.014 in. (0.229-0.356 mm)

1-27. PISTON PIN.

a Type ..... Fully Floating
b. Outside Diameter of Piston Pin ..... 1.0625-1.0627 in. (26.987-26.993 mm)
c. Length of Piston Pin ..... 2.673-2.687 in. (67.894-68.250 mm)
d. Fit in Piston Boss ..... Transition

1-28. CONNECTING ROD BEARING SLEEVE.

a. Type ..... Steel Backed, Lead Bronze Lined
b. Length of Small End Bearing Sleeve ..... 0.935-0.955 in. (23.749-24.257 mm)
c. Outside Diameter of Small End Bearing Sleeve ..... 1.221-1.222 in. (31.013-31.039 mm)
d. Inside Diameter Before Reaming..... ..... 1.0495-1.0545 in. (26.657-26.784 mm)
e. Inside Diameter After Reaming..... ..... 1.06315-1.0632 in. (27.004-27.005 mm)
f Clearance Between Small End
Bearing Sleeve and Piston Pin ..... 00045-0.0007 in. (0.0114-0.0178 mm)

1-29. CONNECTING ROD.

a Type ..... "H" Section
b. Cap Location to Connecting Rod ..... Serrations, Offset 45° to the Horizontal
c. Big End Parent Bore Diameter ..... 2.146-2.1465 in. (54.508-54.521 mm)
d. Small End Parent Bore Diameter..... 1.21875-1.21975 in. (30.956-30.982 mm)
e. Length from Center Line of Big
End to Center Line of Small End . ..... 6.217-6.219 in. (157.912-157.963 mm)
f. Big End Setscrew ..... 0.375 in. (3-8 in.) UNF
g. Connecting Rod End Float ..... 0.0065-0.0105 in. (0.165-0.267 mm)

1-30. CONNECTING ROD ALINEMENT.

Large and small end bores must be square and parallel with each other within the limits of ± 0.010 in. (0.25 mm) measured 5 in. (127 mm) each side of the axis of the rod on test mandrel. With the small end bearing sleeve fitted, the limit of ± 0.010 in. (0.25 mm) is reduced to±0.0025 in. (0.06 mm).

1-31. CRANKSHAFT.

a. Overall Length ..... 21.125 in. (536.575 mm)
b. Main Journal Diameter (No. 1 & No. 2) ..... 2.248-2.2485 in. (57.099-57.112 mm)
c. Main Journal Diameter (No. 3) ..... 2.2475-2.248 in. (57.087-57.099 mm)
d. Main Journal Length (No. 1) ..... 1.40625 in. (35.719 mm)
e. Main Journal Length (No. 2) ..... 1.496-1.504 in. (37.998-38.202 mm)
f. Main Journal Length (No. 3) ..... 1.499-1.502 in. (38.075-38.151 mm)
g. Main Journal Fillet Radii ..... 0.125-0.141 in. (3.175-3.581 mm)
h. Crankpin Diameter ..... 1.9995-2.000 in. (50.787-50.800 mm)
i. Crankpin Length ..... 1.1875-1.1895 in. (30.162-30.213 mm)
j. Crankpin Fillet Radii ..... 0.15625-0.17187 in. (3.969-4.365 mm)
k. Surface Finish (All Journals) ..... 8-16 micro-in. (0.2-0.4 micron)
l. Main Journal and Crankpin Regrind Undersizes ..... 0.010, 0.020, 0.030 in. (0.25, 0.51, 0.76 mm)
m. Oil Seal Helix Diameter ..... 2.21075-2.21175 in. (56.153-56.178 mm)
n. Oil Seal Helix Width ..... 0.050-0.080 in. (1.270-2.032 mm)
o. Oil Seal Helix Depth ..... 0.004-0.008 in. (0.102-0.203 mm)
p. Flange Diameter ..... 3.9985-3.9995 in. (101.562-101.587 mm)
q. Flange Width ..... 0.500 in. (12.700 mm)
r. Spigot Bearing Recess Depth ..... 0.875 in. (22.225 mm)
s. Spigot Bearing Recess Bore ..... 1.250 in. (31.750 mm)
t. Crankshaft End Float ..... 0.002-0.015 in. (0.0508-0.381 mm)

1-32. CRANKSHAFT THRUST WASHERS.

a. Type ..... Steel Backed, Lead Bronze Faced
b. Position in Engine ..... Rear Main Bearing
c. Thickness (STD) ..... 0.089-0.091 in. (2.261-2.311 mm)
d. Thickness (O/S) ..... 0.0965-0.1005 in. (2.451-2.553 mm)
e. Outside Diameter ..... 3.245-3.255 in. (82.423-82.677 mm)
f. Inside Diameter ..... 2.590-2.600 in. (65.786-66.040 mm)

1-33. MAIN BEARINGS.

a. Type ..... Pre-finished, Steel Backed, Aluminum Tin Lined
b. Shell Width ..... 1.245-1.255 in. (31.623-31.877 mm)
c. Outside Diameter ..... 2.3955 in. (60.846 mm)
d. Inside Diameter ..... 2.2505-2.2515 in. (57.163-57.188 mm)
e. Running Clearance (No. 1 & No. 2) ..... 0.002-0.0035 in. (0.051-0.089 mm)
f. Running Clearance (No. 3) ..... 0.0025-0.004 in. (0.064-0.102 mm)
g. Steel Thickness (Maximum) ..... 0.060 in. (1.524 mm)
h. Aluminum Thickness ..... 0.012-0.01225 in. (0.305-0.311 mm)

1-34. CONNECTING ROD BEARINGS.

a. Type ..... Pre-finished, Steel Backed, Aluminum Tin Lined
b. Shell Width .....0.870-0.880 in. (22.098-22.352 mm)
c. Outside Diameter ..... 2.1465 in. (54.521 mm)
d. Inside Diameter.....2.0015-2.0025 in. (50.838-50.863 mm)
e. Running Clearance .....0.0015-0.003 in. (0.038-0.076 mm)
f. Steel Thickness (Maximum) .....0.060 in. (1.524 mm)
g. Aluminum Thickness .....0.012-0.01225 in. (0.305-0.311 mm)

1-35. CAMSHAFT.

a. No. 1 Journal Length..... 1.347-1.351 in. (34.214-34.315 mm)
b. No. 1 Journal Diameter..... 1.791-1.792 in. (45.49145.517 mm)
c. No. 1 Cylinder Block Camshaft Bore Diameter ..... 1.794-1.7955 in. (45.56845.606 mm)
d. No. 1 Journal Running Clearance.....0.002-0.0045 in. (0.051-0.114 mm)
e. No. 2 Journal Length..... 1.250 in. (31.750 mm)
f No. 2 Journal Diameter.....1.781-1.782 in. (45.237-45.263 mm)
g. No. 2 Cylinder Block Camshaft Bore Diameter ..... 1.784-1.787 in. (45.314-45.390 mm)
h. No. 2 Journal Running Clearance..... 0.002-0.006 in. (0.051-0.152 mm)
i. No. 3 Journal Length..... 1.000 in. (25.400 mm)
j. No. 3 Journal Diameter..... 1.773-1.774 in. (45.034-45.060 mm)
k No. 3 Cylinder Block Camshaft Bore Diameter ..... 1.776-1.778 in. (45.110-45.161 mm)
l. No. 3 Journal Running Clearance.....0.002-0.005 in. (0.051-0.127 mm)
m. Cam Lift .....0.2592-0.2622 in. (6.58-6.66 mm)
n. Oilways for Rocker Shaft Lubrication ..... No. 2 Journal

1-36. CAMSHAFT THRUST WASHERS.

a. Type ..... 1800 Oil Impregnation Sintered Iron
b. Thrust Washer Outside Diameter ..... 2.555-2.557 in. (64.897-64.948 mm)
c. Cylinder Block Recess Diameter for Thrust Washer .....2.5585-2.5685 in. (64.986-65.240 mm)
d. Clearance Fit of Thrust Washer in Recess .....0.0015-0.013 in. (0.038-0.330 mm)
e. Thrust Washer Inside Diameter..... 1.500 in. (38.100 mm)
f Thrust Washer Thickness.....0.160-0.162 in. (4.064-4.115 mm)
g. Cylinder Block Recess Depth for Thrust Washer .....0.1580.164 in. (4.013-4.166 mm)
h. Thrust Washer Height in Relation to Cylinder Block Face ..... 0.004 in. (0.102 mm) Above or Below
i. Camshaft End Float .....0.003-0.013 in. (0.076-0.330 mm)

1-37. VALVE AND INJECTOR PUMP TIMING.
See paragraph 5-20.

1-38. CYLINDER HEAD.

a. Overall Length of Cylinder Head ..... 20.000 in. (508.000 mm)
b. Overall Depth of Cylinder Head ..... 2.617-2.633 in. (66.472-66.878 mm)
c. Skimming Allowance on Cylinder Head Face ..... NIL-On no account can the cylinder head face be skimmed
d. Pressure for Water Leakage Test ..... 20 psi (138 kPa)
e. Valve Seat Angle 45
f. Bore in Cylinder Head for Guide ..... 0.4995-0.5005 in. (12.687-12.713 mm)
g. Bore in Cylinder Head for Combustion Chamber Inserts ..... 1.250-1.252 in. (31.750-31.801 mm)
h. Depth of Bore in Cylinder Head for Combustion Chamber Inserts ..... 0.373-0.376 in. (9.474-9.550 mm)

1-39. COMBUSTION CHAMBER INSERTS.

a. Outside Diameter of Insert ..... 1.248-1.249 in. (31.699-31.725 mm)
b. Depth of Insert ..... 0.374-0.375 in. (9.500-9.525 mm)
c. Height of Insert in Relation to Cylinder Head Face ..... 0.002 in. (0.051 mm) Above or Below
d. Clearance Fit of Insert in Cylinder Head Bore ..... 0.001-0.004 in. (0.025-0.102 mm)
e. Method of Location in Cylinder Head ..... By Cylinder Block Face and Expansion Washer

1-40. VALVE GUIDES (INLET).

a. Inside Diameter ..... 0.3145-0.3155 in. (7.988-8.014 mm)
b. Outside Diameter ..... 0.50125-0.50175 in. (12.731-12.744 mm)
c. Interference Fit of Guide in Cylinder Head Bore ..... 0.00075-0.00225 in. (0.019-0.057 mm)
d. Overall Length of Guide ..... 2.130 in. (54.102 mm)
e. Face of Cylinder Head ..... 0.800-0.815 in. (20.320-20.701 mm)

1-41. VALVE GUIDES (EXHAUST).

a. Inside Diameter ..... 0.3145-0.3155 in. (7.988-8.014 mm)
b. Outside Diameter ..... 0.50125-0.50175 in. (12.731-12.744 mm)
c. Interference Fit of Guide in Cylinder Head Bore ..... 0.00075-0.00225 in. (0.019-0.057 mm)
d. Depth of Counterbore ..... 0.380 in. (9.652 mm)
e. Overall Length of Guide ..... 2.440 in. (61.980 mm)
f. Guide Protrusion Above Top Face of Cylinder Head ..... 0.800-0.815 in. (20.320-20.701 mm)

1-42. VALVES (INLET).

a. Valve Stem Diameter ....0.312-0.313 in. (7.925-7.950 mm)
b. Clearance Fit of Valve Stem in Guide ....0.0015-0.0035 in. (0.038-0.089 mm)
c. Valve Head Diameter .....1.410-1.414 in. (35.814-35.916 mm)
d. Valve Face Angle ..... 45°
e. Valve Head Depth Below Cylinder Head Face ..... 0.028-0.039 in. (0.711-0.991 mm)
f. Overall Length of Valve .... 4.5924.608 in. (116.637-117.043 mm)
g. Sealing Arrangement .... Rubber Oil Seal

1-43. VALVES (EXHAUST).

a. Valve Stem Diameter ....0.3115-0.3125 in. (7.912-7.937 mm)
b. Clearance Fit of Valve Stem in Guide..... .....0.002-0.004 in. (0.051-0.102 mm)
c. Valve Head Diameter .... 1.191-1.195 in. (30.251-30.353 mm)
d. Valve Face Angle ..... 45°
e. Valve Head Depth Below Cylinder Head Face ..... 0.021-0.032 in. (0.533-0.813 mm)
f: Overall Length of Valve .... 4.600-4.616 in. (116.840-117.246 mm)
g. Sealing Arrangement .... No Seal Fitted to Exhaust Valve

1-44. INNER VALVE SPRINGS (WHERE FITTED).

a. Fitted Length .... 1.530 in. (38.862 mm)
b. Load at Fitted Length .... 28.6 lb.-ft. ± 2 lb.-ft. (38.8 N•m ± 2.7 N•m)
c. Fitted Position .... Damper Coil to Cylinder Head

1-45. OUTER VALVE SPRINGS.

a. Fitted Length .... 1.780 in. (45.212 mm)
b. Load at Fitted Length .... 56.0 lb.-ft. ± 2.8 lb.-ft. (75.9 N•m ± 3.8 N•m)
c. Fitted Position .... Damper Coil to Cylinder Head

1-46. ROCKER LEVERS.

a. Length Between Center Line of Adjusting Screw
and Center Line of Rocker Shaft ..... 1.042-1.058 in. (26.467-26.873 mm)
b. Length Between Center Line of Rocker Lever Pad
and Center Line of Rocker Shaft ..... 1.567-1.583 in. (39.802-40.208 mm)
c. Inside Diameter of Rocker Lever Bore ....0.71825-0.71950 in. (18.243-18.275 mm)
d. Outside Diameter of Rocker Lever Bushing ....0.7205-0.7215 in. (18.301-18.326 mm)
e. Interference Fit of Bushing in Rocker Lever ....0.001-0.00325 in. (0.025-0.083 mm)
f. Finished Inside Diameter of Rocker Lever Bushing ....0.6245-0.62575 in. (15.862-15.894 mm)
g. Clearance of Rocker Lever Bushing on Rocker Shaft ..... 0.00075-0.0035 in. (0.019-0.089 mm)

1-47. VALVE CLEARANCES.

Between Valve Stem Tip and Rocker Lever ..... 0.012 in. (0.30 mm) Cold

1-48. ROCKER SHAFT.

a. Overall Length ..... 14.5625 in. (369.888 mm)
b. Outside Diameter ....0.62225-0.62375 in. (15.805-15.843 mm)
c. Lubrication Oil Feed From
Cylinder Head ..... Through Central Passage to Individual Rocker Levers

1-49. PUSHRODS.

a. Overall Length ..... 8.527-8.560 in. (216.59-217.42 mm)
b. Outside Diameter ..... 0.250 in. (6.350 mm)

1-50. TAPPETS

a. Overall Length..... 2.250 in. (57.150 mm)
b. Outside Diameter of Tappet Shank .....0.560-0.561 in. (14.224-14.249 mm)
c. Cylinder Block Tappet Bore Diameter .....0.562-0.56325 in. (14.275-14.307 mm)
d. Tippet Running Clearance in Cylinder Block Bore .....0.001-0.00325 in. (0.025-0.083 mm)
e. Outside Diameter of Tappet Foot ..... 1.245-1.255 in. (31.623-31.877 mm)

1-51. TIMING GEARS (CAMSHAFT GEAR).

a. Number of Teeth 48
b. Inside Diameter of Gear Boss ..... 1.750-1.7514 in. (44.450-44.486 mm)
c. Outside Diameter of Camshaft Hub ..... 1.7496-1.7509 in. (44.440-44.473 mm)
d. Transition Fit of Gear and Hub ..... 0.0009-0.0018 in. (0.023-0.046 mm)

1-52. INJECTOR PUMP GEAR.

a. Number of Teeth 48
b. Inside Diameter of Cylinder Block Bore for Fuel Pump
Drive Hub Bearing ..... 1.8125-1.8141 in. (46.038-46.078 mm)
c. Outside Diameter of Fuel Pump Drive Hub Bearing ..... 1.8145-1.8152 in. (46.088-46.106 mm)
d. Interference Fit of Drive Hub Bearing
in Cylinder Block Bore ..... 0.0004-0.0027 in. (0.010-0.069 mm)
e. Inside Diameter of Fuel Pump Drive Hub Bearing ..... 1.3125-1.3135 in. (33.34-33.36 mm)
f. Outside Diameter of Fuel Pump Gear Drive Hub ..... 1.3105-1.3115 in. (33.287-33.312 mm)
g. Running Clearance of Drive Hub in Bearing .....0.0031-0.0051 in. (0.079-0.130 mm)
h. Drive Hub End Float .....0.002-0.010 in. (0.051-0.254 mm)

1-53. IDLER GEAR AND HUB.

a. Number of Teeth 57
b. Inside Diameter of Gear Boss ..... 1.718-1.7197 in. (43.637-43.680 mm)
c. Inside Diameter of Gear Boss With Bushing Fitted ..... 1.5625-1.5641 in. (39.688-39.728 mm)
d. Outside Diameter of Gear Hub ..... 1.5612-1.5619 in. (39.654-39.672 mm)
e. Running Clearance of Gear on Hub .....0.0003-0.0016 in. (0.008-0.041 mm)
f Idler Gear Width ..... 1.3105-1.3115 in. (33.287-33.312 mm)
g. Hub Width ..... 1.3165-1.3185 in. (33.439-33.490 mm)
h. Idler Gear End Float .....0.003-0.008 in. (0.076-0.203 mm)

1-54. CRANKSHAFT GEAR.

a. Number of Teeth 24
b. Inside Diameter of Gear ..... 1.250-1.2512 in. (31.750-31.780 mm)
c. Crankshaft Diameter for Gear ..... 1.250-1.2512 in. (31.750-31.780 mm)
d. Transition Fit of Gear on Crankshaft .....0.0006-0.0012 in. (0.015-0.030 mm)

1-55. TIMING GEAR BACKLASH.

Between Crankshaft/Idler and Camshaft/Idler Gear .....0.0015A-0.0025 in. (0.038-0.064 mm)

1-56. LUBRICATION SYSTEM.

a. Lubricating Oil Pressure At Maximum Engine Speed
and Normal Working Temperature .....30-60 psi (207-414 kPa)
b. Crankcase Capacity ..... 6 qt (5.7 1)
c. Crankcase Capacity with Filter ..... 7 qt (6.61)

1-57. LUBRICATION OIL PUMP.

a. Type ..... Rotor Type
b. Number of Lobes (Inner Rotor) ..... Three or Four
c. Number of Lobes (Outer Rotor) ..... Four or Five
d. Method of Drive ..... Spiral Gears From the Camshaft

1-58. OIL PUMP CLEARANCES.

a Inner Rotor to Outer Rotor .....0.0005-0.0025 in. (0.013-0.064 mm)
b. Outer Rotor to Pump Body .....0.011-0.013 in. (0.28-0.33 mm)
c. Inner Rotor End Clearance .....0.0015-0.0030 in. (0.038-0.076 mm)
d. Outer Rotor End Clearance .....0.0005-0.0025 in. (0.013-0.064 mm)
e. Inside Diameter of Bore for Pump Shaft .....0.500-0.501 in. (12.700-12.725 mm)
f Outside Diameter of Pump Shaft .....0.4983-0.4986 in. (12.657-12.664 mm)
g. Running Clearance, Shaft in Bore .....0.0014-0.0027 in. (0.036-0.069 mm)

1-59. LUBRICATION OIL PUMP DRIVE GEAR.

a. Number of Teeth 12
b. Inside Diameter of Gear Bore ..... 0.4965-0.4970 in. (12.611-12.624 mm)
c. Outside Diameter of Oil Pump Drive Shaft ..... 0.4983-0.4986 in. (12.657-12.664 mm)
d. Interference Fit of Gear on Shaft ..... 0.0013-0.0021 in. (0.033-0.053mm)
e. Lubricating Oil Pump Drive Gear Backlash ..... 0.0155-0.019 in. (0.394-0.483 mm)

1-60. OIL PUMP PRESSURE RELIEF VALVE.

a. Type ..... Spring Loaded Plunger
b. Pressure Setting..... 50-65 psi (344.8-448.2 kPa)
c. Length of Plunger..... 0.9375 in. (23.813 mm)
d. Outside Diameter of Plunger..... 0.5585-0.5595 in. (14.19-14.21 mm)
e. Inside Diameter of Valve Housing Bore ..... 0.5605-0.5625 in. (14.24-14.29 mm)
f. Clearance of Plunger in Bore..... 0.001-0.004 in. (0.025-0.102 mm)
g. Outside Diameter of Spring ..... 0.368-0.377 in. (9.347-9.576 mm)
h. Spring (Free Length)..... 1.5 in. (38.10 mm)

1-61. LUBRICATING OIL FILTER.

a. Type ..... Full Flow
b. Element Type ..... Paper
c. By-pass Valve Setting ..... Opens Between 13-17 psi (90-117 kPa) Pressure Differential
d. Type of Valve ..... Spring Loaded Ball

1-62. COOLING SYSTEM.

a. Type ..... Water Cooled
b. Cylinder Block and Head ..... Thermo-syphon Impeller Assisted
c. Engine Water Capacity (Less Radiator) ..... 6 Imp. pt (7.2 U.S. pt or 3.4 1)

1-63. THERMOSTAT.

a. Type ..... Wax Capsule
b. Opening Temperature ..... 175°-182° F (80°-84°C)
c. Fully Open Temperature ..... 200°-205°F (94°-96°C)
d. Minimum Travel at Fully Open Temperature ..... 0.3125 in. (7.94 mm)

1-64. WATER PUMP.

a. Type ..... Centrifugal, Belt Driven From Crankshaft
b. Outside Diameter of Shaft for Pulley
(Separate Bearing Pump) ..... 0.5905-0.5908 in. (14.999-15.006 mm)
c. Inside Diameter of Pulley Bore
(Separate Bearing Pump) .....0.5880.589 in. (14.935-14.961 mm)
d. Outside Diameter of Shaft for Pulley
(Combined Bearing and Shaft) .....0.6262-0.6267 in. (15.905-15.918 mm)
e. Inside Diameter of Pulley Bore
(Combined Bearing and Shaft Pump).....0.6239-0.6247 in. (15.847-15.867 mm)
f. Interference Fit of Pulley on Shaft.....0.0015-0.0028 in. (0.038-0.071 mm)
g. Outside Diameter of Shaft for Impeller .....0.498-0.499 in. (12.649-12.675 mm)
h. Inside Diameter of Impeller Bore .....0.497-0.4975 in. (12.624-12.637 mm)
i. Interference Fit of Impeller on Shaft ..... 0.0005/0.002 in. (0.013-0.051 mm)
j. Outside Diameter of Impeller .....3.094-3.125 in. (78.588-79.375 mm)

1-65. FUEL SYSTEM.

a. Approved Fuel Oil Specifications (United States) .....V..V-F-800a A.S.T.M./D975-66T
Grades DF-A, or DF-2
No. 1-D or No. 2-D
b. Fuel Pump.
(1) Type ..... AC Delco Diaphragm '"YJ" Series
(2) Spring Color ..... Green
(3) Method of Drive ..... From Eccentric on Camshaft
Via Pushrod
(4) Total Stroke of Operating Lever ..... 0.192 in. (4.877 mm)

(5) Static Pressure (No Delivery) ..... 4-7 psi (2848 kPa)

(6 Pump to Distance Piece Gasket Thickness .....0.0180.022 in. (0.457-0.559mm)
(7) Distance Piece (Lift Pump to Tappet Inspection Cover) ..... 0.256 in. (6.502 mm)
c. Final Fuel Filter.
(1) Element Type ..... Paper
(2) Overflow Valve Type ..... Gravity Ball Check Valve

(3) Valve in Fuel Pump Drain Connection ..... Spring Loaded Non-return
Valve Set at 0.71-1.25 psi
(4.90-8.62 kPa)

d. Fuel Injector Pump.

(1) Make ..... C.AV.

(2) Type ..... D.P.A.

(3) Rotation (Viewed from Drive End) ..... Clockwise

(4) Plunger Diameter ..... 0.24 in. (6 mm)

e. Mechanically Governed.

(1) Timing Letter C

(2) No. 1 Cylinder Outlet ..... W

f Static Timing Position.

NOTE

For Perkins 4.108 engine model numbers below 108U15973 and 108UD20214, the static timing is 19° BTDC and piston displacement is 0.120 in. (3.05 mm).

The static timing position is 180 BTDC and piston displacement is 0.108 in. (2.75 mm).

g. Injector Nozzles.

(1) Make ..... C.A.V.

(2) Holder Type BKB40SD5224

(3) Nozzle Type BDN12SD6236

(4) Code Letter ..... BG

(5) Minimum Working Pressure ..... 135 atm (2000 psi or 13790 kPa)

(6) Setting Pressure ..... 150 atm (2200 psi or 15169 kPa)

1-66. WATER DISTRIBUTOR PUMP PERFORMANCE.

a. Pumping Capacity ..... 600 gpm (2271 1pm)

b. Pumping Pressure ..... 40-45 psi (276-310 kPa)

c. Spray Range ..... 70 ft. (21.35 m)

1-67. CAPACITIES.

a. Crankcase.

(1) Without Filter ..... 6 qt(5.71)

(2) With Filter ..... 7 qt (6.61)

b. Cooling System ..... 13.6 qt (12.91)

c. Fuel Tank ..... 9 gal (34.11)

d. Water Tank ..... 6000 gal (2.27 kl)

1-68. WATER DISTRIBUTOR DIMENSIONS.

a. Length ..... 441 in. (11.21 m)
b. Height ..... 117 in. (2.97 m)
c. Width ..... 96 in. (2.44 m)
d. Weight.
(1) (Empty) ..... 15800 lb (7173.20 kg)
(2) (Loaded) ..... 65900 lb (29918.60 kg)
e. Weight on the Kingpin (Empty) ..... 4480 lb (2033.92 kg)

CHAPTER 2
OPERATING INSTRUCTIONS

Section I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

2-1. CONTROLS AND INDICATORS.

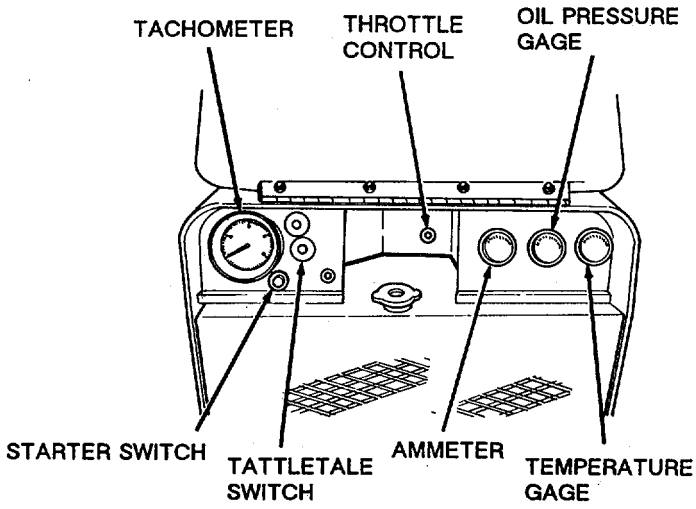

Figure 2-1. Engine Instrument Control Panel.

Key	Control or Indicator	Description
1	Tachometer	Indicates engine speed.
2	Ignition Light	Indicates that the ignition switch is on.
3	Throttle Control	Controls engine speed.
4	Ammeter	Indicates the charging condition of the generator.
5	Oil Pressure Gage	Indicates operating oil pressure.
6	Temperature Gage	Indicates engine coolant temperature.
7	Ignition Switch	Energizes the engine electrical circuit.
8	Tattletale Switch	Stops the engine if it overheats or if the oil pressure is too low.
9	Starter Switch	Cranks over the engine.
10	Air Restriction Indicator	Indicates a restriction or blockage in air pathway to intake manifold.

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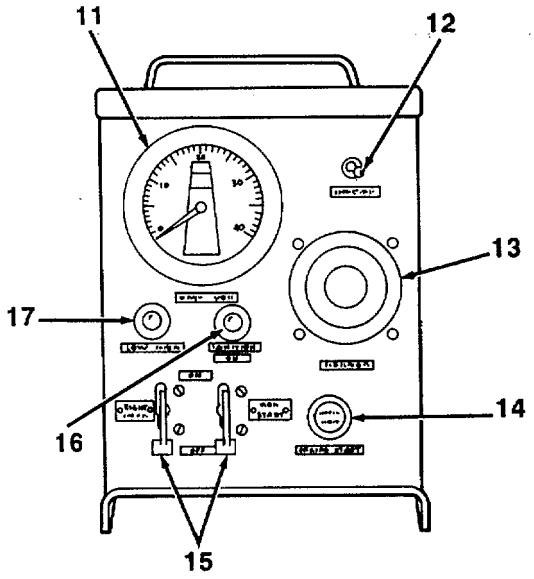

Figure 2-2. Auxiliary Control Box Panel.

Key	Control or Indicator	Description
11	Tachometer	Indicates engine speed.
12	Ignition Switch	Energizes the engine electrical circuit.
13	Throttle Control	Controls engine speed.
14	Starter Switch	Cranks over the engine.
15	Air Control Valves	Open and close the sprinkler valves.
16	Ignition Light	Lights when engine shuts down.
17	Low Level Indictor Light	Lights when tank water level is less than 500 gal (1893 l).

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Section II. OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

2-2. MAINTENANCE FORMS AND RECORDS.

Every mission begins and ends with paperwork. There isn't much of it, but you have to keep up with it. The forms and records you fill out have several uses. They are a permanent record of the services, repairs, and modifications made on your vehicle. They are reports to unit maintenance and to your commander. They also are a checklist for you when you want to know what is wrong with your vehicle after its last use and whether those faults have been fixed. For the information you need about forms and records, see DA Pam 738-750.

2-3. PMCS PROCEDURES.

a. Do your *Before* (B) PMCS just before you operate the vehicle. Pay attention to all WARNINGs and CAUTIONs.

b. Do your *During* (D) PMCS while the equipment or its component systems are in operation.

c. Do *your After* (A) PMCS right after operating the vehicle. Pay attention to all WARNINGs and CAUTIONs.

d. Do your *Weekly* (W) PMCS once a week.

e. Do your *Monthly* (M) PMCS once a month.

f. If something doesn't work, troubleshoot it following the instructions in this manual or notify your supervisor.

g. Always do your PMCS in the same order so it gets to be a habit. Once you've had some experience, you'll quickly spot anything wrong.

h. If anything looks wrong and you can't fix it, write it on your DA Form 2404. If you find something seriously wrong, report it to unit maintenance immediately.

i. When you do your PMCS, take along the tools you need to make all the checks. You always need several rags.

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only In a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100 °F-130°F (38°C- 59 °C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, Immediately wash your eyes and get medical aid.

j. Keep your vehicle clean. Dirt, grease, oil, and debris only get in the way and may cover up a serious problem. Clean as you work and as needed. Use dry cleaning solvent (Item 7, Appendix D) on all metal surfaces. Use soap and water when you clean rubber or plastic material.

k. Perform the following inspections as described below:

(*1) Bolts, nuts, and screws.* Check for obvious looseness and missing, bent, or broken items. You can't try them all with a tool, of course, but look for chipped paint, bare metal, or rust around bolt heads. If you find one you think is loose, tighten it. If you can't tighten it, report itto unit maintenance.

(*2) Welds.* Look for loose or chipped paint, rust, or gaps where parts are welded together. If you find a bad weld, report it to unit maintenance.

(*3) Electric wires and connectors.* Look for cracked or broken insulation, bare wires, and loose or broken connectors. Tighten loose connectors and ensure that the wires are in good condition.

(*4) Hoses and fluid lines.* Look for wear, damage, and leaks, and ensure that clamps and fittings are tight. Wet spots indicate leaks, of course, but a stain around a fitting or connector also can mean a leak. Tighten all loose fittings or connectors. If something is broken or worn out, report it to unit maintenance.

2-4. LEAKAGE DEFINITIONS.

a. You must know how fluid leakage affects the status of your vehicle. The following are definitions of the types/classes of leakage you need to know to be able to determine the status of your vehicle. Learn them, be familiar with them, and REMEMBER-WHEN IN DOUBT, NOTIFY YOUR SUPERVISOR!

LEAKAGE DEFINITIONS FOR OPERATOR/CREW PMCS

CLASS I	Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.
CLASS II	Leakage of fluid great enough to form drops but not enough to cause drops to drip from item being checked/inspected.
CLASS III	Leakage of fluid great enough to form drops that fall from the item being checked/inspected.

CAUTION

Equipment operation is allowable with minor leakage (Class I or II). Of course, consideration must be given to the fluid capacity in the item/system being checked/inspected. When in doubt, notify your supervisor.

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

c. Class III leaks must be reported IMMEDIATELY to unit maintenance.

Table 2-1. Operator/Crew Preventive Maintenance Checks and Services (PMCS).

B-Before D-During A-After W-Weekly M-Monthly

ITEM NO.	INTERVAL					ITEM TO BE INSPECTED PROCEDURE: Check for and have repaired, filled, or adjusted as needed.	Equipment is Not Ready/ Available If:
	B	D	A	W	M		
						NOTE **Perform Weekly as well as Before PMCS if:** **a. You are the assigned operator but have not operated the vehicle since the last weekly PMCS.** **b. You are operating the vehicle for the first time.**	
1						**GENERAL**	
	●					a. Look for evidence of fluid leakage (oil or fuel).	Class III leaks or any fuel leaks are found.
	●					b. Visually check for loose wiring and damaged piping or hoses.	
2						**TIRES** **CAUTION** **Do not overinflate tires. Too much pressure can cause damage.**	
	●			●		Check the tires for worn tread, cracks or low tire pressure. Tire pressure is 75 psi (517 kPa).	The tires are worn or damaged.
3						**WHEEL HUB**	
	●					Check wheel hub oil level using sight gage on wheel hub.	
4						**FRAME ASSEMBLY**	
				●		Check for loose nuts and bolts and obvious damage to subassemblies. Check for broken welds.	Damaged subassembly or broken welds.
5						**KINGPIN**	
		●				When coupling tractor to semitrailer, check for obvious damage.	Kingpin damaged beyond use.

Table 2-1. Operator/Crew Preventive Maintenance Checks and Services (PMCS) (Con't).

B-Before D-During A-After W-Weekly M-Monthly

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: Check for and have repaired, filled, or adjusted as needed.	Equipment is Not Ready/ Available If:
6						**LANDING GEAR**	
		•				Couple tractor to semitrailer and check the landing gear for obvious damage.	Landing gear does not operate.
7						**RADIATOR, SHROUDS, AND COWLINGS**	
	•					a. Check radiator coolant level. When engine is cold, coolant level should be 1–2 in. (2.5–5.1 cm) below filler neck.	
	•					b. Ensure that all shrouds and cowlings are free of debris and securely fastened.	
8						**CRANKCASE**	
	•					Check engine oil level. Add oil if level is at or below the ADD mark on the dipstick (see Chapter 3, Section I).	
9						**EXHAUST MUFFLER**	
					•	Check the exhaust muffler for corrosion or obvious damage.	
10						**PUMP ASSEMBLY**	
	•					a. Ensure that there is water in the pump tank before operating the water distributor.	
	•					b. Ensure that the discharge and inlet valves turn smoothly.	Valves do not operate.
11						**CONTROLS AND INDICATORS (See Figures 2-1 and 2-2)**	
		•				a. Check oil pressure gage. Oil pressure gage reading should be 30–60 psi (207–414 kPa) at maximum engine speed and normal working temperature.	
		•				b. Check temperature gage.	
12						**AIR CLEANER**	
		•				If the air restriction indicator is red, change the air cleaner filter element. After changing the filter element, reset the air restriction indicator.	Filter element is missing.
13						**JUNCTION BOX (POWER CONNECTION)**	
		•				While coupling semitrailer to tractor, check the receptacle connectors for obvious damage.	Junction box and receptacle connectors are damaged beyond use.

Table 2-1. Operator/Crew Preventive Maintenance Checks and Services (PMCS) (Con't).

B-Before			D-During			A-After	W-Weekly	M-Monthly
14						**LIGHTS**		
		•				Ensure that the taillight, stop, turn signal, and clearance lights function.	Lights do not operate.	
15						**AUXILIARY CONTROL BOX (See Figure 2-2)**		
		•				a. Check the gages, lights, and switches for damage.		
		•				b. Ensure that the air control valves operate.		
		•				c. Ensure that the throttle control operates.		
16						**HOSES, LINES, FITTINGS, AND PIPING**		
		•				Check all hoses, lines, fittings, and piping for leakage under pressure.	Class III leaks are found.	
17						**AIR RESERVOIRS**		
			•			Open draincocks and drain the water from all air reservoirs.		
18						**BATTERY**		
				•		a. Check the electrolyte level. Add clean water if level is below the star level in the cell covers. In freezing weather, run the engine at least 15 minutes after adding water.		
					•	b. Clean battery terminal and apply coating of grease to protect them.		
19						**BRAKES**		
		•				Make several stops, noting side pull, noise, chatter, or any other unusual condition. Disconnect air hoses from tractor and note if semitrailer brakes apply.		
20						**SUCTION HOSE ASSEMBLY**		
	•					a. Check foot valve for mud, dirt, or debris. Clean as required.	Any leaks found.	
	•					b. Check for debris in hoses before using.		
21	•					**FUEL TANK**		
						Check fuel tank for leaks or external damage.		

Section III. OPERATION UNDER USUAL CONDITIONS

2-5. COUPLING SEMITRAILER TO TRACTOR.

a. Perform the preventive maintenance checks and services in Table 2-1.

WARNING

All personnel must stand clear of semitrailer and tractor during coupling operations. Failure to follow this warning may result in serious injury or death to personnel.

b. Back tractor up to semitrailer until tractor is close enough to semitrailer to connect air lines.

c. Stop tractor. Activate tractor parking brake and semitrailer brake.

d. Connect service air line from tractor to service gladhand on semitrailer. Connect emergency air line to emergency gladhand on semitrailer.

e. Connect tractor's electrical cable to semitrailer's receptacle connector.

f. Open service and emergency air control valves.

g. Wait until the air pressure has built up enough to activate the semitrailer brakes, then slowly back the tractor under the semitrailer until the kingpin is engaged by the fifth wheel jaws.

NOTE

Steps *h* and *i* must be performed to ensure that kingpin is securely locked by fifth wheel Jaws. Never raise landing gear until the locking of the Jaws around the kingpin is certain.

h. Disengage tractor parking brake.

(1) Place transmission in first gear and check engagement by trying to pull forward a few feet.

(2) The semitrailer brakes should prevent forward movement and the kingpin should remain engaged to the fifth wheel.

i. When the operator is certain that the kingpin is engaged, thetransmission should be returned to neutral and the parking brake applied.

j. Raise the landing gear, release the parking brake and drive off.

2-6. START-UP AND FILLING INSTRUCTIONS.

NOTE

The water distributor Is equipped with two 15 ft. (4.6 m) sections of suction hose for filling the tank from ponds or streams. The tank can also be filled through the manhole from water stations. The following instructions cover filling from a pond or stream.

a. Move the water distributor within reach of the water supply.

b. String suction hose (see Figure 2-3) from the water supply to the water distributor pump. Ensure that the hose coupling gaskets are in place and that the foot valve is submerged in the water supply.

c. Remove the 4 in. (10.2 cm) dust cap (C) and connect the suction hose to the pump.

d. Close the sprinkler valves (F and G).

e. Close the discharge valve (A).

f. Open the inlet valve (B, Figure 2-4).

g. Fill the water distributor pump tank with water to prime it (see Figure 2-5).

NOTE

The engine can be started and controlled from the auxiliary control box or the Instrument panel.

h. Start the engine.

(1) Push the tattletale switch (8, Figure 2-1).

NOTE

Before starting the engine, the auxiliary control box throttle control must be turned to the OFF position and the instrument panel throttle control must be pushed all the way in until it stops.

(2) Adjust the throttle controls (3, Figure 2-1 and 13, Figure 2-2).

(3) Turn on the ignition switch (7, Figure 2-1). The ignition light (2) should turn on.

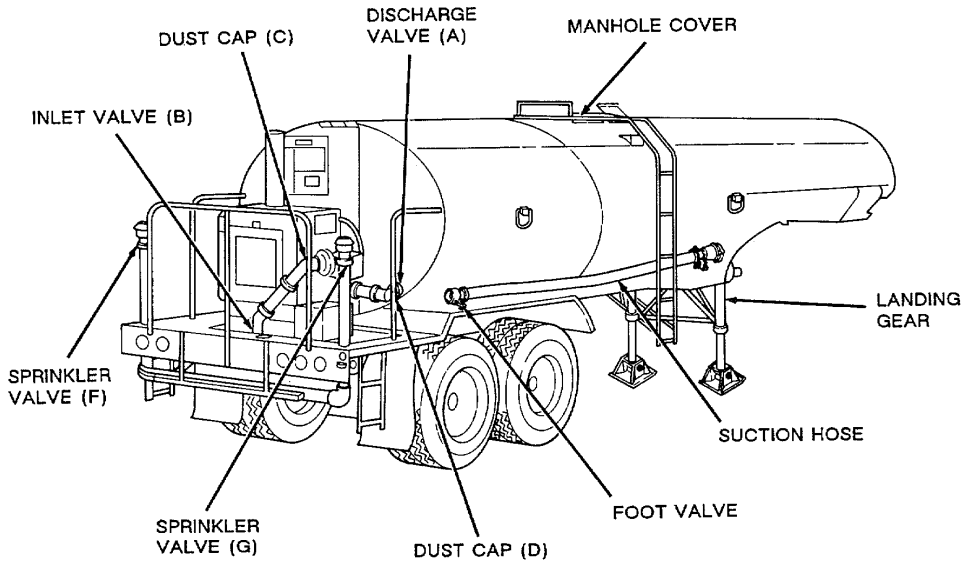

Figure 2-3. Water Distributor.

CAUTION

If engine does not start within 30 seconds, allow starter to cool 2 minutes before attempting to start engine again. Damage to starter may occur if this caution is not followed.

NOTE

When starting the engine from the auxiliary control box, the water distributor engine cannot be heard. The tachometer will Indicate that the engine is operating.

(4) Push the starter switch (9) until the engine starts.

(5) Adjust the engine idle speed with the throttle control (3). The idle speed should be 700-1000 rpm.

i. Adjust the throttle control (3) to approximately 2900 rpm and fill the water distributor tank.

j. When the water distributor tank is full, adjust the throttle control (3) to 700-1000 rpm.

k. Close the inlet valve (B, Figure 2-4).

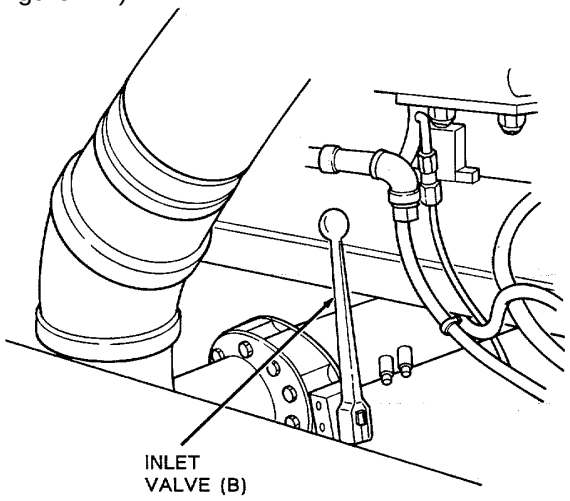

Figure 2-4. Inlet Valve (B).

NOTE

The engine can be stopped from either the instrument panel Ignition switch or the auxiliary control box ignition switch.

l. Turn off the ignition switch (7, Figure 2-1) to stop the engine.
m. Remove the foot valve (see Figure 2-3) from the water supply and clean debris from it.
n. Disconnect suction hose from the pump and stow each hose section in its rack.
o. Remove and clean inlet pump strainer.
p. Install inlet pump strainer and 4 in. (10.2 cm) dust cap (C, Figure 2-5).

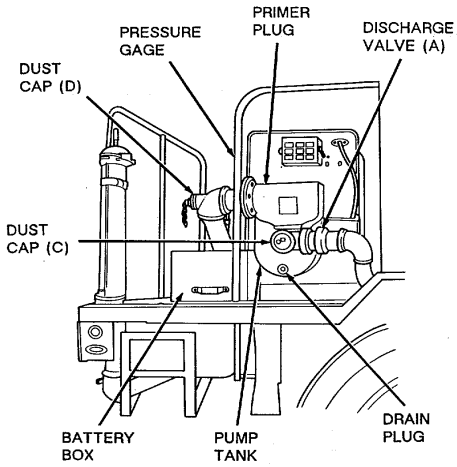

Figure 2-5. Water Distributor Pump.

2-7. SPRAYING PROCEDURES.

NOTE

The spraying operation Is controlled from the tractor cab.

a. Start the engine (see paragraph 2-6h).
b. Open the air control valves (15, Figure 2-2) at the auxiliary control box.
c. Adjust the engine speed to approximately 2900 rpm and observe the spray pattern from the sprinkler valves (F and G, Figure 2-3). If the spray pattern is acceptable, go to stepe.
d. Adjust the sprinkler valve spray patterns.
(1) Adjust the engine speed to 700 rpm.
(2) Close the sprinkler valves (F and G).
(3) Adjust the spray width.
(a) Loosen thumbscrew (11, Appendix F, Figure 86).

NOTE

The spray width Is controlled by the position of the adjusting band. When the adjusting band slot is alined with slot in valve body, the spray will be at its widest point. To decrease the spray width, close the valve body opening by turning the adjusting bands.

(b) Turn the nozzle adjusting band (9) to the required position.
(c) Tighten thumbscrew (11).
(d) Open the sprinkler valves (F and G, Figure 2-3).
(e) Adjust the engine speed to approximately 2900 rpm and observe spray width. Adjust the spray width as necessary.
(4) Adjust the spray overlap.
(a) Turn the sprinkler valve to the required position.
(b) Open the sprinkler valves (F and G).
(c) Adjust the engine speed to approximately 2900 rpm and observethe spray overlap. Adjust the spray overlap as necessary.
e. Drive the water distributor over the designated area.
f. Turnaround procedures. (1) Adjust' the engine speed to 700-1000 rpm.
(2) Close the sprinkler valves (F and G).
(3) Change direction.

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(4) Open the sprinkler valves (F and G).

(5) Adjust the engine speed to 2900 rpm and drive over the designated area.

2-8. SHUTDOWN PROCEDURES.

NOTE

When the water level in the water distributor is less than 500 gal (1893 l1), the low level indicator light on the auxiliary control box panel will turn on.

a. Turn the auxiliary control box throttle control (13, Figure 2-2) to OFF immediately.

b. Turn the ignition switch (12) to OFF.

c. Push the instrument panel throttle control (3, Figure 2-1) all the way in until it stops.

d. If freezing weather is expected, completely drain the water distributor tank, the pump tank, and the plumbing lines (see Figures 2-6 and 2-7).

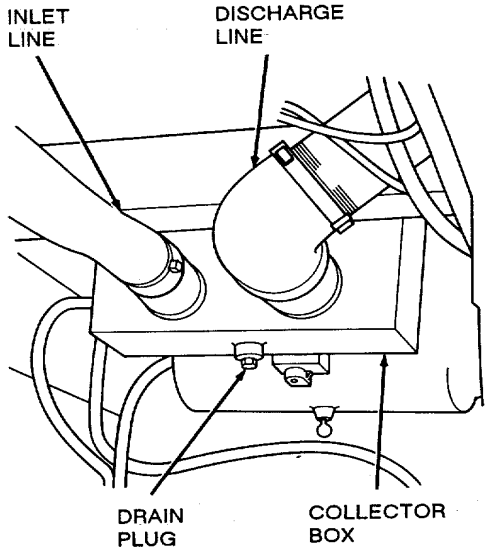


Figure 2-6. Collector Box.

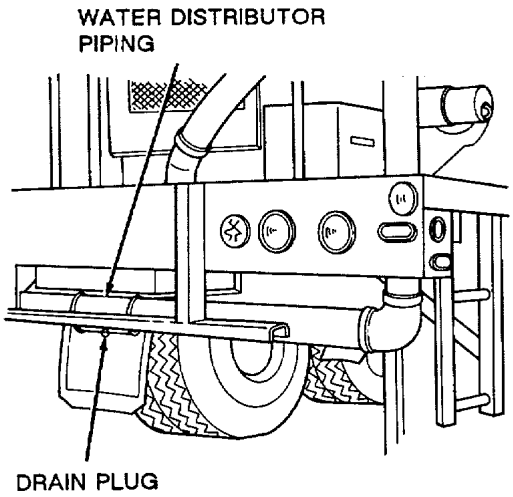


Figure 2-7. Piping Drain Plug.

2-9. FIRE FIGHTING OPERATIONS.

WARNING

Do not handle fire hose alone. It Is a two per- son operation. One person must operate the engine while the second handles the hose.

NOTE

During fire fighting operations, water can be pumped from the water distributor tank or from an outside source if it is close enough to the fire.

a. Remove the 1.5 in. (3.8 cm) dust cap (D, Figure 2-5) from the pump.
b. Connect the fire hose to the 1.5 in. (3.8 cm) pump fitting and connect the nozzle to the fire hose.
c. Pump from the water distributor tank.

(1) Open the discharge valve (A).
(2) Close the inlet valve (B, Figure 2-4).
(3) Ensure that the sprinkler valves (F and G, Figure 2-3) are closed.
(4) Start the water distributor engine (see paragraph 2-6h).
(5) Spray the fire.

d. Pump from an outside source.

(1) Remove the 4 in. (10.2 cm) dust cap (C, Figure 2-3).

(2) Connect the 4 in. (10.2 cm) suction hose to thepump and set the other end in the water source.

(3) Close the discharge valve (A).

(4) Close the inlet valve (B).

(5) Ensure that the sprinkler valves (F and G) are closed.

(6) Start the water distributor engine (see paragraph 2-6*b*).

(7) Spray the fire.

e. Fire fighting shutdown procedures.

(1) Turn off the ignition switch (7, Figure 2-1) to stop the engine.

(2) Disconnect and store fire hose.

(3) Disconnect and stow suction hoses.

(4) Install dust cap (D).

(5) Ensure that sprinkler valves (F and G) are open.

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

2-10. OPERATION IN EXTREME HEAT.

a. Lubrication. Refer to Chapter 3, Section I for lubricants to be used during periods of extreme heat.

b. Cooling System.

(1) Ensure that the shrouding is free of debris and securely attached to the engine.

(2) Ensure that the radiator is free of dust and debris and is filled with coolant.

2-11. OPERATION IN EXTREME COLD.

a. Lubrication. Refer to Chapter 3, Section I for lubricants to be used during periods of extreme cold.

b. Cooling System. Add antifreeze (Item 1.1 NO TAG, Appendix D) to the cooling system. The antifreeze should be added to give a 50:50 mixture with water in the radiator.

c. Pump and Water System. When the temperature is expected to drop below 32°F (0°C), drain the water distributor tank, the pump tank, the tank collector box, and the plumbing lines.

2-12. OPERATION IN SANDY AND DUSTY CONDITIONS.

CAUTION

Dust and sand are very abrasive and will cause serious mechanical damage if not removed from water distributor.

a. General. Before maintaining or disassembling the water distributor, remove all dust and sand.

b. Lubrication.

(1) Clean all fittings and parts before lubricating them or checking lubrication.

(2) Clean and service the air cleaner and oil filter more often than specified (see Chapter 3, Section I).

c. Fuel Tank

(1) Clean all dust and sand away from fuel tank cap before filling the tank.

(2) Ensure that the tank air vents are clear and free of debris.

2-13. OPERATION IN HIGH HUMIDITY OR SALTWATER.

a. Before operating the water distributor in high humidity or saltwater areas, inspect it for rust.

b. After operating the water distributor, rinse the tank and the water system thoroughly with salt-free water.

2-14. OPERATION IN HIGH ALTITUDES.

a. Clean and service the air cleaner more often than specified (see Chapter 3, Section 1).

b. Refer to paragraph 1-20 for de-rating engines for high altitudes.

2-15. OPERATION WITH DIRTY OR MUDDY WATER.

If dirty or muddy water was used in spraying operations, the following steps must be taken:

a. Clean the foot valve and pump strainers.

b. Fill the tank with clean water to rinse out any sand or mud.

CHAPTER 3
OPERATOR MAINTENANCE

Section I. LUBRICATION INSTRUCTIONS

3-1. GENERAL.

NOTE
These lubrication Instructions are MANDATORY.

a. The water distributor must receive lubrication with approved lubricants at recommended intervals in order to be mission-ready at all times.

b. The K*EY* lists lubricants to be used in all temperature ranges. Tabular listings show all lubrication points, and names the item to be lubricated, the required lubricant, the recommended interval, and the estimated man-hours to perform the service. Notes at the end of the tabular listing provide specific instructions.

c. Broken arrow shafts (-) indicate lubrication points on both sides of the semitrailer.

d. Level of maintenance authorized to perform lubrication is indicated in parentheses on last line of ITEM NAME entry.

e. Recommended intervals are based on normal conditions of operation, temperature, and humidity. When operating under extreme conditions, lubricants should always be changed more frequently. When in doubt, notify your supervisor.

3-2. SPECIFIC LUBRICATION INSTRUCTIONS.

a. Maintain a record of lubrication performed and report any problems noted during lubrication. Refer to DA Pam 738-750 for maintenance forms and procedures to record and report any findings.

WARNING

Dry cleaning solvent P-D-680 Is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F-130°F (38°C-59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

b. Use dry cleaning solvent (Item 7, Appendix D) to clean grease fittings, lubrication points, and surrounding areas before lubrication.

c. When lubricating at a grease fitting, apply enough grease to purge old grease from the lubricated area. When old grease oozes from grease fitting, purging and relubricating are adequate.

d. After lubrication, wipe clean excess oil or grease to prevent accumulation of foreign matter.

e. Refer to FM 9-207 for instructions on lubrication in cold weather.

f. After operation under muddy, dusty, or sandy conditions, clean and inspect all points of lubrication for fouled lubricants. Change lubricants as required.

LUBRICATION CHART

DISTRIBUTOR, WATER, SEMITRAILER MOUNTED,
6000 GALLON, MODEL WD6S
NSN 3825-01-065-6221

Intervals (on-condition or hard time) and related man-hour times are based on normal operation. The man-hour time specified is the time you need to do all services prescribed for a particular interval. Decrease the intervals if your lubricants are contaminated, or if you are operating equipment under adverse conditions, including longer-than-usual operating hours. The intervals may be extended during periods of low activity. If extended, adequate preservation precautions must be taken.

Dotted leader lines indicate lubrication is required on both sides of the equipment.

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F-130°F (38°C-59°C). If you become dizzy while using cleaning solvent, Immediately get fresh air and medical help. If solvent contacts eyes, Immediately wash your eyes and get medical aid.

Clean all fittings and area around lubrication points with dry cleaning solvent (Item 7, Appendix D) or equivalent before lubricating equipment. After lubrication, wipe off excess oil or grease to prevent accumulation of foreign matter.

The lowest level of maintenance authorized to lubricate a point is indicated in parentheses by use of the following: (C) Operator/Crew; or (O) Unit Maintenance.

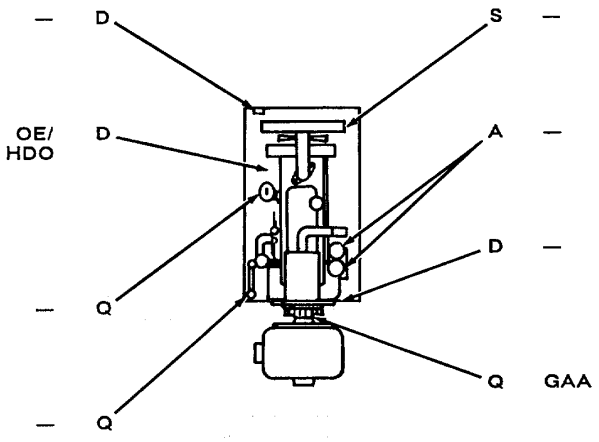
LUBRICANT•INTERVAL

Oil Pressure Gage
(C) (See Note 1)

Crankcase Oil Level
Oil must be between
FULL and ADD
marks on dipstick
(C) (See Note 3)

Crankcase Oil Filter
(O) (See Note 4)

Crankcase
Drain Plug
(O) (See Note 4)



INTERVAL•LUBRICANT

Radiator
(O)(See Note 7)

Fuel Filters
(O)(See Note 5)

Air Restriction
Indicator
(C)(See Note 2)

Flywheel Adapter
Lubricate adapter
(C)

TOTAL MAN-HOURS*

INTERVAL	MAN-HOUR
Q	0.50
S	0.50
A	0.50

* The man-hours time specified is the time you need to do all services prescribed for a particular interval.

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LUBRICANT•INTERVAL

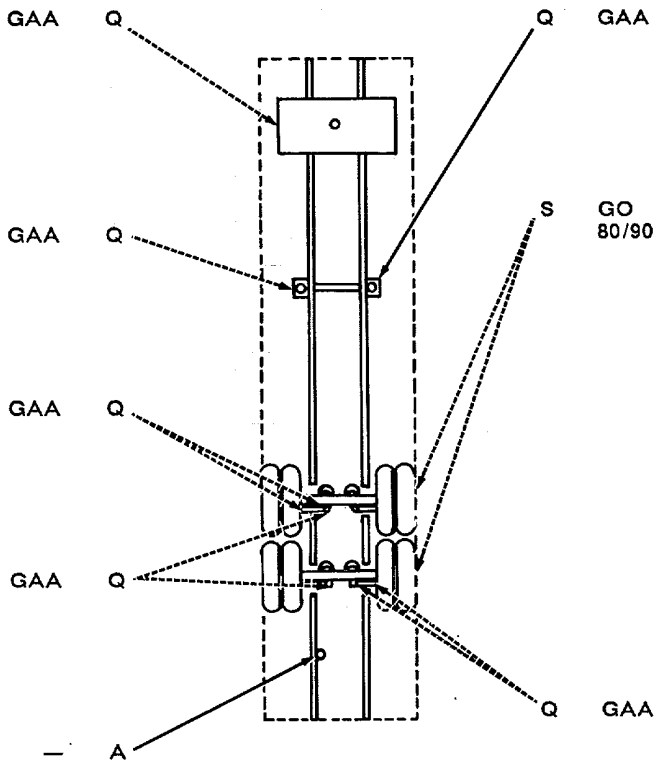
Kingpin and Fifth Wheel Plate
Every 150 hours or quarterly lubricate kingpin and fifth wheel plate (C)

Landing Gear Lower Leg
Lubricate landing gear (C)

Camshaft
Every 150 hours or quarterly lubricate camshaft (C)

Slack Adjuster
Every 150 hours or quarterly lubricate slack adjuster (C)

Water Trap
(O) (See Note 5)



INTERVAL•LUBRICANT

Landing Gear Gearbox
Every 150 hours or quarterly lubricate gearbox (C)

Wheel Bearings and Hubs
Every 300 hours or semiannually fill wheel bearing hubs. (Check level) (0) (See Note 6)

Camshaft
Every 150 hours or quarterly lubricate camshaft (C)

TOTAL MAN-HOURS*

INTERVAL	MAN-HOUR
D	0.25
Q	0.50
S	0.50
A	0.50

* The man-hours time specified is the time you need to do all services prescribed for a particular interval.

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- KEY -

Lubricants	Refill Capacity (AAP)	EXPECTED TEMPERATURES			
		0℉ TO 30℉ (-18℃ TO -1℃)	30℉ TO 80℉ (-1℃ TO 27℃)	Over 80℉ (Over 27℃)	Intervals
OE/HDO (MIL-L-2104) Lubrication Oil, Internal Combustion Engine, Heavy Duty	6 Qts 7 with Filter	OE/HDO 10	OE/HDO 30	OE/HDO 50	D - Daily
GO 80/90 (MIL-L-2105) Lubricating Oil, Gear, Multipurpose	1 Pt	GO 80/90	GO 80/90	GO 80/90	Q - 150 hrs or Quarterly
GAA (MIL-G-10924) Grease, Automotive and Artillery	As Req				S - 300 Hrs or Semiannu-ally
Antifreeze (MIL-A-46153)	As Req				A - 600 Hrs or Annually

FOR ARTIC OPERATIONS, REFER TO FM 9-207

NOTES:

1 Oil Pressure. Check the oil pressure daily. If the oil pressure is below 25 psi (172 kPa), check the oil level. If the oil pressure is above 60 psi (414 kPa) check the crankcase oil filter.

2. Air Restriction Indicator. Check the air restriction indicator daily. If it is up, check the air cleaner filter elements and the intake air for clogging.

CAUTION

Do not overfill the crankcase. The oil level must never be higher than the FULL mark on the dipstick or damage to the engine may occur.

3. Crankcase Dipstick and Filter Cap. Check the oil level daily. The oil level should always be maintained between the ADD and FULL marks on the dipstick. Add or drain oil (OE-HDO) as necessary.

4. Crankcase Oil Filter and Drain Plug. Every 150 hours or quarterly, remove drain plug, drain oil, and replace oil filter element. Clean filter head with dry cleaning solvent (Item 7, Appendix D). Do not attempt to clean and reuse filter element. Lightly oil top filter head seal and gaskets with clean engine oil and install new oil filter element. Install drain plug and add 7 quarts (6.6 I1) of oil (OE/HDO) to engine crankcase.

5. Fuel Filters. Every 600 hours or annually, replace fuel filter elements. Do not attempt to clean filter elements. Replace them. After replacing the filter elements, prime the fuel lines and clear air bubbles from system.

6. Wheel Bearing Oil. Every 300 hours, semiannually, or as required, replace the wheel bearing oil (GO 80/90). Remove the wheel hubcap and add the oil.

7. Radiator. Every 300 hours or semiannually, renew the engine coolant. Remove the radiator cap and add coolant to bring the water to coolant ratio to 50:50.

Section II. OPERATOR/CREW TRIYBKESHOOTING PROCEDES

3-3. INTRODUCTION.

This section contains the troubleshooting procedures as signed to the water distributor operator and crew. Possible water distributor malfunctions are listed in the Troubleshooting Symptom Index (see paragraph 3-4). The Troubleshooting Table (Table 3-1) lists the malfunction, the probable cause, and the corrective action to be used. If any of the following malfunctions cannot be corrected or their cause cannot be found, notify unit maintenance personnel.

3-4. TROUBLESHOOTING SYMPTOM INDEX.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

1. ENGINE WILL NOT TURN OVER.

Step 1. Check the tattletale switch (8, Figure 2-1).

Reset it as necessary.

Step 2. Ensure that the auxiliary control box is connected to the main power lines.

2. RUNNING LIGHTS DO NOT OPERATE.

Step 1. Check connectors.

Disconnect, then connect firmly.

Step 2. Check for burned out lamps in inoperative lights.

Replace burned out lamps.

Table 3-1. Operator/Crew Troubleshooting (Con't).

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

3. BRAKES ARE WEAK OR INEFFECTIVE.

WARNING

Use extreme caution when operating draincocks. Wear safety goggles to prevent eye Injury due to high pressure air.

Check for water in air reservoirs.

Open draincocks on air reservoirs and drain water.

4. STEERING IS DIFFICULT

Check for low air pressure in one or more tires.

Inflate all tires to 75 psi (517 kPa).

5. GRATING NOISE OCCURS WHEN TURNING THE TRACTOR.

Check for lack of grease on kingpin.

Lubricate kingpin with proper grease (see Chapter 3, Section I).

6. LANDING GEAR WILL NOT EXTEND OR RETRACT.

Step 1. Check for rust and corrosion on telescoping, section.

Clean and remove corrosion. Lubricate landing gear (see Chapter 3, Section I).

Step 2. Check for bent telescoping section.

Notify unit maintenance if bent.

7. ENGINE CRANKS BUT WILL NOT START.

Check for an empty fuel tank.

Fill fuel tank.

8. ENGINE OVERHEATS.

Step 1. Check radiator coolant level.

Add coolant as necessary (see Chapter 3, Section I).

Step 2. Check oil level in engine crankcase.

Add proper grade of oil (see Chapter 3, Section I).

Table 3-1. Operator/Crew Troubleshooting (Con't).

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

Step 3. Check fan belts.

Notify unit maintenance if adjustment is necessary.

9. OIL PRESSURE IS LOW.

Check for low oil level in engine crankcase.

Add proper grade of oil (see Chapter 3, Section I).

10. ENGINE IS OVERLOADED.

Step 1. Ensure that the pump is not working against closed valve.

Step 2. Ensure that the sprinkler valves (F and G, Figure 2-3) are not clogged.

11. TANK WILL NOT FILL.

Step 1. Ensure that the discharge valve (A, Figure 2-3) is closed and the inlet valve (B) is open.

Step 2. Ensure that there is water in the pump housing.

Fill the pump housing as necessary.

Step 3. Check the foot valve strainer (6, Appendix F, Figure 39) in suction hose for debris.

Remove the foot valve strainer and clean the debris.

Step 4. Check the pump strainer (14, Appendix F, Figure 83) for debris.

Remove strainer (14) from tee (15) and clean.

Step 5. Check the suction hose and fittings for damage or leaks.

Replace the fittings if they are damaged or leaking.

Replace the hose if it collapses when the pump starts.

12. PUMP SUDDENLY OR GRADUALLY STOPS PUMPING.

Check the pump or foot valve strainers for clogging.

WARNING

Do not stand In front of the pump while disconnecting the hose. If the pump runs for a time with a plugged line, it will generate enough heat to cause severe burns. Stand to one side of the pump and disconnect the camlock fitting with a long-handled Instrument.

Remove and clean the hose and pump strainer (14, Appendix F, Figure 83).

Table 3-1. Operator/Crew Troubleshooting (Con't).

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

Remove the foot valve strainer (6, Appendix F, Figure 39) and clean the foot valve.

Check for low water level.

13. PUMP WILL NOT PRIME DURING FILLING PROCEDURES.

Step 1. Check foot valve and suction hose for plugging (Figure 2-3).

Clean the foot valve and suction hose as necessary.

Step 2. Check the pump strainer (14, Appendix F, Figure 83).

Clean it as necessary.

Step 3. Check the suction hose (Figure 2-3) for leaks.

Replace suction hose as necessary.

Step 4. Check hose coupling gaskets.

Replace hose coupling if gasket is missing or damaged.

14. AUXILIARY THROTTLE CONTROL VALVE DOES NOT OPERATE.

WARNING

Use extreme caution when opening draincocks. Wear safety goggles to protect against eye Injury due to high pressure air.

Check the auxiliary air reservoir and the brake air reservoirs for pressure by opening the draincocks.

If there is no air in any of the reservoirs, check the gladhands and connect them as necessary.

If there is air pressure in any or all of the air reservoirs, notify unit maintenance.

CHAPTER 4
UNIT MAINTENANCE

Section I. SERVICE UPON RECEIPT

4-1. INSPECTION.

a. Make a complete visual inspection to see that basic issue items, publications, accessories, and attachments are with the water distributor.

b. Visually inspect entire water distributor and record any damage or loss of parts.

c. Check tire pressure. It should be 75 psi (517 kPa).

d. Inspect engine cowling, exhaust muffler, air cleaner, and air restriction indicator.

e. Remove engine cowling (5, Appendix F, Figure 47) and side panel (16), and check the injector pump, fuel filters, alternator and belt, oil filter, and throttle control valve for damage (see Figure 4-1).

f. Open instrument panel and inspect gages and instruments for damage (see Figure 2-1).

g. Inspect auxiliary control box for damage and mount it in tractor cab (see Figure 2-2).

h. Ensure that all hose connections and electrical connections are secure. Replace any chafed, frayed, or damaged hoses, wires or fittings (see Figures 4-2 through 4-4).

i. Check crankcase oil level and add oil as necessary (see Chapter 3, Section I).

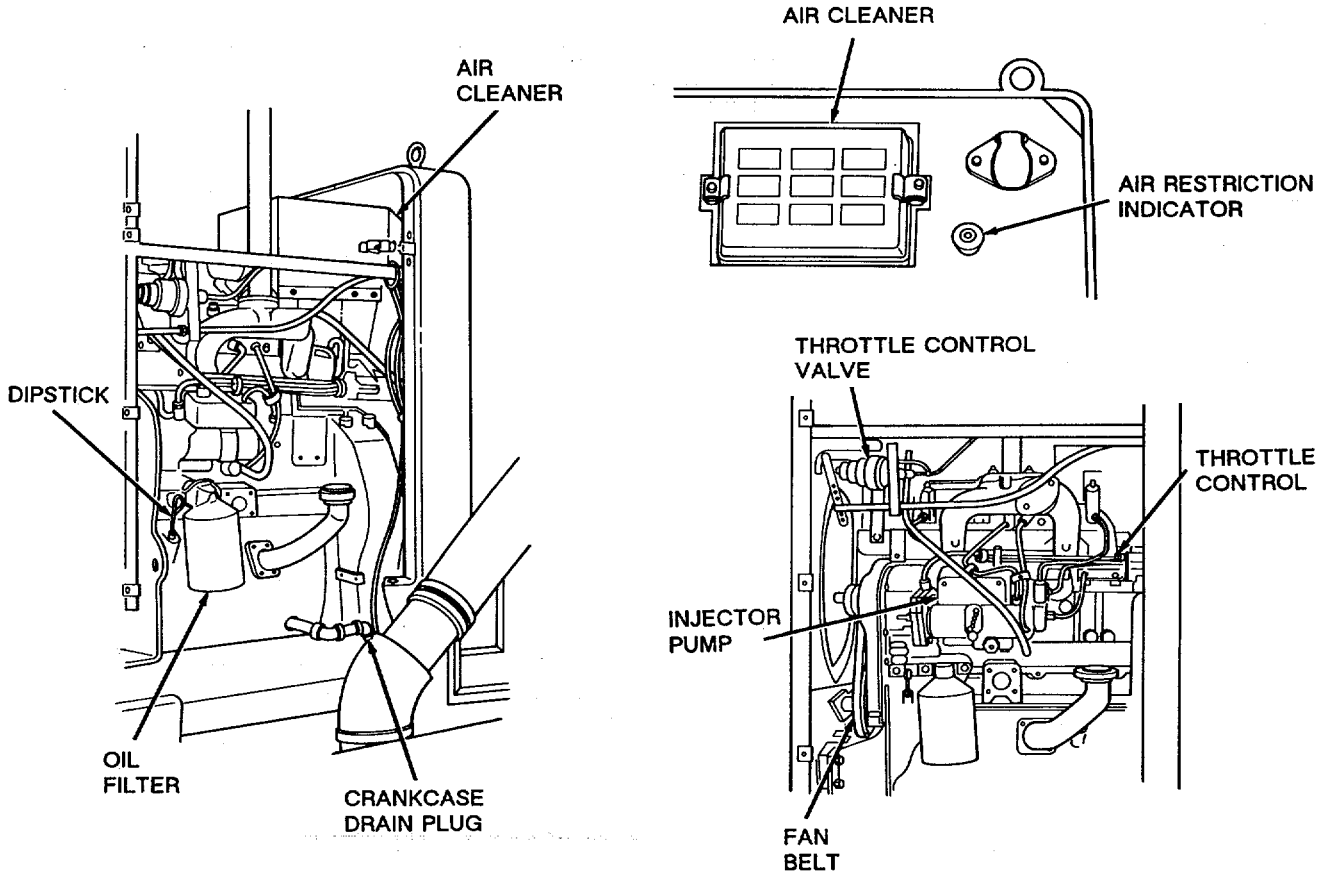

Figure 4-1. Water Distributor Engine.

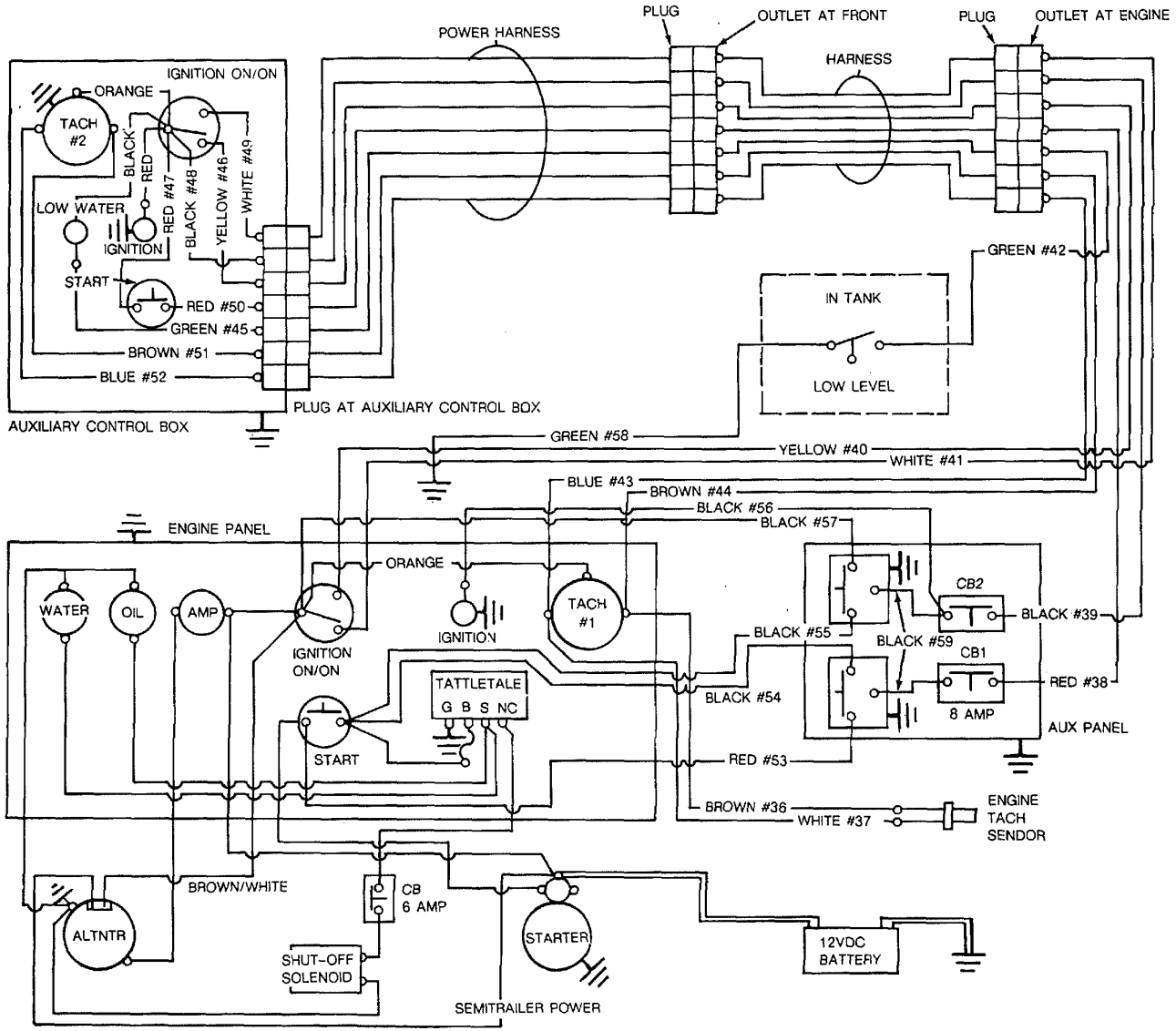

Figure 4-2. Engine Wiring Diagram.

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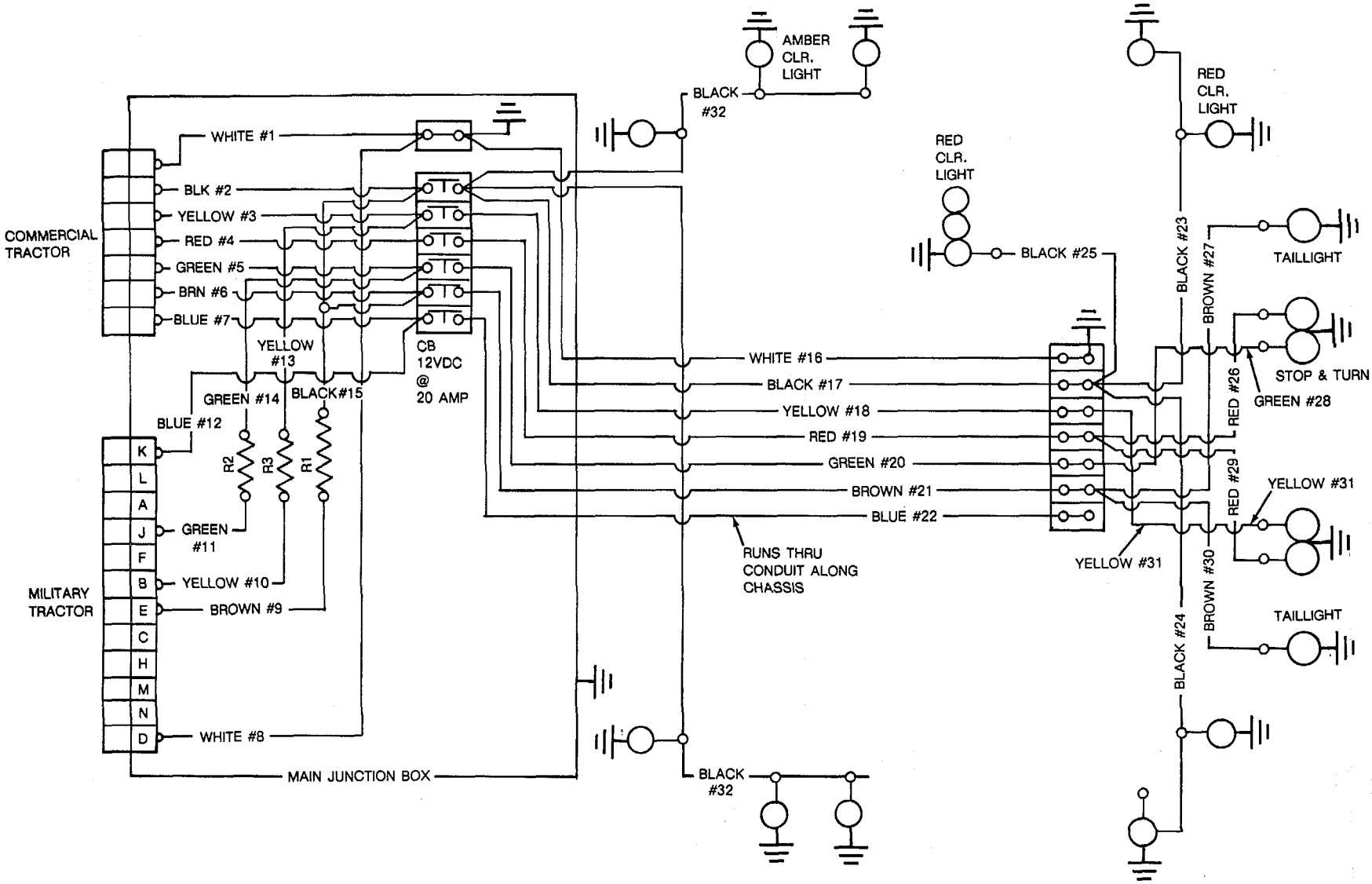

Figure 4-3. Water Distributor Wiring Diagram.

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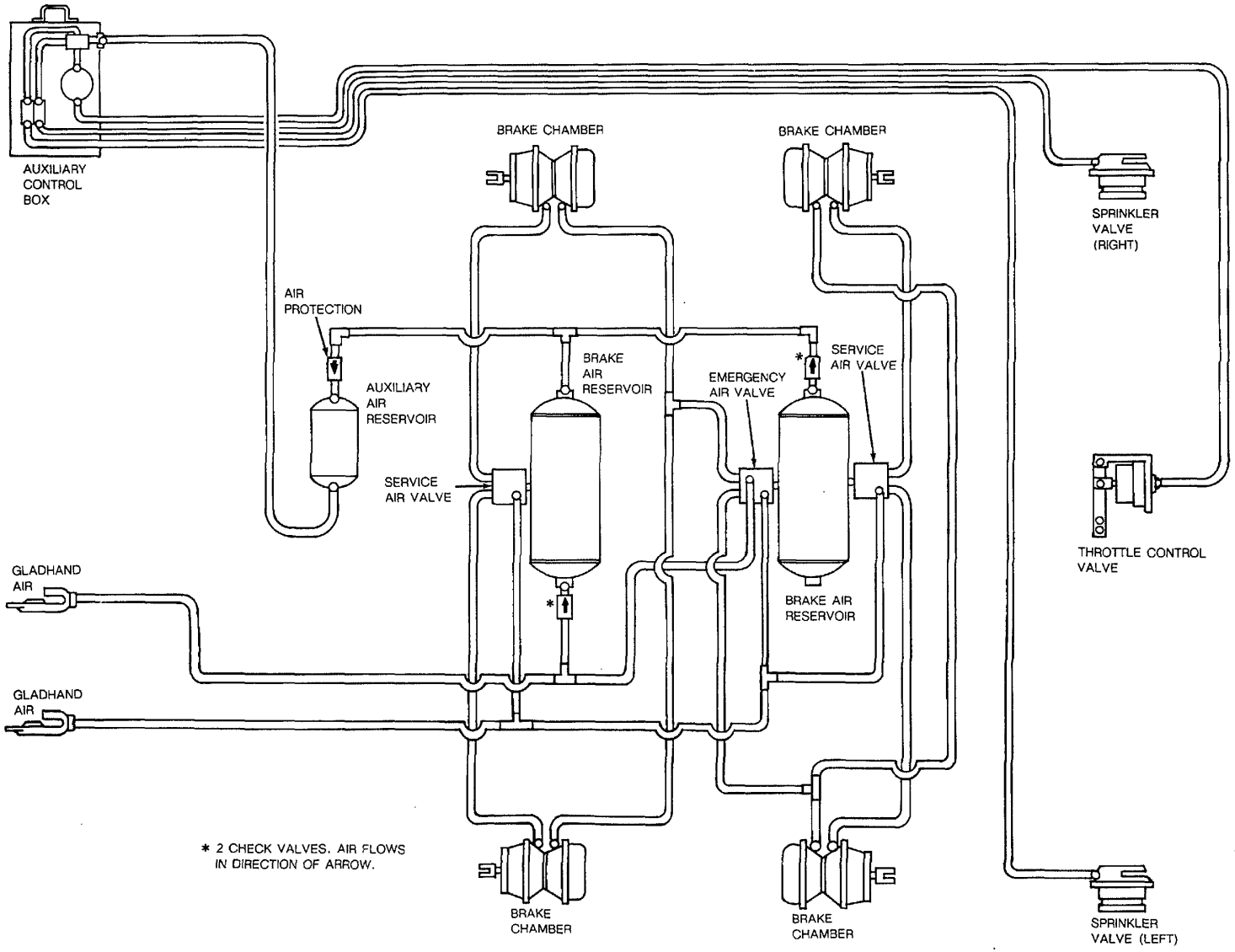

Figure 4-4. Air Line Diagram

TA506318

Section II. SERVICING AND LUBRICATION INSTRUCTIONS

4-2. GENERAL.

This section contains instructions necessary to perform periodic servicing and lubrication. For detailed instructions refer to Chapter 3, Section I.

a. Change Fuel Filters. Remove and inspect fuel filters (see paragraph 4-42).
b. Drain Water Trap. Open draincock on the bottom of the water trap and drain until fuel comes out.

NOTE
If the air restriction indicator has been tripped, it must be reset after changing the filter element.

c. Change Air Cleaner Filter Elements. Remove and inspect air cleaner filter element. If clogged or dirty, clean. Replace if damaged (see paragraph 4-44).
d. Check Crankcase Oil Level (See Figure 4-1).

(1) Remove the dipstick and check the crankcase oil level.
(2) The oil level must be kept between the FULL and ADD marks on the dipstick. If the level is below the ADD mark, add oil as necessary (see Chapter 3, Section I).

e. Change Crankcase Oil and Oil Filter.

NOTE
Oil should be drained when the engine is warm. Warm oil will flow faster and carry out any fine sediment with It.

(1) Remove drain plug from oil pan and drain oil.
(2) Replace oil filter element (see paragraph 4-41).
(3) Install crankcase drain plug and add oil to crankcase (see Figure 4-1).

CAUTION

Do not overfill the crankcase. The oil level must never be higher than the FULL mark on the dipstick or damage to the engine may occur.

(4) Check oil level. The oil must never be above the FULL mark on the dipstick. Drain oil as necessary to achieve the correct level in the crankcase.

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

4-3. GENERAL.

a. To ensure that the vehicle is ready for operation at all times, it must be inspected within designated intervals so that defects may be discovered and corrected before they result in serious damage or failure.
b. Table 4-1 is a tabulated listing of preventive maintenance checks and services (PMCS) to be performed by unit maintenance personnel.
c. All deficiencies and shortcomings, as well as the corrective action taken, will be recorded on DA Form 2404 as soon as possible.

4-4. PMCS PROCEDURES.

a. The item numbers on the tabulated listing indicate the sequence of the PMCS. Perform the PMCS at the intervals shown below:

(1) Do your *Quarterly* (Q) PMCS once every three months.
(2) Do your *Semiannual* (S) PMCS once every six months.

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only In a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point Is 100°F-130°F (38°C -59°C). If you become dizzy while using cleaning solvent, Immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

b. Keep your vehicle clean. Dirt, grease, oil, and debris only get in the way and may cover up a serious problem. Clean as you work and as needed. Use dry cleaning solvent (Item 7, Appendix D) to clean metal surfaces. Use soap and water when you clean rubber or plastic material.

c. If something doesn't work, troubleshoot it following the instructions in this manual or notify your supervisor.

d. Always do your PMCS in the same order so it gets to be a habit. Once you've had some experience, you'll quickly spot anything wrong.

e. If anything looks wrong and you can't fix it, write it down on your DA Form 2404. If you find something seriously wrong, report it to direct support maintenance as soon as possible.

f. While performing PMCS, inspect the following components:

(1*) Bolts, nuts, and screws.* Check for loose, missing, bent or broken hardware. You can't try them all with a tool, of course, but look for chipped paint, bare metal, or rust around bolt heads. Tighten any hardware you find loose.

(2) *Welds.* Look for loose or chipped paint, rust, or gaps where parts are welded together. If you find a bad weld, report it to direct support maintenance.

(3) *Electric wires and connectors.* Tighten loose connections and ensure that the wires are in good condition.

(4) *Hose and fluid lines.* Look for wear, damage, and leaks. Ensure that clamps and fittings are tight. Wet spots show leaks, of course, but a stain around a fitting or connector can mean a leak. Tighten all loose fittings or connectors. If something is broken or worn out, take corrective action or report to direct support maintenance.

g. For classification of LEAKAGE, refer to paragraph 2-4.

Table 4-1. Unit Preventive Maintenance Checks and Services (PMCS).

Q - Quarterly **S - Semiannual**

ITEM NO.	INTERVAL Q	INTERVAL S	ITEM TO BE INSPECTED	PROCEDURES
				NOTE **Perform operator/crew PMCS prior to or In conjunction with unit PMCS If:** **a. There is a delay between the daily operation of the equipment and the unit PMCS.** **b. Regular operator is not assisting/participating.**
1	•		**WIRING**	Check wires and connectors for correct assembly and good con- (see Figures 4-2 and 4-3).
2	•		**KINGPIN AND FIFTH WHEEL PLATE**	Lubricate kingpin and fifth wheel plate (see Chapter 3, Section I).

Table 4-1. Unit Preventive Maintenance Checks and Services (PMCS) (Con't).

Q - Quarterly **S - Semiannual**

ITEM NO.	INTERVAL Q	INTERVAL S	ITEM TO BE INSPECTED	PROCEDURES
3	•		SPRINGS	Check leaf springs for cracks, breaks, or a sagging condition.
4		•	AXLE ASSEMBLY	Check the axle for loose bolts and nuts. Torque loose bolts or nuts to 300 lb.-ft. (407 N-m).
5	•		BRAKE AIR LINES	Check air lines and fittings for damage and leaks.
6		•	MANHOLE COVER	Check manhole cover and gasket for cracks.
7	•		DRIVE BELT	Check for wear, damage, and proper tension. Proper tension is 3/8 in. (10 mm) deflection. Adjust as required (see paragraph 4-51).
8	•		ENGINE	a. Change crankcase oil and filter (see paragraph 4-41).
	•			b. Change fuel filter element (see paragraph 4-42).
	•			c. Inspect flywheel for cracks or damage
9	•		BATTERY	a. Check for cracks in the battery casing.
	•			b. Check electrolyte specific gravity in each cell (see paragraph 4-20). If any cell reads less than 1.150, replace the battery (see paragraph 4-20).
10	•		BRAKE DRUM AND HUB	**WARNING** **Overheated brakedrums and hubs can cause severe burns to personnel when touched** Immediately after road test, cautiously feel brakedrums and hubs. An overheated wheel hub or brakedrum indicates defective or improperly adjusted wheel bearings or dragging brakes. An abnormally cool condition indicates an inoperative brake.

Section IV. UNIT TROUBLESHOOTING PROCEDURES

4-5. GENERAL.

a. This section contains the troubleshooting procedures assigned to water distributor unit maintenance personnel.

b. Possible water distributor malfunctions are listed in the Troubleshooting Symptom Index (see paragraph 4-6). The Troubleshooting Table (Table 4-2) lists the malfunction, the probable cause and the corrective action to be taken.

c. Before performing unit troubleshooting, ensure that all applicable operator/crew troubleshooting has been performed.

d. If any of the following malfunctions cannot be corrected or their cause cannot be found, notify direct support maintenance personnel.

4-6. TROUBLESHOOTING SYMPTOM INDEX.

4-2. Unit Troubleshooting.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

1. ENGINE FAILS TO CRANK.

Step 1. Check the battery cables for fraying, chafing, corrosion, or looseness.

Replace, clean, or tighten battery cables as necessary (see paragraph 4-20).

Step 2. Test the battery for low charge (see paragraph 4-20).

Replace the battery as necessary (see paragraph 4-20).

Step 3. Test the ignition switch and the starter switch. Turn ignition switch to ON and check the voltage across the switch with a multimeter. It should read 12V. Push the starter switch and check the voltage across it with a multimeter. It should read 1 2V. Check all the ignition wire terminals for damage or looseness.

Replace switches as necessary. Replace or tighten wires and terminals as necessary (see paragraph 4-21).

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

Step 4. Test starter. Use a multimeter and ensure that there are 12V to the starter when the ignition switch is turned to START.

If there are 12V of power to the starter but it does not turn over, replace it (see paragraph 4-52).

2. ENGINE CRANKS BUT DOES NOT START.

Step 1. Test the battery for low charge (see paragraph 4-20).

Replace battery as necessary (see paragraph 4-20).

Step 2. Check the air restriction indicator. If it shows red, check the air cleaner filter element.

Replace the filter element as necessary (see paragraph 4-44).

Step 3. Ensure that the exhaust system is not clogged.

Clear the exhaust system or replace as necessary (see paragraph 449).

Step 4. Ensure that the fuel tank strainer element is clear of obstructions.

Clear the strainer element as necessary (see paragraph 4-46).

Step 5. Ensure that the fuel is clean and free of contamination.

Drain the fuel tank, fuel filters, fuel pump, and fuel injector pump. Fill the fuel tank with clean fuel and prime the fuel system (see paragraph 4-42).

Step 6. Check the throttle control solenoid and circuit breaker. Turn ignition switch to ON and check the voltage across the circuit breaker with a multimeter. The meter should read 12V. Turn ignition switch to ON and check the action of the throttle control solenoid. If it does not activate, check the voltage across the terminals with a multimeter.

Replace the circuit breaker as necessary.

If the voltage is less than 9V ensure the terminal connections are secure. If the voltage remains below 9V, replace the solenoid (see paragraph 4-48).

Step 7. Ensure that the fuel filter elements are clean.

Replace both filter elements as a set. Discard the old filter elements; do not attempt to clean or reuse them (see paragraph 4-42).

CAUTION

Always prime the fuel system whenever a part of the fuel system has been disconnected or equipment could be damaged.

Step 8. Test the fuel pump. Disconnect the fuel line from the discharge side of the fuel pump. Crank the engine. A well defined spurt of fuel should flow from the pump every other revolution of the engine.

Replace the fuel pump as necessary (see paragraph 4-43).

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

3. ENGINE DOES NOT DEVELOP FULL POWER.

CAUTION

Always prime the fuel system whenever a part of the fuel system has been disconnected or equipment could be damaged.

Step 1. Check for moisture in the fuel.

If moisture is present in the fuel, drain the fuel tank, fuel filters, water trap, fuel pump, and fuel injector pump and refill the fuel system. Prime the system and bleed air from the fuel (see paragraph 4-42).

Step 2. Check the air restriction indicator (see Malfunction 2, step 2).

Step 3. Check exhaust system for obstructions (see Malfunction 2, step 3).

Step 4. Check the fuel filter elements for obstructions (see Malfunction 2, step 7).

Step 5. Test the fuel pump (see Malfunction 2, step 8).

4. EXHAUST IS SMOKY.

Step 1. Check the air restriction indicator (see Malfunction 2, step 2).

Step 2. Check exhaust system for obstructions (see Malfunction 2, step 3).

5. OIL PRESSURE IS LOST.

CAUTION

DO NOT over fill crankcase. The oil level must never be higher than the FULL mark on the dipstick or damage to the engine may occur.

Step 1. Check the crankcase oil level. The oil level should be between the FULL and ADD marks on the dipstick.

Add oil to crankcase as necessary (see Chapter 3, Section I).

Step 2. Check the oil filter element for clogging.

Replace the oil filter element as necessary. Discard the old element; do not attempt to clean or reuse it (see paragraph 4-41).

Step 3. Ensure that the oil pressure gage is functioning correctly.

Replace the oil pressure gage as necessary (see paragraph 4-15).

6. ENGINE OVERHEATS.

WARNING

Ensure that steam pressure has been relieved before removing the radiator cap. Personnel could be severely burned by escaping steam.

Step 1. Check coolant level in radiator.

Add coolant as necessary (see Chapter 3, Section 1).

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

CAUTION

DO NOT over fill the crankcase. The oil level must never be higher than the FULL mark on the dipstick or damage to the engine may occur.

Step 2. Check crankcase oil level. The oil level should be between the FULL and ADD marks on the dipstick.
Add oil to crankcase as necessary (see Chapter 3, Section I).

Step 3. Check fan belt tension and tighten as necessary (see paragraph 4-51).

Step 4. Ensure that the front of the radiator is not clogged with dust and debris.
Clean the front of the radiator as necessary.

Step 5. Check oil filter element for clogging (see Malfunction 5, step 2).

Step 6. Inspect and test the thermostat. Immerse the thermostat in a container of water and slowly heat the water. Use a calibrated thermometer and observe the temperature where the thermostat begins to open. It should begin to open at 175-182°F (79.5-83.5°C). It should be fully open at 220°F (140°C). The opening should not be less than 0.31 in. (7.87 mm).
Replace the thermostat if it does not function properly.

7. WATER DISTRIBUTOR PUMP WILL NOT PRIME.

Step 1. Check for air leaks in the plumbing or suction hose on the suction side of the pump.
Tighten loose fittings and pipe joints.
Repair or replace suction hose as necessary (see paragraph 4-33).
Replace hose coupling gaskets as necessary.

Step 2. Check the foot valve and strainer for clogging.
Clean the foot valve and strainer as necessary (see paragraph 4-32).

8. PUMP STOPS PUMPING UNTIL THE ENGINE IS STOPPED AND RESTARTED.

Check suction hose for collapsed section.
Repair or replace suction hose as necessary (see paragraph 4-33).

9. AUXILIARY THROTTLE CONTROL VALVE DOES NOT OPERATE.

Step 1. Check all air lines, throttle control valve, air control valves, air reservoirs, sprinkler valves, and sprinkler nozzles for air leaks (see Figure 4-4).

Step 2. Check the pressure in the brake air reservoirs. The tractor air pressure gage should read greater than 75 psi (517 kPa).
If the tractor air pressure is less than 75 psi (517 kPa), refer to the tractor maintenance manual.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

WARNING

Use extreme caution when opening draincock. Wear safety goggles to protect against eye Injury due to high pressure air.

NOTE

When the draincock is closed, the pressure protection valve will pulsate as the auxiliary air reservoir refills.

Step 3. Open the draincock on the auxiliary air reservoir. When the draincock is opened, a strong air flow from the reservoir should be evident. Close draincock.

If there is no pressure in the auxiliary air reservoir but there is pressure in the brake reservoirs, replace the pressure protection valve at the inlet to the auxiliary air reservoir (see paragraph 4-24).

If there is pressure in the auxiliary air reservoir and brake air reservoir, check the throttle control valve and the air control valves for defects and replace them as necessary (see paragraphs 4-37 and 4-47).

10. SPRINKLER VALVES DO NOT OPERATE.

Step 1. Check all air lines, throttle control valve, air reservoirs, sprinkler nozzles, and air control valves for air leaks (see Figure 4-4).

Step 2. Perform Malfunction 9, step 2.

Step 3. Perform Malfunction 9, step 3.

Section V. GENERAL MAINTENANCE INSTRUCTIONS

4-7. GENERAL.

This section contains general maintenance instructions for unit maintenance personnel. These instructions cover removal, cleaning, inspection, repair, and installation procedures to be followed when maintaining the water distributor.

4-8. REMOVAL PROCEDURES.

a. Disconnect the battery ground cable before removing electrical parts.
b. Prior to removal, clean the area around air or fuel line fittings to prevent dirt from entering into ports as the fitting is removed. Cover or plug all open ports or lines.
c. Attach identifying tags to the mating ends of electrical, air, and fuel lines asthey are disconnected.
d. Use proper lifting devices when removing heavier components. Ensure that these devices are correctly arranged and attached before removing attaching hardware.

4-9. CLEANING PROCEDURES.

WARNING

Dry cleaning solvent P-D-680 Is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F-130°F (38°C -59°C). If you become dizzy while using cleaning solvent, Immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

a. Do not spray or soak electrical parts such as coils, junction blocks, switches, and insulated wires in cleaning solutions. Use a clean, lint-free cloth moistened with dry cleaning solvent (Item 7, Appendix D).
b. Use a cleaning compound to clean external parts and components.

CAUTION

Do not expose preformed packing, gaskets or other rubber materials to cleaning solvents. The solvents will destroy them.

c. Use dry cleaning solvent (Item 7, Appendix D) to clean bearings and internal engine parts. If necessary, brush caked grease and dirt from parts. Be careful not to score or damage facing parts. Spin bearings in light lubricating oil after cleaning to remove solvent.

4-10. INSPECTION PROCEDURES.

a. Check all hose surfaces for broken or frayed fabric. Check for breaks caused by sharp kinks or rubbing against other parts of the water distributor.
b. Inspect metal tubing lines for kinks.
c. Inspect fitting threads for damage.
d. Visually inspect all castings and weldments for cracks.
e. Inspect all wires for chafed or burned insulation. Inspect all terminal connections for loose connections and broken parts.
f. Inspect all bearings and bearing cups in accordance with TM 9-214.

4-11. REPAIR PROCEDURES.

a. Replace all broken, frayed, crimped or soft flexible lines and hoses. Replace fittings that arestripped or damaged. Ensure that hose clamps do not crimp hoses.
b. Replace all broken, worn, burned, or chafed electrical wiring. Wires with several broken strands must be replaced. Broken strands increase the resistance of the wire and affect the efficiency of the electrical components.
c. Replace any bolt, screw, nut, or fitting with damaged threads. Inspect tapped holes for thread damage. If cross threading or spalling is evident, drill and tap the hole for an oversize screw or stud. When retapping will result in weakening the part, or when the cost of the part makes retapping impractical, replace the damaged part. At times, merely chasing the threads with the proper size tap or die will be adequate.

4-12. REPLACEMENT OF BRASS FITTINGS.

Some of the air line brass fittings on the semitrailer bulk-head and in the auxiliary control box are not currently in the Army's supply system. If any of these brass fittings have to be replaced, use fittings from the fitting kit (NSN 4730-00-470-6625) in the organizational maintenance tool set.

4-13. INSTALLATION PROCEDURES.

a. Remove protective grease coatings from new parts prior to installation.

b. Lubricate all preformed packings with a thin coating of light oil of the same type used in the system before installation. Clean the groove, then stretch preformed packing and place into position. Rotate component on flat surface, applying downward pressure to press the preformed packing uniformly into position.

c. To provide added sealing for gaskets, coat both sides with nonhardening oil-resistant sealing compound (Item 3, Appendix D). Ensure that all traces of previous gasket and sealant are removed before installing new gasket.

d. Install oil seals with seal lip facing in proper direction, applying even force to the outer edge of seal. Coat oil seals evenly with oil or grease before installing. If oil seals are to be installed over keyed or splined shafts, use a guide to prevent sharp edges of the keyway or splines from cutting the lips of the seal. Guides can be constructed of very thin gage sheet metal and shaped to the required diameter. Ensure that the guide edges are not sharp and are bent slightly inward so they do not cut the seal.

e. When installing bearings in a housing, apply force to the outer race or cup to seat the bearing. When mounting bearings on shafts, always apply force to the inner races.

f. Lubricate bearings prior to assembly with the type of lubricant normally used in the related housing or container. This will provide lubrication during the first run-in until lubricant from the system can reach the bearing.

g. Following assembly and installation, and during operational period, check for leaks. Refer to Appendix G for all torque values.

4-14. ENGINE SAFETY DEVICES REPLACEMENT.

a. Removal.

(1) Disconnect and tag wires from tattletale switch, ignition switch, and starter switch at engine instrument control panel (see Figure 4-5).
(2) Remove fuse (3, Appendix F, Figure 1) from tattletale switch (2).
(3) Remove retaining nut, washer, and tattletale switch (2) from control panel.
(4) Remove knurled nut and ignition switch (1) from control panel.
(5) Remove knurled nut and starter switch (4) from control panel.

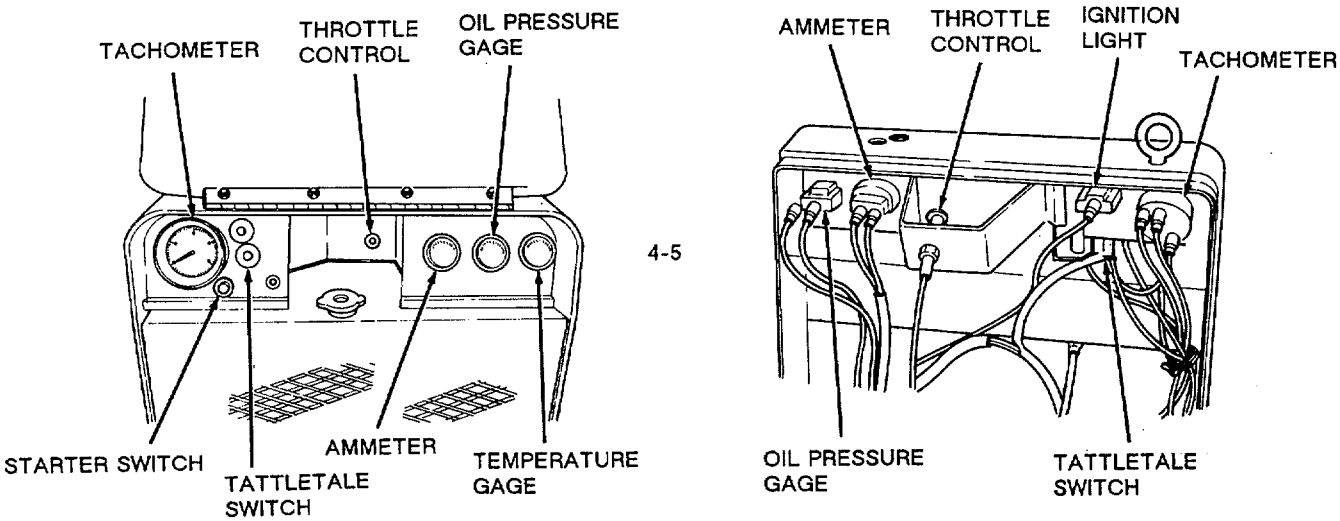

Figure 4-5. Engine Safety Devices.

b. Installation.

(1) Install starter switch (4, Appendix F, Figure 1) to control panel with knurled nut.
(2) Install ignition switch (1) to control panel with knurled nut.
(3) Install fuse (3) in tattletale switch (2).
(4) Install tattletale switch (2) to control panel with washer and retaining nut.
(5) Connect wires to tattletale switch, ignition switch, and starter switch as tagged (see Figure 4-5).

4-15. ELECTRICAL GAGES AND TACHOMETER MAINTENANCE.

a. Removal (See Figures 4-5 and 4-6).

NOTE

All lead wires should be tagged to ensure proper installation.

(1) Disconnect lead wires from back of temperature gage (4, Appendix F, Figure 2).
(2) Remove mounting nuts and mounting bracket from the back of engine instrument control panel.
(3) Remove temperature probe from engine head and temperature gage (4) from control panel.
(4) Disconnect wire leads and hose from oil pressure gage (5).
(5) Remove mounting nuts, mounting bracket, and oil pressure gate (5) from control panel.
(6) Disconnect lead wires from back of ammeter (6).
(7) Remove mounting nuts, mounting bracket, and ammeter (6) from control panel.
(8) Remove socket and light bulb)2) from back of tachometer (1).
(9) Disconnect lead wires from tachometer (1).
(10) Remove mounting nuts, mounting bracket, and tachometer (1) from control panel.

NOTE
The tachometer sending unit is located on the camshaft side of the engine..

(11) Remove tachometer sending unit from the engine block (see Figure 4-6).

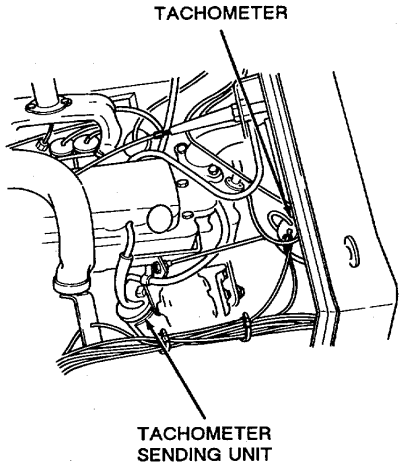

Figure 4-6. Tachometer Sending Unit.

b. Testing Temperature Gage. The temperature gage can be tested without removing the gage from the engine instrument control panel. This switch is used in conjunction with the tattletale switch and is set to actuate at 200°F (93°C).

(1) Remove the temperature probe from the engine block and place it in a container of water heated to a known temperature above 200°F (93°C).

NOTE
Use a calibrated thermometer to measure the actual water temperature.

(2) Compare the actual temperature with the temperature gage reading. If the readings differ by± 5°F (± 15°C), replace the temperature gage.

(3) Reset the tattletale switch and turn ignition switch to ON. If the tattletale switch does not actuate when the temperature probe is placed in the water, replace the temperature gage switch after checking the tattletale switch.

c. Testing Oil Pressure Gage. The oil pressure gage switch can be tested without removing it from the engine instrument control panel.

(1) Disconnect the pressure line from the oil pressure gage.
(2) Apply a known pressure to the oil pressure gage switch and compare the gage reading with the actual pressure. If the oil pressure gage reading is inaccurate, replace the oil pressure gage switch.
(3) Reset the tattletale switch and turn the ignition switch to ON.
(a) Apply a pressure less than 25 psi (172 kPa) to the oil pressure gage switch.
(b) Apply a pressure greater than 60 psi (414 kPa) to the oil pressure gage switch. If the tattletale switch fails to actuate in both cases above, replace the pressure gage switch after checking the tattletale switch.

d. Testing Ammeter. Check the accuracy of the ammeter with an ampere meter. If the ammeter is faulty, replace it.

e. Installation (See Figures 4-5 and 4-6).

(1) Install temperature gage (4, Appendix F, Figure 2) to control panel with mounting bracket and nuts.
(2) Connect lead wires to temperature gage (4).
(3) Attach temperature probe to engine block.
(4) Install oil pressure gage (5) to control panel with mounting bracket and nuts.
(5) Connect wire leads to oil pressure gage*(5).*
(6) Connect pressure line to engine and oil pressure gage (5).
(7) Install ammeter (6) to control panel with mounting bracket and nuts.
(8) Connect wire leads to ammeter (6).
(9) Attach tachometer sending unit to engine block (see Figure 4-6).
(10) Install tachometer (1, Appendix F, Figure 2) in control panel with mounting bracket and nuts.
(11) Connect lead wires and sending unit wires to the tachometer (1).

4-16. MAIN JUNCTION BOX MAINTENANCE.

a. Removal and Disassembly (See Appendix F, Figure 3).

b.

NOTE

Identify and tag all wires as they are disconnected. This will aid in reassembly.

(1) Disconnect power lines from junction box receptacles (3 and 5).
(2) Remove screws (7) and enclosure (6) from junction box.
(3) Disconnect wires from terminal block (13), fuse block (10), resistors (21 and 29), and receptacles (3 and 5).
(4) Disconnect conduit (5, Appendix F, Figure 10) from junction box.
(5) Remove screws (33, Appendix F, Figure 3), nuts (32), and lockwashers (31) from junction box and separate junction box from mounting bracket. Discard lockwashers.
(6) Remove nuts (8) and lockwashers (9) from enclosure (6) and separate it from junction box. Discard lockwashers.
(7) Remove circuit breakers (12) from fuse block (10).
(8) Remove screws (11) and fuse block (10) from enclosure (6).
(9) Remove screws (11) and terminal block (13).
(10) Remove screw (28), nut (23), lockwasher (24), washers (26 and27), and resistor (29). Discard lockwasher.

(11) Remove screws (20), nut (15), lockwasher (16), washers (18 and 19), and resistors (21). Discard lockwasher.
(12) Remove screws (11) and brackets (17 and 25).
(13) Remove screw (2), nuts (8), lockwashers (9), receptacles (3 and 5), gasket (30), and connector pin (4). Discard lockwashers and gasket.

b. Test and Repair.

(1) Use a multimeter to test the resistors. Resistor (29) should read 0.9 ohms and resistor (21) should read 4.5 ohms. Replace the resistors if the readings are incorrect.
(2) Use a multimeter to test the circuit breakers' resistance. If the meter reads greater than 5 ohms, replace the circuit breaker. If the meter reads zero, the circuit breakers are okay.

c. Assembly and Installation (See Appendix F, Figure 3).

(1) Attach fuse block (10), terminal block (13), and brackets (17 and 25) to enclosure (6).
(2) Attach circuit breakers (12) to fuse block (10).
(3) Attach resistor (29) to brackets (25) with washers (26 and 27), new lockwasher (24), nut (23), and screw (28).
(4) Attach resistor (21) to brackets (17) with washers (18 and 19), new lockwasher (16), nuts (15), and screws (20).
(5) Attach enclosure (6) to junction box with new lockwashers (9) and nuts (8).
(6) Insert connector pin (4) into receptacle (5).
(7) Attach receptacles (3 and 5) and new gasket (30) to junction box door with new lockwashers (9), nuts (8), and screws (2).
(8) Thread wires into junction box assembly. Install junction box assembly to mounting brackets with new lockwashers (31), nuts (32), and screws (33).
(9) Connect conduit (5, Appendix F, Figure 10) to junction box.
(10) Connect wires to fuse block (10, Appendix F, Figure 3), terminal block (13), receptacles (3 and 5), and resistors (21 and 29). Use wiring diagram to aid in connecting wires at proper terminals (see Figures 4-2 and 4-3).
(11) Install enclosure (6, Appendix F, Figure 3) to junction box with screws (7).

4-17. JUNCTION BOX (LIGHTS) MAINTENANCE.

a. Removal and Disassembly (See Appendix E Figure 8).

(1) Pry junction box cover (7) from body (3) and remove preformed packing (6). Discard preformed packing.
(2) Disconnect wires from terminal board (4).
(3) Remove screws (5) and terminal board (4) from body (3).
(4) Remove nuts (10), lockwashers (9), screws (8), and body (3) from rear bumper. Discard lockwashers.
(5) Remove relief valve (2) from body (3).

b. Assembly and Installation (See Appendix E Figure 8).

(1) Attach relief valve (2) to body (3).
(2) Attach body (3) to rear bumper with nuts (10), new lockwashers (9), and screws (8).
(3) Thread wires from conduit into body (3) and attach conduit to body.
(4) Attach terminal board (4) to body (3) with screws (5). Connect wires to terminal block.
(5) Insert new preformed packing (6) and press junction box cover (7) into body (3).

4-18. CLEARANCE LIGHTS MAINTENANCE.

NOTE

- **Maintenance of all clearance lights is similar. The triple clearance light Is described here.**
- **A gasket Is provided for all clearance lights except the rear clearance lights.**

a. Removal and Disassembly (See Appendix E Figure 5).

(1) Pry lens (5) from body (3) and remove preformed packing (6) from body. Discard preformed packing.
(2) Disconnect wires and remove conduit from light assembly (1).
(3) Remove lamps (4) from socket.
(4) Remove nuts (9), lockwashers (8), screws (7), and light assembly (1). Discard lockwashers.
(5) Separate bodies (3) from pipe nipples (2) and remove pipe plug (10).

b. Assembly and Installation (See Appendix E Figure 5)

(1) Insert pipe nipples (2) and pipe plug (10) into bodies (3).
(2) Attach bodies (3) to mounting bracket with screws (7), new lockwashers (8), and nuts (9).
(3) Thread wires through bodies (3) and nipples (2), and attach conduit to body.
(4) Insert lamp (4) into socket and connect wires.
(5) Ensure that lights operate correctly.
(6) Insert new preformed packing (6) and press lens (5) into body (3).

4-19. TAILLIGHTS AND STOP AND TURN LIGHTS MAINTENANCE.

a. Removal and Disassembly (See Appendix E Figure 6).

NOTE

Stop, turn, and taillights are removed and disassembled the same.

(1) Pry lens (7) from body (9) and remove preformed packing (8). Discard preformed packing.
(2) Disconnect wire, conduit, and pipe plug (4) from body (9).
(3) Remove lamp (6).
(4) Remove screws (3), nuts (1), lockwashers (2), body (9), and gasket (10) from rear bumper. Discard lockwashers and gasket.

b. Assembly and Installation (See Appendix E Figure 6).

NOTE

Stop, turn, and taillights are assembled and installed the same.

(1) Attach new gasket (10) and body (9) to rear bumper with screws (3), new lockwashers (2), and nuts (1).
(2) Thread wire from conduit into body (9) and attach conduit to body.
(3) Install lamp (6).
(4) Ensure that lights operate correctly.
(5) Install new preformed packing (8) and press lens (7) into body (9).

4-20. BATTERY AND BATTERY BOX MAINTENANCE.

a. Battery Box Disassembly (See Appendix Figure 9).

(1) Unlatch and remove battery box cover (9).
(2) Remove wingnut (6), washer (7), screw (11), and retainer (8).

(3) Disconnect battery cables (5) and remove battery (12) from battery box (10).
(4) Remove battery cables (5) and grommets (13) from battery box (10).

b. Testing Battery Specific Gravity.

(1) Specific gravity of the electrolyte (distilled water and acid solution) determines the temperature at which a battery will be harmed or damaged by freezing. Table 4-3 gives the freezing point of battery electrolyte at given specific gravities.
(2) The battery box is a good heat insulator and the electrolyte temperature will lag several hours behind atmospheric temperature.
(3) The specific gravity of the electrolyte must be maintained at 1.225 minimum. The level of the solution should be at the star level in the cell covers. A fully charged battery has a specific gravity of 1.255-1.270 at 80°F (270C).
(4) To eliminate the possibility of harmful sulfation of plates, a battery with a specific gravity of 1.225 or less should be recharged.
(5) Table 4-4 shows the effect of temperature on the capacity of a battery.

c. Checking Battery Visually.

(1) If there is any corrosion on the battery or around the terminals, rinse it off with a baking soda and water solution.
(2) Remove any dirt on top of the battery.

Table 4-3. Electrolyte Specific Gravity.

Specific Gravity	Freezing Point	
1.280	**-90°F**	**(-68°C)**
1.220	**-30°F**	**(-34°C)**
1.210	**-20°F**	**(-29°C)**
1.180	**-10°F**	**(-23°C)**
1.160	**0°F**	**(-18°C)**
1.140	**10°F**	**(-12°C)**
1.100	**20°F**	**(-7°C)**
1.000	**32°F**	**(O°C)**

Table 4-4. Effect of Temperature On Battery Capacity.

State of Charge	Electrolyte Temperature		Percentage Capacity
Full	**80°F**	**(27°C)**	**100**
Full	**60°F**	**(16°C)**	**88**
Full	**40°F**	**(4°C)**	**75**
Full	**20°F**	**(-7°C)**	**62**
Full	**0°F**	**(-18°C)**	**45**
Full	**-20°F**	**(-29°C)**	**20**

(3) If there are cracks in the sides or the cover of the battery, replace it.
(4) If the cable insulation is frayed or broken, replace the cable.

d. Checking Battery Voltage With a multimeter.

(1) Connect the positive (+) meter lead to the positive (+) battery terminal and the negative (-) meter lead to the negative (-) battery terminal.
(2) If the meter reads between 11.5 and 12V, the battery is okay.
(3) If the meter reads less than 11.SV, check the electrolyte level in the battery. Use a hydrometer to check the specific gravity.

e. Checking Electrolyte Level.

CAUTION

- **The electrolyte level must be kept above the plates in the battery or the plates will deteriorate.**

- **Do not overfill the battery. The electrolyte should not overflow onto the battery cover when the cell covers are placed over the cells or equipment could be damaged.**

(1) Remove the cell covers and check the electrolyte level. Add distilled water if the level is below the top of the plates.
(2) Use a hydrometer to check the specific gravity:
(a) If the specific gravity is between 1.250 and 1.280, the cells are okay.
(b) If the specific gravity is between 1.225 and 1.250, the cells are still in fair condition.
(c) If the specific gravity is below 1.150 in any one cell, charge the battery.

f. Charging Battery.

(1) If the battery does not hold a charge, replace the battery.
(2) If the battery holds a charge, return the battery to the battery box.

g. Checking Battery Cables With Multimeter.

(1) Connect a meter lead to each end of the cable being tested.
(2) Wiggle the cable.
(3) If the cable conducts a current, cable is okay.
(4) If the cable does not conduct, replace it.
(5) If any of the cables or insulation are frayed, broken, or cracked, repair them or replace them as necessary.

h. Battery Box Assembly (See Appendix E Figure 9).

(1) Thread battery cables (5) through grommets (13) and battery-box (10) and install grommets in battery box.
(2) Place battery (12) in battery box (10). Connect battery cables (5) to battery, engine, and ground connection.
(3) Install retainer (8) and secure it in place with screw (11), washer (7) and wing nut (6).
(4) Install and latch battery box cover (9).

4-21. WIRES AND TERMINALS INSPECTION.

a. Ensure that all terminal connections are fastened securely (see Figures 4-2 and 4-3).
b. Check insulation for cracking, chafing, or fraying.
c. Ensure that all conduits are securely mounted to the frame.
d. Replace any damaged or worn parts.

Section VII. BRAKE SYSTEM MAINTENANCE

4-22. BRAKESHOES AND SLACK ADJUSTER REPLACEMENT.

WARNING

DO NOT handle brakeshoes, brakedrums, or other brake components unless area has been properly cleaned. There may be asbestos dust on these components which can be dangerous If you touch it or breathe it. Wear an approved filter mask and gloves. Never use compressed air or a dry brush to clean brake components. Dust may be removed using an industrial-type vacuum cleaner. Clean dust or mud away from brake components with water and a wet, soft brush or cloth. Failure to follow this warning may result In serious Illness or death to personnel.

a. Removal (See Appendix F, Figures 20 and 21).

(1) Remove wheel assemblies (see paragraph 4-26).
(2) Remove brakedrum, hub and wheel bearings (see paragraph 4-25).
(3) Disconnect slack adjuster (5, Appendix F, Figure 21) from brake chamber (see paragraph 4-23).
(4) Remove retaining ring (6), slack adjuster (5), spacer (4), and preformed packing (3). Discard retaining ring and preformed packing.
(5) Remove shoe return spring (1, Appendix F, Figure 20).
(6) Remove retaining rings (6) and washers (7). Discard retaining rings.
(7) Knock out anchor pin (9) and bushing (8), and remove brakeshoes (2).
(8) Remove roller retaining spring (12), spring pin (10), and rollers (11).
(9) Remove screws (5), lockwashers (4), and dust shield (3). Discard lockwashers.
(10) Remove screws (7, Appendix F, Figure 21), lockwashers (8), washers (9), camshaft bushing and retainer assembly (2), and preformed packing (3). Discard lockwashers and preformed packing.
(11) Remove retaining ring (6), washer (10), and camshaft (14).
(12) Remove washer (10), preformed packing (13), bushing (12), and seal (11). Discard preformed packing and seal.

b. Inspection.

(1) Check anchor pin for wear and signs of misalinement.
(2) Check brakeshoes for wear at anchor pin holes.
(3) Check camshaft and camshaft bushing for wear.
(4) Replace shoe return springs when replacing shoes.
(5) Check brake linings for grease saturation, wear, and loose rivets or bolts.
(6) Replace any worn or damaged parts.

c. Installation (See Appendix F Figures 20 and 21).

(1) Install new seal (11), bushing (12), new preformed packing (13), and washer (10, Appendix F, Figure 21).
(2) Install camshaft (14), washer (10), and retaining ring (6).
(3) Attach camshaft bushing and retainer assembly (2) and new preformed packing (3) to camshaft (14) and axle with washers (9), new lockwashers (8), and screws (7).
(4) Attach dust shield (3, Appendix F, Figure 20), to spider with new lockwashers (4) and screws (5).
(5) Attach rollers (11) to brakeshoes (2) with spring pin (10) and roller retaining spring (12).
(6) Attach brakeshoes (2) to spider with bushing (8) and anchor pin (9).
(7) Secure anchor pin (9) with washers (7) and new retaining rings (6).

(8) Attach shoe return spring (1) to brakeshoes (2).
(9) Connect preformed packing (3, Appendix F, Figure 21), washer (4), and slack adjuster (5) with new retaining ring (6).
(10) Connect slack adjuster (5) to brake chamber (see paragraph 4-23).
(11) Install brakedrum, hub and wheel bearings (see paragraph 4-25).
(12) Install wheels (see paragraph 4-26).

4-23. BRAKE CHAMBER REPLACEMENT.

a. Removal (See Appendix E Figure 26).

WARNING

- **Open air reservoir draincocks before removing brake chamber or personnel could be Injured.**

- **Use extreme caution when opening draincocks. Wear safety goggles to prevent eye injury due to high pressure air.**

(1) Open draincocks and drain air from air reservoirs.
(2) Tag and disconnect air lines from brake chamber (2).
(3) Remove cotter pin (5) and clevis pin (7). Discard cotter pin.
(4) Separate slack adjuster and clevis (6).
(5) Remove clevis (6) and nut (1).
(6) Remove nuts (4), lockwashers (3), and brake chamber (2). Discard lockwashers.

b. Installation (See Appendix E Figure 26).

(1) Attach brake chamber (2) to axle with new lockwashers (3) and nuts (4).
(2) Install nut (1) and clevis (6) to brake chamber (2).
(3) Connect slack adjuster to clevis (6) with clevis pin (7) and new cotter pin (5).
(4) Connect air lines to brake chamber (2) as tagged.

4-24. AIR RESERVOIRS AND BRAKE VALVES REPLACEMENT.

a. Removal (See Appendix F; Figures 23 and 25).

WARNING

- **Use extreme caution when opening draincocks. Wear safety goggles to prevent eye injury due to high pressure air.**

(1) Open reservoir draincocks (9, Appendix F, Figure 25) and drain air from air reservoirs (see Figure 4-7).
(2) Tag and disconnect air lines from air reservoirs.
(3) Remove screws (12), washers (11), grommets (10), nuts (1), lockwashers (2), and pressure tanks (5, 8, and 13) from frame. Discard lockwashers.
(4) Remove draincocks (9) from pressure tanks (5, 8, and 13).
(5) Remove brake valves (3 and 6) from pressure tanks (5 and 8).
(6) Remove brake valve (1, Appendix F, Figure 23) from pressure tank (13, Appendix F, Figure 25).

b. Installation (See Appendix F, Figures 23 and 25).

(1) Install draincocks (9, Appendix F, Figure 25) in pressure tanks (5, 8, and 13).
(2) Install brake valve (1, Appendix F, Figure 23) in pressure tank (13, Appendix F, Figure 25).
(3) Install brake valves (3 and 6) to pressure tanks (5 and 8).
(4) Install pressure tanks (5, 8 and 13) to frame with washers (11), screws (12), grommets (10), new lockwashers (2) and nuts (1).
(5) Connect air lines to air reservoirs as tagged (see Figure 4-7).
(6) Charge the pressure tanks with air and check all joints and fittings for leaks.

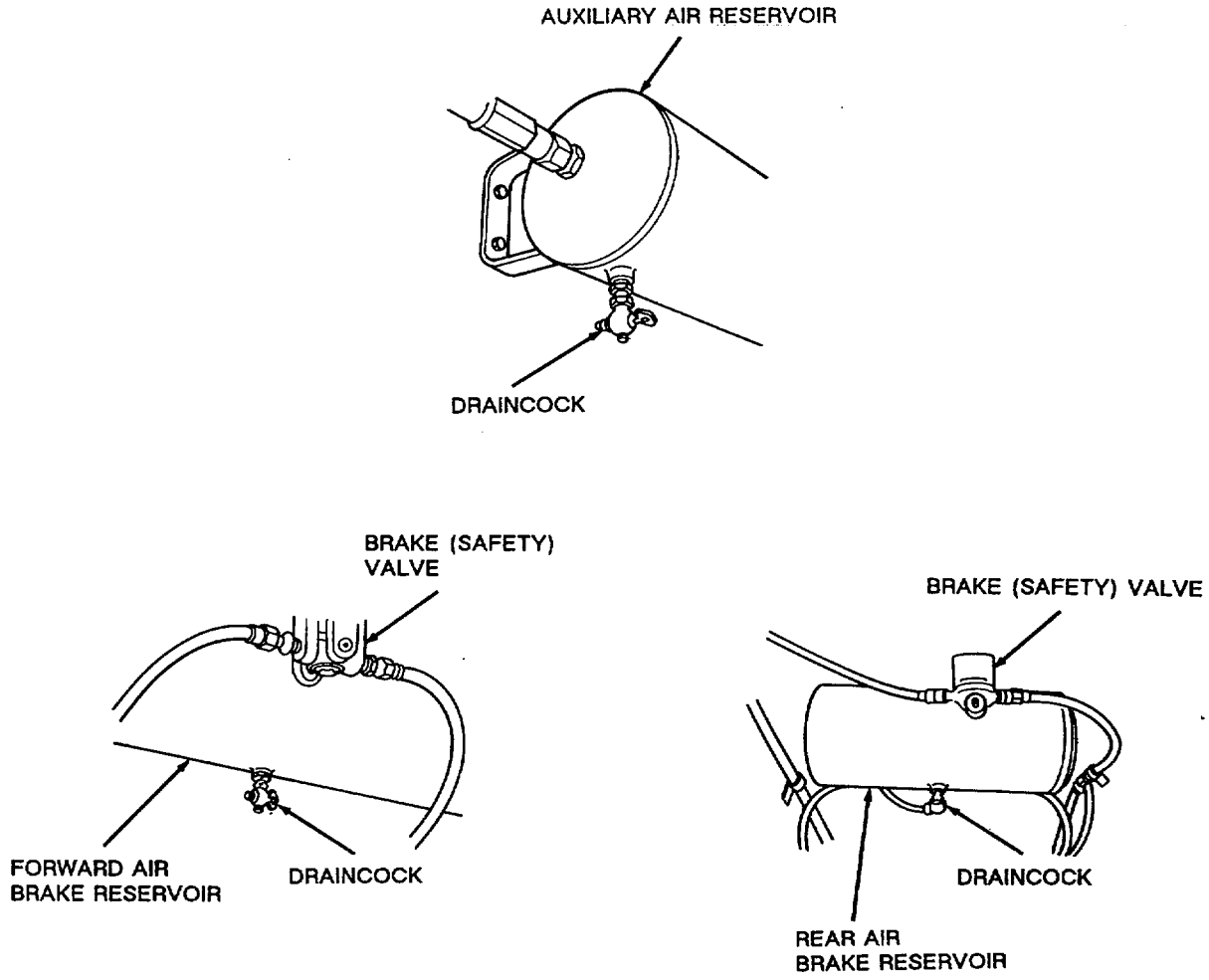

Figure 4-7. Air Reservoir Draincocks.

Section VIII. WHEELS MAINTENANCE

4-25. HUB, WHEEL BEARINGS, AND BRAKEDRUM REPLACEMENT.

a. Removal (See Appendix F, Figure 27).

WARNING

Use extreme caution and proper tools when lacking up the semitrailer and supporting it. Personnel could be injured.

(1) Jack up the semitrailer and support it.

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(2) Remove wheel assemblies (see paragraph 4-26).
(3) Remove screws (1), lockwashers (2), hubcap (3), and gasket (4). Discard lockwashers and gasket.
(4) Remove outer bearing nut (5), lockwasher (6), inner bearing nut (7), bearing (8), and bearing cup (9). Discard lockwasher.
(5) Remove inner stud nuts (18), hub (10), bearing cup (11), and bearing (12).
(6) Remove inner tire, brakedrum (13), deflector (14), and oil seal (15). Discard oil seal.

b. Cleaning and Inspection.

WARNING

- **Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F-130°F (38°C -59°C). If you become dizzy while using cleaning solvent, Immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.**

- **DO NOT handle brakeshoes, brakedrums, or other brake components unless area has been properly cleaned. There may be asbestos dust on these components which can be dangerous If you touch it or breathe it. Wear an approved filter mask and gloves. Never use compressed air or a dry brush to clean brake components. Dust may be removed using an industrial-type vacuum cleaner. Clean dust or mud away from brake components with water and a wet, soft brush or cloth. Failure to follow this warning may result In serious illness or death to personnel.**

(1) Clean all removed components and axle spindle shoulder with dry cleaning solvent (Item 7, Appendix D). Remove any burrs with abrasive cloth and wipe clean with dry cleaning solvent.
(2) Clean and inspect bearings in accordance with TM 9-214. If any bearing or bearing cups need replacing, replace all bearings and bearing cups.
(3) Inspect hub for cracks or breaks and replace it as necessary.
(4) Inspect brakedrum for cracks, scoring, pitting, or grooves. Check edge of brakedrum for cracks or broken areas. If brakedrum is damaged, notify direct support maintenance.

c. Installation (See Appendix E Figure 27).
(1) Install new oil seal (15), deflector (14), brakedrum (13), and inner stud nuts (18).
(2) Install bearing (12), bearing cup (11) and hub (10).
(3) Install bearing cup (9), bearing (8), inner bearing nut (7), new lockwasher (6), and outer bearing nut (5).
(4) Install new gasket (4) and hubcap (3) with new lockwashers (2) and screws (1).
(5) Install wheels (see paragraph 4-26).
(6) Lubricate wheel bearings (see Chapter 3, Section I).

4-26. WHEELS AND TIRES MAINTENANCE.

a. Wheel Assembly Removal (See Appendix F Figure 27).
(1) Remove lug nuts (21) and outer wheel assembly.
(2) Remove stud nuts (18) and inner wheel assembly from hub.

b. Repair. Repair and service tires in accordance with TM 9-2610-200-24.

c. Wheel Assembly Installation (See Appendix E Figure 27).
(1) Attach inner wheel assembly to hub with stud nuts (18).
(2) Attach outer wheel assembly to stud nuts (18) with lug nuts (21).

Section IX. FRAME AND TOWING ATTACHMENTS MAINTENANCE

4-27. KINGPIN AND FIFTH WHEEL PLATE ASSEMBLY MAINTENANCE.

a. Removal and Disassembly (See Appendix EF Figures 30 and 31).

WARNING

Use proper lifting devices to support fifth wheel plate assembly while removing It. It is very heavy and can Injure personnel If dropped.

CAUTION

Be alert not to break hose assemblies (5, Appendix F, Figure 31) when lowering fifth wheel plate assembly.

(1) Remove screws (3 and 4, Appendix F, Figure 30), nuts (2), and lockwashers (1) and carefully lower fifth wheel plate (5). Discard lockwashers.
(2) Disconnect straight adapters (6 and 7, Appendix F, Figure 31).
(3) Lower fifth wheel plate (5, Appendix F, Figure 30) completely.
(4) Disconnect straight adapters (4, Appendix F, Figure 31) and elbows (2).
(5) Remove and separate elbows (2), pipes (1), and grease fittings (8). Discard grease fittings.
(6) If hose assemblies (5) leak or are chafed, cracked, or plugged, replace them as an assembly.

b. Assembly and Installation (See Appendix Figures 30 and 31).

(1) Install new grease fittings (8, Appendix F, Figure 31), pipes (1), and elbows (2).
(2) Attach straight adapters (4) to elbows (2).
(3) Install straight adapters (7) in fifth wheel plate (5, Appendix F, Figure 30).

WARNING

Use proper lifting devices to support fifth wheel plate assembly. It is heavy and can injure personnel if dropped.

(4) Lift fifth wheel plate (5) and connect straight adapters (6 and 7, Appendix F, Figure 31).
(5) Lift the fifth wheel plate (5, Appendix F, 30) and secure it with screws (3 and 4), new lockwashers (1), and nuts (2).
(6) Lubricate kingpin and fifth wheel plate (see Chapter 3, Section I).

4-28. LANDING GEAR MAINTENANCE.

a. Removal and Disassembly (See Appendix E Figure 32).

WARNING

Support the semitrailer with proper jacks or jackstands before removing landing gear. Ensure that the water distributor is drained. Failure to follow this warning may result in serious injury or death to personnel.

(1) Retract landing gear and place support blocks under the sand shoes (47).
(2) Remove nuts (3), lockwashers (2), screws (7), angle support (8), and side braces (1). Discard lockwashers.
(3) Remove nuts (4), lockwashers (5), and screws (6). Discard lockwashers.
(4) Remove nuts (25), screws (22), landing gear assemblies and intermediate shaft (23).
(5) Remove nut (34), washers (35), screw (37), and crank (36).

NOTE

Be careful not to lose detent balls (39) and detent spring (38) when removing cover assembly (31).

(6) Remove screws (32), cover assembly (31), detent balls (39), and detent spring (38). Remove grease fitting (33) from cover assembly and discard.
(7) Remove pin (29), spring pin (30), pin (41), and gear sets (28 and 40).
(8) Remove bushing (27) and crankshaft (24).
(9) Remove covers (17), locknuts (18), spring pins (15), pinion shafts (26 and 12), bushings (16), washer (19), and bevel gears (13 and 14). Discard locknuts.
(10) Separate lower legs (44) from upper legs (42 and 10). Remove grease fittings (11) from upper legs (42 and 10). Discard grease fittings.
(11) Remove bearing sleeves (20), bearings (46), clamps (45), and keys (43) from lower legs (44).
(12) Remove nuts (50), screws (48), sand shoe axles (49), and sand shoes (47) from lower legs (44).

b. Assembly and Installation (See Appendix Figure 32).

(1) Attach sand shoes (47) to lower legs (44) with sand shoe axles (49), screws (48), and nuts (50).
(2) Insert lower legs (44) into upper legs (42 and 10).
(3) Attach keys (43), clamps (45), bearings (46), and bearing sleeves (20) to lower legs (44).
(4) Place bevel gears (13) over bearings (46) and secure in place with new locknuts (18).
(5) Insert bushings (16) into upper legs (42 and 10).
(6) Slide pinion shaft (12) through bushings (16), washer (19), and bevel gears (14) in the single speed upper leg (10).
(7) Slide pinion shaft (26) through bushings (16) and bevel gears (14) in two speed upper leg (42).
(8) Secure bevel gears (14) and pinion shafts (26 and 12) with spring pins (15).
(9) Install new grease fittings (11) and covers (17) to upper legs (42 and 10).
(10) Insert bushing (27) into upper leg (42) and slide crankshaft (24) through.
(11) Slide gear set (40) over crankshaft (24) and gear set (28) over pinion shaft (26).
(12) Secure gear set (40) with pin (41). Secure gear set (28) with spring pin (30) and pin (29).
(13) Insert detent spring (38) and detent balls (39) into crankshaft (24) and slide cover assembly (31) over pinion shaft (26) and crankshaft (24).
(14) Secure cover assembly (31) with screws (32). Install new grease fitting (33) to cover assembly.
(15) Slide crankshaft (24) and pinion shafts (26 and 12) through semitrailer frame and insert the ends of pinion shafts into intermediate shaft (23).
(16) Secure intermediate shaft (23) with screws (22) and nuts (25).
(17) Attach upper legs (10 and 42) to semitrailer frame with screws (6), new lockwashers (5) and nuts (4).
(18) Attach angle support (8) to upper legs (10 and 42) and side braces (1) between semitrailer frame and upper legs (10 and 42) with screws (7), new lockwashers (2), and nuts (3).
(19) Lubricate landing gear (see Chapter 3, Section I).

Section X. SPRINGS MAINTENANCE

4-29. SPRING REPLACEMENT.

a. Removal (See Appendix E Figure 33).

(1) Jack up and support the water distributor. The wheels should be on the ground but the weight should be off the springs.
(2) Remove screws (8), locknuts (7), and spacer (13). Discard locknuts.
(3) Remove nuts (9), U-bolts (11), and spring hanger (10)..

(4) Remove spring (12).
(5) Remove screw (4), nut (6), washers (5), equalizer shaft (1), equalizer bearing (2), and equalizer (3).

b. Installation (See Appendix E Figure 33).

(1) Attach equalizer (3) to frame with screw (4), equalizer shaft (1), equalizer bearing (2), washers (5), and nut (6). Torque nut to 500 lb.-ft. (678 N•m).
(2) Set spring (12) on axle.
(3) Attach spring (12) to axle with U-bolts (11), spring hanger (10), and nuts (9). Torque nuts to 300 lb.-ft. (407 N•m).
(4) Attach screws (8), spacer (13), and new locknuts (7). Torque locknuts to 250 lb.-ft. (339 N•m) for the front spring hanger and 35 lb.-ft. (47 N•m) for the rear spring hanger.

4-30. TORQUE RADIUS ROD REPLACEMENT.

a. Removal (See Appendix E Figure 34). Remove screws (2), locknuts (1), rubber bushings (6), and torque rods (3, 4, 5, and 7). Discard locknuts.
b. Inspection. Check torque rods for bending, warping, or wear.
c. Installation (See Appendix E, Figure 34).
(1) Attach torque rods (3, 4, 5, and 7) to frame and axle with screws (2), rubber bushings (6), and new locknuts (1).
(2) Torque locknuts (1) to 135 lb.-ft. (183 N•m).

Section XI. BODY MAINTENANCE

4-31. MANHOLE COVER ASSEMBLY REPLACEMENT.

a. Removal (See Appendix I; Figure 36).
(1) Remove cotter pin (7) and hinge pin (8). Discard cotter pin.
(2) Unfasten latch (6) and remove manhole cover assembly (3).
(3) Remove cotter pin (7), hinge pin (9), and latch (6). Discard cotter pin.
(4) Remove screw (5) and vent cap (4) from manhole cover assembly (3).

NOTE
Gasket can be removed without removing manhole cover assembly.

(5) Bend retaining tabs out and remove gasket (2). Discard gasket.

b. Installation (See Appendix E Figure 36).
(1) Set new gasket (2) in place and bend down retaining tabs.
(2) Attach vent cap (4) to manhole cover assembly (3) with screw (5).
(3) Attach manhole cover assembly (3) to hinge with hinge pin (8) and new cotter pin (7).
(4) Attach latch (6) to hinge with hinge pin (9) and new cotter pin (7).
(5) Ensure that latch operates correctly.

Section XII. ACCESSORY ITEMS MAINTENANCE

4-32. FOOT VALVE MAINTENANCE.

a. Removal and Disassembly (See Appendix F, Figures 38 and 39).
(1) Remove foot valve assembly (1, Appendix F, Figure 39) from adapter nipple (11, Appendix F, Figure 38).

(2) Remove screws (2, Appendix F, Figure 39), nuts (7), strainer (6), seat plate (5), and diaphragm (4) from valve (3).
(3) Remove adapter nipple (11, Appendix F, Figure 38) from hose.

b. Inspection.
(1) Clean dirt and debris from inside of foot valve.
(2) Check the internal parts for wear and damage.
(3) Replace any damaged parts.

c. Assembly and Installation.
(1) Attach valve (3, Appendix F, Figure 39) to adapter nipple (11, Appendix F, Figure 38).
(2) Attach diaphragm (4, Appendix F, Figure 39), seat plate (5), and strainer (6) to top (3) with screws (2) and nuts (7).

4-33. SUCTION HOSE ASSEMBLY MAINTENANCE.

a. Removal and Disassembly (See Appendix F, Figure 38).

NOTE

The following Instructions refer to the suction section of the hose. They also cover the disassembly of the extension section of the hose.

(1) Unlatch assembly hose (9) from side rack (4) and eye bracket (5).
(2) Remove foot valve assembly from adapter nipple (11).
(3) Remove hose clamps (8), adapter nipple (11), and coupling (7) from hose (9).
(4) Remove screws (1), nuts (2), lockwashers (3), side rack (4) and eye bracket (5). Discard lockwashers.

b. Repair.

NOTE

- **The most common hose damage occurs to the hose couplings or to the hose around the coupling. In such cases the hose can be repaired in the field. The damaged section of hose can be cut away or the coupling replaced and the hose reassembled.**

- **It may be necessary to cut the hose away from the coupling with a hacksaw. The hose is reinforced with steel cable.**

(1) Remove the couplings from the hose.
(2) Cut the damaged section from the hose with a hacksaw.
(3) Replace the couplings if they are damaged.
(4) Replace coupling if gasket is worn or missing.

c. Assembly and Installation (See Appendix E Figure 38).
(1) Slide hose clamps (8) over hose (9).
(2) Apply grease to barbed end of coupling (7), and the inside lip of hose (9).
(3) Press coupling (7) into hose (9) until it stops.
(4) Hold a strong 2X6 board flush against the mouth of coupling (7).

CAUTION

Do not pound directly on the coupling. This will bend or damage the coupling.

(5) Drive coupling (7) into hose (9) by pounding on the board with a heavy hammer.

CAUTION

Do not over tighten the hose clamps. This can crimp or cut the hose so it will leak.

(6) Tighten hose clamps (8).
(7) Follow steps (3) through (6) above to install adapter nipple (11).

(8) Attach foot valve assembly to adapter nipple (11).
(9) Attach side rack (4) and eye bracket (5) to semitrailer with screws (1), new lockwashers (3), and nuts (2).
(10) Latch hose assembly (9) in side rack (4) and eye bracket (5).

4-34. MOUNTING AUXILIARY CONTROL BOX MOUNTING BRACKETS.

a. M123AIC Mounting Bracket (see Appendix F, Figure 40).
(1) Open rear cab window and place auxiliary control box (2) on assistant driver's seat.
(2) Insert rear lip of mounting bracket (13) in the slot between rear of window frame and front of dash panel.
(3) Position mounting bracket (13) so that it is centered on dash panel and secure with thumbscrews.
(4) Secure auxiliary control box (2) to mounting bracket (13) with spring latches.

b. XM9161XM920 Mounting Bracket (see Appendix F, Figure 40).
(1) Perform step a(1*l)* for the M123A1C mounting bracket.
(2) Open glove box door and secure mounting bracket (15) to door. The support shelf should face toward operator.
(3) Secure auxiliary control box (2) to mounting bracket (15).
(4) Adjust mounting bracket (15) position so that operator can easily reach auxiliary control box (2).

4-35. REMOVAL AND REPLACEMENT OF XM920 ROLLER.

CAUTION
Do not attempt to remove or Install the roller without mechanical support or roller may be damaged.

NOTE
Removal of the roller is only necessary for cross-country operations.

a. Support roller (see Figure 4-8) with a mechanical device.
b. Remove retaining bolts from each end of shaft.
c. Drive shaft out with drift and remove roller.
d. Remove right and left roller supports and spacers if applicable.
e. To install roller, reverse steps a through *d.*

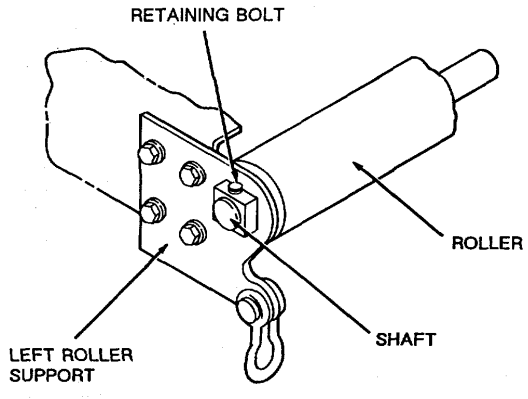

Figure 4-8. XM920 Roller.

4-36. AUXILIARY CONTROL BOX REPLACEMENT.

a. Removal.
(1) Disconnect power cable from auxiliary control box.
(2) Disconnect and tag air lines from control box.
(3) Unlatch auxiliary control box and remove it from mounting bracket.

b. Installation.
(1) Install mounting bracket as necessary.

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(2) Attach auxiliary control box to mounting bracket with retaining latches.
(3) Connect air lines and power cable to auxiliary control box.

4-37. AUXILIARY CONTROL BOX REPAIR.

a. Disassembly (See Appendix F, Figures 1, 2, and 40 through 42).
(1) Remove auxiliary control box (see paragraph 4-36).
(2) Remove mounting bracket from tractor cab (see paragraph 4-34).
(3) Remove screws (8, Appendix F, Figure 40), control box cover, and back panel.
(4) Tag and disconnect all wires from terminals and receptacle (11).
(5) Tag and disconnect air lines from air regulator valve (2, Appendix F, Figure 41), air control valves (2, Appendix F, Figure 42), and cross pipe (5, Appendix F, Figure 40).
(6) Remove retaining nut and ignition switch (1, Appendix F, Figure 1) from auxiliary control box.
(7) Remove and lamp (2, Appendix F, Figure 2) from tachometer (1).
(8) Remove nuts, washers, mounting bracket, and tachometer (1) from auxiliary control box.
(9) Remove low level indicator light (6, Appendix F, Figure 1) and ignition light (6), from auxiliary control box.

NOTE

Air regulator dial must be removed to remove the air regulator valve from the auxiliary control panel.

(10) Remove screws (1, Appendix F, Figure 41), nuts (3), lockwashers (4), and air regulator valve (2) from auxiliary control box. Discard lockwashers.
(11) Remove retaining nut and starter switch (4, Appendix F, Figure 1) from auxiliary control box.
(12) Remove screws (4, Appendix F, Figure 42), lockwashers (3), plates (1), and air control valves (2). Discard lockwashers.
(13) Remove screws (12, Appendix F, Figure 40), nuts (4), lockwashers (3), receptacle (11) and gasket (10) from auxiliary control box. Discard lockwashers and gasket.

b. Assembly (See Appendix E; Figures 1, 2, and 40 through 42).
(1) Attach receptacle (11, Appendix F, Figure 40) and new gasket (10) to auxiliary control box with screws (12), new lockwashers (3), and nuts (4).
(2) Attach starter switch (4, Appendix F, Figure 1) to the auxiliary control box with retaining nut.
(3) Attach air control valves (2, Appendix F, Figure 42) with screws (4), plates (1), and new lockwashers (3).
(4) Attach low level indicator light (6, Appendix F, Figure 1) and ignition light (6) to auxiliary control box.

NOTE

Air regulator dial must be removed to Install air regulator valve in auxiliary control box.

(5) Attach air regulator valve (2, Appendix F, Figure 41) to auxiliary control box with screws (1), new lockwashers (4) and nuts (3).
(6) Attach tachometer (1, Appendix F, Figure 2) to the auxiliary control box with mounting bracket, washers, and nuts. Install lamps (2).
(7) Attach ignition switch (1, Appendix F, Figure 1) to control panel with retaining nut.
(8) Connect wires to terminals and receptacle (see Figure 4-2).
(9) Connect air lines and adapters (see Figure 4-4).
(10) Attach back panel and control box cover to the auxiliary control box with screws (8, Appendix F, Figure 40).

(11) Install mounting bracket to tractor cab (see paragraph 4-34).
(12) Install auxiliary control box (see paragraph 4-36).

4-38. ENGINE AUXILIARY CONTROL PANEL REPAIR.

a. Disassembly (See Appendix Figure 43).
(1) Disconnect and tag wires from solenoids (6 and 13) and circuit breaker (7).
(2) Remove screws (12), nuts (11), lockwashers (9), and solenoids (6 and 13) from mounting plate (5). Discard lockwashers.
(3) Remove screws (8), nuts (10), and lockwashers (9), and separate circuit breaker (7) and mounting plate (5) from engine frame. Discard lockwashers.
(4) Remove screws (1), nuts (3), and lockwashers (2), and separate mounting plate (5) from engine frame. Discard lockwashers.

b. Assembly (See Appendix E Figure 43).
(1) Attach mounting plate (5) to engine frame with screws (1), new lockwashers (2), and nuts (3).
(2) Attach circuit breaker (7) to mounting plate (5) with screws (8), new lockwashers (9), and nuts (10).
(3) Attach solenoids (6 and 13) to mounting plate (5) with screws (12), new lockwashers (9), and nuts (11).
(4) Connect wires to solenoids (6 and 13) and circuit breaker (7).

4-39. POWER CABLE INSTALLATION.

a. Unpack auxiliary control box and check for damage (see Figure 4-9).
b. Secure auxiliary control box (2, Appendix F, Figure 40) to mounting bracket (13 or 15) with latches.
c. Remove cover of auxiliary control box (2).
d. Unpack power cable (5, Appendix F, Figure 18) and check for damage.
e. Connect power cable (5) to auxiliary control box.

NOTE
Push down on head of brass fitting to Insert air lines. When line bottoms release pressure on fitting head.

f. Air lines are color coded. Match color to color, connecting all lines to auxiliary control box.
g. Replace cover on auxiliary control box (2, Appendix F, Figure 40).

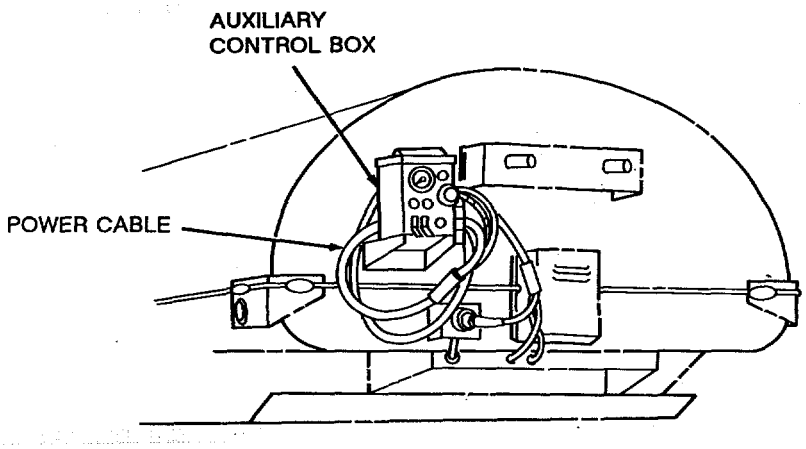

Figure 4-9. Auxiliary Control Box Installed.

h. Connect air lines to semitrailer forward bulkhead using procedure in step *f*.
i. Prior to connecting power cable (5, Appendix F, Figure 18)), ensure that you are using the proper receptacle. The light receptacle and auxiliary control box receptacle look the same.
j. Test run the water distributor to ensure that all controls, valves, and gages are operating properly.
k. Install power cable (5) on water distributor mounting bracket when not connected to tractor.

Section XIII. AUXILIARY GENERATORS AND ENGINE AND CONTROLS MAINTENANCE

4-40. ENGINE ASSEMBLY REPLACEMENT.

a. Removal (see Appendix F, Figure 46).

CAUTION

Support the water distributor plumbing before disconnecting the pump from the plumbing or the pump could be damaged.

NOTE

Remove engine assembly with water distributor pump attached.

(1) Disconnect the water water distributor pump from the plumbing at the discharge flange and the butterfly valve (see Figure 2-5).
(2) Disconnect battery power cable from engine cowling (see Figure 4-10).

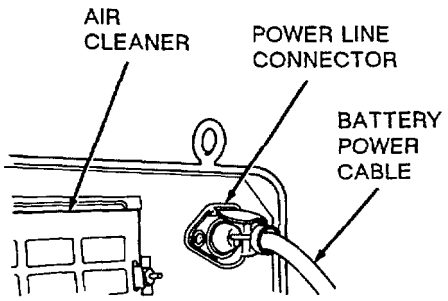

Figure 4-10- Power Line Connector

(3) Disconnect battery cables.
(4) Tag and disconnect air lines (see Figure 4-4).
(5) Tag and disconnect necessary wires.
(6) Disconnect fuel return line from no. 1 injector nozzle and fuel tank. Disconnect the fuel line from the water trap and the fuel pump (see Figure 4-11). Stop fuel flow from water trap.

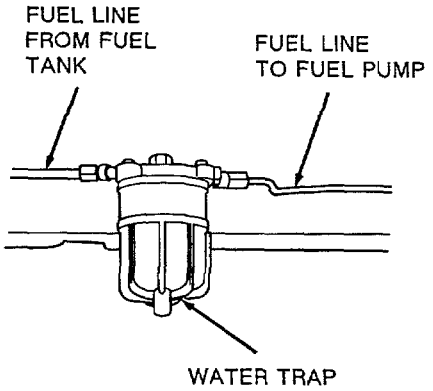

Figure 4-11-Water Trap

(7) Attach lifting equipment to lifting eyes of engine assembly.
(8) Remove screws (1, Appendix F, Figure 46), nuts (2), and lockwashers (3). Discard lockwashers.

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WARNING

Use proper lifting equipment to remove engine assembly. Engine is heavy and could injure personnel if it drops.

(9) Lift engine and pump from mounting platform.

b. Attached Component Removal (see Appendix F, Figure 47 and 48).

(1) Attach lifting equipment to water distributor pump.
(2) Remove water distributor pump (see paragraph 4-54).
(3) Remove engine cowling (5, Appendix F, Figure 47) from engine.
(4) Remove side panels (16).
(5) Remove auxiliary control panel from crossbrace (see paragraph 4-38).
(6) Remove throttle control valve from crossbrace (see paragraph 4-47).
(7) Remove cowling crossbraces (3 and 4, Appendix F, Figure 48)
(8) Remove exhaust muffler (see paragraph 4-49).
(9) Remove air cleaner assembly (see paragraph 4-44).
(10) Disconnect gage wiring from engine (see Figure 4-2).
(11) Remove end cowlings (1 and 9) from engine.
(12) Remove radiator assembly (see paragraph 4-50).
(13) Remove engine mounting brackets (8, 19, 26, and 31) and rails (16).
(14) Disconnect instrument panel (2, Appendix F, Figure 47) from end cowling (1, Appendix F, Figure 48).
(15) Remove gages from instrument panel (see paragraphs 4-14 and 4-15).

c. Attached Component Installation (see Appendix E Figures 47 and 48.

(1) Attach mounting brackets (8, 19, 26, and 31, Appendix F, Figure 48) and rails (16) to engine.
(2) Attach radiator assembly (see paragraph 4-50).
(3) Attach instrument panel (2, Appendix F, Figure 47) to end cowling (1, Appendix F, Figure 48).
(4) Attach gages to instrument panel (see paragraphs 4-14 and 4-15).
(5) Attach end cowlings (1 and 9) to engine mounting brackets.
(6) Attach air cleaner assembly to engine (see paragraph 4-44).
(7) Attach crossbraces (3 and 4) to cowlings (1 and 9).
(8) Attach auxiliary control panel to crossbrace (see paragraph 4-38).
(9) Attach throttle control valve to crossbrace (see paragraph 4-47).
(10) Attach side panels (16, Appendix F, Figure 47).
(11) Attach exhaust muffler (see paragraph 4-49).
(12) Attach engine cowling (5) to engine.
(13) Attach water distributor pump to engine (see paragraph 4-54).

d. Installation (see Appendix E, Figure 46).

WARNING

Use proper lifting equipment to install engine assembly. Engine Is heavy and could Injure personnel If it drops.

(1) Attach lifting equipment to lifting eyes and lift engine and pump into place on the mounting platform.
(2) Attach engine with screws (1, Appendix F, Figure 46), new lockwashers (3), and nuts (2).
(3) Connect water distributor plumbing to pump at discharge flange and butterfly valve (see Figure 2-5).
(4) Connect electrical line to engine cowling (see Figure 4-10).
(5) Connect battery cables to engine.

(6) Connect wiring to engine (see Figure 4-2).
(7) Connect air lines to engine (see Figure 4-4).
(8) Connect fuel return line to no. 1 injector nozzle and fuel tank.
(9) Connect the fuel line to the water trap and the fuel pump (see figure 4-11).

4-41. OIL FILTER ELEMENT REPLACEMENT.

a. Unscrew the filter element (see Figure 4-12 and 5, Appendix F, Figure 61) from the filter head (2).
b. Check that the threaded adapter is secure in the filter head (2) and discard the old filter element (5). Clean the filter head.
c. Lightly oil the top seal of the new filter element (5) using clean engine lubricating oil.
d. Screw the new filter element (5) on to the filter head (2) until the filter element seal just touches the head and then tighten by hand. If the filter element is over tightened, removing it may be difficult.

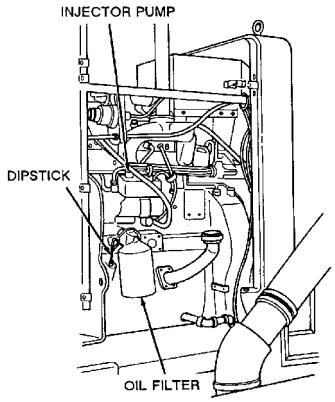

Figure 4-12. Oil Filter

e. As the filter element (5) will normally be changed at the same time as the engine lubricating oil, refill the crankcase with oil, run the engine, and check for oil leaks. Check the oil level after running the engine and top up as necessary (see Chapter 3, Section I).

4-42. FUEL FILTER ELEMENTS REPLACEMENT.

a. Replacement (See Figure 4-13).

NOTE

- **There are two fuel filters used with the water distributor engine. One is mounted on the engine and the second is attached to the water distributor frame under the engine. The following procedure covers both filter elements.**
- **Change both filter elements at the same time. Never change only one.**

(1) Remove the filter bowl mounting screw and separate the filter bowl (28, Appendix F, Figure 71) and filter element (30) from the head casting.

CAUTION

Do not attempt to clean or reuse the filter elements or equipment could be damaged.

(2) Discard gaskets and filter element (30).
(3) Replace filter element (30) and gaskets.

CAUTION

Ensure that the filter bowl gaskets are alined correctly before installing the filter bowl to prevent damage to equipment.

(4) Attach the filter bowl (28) to the head casting and install mounting screw.
(5) Prime fuel system.

b. Priming Fuel System.

CAUTION

Do not start the engine before priming the fuel system and bleeding air present In the fuel or damage may occur to equipment.

(1) Remove the vent plug (11) from the primary fuel filter vent (see Figure 4-13).

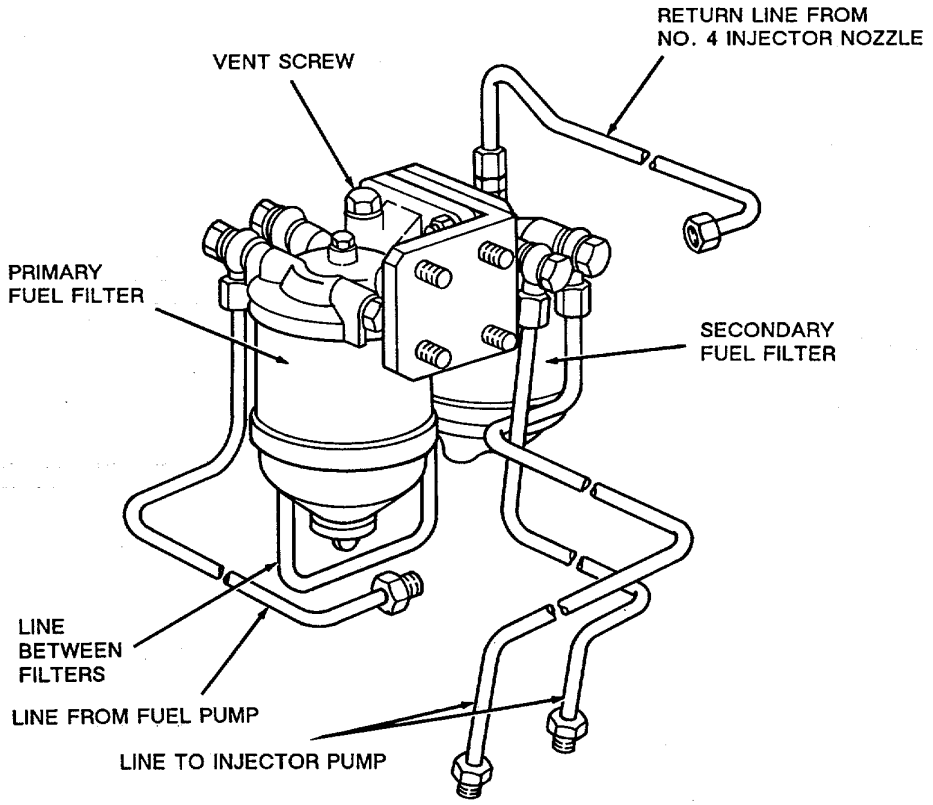

Figure 4-13. Fuel Filters.

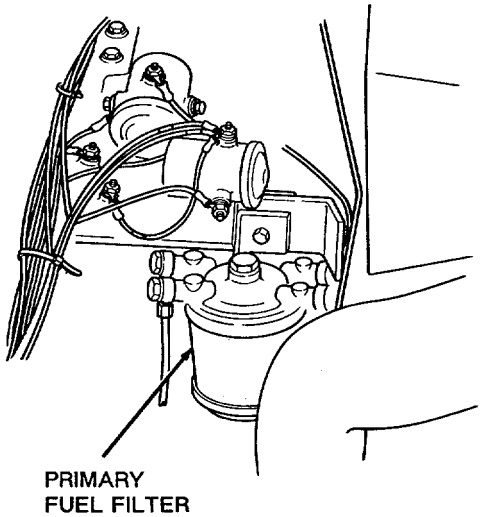

Figure 4-14. Primary Fuel Filter

(2) Operate the fuel pump priming lever (see Figure 4-15) until fuel, free of air bubbles, flows from the primary fuel filter vent.
(3) Return the vent plug (11) to the primary fuel filter vent.
(4) Disconnect the fuel return line from the secondary fuel filter (see Figure 4-13).
(5) Operate the fuel pump priming lever (see Figure 4-15) until fuel, free of air bubbles, flows from the top of the secondary fuel filter.
(6) Return the fuel return line to the secondary fuel filter. Do not tighten the fuel line.

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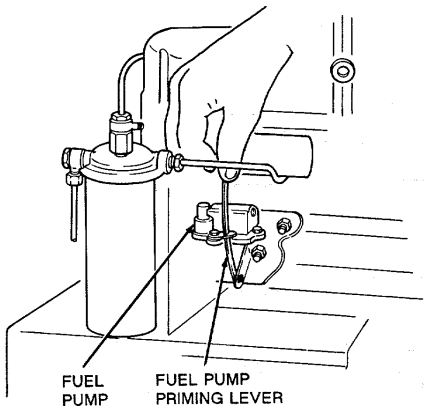

Figure 4-15. Primer Pump

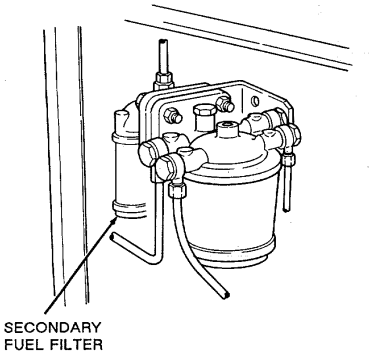

Figure 4-16. Secondary Fuel Filter.

(7) Operate the fuel pump priming lever (see Figure 4-15) until fuel, free of air bubbles, flows from the fuel return line connection.
(8) Tighten the fuel return line connection (see Figure 4-13).

4-43. FUEL PUMP MAINTENANCE.

a. Testing Fuel Pump.
(1) Disconnect fuel line from discharge port.
(2) Pump priming lever (see Figure 4-15). A strong stream of fuel should discharge from the pump.

NOTE
If the engine has not stopped in the correct position, the priming lever will not operate correctly.

(3) If the priming lever does not operate correctly, turn the engine over and watch for the fuel discharge.
(4) If fuel still does not discharge well or at all, replace the fuel pump.
(5) Disconnect the inlet fuel line from the fuel pump and attach a vacuum gage to the fuel pump. Turn the engine over; the pump should pull 8-14 in. of mercury (0.28-0.48 kg/sq cm mercury).

b. Removal (See Figure 4-15).

CAUTION
Plug any disconnected fuel lines or ports to prevent any dirt particles from entering them.

(1) Disconnect fuel lines from inlet ports and discharge port.
(2) Remove nuts (6, Appendix F, Figure 70) and retaining plates (7), and separate fuel pump (3) and gasket (4) from engine. Discard gasket.

c. Installation (See Figure 4-15).
(1) Set new gasket (4) on mounting studs.
(2) Insert pump (3) into tappet inspection hole and mount fuel pump on mounting studs.

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(3) Secure fuel pump (3) to mounting studs with retaining plates (7) and nuts (6).
(4) Connect fuel lines to inlet ports and discharge port.
(5) Prime fuel system (see paragraph 4-42).

4-44. AIR CLEANER ASSEMBLY REPLACEMENT.

a. Removal (See Appendix F, Figure 65).
(1) Remove nuts (7) and lockwashers (6) and disconnect retaining clips. Discard lockwashers.
(2) Remove moisture trap (9) and filter element (8).
(3) Remove hose clamps and intake manifold hose.
(4) Remove screws (18), nuts (3), lockwashers (2), and housing (5). Discard lockwashers.
(5) Remove screws (17), lockwashers (16), washers (15), and brackets (1 and 14). Discard lockwashers.
(6) Disconnect circuit breaker (5, Appendix F, Figure 69) from bracket (12, Appendix F, Figure 65).
(7) Remove screws (10), lockwashers (11), spacers (13), and bracket (12). Discard lockwashers.

b. Installation (See Appendix E Figure 65).
(1) Attach brackets (1 and 14) to engine head assembly with washers (15), new lockwashers (16), and screws (17).
(2) Attach bracket (12) with screws (10), new lockwashers (11), spacers (13), screws (18), new lockwashers (2), and nuts (3).
(3) Connect circuit breaker (5, Appendix F, Figure 69) to bracket (12, Appendix F, Figure 65).
(4) Attach housing (5) to brackets (1 and 14) with screws (18), new lockwashers (2), and nuts (3).
(5) Install intake manifold hose to air cleaner with hose clamps.
(6) Install filter element (8) and attach moisture trap (9) to body (5) with new lockwashers (6) and nuts (7).

4-45. AIR RESTRICTION INDICATOR REPLACEMENT.

a. Removal (See Appendix E, Figure 66).
(1) Disconnect tubing at straight adapters (1).
(2) Unscrew restriction indicator (4) from elbow (5).
(3) Separate coupling (2), nipple (3), and elbow (5) from flange (7).
(4) Remove screws (6), nuts (9), lockwashers (8), and flange (7) from engine cowling. Discard lockwashers.

b. Installation (See Appendix E Figure 66).
(1) Install flange (7) to engine cowling with screws (6),new lockwashers (8), and nuts (9).
(2) Install nipple (3), coupling (2), and elbow (5) to flange (7).
(3) Install restriction indicator (4) to elbow (5).
(4) Connect tubing between intake manifold and straight adapters (1).

4-46. FUEL TANK MAINTENANCE.

a. Removal (See Appendix E Figure 67).
(1) Drain the fuel tank (8).
(2) Tag and disconnect fuel lines from return elbow (5) and outlet elbow (10). Plug fuel lines to prevent contamination from entering fuel lines.
(3) Disconnect static strap (3) by removing nut (2) and washer (4).
(4) Remove screws (13), nuts (11), lockwashers (12), and fuel tank assembly (1). Discard lockwashers.
(5) Remove return elbow (5), outlet elbow (10), and plug (9) from fuel tank (8).

(6) Remove cap (6) and strainer (7) from fuel tank (8).

b. Repair (See Appendix F Figure 67).

WARNING

Do not weld or solder the fuel tank if fumes are present in the tank. Fill the tank with water while working on it. Failure to follow this warning may cause tank to explode, resulting in serious Injury or death to personnel.

(1) Steam or boil water in the fuel tank (8) to remove any fuel fumes present.
(2) Solder any leaks, cracks, or holes in the fuel tank (8).
(3) If the fuel tank (8) cannot be repaired, replace it.
(4) Replace any damaged fuel tank parts.

c. Installation (See Appendix E Figure 67).

(1) Install strainer (7) and cap (6).
(2) Install return elbow (5), outlet elbow (10), and plug (9) into fuel tank (8).
(3) Attach fuel tank assembly (1) to semitrailer frame with screws (13), new lockwashers (12), and nuts (11).
(4) Attach static strap (3) with washer (4) and nut (2).
(5) Connect fuel lines to return elbow (5) and outlet elbow (10).

4-47. THROTTLE CONTROL VALVE REPLACEMENT.

a. Removal (See Appendix F Figure 68).

(1) Disconnect tubing from throttle control valve (1).
(2) Remove cotter pins (4) and straight pin (5) from throttle clevis. Discard cotter pins.
(3) Disconnect spring (6) from support bracket (3) and throttle control valve lever.
(4) Remove screws (2), nuts (7), and lockwashers (8) and separate throttle control valve (1) from support bracket (3). Discard lockwashers.
(5) Remove support bracket (3) and ground wire from crossmember.

b. Installation (See Appendix E Figure 68).

(1) Attach support bracket (3) and ground wire to crossmember.
(2) Attach throttle control valve (1) to support bracket (3) with screws (2), new lockwashers (8), and nuts (7).
(3) Connect spring (6) to mounting bracket (3) and throttle control valve lever.
(4) Install new cotter pins (4) and straight pin (5) into throttle clevis.
(5) Connect tubing to throttle control valve (1).

4-48. THROTTLE CONTROL MAINTENANCE.

NOTE

Throttle control testing Is done while the throttle control is attached to the engine.

a. Testing Throttle Control (see Appendix Figure 69). Turn on the ignition switch and test the voltage across the solenoid (6) terminals.

(1) If the voltage is greater than 9V; the solenoid (6) is okay.
(2) If the voltage is less than 9V, ensure that all the wire terminals are tight. If the voltage is still less than 9V, replace the solenoid.

b. Removal (See Appendix F Figure 69).

(1) Remove cotter pin (13) and washer (14), and disconnect connecting link (19) from injector pump. Discard cotter pin.
(2) Separate connecting link (19), nut (20), and bracket (21) from solenoid (6).
(3) Disconnect lead wire from solenoid (6)
(4) Remove screws (4), nuts (2), lockwashers (3), and solenoid (6) from bracket (8). Discard lockwashers.

(5) Remove control assemblies (18) and disconnect throttle cables (1 and 7) from injector pump.
(6) Disconnect throttle cables (1 and 7) from bracket (8) and throttle controls.
(7) Remove screws (10), lockwashers (9), and bracket (8) from engine. Discard lockwashers.
(8) Remove circuit breaker (5) from air cleaner bracket.

c. Installation (See Appendix E Figure 69).

(1) Install circuit breaker (5) to air cleaner bracket.
(2) Attach bracket (8) with screws (10) and new lockwashers (9).
(3) Connect throttle cables (1 and 7) to bracket (8) and throttle controls.
(4) Connect throttle cables (1 and 7) to the injector pump with control assemblies (18).
(5) Connect solenoid (6) to bracket (8) with screws (4), new lockwashers (3), and nuts (2).
(6) Temporarily connect connecting link (19), nut (20), and bracket (21) to solenoid (6).

NOTE

The lever must be in the run position and there must be 1/16 in. (1.6 mm) clearance between the lever and the lever stop (see Figure 4-17).

(7) Compress the solenoid (6) fully to bottom position and adjust connecting link (19) to the hose in the injector pump lever.
(8) Tighten nut (20) and repeat step (7) above as necessary.

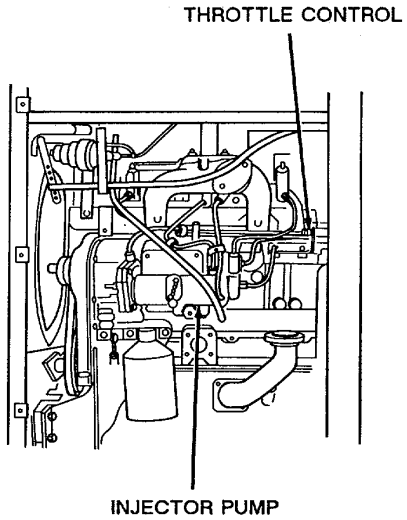

Figure 4-17. Throttle Control and Injector Pump.

4-49. EXHAUST MUFFLER REPLACEMENT.

a. Removal (See Appendix ,E Figure 73).

WARNING

Do not attempt to remove any part of exhaust system until it has cooled. Failure to follow this warning may result in serious burns.

(1) Remove top engine cowling.
(2) Remove rain cap (2).
(3) Remove nuts (7), washers (6), exhaust muffler (1), and gasket (4). Discard gasket.
(4) Separate exhaust muffler (1) and flange (3).

b. Installation (See Appendix F, Figure 73).

(1) Attach flange (3) to exhaust muffler (1).
(2) Attach exhaust muffler (1) and new gasket (4) to exhaust manifold with washers (6) and nuts (7).
(3) Attach rain cap (2) to exhaust muffler (1).
(4) Attach top engine cowling.

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4-50. RADIATOR REPLACEMENT.

a. Removal (See Appendix E Figure 74).

WARNING

Do not attempt to remove any part of cooling system until it has cooled. Failure to follow this warning may result In serious burns.

(1) Drain coolant from radiator (1).
(2) Disconnect instrument panel wires, oil pressure gage tubing, temperature gage probe, and tachometer sending unit (see Figure 4-6).
(3) Disconnect hose clamps (7, 14, and 28, Appendix F, Figure 74) and radiator hoses (8, 15, and 27).
(4) Remove stays (10 and 29).
(5) Remove radiator (1) and mountings from mounting bracket (25).
(6) Remove mounting bracket (25) from engine.

b. Installation (See Appendix E Figure 74).

(1) Attach mounting bracket (25) to engine.
(2) Attach radiator (1) and mountings to mounting bracket (25).
(3) Install stays (10 and 29) between the engine and radiator (1).
(4) Attach radiator hoses (18, 15, and 27) to radiator with hose clamps (7, 14, and 28).
(5) Connect instrument panel wires, oil pressure gage tube, temperature gage probe, and tachometer sending unit to engine and appropriate terminals.
(6) Fill radiator (1) with coolant to proper level (see Chapter 3, Section I).

4-51. ALTERNATOR REPLACEMENT.

a. Removal (See Appendix E Figure 77).

WARNING

Disconnect battery ground cable before removing alternator to prevent injury to personnel.

(1) Disconnect and tag alternator lead wires.
(2) Loosen mounting bolts (1 and 9) and adjusting bolt (15), and tilt generator (8) toward engine.
(3) Remove fan belt.
(4) Remove mounting bolts (1 and 9), washers (6 and 11), lockwasher (10), nut (7), and generator (8) from engine. Discard lockwasher.
(5) Remove adjusting bolt (15), lockwasher (4), bushing (13), and nut (12). Discard lockwasher.
(6) Remove bolts (3), lockwashers (4), washers (5), and alternator mounting bracket (2). Discard lockwashers.

b. Installation (See Appendix F Figure 77).

(1) Attach alternator mounting bracket (2) to engine block with bolts (3), new lockwashers (4), and washers (5).
(2) Attach bracket (14) with adjusting bolt (15), new lockwasher (4), bushing (13), and nut (12).

NOTE

Do not tighten mounting bolts or adjusting bolt until the belt tension has been adjusted.

(3) Attach generator (8) to alternator mounting bracket (2) with mounting bolts (1 and 9), washers (6 and 11), new lockwasher (10), and nut (7).
(4) Tilt generator (8) toward engine and install fan belt.
(5) Adjust fan belt tension.
(a) Tilt generator (8) away from engine.

(b) Tighten adjusting bolt (15).

(c) Apply thumb pressure to the fan belt at a point midway between water pump pulley and crankshaft pulley. The belt should depress X in. (10 mm). If it does not, adjust the tension.

(d) Tighten mounting bolts (1 and 9).

(6) Connect alternator lead wires to alternator.

4-52. STARTER AND SOLENOID REPLACEMENT.

a. Testing Starter and Solenoid.

(1) Connect a multimeter across the battery terminals.

(2) Crank the engine.

(a) If the multimeter remains steady and the starter does not crank over, ensure that there is current to the starter.

(b) If there is no current, ensure that all the wire terminals are tight and free of corrosion.

(c) If there is current to the starter and it does not crank over, replace it.

(d) If the multimeter reading drops appreciably and the starter fails to crank, the drive pinion may be jammed in mesh with the flywheel. Remove starter and check engine for internal seizure.

(e) If the starter cranks over but does not drive the engine, replace it.

b. Removal (See Appendix F, Figure 78).

WARNING

Disconnect battery ground cable before removing starter to prevent Injury to personnel.

(1) Disconnect and tag starter wires from solenoid.

(2) Remove nuts (5), lockwashers (4), and starter (1) from engine.

c. Installation (See Appendix F Figure 78).

(1) Install starter (1) to engine with new lockwashers (4) and nuts (5).

(2) Connect starter wires to solenoid.

Section XIV. NONELECTRICAL GAGES MAINTENANCE

4-53. PRESSURE GAGE REPLACEMENT.

a. Test the accuracy of the pressure gage by applying a known pressure to the gage.

b. If the pressure gage is damaged or gives false readings, replace it (See Appendix F, Figure 80).

Section XV. DISPENSING AND SERVICING EQUIPMENT COMPONENTS MAINTENANCE

4-54. WATER DISTRIBUTOR PUMP REPLACEMENT.

a. Removal (See Appendix F, Figure 81).

WARNING

- **Use only proper lifting equipment when removing pump or personnel could be injured.**
- **Ensure that all valves are opened before removing pump to relieve any pressure in the line. Remove pump tank drain plug and drain any hot water in the tank. Support the attached plumbing before disconnecting the pump from it. Failure to follow this warning may cause Injury to personnel.**

(1) Support the plumbing on either side of the pump.
(2) Attach lifting equipment to pump and lift up on the pump to support it.
(3) Remove discharge butterfly valve (see paragraph 4-56).
(4) Disconnect discharge flange.
(5) Remove screws (4) and lockwashers (2) and lift the pump away from the engine. Discard lockwashers.

b. Installation (See Appendix F Figure 81).

WARNING

Use only proper lifting equipment when installing pump or personnel could be injured.

(1) Lift pump into place against the engine.
(2) Attach the pump to the engine with screws (4) and new lockwashers (2).
(3) Aline 'plumbing and connect the discharge flange to the pump.
(4) Install the discharge butterfly valve (see paragraph 4-56).
(5) Fill the pump tank with water to prime it.
(6) Ensure that the pump operates correctly and does not leak.

4-55. LINES AND FITTINGS REPLACEMENT.

a. Removal (See Appendix F; Figures 83 and 86).

(1) Disconnect hose clamps (7 and 23, Appendix F, Figure 83).
(2) Remove water distributor pump (see paragraph 4-54).
(3) Remove 4 in. (10.2 cm) butterfly valve (see paragraph 4-56).
(4) Separate nipple (18), elbow (5), and valve nipple assembly (9).
(5) Separate valve nipple (11), tee (15), dust cap (12), adapter (13), and strainer (14) from pump.
(6) Remove screws, nuts, and washers from flange (16) and gage pipe nipple (18).
(7) Separate flange (16), gasket (17), gage pipe nipple (18), and attached plumbing from pump. Discard gasket.
(8) Separate pressure gage, gage pipe nipple (18), reducer tee (19), dust cap (21), adapter (20), and discharge nipple (22).
(9) Separate hose (8), hose clamps (7), close nipple (6), elbow (5), and sump pipe (4) from tank.
(10) Separate hose (24), hose clamps (23), discharge nipples (22), elbow (26), and close nipple (27) from tee (28).
(11) Remove 3 in. (7.6 cm) butterfly valve (see paragraph 4-56).
(12) Disconnect hose clamps (41) and remove hose (42), discharge valve nipple (40), and sump nipple (3). Remove plug (2).

(13) Disconnect air lines and coupling (13 Appendix F, Figure 86) and remove sprinkler valves (1).

WARNING

Attach proper lifting devices to the spray bar plumbing before dropping it from the water distributor or personnel could be injured.

(14) Remove U-bolts (25, Appendix F, Figure 83) and drop spray bar plumbing to the ground.
(15) Remove riser pipes (37) from elbows (36).
(16) Remove elbows (36) and horizontal pipes (31 and 35) from tee (33).
(17) Separate reducing tee (28), discharge pipe (29), elbow (5), nipple (32), tee (33), and plug (34).

b. Installation (see Appendix E Figures83 and 86).

(1) Attach sump pipe (4, Appendix F, Figure 83), sump nipple (3), plug (2), elbow (5), and close nipple (6) to collection box.
(2) Install water distributor pump to engine (see paragraph 4-54).
(3) Attach tee (15), adapter (13), strainer (14), and dust cap (12) to pump.
(4) Attach valve nipple (11) to tee (15).
(5) Attach 4 in. (10.2 cm) butterfly valve (see paragraph 4-56).
(6) Attach elbow (5) and close nipple (6) to valve nipple assembly (9).
(7) Slide hose clamps (7) over hose (8) and install hose and tighten hose clamps.
(8) Assemble elbows (36), horizontal pipes (31 and 35), tee (33), plug (34), nipple (32), elbow (5), discharge pipe (29), reducing tee (28), close nipple (27), elbow (26), discharge nipple (38), and nipple (22).

WARNING

Use proper lifting devices to raise spray bar plumbing into place or personnel could be Injured.

(9) Raise the spray bar plumbing into place and attach it to the frame with U-bolts (25).
(10) Install riser pipes (37). Install sprinkler valves to pipes with couplings (13, Appendix F, Figure 86).
(11) Attach risers to frame with U-bolts (25, Appendix F, Figure 83).
(12) Install new gaskets (39) and discharge valve nipple (40) and install 3 in. (7.6 cm) butterfly valve (see paragraph 4-56).
(13) Slide hose clamps (41) over hose (42). Attach hose to discharge valve nipple (40) and sump nipple (3) and tighten hose clamps.
(14) Attach flange (16), new gasket (17), and gage pipe nipple (18) to pump assembly.
(15) Attach pressure gage to gage pipe nipple (18).
(16) Install reducer tee (19), adapter (20), dust cap (21), and discharge nipple (22).
(17) Slide hose clamps (23) over hose (24). Attach hose to discharge nipples (22) and tighten hose clamps.
(18) Attach air lines to sprinkler valves.
(19) Check the water distributor plumbing for leaks after it is assembled.

4-56. BUTTERFLY VALVE MAINTENANCE.

NOTE

Replacement and repair of 4 in. (10.2 cm) butterfly valve Is described. 3 in. (7.6 cm) butterfly valve is replaced and repaired the same.

a. Removal (See Appendix F, Figure 85). Remove screws (16), nuts (14), lockwashers (15), and valve assembly (1). Discard lockwashers.

b Disassembly (See Appendix F, Figure 85).

(1) Remove screw (7) and valve handle (8) from valve body (4).

(2) Remove retainer screw (9), spring (10), and detent ball (11).
(3) Remove spring pins (3) from valve body (4).
(4) Remove valve stem (6), valve shaft (13), and preformed packings (5 and 12). Discard preformed packings.
(5) Remove valve disc (2).

c. Assembly (See Appendix E, Figure 85).

(1) Install valve disc (2), valve shaft (13), valve stem (6), and new preformed packings (5 and 12), and hold in place with spring pins (3).
(2) Install detent ball (11), spring (10), and retainer screw (9).
(3) Attach valve handle (8) to valve body (4) with screw (7).

d. Installation (See Appendix E ,Figure 85). Install valve assembly (1) with new lockwashers (15), nuts (14) and screws (16).

4-57. SPRINKLER VALVE MAINTENANCE.

a. Removal (See Appendix F, Figure 86). Disconnect air line and remove coupling (13) and sprinkler valve (1) from riser pipe.

b. Disassembly (See Appendix F, Figure 86).

(1) Remove thumbscrew (11), nuts (10 and 12), and adjusting band (9).
(2) Remove screws (5), nuts (2), and clamp loop (6).
(3) Separate valve body (8), diaphragm (7), and cover (4).
(4) Remove plug (3) from cover (4).

c. Assembly (See Appendix F, Figure 86).

(1) Install diaphragm (7) and cover (4) in valve body (8), and secure with clamp loop (6), screws (5), and nuts (2).
(2) Install plug (3) in cover (4).
(3) Attach adjusting band (9) to valve body (8) with thumbscrew (11) and nuts (10 and 12).

d. Installation (See Appendix F, Figure 86).

(1) Install sprinkler valve (1) on riser pipe with coupling (13).
(2) Connect air line to sprinkler valve.

CHAPTER 5
DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE

Section I. SERVICE UPON RECEIPT

5-1. INSPECTION.

a. Make a complete visual inspection to see that basic issue items, publications, accessories, and attachments are with the water distributor.
b. Visually inspect entire water distributor and record any damage or loss of parts.
c. Inspect engine cowling, exhaust muffler, air cleaner, and air restriction indicator.
d. Remove top cowling and side cowling panel and check the injector pump, fuel filters, alternator and belt, oil filter, and throttle control valve for damage (see Figure 5-1).
e. Open instrument panel and inspect gages and instruments for damage (see Figure 2-1).
f. Inspect auxiliary control box for damage and mount it in tractor cab (see Figure 2-2).
g. Ensure that all hose connections and electrical connections are secure.

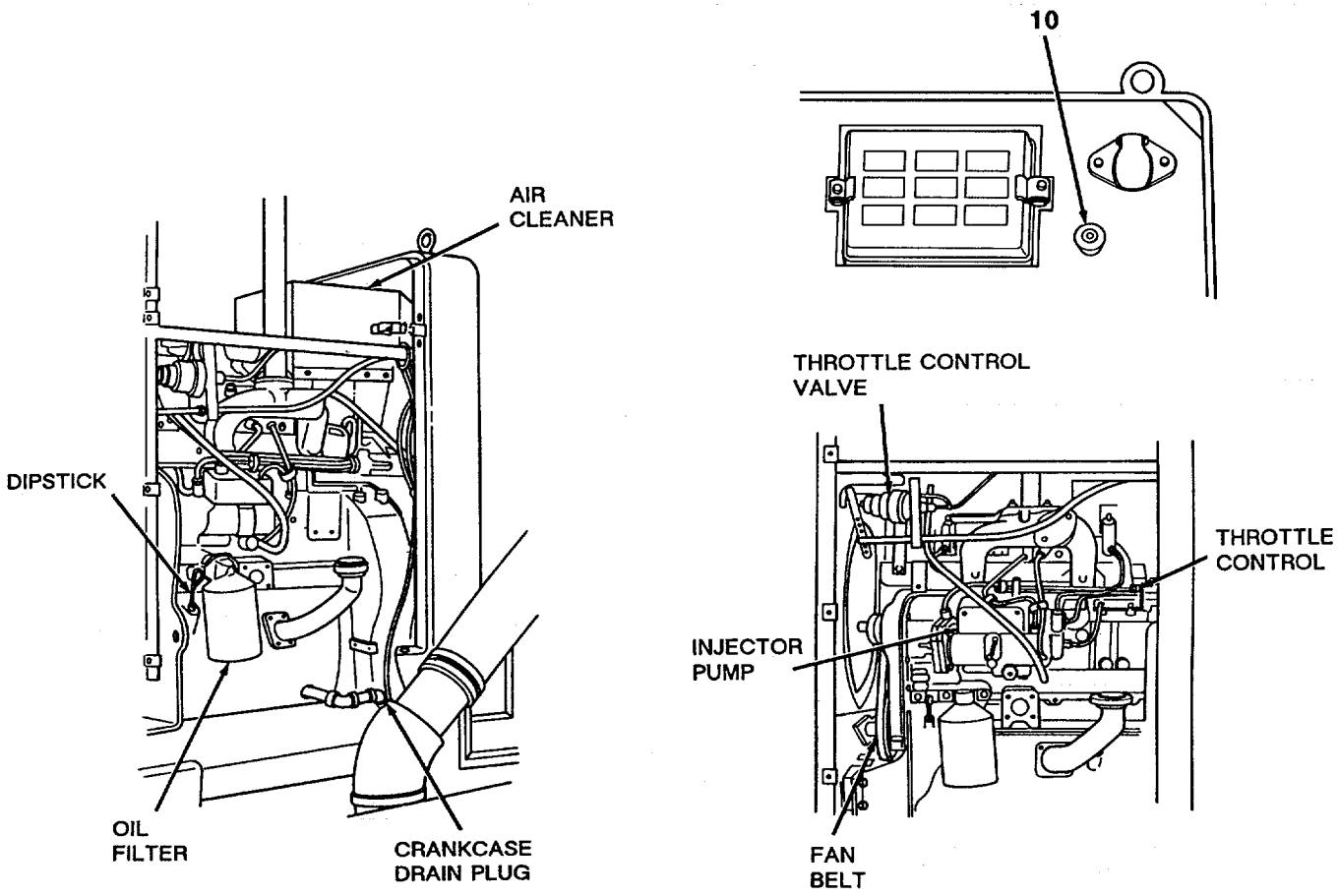

Figure 5-1. Water Distributor Engine.

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Section II. DIRECT SUPPORT AND GENERAL SUPPORT TROUBLESHOOTING PROCEDURES

5-2. GENERAL.

a. This section contains the troubleshooting procedures for direct and general support maintenance personnel.
b. Possible water distributor malfunctions are listed in the troubleshooting Symptom Index (see paragraph 5-3). The Troubleshooting Table (Table 5-1) lists the malfunction, the probable cause, and the corrective action to be taken.
c. Before performing direct support and general support troubleshooting, ensure that all applicable unit troubleshooting has been performed.

5-3. TROUBLESHOOTING SYMPTOM INDEX

Table 5-1. Direct Support and General Support Troubleshooting.

MALFUNCTION TEST OR INSPECTION	CORRECTIVE ACTION
1. ENGINE FAILS TO CRANK.	
Check for internal seizure.	Replace any damaged parts or components. Replace the entire engine as necessary.
2. ENGINE CRANKS BUT DOES NOT START.	
CAUTION **Air must be bled from the fuel system whenever any part between the fuel tank and the injector pump has been disconnected or when the system has been emptied of fuel. Failure to follow this caution may result in damage to equipment.**	
Step 1. Check the operation of the fuel injector pump. Disconnect the high pressure fuel lines one at a time and crank engine. A well defined spurt of fuel should flow from each fuel line fitting.	If fuel does not flow from one or all of the fuel line fittings, replace the fuel injector pump (see paragraph 5-22).

Table 5-1. Direct Support and General Support Troubleshooting (Con't).

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

WARNING

Keep hands away from the spray. The working pressure will cause fuel to penetrate the skin.

Step 2. Check the high pressure fuel lines for obstructions. Disconnect each high pressure fuel line one at a time from the injector nozzles and crank the engine.

If fuel does not flow from the fuel line or if the flow is retarded, replace the fuel line.

Step 3. Check the injector nozzles. Disconnect the high pressure fuel line at both ends and remove the injector nozzle. Connect the fuel line to the injector nozzle and pump. Turn the nozzle away from the engine. Loosen the high pressure fuel lines from the other injector nozzles to prevent fuel from entering the cylinders. Crank the engine until fuel sprays from the removed nozzle. Do this in turn with each nozzle.

If the spray is wet, or variable, or to one side, or if the nozzle dribbles fuel, replace the nozzle. Prime the fuel system (see paragraph 5-22).

Step 4. Check fuel injector pump and valve timing. Correct it as necessary (see paragraph 5-20).

Step 5. Check cylinder compression. Disconnect lead wire from throttle control solenoid (6,Appendix F, Figure 69). Disconnect the high pressure fuel line from the no. 1 injector nozzle. Disconnect the return fuel line from no. 1 injector nozzle. Remove the no. 1 injector nozzle and insert a diesel engine compression gage. Crank the engine and note reading on compression gage. Repeat procedure for other cylinders. If there is more than 25 psi (172 kPa) difference between cylinders, check the cylinder in question.

Remove the injector nozzle and add approximately a tablespoonful of clean crankcase oil. If the compression pressure increases, check the piston rings for damage. If the compression pressure remains the same, check the valves and head gasket for damage.

Step 6. Disassemble the engine and check the piston rings, valves, valve seats, and cylinder bores.

Replace any of the above parts as necessary.

3. ENGINE DOES NOT DEVELOP FULL POWER.

Step 1. Check the fuel injector pump (see Malfunction 2, step 1).
Step 2. Check the fuel injector pump timing (see paragraph 5-20).
Step 3. Check cylinder compression (see Malfunction 2, step 5).

4. EXHAUST IS SMOKY.

Step 1. Check the fuel injector pump (see Malfunction 2, step 1).
Step 2. Check injector nozzles (see Malfunction 2, step 3).
Step 3. Check fuel injector pump and valve timing and correct as necessary (see paragraph 5-20).
Step 4. Check cylinder compression (see Malfunction 2, step 5).
Step 5. Disassemble the engine and check for incorrect tappet adjustment, sticking valves, worn cylinder bores, pitted or worn valves and/or valve seats, broken or worn piston rings, and piston seizure / pick up.

Replace any of the above parts as necessary.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

5. OIL PRESSURE IS LOST.

Disassemble the engine and check for worn main bearings and camshaft bearings, worn oil pump, worn or plugged oil suction tube, plugged oil strainer, pressure oil pump relief valve sticking open, or broken oil pump relief valve spring.

Replace any of the above parts as necessary.

6. ENGINE OVERHEATS.

Step 1. Check the fuel injector pump (see Malfunction 2, step 1).
Step 2. Check injector nozzles (see Malfunction 2, step 3).
Step 3. Check fuel injector pump and valve timing and correct as necessary (see paragraph 5-20).
Step 4. Check cylinder compression (see Malfunction 2, step 5).
Step 5. Check the water pump.
Replace the water pump as necessary.
Step 6. Disassemble the engine and check for clogged water jacket or clogged radiator.
If the problems above cannot be repaired, replace the engine.

7. WATER DISTRIBUTOR PUMP WILL NOT PRIME.

Check the pump shaft seal (22, Appendix F, Figure 82).
Replace the pump shaft seal as necessary (see paragraph 5-23).

8. WATER LEAKS AROUND PUMP SHAFT

Check for worn pump shaft seal (22, Appendix F, Figure 82).
Replace the pump shaft seal as necessary (see paragraph 523).

9. PUMP HAS LOW OPERATING PRESSURE AND WEAK SPRAY.

Check pump impeller (21, Appendix F, Figure 82) for wear.
Replace the pump impeller as necessary (see paragraph 5-23).

10. PUMP WILL NOT HOLD A PRIME.

Check for damaged check valve (5, Appendix F, Figure 82).
Replace the check valve as necessary (see paragraph 5-23).

Section III. GENERAL MAINTENANCE INSTRUCTIONS

5-4. GENERAL.

This section contains the maintenance procedures for direct support and general support maintenance personnel. These procedures cover removal, cleaning, inspection, repair, and installation of water distributor component parts. The responsibility for each level of maintenance can be found in the Maintenance Allocation Chart (MAC) in Appendix B.

5-5. REMOVAL PROCEDURES.

Refer to paragraph 4-8 for removal procedures.

5-6. CLEANING PROCEDURES.

Refer to paragraph 4-9 for cleaning procedures.

5-7. INSPECTION PROCEDURES.

a. Clean all parts before inspection.

b. Inspect all bearings and bearing cups in accordance with TM 9-214.

c. Inspection consists of checking for defects such as physical distortion, wear, cracks, and pitting. Dimensions of parts should be checked for compliance with maximum wear limits data. Parts subjected to heavy load or pressure should be inspected more thoroughly by performing surface temper, magnetic particle, or fluorescent penetrant procedures where necessary.

NOTE

If visual inspection proves the service of gears doubtful, perform a surface temper or magnetic particle inspection or both.

d. Gears should be inspected on removal for the following conditions:

(1) Normal wear in excess of practical limits.
(2) Pitting of teeth due to extreme pressure loading.
(3) Abrasive wear due to foreign materials in lubricant.
(4) Scoring, seizing, and galling of teeth due to excessive loads and clearance.
(5) Burning and loss of temper due to extreme high temperature operation caused by excessive friction and lack of lubrication.
(6) Rolling or plastic yielding due to extreme loads over a long period.
(7) Cracks and fractures due to shock loading.

e. Inspect shaft splines for wear, pitting, rolling, peening, and fatigue cracks. In many instances, the same inspection procedure will apply as for gears. The condition, however, will in most cases be much less pronounced. Perform a magnetic particle inspection if serviceability of shaft spline is unclear.

f. Check all hose surfaces for broken or frayed fabric. Checks for breaks caused by sharp kinks or rubbing against other parts of the equipment. Inspect metal tubing lines for kinks. Inspect the fitting threads for damage. Replace any part found defective. Following assembly and during initial operation period, check for leaks.

g. Visually inspect all castings and weldments for cracks.

h. Inspect all wires for chafed or burned insulation. Inspect all terminal connectors for loose connections and broken parts.

5-8. REPAIR PROCEDURES.

Refer to paragraph 4-11 for repair procedures.

5-9. INSTALLATION PROCEDURES.

Refer to paragraph 4-13 for installation procedures.

5-10. WELDING REPAIR.

CAUTION

Cracks and broken welds at critical stress points of highly stressed members will require very careful preparation and welding procedures to ensure successful repair. Whenever possible, these parts should be replaced rather than repaired. In those cases of emergency where welding repair Is the only practical means of restoring the serviceability of the vehicle, the Instructions given below must be rigidly followed.

a. The surface of parts to be welded must be free from paint, grease, scale, and other foreign matter that can be removed by chipping and wire brushing.

b. When multiple layers of weld metal are required, each layer must be thoroughly cleaned before depositing another layer.
c. Ensure that all welded parts and assemblies are free from cracks and other imperfections that may reduce the effectiveness of the part or assembly.
d. Ensure that weldments are free from slag, flux, weld spatter, and other impurities detrimental to the strength and soundness of the weld.
e. Position work for flat welding whenever practicable. Aline butt-type joints having members of equal thickness within 10% of the thickness of the members involved. Weldments must be free from overlays.
f. Undercut in weldments must not be more than 0.01 in. (0.25 mm) deep when its direction is transverse to the primary stress in the part that is undercut. Undercut must not be more than A2 in. (0.79 mm) deep when its direction is parallel to the primary stress in the part that is undercut.

Section IV. REAR AXLE MAINTENANCE

5-11. AXLE ASSEMBLY REPLACEMENT.

a. Removal (See Appendix E Figure 33).
(1) Raise and support the rear of the semitrailer high enough to remove the wheels.
(2) Remove the wheels from the axle assembly (see paragraph 4-26).
(3) Remove hub and wheel bearings (see paragraph 4-25).
(4) Remove brake assembly (see paragraph 4-22).
(5) Remove brake chambers (see paragraph 4-23).
(6) Remove torque radius rods (see paragraph 4-30).

WARNING
Use proper lifting equipment to raise and lower the axle assembly or personnel could be injured.

(7) Support the axle assembly with lifting equipment.
(8) Remove nuts (9, Appendix F, Figure 33), U-bolts (11), and spring hanger (10).
(9) Remove axle assembly.
(10) Remove screw (4), washers (5), nut (6), screws (8), spacer (13), locknuts (7), equalizer bearing (2), equalizer shaft (1), equalizer (3), and leaf springs (12). Discard locknuts.

b. Installation (See Appendix EF Figure 33).
(1) Attach equalizer (3) to frame hanger with screw (4), equalizer shaft (1), equalizer bearing (2), washers (5), and nut (6). Torque nut (6) to 500 lb.-ft. (678 N•m).
(2) Install leaf springs (12), screws (8), spacer (13), and new locknuts (7). Torque locknuts to 250 lb.-ft. (339 N•m) for the front spring hanger and 35 lb.-ft. (47 N•m) for the rear spring hanger.

WARNING
Use proper lifting equipment to raise the axle assembly into place or personnel could be injured.

(3) Lift axle assembly into place and support.
(4) Attach axle assembly to semitrailer with spring hanger (10), U-bolts (11), and nuts (9). Torque nuts to 300 lb.-ft. (407 N•m).
(5) Install the torque radius rods to axle assembly and frame hanger (see paragraph 4-30).
(6) Attach the brake chambers (see paragraph 4-23).

(7) Install the brake assembly (see paragraph 4-22).
(8) Install hub and wheel bearings (see paragraph 4-25).
(9) Install the wheels (see paragraph 4-26).
(10) Check axle alinement.

c. Axle Alinement (see Appendix F; Figure 33 and Figure 5-2).

CAUTION

The center point of the fifth wheel kingpin must be located within 1/8 in. (3.2 mm) of the semitrailer's longitudinal centerline or damage to equipment could occur.

NOTE

Before checking alinement, ensure that suspension components are not damaged and that they are tightly secured to axles and frame hangers.

(1) Load the semitrailer to its rated capacity.
(2) Locate the kingpin centerline.
(3) Roll the semitrailer back and forth over a level floor to permit connecting linkage to position itself.
(4) Jack up the semitrailer.
(5) Remove the ladder assembly.
(6) Remove the landing gear (see paragraph 4-28).
(7) Remove outer wheels (see paragraph 4-26).
(8) Ensure that the semitrailer is level.
(9) Measure the distances A and B from kingpin to the forward axle. These distances must be within 1/16 in. (1.6 mm) of each other (see Figure 5-2).
(10) Measure the distances C and D between front and rear tandem axle.
(11) If the axles are still not alined properly, adjust the alinement with the adjustable torque radius rod (see Appendix F, Figure 34).
(12) Install outer wheels (see paragraph 4-26).
(13) Install the landing gear (see paragraph 4-28).
(14) Install the ladder assembly.
(15) Lower semitrailer to ground.

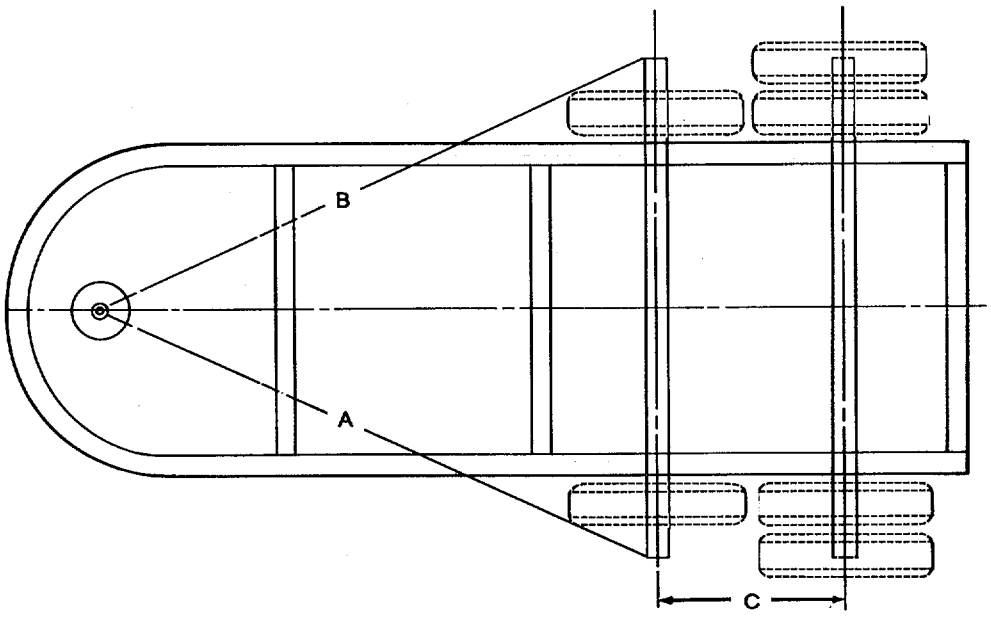

Figure 5-2. Axle Alinement.

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Section V. BRAKE SYSTEM MAINTENANCE

5-12. BRAKEDRUM REPAIR.

a. Inspection.

WARNING

DO NOT handle brakeshoes, brakedrums, or other brake components unless area has been properly cleaned. There may be asbestos dust on these components which can be dangerous if you touch it or breathe it. Wear an approved filter mask and gloves. Never use compressed air or a dry brush to clean brake components. Dust may be removed using an industrial-type vacuum cleaner. Clean dust or mud away from brake components with water and a wet, soft brush or cloth. Failure to follow this warning may result in serious illness or death to personnel.

(1) Remove hub, wheel bearings, and brakedrum (see paragraph 4-25).
(2) Ensure that the inside surface of the brakedrum is smooth, true, and concentric.

CAUTION

The maximum allowable eccentricity is 0.004 in. (0.10 mm) to prevent equipment damage.

(3) Ensure that the brakedrum is not bulged, bell mouthed, scored, or eccentric.
(4) If any of the above conditions exist, turn the brakedrum or replace them.

b. Repair:

CAUTION

Each time brakedrums are turned, less metal remains to absorb the heat developed by braking action. Brakedrums containing less metal will operate at higher temperatures. As a result, brake fade, slow recovery, and erratic action will be more noticeable. The extremely high temperatures will not only shorten lining life but can also cause heat checks and cracks to form on the inner surfaces of the brakedrums. These conditions will become progressively worse until the brakedrums fall.

(1) Use the correct size cone and mount the brakedrum on the lathe. Ensure that it is centered accurately.
(2) Turn the brakedrum. Take only light cuts and remove only enough material to clean up the brakedrum.
(3) Grind the finished surface. Use emery cloth on a straight board if a grinder is not available. Polish the inside surface of the brakedrum.
(4) Clean brakedrums with steam or hot water. Do not use solvent.
(5) Brakedrums that do not need to be turned should be rubbed with emery cloth or fine sandpaper and washed.
(6) Clean any metal particles or debris from inside the brakedrum before installing it.
(7) Install brakedrum, wheel bearings, and hub (see paragraph 4-25).

Section VI. FRAME AND TOWING ATTACHMENTS MAINTENANCE

5-13. LADDER MODIFICATION.

a. The following modification is at the discretion of the unit commander.
b. The fourth rung from bottom of ladder is close to the semitrailer body. Personnel can slip on this rung.

c. To solve this problem, arc weld a piece of steel angle 1/4 X 2 X 2 X 14 1/4 in. (0.64 X 5.08 X 5.08 X 36.20 cm) to the ladder. Arc weld the angle to the ladder (see Figure 5-3).

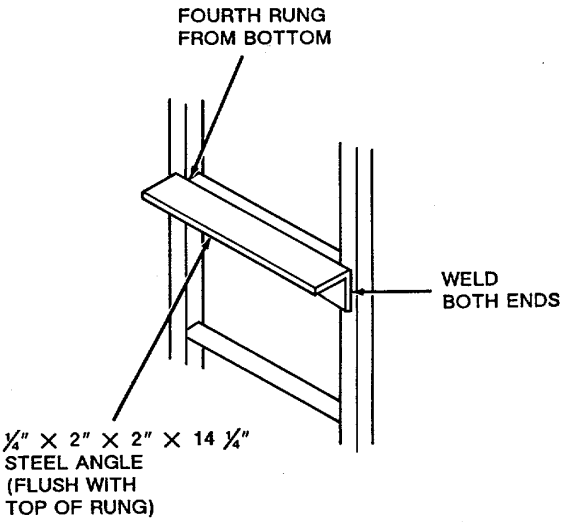

Figure 5-3. Ladder Modification.

Section VII. BODY MAINTENANCE

5-14. TOOLBOX REPAIR.

The only parts maintained in the toolbox are the nozzle fixtures. They are attached to the toolbox with a screw, nut, and lockwasher. If they become damaged, replace them (see Appendix F, Figure 35). If replacing them, discard lockwashers and use new lockwashers for installation.

Section VIII. AUXILIARY GENERATORS AND ENGINE AND CONTROLS MAINTENANCE

5-15. CYLINDER HEAD MAINTENANCE.

a. Cylinder Head Removal (See Appendix E Figures 49, 50, 55, and 57).

(1) Remove engine and engine components (see paragraph 4-40).

(2) Disconnect fuel lines from injector nozzles and remove nozzles from cylinder head (see paragraph 5-22).

(3) Disconnect breather tube (10, Appendix F, Figure 55) and remove cover (4) and gasket (8). Discard gasket.

(4) Remove water connector (9, Appendix F, Figure 50), gasket (8) and thermostat (5). Discard gasket.

(5) Disconnect oil feed tube (20, Appendix F, Figure 57) from cylinder head.

(6) Remove rocker shaft assembly from cylinder head (see Figure 54).

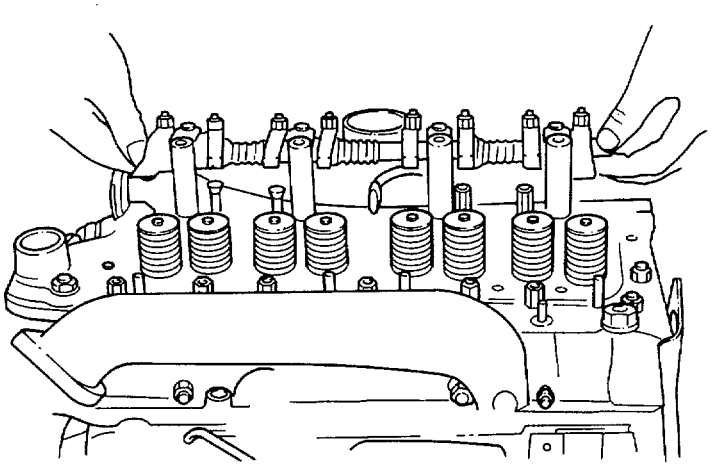

Figure 5-4. Rocker Shaft Assembly Removal.

(7) Remove cylinder head (16, Appendix F, Figure 50) from engine block (14, Appendix F, Figure 49).
(8) Remove pushrods (30, Appendix F, Figure 57).

b. Cylinder Head Disassembly.

(1) Compress valve springs (see Figure 5-5) and remove locks (1, Figure 5-6).
(2) Remove compression seats (2), springs (3 and 4), seats (5), preformed packing (6), intake valves (7), and exhaust valves (8). Discard preformed packing.

c. Cylinder Head Cleaning.

CAUTION

Do not scrape or scratch machined surfaces of cylinder head or cylinder head could be damaged.

Clean carbon from cylinder head.

d. Cylinder Head Inspection and Repair (see Appendix E Figure 50).

(1) Replace valve springs as necessary.
(2) Replace any worn valve guides (6 and 7, Appendix F, Figure 50). Press them out or use a valve guide removal tool.
(3) Check for worn valves. Inspect them in their guides to ensure that the valve stems are worn and not the valve guide bores. Replace any worn valves and mark them in case they must be removed again (see Chapter 1 for engine specifications).

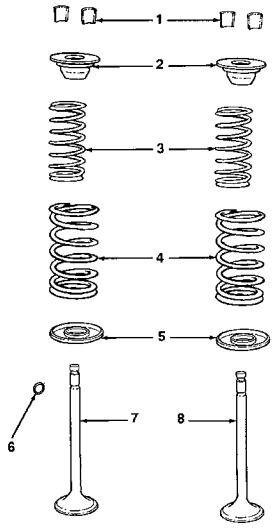

Figure 5-6. Valve Assemblies

(4) Grind valves and valve seats as necessary. Use grinding compound or grinding tools. Valves should always be refitted to their original seats (see Chapter 1 for engine specifications).
(5) Ensure that valve head depth is correct relative to the cylinder head face (see Figure 5-7). Place a straight edge across the face of the cylinder head. Use a feeler gage to measure the valve head depth. If the depth exceeds the maximum limit, install a valve seat insert (see paragraphs 1-42 and 1-43).

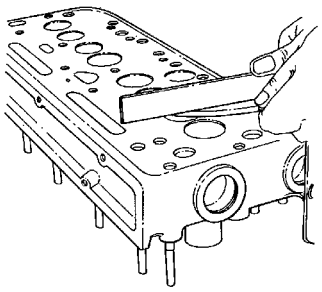

Figure 5-7. Gaging Valve Head Depth.

e. Disassembly of Rocker Shaft Assembly (See Appendix E Figure 57).
(1) Remove retaining rings (3) from each end of the rocker shaft (5).
(2) Remove rocker levers (15), springs (12), and support brackets (11) from rocker shaft (5).
(3) Remove connector (22) from rocker shaft (5).

f. Rocker Shaft Assembly Inspection (see Appendix E Figure 57).

Check rocker bearing sleeves (16) and rocker shaft (5) for wear. The rocker levers (15) should fit the shaft easily without excessive play.

g. Assembly of Rocker Shaft Assembly (see Appendix F, Figure 57).

NOTE

Use the oil feed tube to locate the connector on the rocker shaft.

(1) Slide connector (22) over rocker shaft (5).

NOTE

When refitting new bearing sleeves, ensure that the oil feed holes line up before pressing the bearing sleeves on the shaft.

(2) Lightly oil the components as the rocker shaft (5) is assembled to prevent the rocker levers (15) from binding.

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(3) Slide support brackets (11), rocker levers (15), and springs (12) over rocker shaft (5).
(4) Attach retaining rings (3) to the ends of the rocker shaft (5).

h. Cylinder Head Assembly.

NOTE
Lightly oil valve stems to provide initial lubrication.

(1) Install intake and exhaust valves (7 and 8, Figure 5-6), springs (3 and 4), seats (5) and compression seats (2).
(2) Depress springs (3 and 4) and install locks (1).
(3) Ensure that the damper coil is located onto the bottom of the spring and that preformed packing (6) is correctly installed on the intake valve (see Figure 5-8).

i. Cylinder Head Installation (see Appendix Figures 49, 50, 55, and 57).

(1) Install new cylinder head gasket (7, Appendix F, Figure 49). Ensure that it is positioned flat with all holes alined.
(2) Set the cylinder head (16, Appendix F, Figure 50) in place. Ensure that it lies level on top of the head gasket.
(3) Oil the cylinder head studs and nuts lightly and tighten them progressively according to sequence in Figure 5-9. Refer to paragraph 1-21 for torque values.

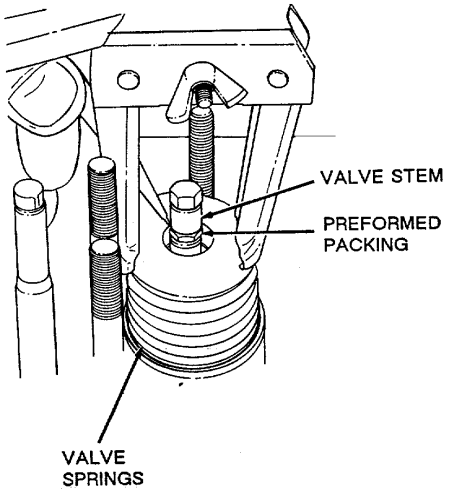

Figure 5-8. Intake Valve Preformed Packing

(4) Install pushrods (30, Appendix F, Figure 57).
(5) Install rocker shaft assembly. Ensure that the valve adjusting setscrew (18) ends are located in their respective pushrod cups.

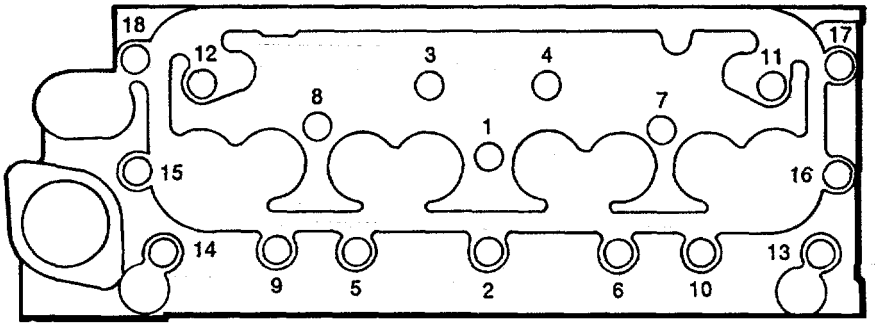

Figure 5-9. Torque Sequence.

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NOTE

If the oil feed tube is tightened before the rocker shaft assembly, the tube will be strained or the fitting will be pulled from the end of the feed tube.

(6) Attach oil feed tube (20) to cylinder head assembly but do not tighten the retaining nut (19).
(7) Torque the rocker shaft mounting nuts (9) to 12-15 lb.-ft. (16-20 N•m).
(8) Tighten the oil feed tube (20).
(9) Adjust the valve clearances to 0.012 in. (0.3 mm) as follows:
  (a) Turn the engine so that the valves of no. 1 cylinder are in the position of valve overlap, i.e. the period between the opening of the intake valve and the closing of the exhaust valve.
  (b) In this overlap position, adjust the clearances of no. 4 cylinder valves.
  (c) With valves of no. 3 cylinder in the overlap position, adjust valves of no. 2 cylinder.
  (d) With valves of no. 4 in the overlap position, adjust valves of no. 1 cylinder.
  (e) With valves of no. 2 cylinder in overlap position, adjust valves of no. 3 cylinder.
(10) Install alternator (see paragraph 4-51).
(11) Install injector nozzles (see paragraph 5-22).
(12) Install the fuel return line, high pressure fuel lines, and fuel tank return line.
(13) Tighten injector nozzle retaining nuts.
(14) Install water connector (9, Appendix F, Figure 50), new gasket (8), and thermostat (5).
(15) Install new gasket (8, Appendix F, Figure 55) cover (4), and breather tube (10).
(16) Fill the cooling system with clean water and check for water leaks.
(17) Prime fuel system (see paragraph 4-42).

5-16. CRANKSHAFT AND MAIN BEARING MAINTENANCE.

a. General.

(1) The crankshaft runs in three prefinished, replaceable, thinwall, steelbacked, aluminum, tin-lined bearings.
(2) Crankshaft end float is controlled by thrust washers located on either side of rear main bearing. 0.0075 in. (0.19 mm oversize) thrust washers are available, that, if used on one side of the rear main bearing only, will reduce crankshaft end float by 0.0075 in. (0.19 mm) and by 0.015 in. (0.38 mm) if used on both sides. The limits for the crankshaft end float are given in paragraph 1-31.
(3) The main bearing caps are numbered and are not interchangeable. The main bearing shells are located by means of tabs that insert in the slots in the bearing housings.

NOTE

Before replacement of the main bearings is attempted, ensure that the correct replacement is available. For identification purposes, the new bearings should have an annular groove machined in the inner (bearing) face along the center line of the feed holes. When the bearings are correctly located, these feed holes will correspond exactly with those machined in the cylinder block.

(4) These shell bearings may be used on both early and later engines. The early type of shell bearing must NOT on any account be fitted to later engines where the annular groove in the main bearing parent bore has been deleted.

b. Main Bearing Replacement (see Appendix E Figure 52).

NOTE

Main bearing and thrust washers can be replaced without removing the crankshaft.

(1) Remove engine from water distributor (see paragraph 4-40).

(2) Remove oil pan assembly (see paragraph 5-21).
(3) Loosen bearing cap setscrews.
(4) Remove one bearing cap and separate bearing shell (5, Appendix F, Figure 52) from the cap.
(5) Remove top half of the bearing shell (see Figure 5-10) by pressing on side opposite the locating tag. Use a sturdy stick; do not use a metal bar.

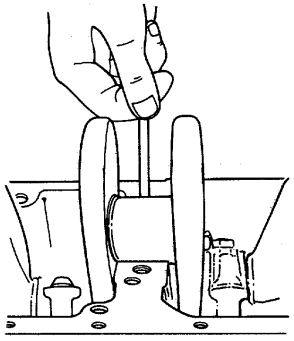

Figure 5-10. Bearing Removal.

(6) Inspect the bearing shell (5) and replace it as necessary.
(7) Rotate the bearing shell (5) on the crankshaft (2) until it locates with the tag in the machined slot.
(8) Install the lower half bearing shell (5) in the main bearing cap and liberally oil it.
(9) Repeat steps (3)-(8) for the other two main bearings.

NOTE
To remove the rear main cap, remove setscrews (see Figure 5-11).

(10) Torque bearings to 85 lb.-ft. (115 N•m).

c. Thrust Washer Replacement (see Appendix F, Figures 49 and 52).

(1) Remove rear main bearing oil seal half housing setscrews (18, Appendix F, Figure 49) (see Figure 5-11).
(2) Separate oil seal half housing (20) from bearing cap.

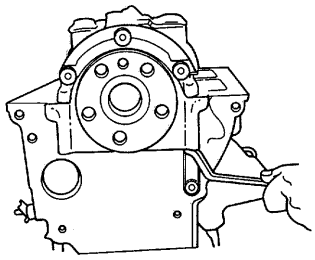

Figure 5-11. Oil Seal Housing

(3) Remove bearing cap retaining screws (30).
(4) Remove the lower thrust washer halves (4, Appendix F, Figure 52) from the bearing cap (see Figures 5-12 and 5-13).

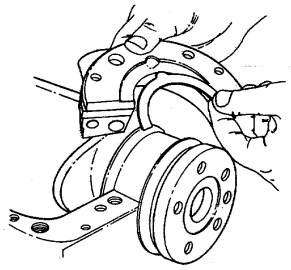

Figure 5-12. Thrust Washers.

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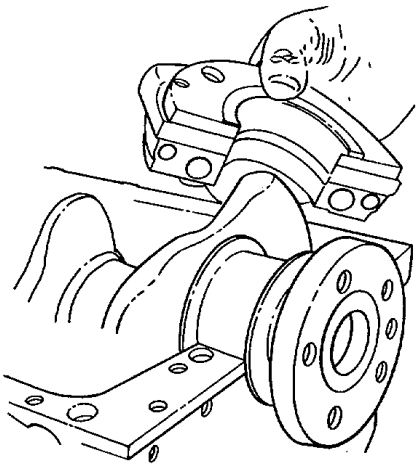


Figure 5-13. Bearing Cap.

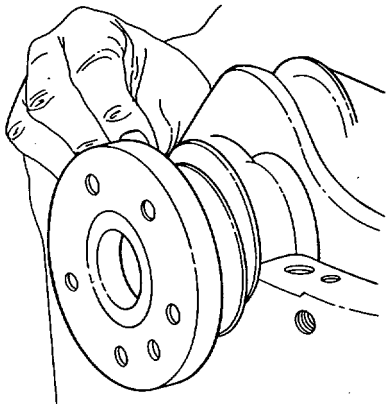


Figure 5-14. Thrust Washer Installation.

(5) Rotate the upper thrust washer halves (3) by rotating them with a piece of wood until they can be removed from recesses.

NOTE
Lightly oil thrust washers before Installing them. The steel faces of the thrust washers should face Inward toward the bearing cap.

(6) Install upper thrust washer halves (3) (see Figure 5-14).

(7) Install lower thrust washer halves (4) and torque setscrews (30, Appendix F, Figure 49) to 85 lb.-ft. (115 N•m).

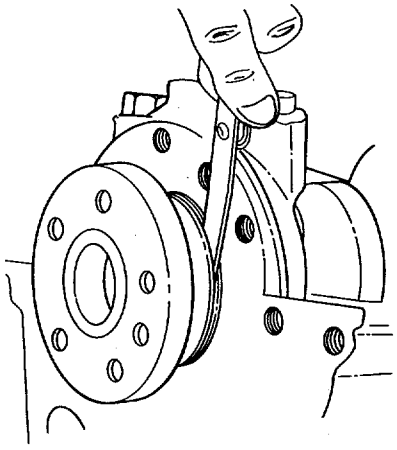
(8) Ensure that crankshaft end float is with-in limits 0.002-0.015 in. (0.0508-0.381mm) (see Figure 5-15).

(9) Install rear main oil seal half housing (20) with setscrews (18).

NOTE
If oil seals leak, replace them.

(10) Install oil pan assembly (see paragraph 5-21).

d. Crankshaft Removal (see Appendix E Figures 49 and 52).



(1) Remove starter and solenoid (see paragraph 4-52).

(2) Remove flywheel housing and flywheel (see paragraph 5-17).

(3) Remove crankshaft front pulley, timing case cover, timing gears, and injector pump drive hub (see paragraph 5-19).

(4) Remove timing case back plate (see paragraph 5-19).

(5) Remove oil pan and oil pump assembly (see paragraph 5-21)

Figure 5-15. Gaging Crankshaft End Float.

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NOTE

Bearing shells should be marked to indicate top or bottom and number of the rod assembly.

(6) Remove connecting rod setscrews, caps, and bearing shells (see paragraph 5-18).

NOTE

The bearing seal half housing setscrews must be removed to remove the rear main bearing cap.

(7) Remove main bearing cap.
(8) Remove crankshaft (2, Appendix F, Figure 52).
(9) Remove top half of main bearing shells (5).
(10) Remove top half of oil seal housing (20, Appendix F, Figure 49).

e Crankshaft Installation (see Appendix E Figure 52).

NOTE

- **Ensure that the crankshaft oil ports are unplugged.**
- **Unless the bearing shells are being replaced they must be Installed In their original positions.**

(1) Install three top bearing shells (5, Appendix F, Figure 52) and lubricate them with clean engine oil.

(2) Set crankshaft (2) in place.
(3) Install upper thrust washer (see Figure 5-14).
(4) Install three lower bearing shells (5) and lubricate them with clean engine oil.
(5) Install main bearing cap.

NOTE

Ensure that the two lower thrust washer halves are located correctly on either side of the rear main bearing.

(6) Check the main bearing setscrews for signs of stretch or thread damage. Replace the setscrews if necessary.

(7) Install setscrews and torque to 85 lb.-ft. (115 N•m).

NOTE

If the crankshaft end float is not within limits, install oversized thrust washers.

(8) Ensure that the crankshaft (2) rotates freely. Check the crankshaft end float with feeler gage. Acceptable end float is 0.002-0.015 (see Figure 5-15).
(9) Install new sealing strips to the rear main bearing oil seal housing (see paragraph 5-16/).
(10) Oil crankpins with clean engine oil and install connecting rod bearing shells. Ensure that they are returned to their correct positions. Install connecting rod caps (see paragraph 5-18).
(11) Install oil pump and oil pan assembly. Replace gaskets and seals (see paragraph 5-21).
(12) Install timing case back plate, injector pump drive hub, timing gears, timing gear cover, and crankshaft pulley (see paragraph 5-19).
(13) Install and align flywheel housing and flywheel (see paragraph 5-17).
(14) Install starter and solenoid (see paragraph 4-52).

f Rear Oil Seal Installation.

(1) This sealing arrangement consists of two half housings bolted around the rear of the crankshaft. The bore of these housings is machined to accommodate a rubber cored asbestos strip that, in conjunction with a right-hand helix machined between the thrust collar and the flywheel mounting flange, acts to return the surplus oil reaching the seal. The two half housings fit over this helix. The contact of the sealing strips with the crankshaft prevents leakage beyond this point.

(2) When traces of oil become apparent from behind the flywheel and a faulty rear oil seal is suspected, first ensure that the crankcase is breathing normally. Any buildup in crankcase pressure could cause oil to be forced past the rear sealing arrangement.

(3) If crankcase pressure is normal and new seals need to be fitted, the following procedures should be adopted with the crankcase in position.

(a) Set a half housing in a vise with the seal facing up.

(b) Insert approximately 1 in. (2.5 cm) of the strip, at each end, into the ends of the groove ensuring that each end of the strip projects 0.010-0.020 in. (0.25-0.51 mm) beyond the half housing joint face.

(c) With the thumb or finger, press the remainder of the strip into the groove, working from the center. Then use any convenient round bar to seat the strip by rolling and pressing its inner diameter (see Figure 5-16). This procedure takes advantage of the friction between the strip and the groove at the ends to compact the rope, while ensuring that the projections of the end faces of the rope remain as set.

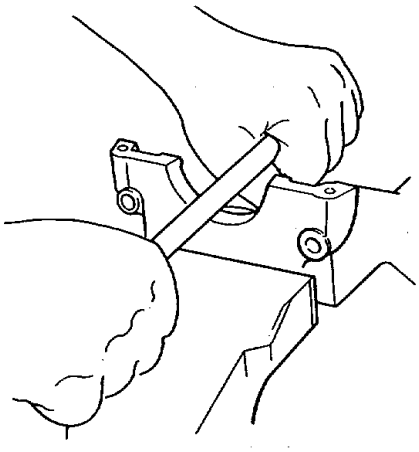

Figure 5-16. Pressing Seal in Place.

(d) Install the sealing strip to the other half housing in a similar manner.

(e) Remove all traces of the old joint from the cylinder block rear face and fit a new joint treated with a suitable jointing compound.

(f) Lightly coat the faces of the housing with a suitable jointing compound.

(g) Spread a film of graphite grease over the exposed inside diameter surface of the strip.

(h) Assemble the half housings around the crankshaft rear journal and fasten together with two setscrews (see Figure 5-11).

(i) Swivel the complete seal housing on the crankshaft, to seat the strips and to ensure that the assembly turns on the crankshaft.

(j) Bolt the seal housing in position on the block and the rear main bearing cap. Tighten the securing setscrews.

5-17. FLYWHEEL AND RING GEAR REPLACEMENT.

a. Flywheel and Ring Gear Removal (See Appendix E Figure 53).

(1) Remove flywheel assembly (8).

NOTE

The flywheel ring gear (9) is a shrunk fit on the flywheel (10). It is removed by partially cutting through the gear and chisel cutting it from the flywheel. An alternative method is to apply localized heat to the ring gear to expand It sufficiently to enable it to be tapped evenly from the flywheel.

(2) Separate flywheel (10) and ring gear (9).

(3) Remove flywheel housing (14).

(4) Remove flywheel housing dust cover (19) and preformed packing (1). Discard preformed packing.

b Flywheel and Ring Gear Installation (see Appendix E Figure 53).

(1) Install new preformed packing (1) and flywheel housing dust cover (19).

(2) Attach flywheel housing (14) to engine.

(3) Clean locating faces of flywheel (10) to ensure a position location when the new ring gear is fitted.

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(4) Clean new ring gear, then heat to X temperature not exceeding 480°F (250°C).
(5) Install the ring gear (9) over the fly-wheel (10) with the lead on the teeth facing inward, i.e., facing away from the engine when the flywheel (10) is fitted. Rotate the ring gear (9) quickly on its location immediately after it is fitted to ensure that it is laying flat. Allow ring gear to cool.

c. Flywheel Assembly Installation and Alinement.

CAUTION

The crankshaft flange face and periphery, and the mating face of the flywheel assembly must be perfectly clean and free from burrs before refitting the flywheel assembly. Failure to ensure this may make It Impossible to fit the fly-wheel assembly properly within the specifications given.

NOTE

There is a sixth (untapped) hole In the crankshaft flange that will be at BDC (bottom dead center) when nos. 1 and 4 pistons are at TDC (top dead center). The flywheel assembly can be fitted In only one position because of the Irregular spacing of the setscrew holes.

(1) Screw a short stud into the crankshaft flange fingertight. When the flywheel assembly (8) is offered up, this stud can take the weight of the flywheel assembly while the securing setscrews (12) are fitted. The stud can be removed and re- placed by the fifth setscrew.
(2) Torque the securing setscrews (12) to 60 lb.-ft. (81 Nom) but do not lock with the tabwashers at this stage.
(3) Set up a dial test indicator (clock) gage with the base secured against the rear face of the flywheel housing (14) and the gage stylus at right angles to the periphery of the flywheel assembly. Turn the crankshaft and check the runout. Fly- wheel assembly runout should not exceed 0.012 in. (0.30 mm).
(4) Check the alignment of the flywheel face-by turning the crankshaft. The total indicator reading for the flywheel being truly at right angles to the crankshaft axis should not exceed 0.001 in. (0.025 mm) for every inch (2.5 cm) the gage stylus is reading from the center of the flywheel. That is, if the flywheel has a diameter of approximately 20 in. (50.8 cm), then the stylus will be approximately 10 in. (25.4 cm) from its center; therefore, the total indicator reading should not exceed 0.010 in. (0.25 mm).
(5) When the flywheel assembly (8) is correctly aligned, lock the securing setscrews (12) with the tabwashers.

5-18. PISTONS AND CONNECTING RODS REPLACEMENT.

a. Removal (See Appendix F Figure 52 and 54).

(1) Remove the cylinder head assembly (see paragraph 5-15).
(2) Remove the oil pan (see paragraph 5-21).
(3) Rotate the crankshaft (2, Appendix F, Figure 52) until one pair of connecting rods (6, Appendix F, Figure 54) is at BDC. Remove their respective connecting rod caps securing bolts (10).
(4) Remove the connecting rod caps and bearing shells (11) (see Figure 5-17).

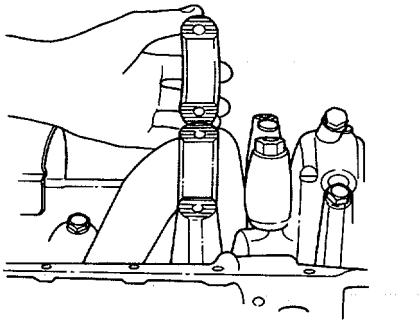

Figure 5-17. Connecting Rod Cap.

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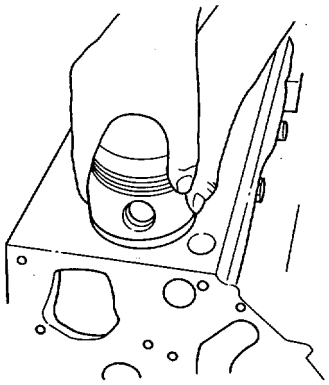
NOTE

If the bearing shells are serviceable, they should be suitably marked for installation.

NOTE

Any ridges or carbon deposits around the top of the cylinder bores should be removed with a suitable scraper before piston removal is attempted.



(5) Push the pistons (5) and connecting rods (6) carefully out through the top of the block and remove (see Figure 5-18).

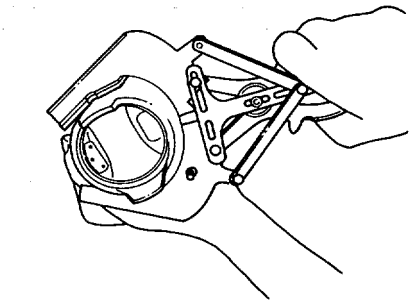
(6) Rotate the crankshaft through 180° to bring the remaining pair to BDC. Repeat removal operations. Keep each piston (5) and rod assembly (6) separate, each to each as marked. Mark the pistons on the crown (before removing the gudgeon pin) to indicate the front in relation to the FRONT marking cast on the connecting rods (6).

Figure 5-18. Piston Removal.

b. Disassembly (see Appendix E Figure 54).

NOTE

With 4.108 model engine, pistons have a steel Insert rolled into the top ring groove during piston manufacture. This steel Insert is an Integral part of the piston and no attempt should be made to remove It from its location. The laminated segments or spring loaded rings fitted in the fourth ring groove should be removed by hand.



(1) Remove the piston rings (1) from each piston (6), using a suitable piston ring tool (see Figure 5-19).

NOTE

Piston can be warmed in a suitable clean liquid (usually water) to a temperature of 100-120 ° F (40-50°C) to aid in removal of piston pin.

(2) Remove the retaining rings (3) securing the piston pin (4). Push out the piston pin to release the connecting rod (6). Discard retaining rings.

Figure 5-19. Piston Ring Removal.

c. Inspection.

(1) Examine the pistons for scoring and any signs of groove damage.

NOTE

All piston ring specifications are given in paragraph 1-26.

(2) Check the clearance of the piston rings in their respective grooves by placing the ring outer face into the groove and a suitable sized feeler gage between the ring and groove face.
(3) Check the fitted gaps of the piston rings. In worn cylinder bores, these gaps should be checked at the bottom of the bores.
(4) Check the fit of the piston pin in the small end bearing sleeve; if excessive, replace the small end bearing sleeve.
(5) To renew the small end bearing sleeve, remove the old one by means of a suitable press and dolly. Press in the new bearing sleeve, ensuring that the oil feed holes are aligned. Ream the new bearing sleeve to suit the piston pin, then check the connecting rod for parallelism and twist.

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(6) Examine the big end bearing sleeves for any signs of wear or pitting.

d Assembly (see Appendix E Figure 54).

(1) If original pistons (5) are to be installed, they must be assembled to the same connecting rod (6), i.e., no. 1 piston to no. 1 connecting rod assembly. See Figures 5-20 and 5-21 for location of piston and connecting rod numbering. Any new components fitted should be numbered the same as those that they replace.

(2) Warm the piston (5) in a suitable clean liquid (usually water) to a temperature of 100-120°F (40-50°C). This will enable the piston pin (4) to be easily pushed into the piston bore when the piston and connecting rod (6) have been correctly aligned.

(3) Place no. 1 piston (5) onto its head, noting the position of the mark previously made to indicate FRONT.

(4) Hold no. 1 connecting rod (6) with the small end between the piston pin bores so that the word FRONT cast on the rod is toward the same side.

(5) Push the piston pin (4) into the piston, locating the connecting rod (6) in position.

(6) Install the two new retaining rings (3) securely in piston pin grooves.

(7) Repeat this procedure for the three remaining pistons and connecting rods.

(8) Install piston rings (1).

(a) Plain parallel faced compression.

(b) Internally stepped compression.

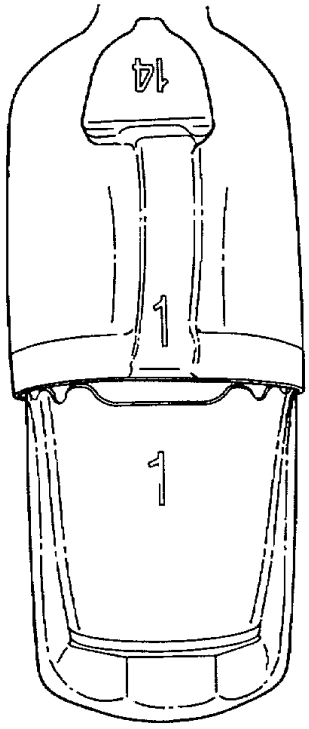

Figure 5-20. Connecting Rod Matching Ends.

NOTE

Always ensure that Internally stepped or taper-faced rings are correctly fitted. They are marked TOP or BTM (bottom) to ensure correct replacement. The top compression and slotted oil control rings may be fitted either way up.

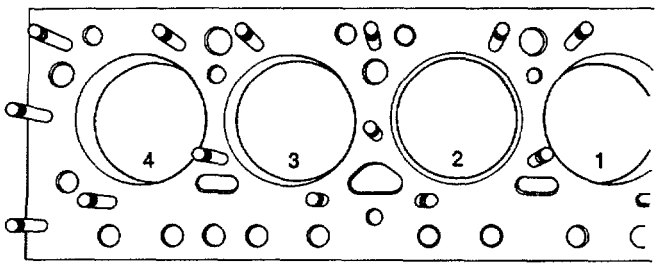

Figure 5-21. Engine Block.

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(c) Internally stepped compression.
(d) Laminated segment oil control.
(e) Slotted scraper.

(9) Install laminated rings. The procedure for fitting the laminated type is different because the ring has four separate segments. These may be fitted by hand in the following sequence with the piston crown uppermost:
(a) Install the first segment to the piston (5) so that when held horizontally between the thumb and fingers and radially compressed, the ring ends point downward (see Figure 5-22). Place this ring on the bottom face of the fourth ring groove with the gap over the piston pin bore.
(b) Install the second segment on top of the first, so that when compressed as described above the ends point upward. Position the gap at 180º to that of the first segment.
(c) Install the third segment as in (a) above with the gap immediately above the gap of the first segment.
(d) Install the fourth segment as in (b) above with the gap immediately above the gap of the second segment. If all the segments have been fitted correctly, they will be positioned as shown Figure 5-22. The gaps of the remaining rings should be staggered alternately along the piston pin axis.

(10) Liberally lubricate the rings (1) in their grooves and ensure that theymove freely. This does not apply to the laminated type in the fourth groove, which if correctly fitted should not move freely due to the outward pressure of the top and bottom segments on the ring groove walls. When all the rings have been fitted, they should be as shown in Figure 5-22.

(11) Install spring loaded scraper ring. When fitting the chrome plated spring loaded scraper ring (see Figure 5-23), the following should be adopted:
(a) Install internal expander (1, Figure 5-23).

NOTE
When fitting rail rings, gaps should be staggered.

(b) Install two rail rings (2) at the bottom of the groove.
(c) Install spiral ring (3).
(d) Install two top rail rings (2).

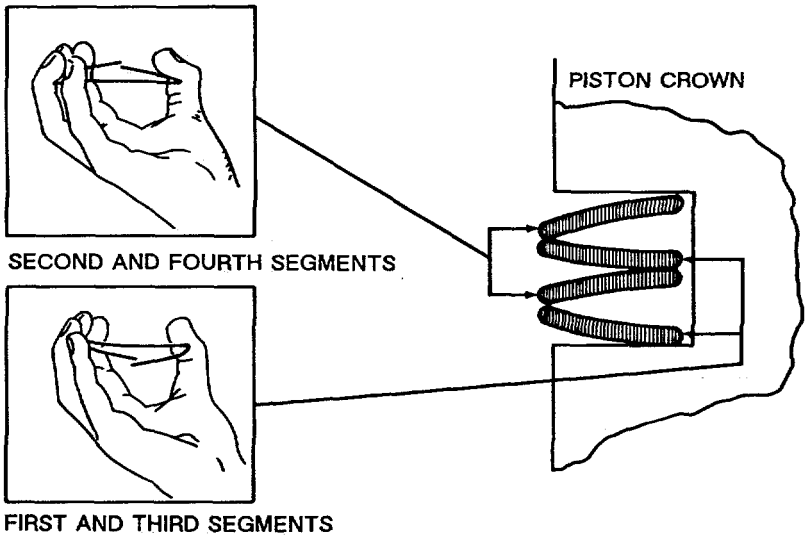

Figure 5-22. Piston Ring Installation.

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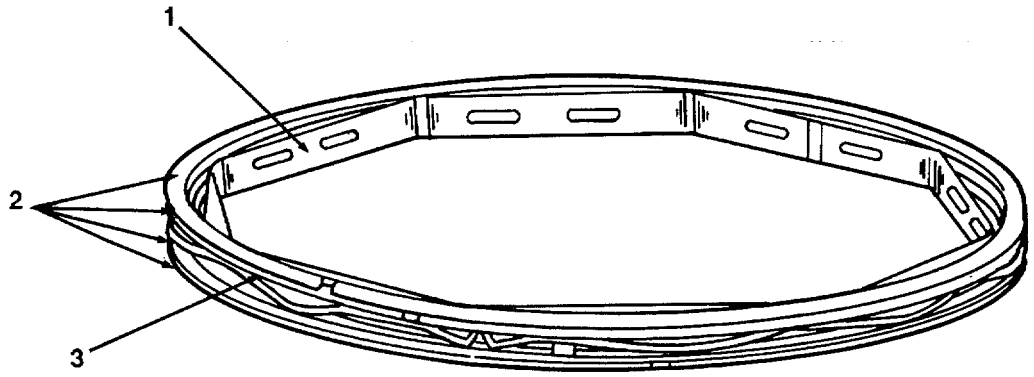


Figure 5-23. Scraper Ring.

e. Installation(see Appendix E Figure 54).

(1) Before fitting the piston (5) and connecting rod assemblies (6) to their respective cylinder bores, thoroughly clean and liberally coat each bore with clean engine oil.

(2) Turn the engine until the crankpins of no. 1 and no. 4 cylinders are at BDC.

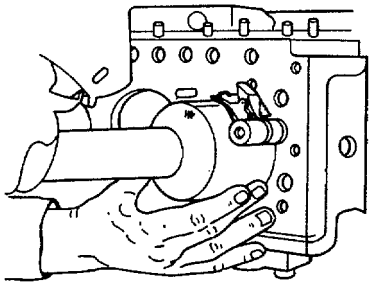
(3) Using a suitable ring clamp as shown in Figure 5-24, carefully compress the rings of no. 1 piston and hold in this position.

(4) With the word FRONT on the connecting rod facing the front of the engine, insert the rod carefully into no. 1 cylinder bore.

(5) The piston head may be gently tapped with the shaft of a hammer until all the rings have entered the cylinder bore.

(6) Draw the connecting rod (6) toward the crankpin, and place the top half bearing shell in position. Locate the tag in the machined slot and oil it liberally. Draw the rod onto the crankpin.

(7) Install the lower half bearing shell (11) to the connecting rod cap. Locating the tag in the machined slot, liberally oil and fit the cap to the crankpin, ensuring that the numbers on the rod and cap coincide (see Figure 5-20).



NOTE
The cylinders are numbered 1, 2, 3, and 4 starting from the front (water pump) end of the engine. These components (marked as shown in Figures 5-20 and 5-21) must be returned to their original locations.

Figure 5-24. Piston Installation.

NOTE
Locking tabs are not fitted to these setscrews.

(8) Install the two connecting rod securing setscrews (10) and torque evenly to 42 lb-ft. (57 N•m).

(9) Repeat this procedure for no. 4 piston and connecting rod assembly.

(10) Rotate the crankshaft to bring crankpins of no. 2 and no. 3 cylinders to BDC.

(11) Repeat steps (3)-(8) to install the two remaining piston and connecting rod assemblies.

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NOTE

With new pistons, a machining allowance Is provided on the crown of the piston. Material may be removed by lathe so that, when fitted, the piston height above the cylinder block top face will be within 0.002-0.006 In. (0.051-0.152 mm).

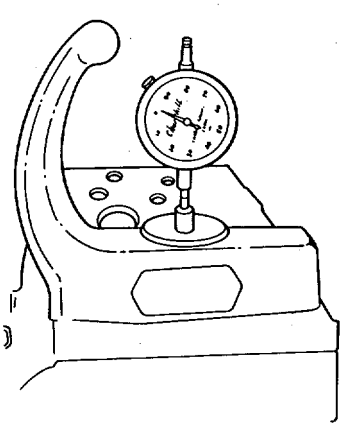

Figure 5-25. Checking new pistons.

(12) Measure the piston height above the cylinder block top face with the particular piston at TDC. This piston height can be measured by a piston height gage as shown in Figure 5-25. Repeat for each new piston to be fitted and mark each piston with the number of the cylinder bore to which it will belong. Do not mark on the top as any marking here will be removed by the machining.

(13) When each piston (5) has been skimmed, check it again when finally refitted to ensure that any new piston fitted is now within the limits quoted. Once the piston height is correct, mark any such piston on the crown with the number of its respective bore (see Figure 5-21).

(14) Install the oil pump (see paragraph 5-21).

(15) Install the cylinder head assembly (see paragraph 5-15).

f. Cylinder Sleeve Replacement (see Appendix E Figure 49).

(1) The cylinder sleeves (6) fitted to the cylinders are centrifugally cast alloy iron. They are an interference fit in the cylinder block parent bore and of the thinwall dry type. Reboring of these sleeves is not possible. New sleeves should be fitted when a rebore would normally be considered necessary.

(2) Dimensional checks of the cylinder bore are carried out using the gage tool as shown in Figure 5-26. When checking sleeves (6), each one should be measured in three positions: top, center and bottom. The readings being taken parallel and at right angles to the center line of the cylinder block give six readings for each cylinder bore. When checking the fitted internal bore of a new thinwall sleeve, allow a period of time to elapse for the sleeve to settle.

(3) Remove all the various components from the cylinder block.

NOTE

Support the block locally in the area of the top of the sleeve.

(4) Using a suitable press and shouldered metal disc slightly smaller on the outside diameter than the parent bore diameter, press the sleeve (6) carefully out through the top of the cylinder block.

(5) Lightly lubricate the outside of the sleeve (6) with clean engine oil.

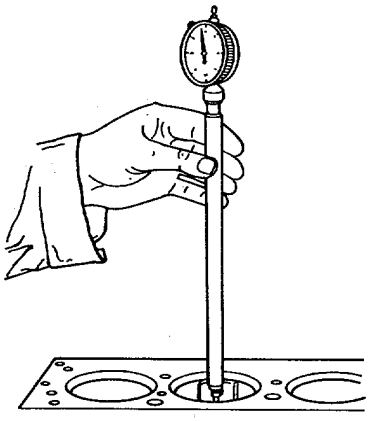

Figure 5-26. Cylinder Bore Check.

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NOTE

The limits for sleeve protrusion are 0.023-0.027 In. (0.584-0.686 mm) and may be checked as shown In Figure 5-27.

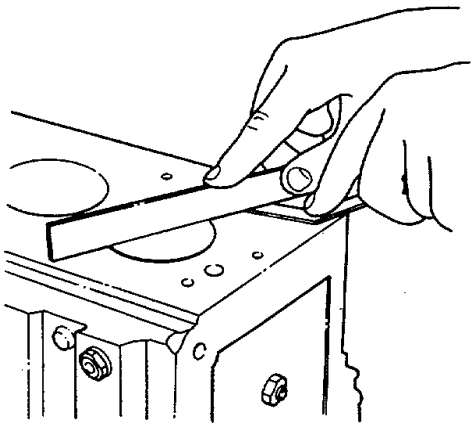

Figure 5-27. Piston Clearance.

(6) The sleeve (6) must protrude above the cylinder block top face and not be pressed fully home when fitted correctly. Use a solid stop washer designed to give the correct sleeve protrusion.

(7) Press the sleeve into the bore progressively until it reaches the solid stop washer.

NOTE

Where boring equipment is mounted on the top face of the cylinder block, a parallel plate thicker than 0.027 in. (0.686 mm) should be fitted between the boring bar and cylinder block face.

(8) Bore and finish hone the sleeves to 3.125-3.126 in. (79.375-79.400 mm).

(9) Assemble the engine components to the cylinder block.

5-19. TIMING GEARS AND CRANKSHAFT MAINTENANCE.

a. Timing Case Cover Removal (See Appendix E Figure 52, 58, and 77).

(1) Loosen alternator mounting bolts (1 and 15, Appendix F, Figure 77) and adjusting bolts (9) and tilt generator (8) toward engine.

(2) Remove fan belt.

(3) Remove crankshaft pulley setscrew, crankshaft pulley (8, Appendix F, Figure 52), and key (6).

CAUTION

Be careful not to damage the crankshaft front oil seal.

(4) Remove timing case cover setscrews (24, Appendix F, Figure 58) and timing gear cover (16).

(5) Remove gasket (20) and discard.

b. Crankshaft Front Oil Seal Replacement (See Appendix E Figure 58).

(1) Press oil seal (28) from timing case cover (16). Discard oil seal.

(2) Press new oil seal (28) with lip facing inward, into the timing case cover (16) until seated against seal retaining lip. Ensure that cover is supported as the seal is pressed into it.

c. Timing Case Cover Installation (See Appendix F, Figures 52 and 58).

(1) Using a new gasket (20, Appendix F, Figure 58) lightly coated with a suitable jointing compound, place the timing case cover (16) in position, taking care not to damage the rubber tip of the oil seal (28) on the crankshaft pulley key (6, Appendix F, Figure 52).

(2) Loosely install the timing case cover setscrews and nuts.

(3) Install the crankshaft pulley (8) to centralize the oil seal, then tighten the securing setscrews and nuts.

(4) Install the crankshaft pulley setscrew and torque to 150 lb.-ft. (203.4 Nm).

(5) Install the fan belt and adjust fan belt tension (see paragraph 4-51).

d. Idler Gear and Hub Removal (See Appendix E Figure 56 and 58).

(1) Remove the timing case cover (see a above).

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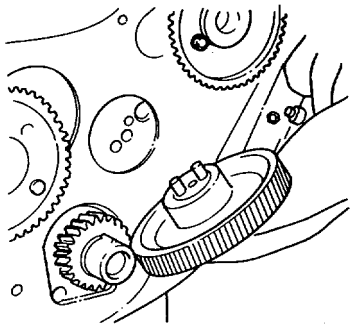

(2) Tap back the locking tabs and unscrew the two idler hub securing setscrews (1, Appendix F, Figure 56).

(3) Remove setscrews (1), idler gear (15, Appendix F, Figure 58), and hub (4, Appendix F, Figure 56) (see Figure 5-28).

(4) Clean and thoroughly inspect the idler gear and hub for signs of excessive wear, cracks, pitting, or other damage. Ensure that oil passages in hub and idler gear are clear.

Figure 5-28. Idler Gear and Hub.

e. Idler Gear and Hub Installation (see Appendix F, Figure 56 and 58).

(1) Hold the idler gear (15, Appendix F, Figure 58) in position with the timing marks correctly aligned.

(2) Insert the hub (4, Appendix F, Figure 56) (see Figure 5-29) so that the holes in the hub and the cylinder block are aligned. Secure with two setscrews (1).

NOTE

Clearance Is provided in the setscrew holes of the Idler gear hub to provide the necessary backlash adjustment for the timing gears.

(3) Using the adjustable idler gear, backlash between both crankshaft gear/idler gear should be set within 0.0015-0.0025 in. (0.038-0.064 mm) with the gears held together to take up the effect of bearing clearance. Check backlash with feeler gages (see Figure 5-30).

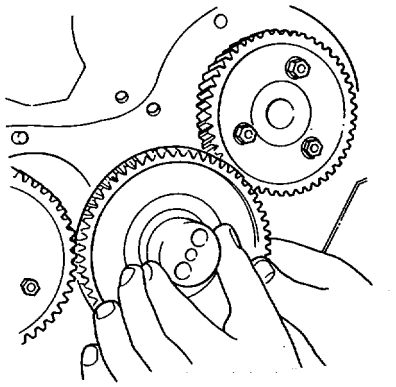

Figure 5-29. Idler Gear Installation.

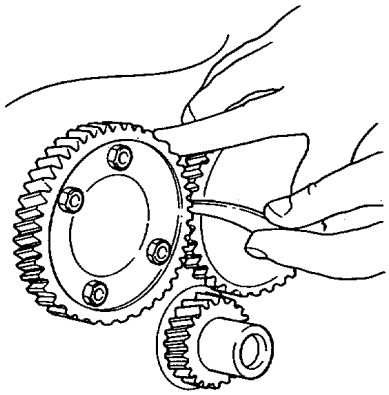

Figure 5-30. Gaging Backlash.

(4) When the backlash has been correctly set, torque the idler hub setscrews (1) to 31 lb.-ft. (42 Nm).

(5) Check the idler gear end float (see Figure 5-31). The limits are 0.003-0.008 in. (0.076-0.203 mm).

NOTE

When correctly set, the timing gears should appear as shown In Figure 5-32.

(6) Install the timing case cover (see *c* above).

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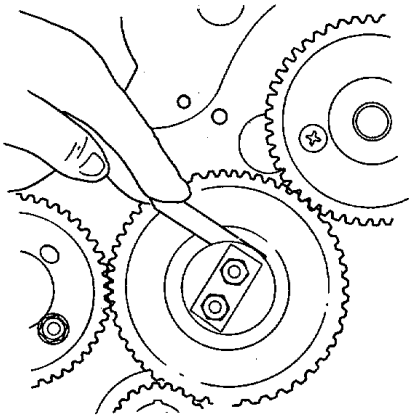

Figure 5-31. Idler Gear End Float.

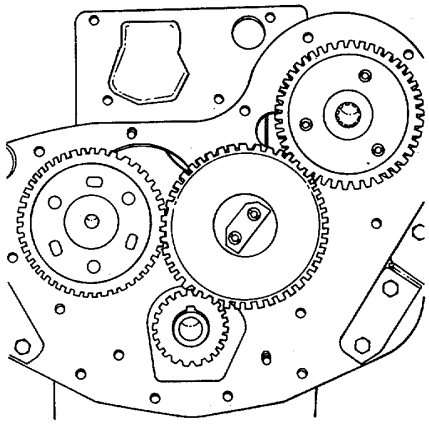

Figure 5-32. Timing Gears.

f. Camshaft Gear Removal (see Appendix E Figure 58).

(1) Remove the timing case cover (see a above).

(2) Remove the three securing setscrews (1) and ease the camshaft gear (3) away from its location.

(3) Examine the camshaft gear for signs of excessive wear, cracks, pitting, or other damage.

g. Camshaft Gear Installation (see Appendix E; Figure 58).

(1) Remove the idler gear and hub (see d above).

(2) Remove cylinder head cover, and rocker shaft (if not previously removed) (see paragraph 5-15).

(3) Install the camshaft gear (3) to the camshaft ensuring that the "D" marks on the camshaft gear and camshaft hub are aligned (see Figure 5-33).

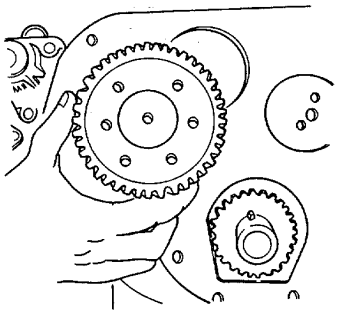

Figure 5-33. Camshaft Gear.

NOTE

Only the plain (nonslotted) holes in the camshaft gear are to be used, and these will align with the tapped holes on the camshaft hub when the "D" marks are in alignment.

(4) Install the three securing setscrews (1) and torque to 19-21 lb.-ft. (26-28 N•m).

(5) Install the idler hub and gear (see e above).

(6) Install cylinder head cover and rocker shaft (see paragraph 5-15).

(7) Install timing case cover (see c above).

h. Injector Pump Gear Removal (see Appendix E, Figure 58).

(1) Remove the timing case cover (see a above).

(2) Remove the idler gear and hub (see d above).

(3) Remove the three securing setscrews (6) and ease the injector pump gear (13) from its location on the injector pump drive hub (11).

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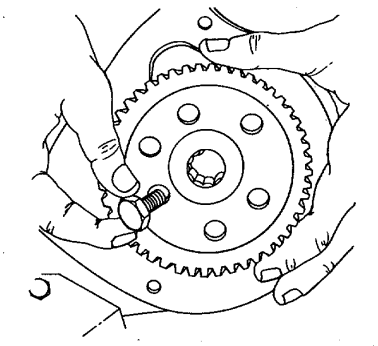
(4) Examine the injector pump gear for signs of excessive wear, cracks, pitting, or other damage.



i. Injector Pump Gear Installation (see Appendix F, Figure 58).

(1) Install the injector pump gear (13) so that the timing marks on the injector pump gear and hub (11) are aligned (see Figure 5-34).

(2) Install the three securing setscrews (6) and torque to 19-21 lb.-ft. (26-28 N•m).

(3) Install the idler gear and hub (see e above).

(4) Install timing case cover (see a above).

Figure 5-34. Injector Pump Gear.

j. Injector Pump Drive Hub Removal (see Appendix E Figures 58 and 64).

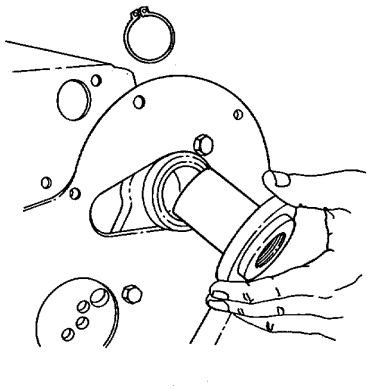
(1) Remove the timing case cover (see a above).

(2) Remove injector pump gear (see h above).

(3) Remove the low and high pressure fuel lines from the injector pump (15, Appendix F, Figure 64).

(4) Remove the injector pump securing setscrews (14) and nut (16) and withdraw the pump (15).

(5) Remove the drive hub locating retaining ring (19, Appendix F, Figure 58) and withdraw the drive hub (11) from its bearing (10) (See Figure 5-35).



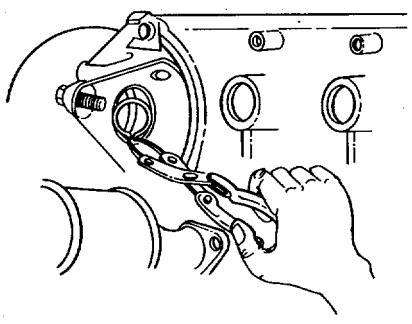
NOTE

The bearing is an interference fit in the cylinder block. If the block is completely stripped, replace by using a suitable dolly and puller or press, the new one being fitted in the reverse order.

(6) Examine the drive hub and bearing for signs of excessive wear, surface cracks, pitting, or other damage.

Figure 5-35. Injector Pump Drive Hub Removal

k. Injector Pump Drive Hub Installation (see Appendix E Figure 58 and 64).



(1) Install the drive hub (11, Appendix F, Figure 58) in the bearing (10) and locate with the retaining ring (8) (see Figure 5-36).

(2) Check the drive hub end float using feeler gages placed between the front face of the bearing and the rear face of the drive hub. The end float limits are 0.002-0.010 in. (0.051-0.254 mm).

Figure 5-36. Injector Pump Retaining Ring.

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(3) Install the injector pump (see paragraph 5-22).

(4) Install the low and high pressure fuel lines to the injector pump.

(5) Install the injector pump gear (see i above).

(6) Install idler gear and hub (see e above).

(7) Install timing case cover (see c above).

l. Timing Case Back Plate Removal (see Appendix F; Figure 49).

(1) Remove the timing case cover and timing gears (see a, d, and f above).

(2) Remove the injector pump (see paragraph 5-22) and drive hub (see j above).

(3) Remove the securing setscrews (28) and studs (where fitted).

NOTE

The crankshaft gear Is an Interference fit on the crankshaft. If removal is necessary, use a suitable puller.

(4) Lift the timing case back plate (27) clear from the camshaft hub and crankshaft gear.

(5) Remove gasket (23) and discard.

m. Timing Case Back Plate Installation (see Appendix E Figure 49).

(1) Install the timing case back plate (27) to the cylinder block using a new gasket (23) and suitable jointing compound.

(2) Install any studs removed and secure with the setscrews (28).

(3) Install the injector pump drive hub (see k above) and injector pump (see paragraph 5-22).

(4) Install the timing gears and timing case cover (see c, e, i, and g above).

n Camshaft and Tappets Removal (see Appendix E Figures 49, 55, and 56).

NOTE

To remove the camshaft, it may be necessary to remove the engine from the vehicle and place in a suitable stand where It can be turned over. This is to prevent the tappets from falling out when the camshaft is removed. If camshaft is being removed with engine on vehicle, attach suitable clips (when the tappet Inspection cover has been removed) to each tappet to hold them In position when the camshaft Is withdrawn from the block.

(1) Remove the engine from the vehicle and mount in a suitable stand with oil pan down.

(2) Remove the cylinder head cover, rocker shaft assembly, and pushrods (see paragraph 5-15).

(3) Remove the timing case cover and timing gears (see a, d, and f above).

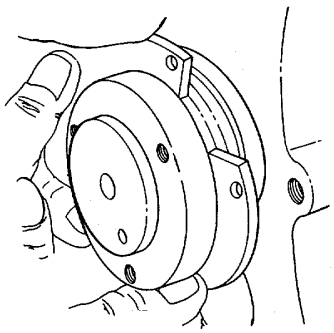

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Figure 5-37. Thrust Washers.

(4) Remove the fuel pump (see paragraph 4-43), tappet inspection cover (4, Appendix F, Figure 55), and fuel pump operating pushrod.

(5) Turn the engine over so that the oil pan is up. If engine can not be turned over, lift tappets (7, Appendix F, Figure 56) to the top of their locations and secure with suitable clips.

(6) Remove the oil pan, oil pump, and sump (see paragraph 5-21).

(7) Remove the timing cover back plate (27, Appendix F, Figure 49). This will show the camshaft and thrust washers (see Figure 5-37).

(8) Ease the camshaft (8) out from the block and catch the thrust washers (6) as they come out of the recess in the cylinder block.

(9) Withdraw the camshaft (8) (see Figure 5-38) ensuring that the cams and journals are not damaged.

(10) Lift tappets (7) from their locations (see Figure 5-39) or remove the retaining clips if the engine is still positioned with the oil pan down.

(11) Examine camshaft (8) and tappets (7) for signs of excessive wear, surface cracks, pitting, or other damage.

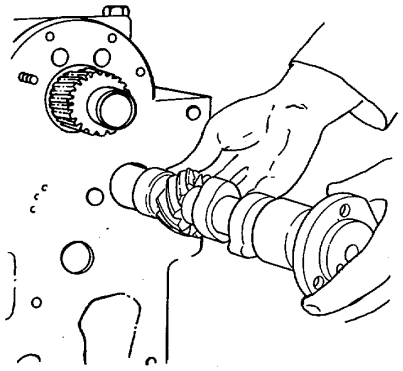

Figure 5-38. Camshaft Removal.

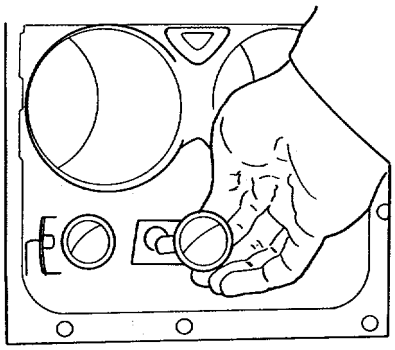

Figure 5-39. Tappet Removal.

o. Tappets and Camshafts Installation.

(1) Liberally lubricate tappets (7, Appendix F, Figure 56) with clean engine oil and return to their respective locations. Secure with suitable clips (if applicable).

(2) Carefully install the camshaft (8) into the cylinder block, ensuring that cams and journals are not damaged.

(3) Before the camshaft (8) is fully installed, locate the two thrust washers (6) (see Figure 5-37) (one of which locates on the dowel in the recess) in position on either side of the camshaft hub. When correctly located, the camshaft can be fully installed and will appear as in Figure 5-40.

(4) Install the timing case back plate (27, Appendix F, Figure 49).

(5) Install the oil pump, oil pan, and sump (see paragraph 5-21).

(6) Turn the engine over so that the cylinder block top face or cylinder head (if fitted) is up.

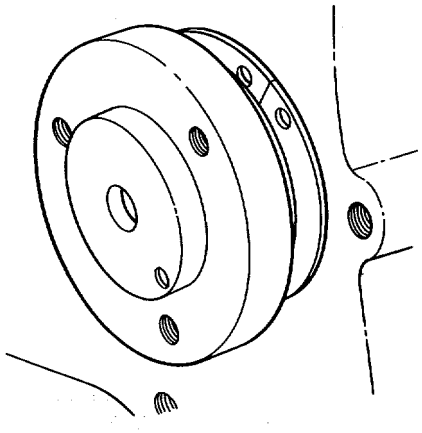

Figure 5-40. Thrust Washers Installed.

(7) Install the fuel pump operating pushrod (see Figure 541), tappet inspection cover (4, Appendix F, Figure 55) (after removing any retaining clips), and fuel pump (see paragraph 4-43).

(8) Install the timing gears and timing case cover (see c, e, and g above).

(9) Install the remainder of the engine components in accordance with the instructions given for each in the relevant part of this section.

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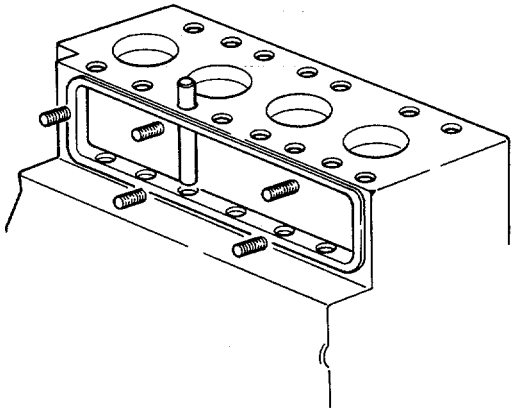

Figure 5-41. Fuel Pump Pushrod.

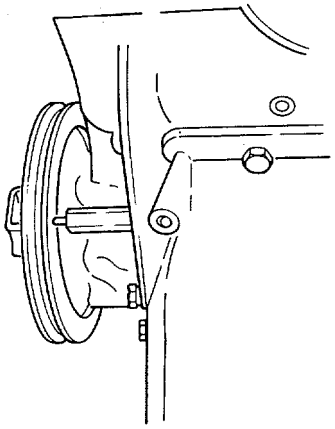

Figure 5-42. Timing Pin.

5-20. TIMING ENGINE.

NOTE

As timing gears are used, the factory setting remains constant. The removal of the cylinder head does not affect the Injector pump or the valve timing.

a. Timing Marks.

When the engine is originally timed at the factory, marks are stamped on the gears. If the engine timing is disturbed, resetting the original timing is quite straightforward.

b. Resetting Engine to Original Timing (see Appendix E Figures 56 and 58).

CAUTION

Use great care when timing engine. If timing is incorrectly set, even by only one tooth, a valve head may strike the piston crown when the engine is started. Damage to engine will result.

(1) Before timing, remove the camshaft (see n above), injector pump (see paragraph 5-22), and idler gears (see d above). Ensure that the camshaft is free to turn by hand. If the cylinder head assembly is still in position, remove the atomizers and rocker shaft to facilitate the timing operations.

(2) Turn the engine until the keyway in the front of the crankshaft is up (see Figure 5-42). This will bring no. 1 and no. 4 pistons to TDC.

(3) Install the camshaft gear (3, Appendix F, Figure 58) to its hub ensuring that the "D" marks are correctly aligned (see Figure 5-33). Secure with the three setscrews (1).

(4) Install the injector pump gear (13) to the injector pump drive hub (11) ensuring that the stamped timing marks align (see Figure 5-34). Secure with three setscrews (6).

(5) Align the idler gear double dots to the single dot on the crankshaft gear. Align the single line (or dot) on the camshaft gear and the single dot on the idler gear with the double dots on the injector pump gear. These timing marks when correctly positioned will appear as shown in Figure 5-42.

(6) Locate the idler gear (15) with the hub (4, Appendix F, Figure 56) and the two securing setscrews (1) using a new tabwasher (2).

(7) Refer to paragraph 5-19e to adjust.

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c. Checking Valve Timing.

NOTE

A timing pin is fitted at the bottom of the timing case cover on the left side. When it is unscrewed, it locates in a hole machined in the rear face of the crankshaft pulley (see Figure 5-42), when no. 1 and no. 4 pistons are at TDC. With some applications, two holes are provided in the rear face of the crankshaft pulley, i.e., one for the TDC position and the other for the static injector pump timing position. Always return this pin to its normal location immediately after TDC has been determined and before any attempt is made to turn or start the engine.

(1) Turn the crankshaft until the valves of no. 4 cylinder are on overlap.
(2) In this position, set the valve clearance of no. 1 inlet valve to 0.039 in. (0.99 mm).
(3) Turn the engine slowly in the normal direction of rotation until the clearance of no. 1 inlet valve is just taken up. It will just be possible to rotate no. 1 inlet valve pushrod between the thumb and the forefinger.
(4) If the timing has been correctly set, no. 1 and no. 4 pistons will now be at TDC.

NOTE

No adjustment is provided for valve timing. If timing is incorrect and the camshaft gear has been correctly fitted to the camshaft hub, the error will probably be due to incorrect alignment of the original timing marks on the drive gears. Recheck (see b above).

(5) When valve timing is originally set and checked during production, a timing tolerance of ± 2 1/2° (flywheel) is allowed for step (4)-above. When the timing has been correctly set, do not forget to reset no. 1 inlet valve clearance to the correct amount. Also return the timing pin to its correct location if it has been used to check TDC.

5-21. OIL PUMP MAINTENANCE.

NOTE

The oil pump fits Into a machined bore in the cylinder block and is located by means of a screw locked by a tabwasher. The oil pump is driven through spiral gears from the camshaft. On the other end of the drive shaft Is a four-lobed rotor. This rotor drives a five-lobed rotor that is free to rotate within the pump body.

a. Oil Pan Removal (See Appendix F, Figure 51).

(1) Remove the oil pan drain plug (14) and drain the oil.
(2) Remove the dipstick (2), oil pan retaining setscrews (18), and oil pan (1) Remove gaskets (4 and 6) and discard.

b Oil Pan Installation (see Appendix E Figure 51).

NOTE

When the gaskets are being positioned, the mitered ends must go right up into the recesses in the front and rear main bearing caps.

(1) Lightly apply a coating of a suitable jointing compound to the crankcase and oil pan faces. Position new gaskets (4) so that all the holes align.
(2) Lightly apply gasket compound to new gaskets (6). Press gaskets into the grooves provided in the main bearing caps.
(3) Place the oil pan (1) in position and fit all the retaining setscrews (8). Tighten evenly.
(4) Install the dipstick (2) and oil pan drain plug (14), then refill with clean, new oil (see Chapter 3, Section I).

c. Oil Pump Removal (See Appendix Figures 59 and 60).

(1) Drain the engine oil and remove oil pan (see a above).
(2) Remove the strainer (7, Appendix F, Figure 60) from the end of the suction pipe (see Figure 5-43).
(3) Unscrew the delivery pipe securing nut (9, Appendix F, Figure 59) to the cylinder block and the setscrew (4, Appendix F, Figure 60) securing the suction pipe to the rear main bearing cap.
(4) Tap back the tabwasher (7, Appendix F, Figure 59) locking the locating screw (6) and support the oil pump (1) (if the engine is the normal way up), while the locating screw is removed. Discard tabwasher.
(5) Remove the oil pump (1) from the cylinder block (see Figure 5-44).

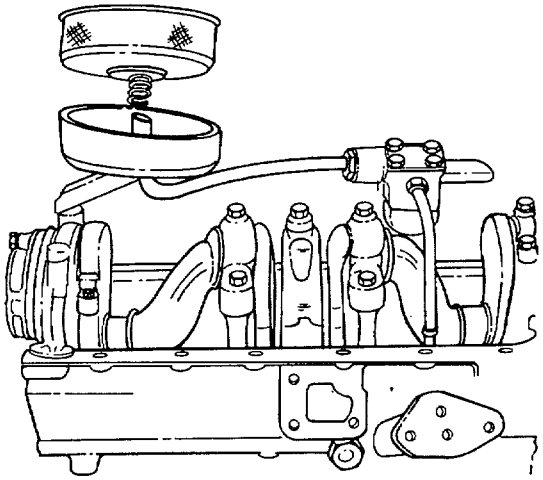

Figure 5-43. Oil Pump Strainer Removal.

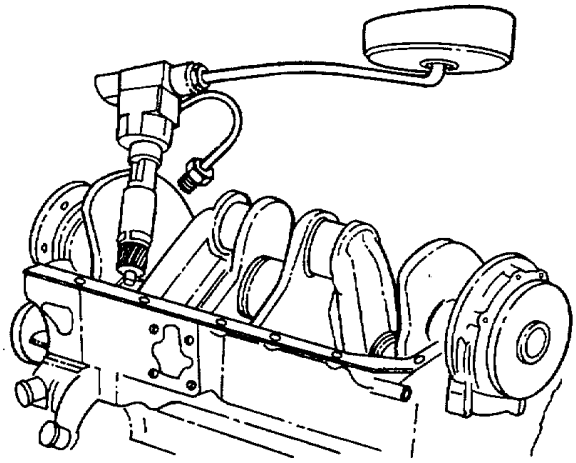

Figure 5-44. Oil Pump Removal.

d. Oil Pump Disassembly (see Appendix E Figure 59).

(1) Remove the delivery (10, Appendix F, Figure 59) and suction pipes. The oil pump will now be as shown in Figure 5-45.

(2) Remove the drive gear using a suitable puller. The end cover assembly also Incorporates the pressure relief valve housing.

(3) With the pump held in a vise with protective clamps, remove the four securing setscrews and remove the end cover assembly.

NOTE

Do not to remove the Inner rotor from the drive shaft. The Inner rotor is not available as a separate part.

(4) Withdraw the drive shaft complete with inner rotor (see Figure 5-46).

(5) Remove the outer rotor.

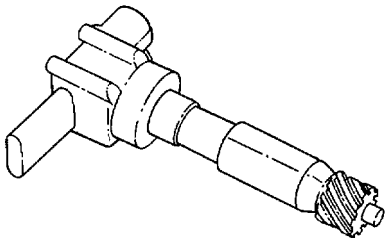

Figure 5-45. Oil Pump Assembly.

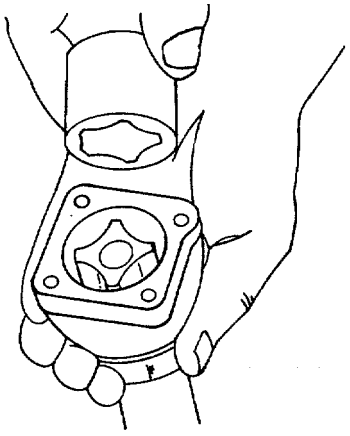

Figure 5-46. Inner Rotor.

e. Oil Pump Inspection (See Appendix E Figure 59).

(1) Inspect for signs of wear, cracks, pitting, or other damage.

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(2) Install the drive shaft with inner rotor, then install the outer (driven) rotor ensuring that face with chamfered edge enters the pump body first (see Figure 5-47). Perform the three following dimensional checks.

NOTE

Clearances for these checks are given in paragraph 1-58. They are the clearances applicable to a new pump and are Intended to be used as a guide. If oil pump is worn to such an extent that it adversely affects the working oil pressure, replace oil pump.

(a Check the clearance between the inner and outer rotors (see Figure 5-48).

(b) Check the clearance between the outer rotor and the pump body (see Figure 5-47).

(c) Check the clearance between the rotors and the end cover assembly using a straightedge and feeler gage.

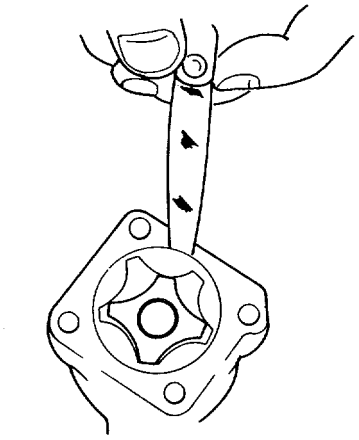

Figure 5-47. Outer Rotor Clearance.

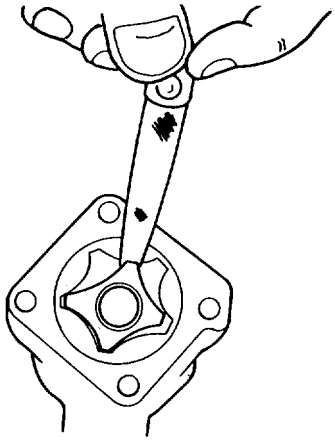

Figure 5-48. Inner Rotor Clearance.

f. Oil Pump Assembly.

(1) Replace the end cover assembly and install the four securing setscrews. Ensure correct positioning so that the suction and delivery pipes will locate correctly.

(2) Press the oil pump drive gear onto the shaft.

(3) Rotate the pump by hand to ensure that it turns freely.

g. Oil Pump Installation (See Appendix F Figures 59 and 60).

(1) Loosely install the suction and delivery pipes (10).

(2) Place the oil pump (1) in position, align with the securing screw (6), and lock it with new tabwasher (7).

(3) Tighten the delivery pipe (10) at both ends. Install the setscrew (4, Appendix F, Figure 60) securing the suction pipe.

NOTE

Ensure that the strainer has been thoroughly cleaned in suitable cleaning fluid before being refitted.

(4) Tighten the suction pipe at the pump end. Install the strainer (7) on the end of the suction pipe.

(5) Install the oil pan (see paragraph 5-21).

(6) Fill crankcase with clean oil of an approved grade (see Chapter 3, Section I).

h. Oil Pump Pressure Relief Valve Removal (see Appendix E Figure 59).

(1) Remove the oil pump (see c above).

(2) Remove suction and delivery pipes (10).

(3) Remove the four securing setscrews and remove the end cover assembly.

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(4) Remove the cotter pin (5, Figure 5-49) from the end of housing (1) and withdraw the spring cap (4), spring (3), and plunger (2). Discard cotter pin.
(5) Thoroughly clean the parts, inspect for wear or damage, and replace if necessary.

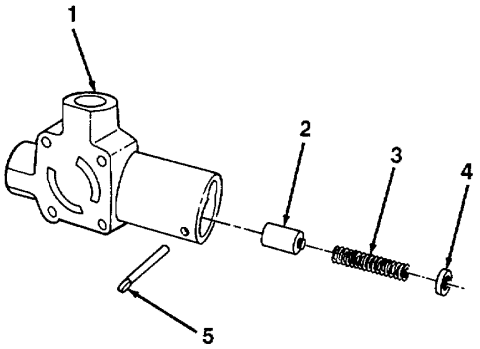

Figure 5-49. Oil Pump Pressure Relief Valve.

i. Oil Pump Pressure Relief Valve Installation (see Figure 5-49).

(1) Install the plunger (2), spring (3), and spring cap (4), and secure with new cotter pin (5).

(2) Install end cover assembly with four securing setscrews.

(3) Install the oil pump (see g above).

5-22. INJECTOR PUMP AND NOZZLE ASSEMBLY REPLACEMENT.

a Removal (See Appendix E Figure 64).

(1) Disconnect the throttle controls from injector pump (see paragraph 4-48).

(2) Disconnect fuel feed lines from injector pump and secondary fuel filter (see Figure 4-14).

(3) Disconnect and tag high pressure fuel pipes (10, 28, 29, and 23, Appendix F, Figure 64) from injector pump (15) and nozzle assemblies (24).

(4) Remove injector pump (15) and throttle seal (18) from engine. Discard throttle seal.

(5) Disconnect return lines and return line manifold (6) from nozzle assemblies (24).

(6) Remove nozzle assemblies (24) from cylinder head.

b. Installation (See Appendix E Figure 64).

(1) Attach nozzle assemblies (24) to cylinder head.

(2) Attach injector pump (15) and new throttle seal (18) to engine.

(3) Attach return line manifold (62 and return lines to nozzle assemblies (24).

(4) Attach high pressure fuel pipes (10, 28, 29, and 23) to pump (15) and nozzle assemblies (24).

(5) Connect fuel feed lines to the injector pump and the secondary fuel filter (see Figure 4-13).

(6) Connect throttle controls to the injector pump (see paragraph 4-48).

(7) Prime fuel system (see c below).

c. Priming Fuel System.

CAUTION

- **Do not attempt to start the engine before filling and priming the Injector pump. Serious damage can occur to the Injector pump or the engine.**
- **Air must be bled from the fuel system whenever any part between the fuel tank and the Injection pump has been disconnected or when the system has been emptied of fuel, or damage to equipment may occur.**

(1) Refer to paragraph 4-42.

(2) Loosen the vent valve on the governor control housing and he head vent screw (see Figure 5-50).

(3) Operate the hand primer on the fuel pump and fill the injector pump with fuel (see Figure 4-15).

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(4) Continue to operate the hand primer until the fuel flowing from the vent valve and head vent screw is free of air bubbles.

(5) Tighten the head vent screw and the vent valve.

(6) Loosen the high pressure fuel lines at the injectorpump.

(7) Operate the hand primer until the fuel flowing from the high pressure fuel lines is free of air bubbles

(8) Tighten the high pressure fuel Lines.

(9) After priming the pump, check all jointing faces for leaks.

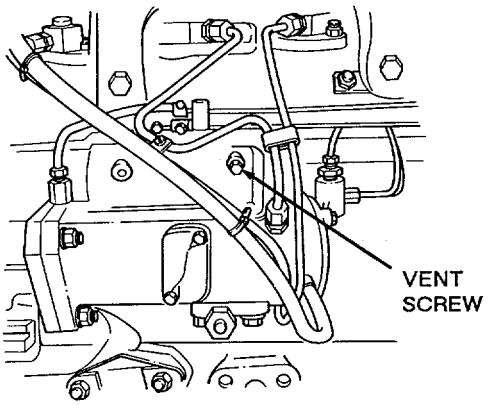

Figure 5-50. Injector Pump.

Section IX. DISPENSING AND SERVICING EQUIPMENT COMPONENTS MAINTENANCE

5-23. WATER DISTRIBUTOR PUMP RE-PAIR.

a. Disassembly (See Appendix E Figures 82 and 83).

(1) Remove pump assembly (1, Appendix F, Figure 82) from engine (see paragraph 4-54).
(2) Remove tee (15, Appendix F, Figure 83), nipple (11), dust cap (12), strainer (14), and adapter (13) from pump.
(3) Remove discharge flange (16) and nipple (18).
(4) Remove screws (34, Appendix F, Figure 82) and lock washers (35) and separate tank (13) and gasket (37) from the internal pump parts. Discard lockwashers and gasket.
(5) Remove diffuser (17) and shim (40) from tank (13).
(6) Remove self-locking nut (18), washer (19), impeller (21), key (20), and shaft seal (22) from shaft (29). Discard self-locking nut and shaft seal.
(7) Remove screws (38) and lockwashers (39) and separate lantern (36) and shim (40) from adapter (28). Discard lockwashers.
(8) Remove screws (41), lockwashers (42), linger (33), bearing cap (32), retaining ring (31), bearing (30), and shaft (29) from adapter (28). Discard lockwasher and retaining ring.
(9) Remove grease fitting (27) from adapter (28). Discard grease fitting.
(10) Remove screws (26), lockwashers (25), drive plate (24), and pilot (23) from engine. Discard lockwashers.
(11) Remove nipples (14) and plugs (4, 15, and 43) from tank (13).
(12) Remove screws (2), inlet flange (3) and check valve assembly (5) from tank (13).
(13) Remove bolt (6), lockwasher (11), and nut (12), and disassemble check valve assembly (5). Discard lockwasher.

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b. Pump Assembly (See Appendix E Figures 82 and 83)

(1) Assemble check valve assembly (5, Appendix F, Figure 82) with bolt (6), newlockwasher (11), and nut (12).
(2) Attach check valve assembly (5) and inlet flange (3) to tank (13) with screws (2).
(3) Attach nipple (18. Appendix F, Figure 83) and discharge flange (16) to tank (13).
(4) Install plugs (4, 15, and 43, Appendix F, Figure 82) and nipples (14) in tank (13).
(5) Attach new grease fitting (27) to adapter (28).
(6) Attach shaft (29), bearing (30), new retaining ring (31), bearing cap (32), slinger (33), new lockwashers (42), and screws (41) to adapter (28).
(7) Attach lantern (36) and shim (40) to adapter (28) with screws (38) and new lockwashers (39).
(8) Attach new shaft seal (22), key (20),
(9) Install (21), washer (19), and new self-locking nut (18) to shaft (29).
(9) Install diffuser (17) and shim (40) to tank (13)
(10) Install internal pump parts and new gasket (37) in tank (13) with new lock-washers (35) and screws (34).
(11) Attach drive plate (24) and pilot (23) to engine with new lockwashers (25) and screws (26).
(12) Attach pump assembly (1) to engine with new lockwashers (39) and screws (38).
(13) Attach tee (15, Appendix F, Figure 83), nipple (11), adapter (13), strainer (14), and dust cap (12) to pump.
(14) Install butterfly valve (see paragraph 4-56).
(15) Ensure that pump operates properly and does not leak

APPENDIX A
REFERENCES

A-1. SCOPE.

This appendix lists Army regulations, forms, field manuals, technical manuals, and other publications referenced in this manual that apply to operating and maintaining the water distributor

A-2. ARMY REGULATIONS.

Reporting of Transportation Discrepancies in Shipments ..... AR 55-38
Dictionary of United States Army Terms ..... AR 310-25
Authorized Abbreviations and Brevity Codes ..... AR 310-50
Accident Reporting and Records ..... AR 385-40
Prevention of Motor Vehicle Accidents ..... AR 385-55
Logistic Assistance Program ..... AR 700-4
Army Materiel Maintenance Handling ..... AR 750-1

A-3. DEPARTMENT OF THE ARMY Pamphlet I S.

Consolidated Index of Army Publications and Blank Forms ..... DA Pam 25-30
The Army Maintenance Management System (TAMMS) ..... DA Pam 738-750

A-4. FORMS.

Equipment Operator's Qualifications Record (Except Aircraft) ..... DA Form 348
Recommended Changes To Publications and Blank Forms ..... DA Form 2028
Recommended Changes To Equipment Technical Publications ..... DA Form 2028-2
Organizational Control Record for Equipment ..... DA Form 2401
Equipment Inspection and Maintenance Worksheet ..... DA Form 2404
Maintenance Request ..... DA Form 2407
Preventive Maintenance Schedule and Record ..... DD Form 314
Processing and Deprocessing Record for Shipment, Storage, and Issue of Vehicles and Spare Engines ..... DD Form 1397
DOD Fire Incident Report ..... DD Form 2324
Transportation Discrepancy Report ..... SF Form 361
Report of Discrepancy (ROD) ..... SF Form 364
Product Quality Deficiency Report (NSN 7540-00-105-0078) ..... SF Form 368

A-5. FIELD MANUALS.

NBC Contamination Avoidance ..... FM 3-3
NBC Protection ..... FM 34
NBC Decontamination ..... FM 3-5
Field Behavior of NBC Agents (Including Smoke and Incendiaries) ..... FM 3-6
Camouflage ..... FM 5-20

Operation and Maintenance of Ordnance Materiel in Cold Weather (0°F to -65°F) ..... FM 9-207
First Aid for Solders ..... FM 21-11
Manual for the Wheeled Vehicle Driver ..... FM 21-305
Basic Cold Weather Manual ..... FM 31-70
Metal Body Repair and Related Operations ..... FM 43-2
Desert Operations ..... FM 90-3

A-6. TECHNICAL BULLETINS.

Occupational and Environmental Health: Hearing Conservation ..... TB MED 501
Solder and Soldering ..... TB SIG 222
Hand Portable Fire Extinguishers Approved for Army Users ..... TB 5-4200-200-10
Equipment Improvement Report and Maintenance Digest (U.S. Army Tank-Automotive Command) Tank-Automotive Equipment ..... TB 43-0001-39 Series
Color, Marking, and Camouflage Painting of Military Vehicles, Construction Equipment, and Materials Handling Equipment ..... TB 43-0209
Maintenance in the Desert ..... TB 43-239
Preservation of USAMECOM Mechanical Equipment for Shipment and Storage ..... TB 740-97-2
Use of Antifreeze Solutions and Cleaning Compounds in Engine Cooling Systems 1B 750-651

A-7. TECHNICAL MANUALS.

Inspection, Care, and Maintenance of Antifriction Bearings ..... TM 9-214
Operator's Manual for Welding Theory and Application ..... TM 9-237
Materials Used for Cleaning, Preserving, Abrading, and Cementing Ordnance Materiel and Related Items Including Chemicals ..... TM 9-247
Organizational, Direct Support, and General Support Maintenance Care, Maintenance, and Repair of Pneumatic Tires and Inner Tubes ..... TM 9-2610-200-24
Operator's, Organizational, Direct Support and General Support Maintenance Manual for Lead-Acid Storage Batteries ..... TM 9-6140-200-14
Administrative Storage of Equipment ..... TM 740-90-1
Painting Instructions for Field Use ..... TM 43-0139
Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use ..... TM 750-244-6

A-8. OTHER PUBLICATIONS.

Army Medical Department Expendable/Durable Items ..... CTA 8-100
Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items) ..... CTA 50-970
Catalog of Audiovisual Productions, Army Productions, Volume I (PA) DOD5040 2-C-1

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 the various maintenance levels.

b. The Maintenance Allocation Chart (MAC) 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 levels.

c. Section III list 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 (e.g., by sight, sound, or feel).

b. Test To verify serviceability by measuring the mechanical, pneumatic, hydraulic, 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 decontaminate, when required), to preserve, to drain, 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 equipments 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.

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 T o remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and is shown as the third position of the SMR code

i. Repair The application of maintenance services, including fault location/troubleshooting, removal/ installation, and disassembly/assembly procedures, and maintenance actions to identify troubles and 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 returningto zero those age measurements (hours/miles, etc.) considered in classifying Army equipment/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, assem-

blies, subassemblies, and modules with the next higher assembly. End item group number shall be "00."

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 a detailed explanation of these functions, see paragraph B-2)

d. Column 4, Maintenance Level Column 4 specifies, by the listing of a *work time* figure in the appropriate subcolumn(s), the level 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 level of maintenance If the number or complexity of the tasks within the listed maintenance function vary at different maintenance levels, appropriate work time figures will be shown for each level. 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 levels are as follows.

C Operator or Crew
O Unit Maintenance
F Direct Support Maintenance
H General Support 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, Tool or Test Equipment 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 Level The lowest level 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/NATO Stock Number The National or NATO 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

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIP	(6) REMARKS
06	**ELECTRICAL SYSTEM**								
0606	*Engine Safety Controls*								
	Engine Safety Devices	Inspect	0.1						
	Replace			0.4					
0607	*Instrument or Engine Control Panel*								
	Electrical Gages/ Tachometer	Test		0.5					
		Replace		0.4					
0608	*Miscellaneous Items*								
	Junction Box	Inspect	0.2						
		Test		0.4					
		Repair		1.0					
0609	*Lights*								
	Junction Box	Replace		0.5					
		Repair		0.5					
0612	*Batteries, Storage*								
	Battens	Service	0.2						
		Test		0.2					
		Replace		0.5					
	Cables	Service	0.1						
	Terminals	Replace		0.4					
	Cover and Box	Repair		1.0					
0613	*Chassis Wiring Harness*								
	Wiring	Inspect	0.5						
		Replace		1.0					
		Repair		0.5					
11	**REAR AXLE**								
1100	*Rear Axle Assembly*								
	Axle Assemblies	Inspect		0.2					
		Replace			5.0				
12	**BRAKES**								
1202	*Service Brakes*								
	Brake shoes	Inspect		1.0					
		Adjust		1.0					
		Replace		2.0					

Section II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIP	(6) REMARKS
1208	*Air Brake System*								
	Lines	Replace		1.0					
		Repair		1.0					
	Brake Chambers	Replace		1.0					
	Quick Release Valve	Test		0.1					
		Replace		1.0					
	Reservoir	Service		0.5					
		Replace		0.5					
13	**WHEELS**								
1311	*Wheel Assembly*								
	Wheel Seals	Replace		0.5					
	Wheel Bearings	Inspect		0.5					
		Adjust		0.2					
		Replace		0.5					
	Brakedrums	Replace		0.7					
		Repair			1.5				
	Hubs	Service		2.0					
		Replace		1.0					
1313	*Tires and Tubes*								
	Tires and Tubes	Inspect	0.1						
		Service	0.1						
		Replace		0.5					
		Repair		1.5					
15	**FRAME AND TOWING ATTACHMENTS**								
1501	*Frame Assembly*	Inspect	0.2						
		Repair			2.0				
1506	*Fifth Wheel*								
	Kingpin and Fifth Wheel	Inspect		0.2					
	Plate	Service	0.2						
		Replace		0.5					
1507	*Landing Gear*								
	Landing Gear	Inspect	0.2						
		Replace		4 0.					
		Repair		3.0					

Section II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIP	(6) REMARKS
1507	*Landing Gear (Con't)*								
	Gearbox	Service	0.1						
		Replace		2.0					
		Repair		2.0					
16	**SPRINGS AND SHOCK ABSORBERS**								
1601	*Springs*	Inspect		0.2					
		Replace		4.0					
1605	*Torque, Radius, and Stabilizer Rods*								
	Torque Rods	Replace		1.5					
18	**BODY**								
1808	*Stowage Boxes*								
	Toolbox	Repair			2.0				
1811	*Tank Bodies*								
	Manhole Assembly	Service		0.6					
		Repair		6.0					
	Gasket	Replace		0.2					
	Cover, Manhole	Service		0.1					
		Replace		0.3					
22	**BODY AND CHASSIS ACCESSORY ITEMS**								
2202	*Accessory Items*								
	Foot Valve	Inspect		0.5					
		Replace		0.5					
		Repair		0.5					
	Suction Hose Assembly	Inspect	0.1						
		Replace		0.5					
	Reflectors	Inspect	0.1						
		Replace		0.2					
	Auxiliary Control System Including Valves and Switches	Replace	0.7						
2210	*Data Plates*								
	Data Plates	Replace		0.2					

Section II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIP	(6) REMARKS
29	**AUXILIARY GENERATORS AND ENGINE AND CONTROLS**								
2910	*Engine Assembly*								
	Engine	Service		1.0					
		Replace		2.0					
		Repair				6.0			
2911	*Crankcase, Cylinder Head and Block*								
	Cylinder Head and Block	Inspect			0.5				
		Replace			4.0				
		Repair				6.0			
2912	*Crankshaft*	Replace				4.0			
2913	*Flywheel Assembly*								
	Flywheel and Ring Gear	Inspect		1.0					
		Replace			3.0				
2914	*Pistons and Connecting Rods*	Inspect			1.0				
		Replace				5.0			
2915	*Valves, Camshaft, and Timing System*								
	Valves, Camshaft and Timing Gears	Inspect			1.0				
		Adjust			2.0				
		Replace				4.0			
		Repair				4.0			
2916	*Engine Lubrication System*								
	Lubrication System Filter	Replace		0.5					
	Pump	Replace			1.0				
		Repair				2.0			
2918	*Manifolds*								
	Manifold Exhaust	Replace		1.0					
		Repair		2.0					
2932	*Engine Fuel Pump*								
	Fuel System Injectors	Replace			1.0				
		Repair				1.0			

Section II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIP	(6) REMARKS
2932	*Engine Fuel Pump (Con't)*								
	injector Pump	Test				2.0			
		Replace			1.0				
		Repair				2.0			
	Fuel Pump	Test		0.5					
		Replace		0.5					
2933	Engine Air Cleaner								
	Air Cleaner	Service	0.4						
		Replace		0.3					
2935	*Engine Fuel Tank*								
	Fuel Tank	Inspect	0.1						
		Replace		1.0					
2936	*Engine Spool Governor and Controls*								
	Governor and Controls	Adjust		0.1					
		Replace		3.0					
2937	*Engine Fuel Filter*								
	Fuel Filter	Replace		0.5					
2941	*Engine Muffler, Exhaust and Tail Pipes*								
	Muffler	Replace		1.0					
	Exhaust Pipe	Replace		1.0					
2951	*Engine Radiator, Shell, Core, and Expansion Tank*								
	Radiator	Service	0.2						
		Replace		1.0					
		Repair			2.0				
2954	*Engine Water Pump*								
	Water Pump	Replace		1.0					
2955	*Engine Fan, Fan Drive, Fan Belts, Fan*								
	Fan	Replace	1.0						
	Fan Belt	Replace	0.5						
2961	*Generator*	Replace	1.0						

Section II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIP	(6) REMARKS
2963	Starter and Wiring								
	Starter	Test		0.5					
		Replace		0.7					
		Repair			1.0				
47	**GAGES (NONELECTRICAL)**								
4702	Gages								
	Pressure Gage	Replace		0.5					
72	**DISPENSING AND SERVICING EQUIPMENT COMPONENTS**								
7202	Pumps and Meters								
	Pump	Service	0.1						
		inspect	0.1						
		Replace		1.5					
		Repair				2.5			
7203	Valves, Fittings, Lines								
	Lines and Fittings	Inspect	0.1						
		Replace		0.5					
	Butterfly Valve	Replace		1.0					
		Repair		1.0					
95	**GENERAL USE STANDARDIZED PARTS**								
9501	Bulk Materiel								
	Hoses	Replace		0.5					
	Repair			0.5					
	Wires	Replace		0.5					
	Repair			0.5					

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

(1) Tool or Test Equipment Reference Code	(2) Maintenance Level	(3) Nomenclature	(4) National/NATO l Stock Number	(5) Too Number
1	0	Tool Kit, General Mechanic's (SC 5180-90-CL-W26)	5180-00-177-7033	W33004
2	0	Shop Equipment, Automotive Maintenance and Repair Organizational Maintenance, Common No 1, Less Power (SC 4910-95-CL-A74)	4910-00 754-0654	W32593
3	0	Shop Equipment, Automotive Maintenance and Repair Organizational Maintenance, Common No 2, Less Power (SC 4910-95-CL-A72)	4910-00-754-0650	W32730
4	0	Shop Equipment, Automotive Maintenance and Repair: Organiza- tonal Maintenance, Supplemental No. 1 (SC 4910-95-CL-A73)	4910-00-754-0653	W32867
5	0	Shop Equipment, Organizational Maintenance, Truck Mounted (SC 4940-97-CL-E04)	4940-00-294-9516	T13152
6	F	Shop Equipment, Contact Maintenance, Truck Mounted (SC 4940-97-CL-E05)	4940-X)294-9518	T10138
7	F	Shop Equipment, Welding, Field Maintenance (SC 3470-95-CL-08)	3470-00-357-7268	T16714

Section IV. REMARKS

Not Applicable.

APPENDIX C
COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

Section I. INTRODUCTION

C-1. SCOPE.

This appendix list Components of End Item and Basic Issue Items for the water distributor to help you inventory items required for safe and efficient operation.

C-2. GENERAL.

The Components of End Item and Basic Issue Items lists are divided into the following sections:

a. Section II Components of End Item (COEI) This listing Is for informational purposes only and is not authority to requisition replacements. These items are part of the end item, but are removed and separately packaged for transportation or shipment. As part of the end item, these Items must be with the end item whenever It Is issued or transferred between property accounts. Illustrations are furnished to assist you in identifying the items.

b. Section III Basic Issue Items (BII). These are the minimum essential items required to place the water distributor in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged, BII must be with the water distributor during operation and whenever it is transferred between property accounts. The illustrations will assist you with hard-to identify Items. This manual is your authority to request/requisition replacement BII, based on TOE/MTOE authorization of the end Item.

C-3. EXPLANATION OF COLUMNS.

Below is an explanation of columns found in the tabular listings:

a. Column (1) - Illustration Number (Illus Number). This column indicates the number of the illustration that shows the Item.

b. Column (2) - National Stock Number. Indicates the National Stock Number (NSN) assigned to the item and will be used for requisitioning purposes.

c. Column (3) - Description. Indicates the Federal Item name and, if required, a minimum description to identify and locate the item. The last line for each item indicates the Commercial and Government Entity (CAGE) Code in parentheses followed by the part number.

d. Column (4) - Unit of Measure (U/M). Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in., pr).

e. Column (5) - Quantity Required (Qty Rqr). Indicates the quantity of the item authorized to be used with the equipment.

Section II. COMPONENTS OF END ITEM

There are no Components of End Item currently assigned

Section III. BASIC ISSUE ITEMS

(1) Illus Number	(2) National Stock Number	(3) Description CAGE and Part Number	(4) U/M	(5) Qty Rqr
1		FIRE HOSE ASSEMBLY (37562) B1900-6500	ea	1
2		MOUNTING BRACKET FOR M123A1C (37562) B1900-4868A	ea	1
3		MOUNTING BRACKET FOR M920 (37562) B1900-4868B	ea	1
4	4720-01-124-6698	SUCTION HOSE ASSEMBLY, W/FOOT VALVE (37562) B1900-6600	ea	1
5	4720-01-115-0872	SUCTION HOSE ASSEMBLY (37562) B1900-6602	ea	1

APPENDIX D
EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

D-1. SCOPE.

This appendix lists expendable/durable supplies and materials you will need to operate and maintain the water distributor. These Items are authorized to you by CTA 50-970,*Expendable/ Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items)* and CTA 8-100, *Army Medical Department Expendable Durable Items.*

D-2. EXPLANATION OF COLUMNS.

a. Column (1) - Item Number This number is assigned to the entry in the listing and is referenced in the narrative instructions to Identify the material

b. Column (2) - Level This column identifies the lowest level of maintenance that requires the listed item
C- Operator/Crew
O- Unit Maintenance

c. Column (3) - National Stock Number This Is the National Stock Number (NSN) 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 indicate the Commercial and Government Entity (CAGE) Code in parenthesis, followed by the part number.

e. Column (5) - Unit of Measure (UIM) Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two- or three-character alphabetical abbreviation (e.g., pr, ea, in.). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
1	C		ANTIFRtt/F Permanent Ethylene Glycol (-65°F) Inhibited (81349) MIL-A-46153	
		6850-00-181-7933	5 Gallon Can	gal
2	C		ANTIFRFF/E Permanent (81349) MIL-A-117550	
		6850-00-174-1806	55 Gallon Drum	gal
3	O		COMPOUND, SEALING (81349) MIL-S-45180	
		8030-00-252-3391	11 Ounce Tube	oz
4	C		GREASE Automotive and Artillery (70878) (MIL-G-10924)	
		9150-00-190-0905	5 Pound Can	lb
5	C		OIL Fuel, Diesel, DF-2, Regular (81348) W-F-800	
		9150-00-286-5296	55 Gallon Drum	gal
6	O		OIL lubricating, Gear GO 80/90 (81349) MIL-L-2105	
		9150-01-035-5393	5 Gallon Can	gal
7	C		OIL Lubricating, OE/HDO 10 (81349) MIL-L-2104	
		9150-00-186-6668	5 Gallon Can	gal
8	C		OIL Lubricating, OE/HDO 30 (81349) MIL-L-2104C	
		9150-00-188-9858	5 Gallon Can	gal

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
9	C		SOLVENT Dry Cleaning (81348) P-D-680	
		6850-00-664-5685 6850-00-281-1985 6850-00-285-8011	1 Quart Can 1 Gallon Can 55 Gallon Drum	qt gal gal

APPENDIX E
FABRICATION INSTRUCTIONS

E-1. FABRICATION OF WIRING ASSEMBLIES.

a. Select proper gage wire as replacement wire. The 6000 gallon water distributor uses five gages of electrical wire. They are 10, 12, 14 and 16 gage for lights and similar uses. The battery cable is 0 gage.

b Select replacement terminals identical to the terminal being replaced (see Appendix F).

c. Cut the wire to the proper length.

d. Strip approximately 9/16 in. (1.2 cm) of installation off each end of w*ir*e.

e. Slide terminal over stripped wire until It is seated against the installation.

f C**r**imp terminal to the wire using proper crimping tool.

g. Identify the wining assembly with a marker band and install It in its proper place (see Figures 4-2 and 4-3).

E-2. FABRICATION OF HOSE AND PLASTIC TUBING ASSEMBLIES.

a. Select correct size (ID, OD)and strength (psi rating) of hose/tubing.

b. Cut to proper length.

c. Install nut and compression sleeve on hose/ tubing.

d. Install hose/tubing on adapter.

e Slide nut and compression sleeve up to adapter and tighten nut.

APPENDIX F
UNIT, DS/GS MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LISTS (INCLUDING DEPOT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LISTS)

SECTION I. INTRODUCTION

F-1. SCOPE.

This RPSTL lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (IDE); and other special support equipment required for performance of Unit Maintenance, Direct Support and General Support Maintenance of the Water Distributor. It authorizes the requisitioning, issue, and disposition of spares, repair parts and special tools as indicated by the source, maintenance and recoverability (SMR) codes.

F-2. GENERAL.

In addition to Section I. Introduction, this Repair Parts and Special Tools List is divided into the following sections:

a. *Section II. Repair Parts List.* A list of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Bulk materials are listed in item name sequence. Repair kits are listed separatelyin their own functional group within Section II. Repair parts for reparable special tools are also listed in the section. Items listed are shown on the associated illustration(s)/figure(s).

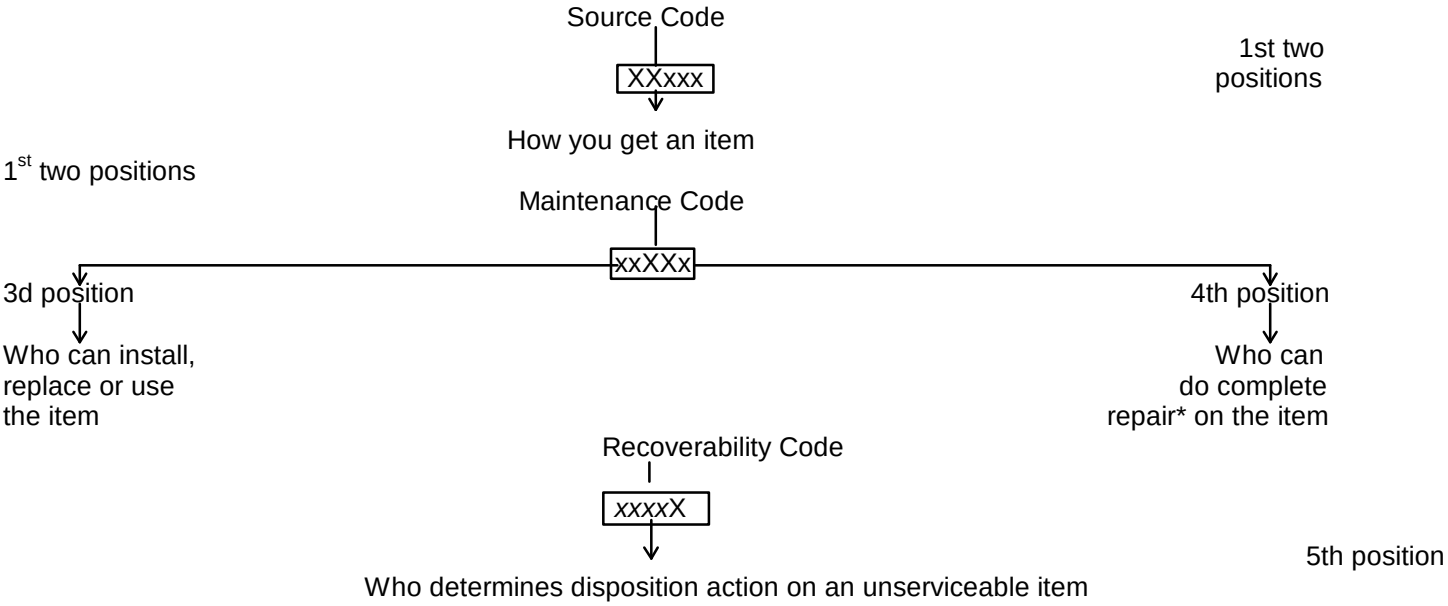
b. *Section III. Special Tools List.* A list of special tools, special TMDE, and other special support equipment authorized by this RPSTL (as indicated by Basis of Issue (BOI) information in DESCRIPTION AND USABLE ON CODE column) for the performance of maintenance.

c. *Section IV Cross-reference Indexes.* A list, in National Item Identification Number (NIIN) sequence, of all National stock numbered items appearing in the listing, followed by a list in alphanumeric sequence of all part numbers appearing; in the listings. National stock numbers and part numbers are cross-referenced to each illustration figure and item number appearance. The figure and item number index lists figure and item numbers in alphanumeric sequence and cross-references NSN, CAGE, and part numbers.

F-3. EXPLANATION OF COLUMNS (SECTIONS II & III).

a. *ITEM NO. (Column (1)).* Indicates the number used to identify items called out in the illustration.

b. *SMR CODE (Column (2)).* The Source, Maintenance, and Recoverability (SMR) code is a 5-position code containing supply/ requisitioning information, maintenance category authorization criteria, and disposition instructions, as shown in the following breakout:



*Complete Repair: Maintenance capacity, capability, and authority to perform all the corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed item.

(*1*) *Source Code.* The source code tells you how to get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follows:

Code	Application/Explanation
PA	Stocked items; use the applicable NSN to request/requisition items with these source codes. They
PB	are authorized to the category indicated by the code entered in the 3d position of the SMR code.
*PC***	
PD	*** Items coded PC are subject to deterioration.
PE	
PF	
PG	
KD	Items with these codes are not to be requisitioned individually. They are part of a kit which isKFKKF
KF	authorized to the maintenance category indicated in the 3d position of the SMR code. The complete
KB	kit must be requisitioned and applied.
MO-(Made at UMI/AVUM Level)	Items with these codes are not to be requested/requisitioned individually. They
MF-(Made at DS/AVUM Level)	must be made from bulk material which is identified by the part number in the
MH-(Made at GS Level)	DESCRIPTION AND USABLE ON CODE (UOC) column and listed in the Bulk
ML-(Made at specialized Repair Activity (SRA)	Material group of the repair parts list in this RPSTL. If the item is authorized to you by the 3d position code of the SMR code, but the source code indicates it is
MD-(Made at Depot)	made at a higher level, order the item from the higher level of maintenance.
AO-(Assembled by UM/AVUM Level)	Items with these codes are not to be requested/requisitioned individually. The
AF-(Assembled by DS/AVIM Level)	parts that make up the assembled item must be requisitioned or fabricated and
AH-(Assembled by GS Category)	assembled at the level of maintenance indicted by the source code. If the 3d
AL-(Assembled by SRA)	*position code of the SMR code authorizes you to replace the item, but the AD-*
AD-(Assembled by Depot)	source code indicates the item is assembled at a higher level, order the item from the higher level of maintenance.

*X*A-	Do not requisition an "XA"-coded item. Order its next higher assembly. (Also refer to the NOTE following.)
XB-	If an "XB" item is not available from salvage, order it using the CAGE and part number given.
*X*C-	Installation drawing, diagram, instruction sheet, field service drawing, that is identified by the manufacturer's part number.
XD-	Item is not stocked. Order an "XD"-coded item through normal supply channels using the CAGE and part number given, if no NSN is available.

NOTE: Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes, except for those source coded "XA' or those aircraft support items restricted by requirements of AR 700-42.

(*2) Maintenance Code.* Maintenance codes tell you the level(s) of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

(a) The maintenance code entered in the third position tells you the lowest maintenance level authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to one of the following levels of maintenance.

Code	Application/Explanation
C-	Crew or operator maintenance done within unit maintenance or aviation unit maintenance.
O-	Unit maintenance or aviation unit category can remove, replace, and use the item.
F-	Direct support or aviation intermediate level can remove, replace, and use the item.
H-	General support level can remove, replace, and use the item.
L-	Specialized repair activity can remove, replace, and use the item.
D-	Depot level can remove, replace, and use the item.

(b) The maintenance code entered in the fourth position tells whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to do complete repair (i.e., perform all authorized repair functions). (NOTE: Some limited repair may be done on the item at a lower level of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes.) This position will contain one of the following maintenance codes:

Code	Application/Explanation
O-	Unit maintenance or aviation unit is the lowest level that can do complete repair of the item.
F-	Direct support or aviation intermediate is the lowest level than can do complete repair of the item.
H-	General support is the lowest level that can do complete repair of the item.
L-	Specialized repair activity is the lowest level that can do complete repair of the item.
D-	Depot is the lowest level that can do complete repair of the item.
Z-	Nonreparable. No repair is authorized.
B-	No repair is authorized. (No parts or special tools are authorized for the maintenance of a "B"-coded item.) However, the item may be reconditioned by adjusting, lubricating, etc., at the user level.

(*3) Recoverability Code.* Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the SMR code as follows:

Code	Application/Explanation
Z -	Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the 3d position of the SMR code.
O-	Reparable item. When uneconomically reparable, condemn and dispose of the item at unit maintenance or aviation unit level.
F-	Reparable item. When uneconomically reparable, condemn and dispose of the item at the direct support or aviation intermediate level.
H-	Reparable item. When uneconomically reparable, condemn and dispose of the item at the general support level.
D-	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item not authorized below depot level.
L-	Reparable item. Condemnation and disposal of item not authorized below specialized repair activity (SRA).
A-	Item requires special handling or condemnation procedures because of specific rea

sons (e.g., precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/ directives for specific instructions.

c. *CAGEC (Column (3)).* The Commercial and Government Entity (CAGE) Code (C) is a 5-digit alphanumeric code which is used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

d. *PART NUMBER (Column (4)).* Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements to identify an item or range of items.

NOTE: When you use an NSN to requisition an item, the item you receive may have a different part number from the part ordered.

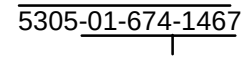
e. *DESCRIPTION AND USABLE ON CODE (UOC) (Column (5)).* This column includes the following information:
   (1) The Federal item name and, when required, a minimum description to identify the item.
   (2) Physical security classification. Not Applicable.
   (3) Items that are included in kits and sets are listed below the name of the kit or set on Figure KIT.
   (4) Spare/repair parts that make up an assembled item are listed immediately following the assembled item I line entry.
   (5) Part numbers for bulk materials are referenced in this column in the line item entry for the item to be manufactured/fabricated.
   (6) When the item is not used with all serial numbers of the same model, the effective serial numbers are shown on the last line(s) of the description (before UOC). Not Applicable.
   (7) The usable on code, when applicable (see paragraph 5, Special information).
   (8) In the Special Tools List section, the basis of issue (BOI) appears as the last line(s) in the entry for each special tool, special TMDE, and other special support equipment. When density of equipments supported exceeds density spread indicated in the basis of issue, the total authorization is increased proportionately.
   (9) The statement "END OF FIGURE" appears just below the last item description in Column 5 for a given figure in both Section II and Section III.

f. *QTY (Column (6)).* The QTY (quantity per figure column) indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column in lieu of a quantity indicates that the quantity is variable and the quantity may vary from application to application.

F-4. EXPLANATION OF COLUMNS (SECTION IV).

a. NATIONAL STOCK NUMBER (NSN) INDEX.

(*1*) *STOCKNUMBER column.* This column lists the NSN by National Item Identification Number (NIIN) sequence. The NIIN consists of the last nine digits of the NSN (i.e., 5305-01-674-1467). When using this column to locate an item, ignore the first 4 digits of the NSN. However, the complete NSN should be used when ordering items by stock number.



(*2*) *FIG. column.* This column lists the number of the figure where the item is identified/located. The figures are in numerical order in Section II and Section III.

(*3*) *ITEM column.* The item number identifies the item associated with the figure listed in the adjacent FIG. column. This item is also identified by the NSN listed on the same line.

b. *PART NUMBER INDEX.* Part numbers in this index are listed by part number in ascending alphanumeric sequence (i.e., vertical arrangement of letter and number combination which places the first letter or digit of each

group in order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order).

(*1*) *CAGEC column.* The Commercial and Government Entity (CAGE) Code C is a 5-digit alphanumeric code used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

(*2*) *PART NUMBER column.* Indicates the primary number used by the manufacturer (individual, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements to identify an item or range of items.

(*3*) *STOCKNUMBER column.* This column lists the NSN for the associated part number and manufacturer identified in the PART NUMBER and CAGE columns to the left.

(*4*) *FIG. column.* This column lists the number of the figure where the item is identified/located in Section II and Ill.

(*5*) *ITEM column.* The item number is that number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

c. FIGURE AND ITEM NUMBER INDEX

(*1*) *FIG. column.* This column lists the number of the figure where the item is identified/located in Sections II and III.

(*2*) *ITEM column.* The item number is that number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

(*3*) *STOCKNUMBER column.* This column lists the NSN for the item.

(*4*) *CAGEC column* The Commercial and Government Entity (CAGE) Code C is a 5-digit alphanumeric code used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

(*5*) *PART NUMBER column.* Indicates the primary number used by the manufacturer (individual, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards and inspection requirements to identify an item or range of items.

F-5. SPECIAL INFORMATION.

a. *USABLE ON CODE.* The usable on code appears in the lower left corner of the Description column heading.

b. *FABRICATION INSTRUCTIONS.* Bulk materials required to manufacture items are listed in the Bulk Material Functional Group of this RPSTL. Part numbers for bulk materials are also referenced in the Description column of the line item entry for the item to be manufactured/fabricated. Detailed fabrication instructions for items source coded to be manufactured or fabricated are found in *Appendix E* of this manual.

c. *KITS.* Line item entries for repair parts kits appear in group 9401 in Section II.

d. *INDEX NUMBERS.* Items which have the word BULK in the figure column will have an index number shown in the item number column. This index number is a cross-reference between the National Stock Number/Part Number Index and the bulk material list in Section II.

e. ASSOCLIATED PUBLICATIONS. Not Applicable.

F-6. HOW TO LOCATE REPAIR PARTS.

a. When National Stock Number or Part Number is Not Known:

(*1*) *Fir*st. Using the table of contents, determine the assembly group or subassembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and listings are divided into the same groups.

(*2*) *Second.* Find the figure covering the assembly group or subassembly group to which the item belongs.

(*3) Third.* Identify the item on the figure and use the Figure and Item Number Index to find the NSN.

b. When National Stock Number or Part Number is Known:

(*1) First.* Using the National Stock Number or Part Number Index, find the pertinent National Stock Number or Part Number. The NSN index is in National Item Identification Number (NIIN) sequence (see paragraph F-4.a.(1)). The part numbers in the Part Number index are listed in ascending alphanumeric sequence (see paragraph F-4.b). Both indexes cross-reference you to the illustration/figure and item number of the item you are looking for.

(*2) Second.* Turn to the figure and item number, verify that the item is the one you're looking for, then locate the item number in the repair parts list for the figure.

F-7. ABBREVIATIONS.

For standard abbreviations see MIL-STD-12D, *Military Standard Abbreviations for Use on Drawings, Specifications, Standards, and in Technical Documents.*

Abbreviations	Explanation
NIIN	National Item Identification Number (consists of the last 9 digits of the NSN)
RPSTL	Repair Parts and Special Tools List

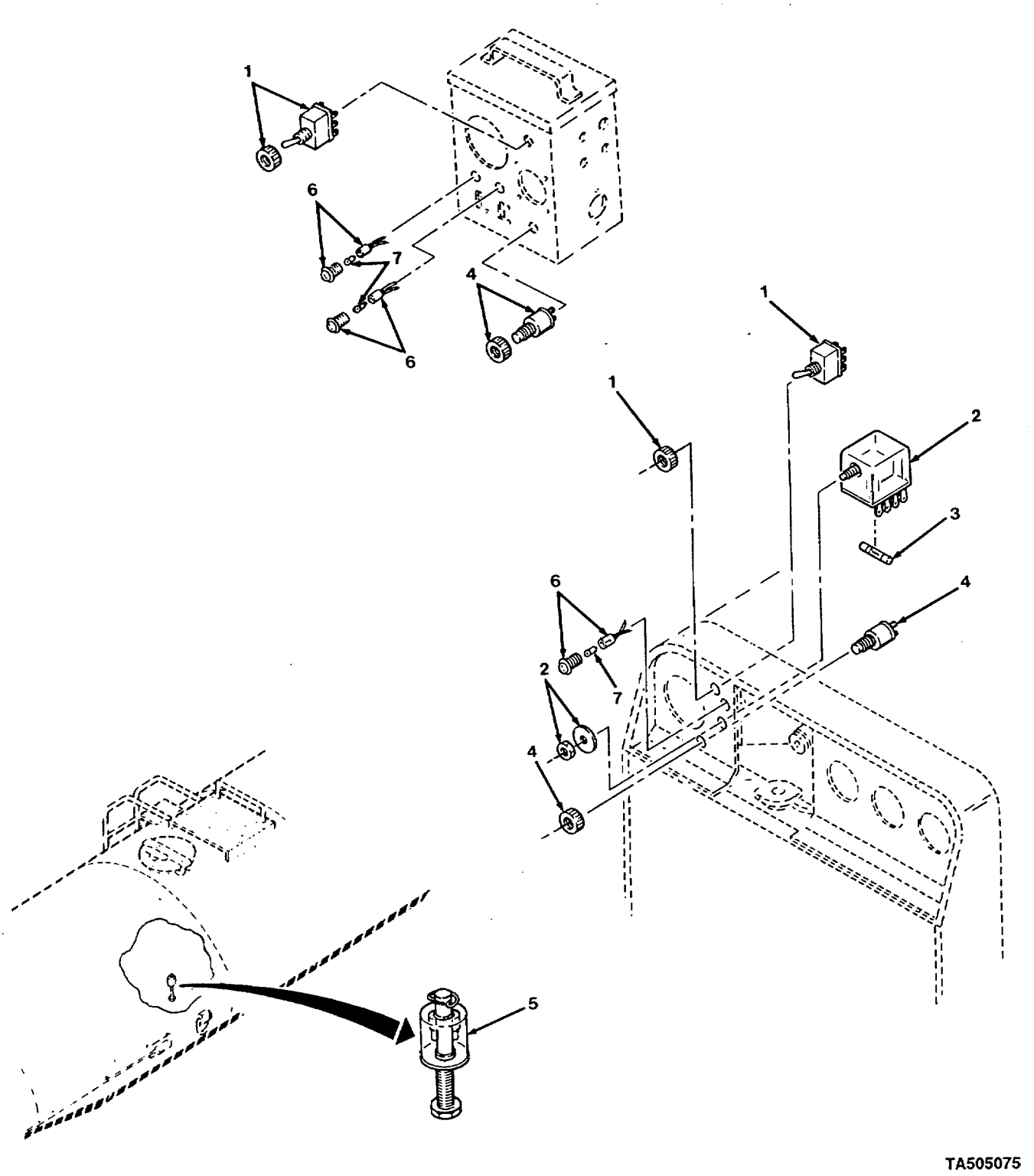


FIGURE 1. SAFETY DEVICES.

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 06 ELECTRICAL SYSTEM	
				GROUP 0606 ENGINE SAFETY CONTROLS	
				FIG. 1 SAFETY DEVICES	
1	PAOZZ	96906	MS35058-23	SWITCH,TOGGLE	2
2	PAOZZ	13446	NA002306	SOLENOID,ELECTRICAL.	1
* 3	PAOZZ	71400	SFE14	FUSE,CARTRIDGE	1
4	PAOZZ	13445	90047-01	SWITCHIPUSH.	2
5	PFOZZ	04034	46202	SWITCH,FLOW	1
6	PAOZZ	13445	PL-36-RC	LIGHT,INDICATOR	3
7	PAOZZ	08805	53	LAMP,INCANDESCENT	3
				END OF FIGURE	

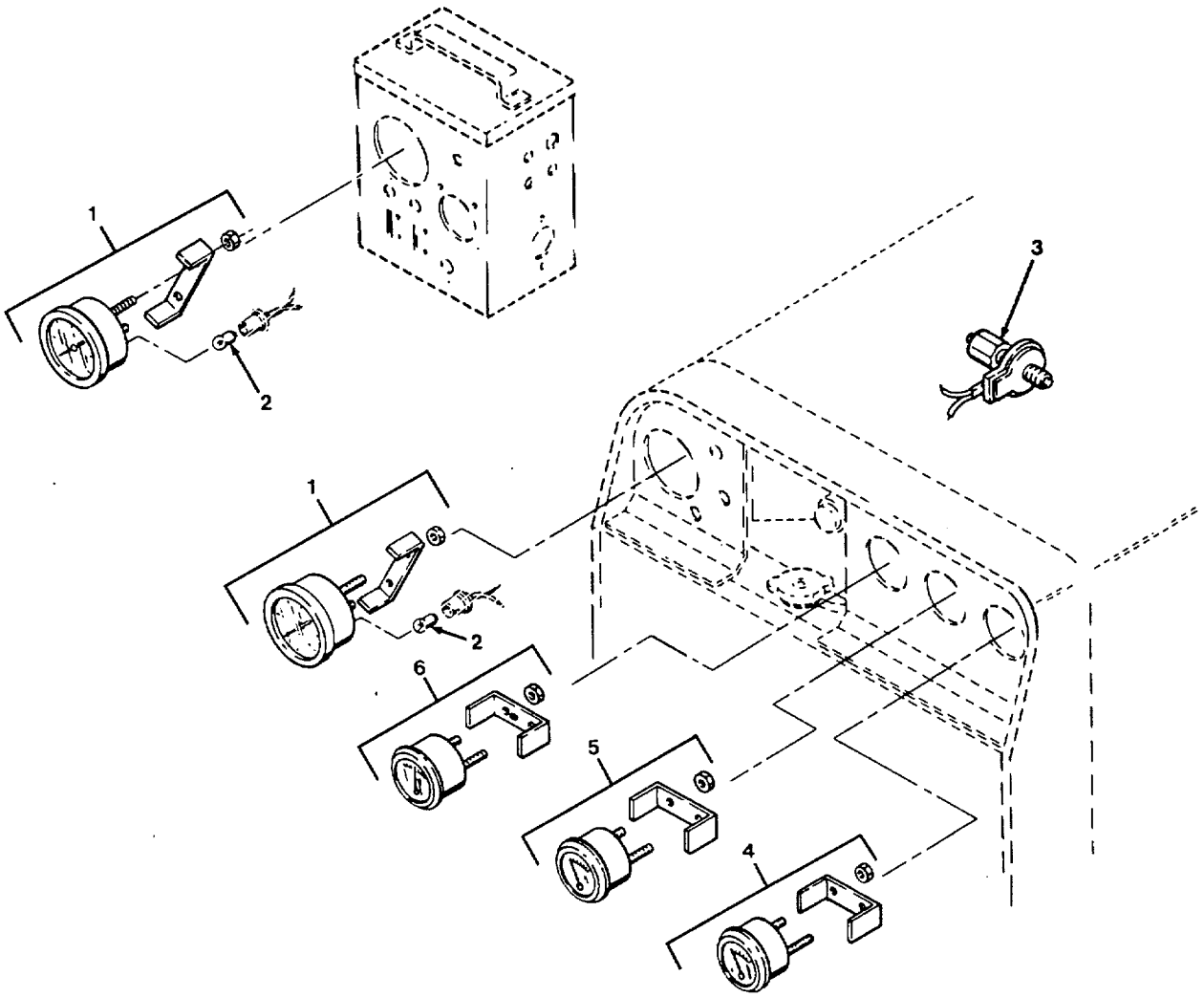


FIGURE 2. TACHOMETER AND GAGES.

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 0607 INSTRUMENT OR ENGINE CONTROL PANEL	
				FIG. 2 TACHOMETER AND GAGES	
1	PAOZZ	09527	TD9489	TACHOMETER,ELECTRIC.....	2
2	PAOZZ	08806	1895	LAMP,INCANDESCENT.	2
3	PAOZZ	09527	DK002	GENERATOR,TACHOMETE.....	1
4	PAOZZ	03479	10 35 253	THERMOMETER,INDICAT.....	1
5	PAOZZ	03479	05 35 252	GAGE PRESSURE,DIAL.....	1
6	PAOZZ	03479	65 35 31	AMMETER....	1
				END OF FIGURE	

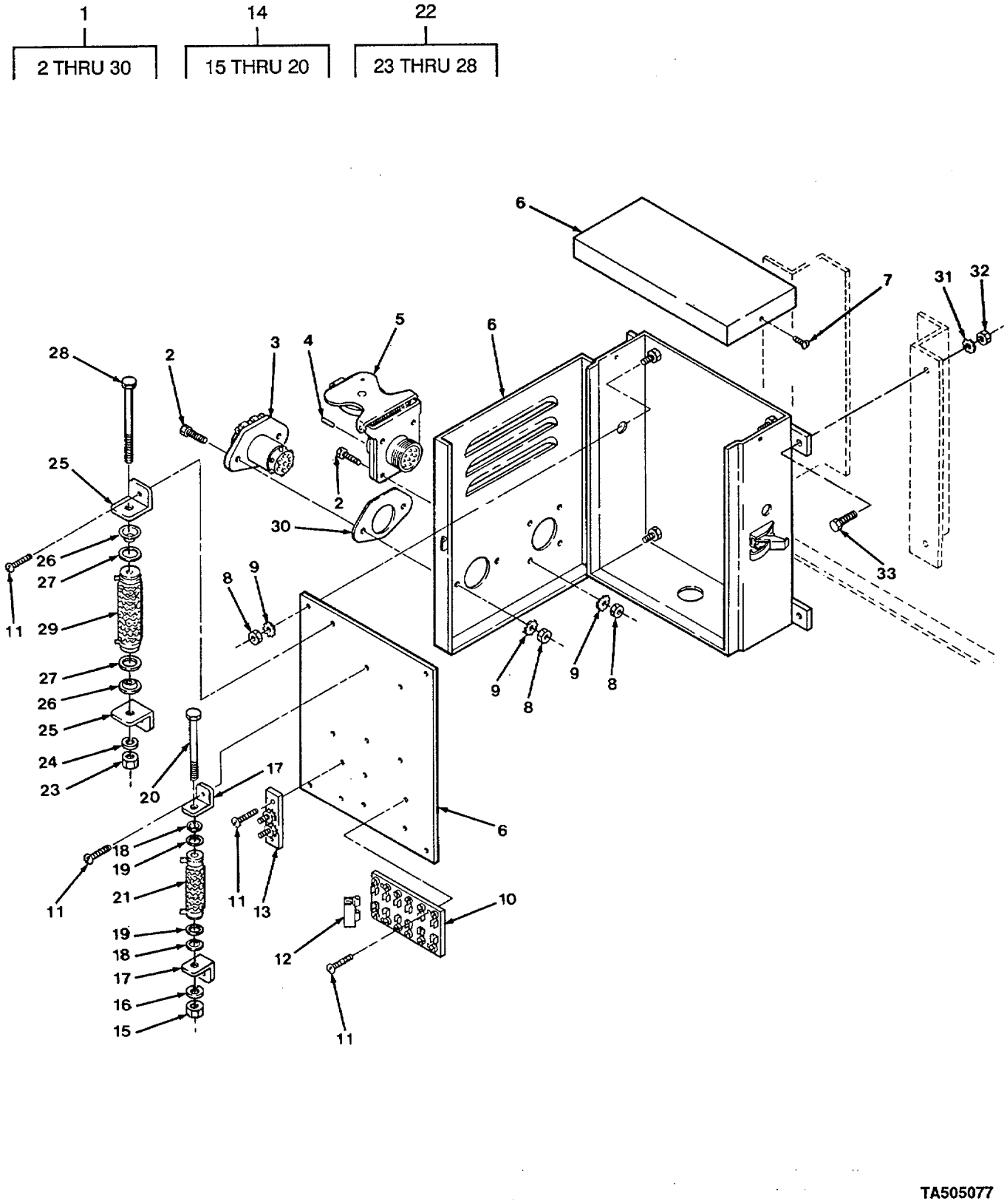


FIGURE 3. MAIN JUNCTION BOX.

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 0608 MISCELLANEOUS ITEMS CONTROL PANEL	
				FIG. 3 MAIN JUNCTION BOX	
1	PAOOO	37562	B1900-7100	JUNCTION BOX	1
2	PAOZZ	96906	MS90725-6	•SCREW,CAP,HEXAGON H	6
3	PFOLZ	37562	BL900-4811	•RECEPTACLE.	1
4	PAOZZ	96906	MS75021-1	•CONNECTOR,RECEPTACL...	11
5	PAOZZ	96906	MS75021-2	•CONNECTOR,RECEPTACL..	1
6	XDOZZ	37562	81900-7116	•ENCLOSURE	1
7	PADZZ	96906	MS24629-45	•SCREW,TAPPING,THREA.	2
8	PAOZZ	96906	MS35691-1	•NUT,PLAIN,HEXAGON	6
9	PAOZZ	96906	MS35338-44	•WASHER,LOCK	6
10	XDOZZ	13445	4626	•FUSEHOLDER,BLOCK	1
11	PAOZZ	96906	MS51957-63	•SCREW,MACHINE	10
12	PAOZZ	13445	30410-20	•CIRCUIT BREAKER	6
13	XDOZZ	13445	4721-P2	•BLOCK,TERMINAL	1
14	XDOOO	82807	A9-48-01	•BRACKET ASSENBLY	1'
15	PAOZZ	96906	MS35650-302	••NUT,PLAIN,HEXAGON	1
16	PAOZZ	96906	MS35338-45	••WASHER,LOCK	1
17	XDOZZ	82807	22-111-100	••BRACKET,RESISTOR	2
18	PAOZZ	82807	12-700-011	••WASHER,FINISHING	2
19	XDOZZ	82807	12-800-002	••INSULATOR,WASHER	2
20	PAOZZ	82807	11-300-172	••SCREW,MACHINE	1
21	PAOZZ	83827	R-5311	•RESISTOR,FIXED,WIRE	1
22	XDOOO	828J7	A18-80-01	•BRACKET ASSEMBLY	1
23	PAOZZ	96906	MS35650-302	••NUT,PLAIN,HEXAGON	1
24	PAOZZ	96906	MS35338-43	••WASHER,LOCK	1
25	XDOZZ	82807	22-114-100	••BRACKET,RESISTOR	2
26	PAOZZ	82807	12-700-001	••WASHER,SHOULDERED A	2
27	PAOZZ	82807	12-800-006	••INSULATOR,WASHER	2
28	PAOZZ	82807	11-300-175	.••SCREW.CAP,HEXAGON H	1
29	PAOZZ	83827	R-531	•RESISTOR,FIXED,WIRE	1
30	PAOZZ	13445	11164	•GASKET	1
31	PAOZZ	96906	MS35338-44	WASHER,LOCK	4
32	PAOZZ	96906	MS35691-1	NUT,PLAIN,HEXAGON	4
33	PAOZZ	96906	MS90725-6	SCREW,CAP ,HEXAGON	4

END OF FIGURE

5

6 THRU 11

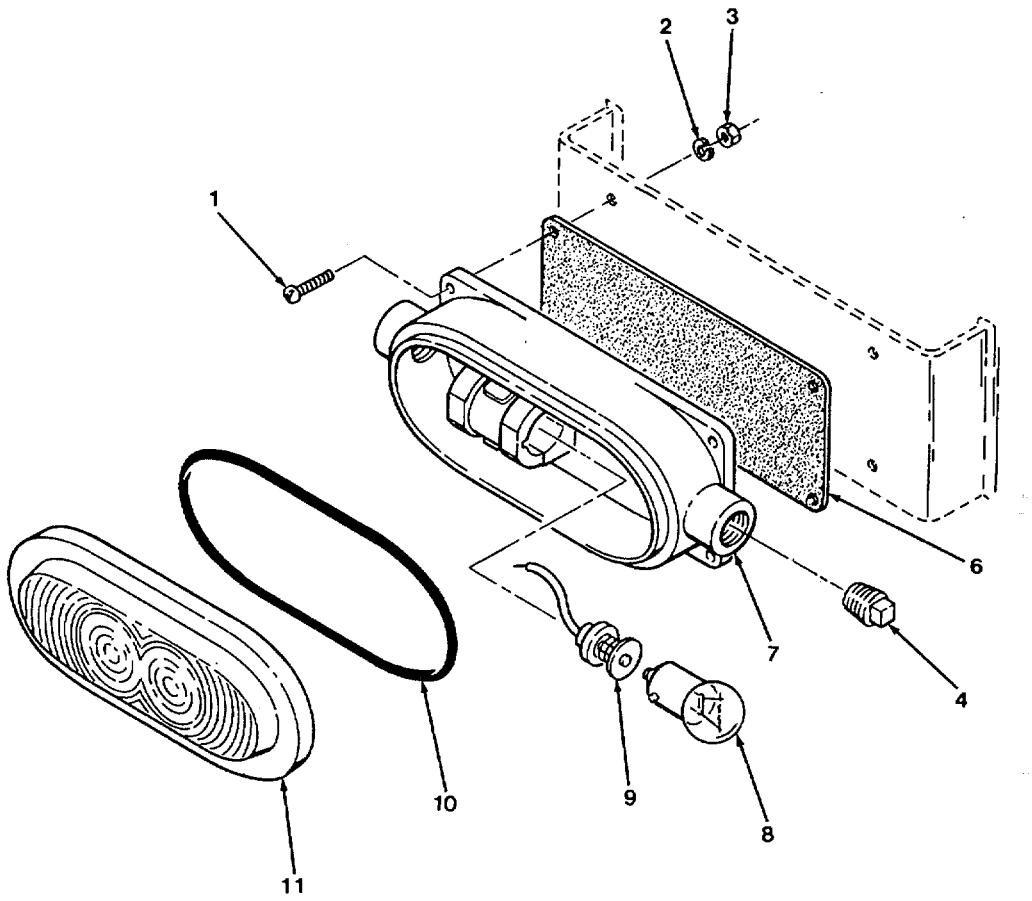


FIGURE 4. CLEARANCE LIGHTS.

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 0609 LIGHTS	
				FIG. 4 CLEARANCE LIGHTS	
1	PAOZZ	96906	MS51957-61	SCREW,MACHINE	4
2	PAOZZ	96906	MS35338-43	WASHER,LOCK	4
3	PAOZZ	96906	MS35649-202	NUT,PLAIN,HEXAGON	4
4	PAOZZ	96906	MS27769-2	PLUG,PIPE USED ON LIGHT P/N 210-05122	1
5	PAOOO	13226	S-200-R	LIGHT,MARKER,CLEARA RED	1
5	PAOOO	13226	210-05122	LIGHT,MARKER,CLEARA AMBER	1
6	PAOZZ	13226	209	•GASKET USED ON LIGHT P/N 210-05122	1
6	PAOZZ	13226	239R	•GASKET USED ON LIGHT P/N S-200-R	1
7	XAOZZ	13226	S-200-2-1	•BODY USED ON LIGHT PIN 210-05122	1
7	XAOZZ	13226	S-200-R-1	•BODY USED ON LIGHT PIN S-200-R	1
8	PAOZZ	08108	97	•LAMP CANDESCENT	1
9	PAOZZ	13226	55	•LEAD,ELECTRICAL	1
13	PAOZZ	13226	202	•PACKING PREFORMEO	1
11	PAOZZ	13226	201-A	•LENS,LIGHT AMBER, USED ON LIGHT P/N N 210-05122	1
11	PAOZZ	13226	201-R	•LENS,LIGHT RED9 USED ON LIGHT P/N S-200-R	1

END OF FIGURE

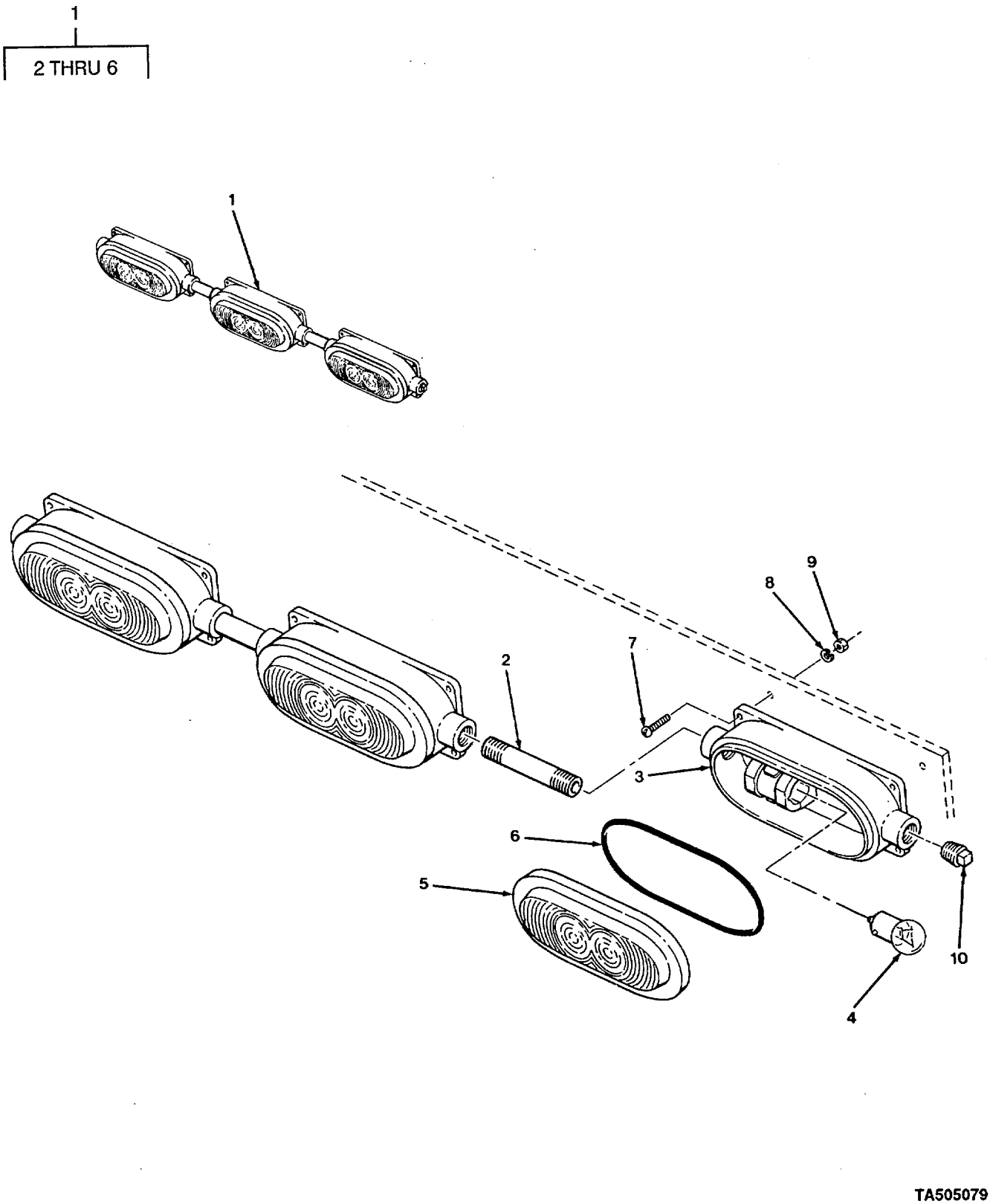


FIGURE 5. CLEARANCE LIGHT (TRIO).

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 0609 LIGHTS	
				FIG. 5 CLEARANCE LIGHT (TRIO)	
1	PAOOO	13226	200-09-132	LIGHT ASSEMBLY,CLEA.....	1
2	XDOZZ	13226	S-200C-R-1	•PIPE,NIPPLE	2
3	XAOZZ	13226	S-200-2-1	•BODY,TWO-ENTRY	3
4	PAOZZ	08108	97	•LAMP,INCANDESCENT.....	3
5	PAOZZ	13226	201-R	•LENS,LIGHT RED.....	3
6	PAOZZ	13226	202	•PACKING,PREFORMED.....	3
7	PAOZZ	96906	MS51957-61	SCREW,MACHINE.....	8
8	PAOZZ	96906	MS35338-43	WASHER,LOCK	8
9	PAOZZ	96906	MS35649-202	NUT,PLAIN,HEXAGON.....	8
10	PAOZZ	96906	MS27769-2	PLUG,PIPE.	1

END OF FIGURE

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6 THRU 10

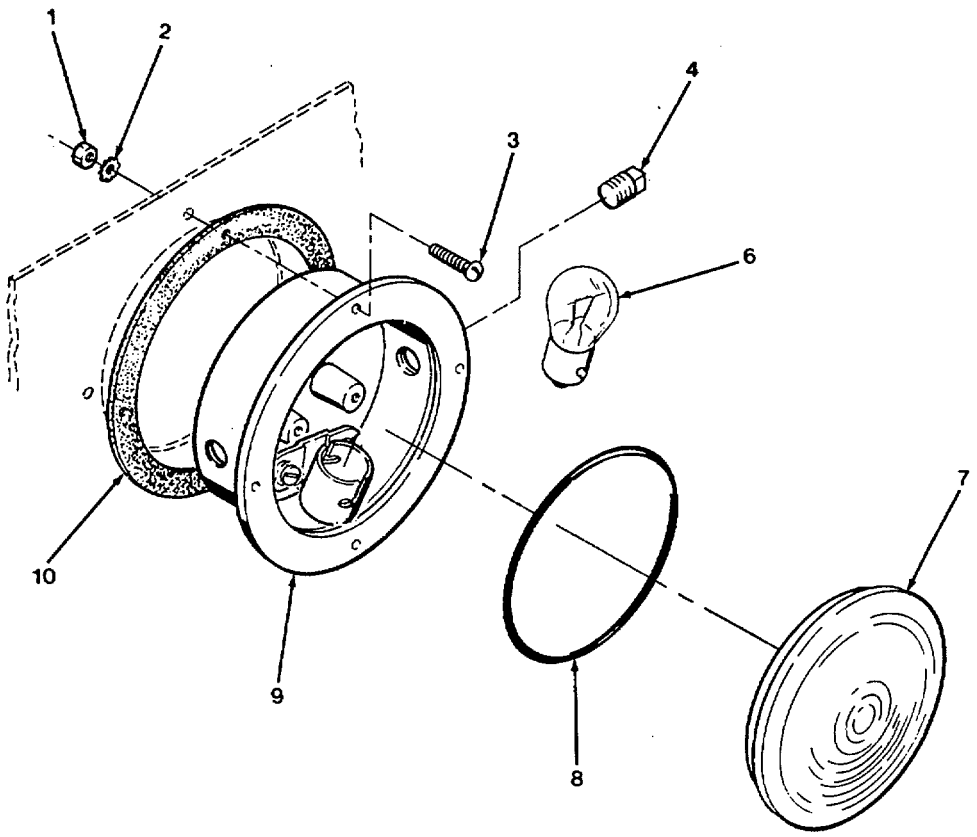

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FIGURE 6. STOP AND TURN LIGHT.

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 0609 LIGHTS	
				FIG. 6 STOP AND TURN LIGHT	
1	PAOZZ	96906	MS35649-202	NUT,PLAIN,HEXAGON	4
2	PAOZZ	96906	MS35338-43	WASHER,LOCK	4
3	PAOZZ	96906	MS51957-65	SCREW,MACHINE	4
4	PAOZZ	96906	MS27769-4	PLUG,PIPE	1
5	PAOOO	13226	40-03221	STOP LIGHT-TAILLIGH	1
6	PAOZZ	08806	1895	•LAMP,INCANDESCENT	1
7	PAOZZ	13226	71R	•LENS,LIGHT,RED.	1
8	PAOZL	13226	72	•PACKING,PREFORNED	1
9	XAOZZ	13226	B40JAS-	•BODY	1
10	PAOZZ	13226	79	•GASKET.,	1

END OF FIGURE

5

6 THRU 10

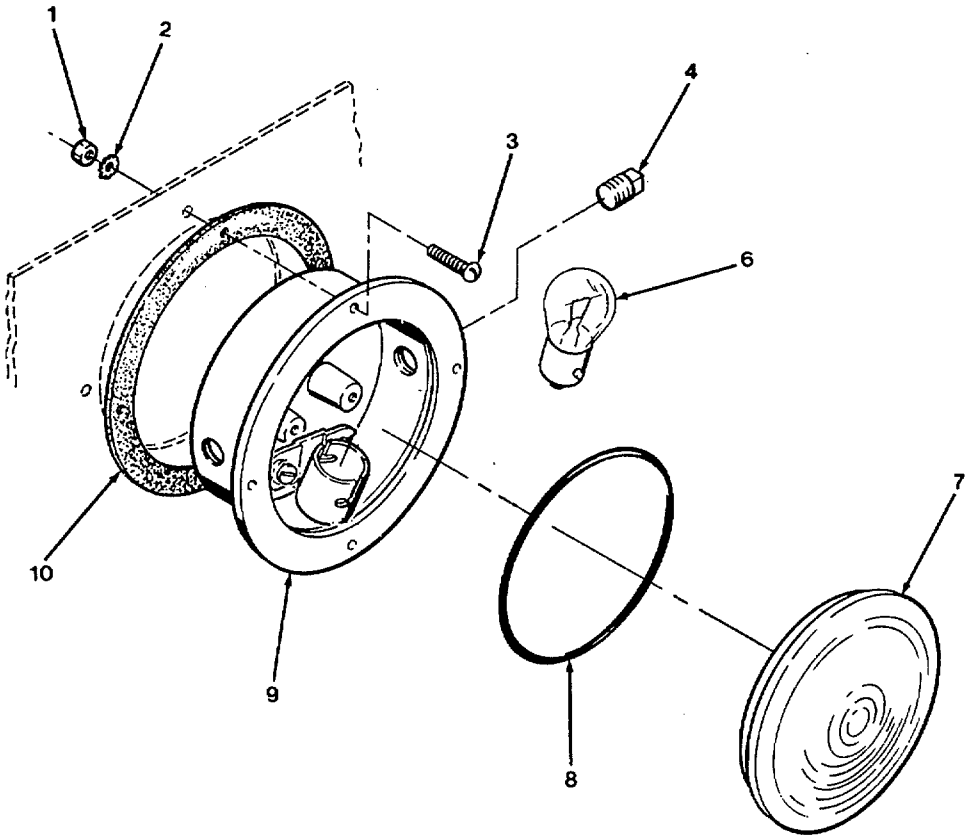

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FIGURE 7. TAILLIGHT.

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 0609 LIGHTS	
				FIG. 7 TAILLIGHT	
1	PAOZZ	96906	MS35649-202	NUT,PLAIN,HEXAGON	4
2	PAOZZ	96906	MS35338-43	WASHER,LOCK	4
3	PAOZZ	96906	MS51957-65	SCREW,MACHINE	4
4	PAOZZ	96906	MS27769-4	PLUG,PIPE	1
5	PAOOO	13226	B-40JTS	STOP LIGHT,VEHICULA	1
6	PAOZZ	088J6	199	•LAMP,INCANDESCENT	1
7	PAOZZ	13226	71R	•LENS,LIGHT.	1
8	PAOZZ	13226	72	•PACKING,PREFORMED	1
9	XAOZZ	13226	B40OJTS-1	•BODY.	1
10	PAOZZ	13226	79	•GASKET	1
				END OF FIGURE	

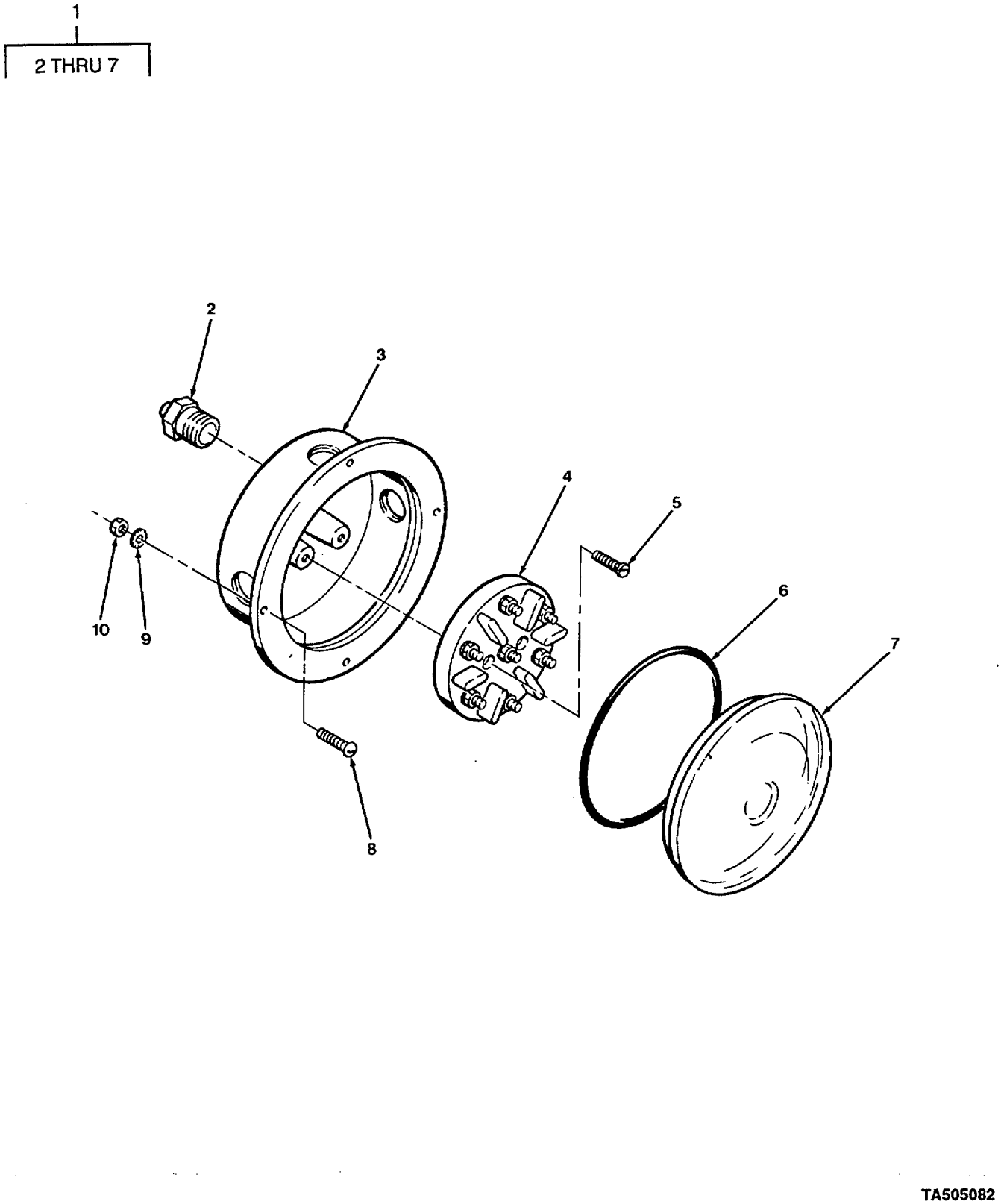

FIGURE 8. JUNCTION BOX (LIGHTS).

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 0609 LIGHTS	
				FIG. 8 JUNCTION BOX (LIGHTS)	
1	XDODO	13226	B-40JJ-CE-7	JUNCTION,BOX,	1
2	XDOZZ	13226	EV-1	•VALVE,SAFTEY RELIEF	1
3	XAOZZ	13226	84OJJCE7-10	•BODY,	1
4	XDOZZ	13226	PDJJ	•TERMINAL BOARD.	1
5	PAOZZ	96906	MS24629-45	•SCREW,TAPPINGP,THREA	2
6	PAOZZ	13226	72	•PACKING,PREFORMED	1
7	PAOZZ	13226	7IPS	•COVER,JUNCTION BOX	1
8	PAOZZ	96906	MS51957-65	SCREW,MACHINE	4
9	PAOZZ	96906	MS35338-43	WASHER,LOCK	4
10	PAOZZ	96906	M5S35649-202	NUT,PLAIN,HEXAGON	4

END OF FIGURE

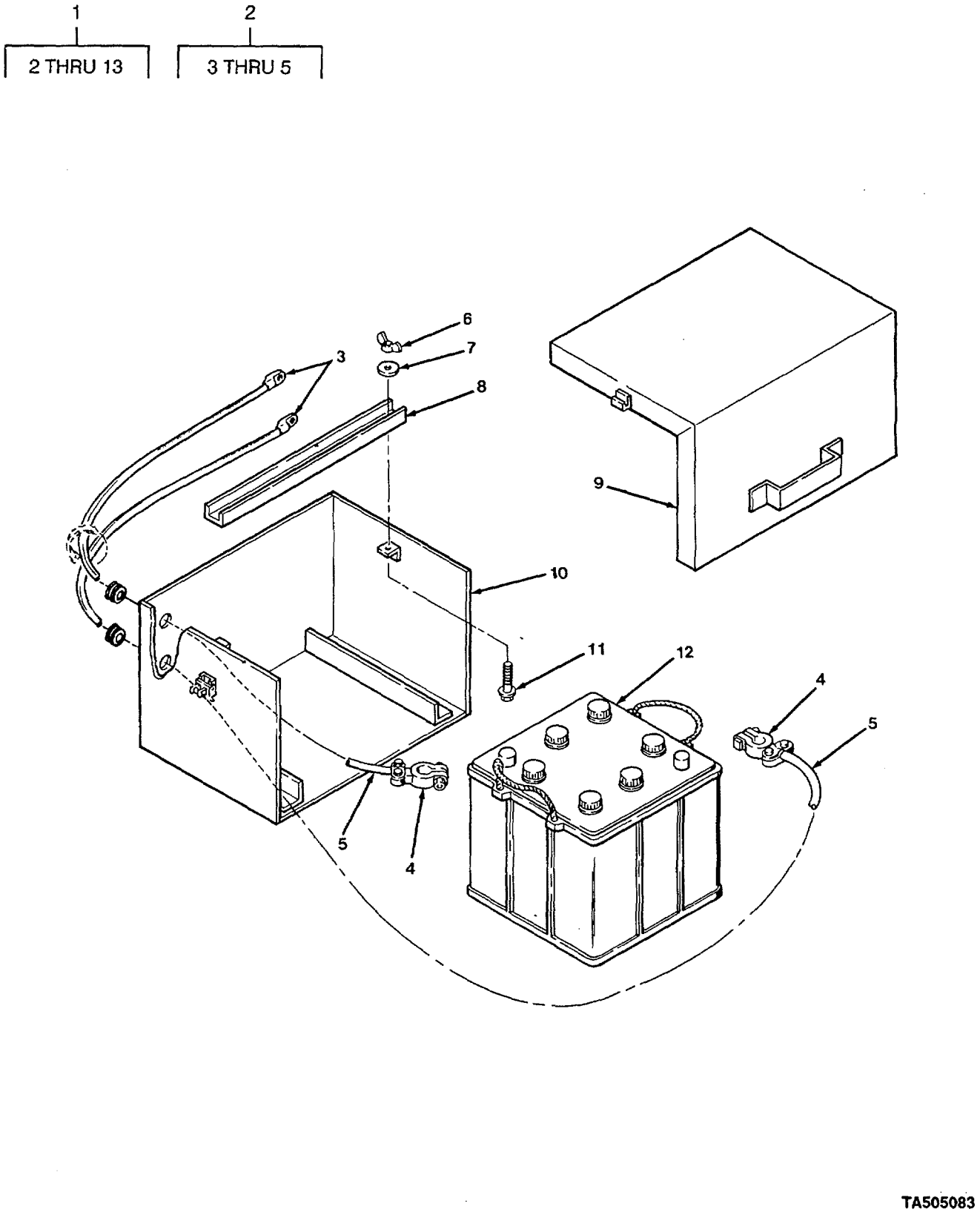

FIGURE 9. BATTERY BOX ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 0612 BATTERIES, STORAGE	
				FIG. 9 BATTERY BOX ASSEMBLY	
1	XDOOO	37562	B1900-7400	BATTERY BOX ASSY	1
2	XDOOO	37652	B1900-7418	•LEAD,STORAGE,BATTER	1
3	PAOZZ	96906	MS35430-21	••TERMINAL,LUG	1
* 4	PAOZZ	16428	728007	••TERMINAL,LUG	1
5	XDOZZ	37562	B1900-7416	••CABLEIBATTERY	1
6	PAOZZ	96906	MS35426-14	•NUT,PLAIN,WING	1
7	PAOZZ	96906	MS27183-10	•WASHER,FLAT	1
8	XDOZZ	37562	81900-7408	•RETAINER,BATTERY.	1
9	XDOZZ	37562	81900-7402	•COVER,BATTERY BOX	1
10	PAOZZ	37562	B1900-7403	•COVER,BATTERY BOX	1
11	PAOZZ	96906	MS90725-6	•SCREW,CAP,HEXAGON H	1
*12	PAOFA	96906	MS52149-1	•BATTERY,STORAGE.	1
13	PAOZZ	96906.	MS35489-49	•GROMMET,NONMETALLIC	2

END OF FIGURE

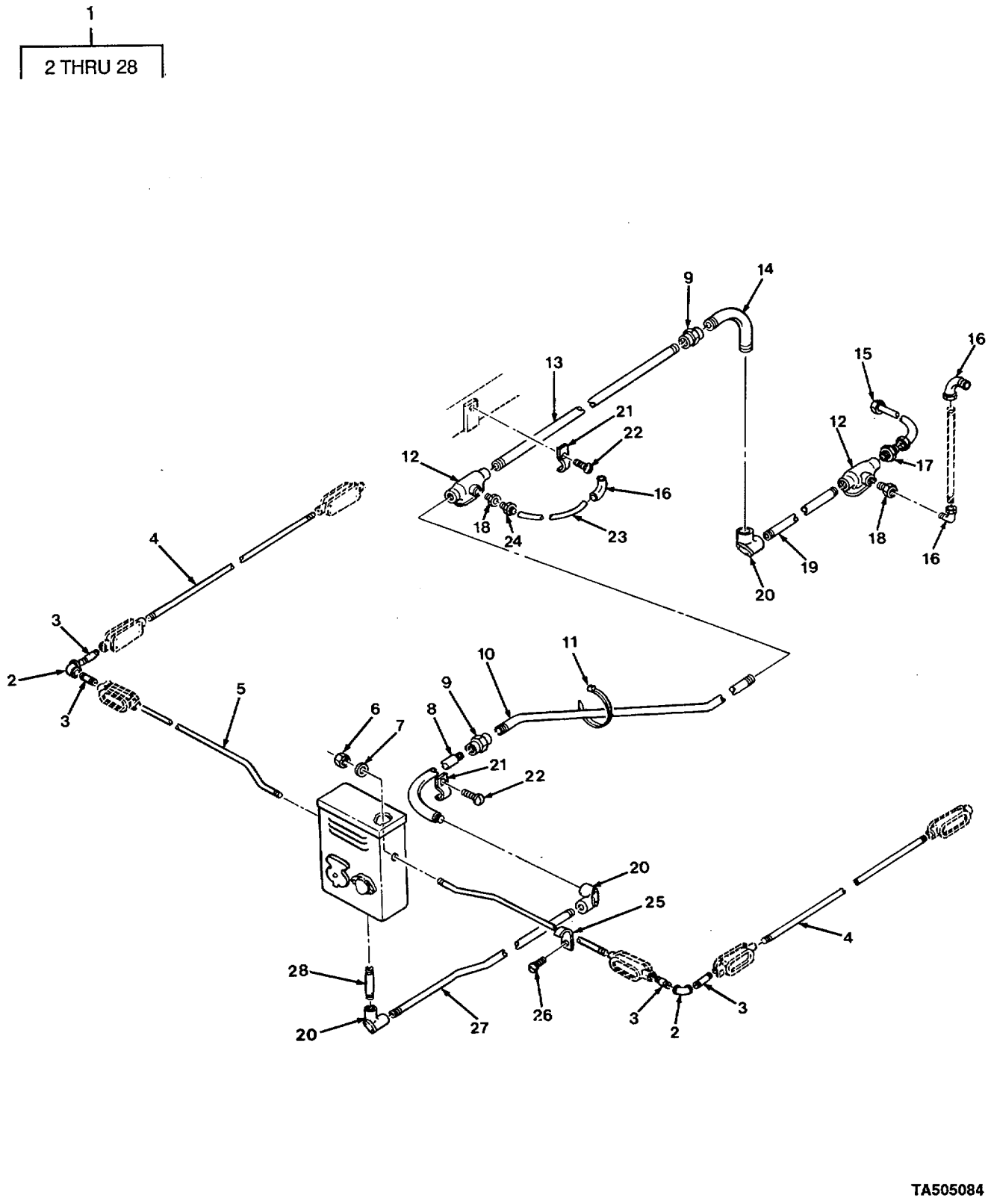

FIGURE 10. FRONT ELECTRICAL CONDUIT ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 0613 CHASSIS WIRING HARNESS	
				FIG. 10 FRONT ELECTRICAL CONDUIT ASSEMBLY	
1	XDOOO	37562	B1900-7000	WIRING HARNESS	1
* 2	PFOZZ	19207	8388931	•ELBOW,PIPE	2
3	XDOZZ	37562	B1900-7202	•CONDUIT ASSEMBLY	4
4	XDOZZ	37562	B1900-7204	•CONDUIT ASSEMBLY,ME	2
5	XDOZZ	37562	B1900-7201	•CONDUIT ASSEMBLY	1
6	PAOZZ	79470	8924X2	•LOCKNUT,PIPE	4
7	PAOZZ	96906	MS27183-15	•WASHER,FLAT	2
8	XDOZZ	37562	81900-7023	•CONDUIT ASSEMBLY	1
* 9	PFOZZ	83879	UNF-755	•UNION,ELECTRICAL CO	2
10	XDOZZ	37562	B1900-7025	•CONDUIT ASSEMBLY	1
11	PAOZZ	96906	MS3367-3-9	•STRAP,TIEDOWN,ELECT	20
* 12	PFOZZ	037'43	TA75S-M	•CONDUIT OUTLET	2
13	XDOZZ	37562	B1900-7030	•CONDUIT ASSEMBLY	1
14	XDOZZ	37562	B1900-7031	•CONDUIT ASSEMBLY	1
* 15	PFOZZ	37562	B1900-7035	•CONDUIT,METAL,RIGID	1
16	XDOZZ	79470	8425X6X6	•ELBOW,PIPE TO TUBE	3
* 17	PFOZZ	03743	SEO-21	•BOX CONNECTOR,ELECT	1
* 18	PFOZZ	79470	3220X12X6	•BUSHING,PIPE	2
19	XDOZZ	37562	B1900-7032	•CONDUIT ASSEMBLY	1
* 20	PFOZZ	03743	FFL-50	•ELBOW,ELECTRICAL CO	3
21	PAOZZ	96906	MS21333-11	•CLAMP,LOOP	5
22	PAOZZ	96906	MS90725-3	•SCREW,CAP,HEXAGON H	5
23	MOOZZ	37562	B1900-7028	•TUBING ASSEMBLY MAKE FROM P/N PB-64-0250	1
24	XDOZZ	79470	8205X6X6	•ADAPTER,STRAIGHT,PI	1
25	PAOZZ	96906	MS21333-6	•CLAMP,LOOP	6
26	PAOZZ	96906	MS51957-61	•SCREW,MACHINE	6
27	XDOZZ	37562	B1900-7022	•CONDUIT ASSEMBLY	
28	XDOZZ	37562	B1900-7020	•CONDUIT ASSEMBLY	1

END OF FIGURE

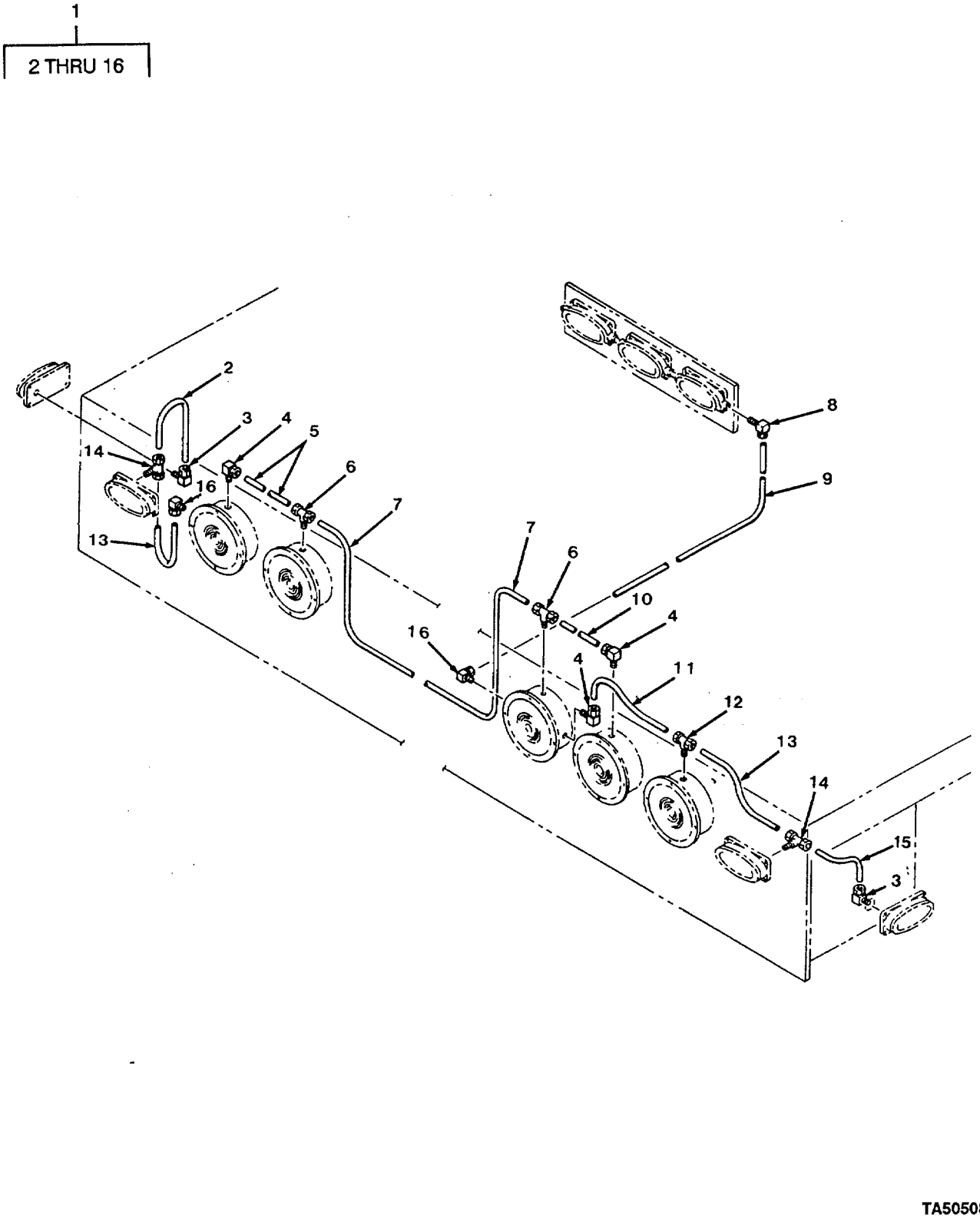

FIGURE 11. REAR ELECTRICAL CONDUIT ASSEMBLY.

	(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
					GROUP 0613 CHASSIS WIRING HARNESS	
					FIG. 11 REAR ELECTRICAL CONDUIT ASSEMBLY	
	1	PFOOO	37562	B1900-7300	WIRING HARNESS,BRAN.....	1
	2	MOOZZ	37562	B81900-7305	•CONDUIT,WIRING MAKE FROM TUBING P/ ..... N PB-86-0250 (13226).....	1
*	3	PFOZZ	81343	6-4 120202BA(LONG NUT)	•ELBOW,PIPE TO TUBE.....	2
*	4	PFOZZ	79470	1469X8	•ELBOW,PIPE TO TUBE.....	3
	5	MOOZZ	37562	B1900-7314	•CONDUIT,WIRING MAKE FROM P/N PB- ..... 108-0100.....	1
*	6	PFOZZ	79470	1472X8	•TEE,PIPE TO TUBE.....,...	2
	7	MOOZZ	37562	81900-7304	•CONDUIT,WIRING MAKE FROM TUBING P/ ..... N PB-108-0100 (13226).....	1
*	8	PFOZZ	79470	1469X6X2	•ELBOW,PIPE TO TUBE.....	1
	9	MOOZZ	37562	B1900-7309	•CONDUIT,WIRING MAKE FROM P/N PB- 64-0250	1
	10	MOOZZ	37562	B1900-7303	•CONDUIT,WIRING MAKE FROM TUBING P/ ..... N PB-108-0100 (13226).....	1
	11	MOOZZ	37562	B1900-7302	•CONDUIT,WIRING MAKE FROM WIRE P/N ..... PB-86-0250.....	1
*	12	PFOZZ	79470	1472X8X6X6	•TEE,PIPE TO TUBE.....	1
	13	MOOZZ	37562	81900-7301	•CONDUIT,WIRING MAKE FROM P/N PB- 64-0250O9	1
*	14	PFOZZ	79470	1472X6X6X6	•TEE,PIPE TO TUBE.....	2
	15	MOOZZ	37562	B1900-7306	•CONDUIT,WIRING MAKE FROM TUBING P/ ..... N PB-86-0250 (13226).....	1
*	16	PFOZZ	81343	6-6 1202028A	•ELBOW,PIPE TO TUBE	2

END OF FIGURE

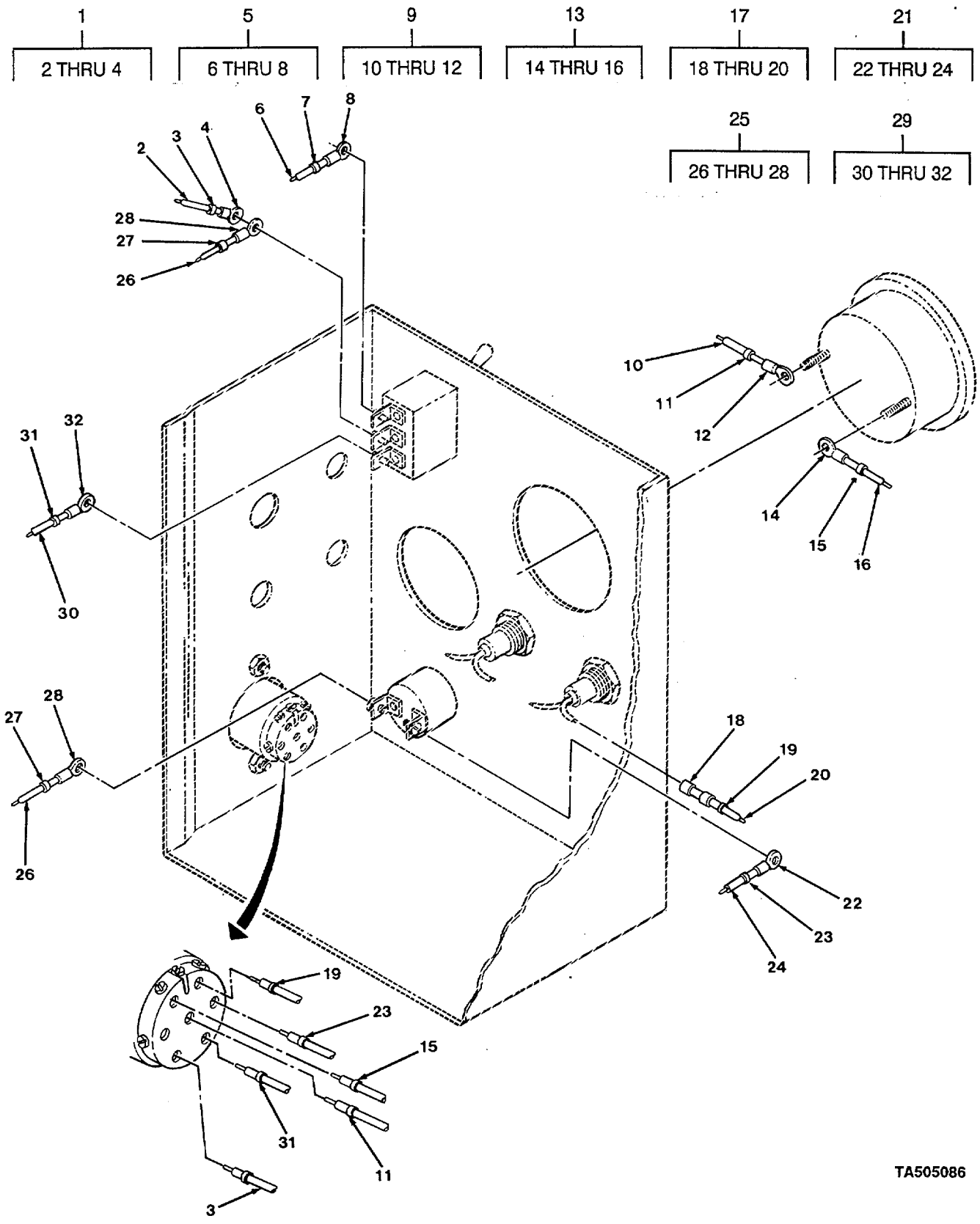

FIGURE 12. AUXILIARY BOX ELECTRICAL LEADS.

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 0613 CHASSIS WIRING HARNESS	
				FIG. 12 AUXILIARY BOX ELECTRICAL LEADS	
1	AOOOO	37562	81900-7101-48-1	LEAD ASSEMBLY	1
2	MOOZZ	37562	81900-7101-48	•LEAD,ELECTRICAL MAKE FROM P/N 81122S	1
3	PADZZ	81349	M43436/1-1	•BAND,MARKER	2
4	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	1
5	AOODO	37562	81900-7101-49-1	LEAD ASSEMBLY	1
6	MOOZZ	37562	B1900-7101-49	•LEAD,ELECTRICAL MAKE FROM P/N 81123S	1
7	PAOZZ	81349	M43436/1-1	•BAND.MARKER	2
8	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	1
9	AOOOO	37562	B1900-7101-51-1	LEAD ASSEMBLY	1
13	MOOZZ	37562	B1900-7101-51	•LEAD,ELECTRICAL MAKE FROM P/N 954	1
11	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
12	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	1
13	AOOOO	37562	81900-7101L-52-1	LEAD ASSEMBLY	1
14	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	1
15	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
16	MOOZZ	37562	81900-7101-52	•LEAD,ELECTRICAL MAKE FROM P/N C12E	1
17	AOOOO	37562	81900-7101-45-1	LEAD ASSEMBLY	1
18	PAOZZ	81349	MH7928/5-5	•SPLICE,CONDUCTOR	1
19	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
20	MOOZZ	37562	B1900-7i01-45	•LEAD,ELECTRICAL MAKE FROM P/N 81123S	1
21	AOOOO	37562	B1900-7101-47-1	LEAD ASSEMBLYV	1
22	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	1
23	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
24	MOOZZ	37562	B81900-7101-47	•LEAD,ELECTRICAL MAKE FROM P/N 81123SS	1
25	AOOOO	37562	81900-7101-50-1	LEAD ASSEMBLY	2
26	MOOZZ	37562	B1900-7101-50	•LEAD,ELECTRICAL MAKE FROM P/N 81123S	1
27	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
28	PAOZZ	96906	M525036-112	•TERMINAL,LUG	1
29	AOOOO	37562	B1900-7101-46-1	LEAD ASSEMBLY	1
30	MOOZZ	37562	81900-7101-46	•LEAD,ELECTRICAL MAKE FROM P/N 1954Y	1
31	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
32	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	1

END OF FIGURE

1	6	11	16	21	26
2 THRU 5	7 THRU 10	12 THRU 15	17 THRU 20	22 THRU 25	27 THRU 30
31	**35**	**39**	**43**	**47**	**51**
32 THRU 34	36 THRU 38	40 THRU 42	44 THRU 46	48 THRU 50	52 THRU 54
55	**59**				
56 THRU 58	60 THRU 63				

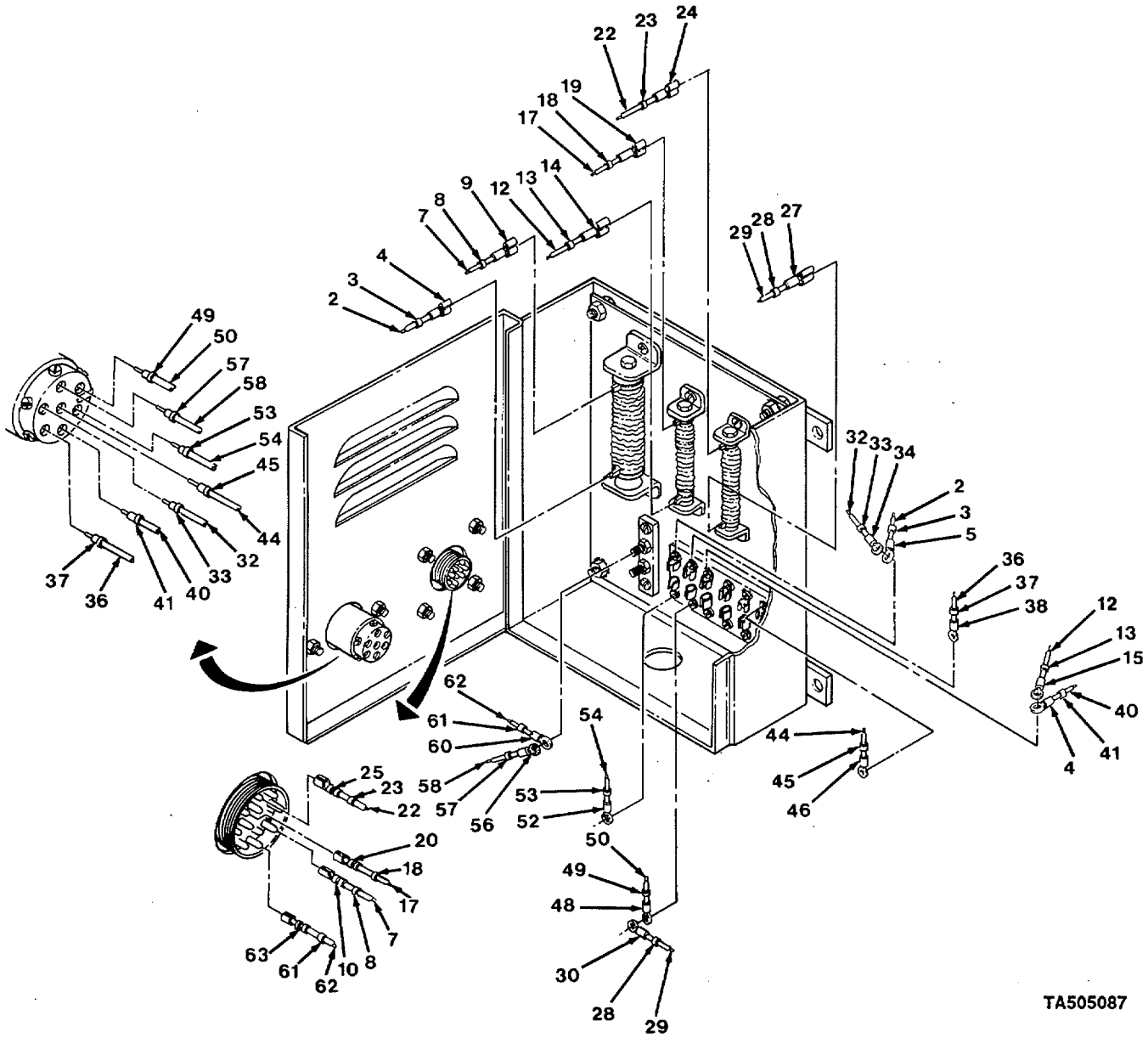

FIGURE 13. JUNCTION BOX ELECTRICAL LEADS.

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 0613 CHASSIS WIRING HARNESS	
				FIG. 13 JUNCTION BOX ELECTRICAL LEADS	
1	AOOO0	37562	B1900-7101-15-1	LEAD ASSEMBLY	1
2	MOOZZ	37562	81900-7101-15	•LEAD,ELECTRICAL MAKE FROM P/N 811235	1
3	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
4	PAOZZ	14726	S09313F	•TERMINAL,QUICK DISC	1
5	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	1
6	AOOOO	37562	B1900-7101-9-1	LEAD ASSEMBLY	1
7	MOOZZ	37562	B1900-7101-9	•LEAD,ELECTRICAL MAKE FROM P/N 954.	1
8	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
9	PAOZZ	14726	S09313F	•TERMINAL,QUICK DISC	1
10	PAOZZ	13445	3125	•TERMINAL,QUICK DISC	1
11	AOUOO	37562	81900-7101-13-1	LEAD ASSEMBLY	
12	MOOZZ	37562	BL900-7101-13	•LEAD,ELECTRICAL MAKE FROM P/N 811225	1
13	PAOZZ	81349	M43436/1-1	•BAND,MARKER 1	2
14	PAOZZ	14726	S09313F	•TERMINAL,QUICK DISC	1
15	PAOZZ	96906	MHS25036-112	•TERMINAL,LUG	1
16	AOODO	37562	81900-7101-10-1	LEAD ASSEMBLY	1
17	MOOZZ	37562	81900-7101-10	•LEAD,ELECTRICAL MAKE FROM P/N 811225	1
18	PAOZZ	81349	M43436/1-1	•BAND1MARKER	2
19	PAOZZ	14726	S09313F	•TERMINAL,QUICK DISC	1
23	PAOZZ	13445	3125	•TERMINAL,QUICK DISC	1
21	AOODO	37562	B1900-7101-11-1	LEAD ASSEMBLY	1
22	MOOZZ	37562	81900-7101-11	•LEAD,ELECTRICAL MAKE FROM P/N 811235	1
23	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
24	PAOZZ	14726	S09313F	•TERMINAL,QUICK DISC	1
25	PAOZZ	13445	3125	•TERMINAL,QUICK DISC	
26	AOOOO	37562	B81900-7101-14-1	LEAD ASSEMBLY,	1
27	PAOZZ	14726	S09313F	•TERMINAL,QUICK DISC	1
28	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
29	MOOZZ	37562	81900-7101-14	•LEADIELECTRICAL MAKE FRCM P/N 81123S5	1
30	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	1
31	AOOOO	37562	B1900-7101-2-1	LEAD ASSEMBLY	1
32	MOOZZ	37562	81900-7101-2	•LEAD,ELECTRICAL MAKE FROM P/N 81123 S.	1
33	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
34	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	1
35	AOOOO	37562	81900-7101-3-1	LEAD ASSEMBLY	1
36	MOOZZ	37562	61900-7101-3	•LEAD,ELECTRICAL MAKE FROM P/N 811225	1
37	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
38	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	1
39	AOOOO	37562	B1900-7101-4-1	LEAD ASSEMBLY...	1
40	MOOZZ	37562	81900-7101-4	•LEAD,ELECTRICAL MAKE FROM P/N	1

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				81123S	
41	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
42	PAOZZ	96906	MS25036-112	•TERMINAL,LUG.	1
43	ADOOO	37562	81900-7101-7-1	LEAD ASSEMBLY	1
44	MOOZZ	37562	81900-7101-7	•LEAD,ELECTRICAL MAKE FRCM P/N C12E	1
45	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
46	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	1
47	PAOOO	37562	B1900-710L-6-1	LEAD ASSEMBLY	1
48	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	1
49	PAOZZ	81349	M43436/1-1	•BAND.MARKER	2
50	MOOZZ	37562	B1900-7101-6	•LEAD,ELECTRICAL MAKE FROM P/N 954	1
51	AOOO	37562	B1900-7101-5-1	LEAD ASSEMBLY	1
52	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	1
53	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
54	MOOZZ	37562	81900-7101-5	•LEAD,ELECTRICAL MAKE FROM P/N 954	1
55	AOOO0	37562	B1900-7101-1-1	LEAD ASSE MBLY	1
56	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	1
57	PAOZZ	81349	M43436/t-1	•BAND,MARKER	2
58	MOOZZ	37562	81900-7101-1	•LEAD,ELECTRICAL MAKE FROM P/N 57209	1
59	AOOOO	37562	81900-T101-8-1	LEAD ASSEMBLY	1
60	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	1
61	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
62	MOOZZ	37562	81900-7101-8	•LEAD,ELE'CTRICAL MAKE FROM P/N 572D9	1
63	PAOZZ	13445	3125	•TERMINAL,QUICK DISC	1

END OF FIGURE

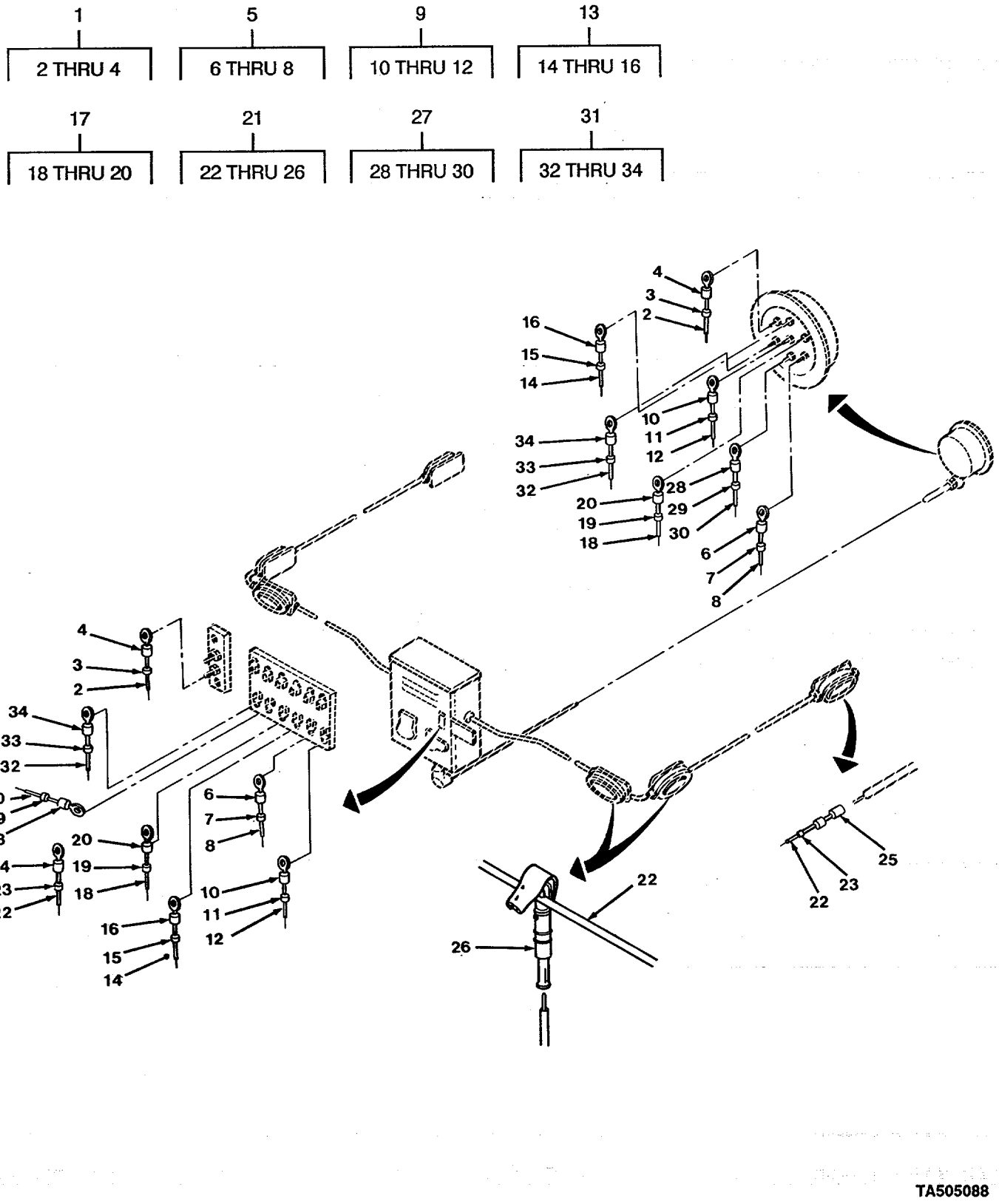

FIGURE 14. FRONT/REAR ELECTRICAL LEADS.

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 0613 CHASSIS WIRING HARNESS	
				FIG. 14 FRONT/REAR ELECTRICAL LEADS	
1	AOOOO	37562	B1900-7101-16-1	LEAD ASSEMBLY	1
2	MOOZZ	37562	B1900-7101-16	•LEAD,ELECTRICAL MAKE FROM P/N 57209	1
3	PAOZZ	81349	M43436/1-1	•BAND,MARKER	1
4	PAOZZ	96906	MS25036-112	•TERMINAL,LUG.	2
5	AOOOO	37562	B1900-7101-21-1	LEAD ASSEMBLY	1
6	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	2
7	PAOZZ	81349	M43436/1-1	•BAND,MARKER	1
8	MOOZZ	37562	81900-7101-21	•LEAD,ELECTRICAL MAKE FROM P/N 954.	1
9	AOOOO	37562	B1900-7101-22-1	LEAD ASSEMBLY.	1
10	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	2
11	PAOZZ	81349	M43436/1-1	•BANDIMARKER	1
12	MOOZZ	37562	B1900-7101-22	•LEAD,ELECTRICAL MAKE FROM P/N C12E	1
13	AOOOO	37562	81900-7101-20-1	LEAD ASSEMBLY	1
14	MOOZZ	37562	81900-7101-20	•LEAD,ELECTRICAL MAKE FROM P/N 81123S	1
15	PAOZZ	81349	M43436/1-1	•BAND,MARKER	1
16	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	2
17	AOOOO	37562	81900-7101-19-1	LEAD ASSEMBLY	1
18	MOOZZ	37562	81900-7101-19	•LEAD,ELECTRICAL MAKE FROM P/N 81123S	1
19	PAOZZ	81349	M43436/1-1	•BAND,MARKER	1
20	PAOZZ	96906	MS25036-112	•TERMINAL,LUG.	2
21	A0OOO	81349	M792815-4-1	LEAD ASSEMBLY	1
*22	MOOZZ	81349	M792815-4	•LEAD,ELECTRICAL MAKE FROM P/N 81162	1
23	PAOZZ	81349	M43436/1-1	•BAND,MARKER	1
24	PAOZZ	96906	MS25036-108	•TERMINAL,LUG	1
25	PAOZZ	14726	B1871BN	•SPLICE,CONDUCTOR	1
26	PAOZZ	77449	Z-45-001	•SPLICE,CONDUCTOR	1
27	AOOOO	37562	81900-7101-18-1	LEAD ASSEMBLY	1
28	PAOZZ	96906	MS25036-112	•TERMINAL,LUG	2
29	PAOZZ	81349	M43436/1-1	•BAND,MARKER	1
30	MOOZZ	37562	B1900-7101-18	•LEAD,ELECTRICAL MAKE FROM P/N 81122S	1
31	AOOO0	37562	B1900-7101-17-1	LEAD ASSEMBLY	1
32	MOOZZ	37562	81900-7101-17	•LEAD,ELECTRICAL MAKE FROM P/N 81123S	1
33	PAOZZ	81349	M43436/1-1	•BAND,MARKER-	1
34	PAOZZ	6906	MS25036-112	•TERMINAL,LUG	2

END OF FIGURE

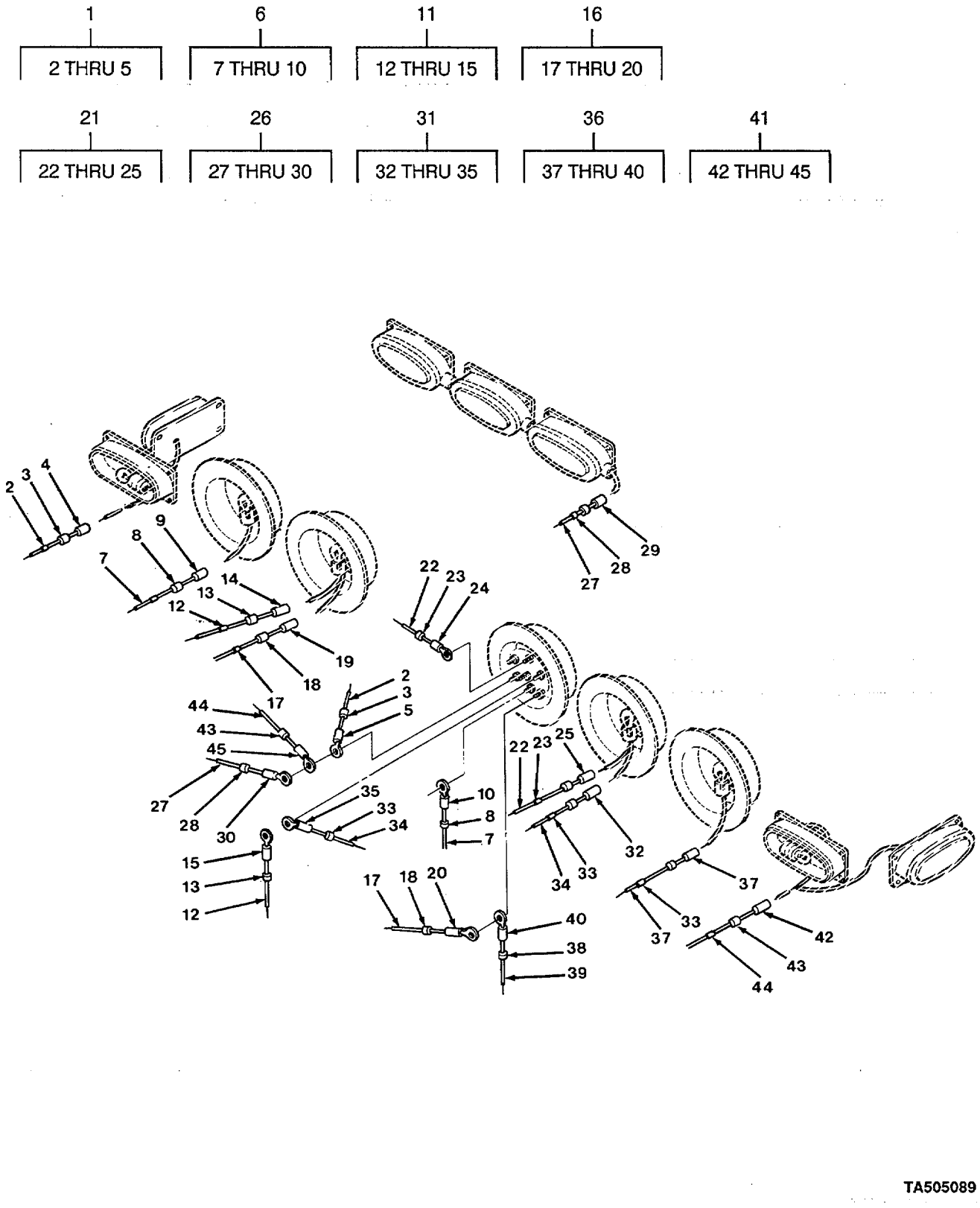

FIGURE 15. TAILLIGHT ELECTRICAL LEADS.

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 0613 CHASSIS WIRING HARNESS	
				FIG. 15 TAILLIGHT ELECTRICAL LEADS	
1	AOOOO	37562	81900-7101-23-1	LEAD ASSEMBLY	1
* 2	MOOZZ	37562	81900-7101-23	•LEAD,ELECTRICAL MAKE FROM P/N 81162S	1
3	PAOZZ	81349	M43436/1-1	•BAND,MARKER.	2
4	PAOZZ	81349	M7928/5-4	•SPLICE,CONDUCTOR	1
5	PAOZZ	96906	MS25036-108	•TERMINAL,LUG	1
6	AOOOO	37562	81900-7101-31-1	LEAD ASSEMBLY	1
* 7	MOOZZ	37562	81900-7101-31	•LEAD,ELECTRICAL MAKE FROM WIRE P/N 81162S (FSCM 64488)	1
8	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
9	PAOZZ	81349	M7928/5-4	•SPLICE,CONDUCTOR	1
10	PAOZZ	96906	MS25036-108	•TERMINAL,LUG	1
11	AOOOO	37562	81900-7101-29-1	LEAD ASSEMBLY	1
* 12	MOOZZ	37562	81900-7101-29	•LEAD,ELECTRICAL MAKE FROM WIRE P/N 81162S (FSCM 64488)	1
13	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
14	PAOZZ	81349	M7928/5-4	•SPLICE,CONDUCTOR	1
15	PAOZZ	96906	MS25036-108	•TERMINAL,LUG	1
16	AOOOO	37562	81900-7101-30-1	LEAD ASSEMBLY	1
* 17	MOOZZ	37562	81900-7101-30	•LEAD,ELECTRICAL MAKE FROM WIRE P/N 811625 (FSCM 64488)	1
18	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
19	PAOZZ	81349	M7928/5-4	•SPLICE,CONDUCTOR	1
20	PAOZZ	96906	MS25036-108	•TERMINAL,LUG	1
21	AOOOO	37562	81900-7101-28-1	LEAD ASSEMBLY	1
* 22	MOOZZ	37562	81900-7101-28	•LEADO,ELECTRICAL MAKE FROM WIRE P/N 81162S (FSCM 64488)	1
23	PAOZZ	81349	M43436/1-1	•BAND,MARKER .	2
24	PAOZZ	96906	MS25036-108	•TERMINAL,LUG	1
25	PAOZZ	81349	M7928/5-4	•SPLICE,CONDUCTOR	1
26	AOOOO	37562	81900-7101-25-1	LEAD ASSEMBLY	1
* 27	MOOZZ	37562	81900-7101-25	•LEAD,ELECTRICAL MAKE FROM WIRE P/N 81162S (FSCM 64488)	1
28	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
29	PAOZZ	81349	M7928/5-4	•SPLICE,CONDUCTOR	1
30	PAOZZ	96906	MS25036-108	•TERMINAL,LUG	1
31	AOOOO	37562	81900-7101-26-1	LEAD ASSEMBLY	1
32	PAOZZ	81349	M7928/5-4	•SPLICE,CONDUCTOR	1
33	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
* 34	MOOZZ	37562	81900-7101-26	•LEAD,ELECTRICAL MAKE FROM WIRE P/N 81162S (FSCM 64488)	1
35	PAOZZ	96906	MS25036-108	•TERMINAL,LUG	1
36	AOOOO	37562	81900-7101-27-1	LEAD ASSEMBLY	1
37	PAOZZ	81349	M7928/5-4 .	SPLICE,CONDUCTOR	1
38	PAOZZ	81349	M43436/1-1	•BAND,MARKER	2
* 39	MOOZZ	7562	81900-7101-27	•LEAD,ELECTRICAL MAKE FROM WIRE P/N 81162S (FSCM 64488)	1
40	PAOZZ	96906	MS25036-108	•TERMINAL,LUG	1

	(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
	41	AOOOO	37562	B1900-7101-24-1	LEAD ASSEMBLY.....	1
	42	PAOZZ	81349	M7928/5-4	•SPLICE,CONDUCTOR.....	1
	43	PAOZZ	81349	M43436/1-1	•BAND,MARKER.....	2
*	44	MOOZZ	37562	B1900-7101-24	•LEAD,ELECTRICAL MAKE FROM WIRE P/ N 81162S (FSCM 64488).....	1
	45	PAOZZ	96906	MS25036-108	•TERMINAL,LUG	1

END OF FIGURE

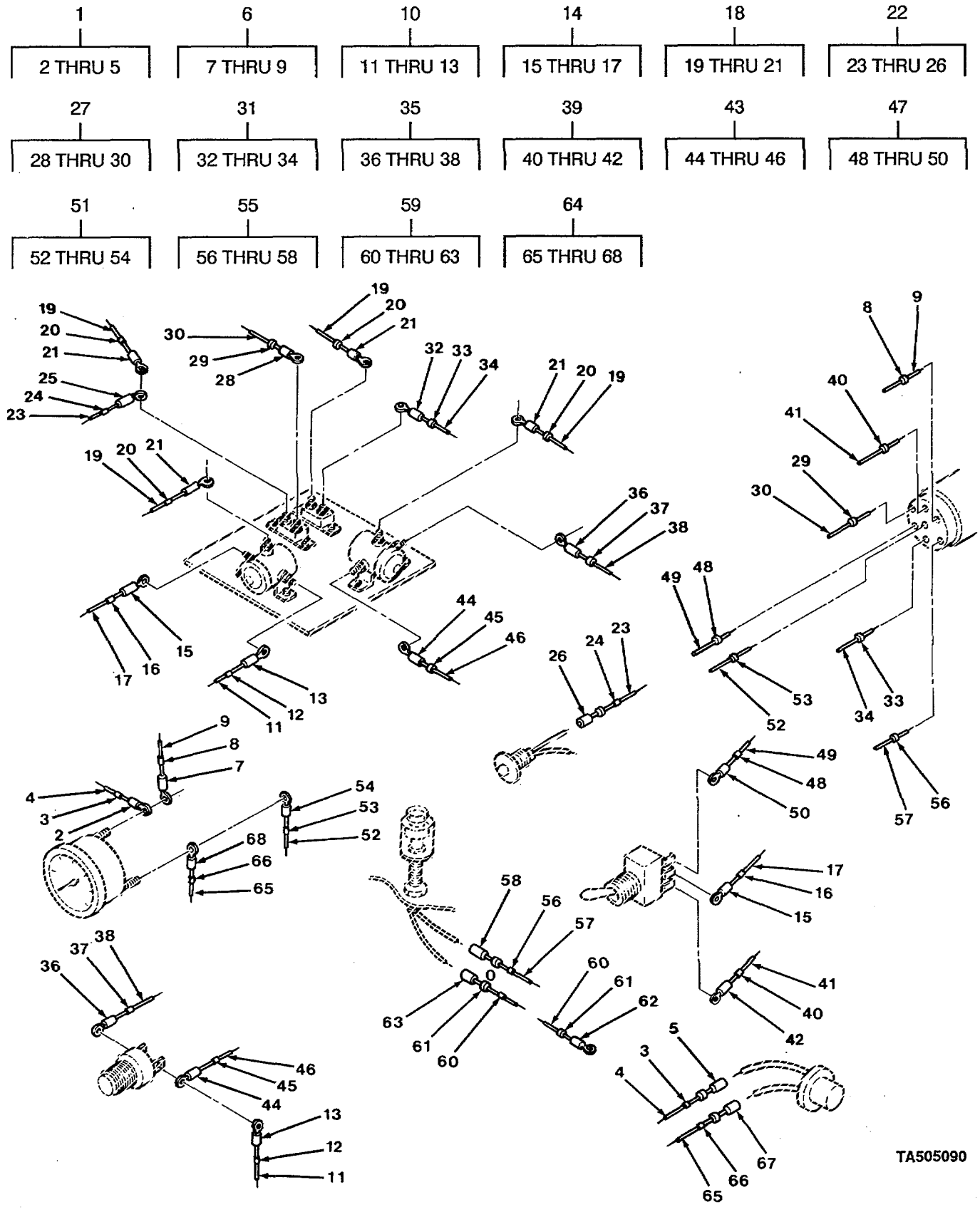

FIGURE 16. ENGINE ELECTRICAL LEADS.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 0613 CHASSIS WIRING HARNESS	
				FIG. 16 ENGINE ELECTRICAL LEADS	
1	AOOOO	37562	B1900-7101-36-1	LEAD ASSEMBLY	1
2	PAOZZ	96906	MS25036-108	TERMINAL, LUG	1
3	PAOZZ	81349	M43436/1-1	BAND,MARKER	2
4	MOOZZ	37562	B1900-7107-36	LEAD, ELECTRICAL MAKE FROM WIRE P/N N 81162S (FSCM 64488)	1
5	XDOZZ	81349	M792815-4	SPLICE, CONDUCTOR	1
6	AOOOO	37562	B1900-7101-44-1	LEAD ASSEMBLY	1
7	PAOZZ	96906	MS25036-108	TERMINAL, LUG	1
8	PAOZZ	81349	M43436/1-1	BANDIMARKER	2
9	MOOZZ	37562	B1900-7101-44	LEAD,ELECTRICAL MAKE FROM P/N C10ER	1
10	AOOOO	37562	B1900-7101-55-1	LEAD ASSEMBLY	1
11	MOOZZ	37562	B1900-7101-55	LEAD IELECTRICAL MAKE FROM P/N 811231	1
12	PAOZZ	81349	M43436/1-1	BAND MARKER	2
13	PAOZZ	96906	MS25036-112	TERMINAL LUG	2
14	AOOOO	37562	B1900-7101-57-1	LEAD	1
15	PAOZZ	96906	MS25036-112	TERMINAL, LUG	2
16	PAOZZ	81349	M43436/1-1	BAND MARKER	2
17	MOOZZ	37562	B1900-7101-57	LEAD , ELECTRICAL MAKE FROM P/N	1
18	AOOOO	37562	B1900-7101-59-1	LEAD ASSEMBLY	1
19	MOOZZ	37562	B1900-7101-59	LEAD, ELECTRICAL MAKE FROM WIRE P/N 81162S (FSCM64488)	1
20	PAOZZ	81349	M43436/1-1	BAND,MARKER	2
21	PAOZZ	96906	MS25036-108	TERMINAL,LUG	2
22	AOOOO	37562	B1900-7101-56-1	LEAD ASSEMBLY	1
23	MOOZZ	37562	B1900-7101-56	LEAD,ELECTRICAL MAKE From P/N 81123S	1
24	PAOZZ	81349	M43436/1-1	BAND MARKER	
25	PAOZZ	96906	M525036-112	TERMINAL, LUG	1
26	PAOZZ	81349	M7928/5-5	SPLICE, CONDUCTOR	1
27	AOOOO	37562	B1900-7101-39-1	LEAD, ASSEMBLY	1
28	PAOZZ	96906	MS25036-112	TERMINAL, LUG	1
29	PAOZZ	81349	M43436/1-1	BAND,MARKER	2
30	MOOZZ	37562	B1900-7101-39	LEAD, ELECTRICAL MAKE FROM P/N 81123S	1
31	AOOOO	37562	81900-7101-38-1	LEAD ASSEMBLY	1
32	PAOZZ	96906	M525036-112	TERMINAL, LUG	1
33	PAOZZ	81349	M43436/1-1	BAND, MARKER	2
34	MOOZZ	37562	B1900-7101-38	LEAD,ELECTRICAL MAKE FROM P/N 81123S	1
35	AOOOO	37562	B1900-7101-53-1	LEAD ASSEMBLY	1
36	PAOZZ	96906	MS25036-112	TERMINAL, LUG	2
37	PAOZZ	81349	M43436/1-1	BAND, MARKER	2
38	MOOZZ	37562	B1900-7101-53	LEAD, ELECTRICAL MAKE FROM P/N C10ER	1
39	AOOOO	37562	B1900-7101-41-1	LEAD ASSEMBLY	1

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
40	PAOZZ	81349	M43436/1-1	BAND, MARKER	2
41	MOOZZ	37562	B1900-T107-41	LEAD,ELECTRICAL MAKE FROM P/N 81123S	1
42	PAOZZ	96906	MS25036-112	TERMINAL,LUG	1
43	AOOOO	37562	B1900-7101-54-1	LEAD ASSEMBLY	1
44	PAOZZ	96906	MS25036-112	TERMINAL LUGS	2
45	PAOZZ	81349	M43436/1-1	BAND,MARKER	2
46	MOOZZ	37562	B1900-7101-54	LEAD,ELECTRICAL MAKE FROM P/N C10ER	1
47	AOOOO	37562	B1900-7101-40-1	LEAD ASSEMBLY	1
48	PAOZZ	81349	M43436/1-1	BAND, MARKER	2
49	MOOZZ	37562	B1900-7101-40	LEAD,ELECTRICAL MAKE FROM P/N 81122S	1
50	PAOZZ	96906	MS25036-112	TERMINAL ,LUG	1
51	AOOOO	37562	B1900-7101-43-1	LEAD ASSEMBLY	1
52	MOOZZ	37562	B1900-7101-43	LEAD,ELECTRICAL MAKE FROM P/N C10ER	1
53	PAOZZ	81349	M43436/1-1	BAND, MARKER	2
54	PAOZZ	96906	MS25036-108	TERMINAL,LUG	1
55	AOOOO	37562	B1900-7101-42-1	LEAD ASSEMBLY,	1
56	PAOZZ	81349	M43436/1-1	BAND, MARKER	2
57	MOOZZ	37562	B1900-7101-42	LEAD,ELECTRICAL MAKE FROM P/N 81123S	1
58	PAOZZ	81349	M7928/5-5	SPLICE, CONDUCTOR	1
59	ADOOO	37562	B1900-7101-58-1	LEAD ASSEMBLY	1
60	MOOZZ	37562	B1900-7101-58	LEAD,ELECTRICAL MAKE FROM P/N 81123S	1
61	PAOZZ	81349	M43436/1-1	BAND,MARKER	2
62	PAOZZ	96906	MS25036-112	TERMINAL, LUG	1
63	PAOZZ	81349	M7928/5-5	SPLICE, CONOUCTOR	1
64	AOOOO	37562	119PO-7101-37-1	LEAD ASSEMBLY	1
65	MOOZZ	37562	B1900-7101-37	LEAD,ELECTRICAL MAKE FROM WIRE PI N 81162S (FSCM 64488)	1
66	PADZZ	81349	M43436/1-1	BAND,MARKER	2
67	XDOZZ	81349	M792815-4	SPLICE, CONDUCTOR	1
68	PAOZZ	96906	MS25036-108	TERMINAL,LUG	1

END OF FIGURE

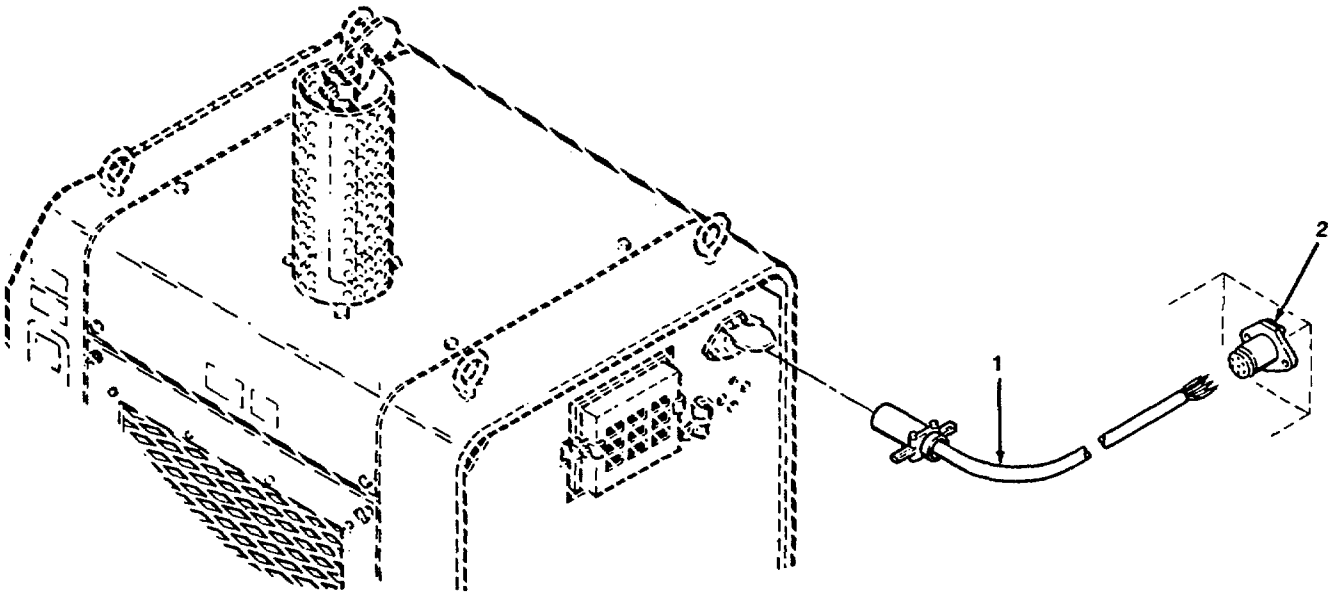

FIGURE 17. ELECTRICAL POWER HARNESS (F/RR).

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 0613 CHASSIS WIRING HARNESS	
				FIG 17 ELECTRICAL POWER HARNESS (F/RR)	
1	PAOZZ	37562	B1900-7105H	CABLE ASSEMBLY,SPEC.	1
2	PAOZZ	37562	B1900-4811	RECEPTACLE	1

END OF FIGURE

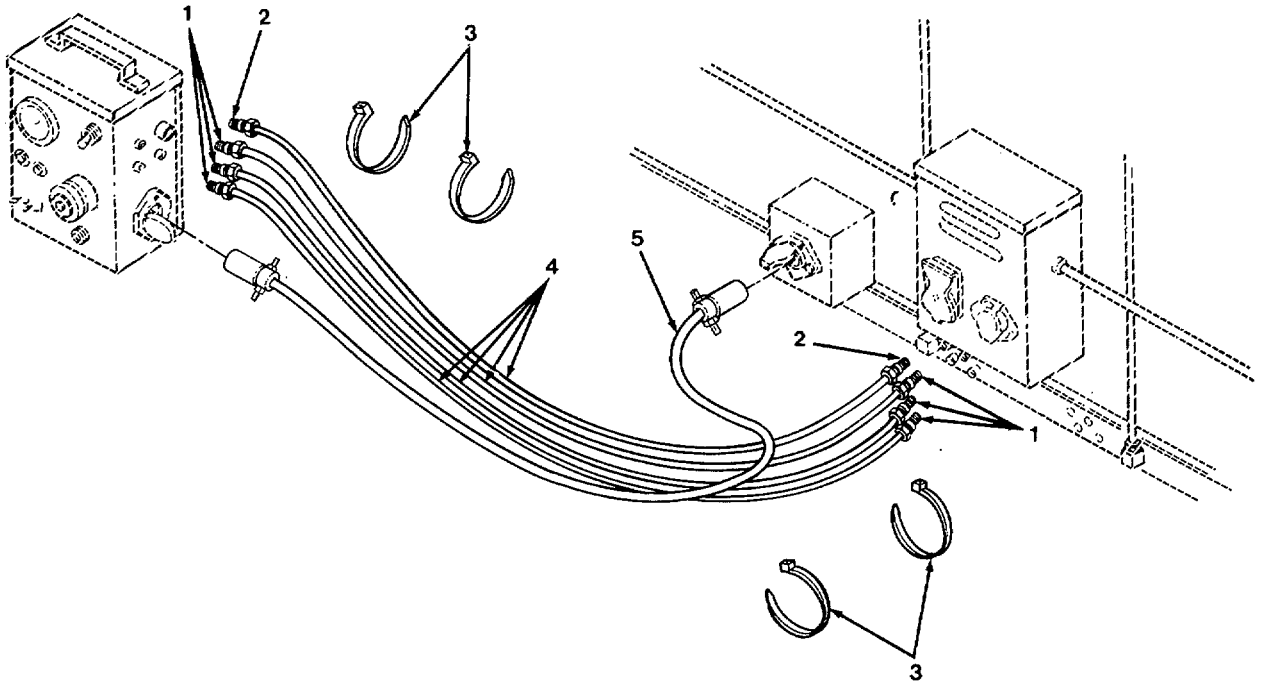

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FIGURE18. ELECTRICAL POWER HARNESS.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 0613 CHASSIS WIRING HARNESS	
				FIG 18. ELECTRICAL POWER HARNESS	
I	PAOZZ	19207	7399088	ADAPTER, STRAIGHT	6
2	PAOZZ	81343	6-4010102C	REDUCER,PIPE	2
3	PFOZZ	53421	T250R	STRAP, TIE DOWN	4
4	PAOZZ	81348	ZZ-H-461	HOSE ASSEMBLY,NONME	4
5	PAOOO	37562	B1900-4872	HARNESS, POWER SUPPLY	1

END OF FIGURE

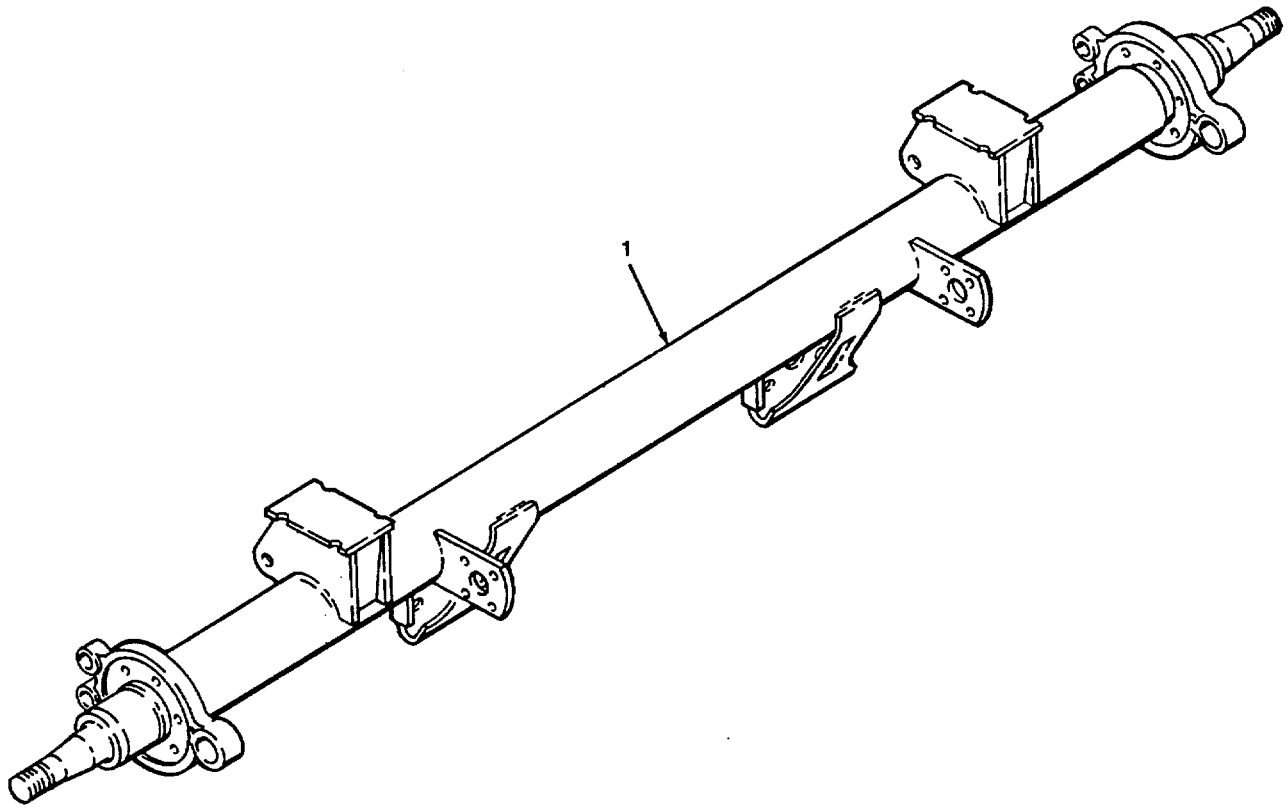

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FIGURE19. AXLE, REAR.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 11 REAR AXLE	
				GROUP 1100 REAR AXLE ASSEMBLY	
				FIG. 19 AXLE, REAR	
1	PFFZZ	78500	TN4670-P	AXLE ASSEMBLY	1
				END OF FIGURE	

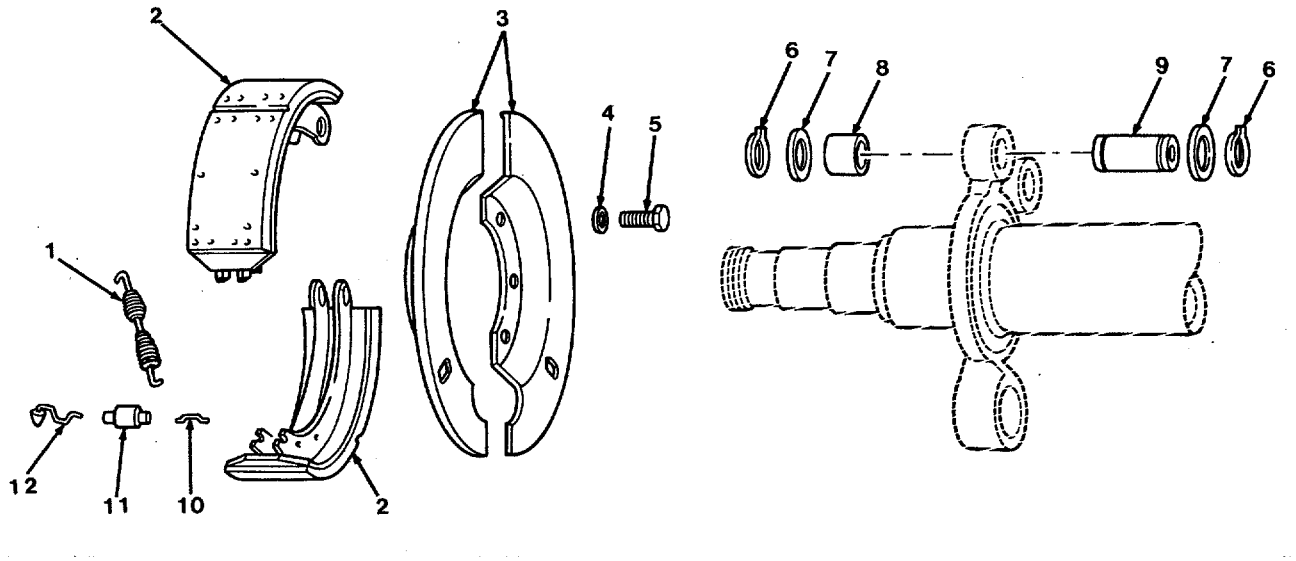

FIGURE 20. SERVICE BRAKES.

	(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
					GROUP 12 BRAKES	
					GROUP 1202 SERVICE BRAKES	
					FIG. 20 SERVICE BRAKES	
	1	KFOZZ	78500	2258-Z-416	SPRING,SHOE RETURN PART OF KIT P/N 9001	1
	2	PAOZZ	78500	A7-3222-R-876	BRAKE SHOE	2
	3	XDOZZ	78500	AI-3236-A-1249	DUST SHIELD	2
	4	PAOZZ	96906	MS35338-46	WASHER,LOCK	6
	5	PAOZZ	96906	MS90725-58	SCREW,CAP,HEXAGON H	6
*	6	KFOZZ	19207	11662296-9	RING,RETAINING PART OF KIT P/N 9001	4
*	7	KFOZZ	78500	1229-B-1848	WASHER,FLAT PART OF KIT P/N 9001	4
*	8	KFOZZ	78500	1225-B-496	BUSHING,ANCHOR PIN PART OF KIT P/N 9001	2 1
*	9	KFOZZ	78500	1259-J-218	PIN,STRAIGHT,HEADLE PART OF KIT P/N 9001	2
	10	KFOZZ	78500	1218-G-85	PIN,RETURN SPRING	2
*	11	KFOZZ	78500	1779-R-18	ROLLER,LINEAR-ROTAR PART OF KIT P/N 9001	2
*	12	KFOZZ	78500	1718-Y-103	RETAINER,BRAKE SHOE PART OF KIT P/N 9001	1

END OF FIGURE

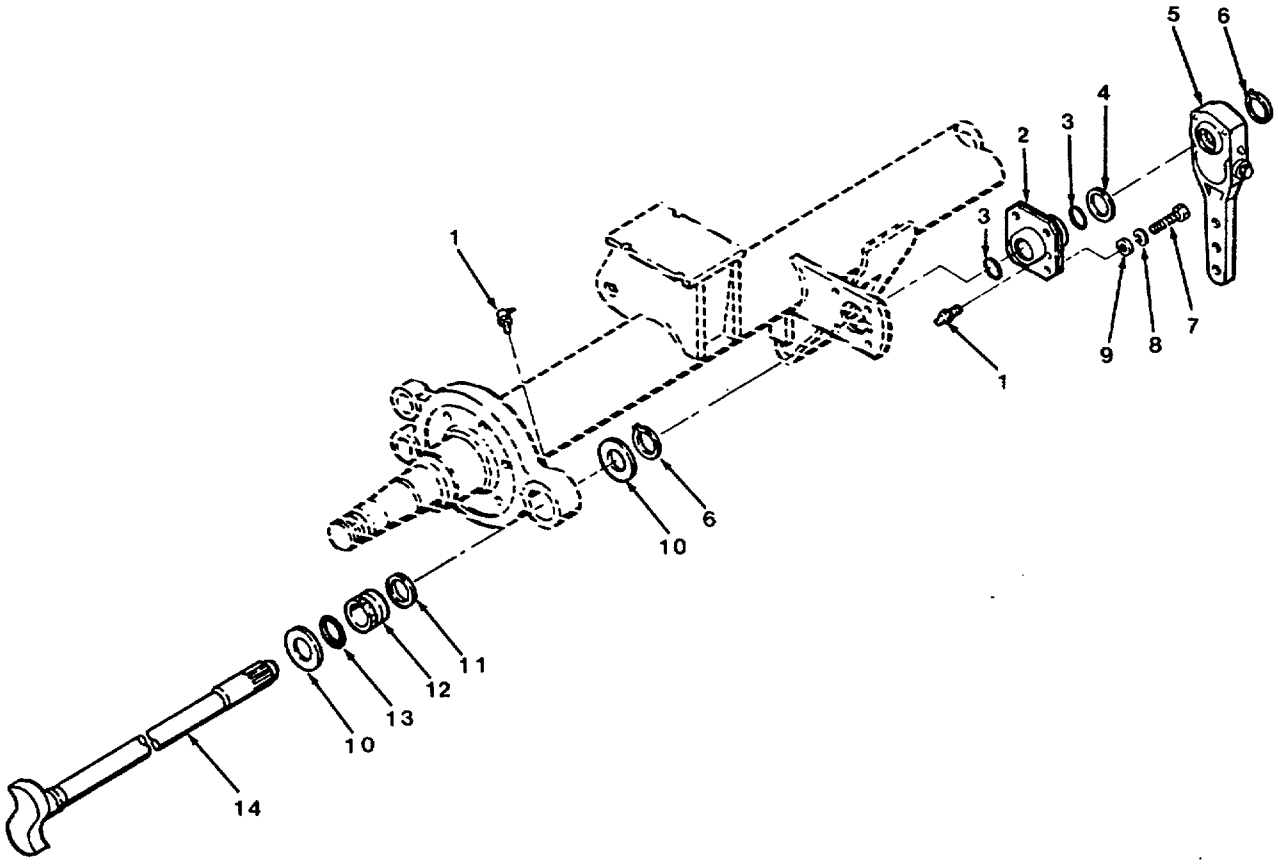

FIGURE 21. CAMSHAFT AND BRACKET ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 1202 SERVICE BRAKES	
				FIG. 21 CAMSHAFT AND BRACKET ASSEEMBLY	
I	PAOZZ	96906	MS15001-1	FITTING, LUBRICATION	2
2	PAOZZ	82304	19083	RETAINER ASSEMBLY	1
3	PAOZZ	78500	12O5X726	PACKING,PREFORMED	1
4	PAOZZ	78500	1229-J-868	SPACER,RING	1
5	PAOZZ	78500	A3275X596	ADJUSTER.SLACK, BRAKE	1
6	PAOZZ	78500	1229-Z-t118	RING, RETAINING	2
7	PAOZZ	78500	S-266-P	SCREW	4
8	PAOZZ	96906	MS35338-43	WASHER,LOCK	4
9	PAOZZ	78500	1229-K-1597-Z	WASHER, FLAT	4
10	PAOZZ	19207	7014891 W	WASHER,FLAT	2
11	XDOZZ	78500	1705-H-294	SEAL	1
12	PAOZZ	78500	1225-X-804	BUSHING, SPIDER	1
13	PAOZZ	19207	11662296-28	PACKING, PREFORMED	1
14	PAOZZ	78500	2210-M-2483	CAMSHAFT, ACTUATING	I
				END OF FIGURE	

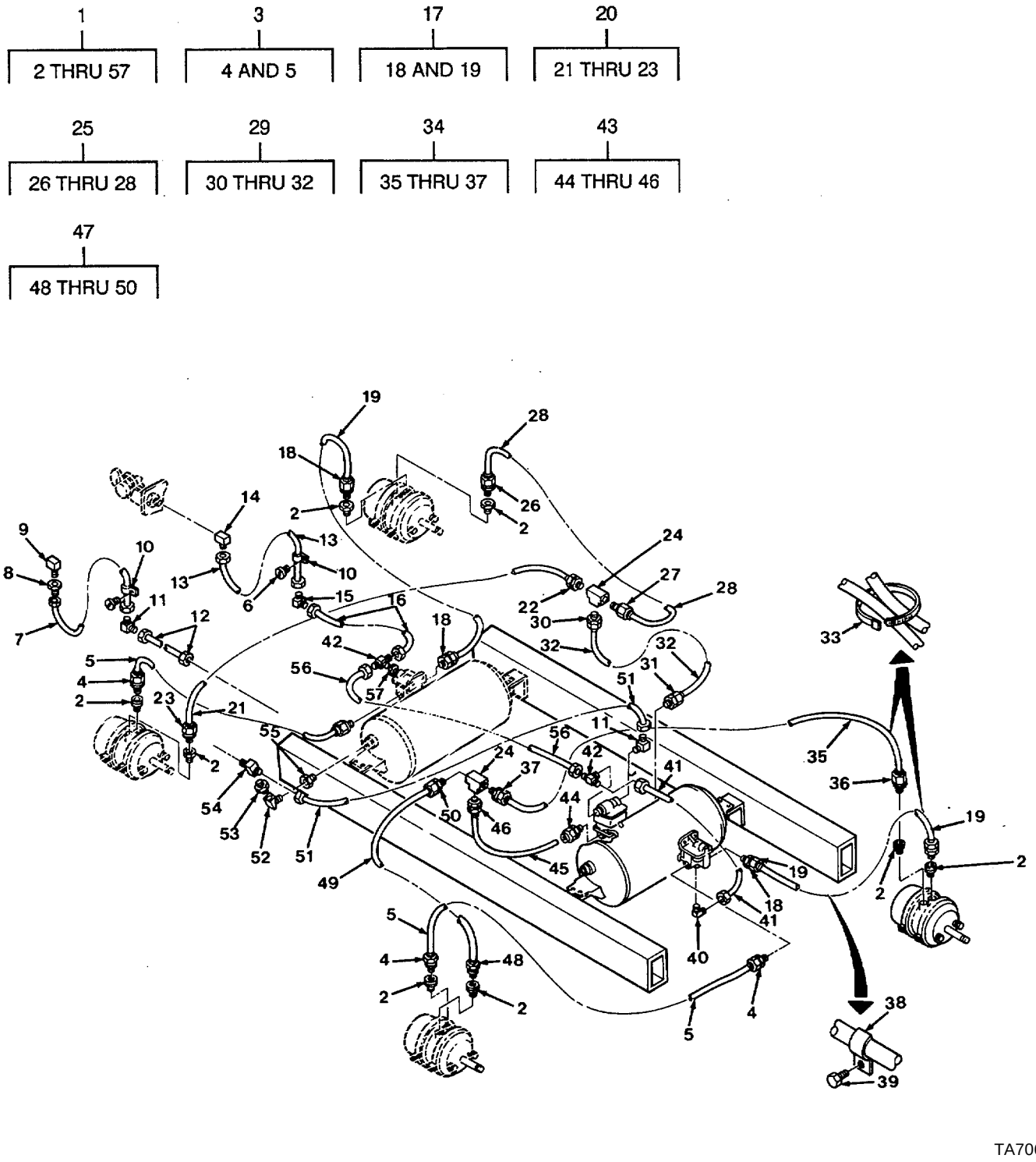

FIGURE 22. AIR SYSTEM ASSEMBLY

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 1208 AIR BRAKE SYSTEM	
				FIG. 22 AIR ASSEMBLY	
1	AOOOO	37562	B1900-4200	AIR SYSTEM ASSY	1
2	XDOZZ	16662	AC20209	ADAPTER,STRAIGHT,PI MAKE FROM P/N 6642-0000	8
3	PAOOO	37562	B1900-4241	HOSE ASSEMBLY NONME	2
4	PAOZZ	16662	A86624	ADAPTER,STRAIGHT,PI	
5	MOOZZ	37562	B1900-424-1	HOSE,NONMETALLIC MAKE FROM P/N 2570-8	1
6	PAOZZ	96906	MS51957-61	SCREW, MACHINE	2
7	MOOZZ	37562	B1900-4248	TUBING,NON-METALLIC MAKE FROM P/N C606-100	1
8	PAOZZ	16662	AC97805	ADAPTER F STRAIGHTPI	1
9	PAOZZ	19207	7373380	ELBOW,PIPE TO TUBE	1
10	PAOZZ	96906	MS21333-6	CLAMP,LOOP	2
11	PAOZZ	81343	6-4 120202BA(LONG NUT)	ELBOW,PIPE TO TUBE	2
12	MOOZZ	37562	Bt900-4228	TUBING,NON-METALLIC MAKE FROM P/N C606-100	1
13	MOOZZ	37562	B1900-4227	TUBING,NON-METALLIC MAKE FROM P/N 06642-0000	1
14	PAOZZ	79470	1469XBX8	ELBOW, PIPE TO TUBE	1
15	PAOZZ	81343	6-6 120202BA	ELBOW,PIPE TO TUBE	1
16	MOOZZ	37562	B1900-4226	TUBING, NON-METALLIC MAKE FROM P/N 06642-0000	1
17	AOOOO	37562	B1900-4220	HOSE ASSEMBLY	2
I8	PAOZZ	16662	A86624	ADAPTER, STRAIGHT, PI	2
19	MOOZZ	37562	B1900-4220-1	HOSE,NONMETALLIC MAKE FROM P/N 2570-8	1
20	AOOOO	37562	B1900-4216	HOSE,ASSEMBLY	1
21	MOOZZ	37562	B1900-4216-1	HOSE, NONMETALLIC MAKE FROM P/N 2570-8	1
22	PAOZZ	16662	AC2476	ADAPTER, STRAIGHT,PI	1
23	XOOZZ	16662	AC20209	ADAPTER,STRAIGHT,P1	
24	PAOZZ	01276	2090-8-85	TEE, PIPE	2
25	AOOOO	37562	B1900-4217	HOSE , ASSEMBLY	1
26	XDOZZ	16662	AC20209	ADAPTER, STRAIGHT, PI	1
27	PAOZZ	16662	AC2476	ADAPTER, STRAIGHT,PI	1
28	MOOZZ	37562	B1900-4217-1	HOSE, NONMETALLIC MAKE FROM P/N 2570-8	1
29	MOOZZ	37562	B1900-4221	HOSE ASSEMBLY	1
30	XDOZZ	99408	A86622	PIN HOLLOW	1
31	PAOZZ	16662	A86624	ADAPTER, STRAIGHT, PI	1
32 25	MOOZZ	37562	B1900-4221-1	HOSE,MONMETALLIC MAKE FROM P/N 2570-8	1
33	PAOZZ	96906	MS3367-3-9	STRAP,TIE DOWN, ELECT	8
34	AOOOO	37562	B1900-4219	HOSE ASSEMBLY	1
35	MOOZZ	37562	B1900-4219-1	HOSE,NONMETALLIC MAKE FROM P/N 2570-6	1
36	XDOZZ	63477	AC20209	FITTING,HOSE	1

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
37	PAOZZ	16662	AC2476	..ADAPTER, STRAIGHT,PI	1
38	PAOZZ	96906	MS21333-11	.CLAMP, LOOP	4
39	PAOZZ	96906	MS90725-6	.SCREW, CAP, HEXAGON H	4
40	PAOZZ	79470	1469X8X4	.ELBOW, PIPE TO TUBE	1
41	MOOZZ	37562	B1900-4226	.TUBING,NON-METALLIC MAKE FROM P/N 06642-0000	1
42	PAOZZ	79470	1472-8	.TEE, PIPE TO TUBE	2
43	AOOOO	37562	B1900-4214	.HOSE ASSEMBLY	1
44	XDOZZ	99408	A86622	..PIN,HOLLOW	1
45	MOOZZ	37562	B1900-4214-1	..HOSE, NONMETALLIC MAKE FROM P/N 2570-8	1
46	PAOZZ	16662	A86624	..ADAPTER,STRAIGHT, PI	1
47	MOOZZ	37562	B1900-4222	.HOSE ASSEMBSLYL	1
48	XDOZZ	16662	AC20209	..ADAPTER, STRAIGHT PI	1
49	MOOZZ	37562	B1900-4222-1	..HOSE,NONMETALLIC MAKE FROM P/N 2570-6	1
50	PAOZZ	16662	AC2476	..ADAPTER, STRAIGHT, PIP	1
51	MOOZZ	37562	B1900-4231	.TUBING,NON-METALLIC MAKE FROM P/N C606-100	1
52	PAOZZ	79470	3350X8	.ELBOW PIPE	1
53	PAOZZ	06853	227856	.VALVE, CHECK	1
54	PAOZZ	79470	1472X6X6X6	.TEE,PIPE TO TUBE	1
55	PFOZZ	79470	3220X8X6	.BUSHING PIPE	1
56	MOOZZ	37562	B1900-4225	.TUBING,NON-METALLIC MAKE FROM PIN 06642-0000	1
57	PFOZZ	81495	S-738-11	.BUSHING, PIPE	1

END OF FIGURE

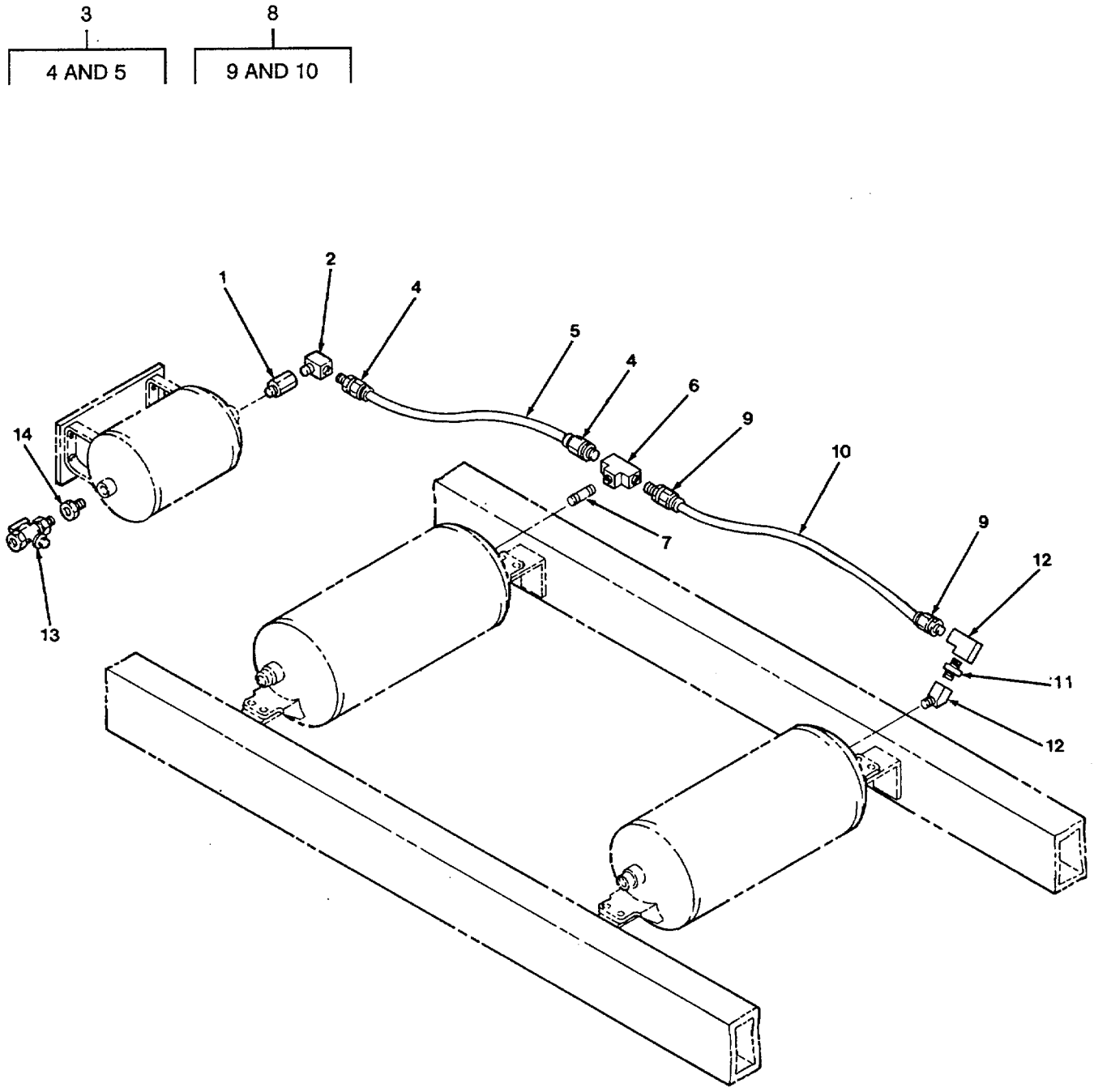

FIGURE 23. AUXILIARY AIR SYSTEM ASSEMBLY .

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 1208 AIR BRAKE SYSTEM	
				FIG. 23 AUXILIARY AIR SYSTEM ASSEMBLY	
1	PAOZZ	16662	AC-80571	.VALVE, BRAKE PNEUMAT.....	1
2	PAOZZ	01276	2089-8-8S	.ELBOW, PIPE.....	2
3	AOOOO	37562	B1900-4215	.HOSE ASSEMBLY.....	1
4	PAOZZ	16662	AC2476	..ADAPTER,STRAIGHT, PI	2
5	MOOZZ	00624	2570-6-20	..HOSE, NONMETALLIC MAKE FROM P/N 2570-6.....	1
6	PAOZZ	79470	1472X6X6X6	.TEE, PIPE TO TUBE.....	1
7	PFOZZ	96906	MS51846-82	.NIPPLE, PIPE	1
8	AOOOO	37562	B1900-4218	.HOSE ASSEMBLYLY.....	1
9	PAOZZ	16662	AC2476	..ADAPTER, STRAIGHT, PI	2
10	MOOZZ	00624	2570-6-40	..HOSE, NONMETALLIC MAKE FROM P/N 2570-6.....	1
11	PAOZZ	06853	227717 SC-2	.VALVE, CHECK	1
12	PAOZZ	79470	3350X8	.ELBOW ,PIPE.....	1
13	PAOZZ	06853	276068	.COCK, DRAIN.....	1
14	PFOZZ	03958	8169006	.BUSHING, PIPE.....	1

END OF FIGURE

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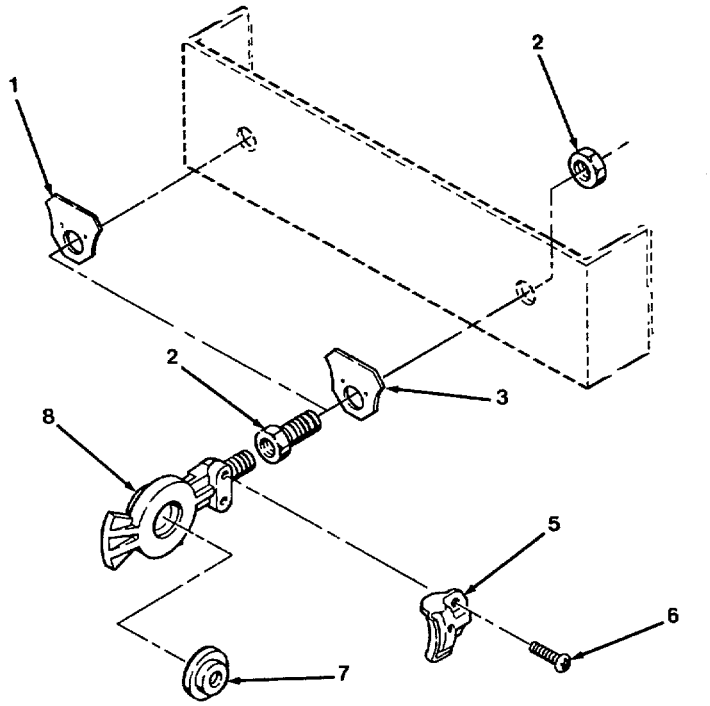

FIGURE 24. GLADHAND COUPLINGS.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 1208 AIR BRAKE SYSTEM	
				FIG. 24 GLADHAND COUPLINGS	
1	PFOZZ	97384	60244-90104	PLATE, INSTRUCTION SERVICE.....	1
2	PAOZZ	28548	5228623	NIPPLE,TANK	1
3	PFOZZ	06853	201499	PLATE,INSTRUCTION EMERGENCY	1
4	PAOOO	79146	MS35746-1	COUPLING HALF, QUICK.....	2
5	PBOZZ	06853	240233	ARM, LOCK,HOSE COUPL.....	1
6	PAOZZ	96906	MS51957-94	SCREW, MACHINE.....	2
7	PAOZZ	06853	213630	PACKING, PREFORMED.....	1
8	XAOZZ	06853	240232	BODY,COUPLING.....	1

END OF FIGURE

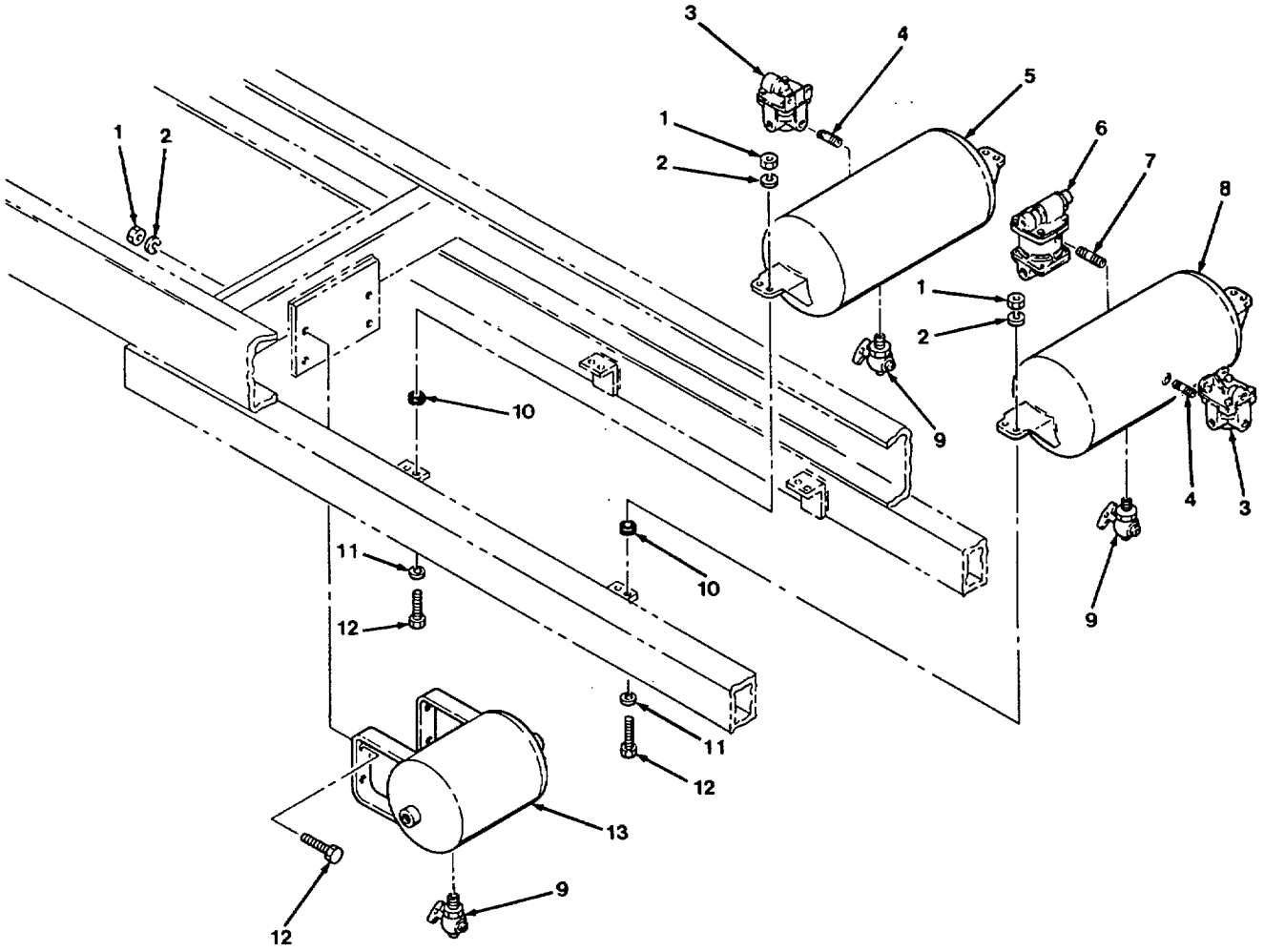

FIGURE 25. BRAKE RESERVOIRS.

	(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
					GROUP 1208 AIR BRAKE SYSTEM	
					FIG. 25 BRAKE RESERVOIRS	
	I	PAOZZ	96906	MS35649-2382	NUT, PLAIN, HEXAGON	4
	2	PAOZZ	96906	MS35338-46	WASHER, LOCK	4
	3	PAOZZ	16662	A78889	VALVE, AIR BRAKE	1
	4	XDOZZ	96906	MS51846-66	NIPPLE,PIPE	2
*	5	PFOZZ	37562	AD80963	TANK,PRESSURE	1
	6	PAOZZ	16662	AE83336	VALVE, BRAKE PNEUMAT	1
	7	PAOZZ	96906	MS51846-82	NIPPLE, PIPE	1
	8	PAOZZ	63477	AE-85732	TANK, PRESSURE	1
*	9	PAOZZ	97907	102143	COCK,DRAIN	1
	10	PAOZZ	96906	MS35489-71	GROMMET, NONMETALLIC	4
	11	PAOZZ	96906	MS27183-14	WASHER, FLAT	8
	12	PAOZZ	96906	MS35291-061	SCREW,CAP,HEXAGON H	8
	13	PAOZZ	06853	283071	TANK, PRESSURE.	1

END OF FIGURE

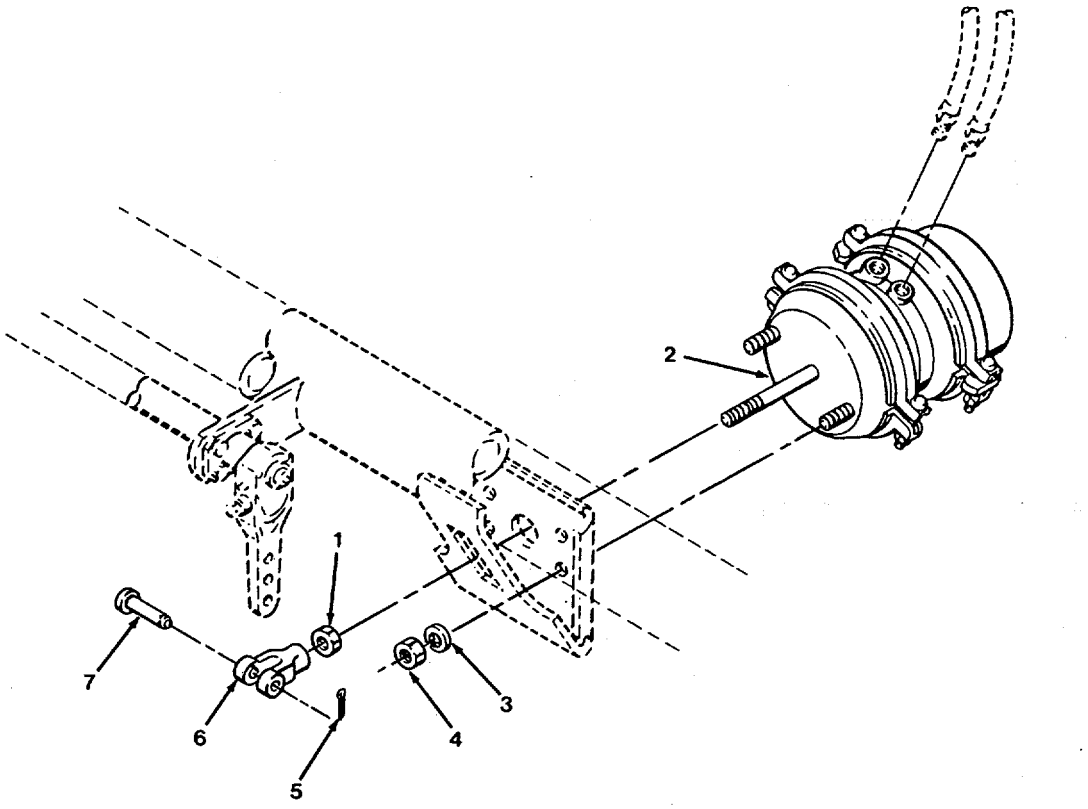

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FIGURE 26. BRAKE CHAMBER.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 1208 AIR BRAKE SYSTEM	
				FIG. 26 BRAKE CHAMBER	
1	PAOZZ	96906	MS51968-20	.NUT,PLAIN, HEXAGON	1
2	XDOZZ	50153	030SB	.CHAMBER,AIR BRAKE	1
3	PAOZZ	96906	MS35338-50	.WASHER, LOCK	2
4	PAOZZ	96906	MS51967-21	.NUT, PLAIN,HEXAGON	2
5	PAOZZ	96906	MS24665-368	.PIN, COTTER	1
6	PAOZZ	50I53	11M018-1/2	.CLEVIS,ROD END.	1
7	PAOZZ	96906	MS9468-18	.PIN, STRAIGHT,HEADED	1

END OF FIGURE

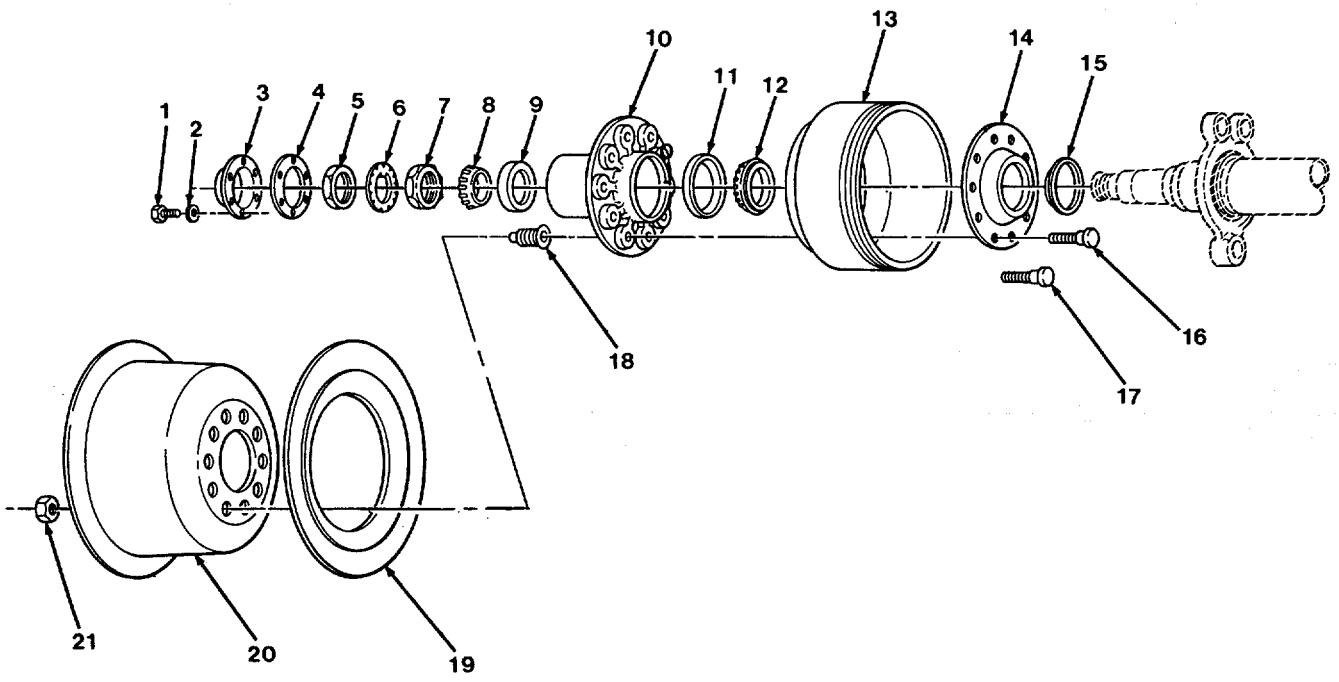

FIGURE 27. WHEELS, SEALS, BEARINGS AND DRUMS.

GROUP 13 WHEELS

GROUP 1311 WHEELS ASSEMBLY

FIG. 27 WHEELS, SEALS BEARINGS AND DRUMS

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
1	PAOZZ	78500	S-255-C	SCREW, CAP	6
2	XDOZZ	78500	WA-15-C	WASHER, LOCK	6
3	PAOZZ	26151	343-4249	HUB CAP, WHEEL	1
4	PAOZZ	78500	2208-N-430	GASKET	1
5	PAOZZ	78500	1227-B-756	NUT, PLAIN HEXAGON	1
6	PADZZ	78500	A1229-W-2545	WASHER, LOCK	1
7	PAOZZ	78500	1227-C-549	NUT INNER WHEEL BEA	1
8	PAOZZ	27996	3A2707-1	CONE AND ROLLERS, TA REPLACE WITH CUP AS A SET	1
9	PAOZZ	24617	457184	CUP, TAPERED ROLLER REPLACE WITH CONE AS A SET	1
10	PBFZZ	78500	A-333-U-2153	HUB, WHEEL VEHICULAR	1
11	PAOZZ	60038	HM218210	CUP, TAPERED ROLLER REPLACE WITH CONE AS A SET	1
12	PAOZZ	60038	HM218248	CONE AND ROLLERS TA REPLACE WITH CUP AS A SET	1
13	PAOZZ	29222	16797	BRAKE DRUM	1
14	XDDZZ	78500	3280-Q-3657	DEFLECTOR, DIRT AND	1
15	PAOZZ	78500	1205-P-1212	SEAL, PLAIN	1
16	PAOZZ	16821	20-X-996	STUD, WHEEL,RIGHT H	10
16	PAOZZ	78500	20-X-997	BOLT, RIBBED SHOULDE	10
17	PAOZZ	96906	MS16624-1075	RING, RETAINING	1
18	PAOZZ	96906	MS53068-2	NUT,CAP,DUAL WHEEL RH	10
18	PAOZZ	78500	1199-X-115	NUT,CAP, DUAL WHEEL LH	10
19	PFOZZ	22337	SR263L8R	RIM, WHEEL, PNEUMATIC	1
20	PAOZZ	22337	27166	WHEEL,PNEUMATIC TIR	1
21	PAOZZ	78500	1199-N-118	NUT,CAP PUTER RH	10
21	PAOZZ	96906	MS51983-3	NUT,PLAIN, SINGLE BA LH	10

END OF FIGURE

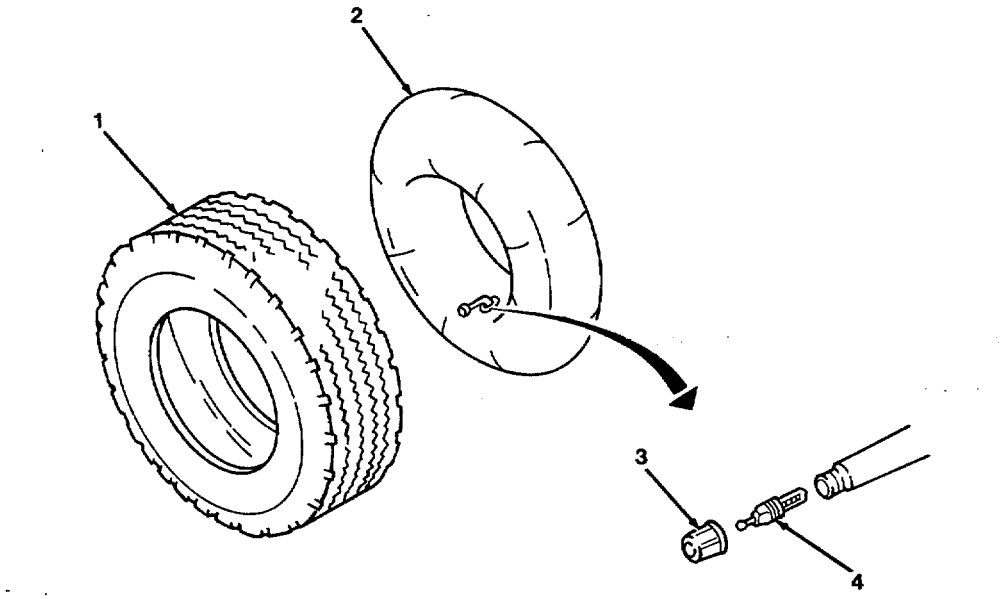

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FIGURE 28. TIRE AND TUBE.

	(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
					GROUP 1313 TIRE AND TUBES	
					FIG. 28 TIRE AND TUBE	
*	1	PAOFH	81348	GROUP3/10.00-22/ F/TBHR	TIRE, PNEUMATIC	8
	2	PAOOO	81348	GROUP2/1O.00-22/ TR78A/ON CENTER	INNER TUBE, PNEUMAT.....	1
	3	PAOZZ	81336	910-08-2168-500	.CAP.,PNEUMATIC VALVE.....	1
	4	PAOZZ	96906	MS51377-1	.VALVE CORE.....	1

END OF FIGURE

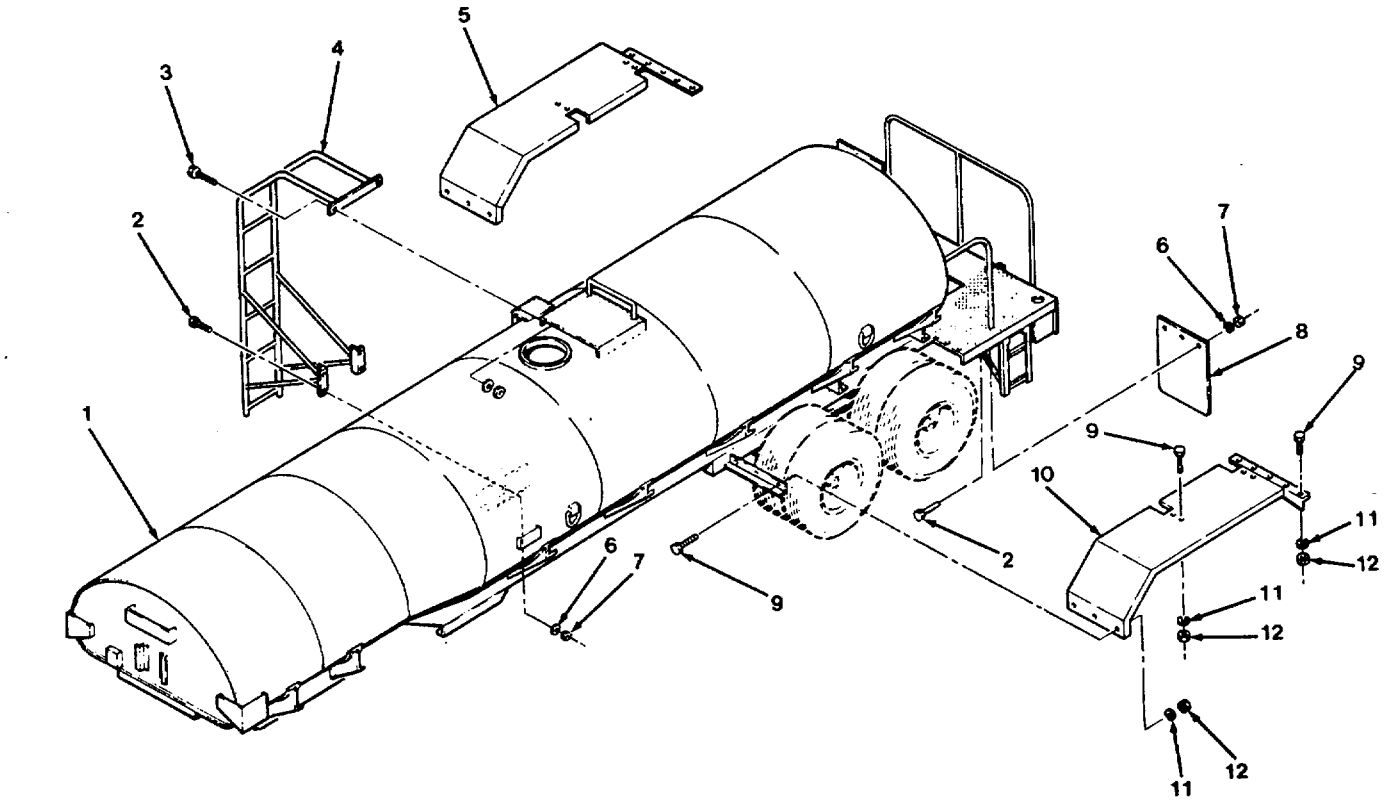

FIGURE 29. FRAME ASSEMBLY.

GROUP 15 FRAME AND TOWING ATTACHMENTS
GROUP 1501 FRAME ASSEMBLY
FIG. 29 FRAME ASSEMBLY

	(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
	1	XAFHH	37562	B1900-1000	FRAME & TANK ASSY	1
	2	PAOZZ	96906	MS90725-6	SCREW,CAP, HEXAGON H	20
*	3	PAOZZ	80204	B1821BH050C150N	SCREW,CAP,HEXAGON H	2
	4	XDOFF	37562	B1900-1300	LADDER ASSEMBLY	1
	5	XDOFF	37562	B1900-1602	FENDER, RH	1
	6	PAOZZ	96906	MS35338-44	WASHER, LOCK	22
	7	PAOZZ	96906	MS51967-3	NUT, PLAIN,HEXAGON	22
	8	PAOZZ	96906	MS51331-3	GUARD, SPLASH, VEHICULAR	2
*	9	PAOZZ	80204	B1821BH050C113N	SCREW, CAP,HEXAGON H	7
*	10	PFOZZ	37562	B1900-1601	FENDER,VEHICULAR	1
	11	PAOZZ	96906	MS35338-48	WASHER ,LOCK	7
	12	PFOZZ	96906	MS51967-14	NUT, PLAIN, HEXAGON	7

END OF FIGURE

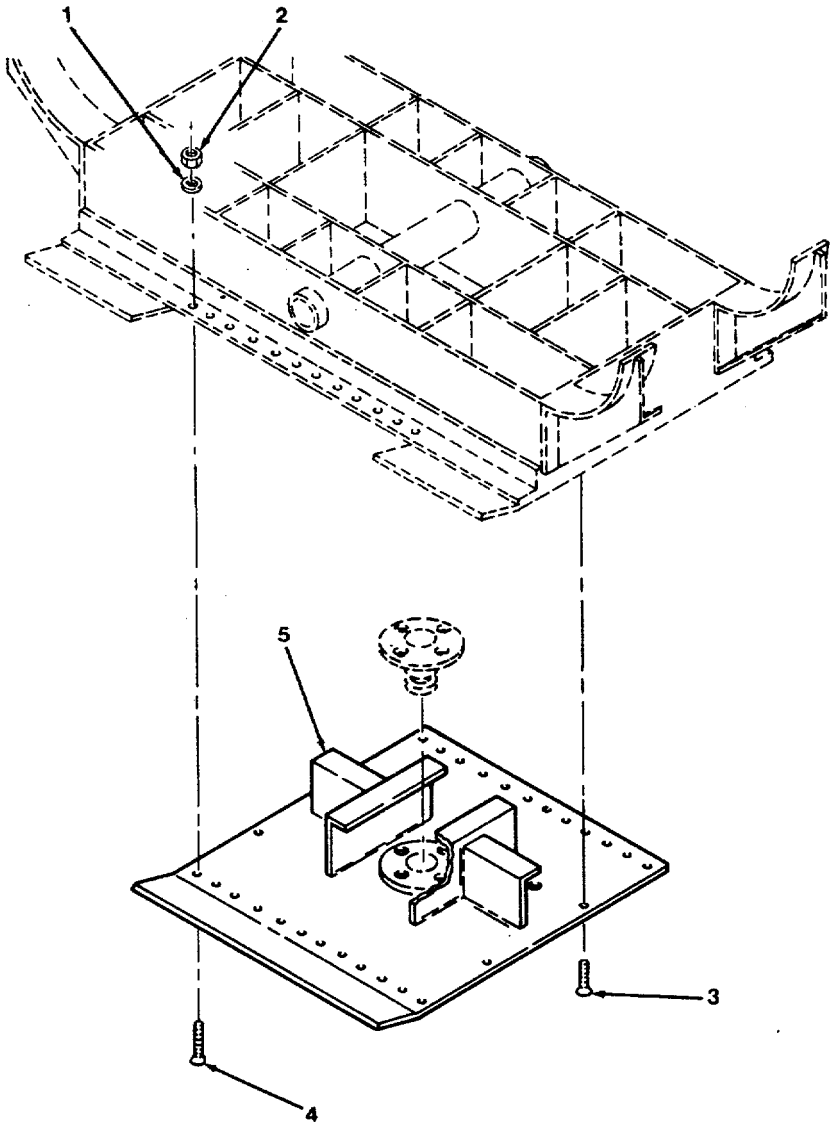

FIGURE 30. FIFTH WHEEL ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 1506 FIFTH WHEEL	
				FIG 30. FIFTH WHEEL ASSEMBLY	
1	PAOZZ	96906	MS35338-50	WASHER, LOCK	24
2	PAOZZ	96906	MS51967-21	NUT, PLAIN, HEXAGON	24
3	PAOZZ	96906	MS24667-84	SCREW, CAP.SOCKET HE	4
4	PAOZZ	96906	MS24667-8	SCREW.CAP.SOCKET HE	24
5	XAOZZ	37562	B1900-1550	PLATE.MOUNTING	1

END OF FIGURE

3

4 THRU 6

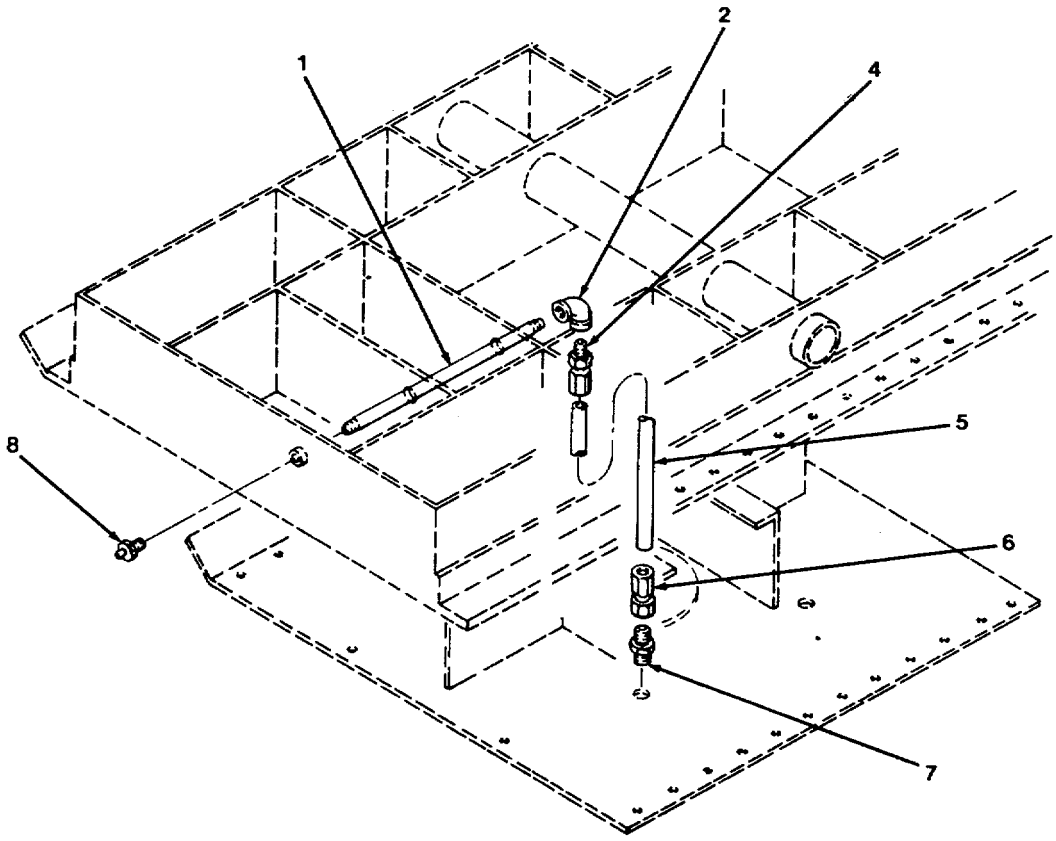

FIGURE 31. FIFTH WHEEL LUBRICATION .

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 1506 FIFTH WHEEL	
				FIG. 31 FIFTH WHEEL LUBRICATION	
1	XDOZZ	37652	B1900-1013	PIPE, NIPPLE	2
2	PAOZZ	88044	AN939-4	ELBOW, BOSS	2
3	AOOOO	37562	B1900-1019-1	HOSE ASSEMBLY	1
4	PAOZZ	01276	412-4-6S	ADAPTER, STRAIGHT,PI	1
5	MOOOO	37562	B1900-1019	HOSE ASSEMBLY MAKE FRCM P/N FC-300-06	1
6	PFOZZ	01276	411-6S	ADAPTER, STRAIGHT,TU	1
7	PAOZZ	96906	MS51500A6	ADAPTER, STRAIGHT,PI	2
8	PAOZZ	88277	912499	FITTING,LUBRICATION	2

END OF FIGURE

9

10 THRU 50

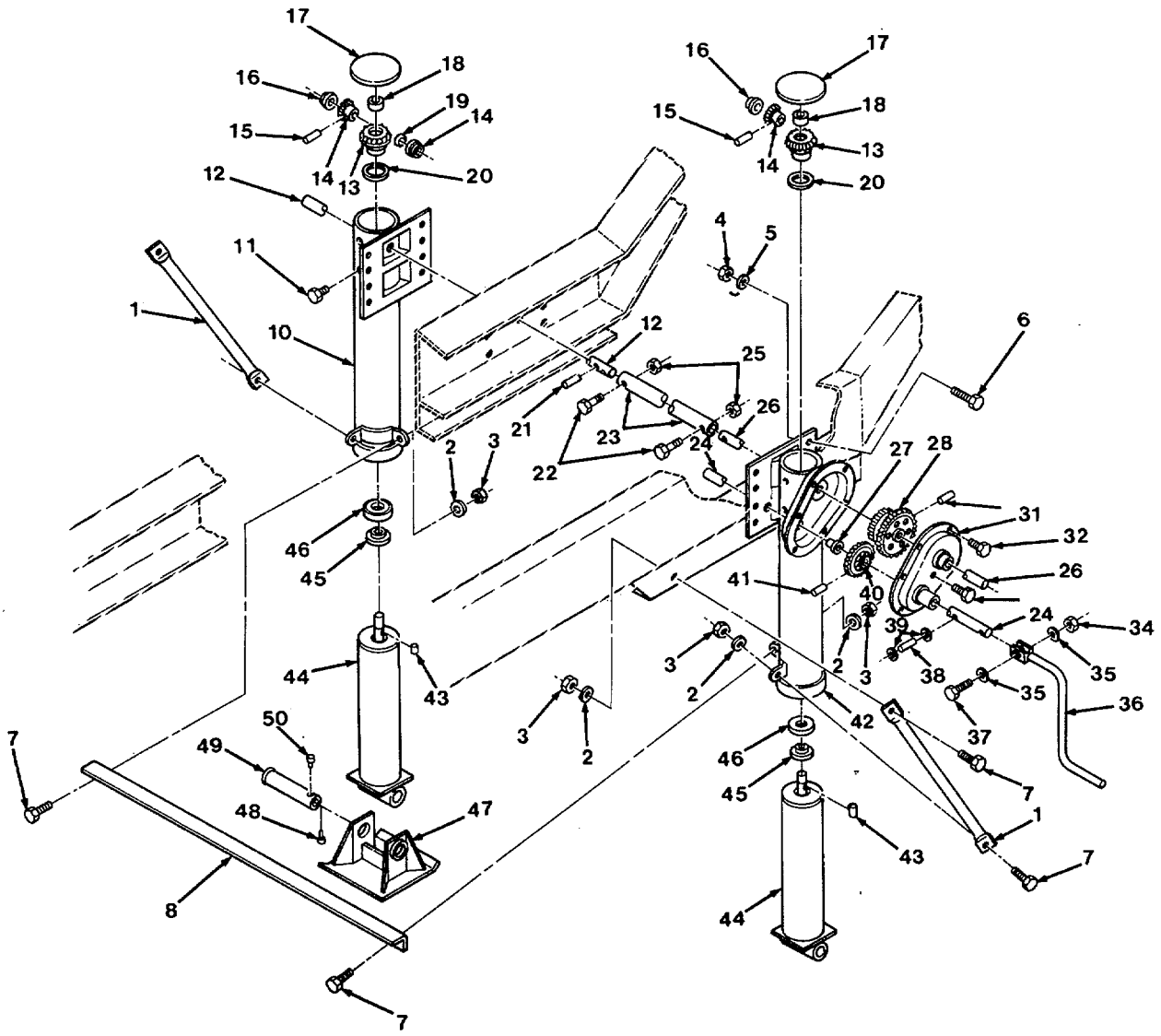

FIGURE 32. LANDING GEAR.

	(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
					GROUP 1507 LANDING GEAR	
					FIG. 32 LANDING GEAR	
	1	PBOZZ	80837	J-7043	BRACE, LANDING GEAR	2
	2	PAOZZ	96906	MS35338-48	WASHER LOCK	6
	3	PAOZZ	96906	MS51967-14	NUT, PLAIN,HEXAGON	6
	4	PAOZZ	96906	MS35650-3392	NUT,PLAIN,HEXAGON	16
	5	PAOZZ	96906	MS35340-46	WASHER, LOCK	16
	6	PAOZZ	96906	MS90727-112	SCREW,CAP,HEXAGON H	16
*	7	PAOZZ	80204	B1821BH050C150N	SCREW, CAP,HEXAGON H	6
	8	PFOZZ	37562	B1900-1405	SUPPORT,RETRACTABLE	1
	9	PFOOO	80837	LPR-2-30-444	SUPPORT, RETRACTABLE	1
	10	PFOZZ	80837	8999-3	.LEG,UPPER SUPPORT	1
	11	PAOZZ	80837	1351-A7	.FITTING, LUBRICATION	4
	12	XDOZZ	80837	6956-1	.SHAFT, PIN	1
	13	PAOZZ	80837	J-5312-1	.GEAR,LEVEL	2
	14	PAOZZ	80837	J-5311-1	.GEAR,LEVEL	2
	15	PAOZZ	96906	MS16562-78	.PIN, SPRING	2
	16	XDOZZ	80837	8994	.BUSHING	2
	17	PAOZZ	80837	8984	.COVER,ACCESS	2
	18	PAOZZ	80837	1402A7	.NUT, SELF-LOCKING, HE	2
	19	PAOZZ	80837	J-1219	.WASHER,FLAT	1
	20	PAOZZ	80837	J-5313	.BEARING , SLEEVE	2
	21	PAOZZ	96906	MS16562-65	.PIN,SPRING	1
*	22	PAOZZ	80204	B1821BH038C138N	.SCREW,CAP, HEXAGON H	2
	23	XDOZZ	80837	6884	.SHAFT, INTERMEDIATE	1
	24	PBOZZ	80837	6943-2	.SHAFT,STRAIGHT	1
	25	PAOZZ	96906	MS35691-17	.NUT, PLAIN, HEXAGON	4
	26	XDOZZ	80837	6948-1	.SHAFT, PINION	1
	27	XDOZZ	80837	6364-1	.BUSHING	1
	28	XDOZZ	80837	J-5309	.GEAR CLUSTER	1
	29	PAOZZ	80837	1914-A1	.PIN	1
	30	PAOZZ	96906	MS16562-79	.PIN,SPRING	1
	31	XDOZZ	80837	9366-3	.COVER ASSEMBLY	1
	32	PADZZ	96906	MS51957-79	.SCREW, MACHINE	6
	33	PAOZZ	80837	1351-A3	.FITTING, LUBRICATION	1
	34	PAOZZ	96906	MS35649-2382	.NUT, PLAIN, HEXAGON	1
	35	PAOZZ	96906	MS27183-14	.WASHER,FLAT	2
	36	PAOZZ	80837	J-27BX-3	.CRANK, HAND	1
	37	PAOZZ	96906	MS90725-69	.SCREW, CAP, HEXAGON	1
	38	PAOZZ	80837	6365-1	.SPRING, HELICAL, COMP	1
	39	PFOZZ	80837	1051-A1	.BALL	2
	40	PAOZZ	80837	J-5310-1	.GEAR CLUSTER	1
	41	PAOZZ	80837	1456-A1	.PIN	1
	42	PFOZZ	80837	8998-3-KIT	.LEG,UPPER SUPPORT	1
	43	PAOZZ	80837	J-3237	.KEY,MACHINE	1
*	44	PFOZZ	80837	6997-3	.STAND,VEHICLE SUPPOR	2
	45	PAOZZ	80837	J-4928-1	.CLAMP	2
	46	PAOZZ	80837	1102-A2	.SEARING, ROLLER,THRU	2
	47	PAOZZ	80837	J-4514-3	.SHOE, VEHICLE SUPPOR	2
	48	PAOZZ	96906	MS90725-60	.NUT, PLAIN, HEXAGON	2

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
* 49	PAOZZ	24234	750005	.AXLE, SUPPORT SHOE	2
50	PAOZZ	96906	MS51967-12	.NUT, PLAIN,HEXAGON	2

END OF FIGURE

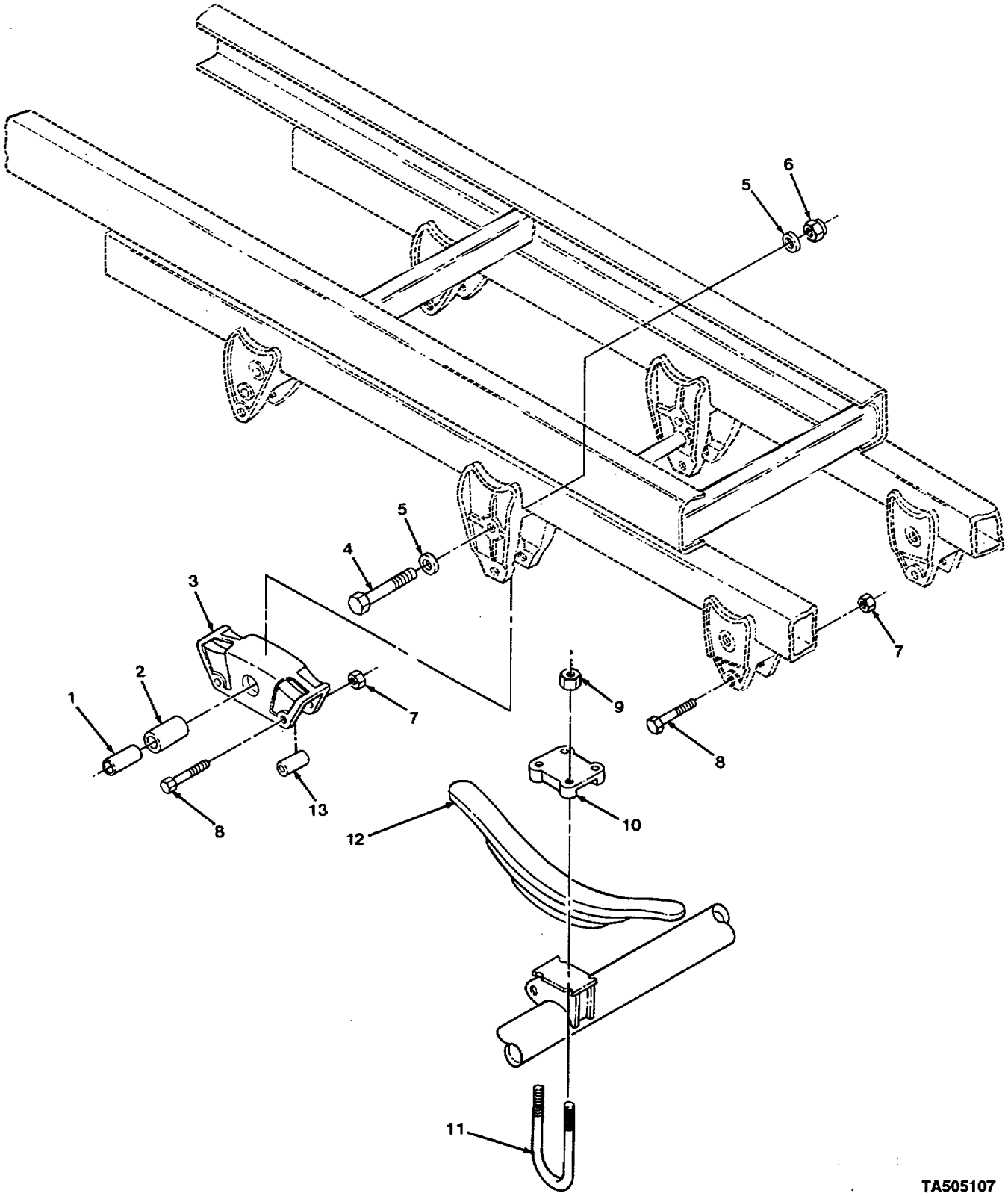

FIGURE 33. SPRINGS.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 16 SPRING AND SHOCK ABSORBERS	
				GROUP 1601 SPRINGS	
				FIG. 33 SPRINGS	
1	XDOZZ	77125	K1424	SHAFT,EQUALIZER	1
2	XDOZZ	77125	L1025	BEARING, EQUALIZER	1
3	XDOZZ	77125	856834	EQUALIZER	1
4	PAOZZ	06625	H80078	SCREW,.CAP,HEXAGON H	1
5	PAOZZ	06625	H230	WASHER, FLAT	2
6	XDOZZ	77125	H76008	NUT,PLAIN*HEXAGON	1
7	PFOZZ	24617	443340	NUT,SELF-LOCKING,HE	3
8	PAOZZ	77125	H85050	SCREW, CAP,HEXAGON H	3
9	PFOZZ	77125	H75814	NUT, PLAIN,HEXAGON	4
10	PFOZZ	77125	K1014	HANGER,SPRIN, VEHIC	1
11	PAOZZ	77125	H75025	BOLT,U	2
12	PFOZZ	06625	D21032	SPRING ASSEMBLY,LEA	1
13	PFOZZ	77125	K1036	SPACER SLEEVE	2

END OF FIGURE

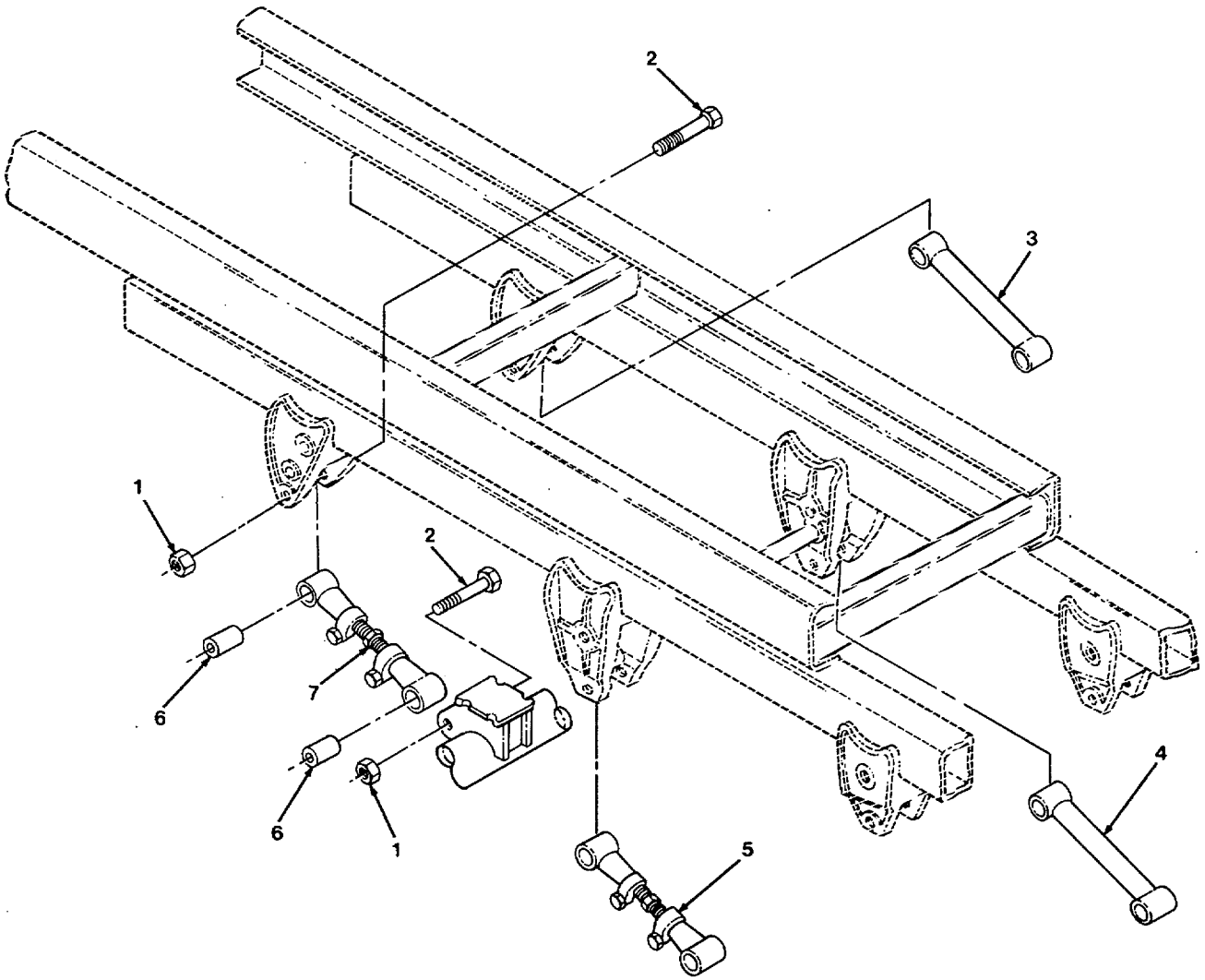

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FIGURE 34. TORQUE RADIUS RODS.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 1605 TORQUE, RADIUS, AND STABILIZER RODS	
				FIG. 34 TORQUE RADIUS RODS	
1	PAOZZ	06625	H75809	NUT, SELF-LOCKING HE	2
2	PAOZZ	77125	H88755	SCREW CAP HEXAGON H	2
3	PFOZZ	77125	M209657	TORQUE ROD, TANDEM A.	1
4	XDOZZ	77125	M209693	TORQUE ROD, TANDEM A	1
S	XDOZZ	77125	ML09202	TORQUE ROD, TANDEM A	2
6	PAOZZ	06625	L1032	BUSHING RUBBER	2
7	XDOZZ	77L25	ML09201	TORQUE ROD TANDEM A	1
				END OF FIGURE	

1
2 THRU 6

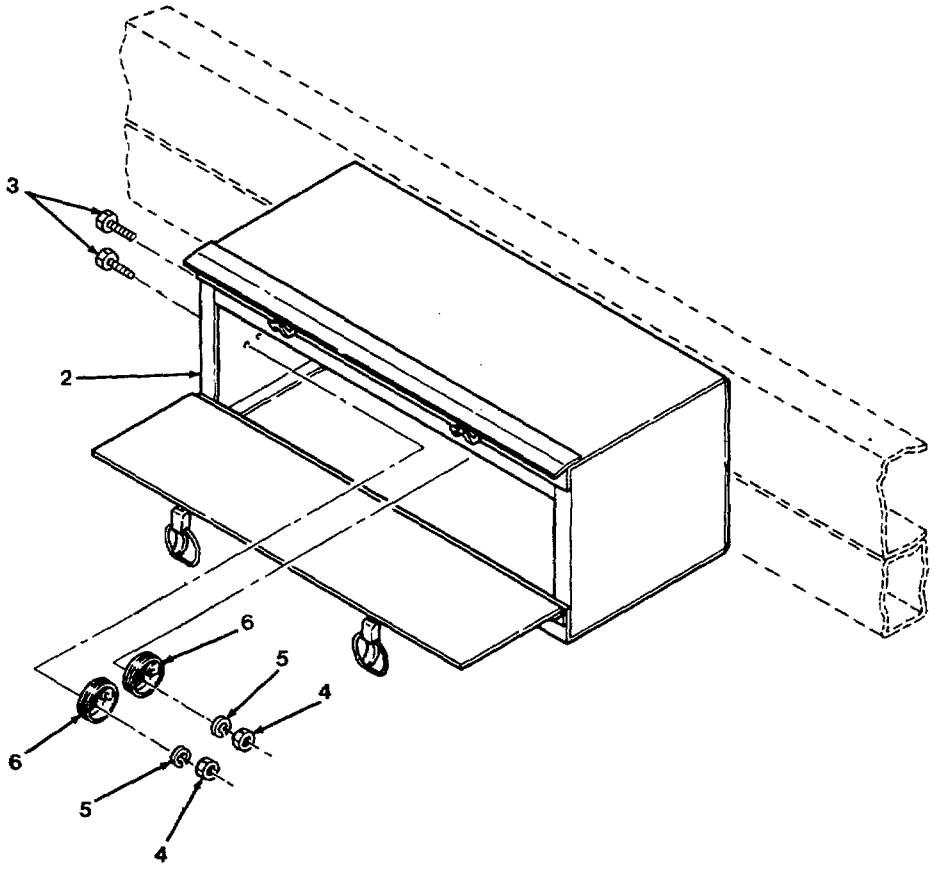

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FIGURE 35. TOOLBOX ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 18 BODY	
				GROUP 1808 STOWAGE BOXES	
				FIG. 35 TOOLBOX ASSEMBLY	
1	XBFFF	37526	B1900-3000	TOOLBOX ASSEMBLY	1
2	XAFFF	37562	81900-3050	. BOX, TOOL	1
3	PAFZZ	96906	MS5S1957-65	. SCREW, MACHINE	4
4	PAFZZ	96906	MS35649-202	. NUT, PLAIN, HEXAGON	4
5	PAFZZ	96906	MS35338-4	. WASHER, LOCK	4
6	XDFZZ	03912	350	FIXTURE, NOOZZLE	2

END OF FIGURE

1

2 THRU 9

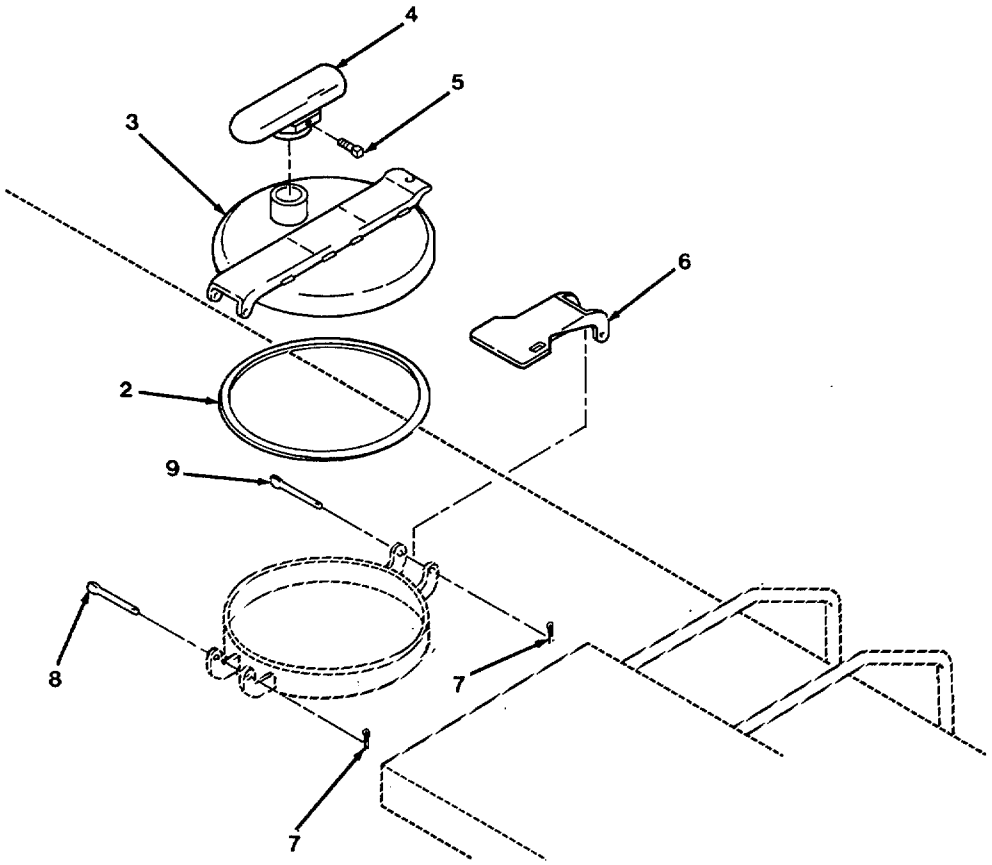

FIGURE 36. MANHOLE ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 1811 TANK BODIES	
				FIG. 36 MANHOLE ASSEMBLY	
1	PFOOO	37562	81900-10	COVER, MANHOLE	1
2	PAOZZ	91840	K-8020-24	•GASKET	1
3	XDOZZ	37562	81900-120	•COVER ASSEMBLY	1
4	PAOZZ	12718	300S-3	•CAP, . VENT, FUEL STORA	1
5	PAOZZ	96906	NS90725-5	•SCREW, CAP, HEXAGON	1
6	PFOZZ	9L840	K-6716-9	•. LATCH, COVER, MANHOLE.	1
7	PAOZZ	96906	MS24665-368	• PIN, COTTER	2
8	PAOZZ	91843	K-6820-9	• PIN, STRAIGHT, HEAD	1
9	PAOZZ	91840	K-6110-12	•. PIN, STRAIGHT, HEAD	1

END OF FIGURE

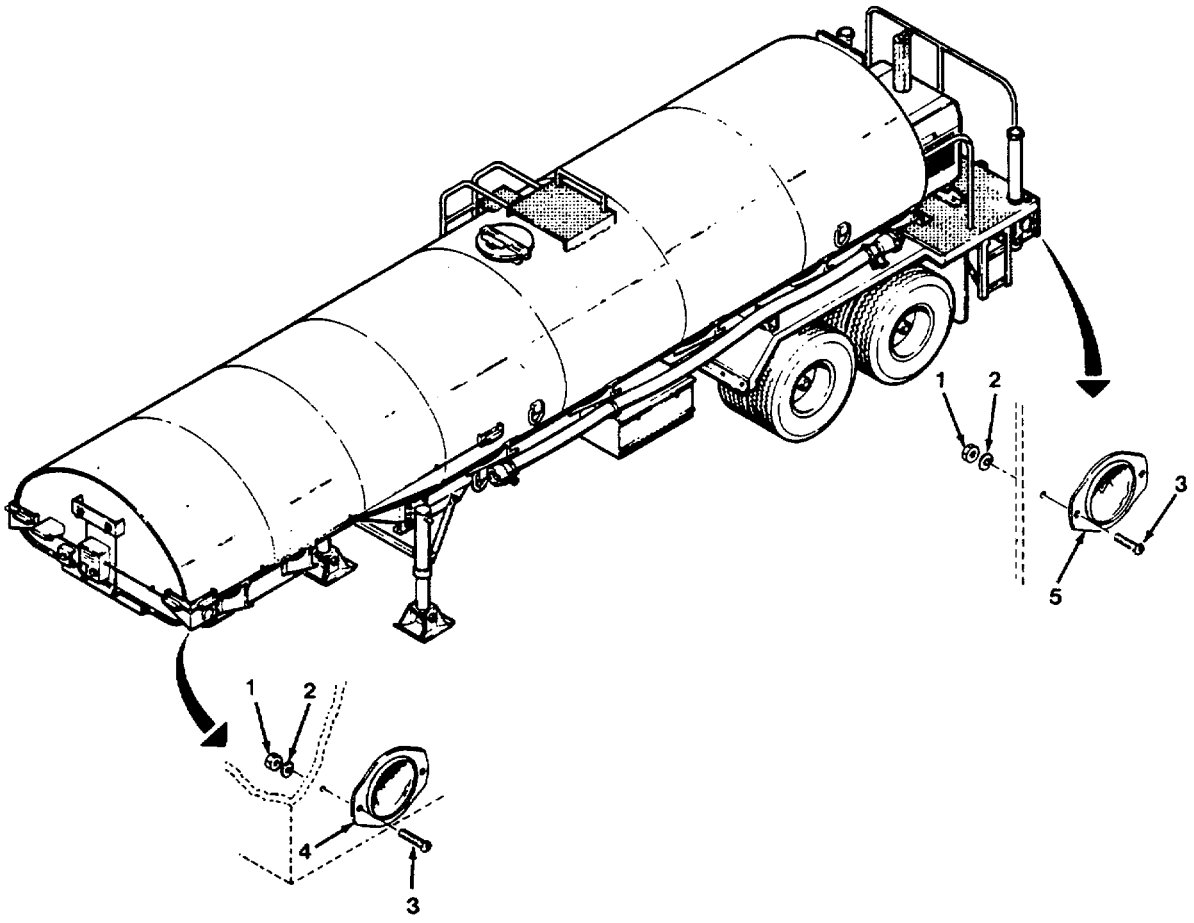

FIGURE 37. REFLECTORS.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 22 BODY AND CHASSIS ACCESSORY ITEMS	
				GROUP 2202 ACCESSORY ITEMS	
				FIG. 37 REFLECTORS	
1	PAOZZ	96906	MS35649-202	NUT, PLAIN, HEXAGON	16
2	PAOZZ	96906	M535338-43	WASHER, LOCK.	16
3	PAOZZ	96906	MS51957-63	SCREW, MACHINE	16
4	PAOZZ	96906	MS35387-2	REFLECTOR INDICATIN AMBER	4
5	PAOZZ	96906	MS35387-1	REFLECTOR, INDICATIN RED	4
				END OF FIGURE	

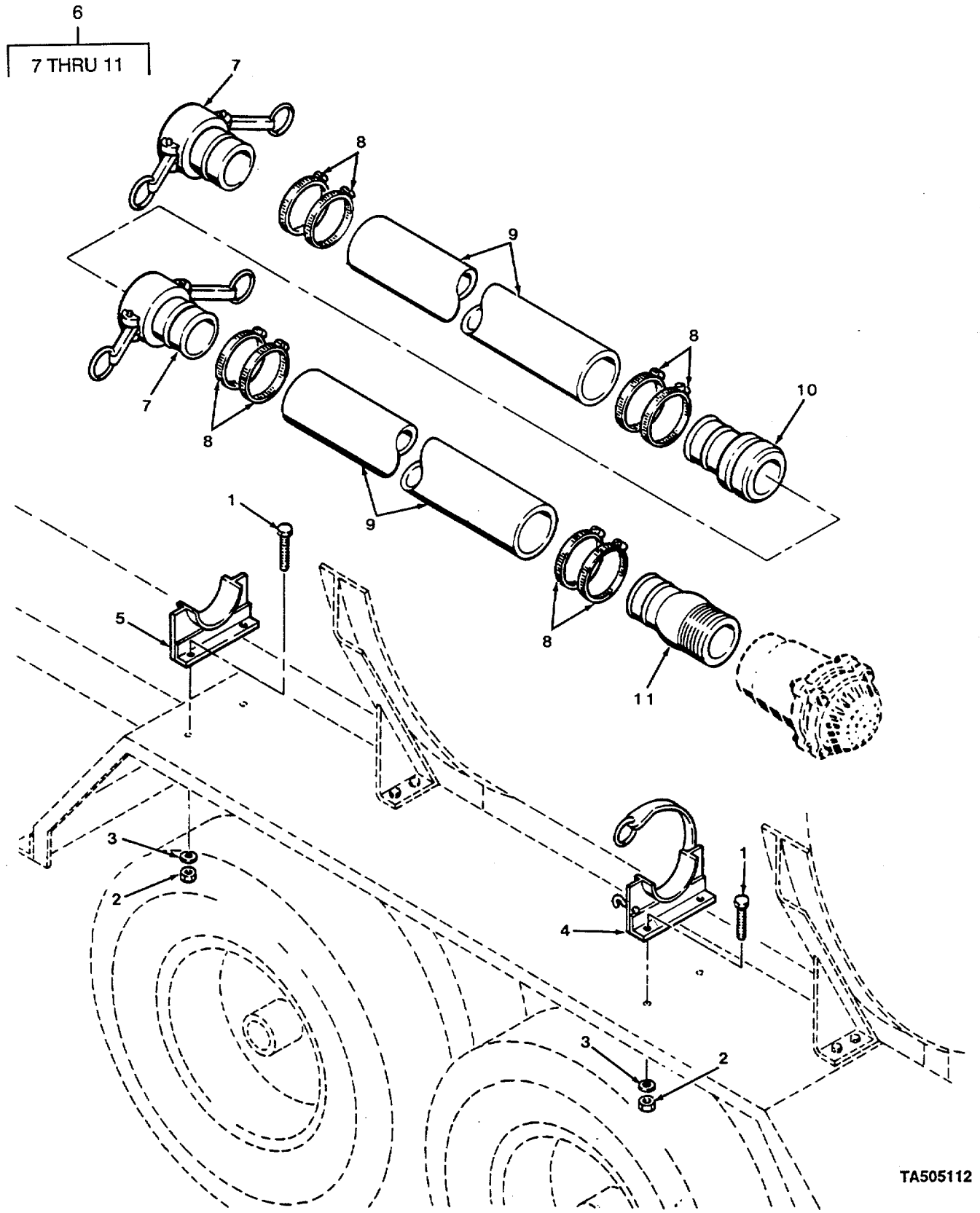

FIGURE 38. SUCTION HOSE ASSEMBLY.

	(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
					GROUP 2202 ACCESSORY ITEMS	
					FIG. 38 SUCTION HOSE ASSEMBLY	
*	1	PAOZZ	80204	B18218HO44C1OON	SCREW, CAP, HEXAGON	4
	2	PAOZZ	96906	MS51967-11	NUT, PLAIN, HEXAGON	4
	3	PAOZZ	96906	MS35338-47	WASHER, LOCK	4
*	4	XDDZZ	37562	B1900-6616	SIDE RACK, VEHICLE B	1
	5	PAOZZ	37562	B1900-6609	BRACKET, EYE, NONROTA	2
	6	PFOOO	37562	B1900-6600	VALVE, FOOT	1
*	7	PFOZZ	80691	C-4	•COUPLING HALF, QUICK	2
	8	PAOZZ	96906	MS35842-16	•CLAMP, HOSE	8
	9	PAOZZ	37562	B1900-6602	•HOSE, NONMETALLIC	2
	10	XDOZZ	80691	E-4BRASS	•COUPLING, HOSE	1
	11	XBOZZ	37652	B1900-6604	•NIPPLE ADAPTER	1
					END OF FIGURE	

1
2 THRU 7

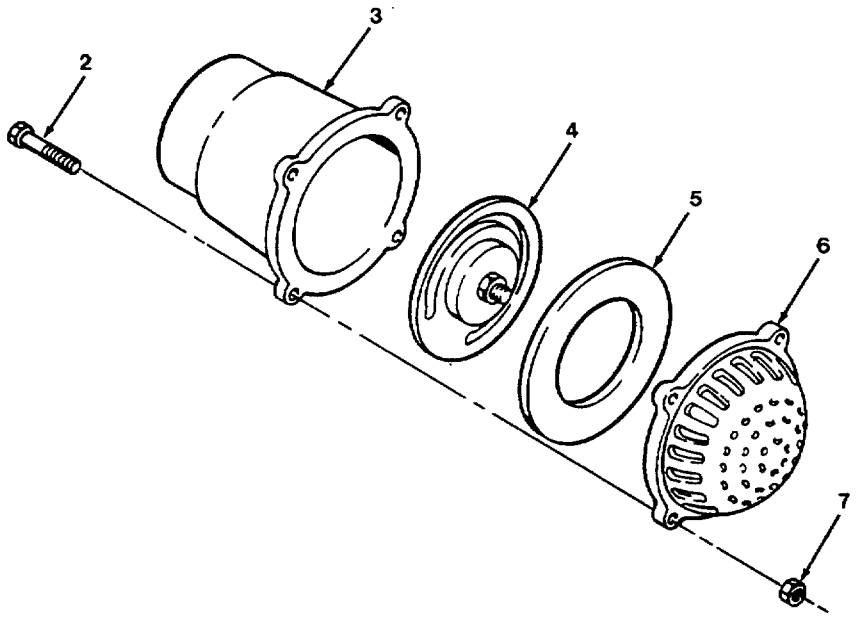

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FIGURE 39. FOOT VALVE.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2202 ACCESSORY ITEMS	
				FIG. 39 FOOT VALVE	
* 1	PFOOO	ONG12	DFVS-40	•VALVE, FOOT	1
* 2	PAOZZ	80204	B1821BHO75C25ON	••SCREW, CAP, HEXAGON H	4
3	PFOZZ	58344	540	••VALVE, FOOT	1
* 4	PAOZZ	7L763	24869	••DIAPHRAGM, ACTUATOR	1
* 5	XDOZZ	ONG12	FVSP-40	••PLATE, SEAT	1
* 6	XBOZZ	ONG1Z	FVS-40	••STRAINER	1
7	PAOZZ	96906	MS51967-23	••NUT PLAIN HEXAGON	4
				END OF FIGURE	

1
2 THRU 15

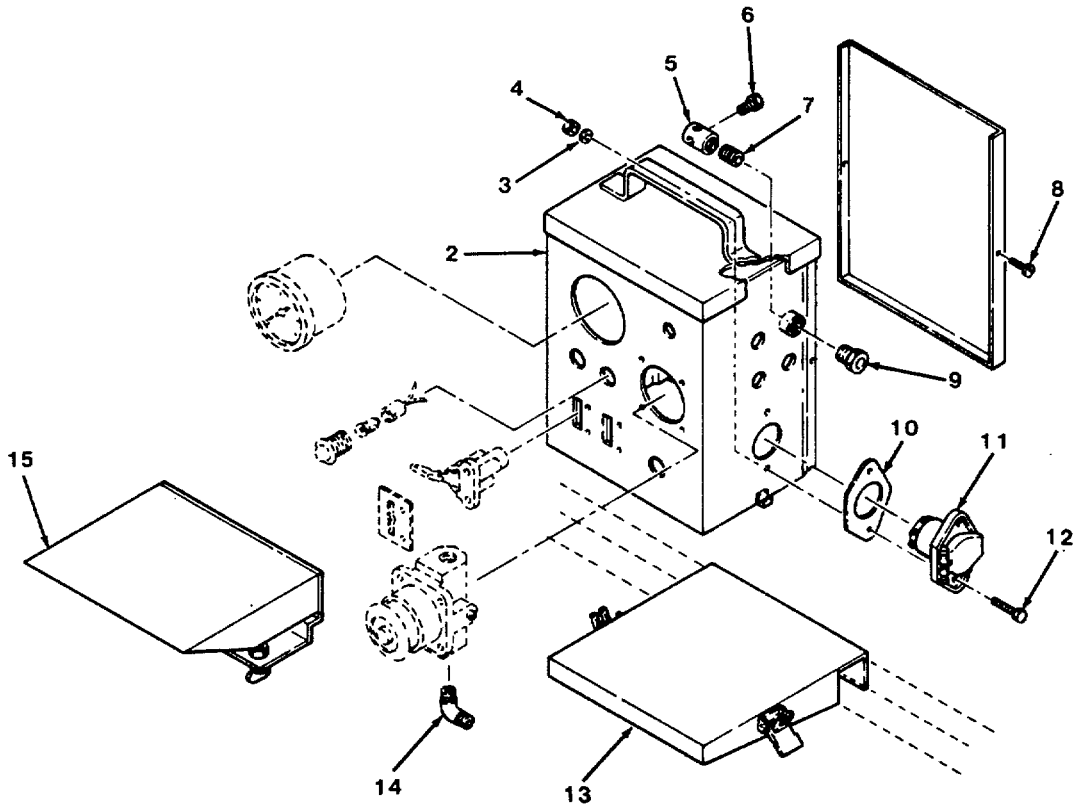

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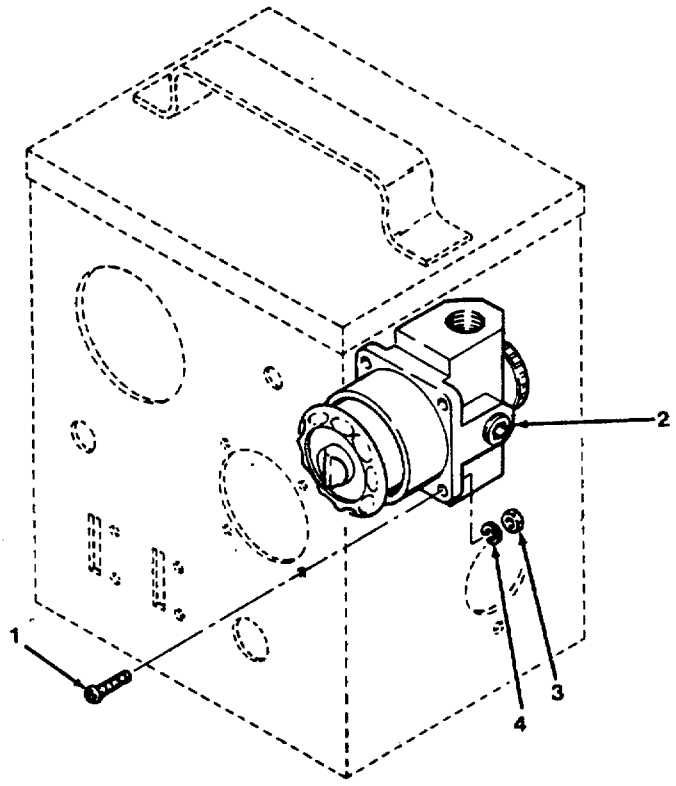
FIGURE 40. AUXILIARY CONTROL PANEL.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2202 ACCESSORY ITEMS	
				FIG. 40 AUXILIARY CONTROL PANEL	
* 1	PFOOO	37562	S1900-4800	PANEL ASSEMBLY, AUXI	1
2	XDOZZ	37562	B1900-4801	•BOX, CONTROL	1
3	PAOZZ	96906	MS35338-44	•WASHER, LOCK.....	2
4	PAOZZ	96906	MS35691-1	•NUT, PLAIN, HEXAGON.	2
5	PAOZZ	37562	B1900-4822	•CROSS, PIPE	1
6	PAOZZ	34629	56842	•COUPLING HALF, QUICK.....	7
7	PAOZZ	96906	MS51846-39	•NIPPLE, PIPE	1
8	PAOZZ	96906	MS24629-35	•SCREW, TAPPING	4
9	XDOZZ	37562	B1900-4819	•FITTING, ADAPTER.....	1
10	PAOZZ	13445	11164	•GASKET	1
11	PAOZZ	37562	B1900-4811	•RECEPTACLE	1
12	PAOZZ	96906	MS90725-6	•SCREW, CAP, HEXAGON He.....	2
13	XDOZZ	37562	81900-4868A	•BRACKET, MOUNTING FOR MOUNTING ..... REMOTE BOX IN M123 TRACTOR	1
14	PAOZZ	34629	56944	•COUPLING HALF, QUICK.....	2
15	XOOZZ	37562	B1900-4868	•BRACKET, MOUNTING FOR MOUNTING IN THE M920 TRACTOR	1

END OF FIGURE

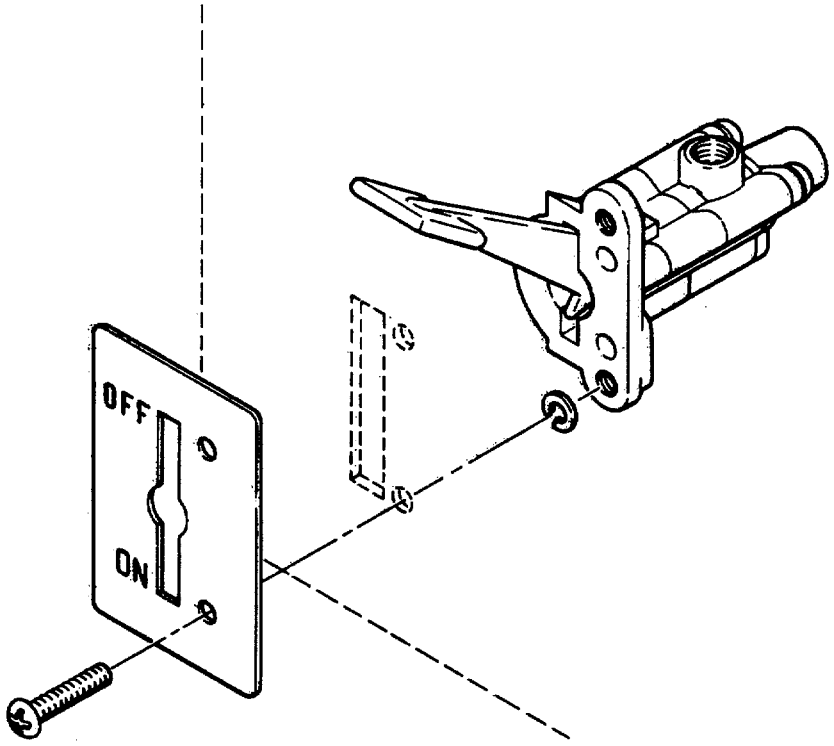


TA505115

FIGURE 41. AIR REGULATOR VALVE.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2202 ACCESSORY ITEMS	
				FIG. 41 AIR REGULATOR VALVE	
1	PAOZZ	96906	MS5195-65	•SCREW, MACHINE	4
2	PAOZZ	98963	R21-02-000 .	•VALVE, REGULATING, FL	1
3	PAOZZ	96906	NS35649-202	•NUT, PLAIN, HEXAGON	4
4	PAOZZ	96906	MS35338-43	•WASHER, LOCK	4

END OF FIGURE



TA505116

FIGURE 42. AIR CONTROL VALVE.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2202 ACCESSORY ITEMS	
				FIG. 42 AIR CONTROL VALVE	
1	XDOZZ	11331	104584	•PLATE, ON/OFF	1
2	PAOZZ	11331	111814	•VALVE, ANGLE	1
3	PAOZZ	96906	MS35338-43	•WASHER, LOCK	2
4	PAOZZ	96906	MS51957-63	•SCREW, MACHINE.	2

END OF FIGURE

4

5 THRU 13

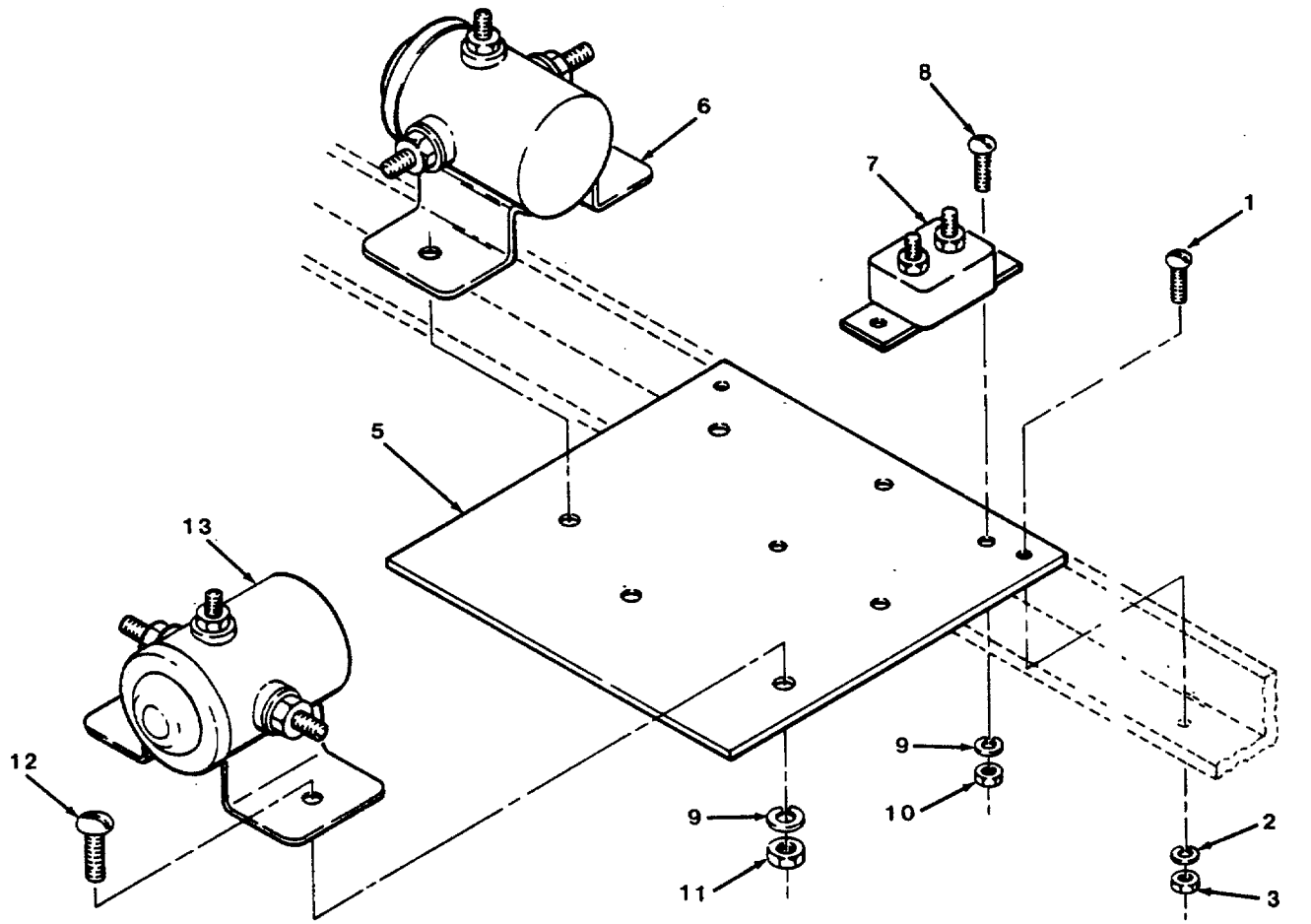
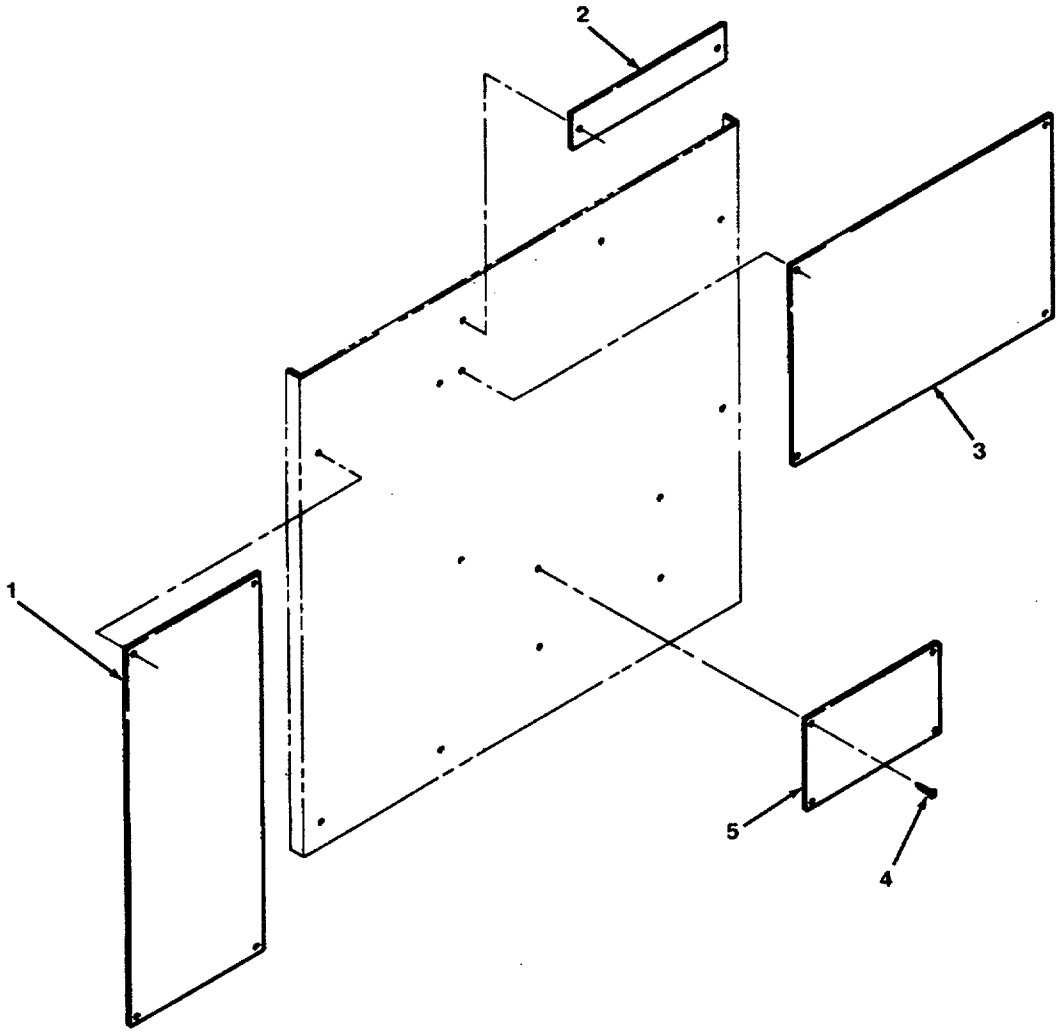


FIGURE 43. AUXILIARY CONTROL PANEL.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2202 ACCESSORY ITEMS	
				FIG. 43 AUXILIARY CONTROL PANEL	
1	PAOZZ	96906	MS51957-79	SCREW, MACHINE	2
2	PAOZZ	96906	MS35338-44	WASHER, LOCK. .	2
3	PAOZZ	96906	MS35691-1	NUT, PLAIN, HEXAGON	2
4	XDOOO	37562	B1900-5313	AUX ELECTRIC PANEL	1
5	XDOZZ	37562	B1900-531T	•PLATE, MOUNTING	1
6	XDOZZ	13445	24106	•SOLENOID, ELECTRICAL	1
7	PAOZZ	13445	30055-8	•CIRCUIT BREAKER	2
8	PAOZZ	96906	MS5L957-63	•SCREW, MACHINE	4
9	PAOZZ	96906	MS35338-43	•WASHER, LOCK	8
10	PAOZZ	96906	MS35649-202	•NUT, PLAIN, HEXAGON	4
11	PAOZZ	96906	MS35691-L	•NUT, PLAIN, HEXAGON	4
12	PAOZZ	96906	MS51957-79	•SCREW, MACHINE	4
13	PAOZZ	13445	M-202	•SOLENOID, ELECTRICAL	1

END OF FIGURE



TA505118

FIGURE 44. DATA PLATES.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2210 DATA PLATES	
				FIG. 44 DATA PLATES	
1	PAOZZ	37562	B1900-8001	PLATE, DESIGNATION INSTRUCTIONS.	1
2	PAOZZ	37562	B1900-8006	PLATE, INSTRUCTION PROTECTION.	1
3	XDOZZ	37562	B1900-8002	PLATE, INSTRUCTION TRANSPORTATION. . .	1
4	PAOZZ	96906	MS24629-33	SCREW, TAPPING THREA	14
5	PAOZZ	37562	B1900-8005	PLATE, DESIGNATION REGISTRATITN	1
				END OF FIGURE	

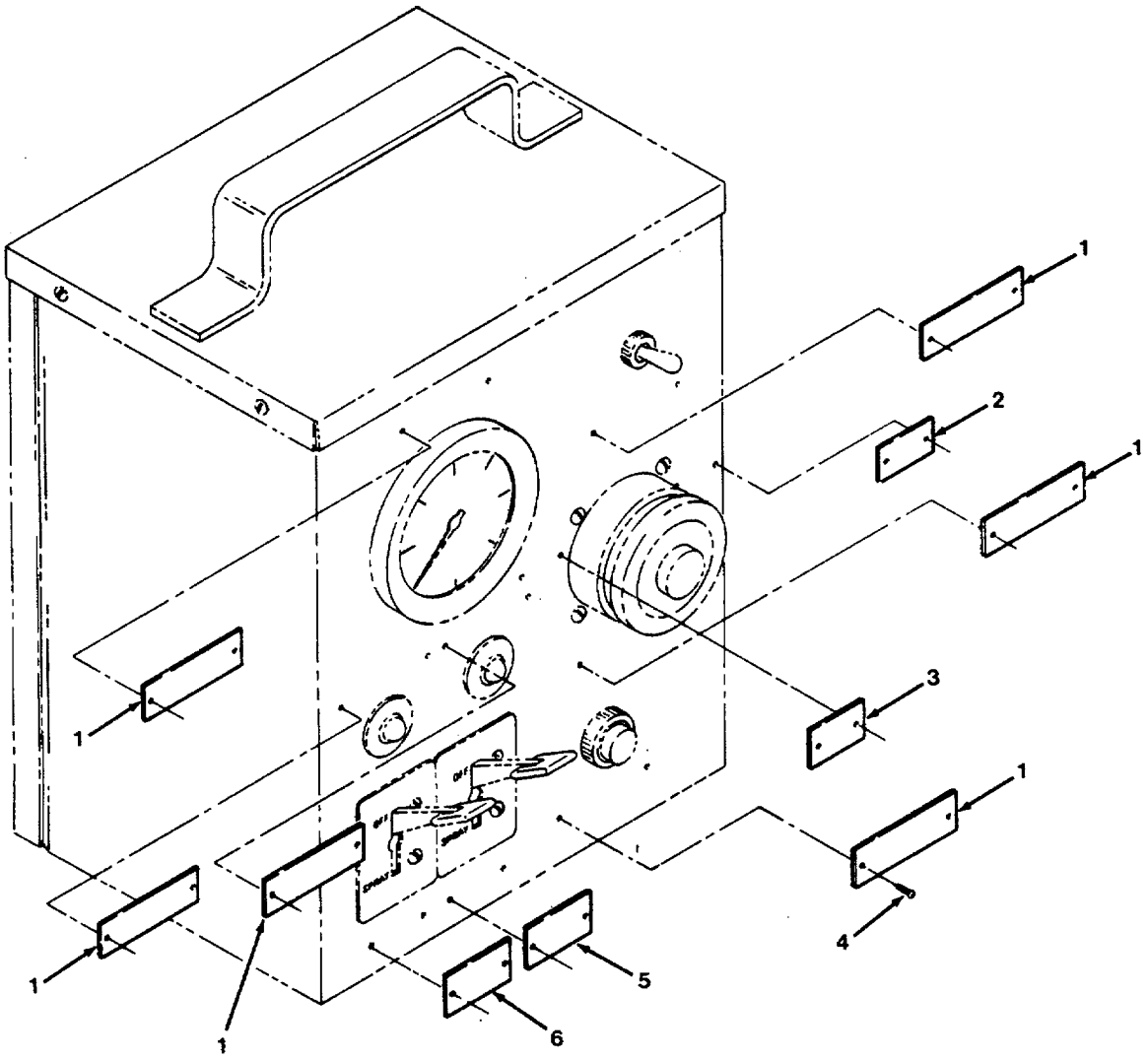
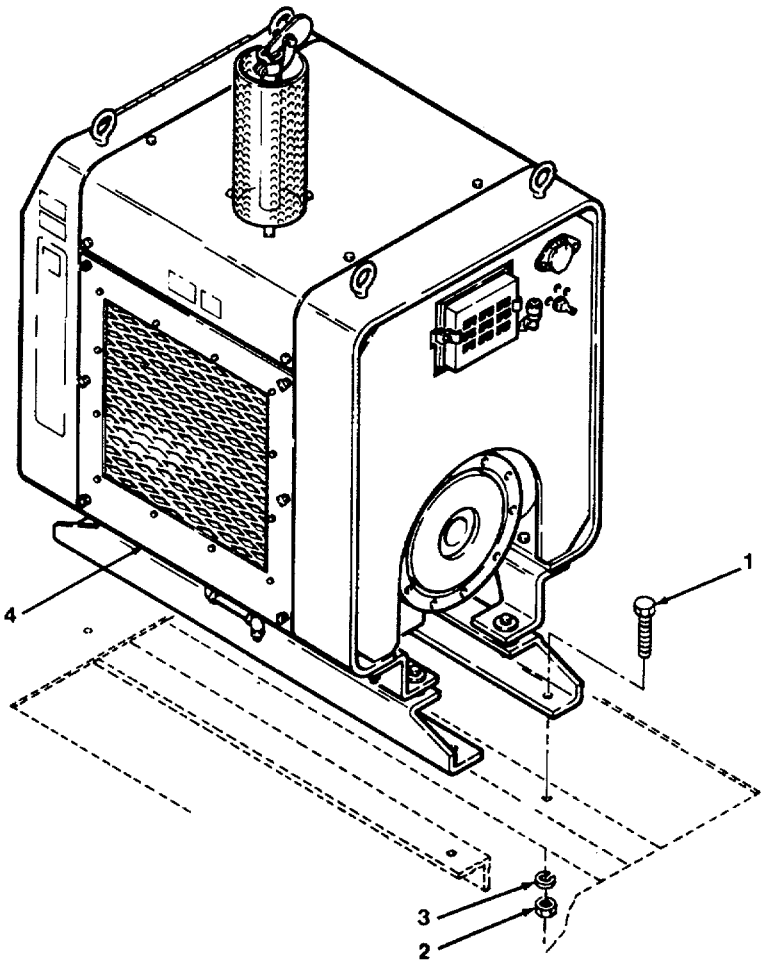


FIGURE 45. AUXILIARY BOX DATA PLATES.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2210 DATA PLATES	
				FIG. 45 AUXILIARY 80X DATA PLATES	
1	PFOZZ	19207	7535606	PLATE, INSTRUCTION	6
2	PAOZZ	37562	81900-4838	MARKER, IDENTIFICATI HIGH	1
3	PFOZZ	37562	B1900-4837	PLATE, IDENTIFICATIO LOW	1
4	PAOZZ	96906	MS24629-2D	SCREW, TAPPING THREA	20
5	PAOZZ	37562	S1900-4844	PLATE, INSTRUCTION RIGHT SPRAY	1
6	PAOZZ	37562	B1900-4843	PLATE, IDENTIFICATIO LEFT SPAY	1

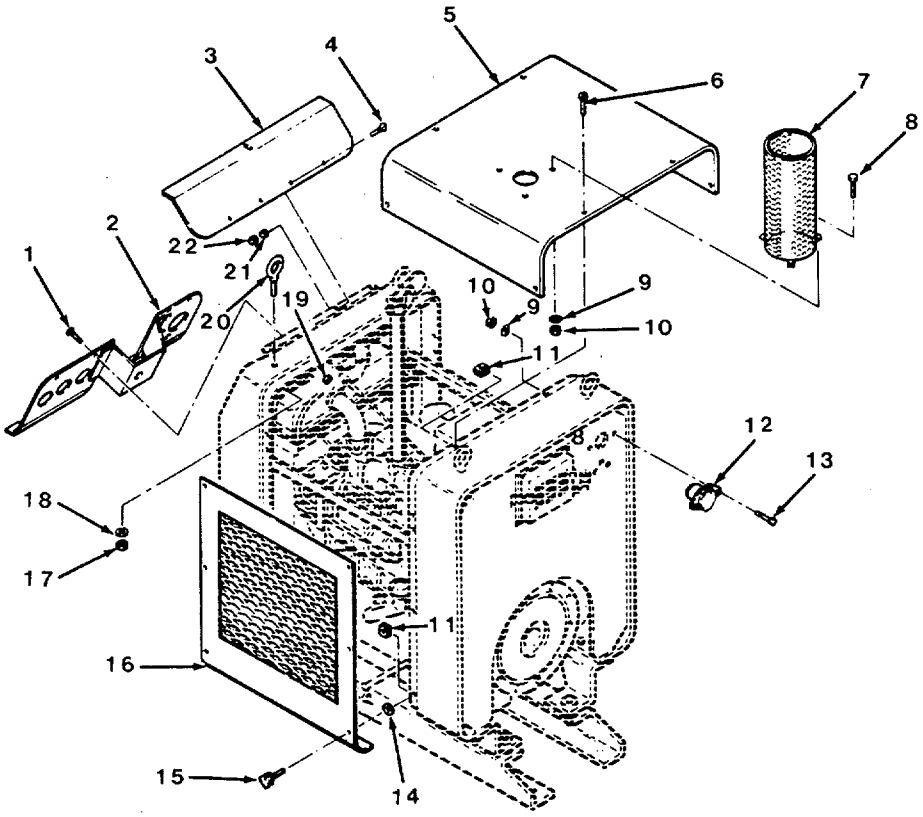
END OF FIGURE



TA505120

FIGURE 46. ENGINE ASSEMBLY.

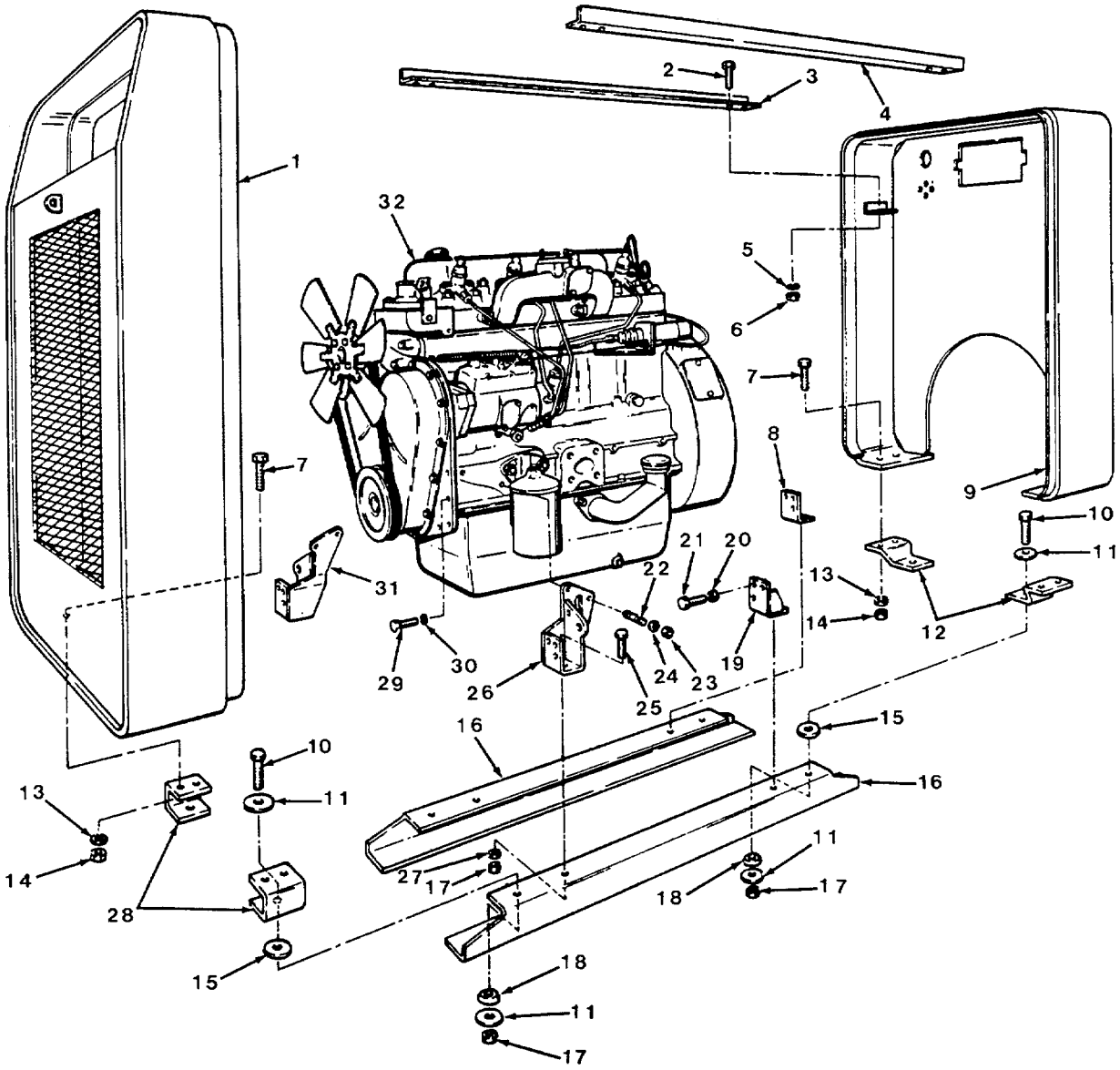
(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 29 AUXILIARY GENERATOR AND ENGINE AND CONTROLS	
				GROUP 2910 ENGINE ASSEMBLY	
				FIG. 46 ENGINE ASSEMBLY	
1	PAOZZ	80204	B18218HD63C175N	SCREW, CAP, HEXAGON H.....	4
2	PAOZZ	96906	MS51967-21	NUT, PLAIN, HEXAGON	4
3	PAOZZ	96906	MS35338-50	WASHER, LOCK.....	4
4	XDOFF	37562	B1900-5111B	ENGINE ASSEMBLY	1
				END OF FIGURE	



TA505121

FIGURE 47. ENGINE MOD.

	(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
					GROUP 2910 ENGINE ASSEMBLY	
					FIG. 47 ENGINE MOD	
	1	PAOZZ	96906	M551957-61	•SCREW, MACHINE	8
	2	XCOZZ 1	37562	B1900-5130	•PANEL, INSTRUMENT	
	3	XDOZZ	13446	NA002302	•COVER, INSTRUMENT	1
	4	PAOZZ	96906	M551957-94	•SCREW, MACHINE	4
	5	XDOZZ	37562	B1900-5128	•COWLING, ENGINE	1
	6	PAOZZ	94222	17-11-104-11 .	•SCREW, PANEL, FASTENE	8
	7	PBOZZ	37562	B1900-5101 .	•SHIELD, EXHAUST MUFF	1
	8	PAOZZ	96906	MS90725-10 .	•SCREW, CAP, HEXAGON H	3
	9	PAOZZ	96906	MS35338-44	•WASHER, LOCK	5
	10	PAOZZ	96906	MS51967-3	•NUT, PLAIN, HEXAGON	5
	11	XDOZZ	37562	B1900-4838	•NUT, SHEET, SPRING	20
	12	PAOZZ	37562	B1900-4811	•RECEPTACLE	1
*	13	PAOZZ	80204	B1821BHO25ClOON	•SCREW, CAP, 1 HEXAGON H	2
	14	PAOZZ	13446	NA002357	•WASHER, FLAT	12
	15	PAOZZ	13446	NA002388	•THUMB SCREW	12
	16	XDOZZ	13446	NA002432	•PANEL, SIDE	2
	17	PAOZZ	96906	MS51967-14	•NUT, PLAIN, HEXAGON	4
	18	PAOZZ	96906	MS35338-48	•WASHER, LOCK	4
	19	PAOZZ	96906	MS35649-202	•NUT, PLAIN, HEXAGON	8
*	20	XDOZZ	13446	NA002350	•BOLT, EYE	4
	21	PAOZZ	96906	MS35338-45	•WASHER, LOCK	4
	22	PAOZZ	96906	MS51967-5 .	•NUT PLAIN, HEXAGON	4
					END OF FIGURE	



TA505122

FIGURE 48. ENGINE MOD.

	(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
					GROUP 2910 ENGINE ASSEMBLY	
					FIG. 48 ENGINE MOD	
	1	XDOZZ	13446	NA002439	•COWLING, ENG.	1
	2	PAOZZ	96906	MS90728-88	•SCREW, CAP HEXAGON H	8
	3	XDOZZ	37562	B1900-5126	•BRACE, CROSS, LEFT.....	1
	4	XDOZZ	37562	B1900-5125	•BRACE, CROSS, RIGHT	1
	5	PAOZZ	96906	NS35338-47	•. WASHER, LOCK.....	8
	6	PAOZZ	96906	MS51967-11	•NUT, PLAIN, HEXAGON.....	8
*	7	PAOZZ	80204	B1821BHO63Cl75N	•SCREW, CAP, HEXAGON	8
	8	XDFZZ	13446	38126226	•SRACKET ENGINE, RH.....	1
	9	XDOZZ	37562	B1900-5127	•COWLING, REAR	1
	10	PAOZZ.	96906	MS51095-420	•SCREW, CAP, HEXAGON.....	4
	11	PAOZZ	96906	MS27183-19	•WASHER, FLAT.....	8
	12	XDFZZ	13446	NA002425	•SPACER, REAR.....	2
	13	PAOZZ	96906	M535338-50.	•WASHER, LOCK	8
	14	PAOZZ	96906	MS51967-21	•NUT, PLAIN, HEXAGON	8
	15	PAOZZ	37562	B1900-4838	•MARKER, IDENTIFICAT	4
	16	XDFZZ	13446	NA002372	•RAIL, ENGINE MOUNT.	2
	17	PAOZZ	96906	NS51967-14	•NUT, PLAIN, HEXAGON.	4
	18	PCOZZ	13446	0920769	•GROMMET, NONMETALLIC	
	4					
	19	XDFZZ	13446	38126227	• BRACKET, ENGINE	1
	20	PAOZZ	13446	0920054	•WASHER, LOCK	6
	21	PAOZZ	13446	0746454	•SETSCREW.	6
	22	PAOZZ	13446	0826617	•STUD, PLAIN	4
	23	PAOZZ	13446	0576153	•NUT, PLAIN HEXAGON	4
	24	PAOZZ	13446	0920055	•WASHER LOCK	4
*	25	PAOZZ	80204	B1821BH0SOC113N	•SCREW, CAP, HEXAGON	4
	26	XOOZZ	13446	38155178	•BRACKET ENG, FR LH.....	1
	27	PAOZZ	96906	MS35338-48	•WASHER, LOCK.....	4
	28	XDFZZ	13446	NA002424	•SPACER, FRONT	2
	29	PAOZZ	13446	0746252	•SETSCREW	2
	30	PAOZZ	13446	0920053	•WASHER, LOCK	2
	31	XOOZZ	13446	38155177	•BRACKET, ENG, FR, RH	1
	32	PFOFH	13446	4108SN108US877	•ENGINE, DIESEL.....	1

END OF FIGURE

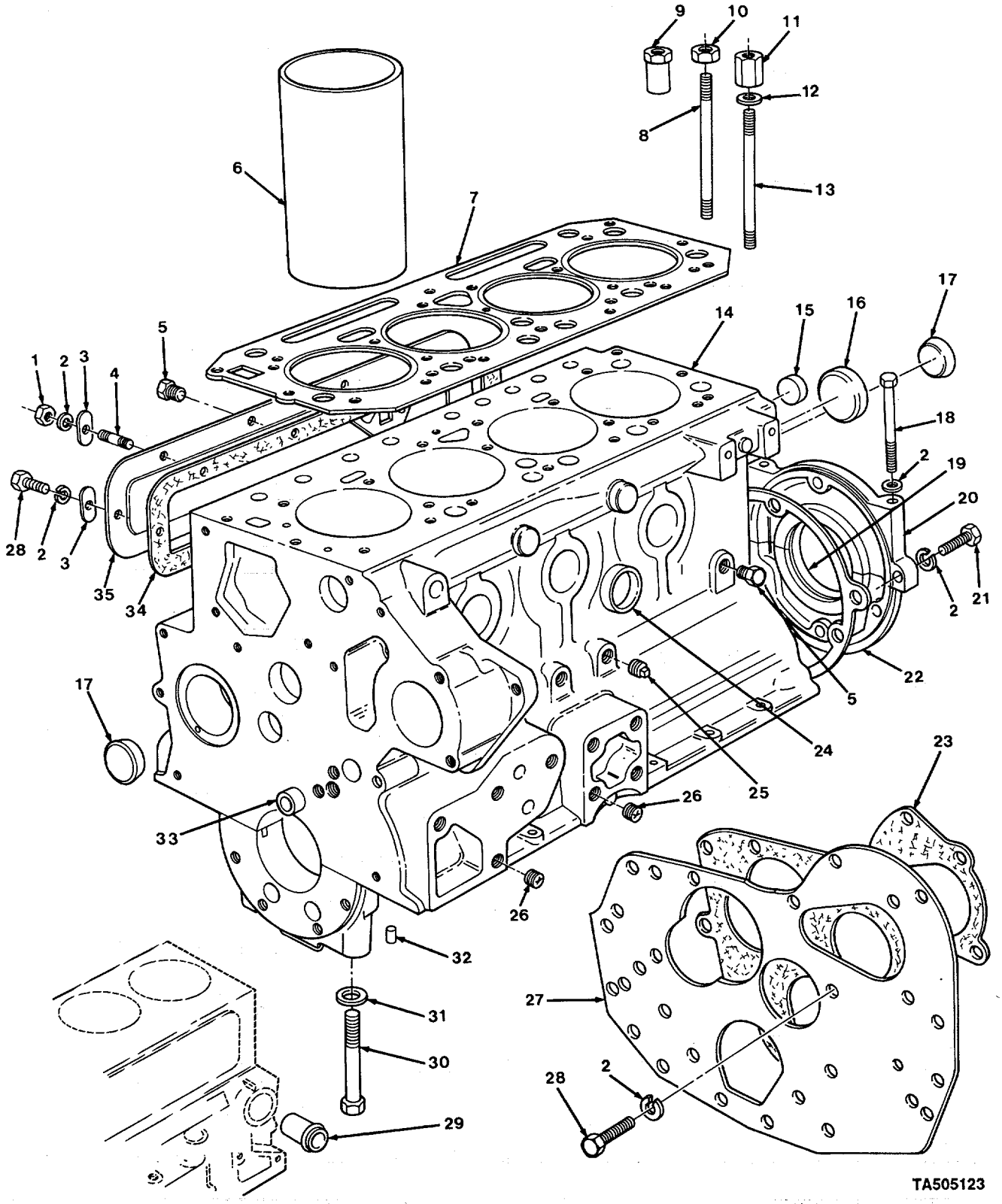


FIGURE 49. CYLINDER BLOCK.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2911 CRANK CASE CYLINDER HEAD AND BLOCK	
				FIG. 49 CYLINDER BLOCK	
1	PAFZZ	13446	0576002	••NUT, PLAIN, HEXAGON	8
2	PAFZZ	13446	0920053	•• WASHER, LOCK	22
3	PAFZZ	13446	36151505	••SPACER, PLATE	10
4	XDFZZ	13446	0826249	••STUD, PLAIN	8
5	PAFZZ	13446	32161114	••PLUG, MACHINE, THREAD	2
6	PAHZZ	13446	31358117	••CYLINDER SLEEVE	1
7	PAFZZ	13446	36812134	••GASKET	1
8	PAFZZ	13446	0826631	••STUD, PLAIN	18
9	PAFZZ	13446	33531117	••NUT, PLAIN, BARREL	6
10	PAFZZ	13446	33221317	••NUT, PLAIN, HEXAGON	11
11	PAFZZ	13446	33287314	••NUT, PLAIN,, HEXAGON	1
12	PAFZZ	13446	33115411	••WASHER, FLAT	1
13	PAFZZ	13446	32524148	••STUD PLAIN	1
14	PBHZZ	13446	93654	••ENGINE BLOCK DIESEL,	1
15	PFFZZ	13446	0650664	••PLUG, EXPANSION	1
16	PFFZZ	13446	0650777	••PLUG, EXPANSION	1
17	PAFZZ	13446	0650710	••PLUG, EXPANSION	2
18	PAFZZ	13446	0096238	••SETSCREW	2
19	PAFZZ	13446	36883107	••PACKING, PREFORMED	2
20	XCFZZ	13446	90990	••HOUSING	1
21	PAFZZ	13446	0746259	••BOLT, MACHINE	6
22	PAFZZ	13446	36826114	••GASKET	1
23	PAFZZ	13446	0490740	••GASKET	1
24	PAFZZ	13446	0650563	••PLUG, EXPANSION	3
25	PAFZZ	81348	WW-P-471AASBCA	••PLUG, PIPE	1
26	PAFZZ	13446	32114481	••PLUG MACHINE THREAD	2
27	XDFZZ	13446	36256717	••PLATE	1
28	PAFZZ	13446	0746254	••SCREW, CAP HEXAGON H	6
29	XDFZZ	13446	0201297	••CONNECTOR FLUID PUM	1
30	PAFZZ	13446	32166216	••BOLT MACHINE	6
* 31	PAFZZ	30076	140598	••WASHER	6
32	XOFZZ	13446	0350014	••DOWEL	6
33	PAFZZ	13446	0650717	••PLUG, EXPANSION	2
34	PAFZZ	13446	36846412	••GASKET	1
35	XDFZZ	13446	37554591	••COVER	1

END OF FIGURE

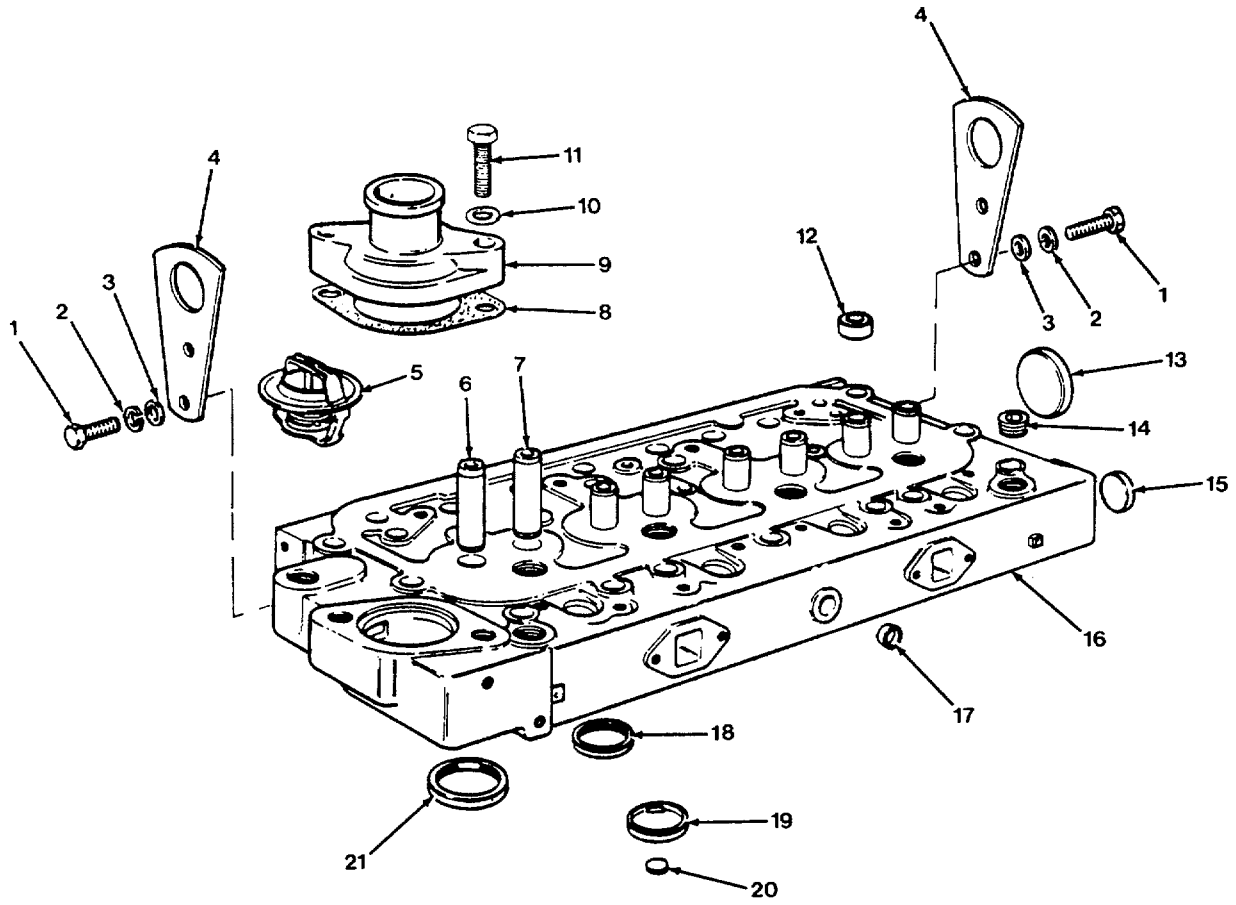


FIGURE 50. ENGINE HEAD.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2911 CRANKCASE, CYLINDER HEAD AND BLOCK	
				FIG. 50 ENGINE HEAD	
1	PAFZZ	13446	0746254	••SCREW, CAP HEXAGON H	4
2	PAFZZ	13446	0920054	••WASHER, LOCK	24
3	PAFZZ	30076	992630	••WASHER	24
4	XDFZZ	13446	0940990	••PLATE	2
5	PFOZZ	13446	2485666	••THERMOSTAT, FLOW CON	1
6	PAHZZ	13446	33261741	••GUIDE VALVE STEM	4
7	PAHZZ	13446	33261723	••GUIDE VALVE STEM	4
8	PAOZZ	13446	0490184	••GASKET	1
9	PBOZZ	13446	0200666	••CONNECTOR, WATER OUT	1
10	PAOZZ	30076	101985	••WASHER, FLAT	2
11	PAOZZ	13446	0096433	••BOLT, MACHINE	2
12	XDFZZ	13446	0650685	••PLUG	4
13	PAFZZ	13446	0650563	••PLUG, EXPANSION	1
14	XDFZZ	13446	2431154	••PLUG	3
15	XDFZZ	13446	0650576	••PLUG	1
16	XDFHH	13446	ZZ80083	••HEAD, ENGINE	1
17	PAFZZ	13446	0650664	••PLUG, EXPANSION	1
18	PAHHH	13446	33123411	••INSERT, ENGINE VALVE	4
19	PAHZZ	13446	37443591	••INSERT, COMBUSTION	4
20	XOFZZ	13446	0921249	••WASHER, FLAT	4
21	PAHHH	13446	33124424	••SEAT, VALVE	4

END OF FIGURE

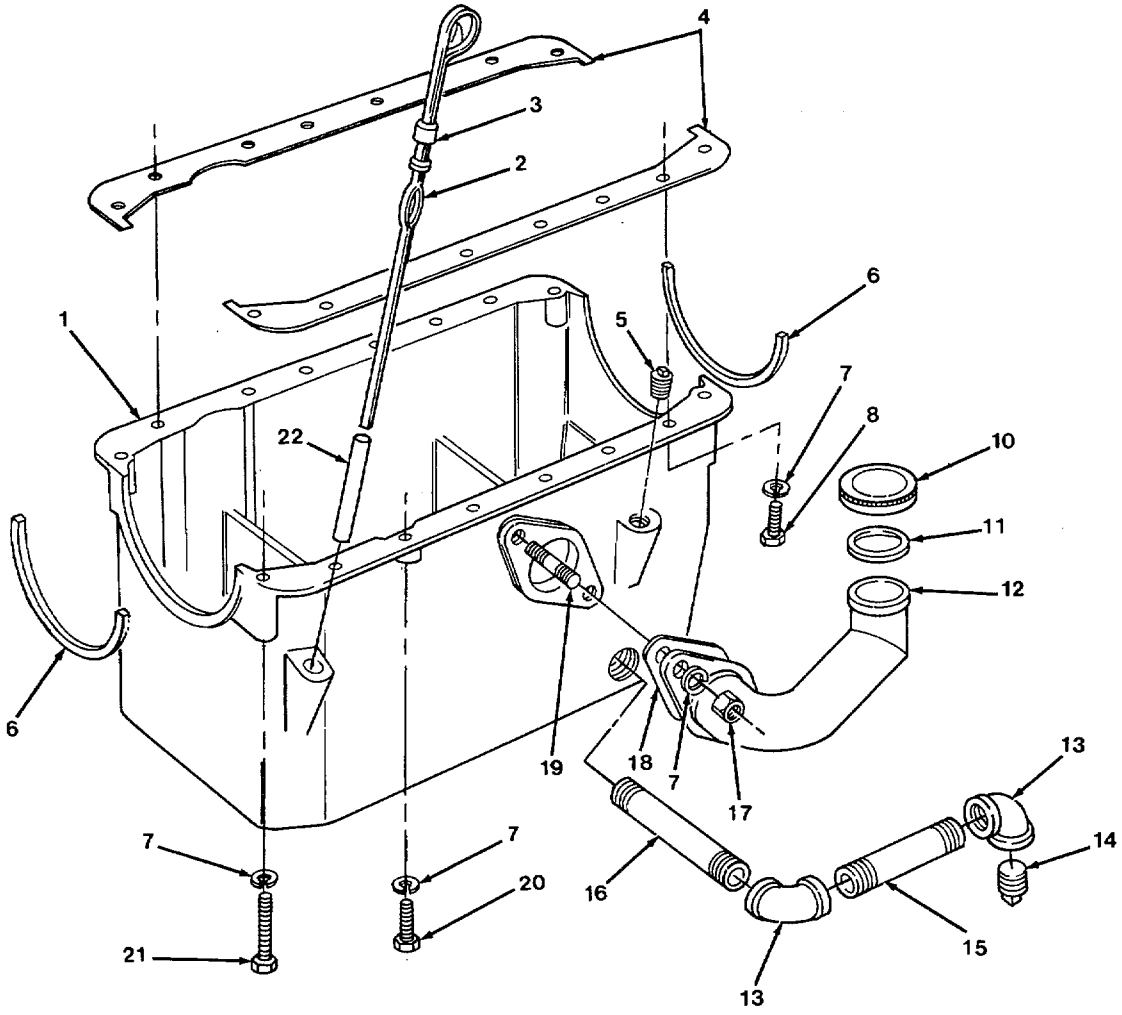


FIGURE 51. CRANKCASE.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2911 CRANKCASE, CYLINDER HEAD AND BLOCK	
				FIG. 51 CRANKCASE	
1	XDFZZ	13446	37171334	••OIL, PAN	1
* 2	PAOZZ	13446	31747838	••CAGE ROD ASSEMBLY	1
3	PADZZ	30076	125519	••WASHER	1
4	PAFZZ	13446	0999659	••GASKET	12
5	PAFZZ	81348	WW-P-471AASBCA	••PLUG, PIPE	1
6	PAFZZ	13446	0490775	••GASKET	2
7	PAFZZ	13446	0920053	••WASHER LOCK	18
8	PAFZZ	13446	0746255	••SET, SCREW	11
* 9	PAOZZ	13446	2487845	••CAP, FILLER OPENING	1
10	PAOZZ	13446	2487845	••CAP FILLER OPENING	1
11	PAOZZ	13446	24870001	••GASKET	1
12	PAOZZ	13446	35784459	••FILLER, NECK	1
13	PAFZZ	21450	454087	••ELBOW, PIPE	2
14	PAFZZ	96906	MS20913-4S	••PLUG PIPE	1
15	XDFZZ	37562	81900-5109	••NIPPLE PIPE	1
16	PAFZZ	96906	MS51953-785	••NIPPLE PIPE	1
17	PAFZZ	13446	0576002	••NUT PLAIN HEXAGON	2
18	PAFZZ	13446	36834117	••CASKET	1
19	PAFZZ	13446	0826210	••STUD, PLAIN	2
20	PAFZZ	13446	0746260	••SCREW, MACHINE	1
21	PAFZZ	13446	0096236	••SCREW, MACHINE	4
22	XDOZZ	13446	0620571	••TUBE, METALLIC	1

END OF FIGURE

1
2 THRU 5

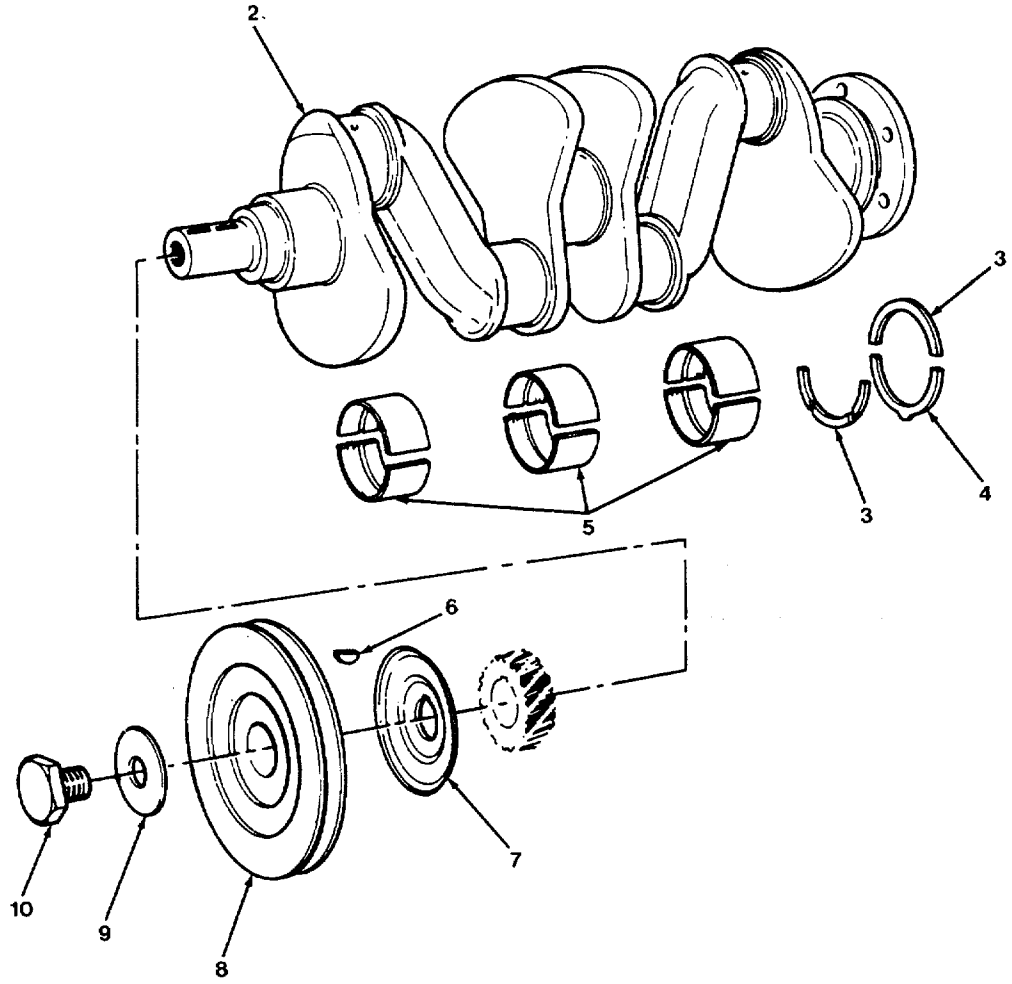


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FIGURE 52. CRANKSHAFT.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2912 CRANKSHAFT	
				FIG. 52 CRANKSHAFT	
1	PBHHH	13446	84417	••CRANKSHAFT, ENGINE.....	1
2	XAHZZ	13446	84417-X	•••CRANKSHAFT	1
3	PAHZZ	13446	0921120	•••BEARING WASHER, THRU.	2
4	PAHZZ	13446	0921t18	•••WASHER HALF, THRUST.....	1
5	PAHZZ	13446	84992	•••PARTS KIT, BEARING.....	1
6	PAFZZ	13446	0500006	••KEY, WOODRUFF.....	1
7	XDFZZ	13446	33474003	••DEFLECTOR, DIRT AND	1
8	PAFZZ	13446	31147633	••PULLEY, GROOVE	1
9	PAFZZ	13446	33124119	••WASHER FLAT.....	1
10	PAFZZ	13446	32162316	••SCREW, CAP, HEXAGON H	1
				END OF FIGURE	

8

9 AND 10

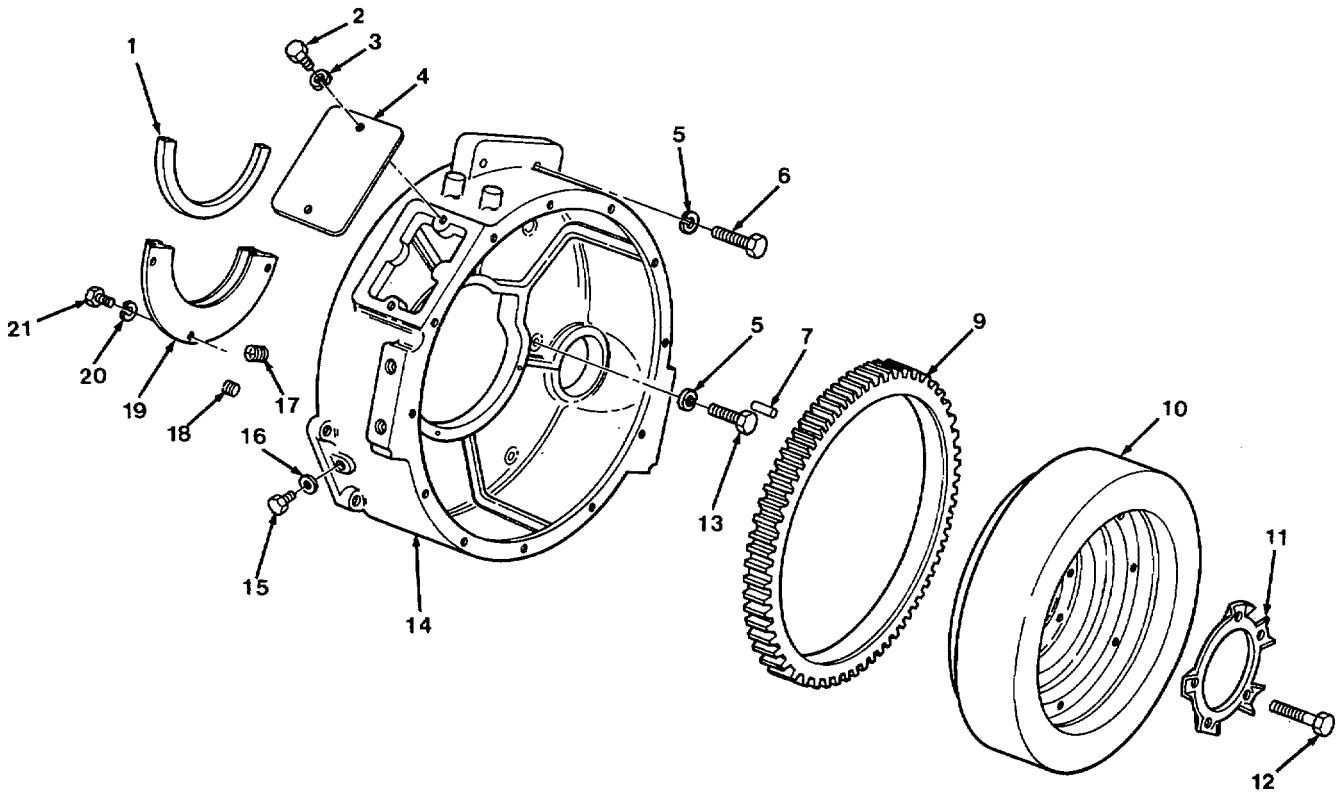

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FIGURE 53. FLYWHEEL AND GEAR.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2913 FLYWHEEL ASSEMBLY	
				FIG. 53 FLYWHEEL AND GEAR	
1	PAFZZ	13446	0730144	PACKING PREFORMED	1
2	PAFZZ	13446	0746252	SETSCREW	2
3	PAFZZ	13446	0920053	WASHER, LOCK	2
4	XBFZZ	13446	0941221	PLATE	1
5	PAFZZ	13446	0920054	WASHER, LOCK	6
6	PAFZZ	13446	0096433	BOLT, MACHINE	2
7	XDFZZ	13446	0350017	DOWEL	2
8	PAFFF	13446	0999573	FLYWHEEL, ENGINE	1
9	PBFZZ	13446	0410277 .	GEAR, SPUR	1
10	XAFZZ	13446	0999573-X	FLYWHEEL	1
11	PAFZZ	13446	31734129	WASHER, KEY	1
12	PAFZZ	13446	0746653	SCREW, CAP, HEXAGON	5
13	PAFZZ	13446	0746424	SCREW, CAP, HEXAGON	4
14	PBFZZ	13446	37138021	HOUSING, FLYWHEEL	1
15	PAFZZ	30076	992025	PLUG, MACHINE, THREAD	1
16	PAFZZ	13446	2411157	WASHER, FLAT	1
17	XOFZZ	13446	32114471	PLUG	4
18	PAFUZ	13446	32114461	PLUG, MACHINE, THREAD	2
19	XDFZZ	13446	0994788	COVER, ASSEMBLY, DUST	1
20	PAFZZ	13446	0920051	WASHER, LOCK	3
21	PAFZZ	13446	0726258	SCREW, MACHINE	3

END OF FIGURE

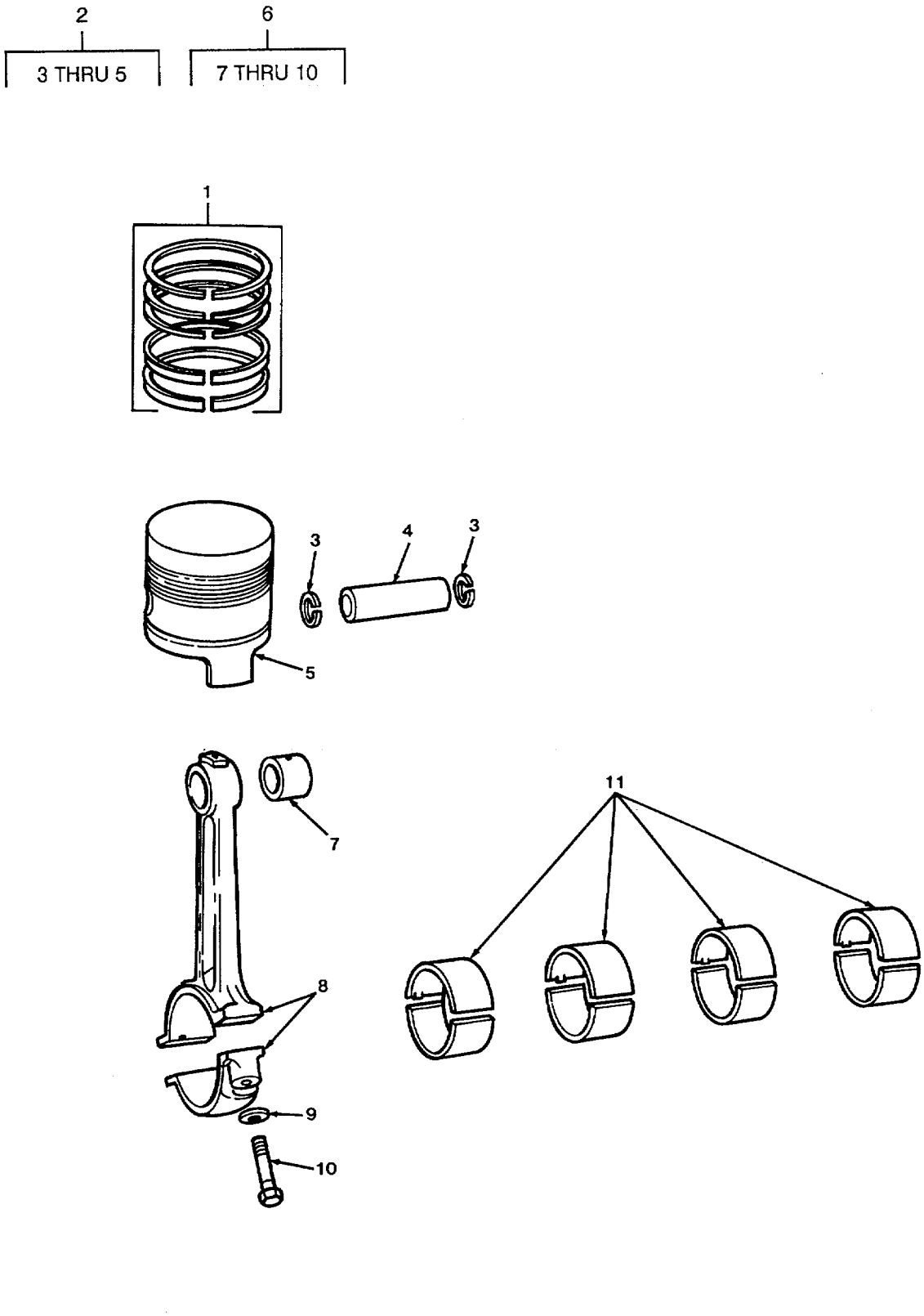

FIGURE 54. PISTONS AND CONNECTING RODS.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2914 PISTONS AND CONNECTING RODS	
				FIG. 54 PISTONS AND CONNECTING RODS	
1	PAHZZ	13446	86764	..RING SET, PISTON	1
2	PBHHH	13446	85758	..RING, RETAINING	1
3	PAHZZ	13446	2721-L24	...RING, RETAINING	2
4	XAHZZ	13446	85758-X	...PIN, PISTON	1
5	XAHZZ	13446	85758-Y	...PISTON	1
6	PBHHH	13446	ZZ90005	..CONNECTING ROD, PIST	1
7	PAHZZ	13446	31134145	...BEARING.SLEEVE	1
8	XAHZZ	13446	83417-X	...ROD	1
9	PAHZZ	13446	33115121	...WASHER, FLAT	2
10	PAHZZ	13446	0095314	...SCREW, CAP, HEXAGON	2
11	PAHZZ	L3446	85037	....BEARING SET, SLEEVE	1

END OF FIGURE

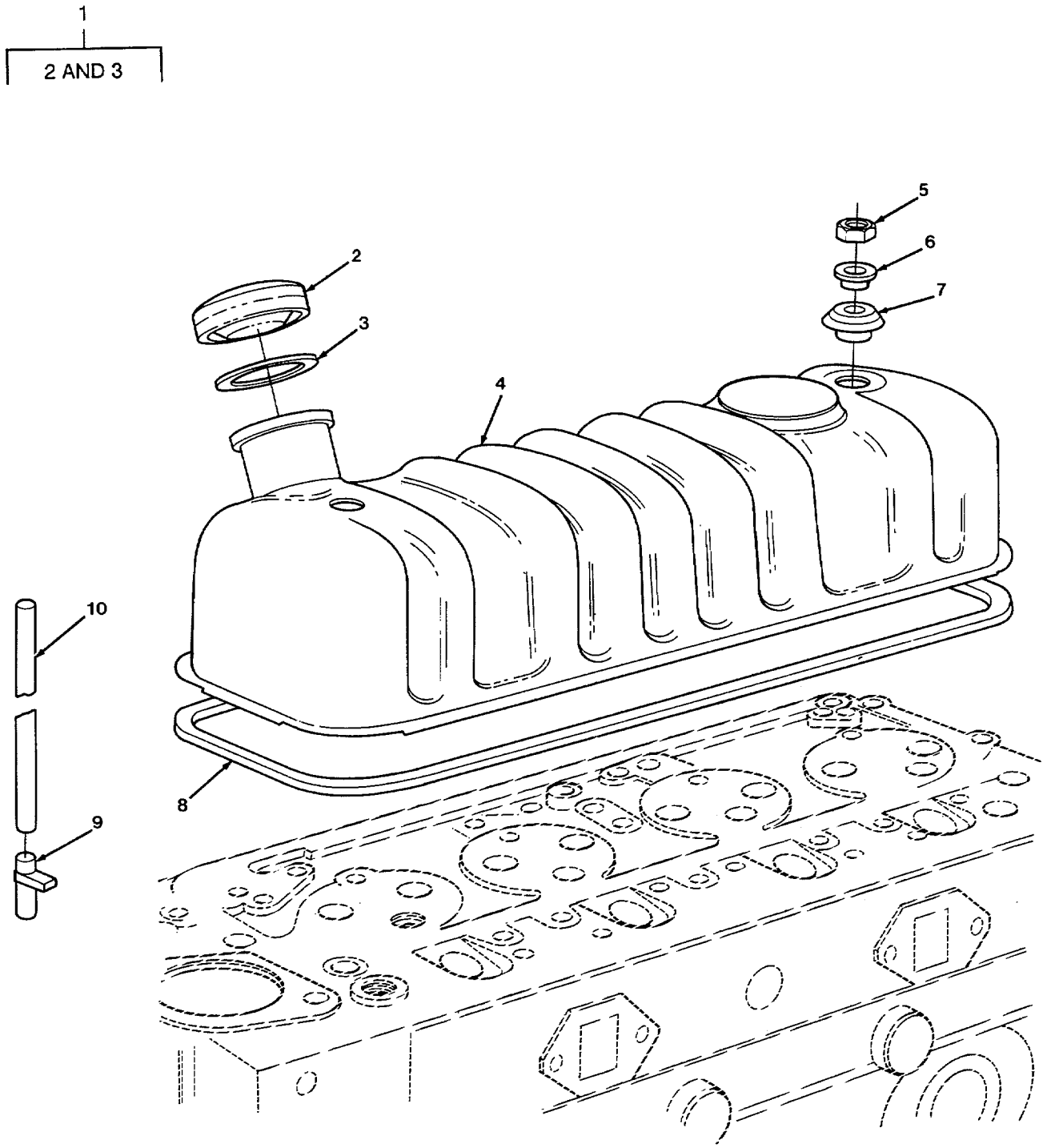

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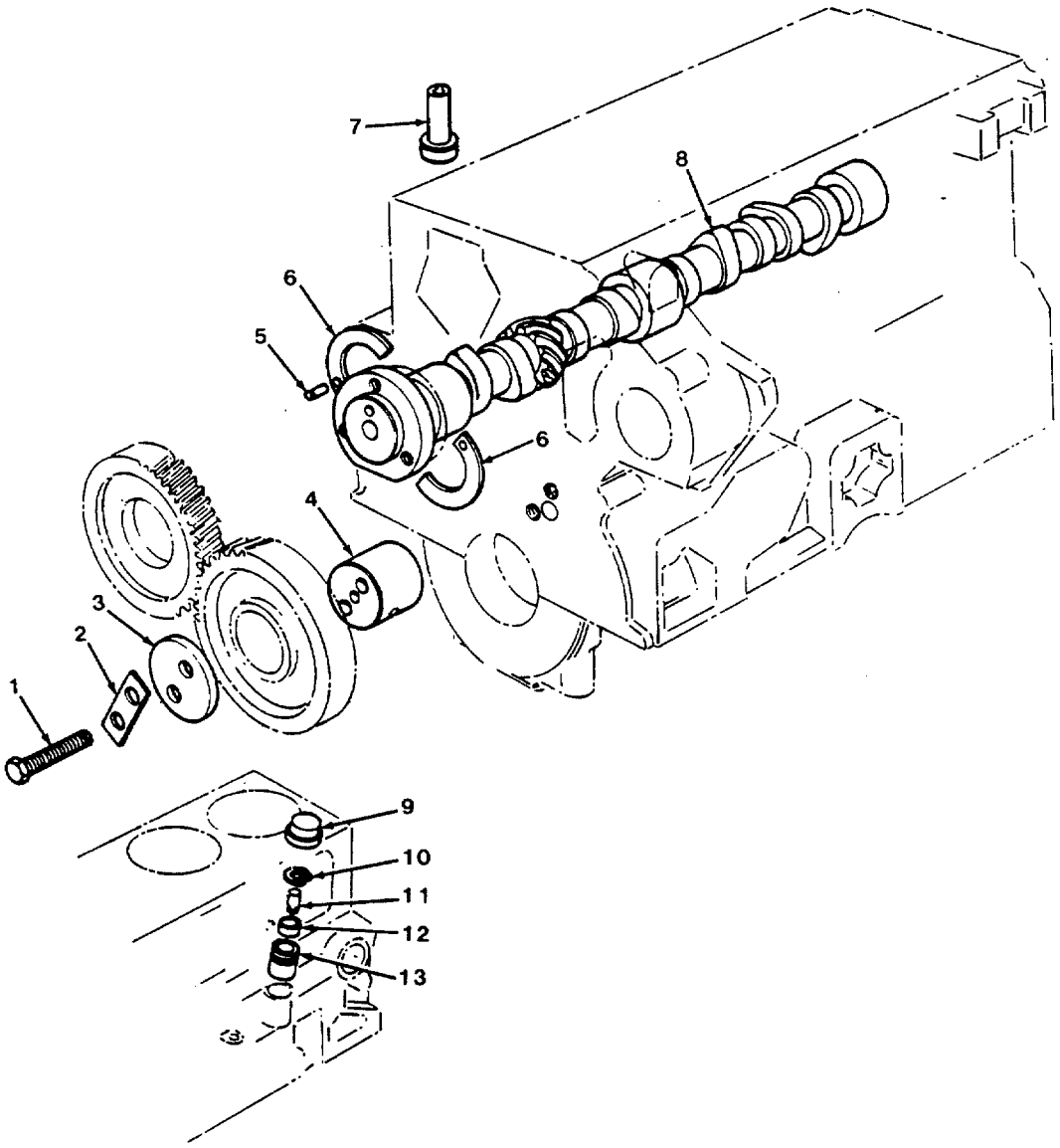
FIGURE 55. HEAD COVER AND BREATHER.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2915 VALVES, CAMSHAFT, AND TIMING SYSTEM	
				FIG. 55 HEAD COVER AND BREATHER	
1	PAOOO	13446	2487841	..CAP, FILLER OPENING	1
2	XAOZZ	13446	2487841-X	. CAP	1
3	PAOZZ	13446	24870001	...GASKET	1
4	PFFZZ	13446	37188137	..COVER, ENGINE POPPET	1
5	PAOZZ	13446	0576102	..NUTPLAIN, HEXAGON	2
6	PAOZZ	30076	985567	..WASHER, FLAT	2
7	PAOZZ	13446	0730116	..SUSHING, NONMETALLIC	2
8	PAFZZ	13446	0490724	..GASKET	1
9	XDFZZ	13446	35731143	..PIPE	1
10	XDFZZ	13446	33872312	..TUBING, NONMETALLIC	1
				END OF FIGURE	



TA505130

FIGURE 56. CAMSHAFT ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2915 VALVES, CAMSHAFT, AND TIMING SYSTEM	
				FIG. 56 CAMSHAFT ASSEMBLY	
1	PBHZZ	13446	0746461	..SCREW, CAP, HEXAGON H.....	2
2	PBHZZ	13446	0921159	..LOCKING PLATE, NUT A.....	1
3	PBHZZ	13446	0941044	..SPACER, PLATE	1
4	PBHZZ	13446	33426516	..HUB GEAR.....	1
5	PBHZZ	13446	0610844	..PIN, STRAIGHT, HEADLE	1
6	PBHZZ	13446	36178509	..WASHER HALF, THRUST	2
7	XDHZZ	13446	31434152	..TAPPET, ENGINE POPPE.....	8
8	PBHZZ	13446	31415303	..CANSHAFT, ENGINE.....	1
9	PBHZZ	13446	32813106	..CAP, PROTECTIVE, DUST.....	1
13	PBHZZ	13446	0170052	..RING, RETAINING	1
11	PSHZZ	13446	33473107	..SHAFT ASSEMBLY, FLEX.....	1
12	PBHZZ	13446	0050358	..BEARING, SLEEVE.....	1
13	PBHZZ	13446	0770101	..SLEEVE, SHAFT, PUMP.....	1

END OF FIGURE

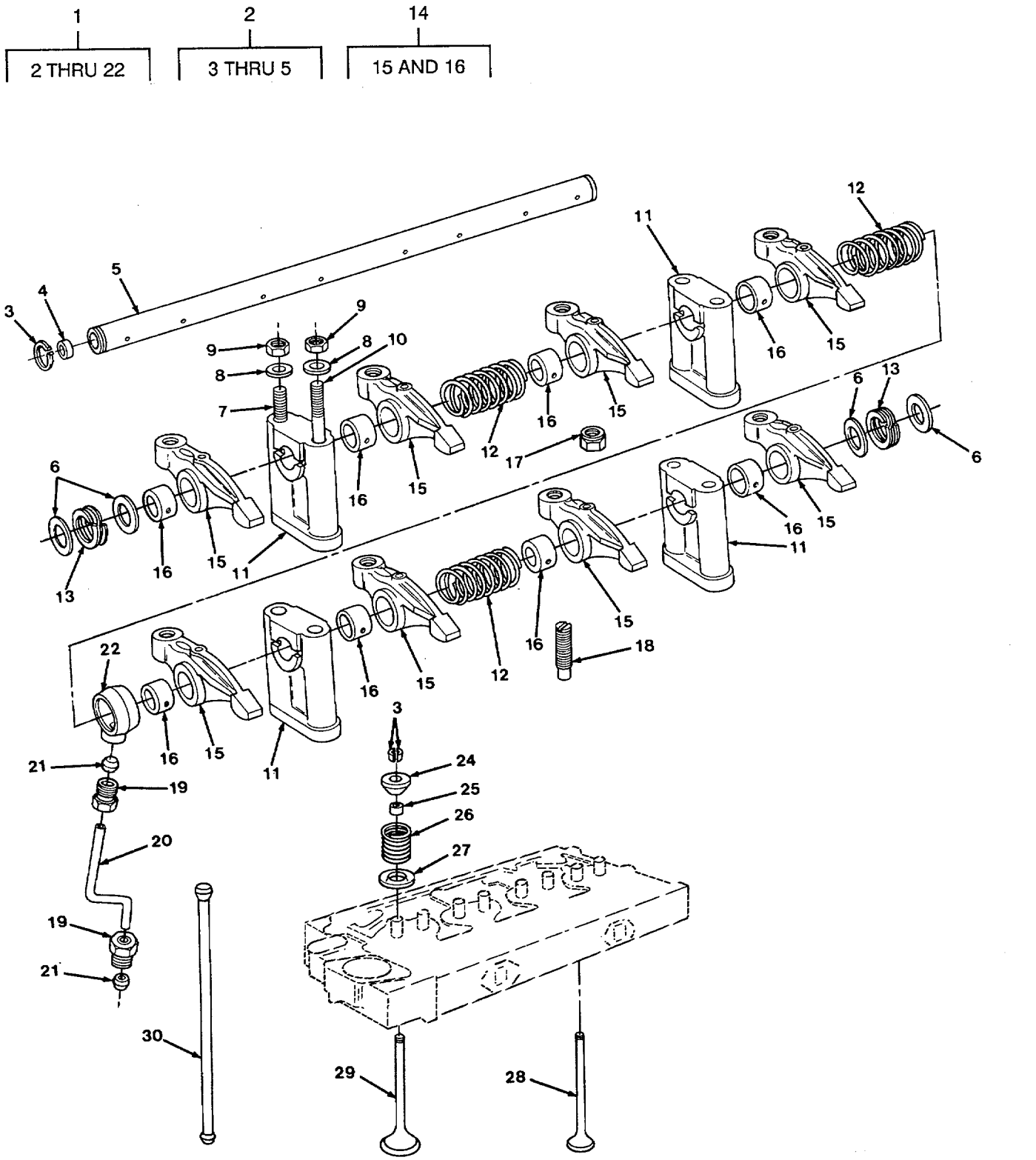


FIGURE 57. VALVE ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2915 VALVES, CAMSHAFT, AND TIMING SYSTEM	
				FIG. 57 VALVE ASSEMBLY	
1	PBHHH	13446	58529	..SHAFT ASSEMBLY, ROCK	1
2	PBHHH	13446	55286	...SHAFT, STRAIGHT	1
3	XDHZZ	13446	0170033	....RING, RETAINING	2
4	XDHZZ	13446	0650507	....PLUG, ROCKER SHAFT	2
5	XAHZZ	13446	55286-X	....SHAFT	1
6	PAHZZ	13446	0920485	...WASHER, FLAT	4
7	PAHZZ	13446	0826250	...STUD, PLAIN	6
8	PAHZZ	13446	0920053	...WASHER, LOCK	8
9	PAHZZ	13446	0576302	...NUT, PLAIN, HEXAGON	8
10	PAHZZ	13446	0825219	...STUD, PLAIN	2
11	PBHZZ	13446	0102202	...BRACKET	4
12	PBHZZ	13446	0780261	...SPRING, HELICAL, COMP	3
13	PAHZZ	13446	0921122	...WASHER, LOCK	2
*14	PBHZZ	13446	41151472	...ROCKER ARM ASSEMBLY	8
15	XAHZZ	13446	41151448-X	....LEVER	1
*16	PBHZZ	K5436	0050132	....BEARING, SLEEVE	1
17	PBHZZ	13446	0576151	...NUT	8
18	PBHZZ	13446	0720790	...SETSCREW	8
19	PBHZZ	13446	0571351	...INVERTED NUT ,TUBE	2
20	PBHZZ	13446	34414122	...TUBE, BENT, METALLIC	1
21	PBHZZ	13446	0566002	...SLEEVE, COMPRESSION,	2
22	PBHZZ	13446	0201318	...CONNECTOR, ROCKER SH	1
23	PBHZZ	13446	0230001	..LOCK, VALVE SPRING R	16
24	PBHZZ	13446	0150129	..SEAT, HELICAL COMPRE	8
25	PBHZZ	13446	33817403	..DEFLECTOR, DIRT AND	8
26	PBHZZ	13446	0780144	..SPRING, HELICALICOMP	8
27	PBHZZ	13446	0921117	..SEAT, HELICAL COMPRE	8
28	PBHZZ	13446	0910061	..VALVE, POPPET, ENGINE	4
29	PBHZZ	13446	0910060	..VALVE, POPPET, ENGINE	4
30	XDHZZ	13446	31434306	..PUSH ROD, ENGINE POP	8

END OF FIGURE

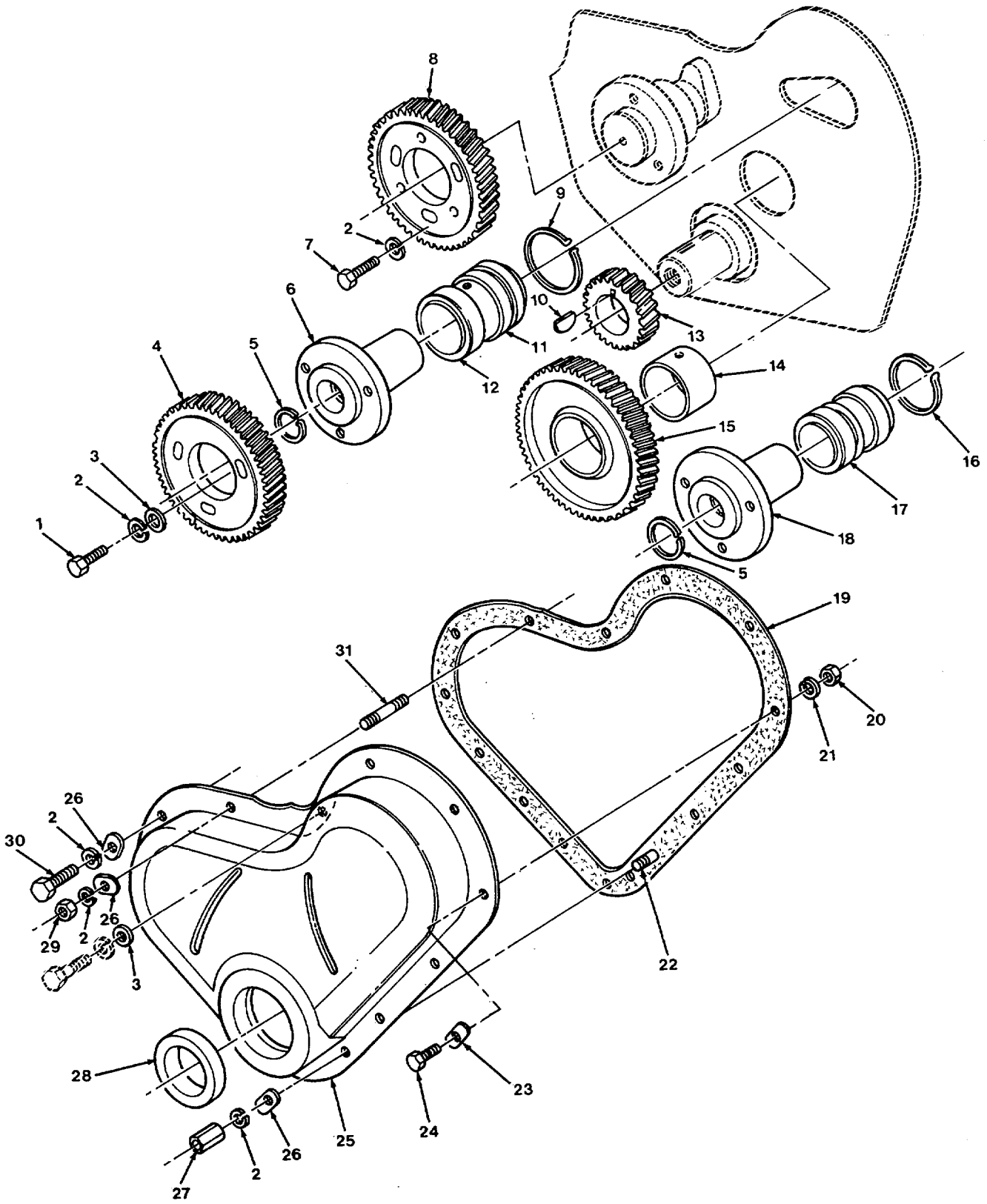


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FIGURE 58. TIMING GEAR ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2915 VALVES, CAMSHAFT, AND TIMING SYSTEM	
				FIG. 58 TIMING GEAR ASSEMBLY	
1	PBHZZ	13446	0746355	..SCREW, CAP,HEXAGON	3
2	PBHZZ	13446	0920053	..WASHER, LOCK	15
3	PBHZZ	30076	992629	..WASHER, FLAT	4
4	PBHZZ	13446	31171542	..GEAR, HELICAL	1
5	PBHZZ	13446	0170048	..RING, RETAINING	1
6	PBHZZ	13446	33472494	..HUB, TIMING GEAR	1
7	PAFZZ	13446	0746255	..SETSCREW	3
8	PBHZZ	13446	31171541	..GEAR, HELICAL	1
9	PBHZZ	13446	2724436	..RING, RETAINING	1
10	PAFZZ	13446	0500006	..KEY, WOODDRUFF	1
11	PBHZZ	13446	41425781	..HOUSING ASSEMBLY	1
12	PBHZZ	13446	2511447	..BEARING, SLEEVE	2
13	PBHZZ	13446	31171245	..GEAR, HELICAL	1
14	PBHZZ	13446	31134137	..BUSHING, SLEEVE	1
15	XDHZZ	13446	4115036	..GEAR, SPUR	1
16	PBHZZ	13446	0170148	..RING, RETAINING	1
17	PBHZZ	13446	33423135	..BEARING, SLEEVE	1
18	PBHZZ	13446	33472491	..HUB, TIMING GEAR	1
19	PAFZZ	13446	36813145	..GASKET	1
20	PBHZZ	13446	0576001	..NUT, PLAIN, HEXAGON	4
21	PBHZZ	13446	0920052	..WASHER, LOCK	4
*22	PBHZZ	13446	0826248	..STUD, PLAIN	1
23	PBHZZ	13446	36151506	..GASKET	4
24	PBHZZ	13446	0746052	..BOLT, MACHINE	4
25	PBFZZ	13446	37161104	..COVER, TIMING GEAR, I	1
*26	PBHZZ	13446	36151505	..SPACER, PLATE	9
27	PBHZZ	13446	32726511	..POST, ELECTRICAL-MEC	1
28	PAFZZ	13446	0730098	..SEAL, PLAIN ENCASED	1
29	PBHZZ	13446	0576002	..NUT, PLAIN, HEXAGON	1
30	PBHZZ	13446	0746255	..SETSCREW	8
31	PBHZZ	13446	0826201	..STUD, PLAIN	1

END OF FIGURE

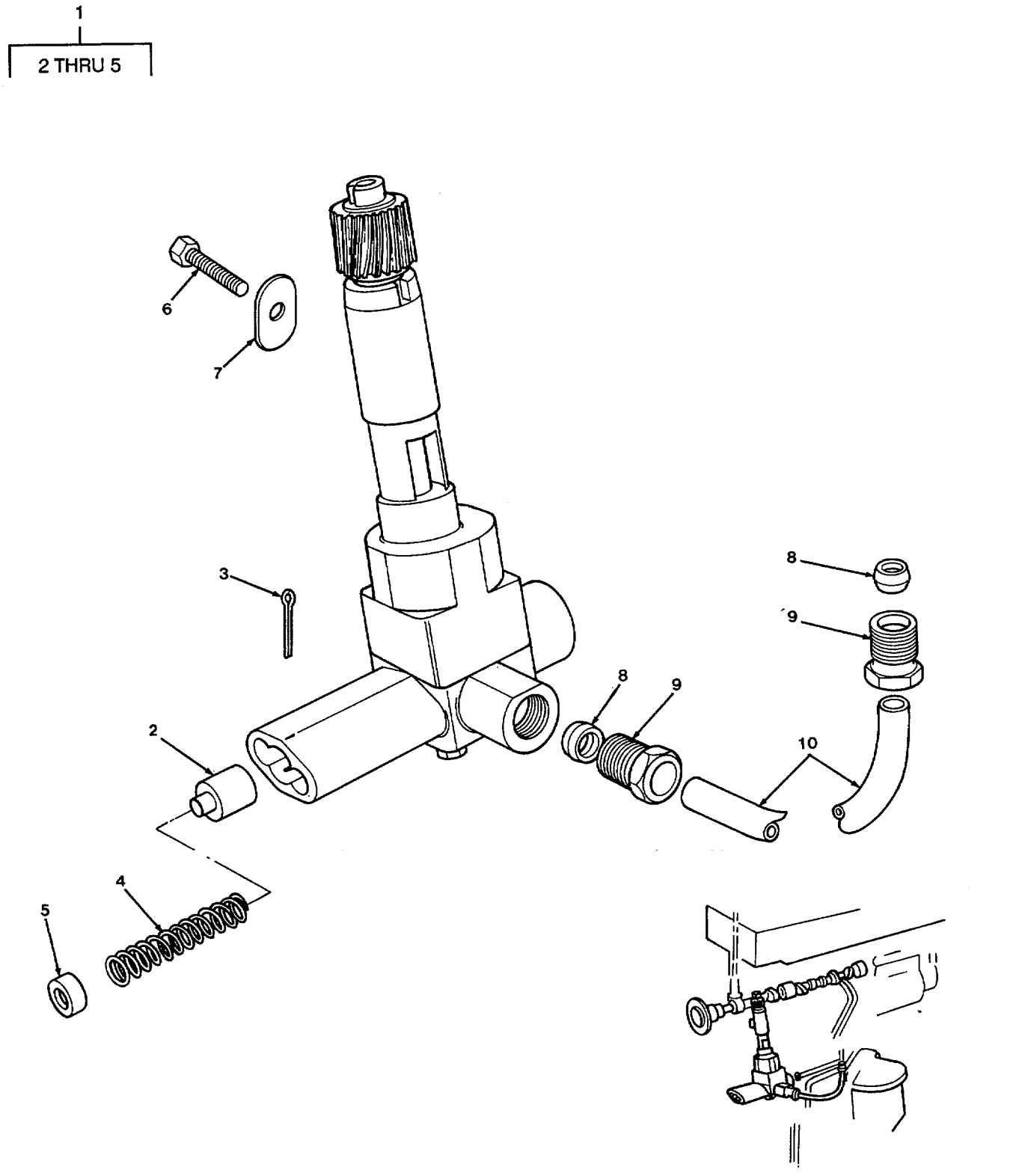

FIGURE 59. LUBRICATION OIL PUMP.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2916 ENGINE LUBRICATION SYSTEM	
				FIG. 59 LUBRICATION OIL PUMP	
1	PBFHH	13446	41314092	..PUMP, ROTARY	1
2	PBHZZ	13446	327T2715	...PLUNGER, RELIEF VALV	1
4	PBHZZ	13446	31742128	..SPRING, HELICAL, COMP	1
5	PBHZZ	13446	0150144	...CAP, PLUNGER SPRING	1
6	PBHZZ	13446	0746201	..SCREWICAP, HEXAGON H	1
7	PBHZZ	13446	36151507	..WASHER, FLAT	1
8	P8HZZ	13446	056600T	..SLEEVE, COMPRESSION	2
9	PBHZZ	13446	0571352	..NUT, TUBE COUPLING	2
*10	PBFZZ	13446	0623293	..PIPE, OIL PUMP	1
				END OF FIGURE	

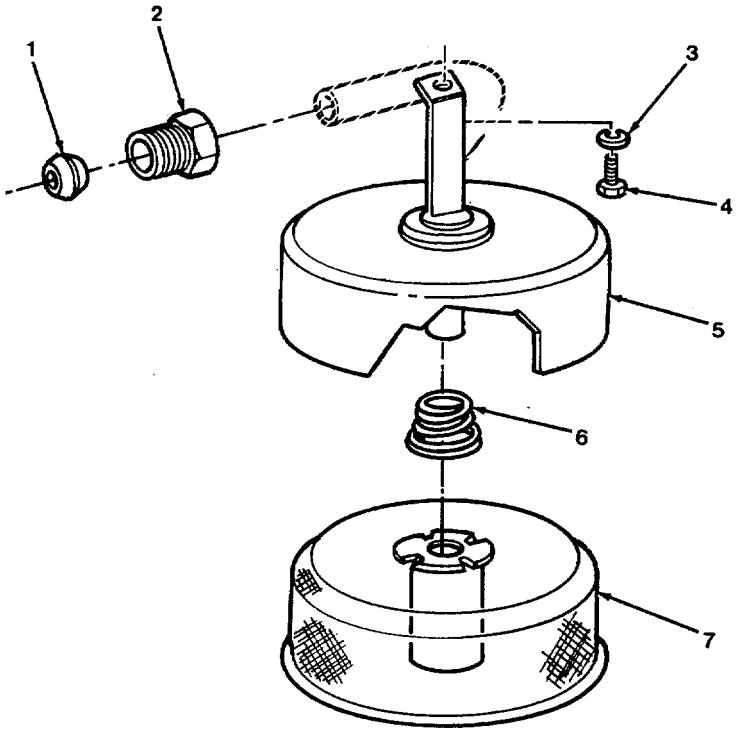

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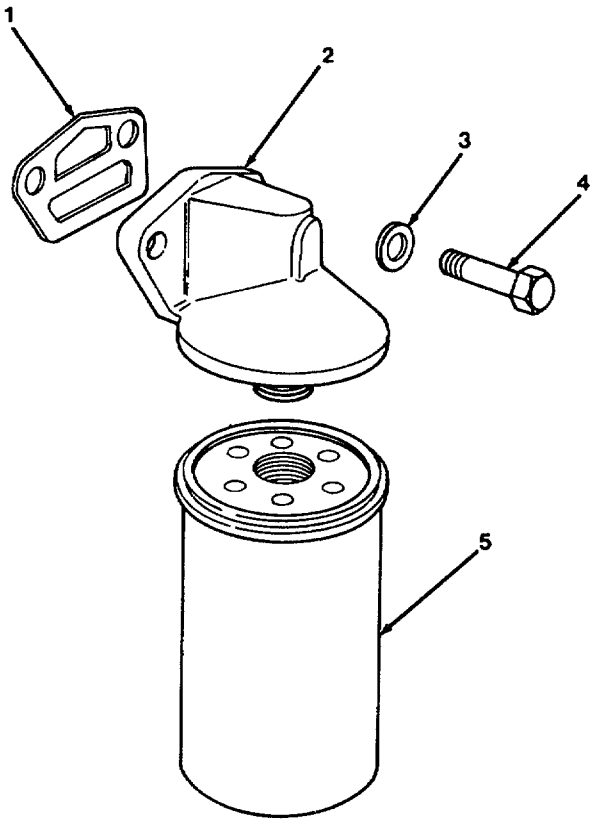
FIGURE 60. STRAINER ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2916 ENGINE LUBRICATION SYSTEM	
				FIG. 60 STRAINER ASSEMBLY	
1	PAFZZ	13446	0560244	..SLEEVE, COMPRESSION,	1
2	XDFZZ	13446	33532121	..NUT-GLAND, OELIVERY	1
3	PAFZZ	13446	0920053	..WASHER, LOCK	1
4	PAFZZ	13446	0746253	..BOLT, MACHINE	1
5	PBFZZ	13446	35737t167	..COVER ASSEMBLY, OIL	1
6	PAFZZ	13446	0780310	..SPRING, HELICAL, COMP	1
7	PAFZZ	13446	37725448	..STRAINER ELEMENT, SE	1
				END OF FIGURE	

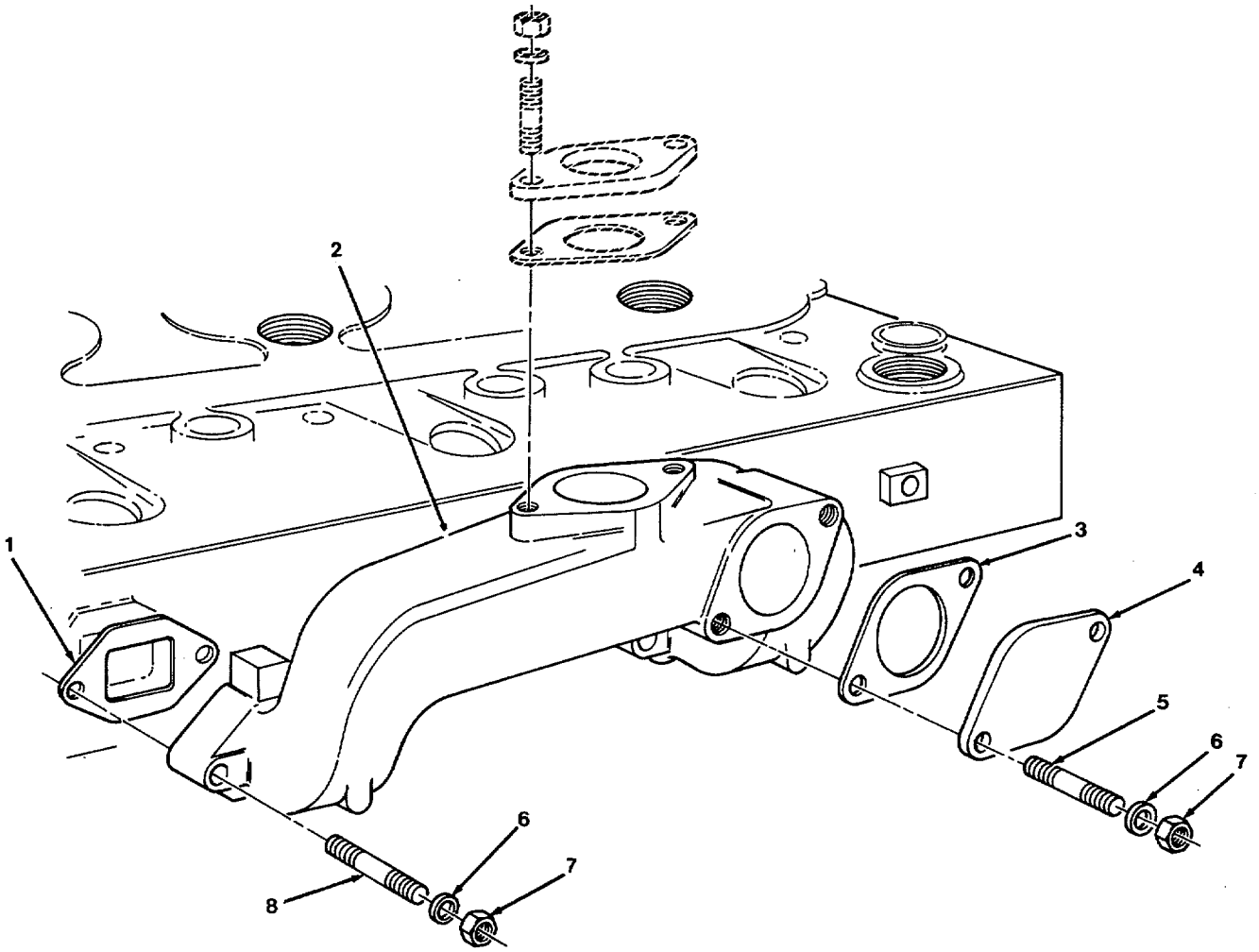


TA505135

FIGURE 61. OIL FILTER.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2916 ENGINE LUBRICATION SYSTEM	
				FIG. 61 OIL FILTER	
1	PAOZZ	13446	36862517	..GASKET	1
2	XDOZZ	13446	37764181	..HEAD CASTING	1
3	PBOZZ	13446	33115118	..WASHER, LOCK	2
4	XDOZZ	13446	0746652	..SCREW, CAP.HEXAGON	2
5	PAOZZ	13446	2654403	..FILTER ELEMENT, FLUI ENGINE OIL	1

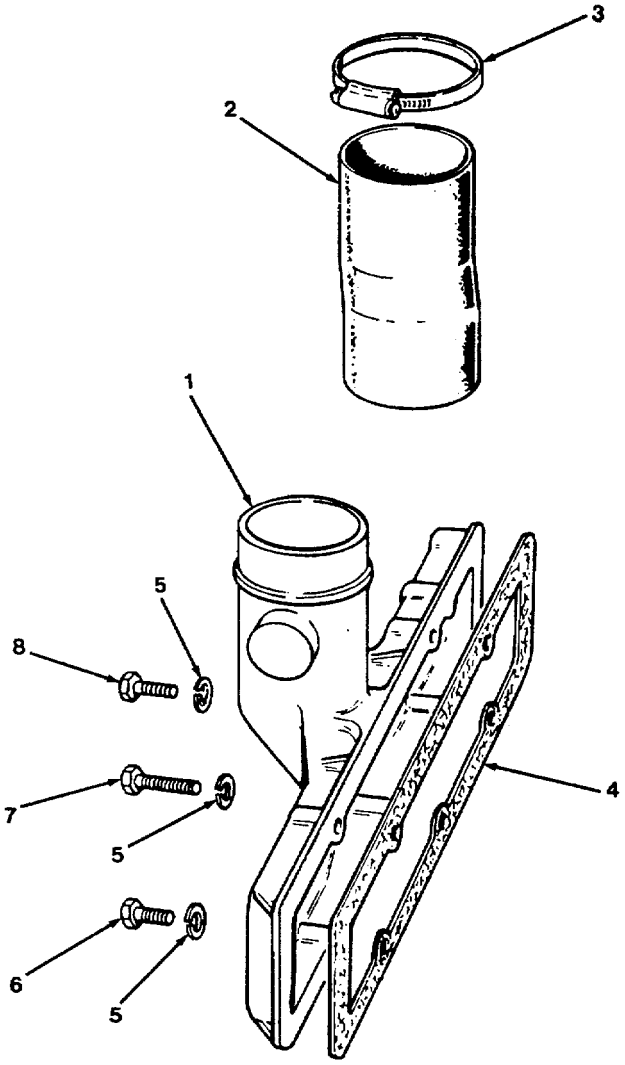
END OF FIGURE



TA505136

FIGURE 62. EXHAUST MANIFOLD.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2918 MANIFOLDS	
				FIG. 62 EXHAUST MANIFOLD	
1	PAOZZ	13446	0490656	..GASKET	2
2	PBOZZ	13446	37783543	..MANIFOLD, EXHAUST	1
3	PAOZZ	13446	0490228	..GASKET	2
4	PBOZZ	13446	0940357	..FLANGE, PIPE, SWIVEL	1
5	PBOZZ	13446	0826242	..STUD, PLAIN	2
6	PAOZZ	30076	992629	....WASHER, FLAT	6
7	PAOZZ	13446	2188134	..NUT, PLAIN, HEXAGON	6
8	PBOZZ	13446	0826260	..STUD, PLAIN	4
				END OF FIGURE	



TA505137

FIGURE 63. INTAKE MANIFOLD.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2918 MANIFOLDS	
				FIG. 63 INTAKE MANIFOLD	
1	PBOZZ	13446	37786175	..MANIFOLD, INTAKE	1
2	PBOZZ	13446	0470688	..HOSE, PREFORMED	1
3	PAOZZ	13446	0180118	..CLAMP, HOSE	2
4	PAOZZ	13446	36846415	..GASKET	1
5	PAOZZ	13446	0920053	..WASHER, LOCK	5
6	PAOZZ	13446	0096233	..BOLT, MACHINE	2
7	PAOZZ	13446	0096237	..SETSCREW	1
8	PAOZZ	13446	0096231	..BOLT, MACHINE	2
				END OF FIGURE	

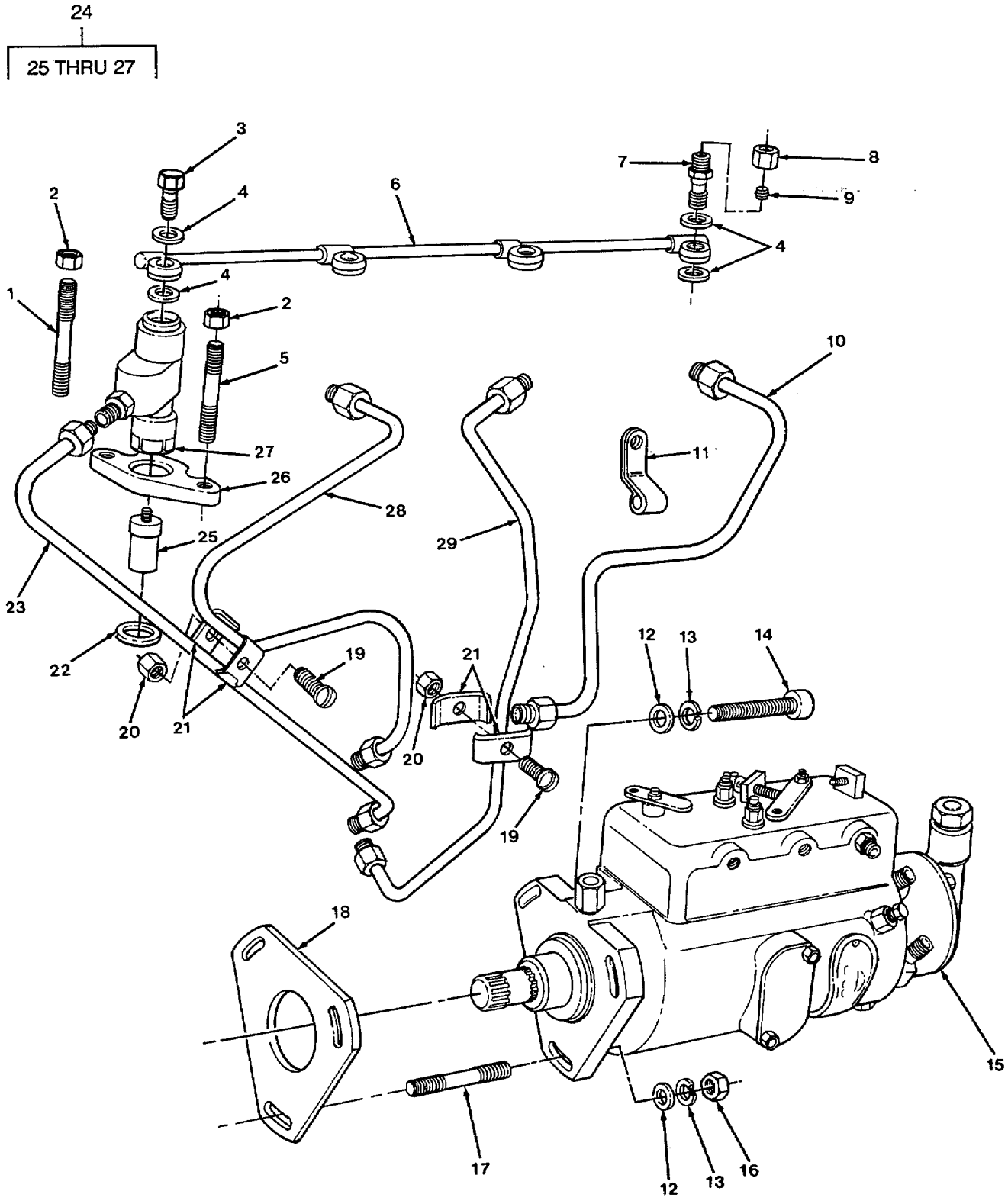


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FIGURE 64. INJECTOR PUMP INSTALLATION.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2932 ENGINE FUEL PUMP	
				FIG. 64 INJECTOR PUMP INSTALLATION	
1	PAOZZ	13446	0826274	..STUD, PLAIN	4
2	PAOZZ	13446	0576002	..NUT, PLAIN, HEXAGON	8
3	XDOZZ	13446	0095315	..BOLT	3
4	PAOZZ	30076	985567	..WASHER, FLAT	8
5	PAOZZ	13446	0826232	..STUD, PLAIN	4
6	PAOZZ	13446	35587355	..TUBE ASSEMBLY, METAL	1
7	PAOZZ	13446	0201526	..BOLT, FLUID PASSAGE.	1
8	PAOZZ	13446	0516111	..NUTIPLAIN, HEXAGON	1
9	PAOZZ	13446	0566002	..SLEEVE, COMPRESSION,	1
10	XDOZZ	13466	35354244	..TUBE ASSEMBLY, METAL	1
11	PAOZZ	13446	36644132	..HANGER, PIPE	1
12	PAOZZ	30076	992629	..WASHER, FLAT	3
13	PAOZZ	13446	0920053	..WASHER, LOCK	3
14	PAOZZ	13446	2172692	..SCREW, CAP, SOCKET HE	2
15	PAFZZ	63632	3249F010	..PUMP, FUEL, METERING	1
16	PAOZZ	13446	0576002	..NUT, PLAIN, HEXAGON	1
17	PAOZZ	13446	0826244	..STUD, PLAIN	1
18	PAOZZ	30076	161315	..SEAL, THROTTLE	1
19	PAOZZ	13446	0726264	..SCREW, MACHINE	2
20	PAOZZ	13446	0571350	..NUT, PLAIN, HEXAGON	2
21	PAOZZ	13446	018b637	..CLIP, SPRING TENSION	4
*22	PAFZZ	K5436	0920113	..WASHER, FLAT.	4
23	PAOZZ	03798	35353247	..TUBE ASSEMBLY, IMETAL	1
*24	PAFZZ	03798	11701	..INJECTOR ASSEMBLY	4
25	PAFZZ	03798	33435	...TIP, FUEL INJECTOR	1
26	PAFZZ	13446	36173452	...HDLDER, NOZZLE FUEL	1
27	PAFZZ	13446	2646522	...HOLDER, NOZZLE, FUEL	1
28	PAOZZ	13446	35343078	..TUBE ASSEMBLY, METAL	1
29	XDOZZ	13446	35354243	..TUBE ASSEMBLY, METAL	1

END OF FIGURE

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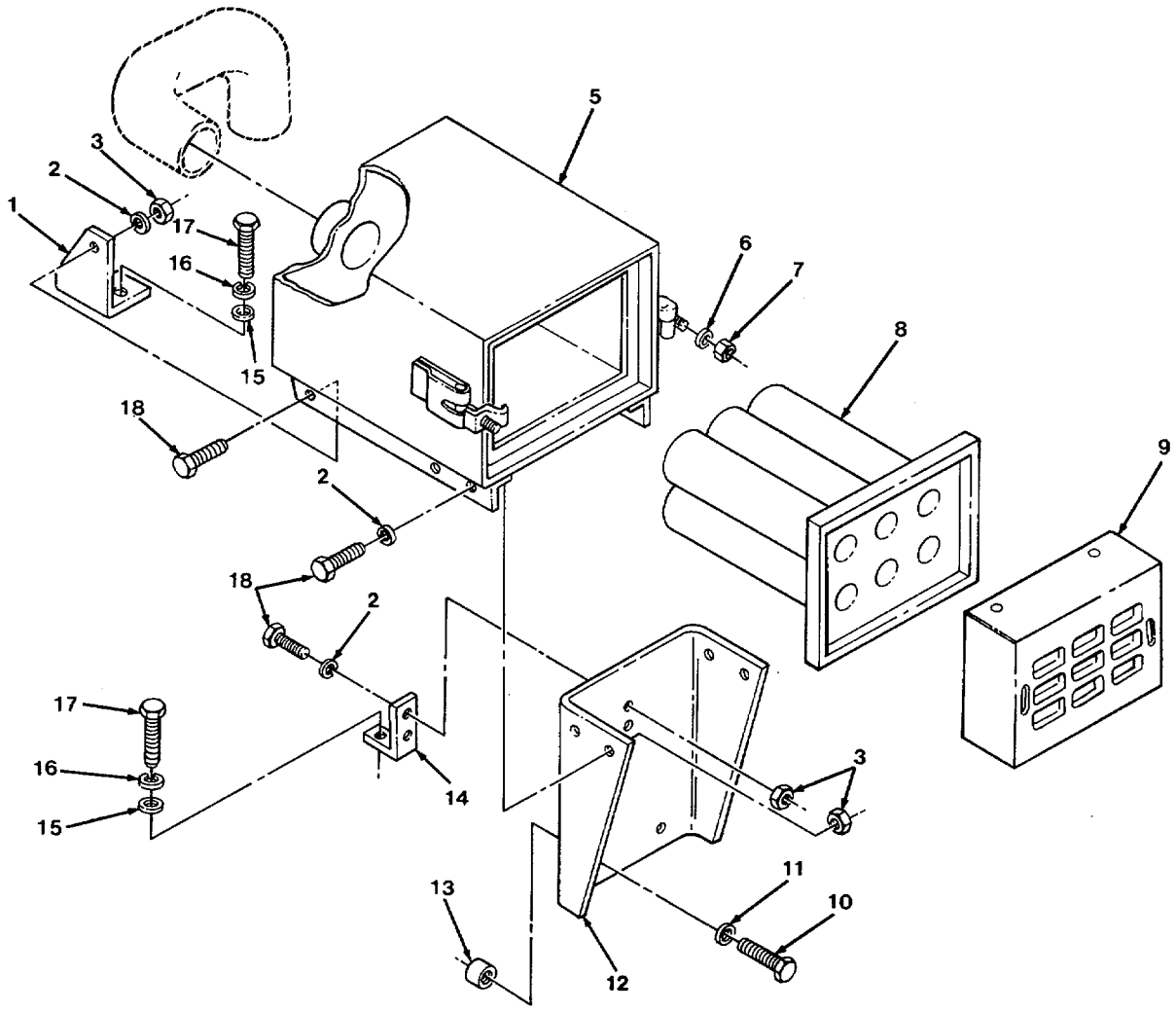

TA505139

FIGURE 65. AIR CLEANER ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2933 ENGINE AIR CLEANER	
				FIG. 65 AIR CLEANER ASSEMBLY	
1	XDOZZ	13446	NA003763	..BRACKET, SPRT, FRONT	1
2	PAOZZ	96906	MS35338-48	..WASHER, LOCK	7
3	PAOZZ	96906	MS51967-14	..NUT, PLAIN, HEXAGON	7
4	XDOOO	04856	51930	..AIR CLEANER ASSY	1
5	XDOZZ	04856	52029	...HOUSING	1
6	PAOZZ	96906	MS35338-48	...WASHER, LOCK	2
7	PAOZZ	96906	MS51967-14	...NUT, PLAIN, HEXAGON	2
8	PAOZZ	21585	C-12233-GR-12	...FILTER ELEMENT, INTA AIR CLEANER ASSEMBLY	1
9	XDOZZ	04856	58249-1	...MOISTURE TRAP	1
10	PAOZZ	96906	MS90725-135	..SCREW, CAP, HEXAGON H	2
11	PAOZZ	96906	MS35338-144	..WASHER, LOCK	2
12	XDOZZ	13446	NA002364	..BRACKET, SUPPORT, AR	1
13	XDOZZ	13446	0920464	..SPACER, BRACKET	2
14	XDOZZ	13446	NA003769	..BRACKET, SUPPORT	1
15	PAOZZ	96906	MS27183-21	..WASHER, FLAT	3
16	PAOZZ	80045	23MS35338-50	..WASHER, LOCK	3
*17	PAOZZ	80204	B18218H063C113N	..SCREW, CAP, HEXAGON H	3
*18	PAOZZ	80204	B1821BH050C075N	..SCREW, CAP, HEXAGON H	7

END OF FIGURE

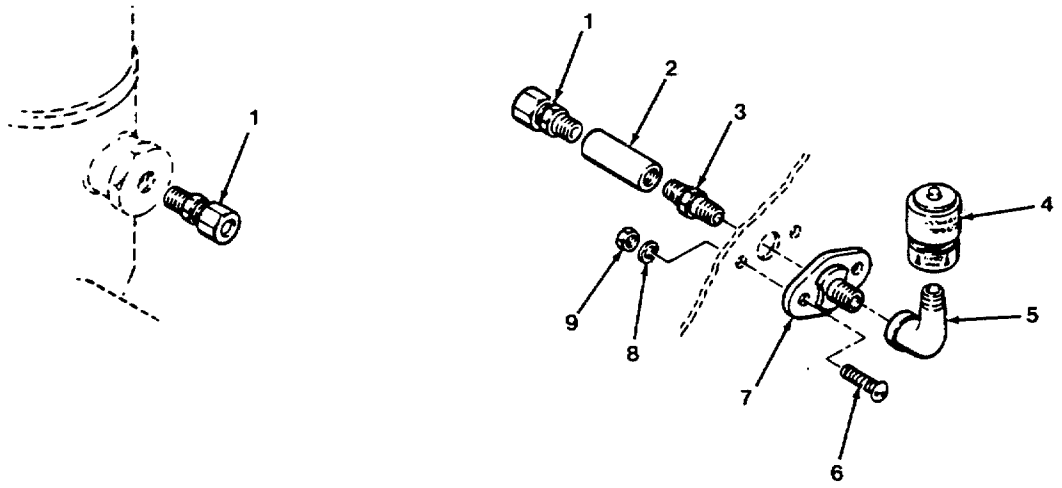

FIGURE 66. AIR RESTRICTOR INDICATOR.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2933 ENGINE AIR CLEANER	
				FIG. 66 AIR RESTRICTOR INDICATOR	
1	PAOZZ	1250	000-027-081	..ADAPTER, STRAIGHT, PIK	2
2	PAOZZ	96906	MS39233-2	..COUPLING, PIPE	1
3	PAOZZ	97907	9196130	..NIPPLE, PIPE	1
4	PAOZZ	18265	RBX00-2252	..RESTRICTION INDICAT	1
5	PAOZZ	96906	MS39230-2	..ELBOW, PIPE	1
6	PAOZZ	96906	MS51957-79	..SCREW. MACHINE	2
7	PB0ZZ	18265	P-10-5168	..FLANGE, RESTRICTION	1
8	PAOZZ	96906	MS35338-44	..WASHER, LOCK	2
9	PAOZZ	96906	MSS5196-3	.NUT, PLAIN, HEXAGON	2
				END OF FIGURE	

1

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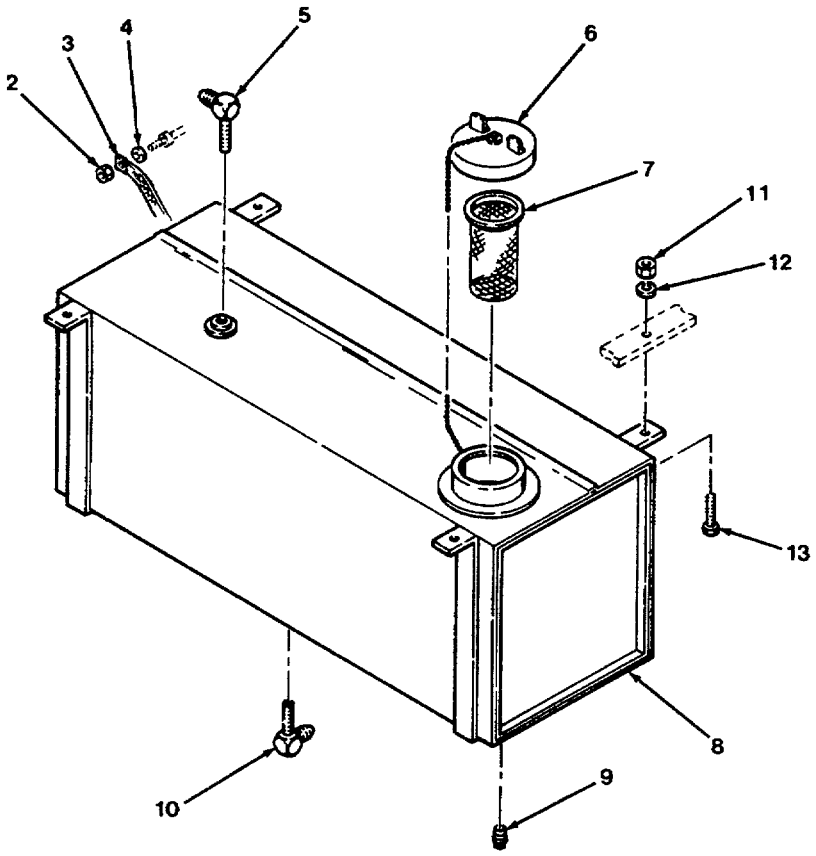
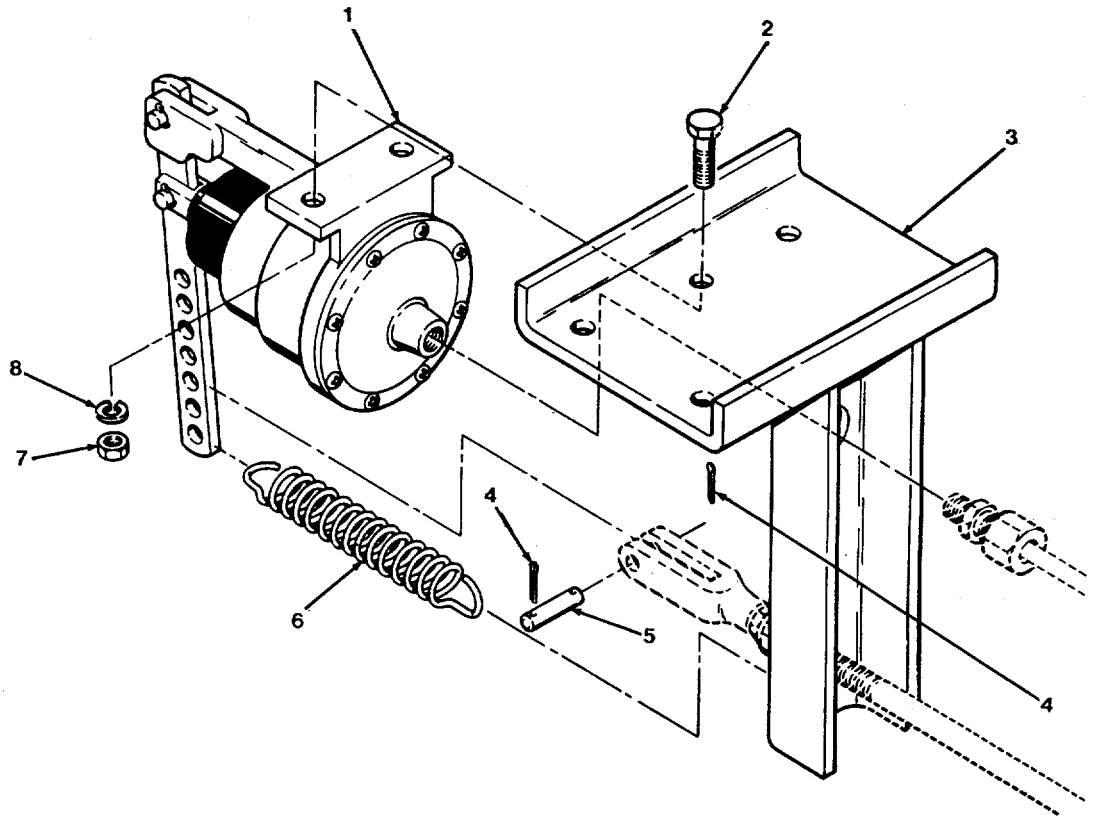


TA505141

FIGURE 67. FUEL TANK.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2935 ENGINE FUEL TANK	
				FIG. 67 FUEL TANK	
1	XDOOO	37562	B1900-5200	..FUEL TANK ASSEMBLY	1
2	PAOZZ	96906	MS51967-23	...NUT, PLAIN, HEXAGON	1
3	XDOZZ	16428	71284	...LEAD, ELECTRICAL	1
4	PAOZZ	96906	MS27183-23	...WASHER, FLAT	1
5	XDOZZ	37562	B1900-5218	...ELBOW, FUEL RETURN	1
6	XDOZZ	37562	B1900-5206	...CAP, FILLER, OPENING	1
*7	PAOZZ	49349	19-61	...STRAINER ELEMENT, SE	1
8	XDOOO	37562	B1900-5225	...TANK, FUEL	1
9	PAOZZ	96906	MS20913-2S	...PLUG, PIPE	1
10	XDOZZ	37562	B1900-5217	...ELBOW, FUEL OUTLET	1
11	PAOZZ	96906	MS35649-2382	..NUT, PLAIN, HEXAGON	4
12	PAOZZ	96906	MS35338-46	..WASHER9LOCK	4
*13	PAOZZ	80204	B1821BH038C113N	..SCREW, CAP, HEXAGON H	4
				END OF FIGURE	



TA505142

FIGURE 68. THROTTLE CONTROL VALVE.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2936 ENGINE SPEED GOVERNOR AND CONTROLS	
				FIG. 68 THROTTLE CONTROL VALVE	
1	PAOZZ	11331	WM388U1C2B	..CYLINOER ASSEMBLY, A	1
2	PAOZZ	80204	B1821BH025C100N	..SCREW, CAP, HEXAGON H	2
3	XDOZZ	37562	B1900-5301	..BRACKET, SUPPORT	1
4	PAOZZ	96906	MS24665-353	..PIN, COTTER	2
5	PAOZZ	96906	MS35810-3	..PIN, STRAIGHT, HEADED	1
6	PAOZZ	37562	B1900-5133	..SPRING, HELICAL, EXTE	1
7	PAOZZ	96906	MS51967-3	..NUT, PLAIN, HEXAGON	2
8	PAOZZ	96906	MS35338-44	..WASHER, LOCK	2

END OF FIGURE

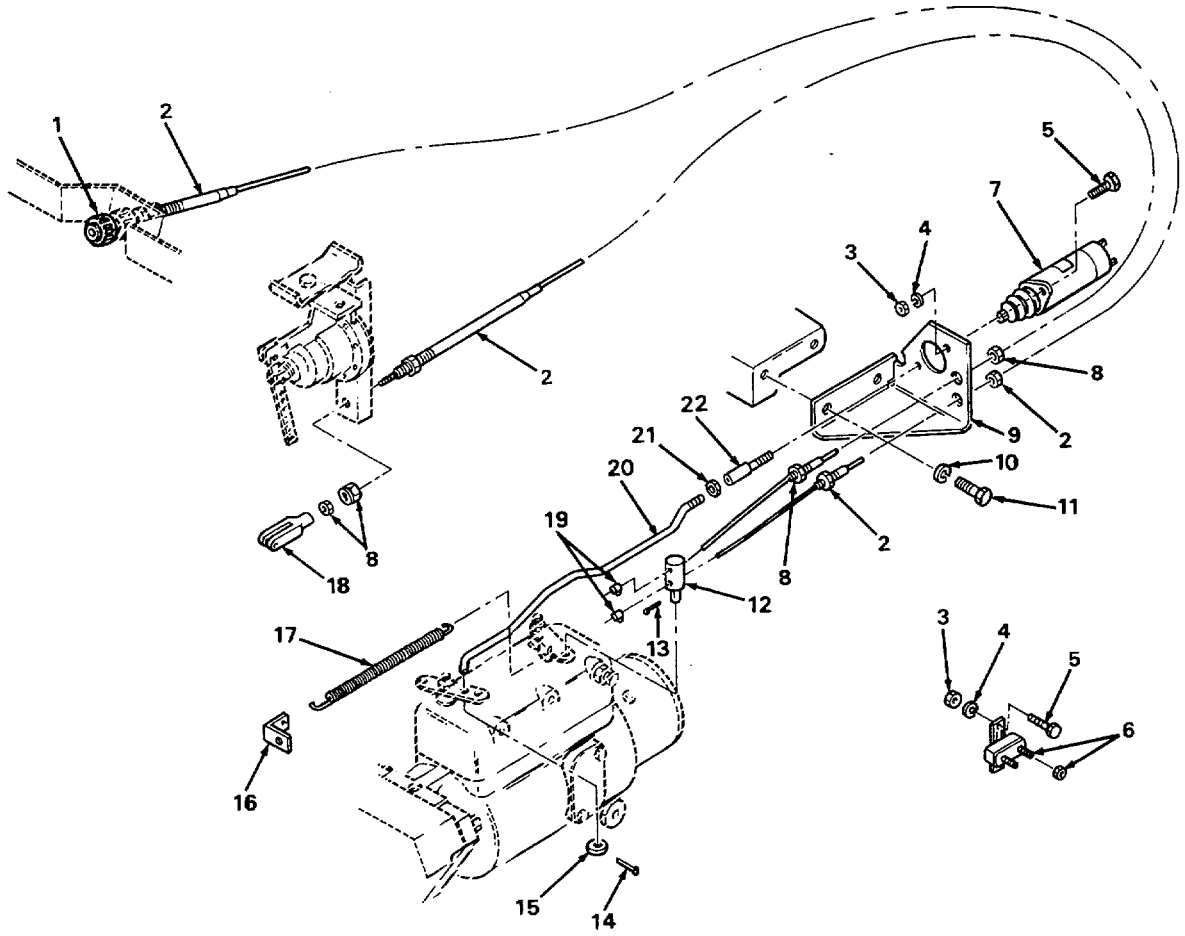


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FIGURE 69. THROTTLE CONTROLS.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2936 ENGINE SPEED GOVERNOR AND CONTROLS	
				FIG. 69 THROTTLE CONTROLS	
*1	PBOZZ	41625	307941-003	..KNOB, VERNIER CONTRO	1
*2	XDOZZ	41625	307142-0-32	..CABLE, SPECIAL ORDER LEAVE 10 INCHES EXPOSED	1
*3	PAOZZ	96906	MS51967-3	..NUT, PLAIN, HEXAGON	4
*4	PAOZZ	96906	MS35338-44	..WASHER, LOCK	4
*5	PAOZZ	96906	MS90725-6	..SCREW, CAP, HEXAGON H	4
*6	XDOZZ	13446	NA002447	..CIRCUIT BREAKER NUT INCLUDED WITH UNIT	1
*7	PAOZZ	13446	NA004756	..SOLENOID, ELECTRICAL	1
*8	PBOZZ	41625	B48722-000-0042 0	..CONTROL ASSEMBLY, PU CABLE IS 32 INCHES PLUS 10 INCHES EXPOSED	1
*9	XDOZZ	37562	B1900-5129	..BRACKET, SOLENOID	1
*10	PAOZZ	96906	MS35338-46	..WASHER, LOCK	2
*11	PAOZZ	96906	MS90725-58	..SCREW, CAP, HEXAGON H	2
*12	XDOZZ	37562	B1900-5304	..PIN, THROTTLE	1
*13	PAOZZ	96906	MS24665-170	..PIN, COTTER	1
*14	PAOZZ	96906	MS24665-315	..PIN, COTTER	1
*15	PAOZZ	96906	MS27183-10	..WASHER, FLAT	1
*16	XDOZZ	37562	B1900-5306	..BRACKET, SPRING	1
*17	PAOZZ	37562	B1900-5312	..SPRING, HELICAL, EXTE	1
*18	PBOZZ	37562	B1900-5310	..CLEVIS.	1
*19	PAOZZ	41625	A37693	..STOP, CONTROL WIRE	2
*20	PFOZZ	13446	NA002393	..CONNECTING LINK, RIG	1
*21	PAOZZ	96906	MS51968-5	..NUT, PLAIN, HEXAGON	1
*22	XDOZZ	13446	NA003485	..BRACKET, FILTER MOUN	1

END OF FIGURE

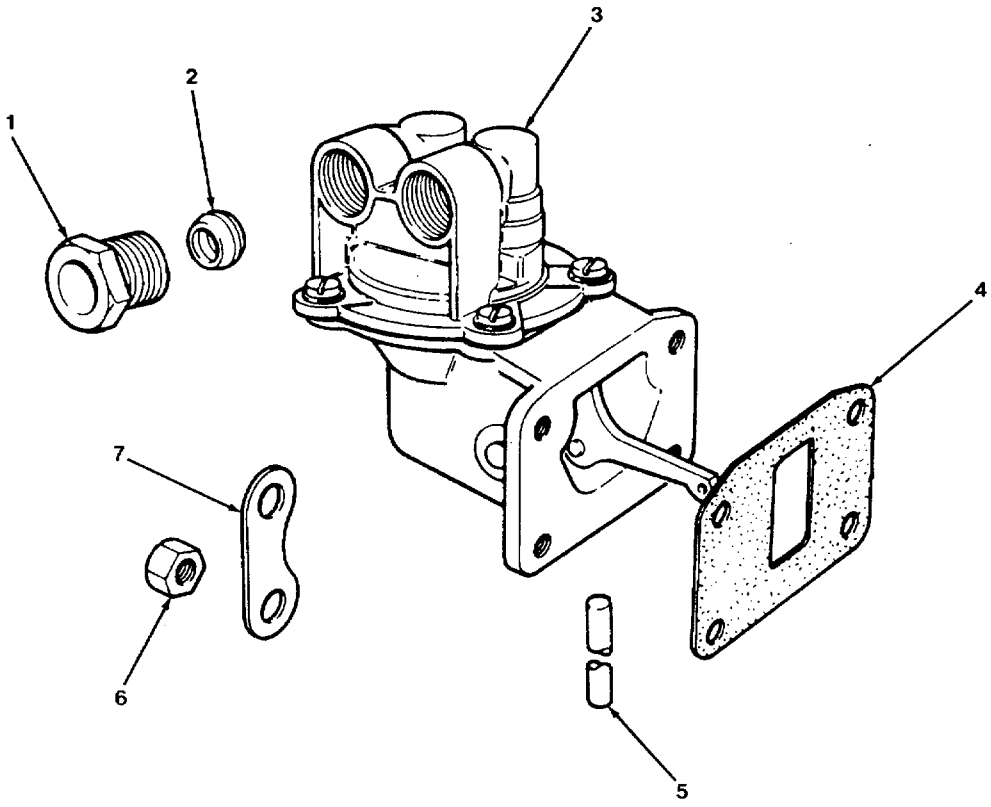

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FIGURE 70. FUEL OIL PUMP.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2937 ENGINE FUEL FILTER FIG. 70 FUEL OIL PUMP	
1	PAOZZ	13446	0571346	..ADAPTER, STRAIGHT, PI	1
2	PAOZZ	13446	056604	..SLEEVE, CLINCH, TUBE.....	1
3	PAOFF	13446	2641702	..PUMP.FUEL, CAM ACTUA	1
4	PAOZZ	13446	36851113	..GASKET, FUEL LIFT PU.....	1
5	PAOZZ	13446	07002T9	..PIN, STRAIGHT, HEAOLE	1
6	PAOZZ	13446	33221115	..NUT, PLAIN, HEXGON.....	4
7	PAOZZ	13446	3624t316	..PLATE, RETAINING, FUE.....	2

END OF FIGURE

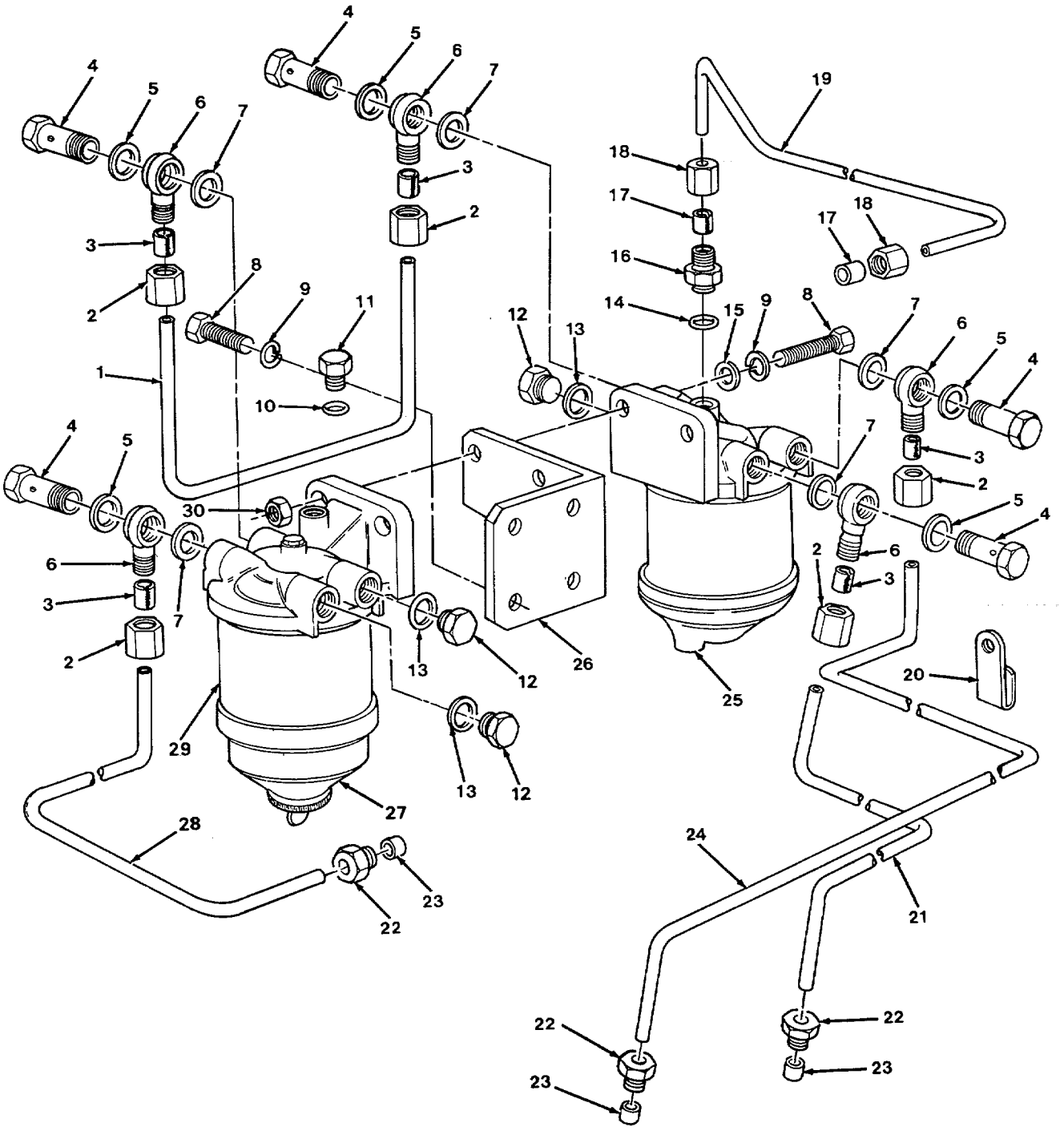

FIGURE 71. PRIMARY FUEL FILTER.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2937 ENGINE FUEL FILTER	
				FIG. 71 PRIMARY FUEL FILTER	
1	PAOZZ	13446	34237308	..TUBE, BENT, METALLIC	1
2	PAOZZ	13446	33225413	..NUT, FILTER END	5
3	PAOZZ	13446	33811115	..SLEEVE, SECONDARY FI	
4	XDOZZ	13446	0095332	..BOLT	5
5	PAOZZ	30076	981652	..WASHER	5
6	PAOZZ	13446	0201091	..CONNECTION, FUEL	5
*7	PAOZZ	K5436	0920154	..WASHER, FLAT	5
8	PAOZZ	13446	0746453	..SCREW, CAP, HEXAGON H	4
9	PAOZZ	13446	0920054	..WASHER, LOCK	4
10	PAOZZ	30076	101985	..WASHER, FLAT	1
11	PAOZZ	13446	32161113	..PLUG, MACHINE THREAD	1
*12	PAOZZ	13446	0650204	..PLUG, MACHINE THREAD	3
13	PAOZZ	13446	0920112	..WASHER, FLAT	3
14	PAOZZ	13446	0920146	..WASHER, FLAT	1
15	PAOZZ	30076	992630	..WASHER	2
16	XDOZZ	13446	33555338	..ADAPTER, STRAIGHT, PI	1
17	PAOZZ	13446	33811112	..SLEEVE, COMPRESSION	2
18	PAOZZ	13446	33225412	..NUT, THERMOSTART TUB	2
19	PAOZZ	13446	34416314	..TUBE BENT, METALLIC	1
20	PAOZZ	13446	0181029	..CLAMP, LOOP	1
21	PAOZZ	13446	35842068	..TUBE ASSEMBLY, METAL	1
22	XBOZZ	13446	33532118	..NUT	3
23	XDOZZ	13446	33811113	..PACKING, PREFORMED	3
24	PAOZZ	13446	35843081	..TUBE ASSEMBLY, METAL	1
25	PFOZZ	13446	2656613	..FILTER, FLUID	1
26	XDOZZ	13446	36444318	..BRACKET	1
*27	PFOZZ	13446	2656615	..FILTER, FLUID	1
*28	PAOZZ	13446	35842006	.TUBE, BENT, METALLIC	1
*29	PAOZZ	75160	AT17387T	..FILTER ELEMENT, FLUI FUEL FILTER	1
*30	PAOZZ	13446	0576051	..NUT, PLAIN, HEXAGON	2

END OF FIGURE

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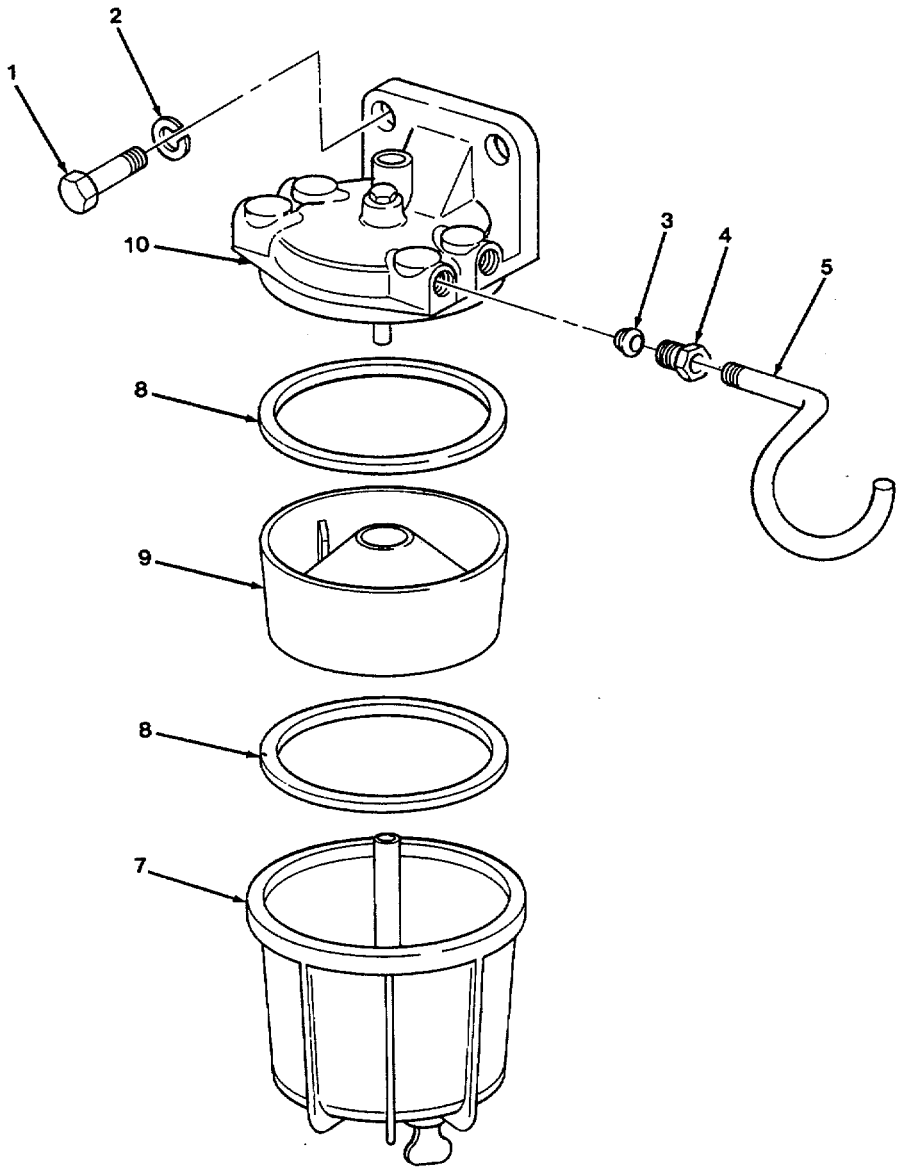

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FIGURE 72. WATER TRAP.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2937 ENGINE FUEL FILTER	
				FIG. 72 WATER TRAP	
1	PAOZZ	96906	MS90725-58	..SCREW, CAP, HEXAGON H.....	2
2	PAOZZ	96906	MS35338-46	..WASHER, LOCK.....	2
3	PAOZZ	13446	0566004	..SLEEVE, CLINCH, TUBE.....	1
4	PAOZZ	13446	0571346	..ADAPTER, STRAIGHT PI	1
5	PBOZZ	37562	B1900-5111-A	..TUBE ASSEMBLY ,METAL	1
6	PAOOO	13446	2656084	..FILTER UNIT, FLUID, P	1
7	PBOZZ	13446	2656084-X	...FILTER BODY, FLUID.....	1
8	PAOZZ	13446	0490786	...GASKET.....	2
*9	PAOZZ	13446	2656084	...FILTER UNIT, FLUID, P	1
10	XAOZZ	13446	2656084-Z	...HEAD	1

END OF FIGURE

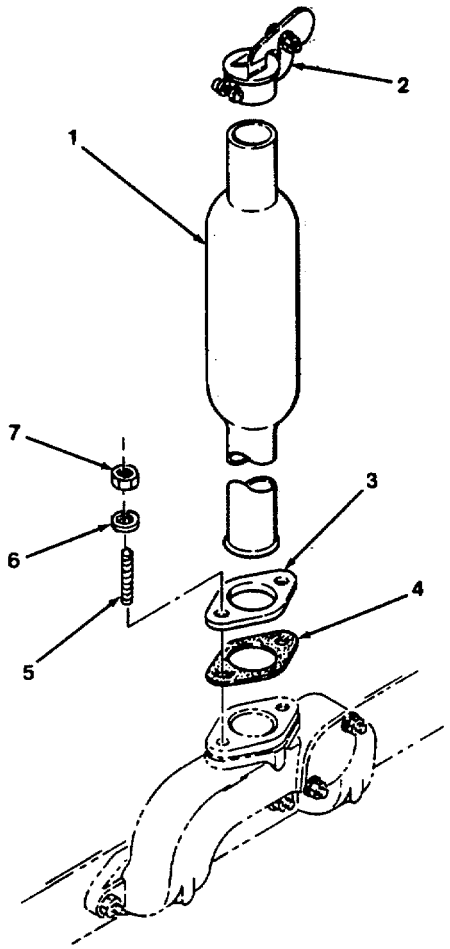

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FIGURE 73. EXHAUST MUFFLER.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2941 ENGINE MUFFLER, EXHAUST AND TAIL PIPES	
				FIG. 73 EXHAUST MUFFLER	
*1	PBOZZ	66351	TM-B-1900-42	..MUFFLER, EXHAUST	1
2	XDOZZ	13446	NA002354	..CAP ASSY, PROTECTIVE	1
3	XDOZZ	13446	0380068	..FLANGE	1
4	PAOZZ	13446	0490228	..GASKET	1
5	PAOZZ	13446	0826242	..STUD, PLAIN	2
6	PAOZZ	30076	992629	..WASHER, FLAT	2
7	PAOZZ	13446	2188134	..NUT, PLAIN, HEXAGON	2

END OF FIGURE

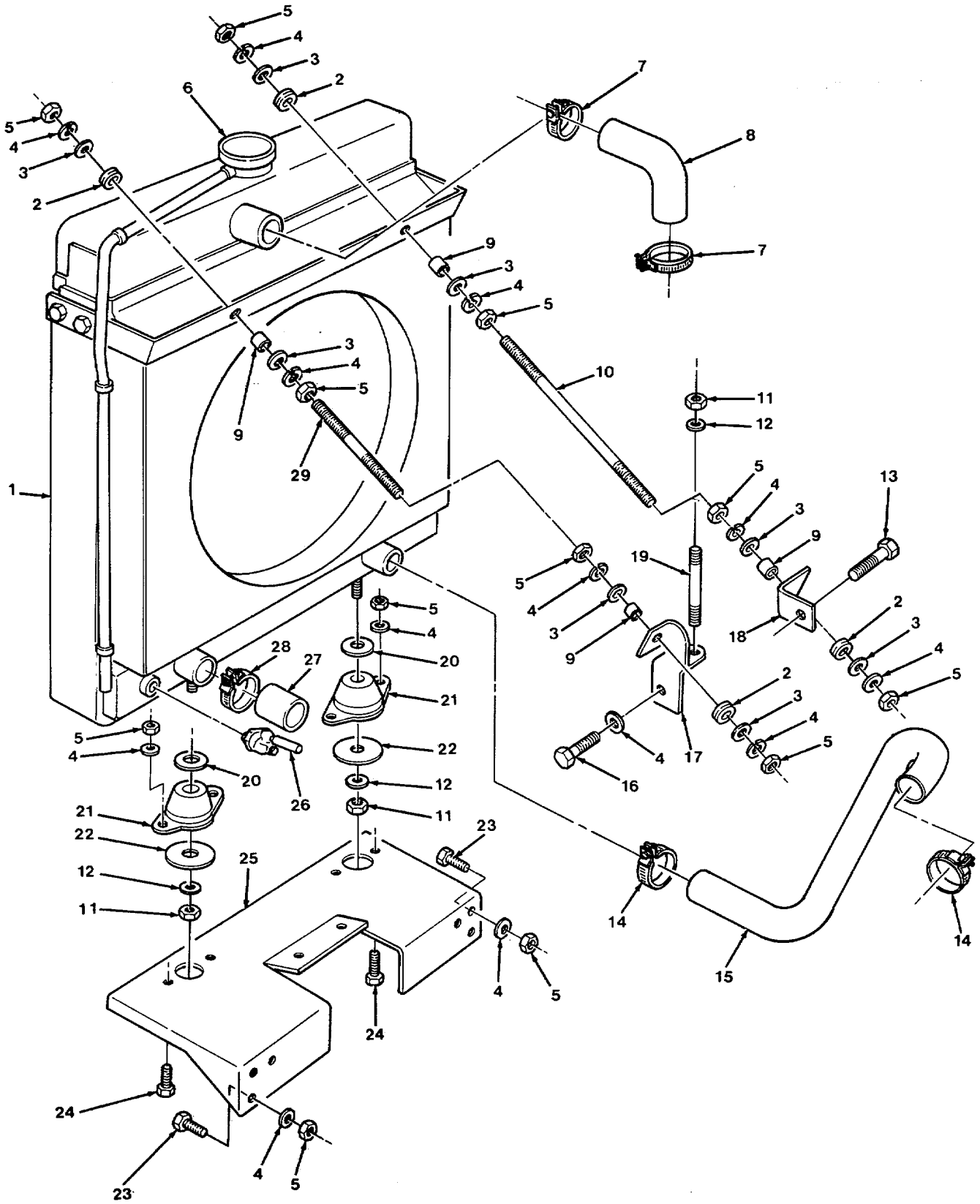

FIGURE 74. RADIATOR ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2951 ENGINE RADIATOR, SHELL, CORE, AND EXPANSION TANK	
				FIGURE 74 RADIATOR ASSEMBLY	
1	PBOHH	13446	24858203	..RADIATOR, ENGINE COC	1
2	PAOZZ	13446	0920769	..GROMMET, NONMETALLIC	4
3	PAOZZ	13446	0920497	..WASHER LOCK	8
4	PAOZZ	13446	0920053	..WASHER LOCK	21
5	PAOZZ	13446	0576002	..NUT, PLAIN, HEXAGON	18
6	XDOZZ	13446	24850016	..CAP, FILLER OPENING	1
7	PAOZZ	13446	2481820	..CLAMP, HOSE	2
8	PAOZZ	13446	34821425	..HOSE, PREFORMED	1
9	XDOZZ	13446	33132112	..SPACER	4
10	XDOZZ	13446	32517124	..STAY, RH	1
11	PAOZZ	13446	0576051	..NUT, PLAIN, HEXAGON	3
12	PAOZZ	13446	0920054	..WASHER, LOCK	3
13	PAOZZ	13446	0096208	..BOLT, MACHINE	1
14	PAOZZ	13446	248t813	..CLAMP, HOSE	2
15	PAOZZ	13446	34828434	..HOSE, PREFORMED.	1
16	PAOZZ	13446	0746254	..SCREW, CAP, HEXAGON	1
17	XDOZZ	13446	38343115	..BRACKET, LH	1
18	XDOZZ	13446	3654414	..BRACKET RH	1
19	XDOZZ	13446	08264T7	..STUD	8
20	PAOZZ	13446	0920488	..WASHER, FLAT	2
21	XDOZZ	13446	2635164	..RUBBER SHOCK	2
22	PAOZZ	13446	33124146	..WASHER, FLAT	2
23	PAOZZ	13446	0746255	..SETSCREW	6
24	PAOZZ	13446	0746253	..BOLT, MACHINE	4
25	XDOZZ	13446	38342162	..BRACKET	1
26	PAOZZ	13446	2461163	..COCK, DRAIN	1
27	PFOZZ	13446	0150170	..CAP, FILLER OPENING	1
28	PAOZZ	13446	0180108	..CLAMP, HOSE	1
29	XDOZZ	t3446	32517117	..STAY, LH	1
				END OF FIGURE	

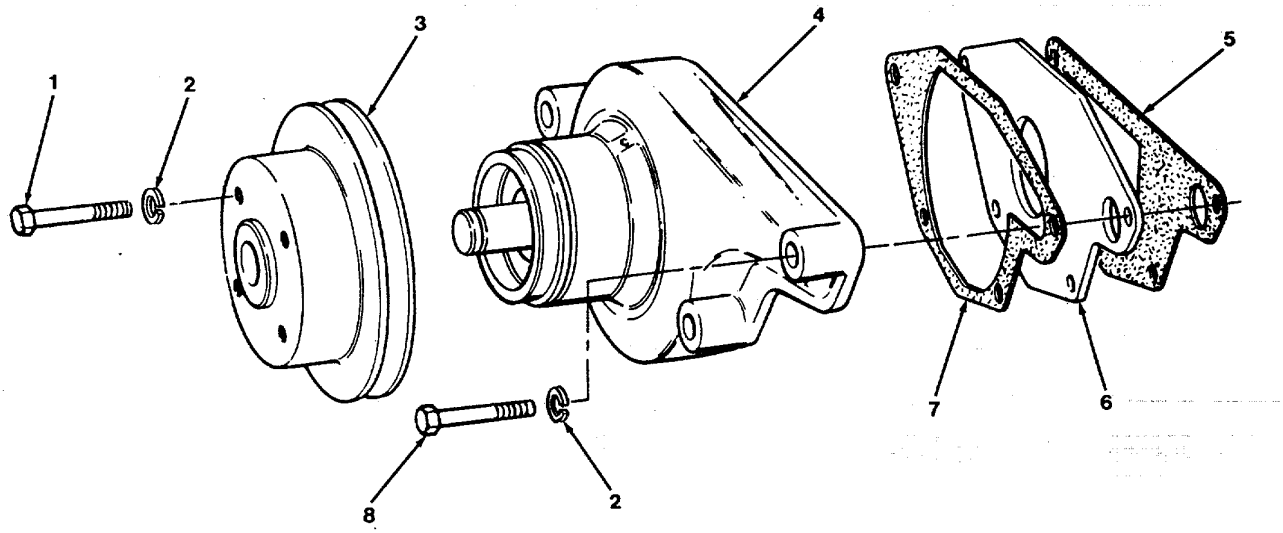

FIGURE 75. WATER PUMP ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2954 ENGINE WATER PUMP	
				FIGURE 75 WATER PUMP ASSEMBLY	
1	PAOZZ	13446	0096236	..SCREW, MACHINE	2
2	PAOZZ	13446	0920053	..WASHER, LOCK	3
3	XDOZZ	13446	31146803	..PULLEY	1
4	XDOZZ	13446	41312471	..WATER PUMP, ENGINE	1
5	PAOZZ	13446	3686671t3	..GASKET.	1
6	XDOZZ	13446	36243515	..PLATE, WATER PUMP	1
7	PAOZZ	13446	36866421	..GASKET	1
8	PAOZZ	13446	0096234	..BOLT MACHINE	1
				END OF FIGURE	

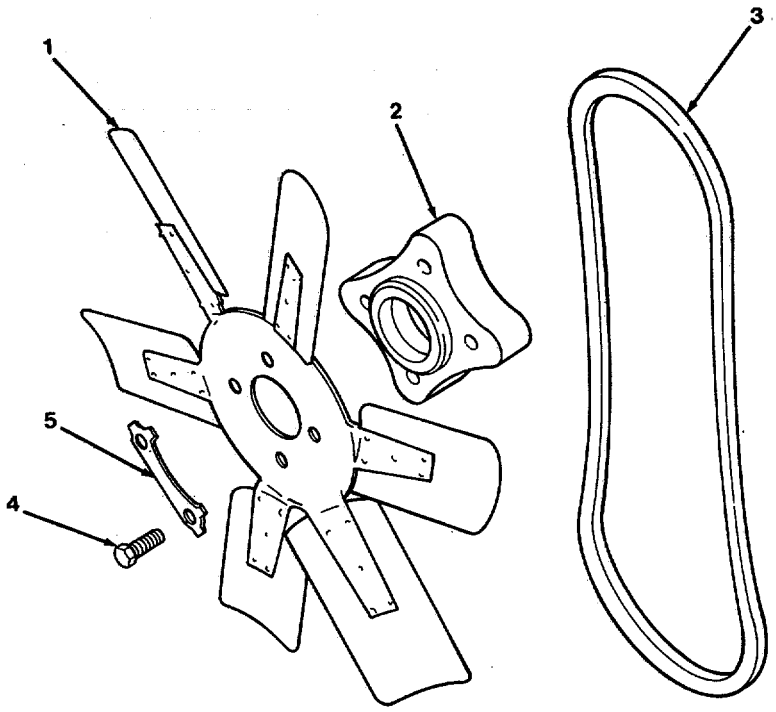

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FIGURE 76. FAN AND DRIVE.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2955 ENGINE FAN, FAN DRIVER FAN BELTS, FAN	
				FIGURE 76 FAN AND DRIVE	
1	PBOZZ	13446	31257137	..IMPELLER. FAN, AXIAL	1
2	XDOZZ	13446	37413581	..EXTENSION	1
3	PAOZZ	10988	G10013	..BELT, V	1
4	PAOZZ	13446	0096231	..BOLT, MACHINE	4
5	PAOZZ	13446	0920645	..WASHER, KEY	2
				END OF FIGURE	

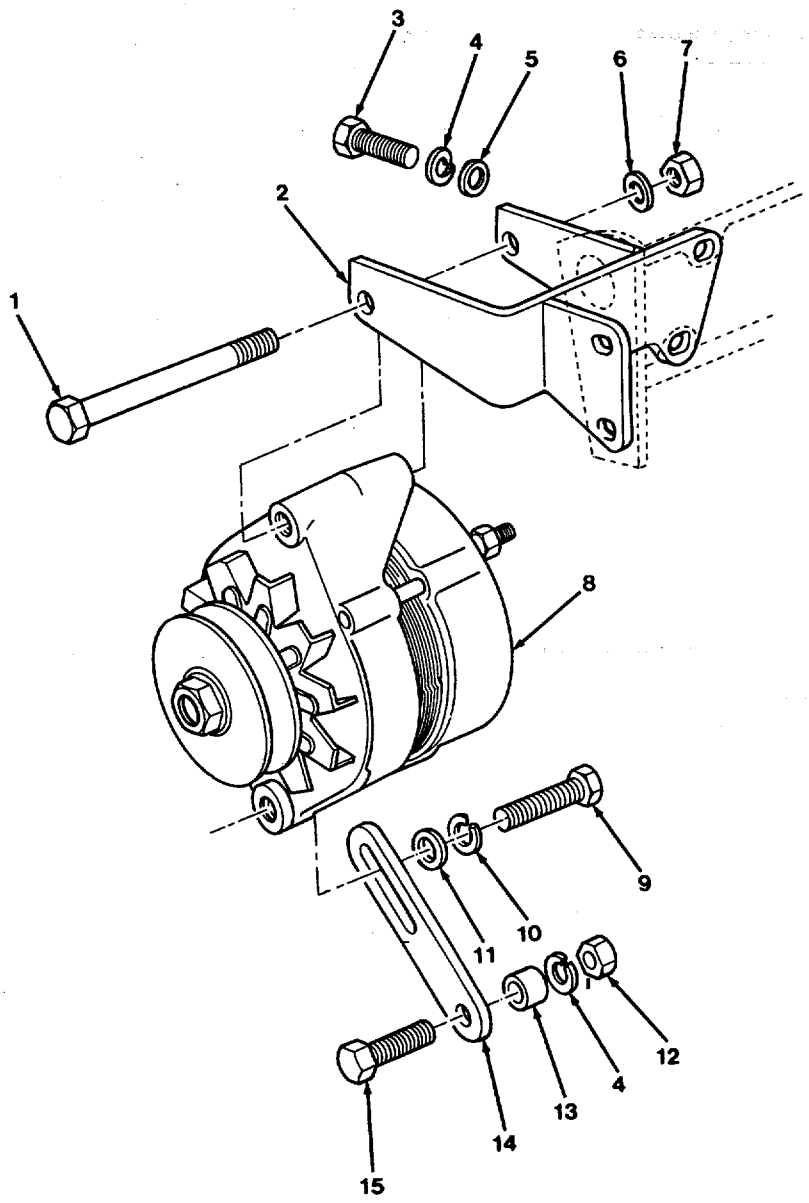

FIGURE 77. ALTERATION INSTALLATION .

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2961 GENERATOR FIGURE 77 ALTERNATOR INSTALLATION	
1	PAOZZ	13446	0746601	..BOLT, MACHINE	1
2	XDOZZ	13446	38163111	..BRACKET.	1
3	PAOZZ	13446	0096235	..BOLT, MACHINE	2
4	PAOZZ	13446	0920053	WASHER, LOCK	3
5	PAOZZ	30076	992629	..WASHER, FLAT	2
6	PAOZZ	30076	992632	..WASHER	1
7	PAOZZ	13446	2211305	..NUT, PLAIN, HEXAGON	1
8	XDOZZ	16764	1103133	..GENERATOR, ENGINE	1
9	PAOZZ	13446	0096433	..BOLT, MACHINE	1
10	PAOZZ	13446	0920054	..WASHER, LOCK.	1
11	PAOZZ	30076	992630	..WASHER	1
12	PAOZZ	13446	0576002	..NUT, PLAIN, HEXAGON	1
13	XDOZZ	13446	33245114	..BUSHING, SPACER.	1
14	XDOZZ	13446	36155132	..BRACKET	1
15	PAOZZ	13446	0096234	..BOLT, MACHINE.	1

END OF FIGURE

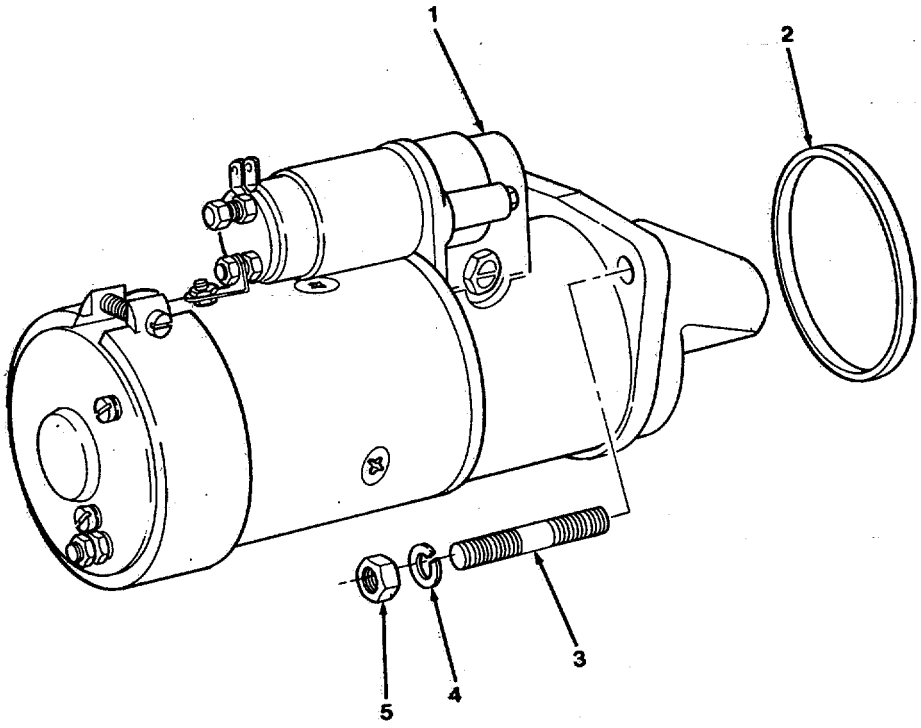

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FIGURE 78. STARTER INSTALLATION.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2963 STARTER AND WIRING	
				FIGURE 78 STARTER INSTALLATION	
* 1	PAOZZ	16764	1113273	..STARTER, ENGINE, ELEC.....	1
2	PAOZZ	13446	33127109	..SPACER, RING	1
3	PAOZZ	13446	0827810	..STUD, PLAIN.....	2
4	PAOZZ	13446	0920054	..WASHER, .LOCK	2
5	PAOZZ	13446	0576051	..NUT, PLAIN, HEXAGON.....	2
				END OF FIGURE	

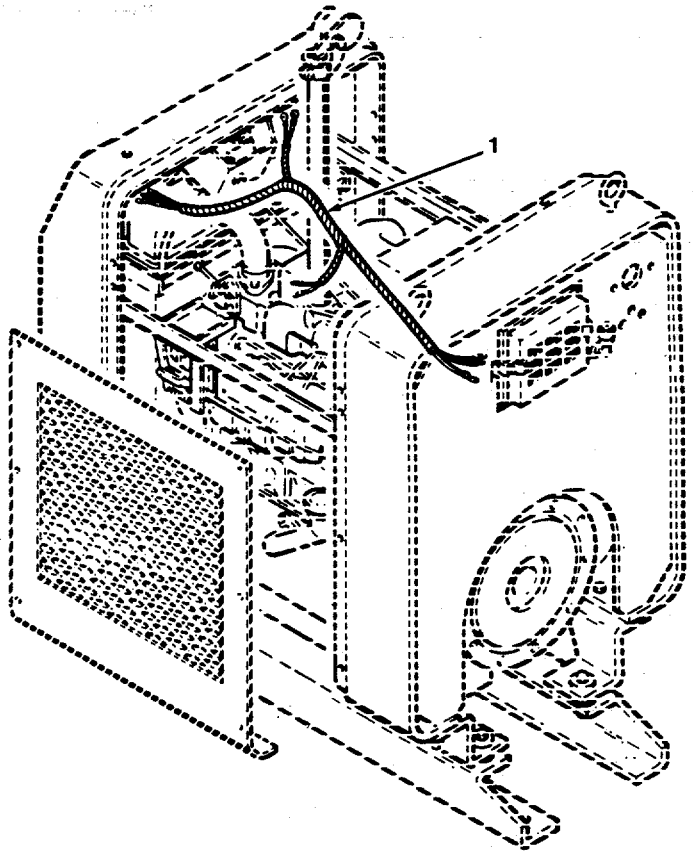

FIGURE 79. ENGINE WIRING HARNESS.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 2963 STARTER AND WIRING	
				FIGURE 79 ENGINE WIRING HARNESS	
1	PAOZZ	13446	NA003441	..WIRING HARNESS, BRAN.....	1

END OF FIGURE

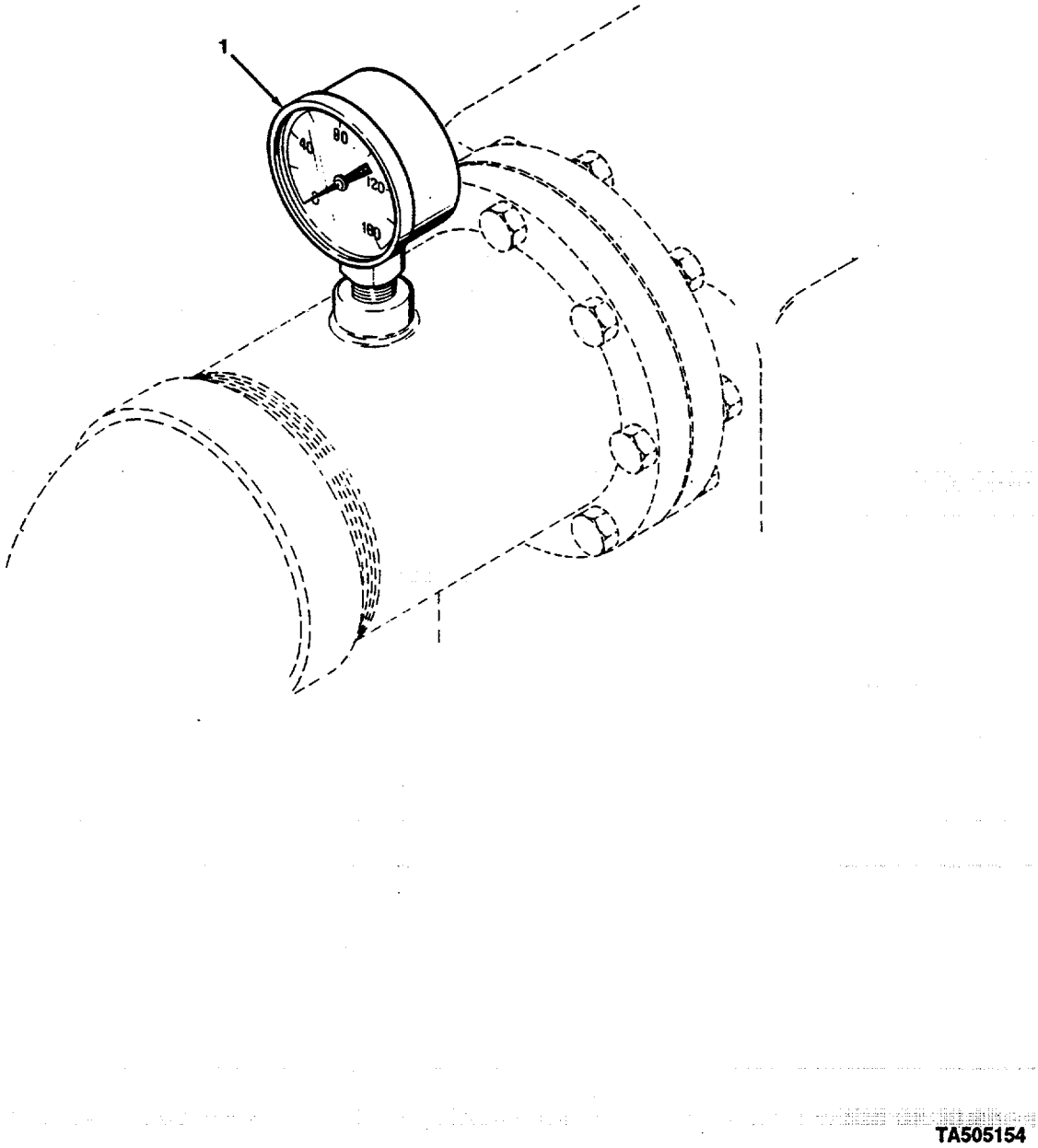

FIGURE 80. PRESSURE GAGE.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 47 GAGES (NONELECTRICAL)	
				GROUP 4702 GAGES	
				FIGURE 80 PRESSURE GAGE	
1	PAOZZ	37562	B1900-6017	GAGE, PRESSURE DIAL DIAL FACE READS 0-160 PSI.....	3

END OF FIGURE

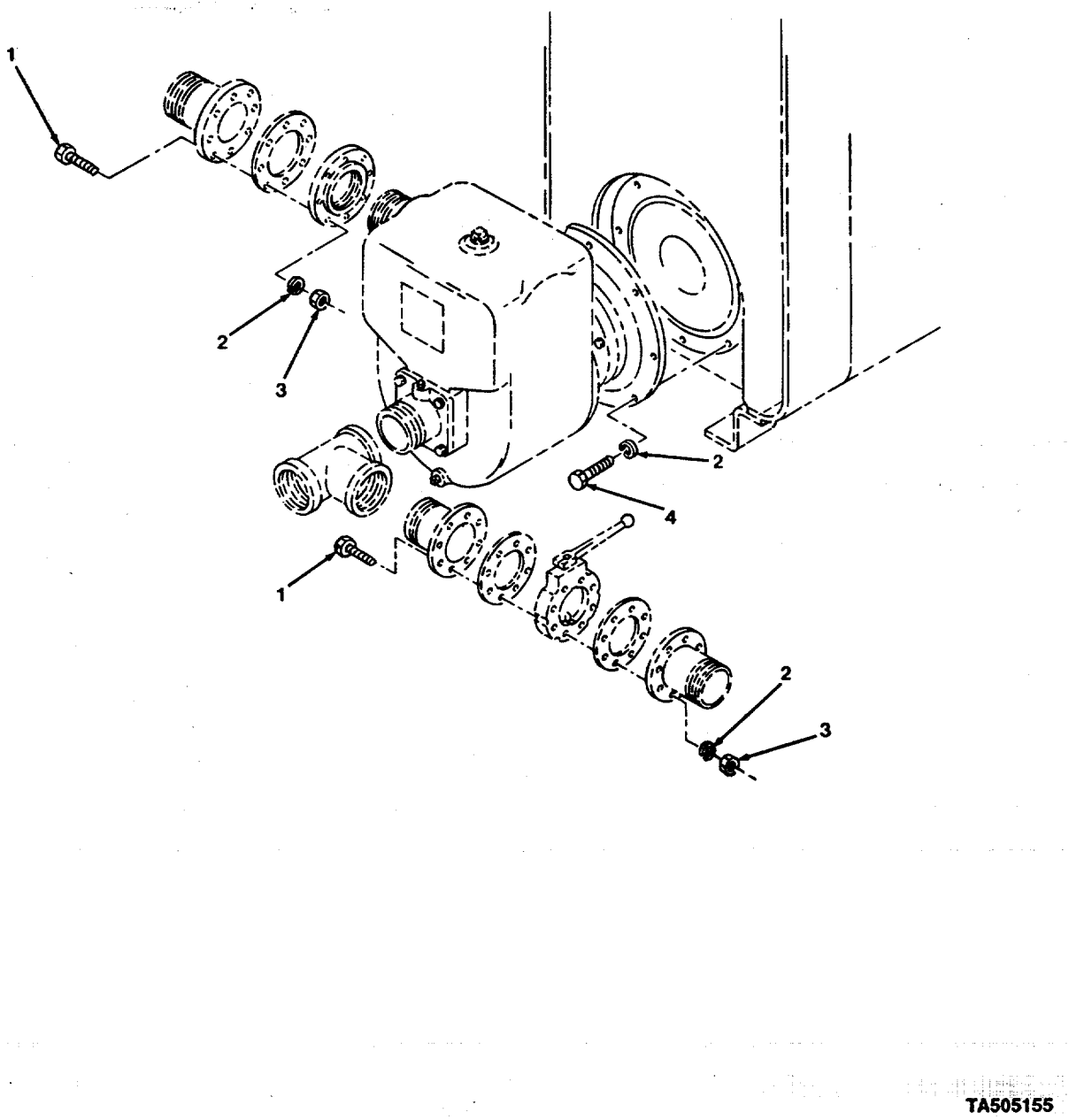

FIGURE 81. PUMP INSTALLATION.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 72 DISPENSING AND SERVICING EQUIPMENT COMPONENTS GROUP 7202 PUMPS AND METERS FIGURE 81 PUMP INSTALLATION	
1	PAOZZ	96906	MS90725-68	SCREW, CAP, HEXAGON H	16
2	PAOZZ	96906	MS35338-46	WASHER ,LOCK	28
3	PAOZZ	96906	MS35649-2382	NUT, PLAIN, HEXAGON	16
4	PAOZZ	96906	MS90726-61	SCREW, CAP, HEXAGON	8

END OF FIGURE

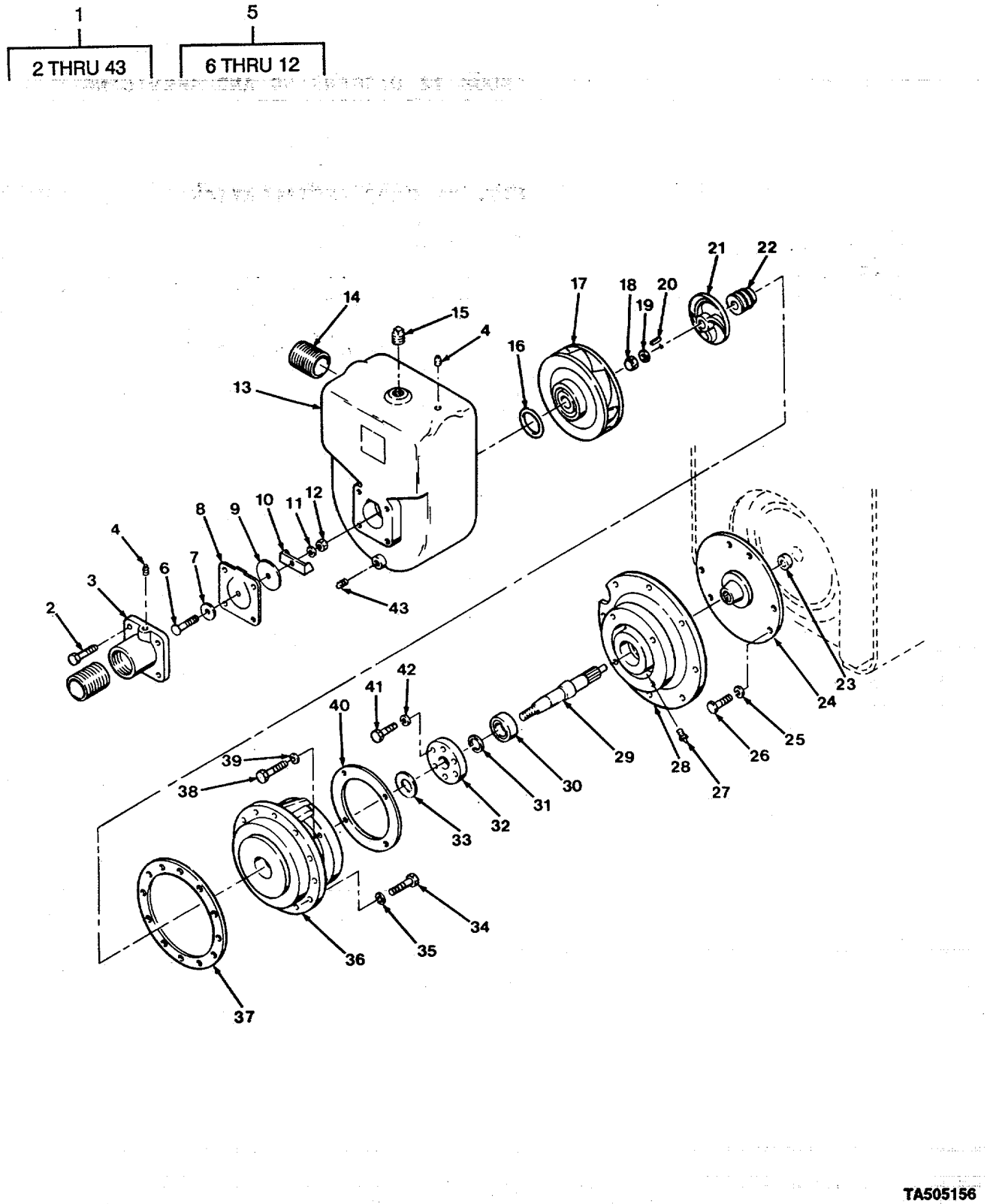

FIGURE 82. WATER DISTRIBUTOR PIMP ASSEMBLY.

	(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
					GROUP 7202 PUMPS AND METERS	
					FIGURE 82 WATER DISTRIBUTOR PUMP **A**SSEMBLY	
	1	PFOHH	38455	4C7/SPEC Q6486AB	.PUMP, CENTRIFUGAL	1
*	2	PAOZZ	80204	B1821BH050C113N	.SCREW, CAP, HEXAGON H	4
	3	XDOZZ	38455	22471-02	.INLET.	1
	4	PAOZZ	96906	MS20913-1S	.PLUG, PIPE	2
	5	PAHHH	38455	27186-00	.DISK, VALVE	1
	6	PAHZZ	96906	MS35751-125	.BOLT, SQUARE NECK	1
	7	PAHZZ	38455	15128-02	.VALVE, PUMP	1
	8	PAHZZ	38455	15636-00	.VALVE, CHECK.	1
	9	PAHZZ	38455	15127-02	.VALVE, PUMP	1
	10	XDHZZ	38455	27185-00	.PLATE, STOP	1
	11	PAHZZ	96906	MS35338-48	.WASHER, LOCK	1
	12	PAHZZ	96906	MS51967-14	.NUT, PLAIN, HEXAGON,	1
	13	XAHZZ	38455	21569-02	.TANK	1
	14	XDOZZ	38455	16147-000	.NIPPLE, CLOSE	2
	15	PAHZZ	96906	MS20913-65	.PLUG, PIPE	1
	16	PAHZZ	38455	21316-00	.GASKET	1
	17	XDHZZ	38455	21578-02	.DIFFUSER	1
	18	PAHZZ	72962	41NTE164	.NUT, SELF-LOCKING,	1
	19	PAHZZ	38455	30586-00	.WASHER, IMPELLER	1
	20	PAHZZ	38455	22967-00	.KEY, WOODRUFF	1
	21	XDHZZ	38455	36442-02	. IMPELLER	1
	22	PAHZZ	38455	2535600	.SEAL ASSEMBLY, SHAFT	1
	23	XDHZZ	38455	41232-00	.PILOT	1
*	24	PFHZZ	38455	41219-00	.PLATE, DRIVE	1
	25	PAHZZ	96906	MS35338-45	.WASHER, LOCK	8
*	26	PAHZZ	80205	NAS1351-5440P	.SCREW, CAP, SOCKET	8
	27	PAHZZ	38455	25924-00	.FITTING, LUBRICANT P	1
	28	XDHZZ	38455	29235-02	.ADAPTER	1
*	29	PFHZZ	38455	42524-00	.SHAFT	1
	30	PAHZZ	15175	A51655-14	.BEARING, BALL, ANNULA	1
	31	PAHZZ	96906	MS16624-3177	.RING, RETAINING	1
*	32	PFHZZ	38455	28745-02	.CAP, BEARING	1
	33	XDHZZ	38455	20831-00	.SLINGER	1
	34	PAHZZ	96906	MS90726-61	.SCREW, CAP, HEXAGON H	8
	35	PAHZZ	96906	MS35338-46	.WASHER, LOCK	8
	36	XDHZZ	38455	21579-02	.LANTERN	1
*	37	PAHZZ	38455	2143T-000	.GASKET-	1
	38	PAHZZ	96906	MS90726-60	.SCREW, CAP, HEXAGON H	8
	39	PAHZZ	96906	MS35340-46	.WASHER, LOCK	8
	40	XDHZZ	38455	4C7-01	.SHIM	1
*	41	PAHZZ	80204	B1821BH063C175N	.SCREW, CAP. HEXAGON H	6
	42	PAHZZ	12603	23E10	.WASHER, LOCK	6
	43	PAHZZ	96906	MS20913-2S	.PLUG, PIPE	1

END OF FIGURE

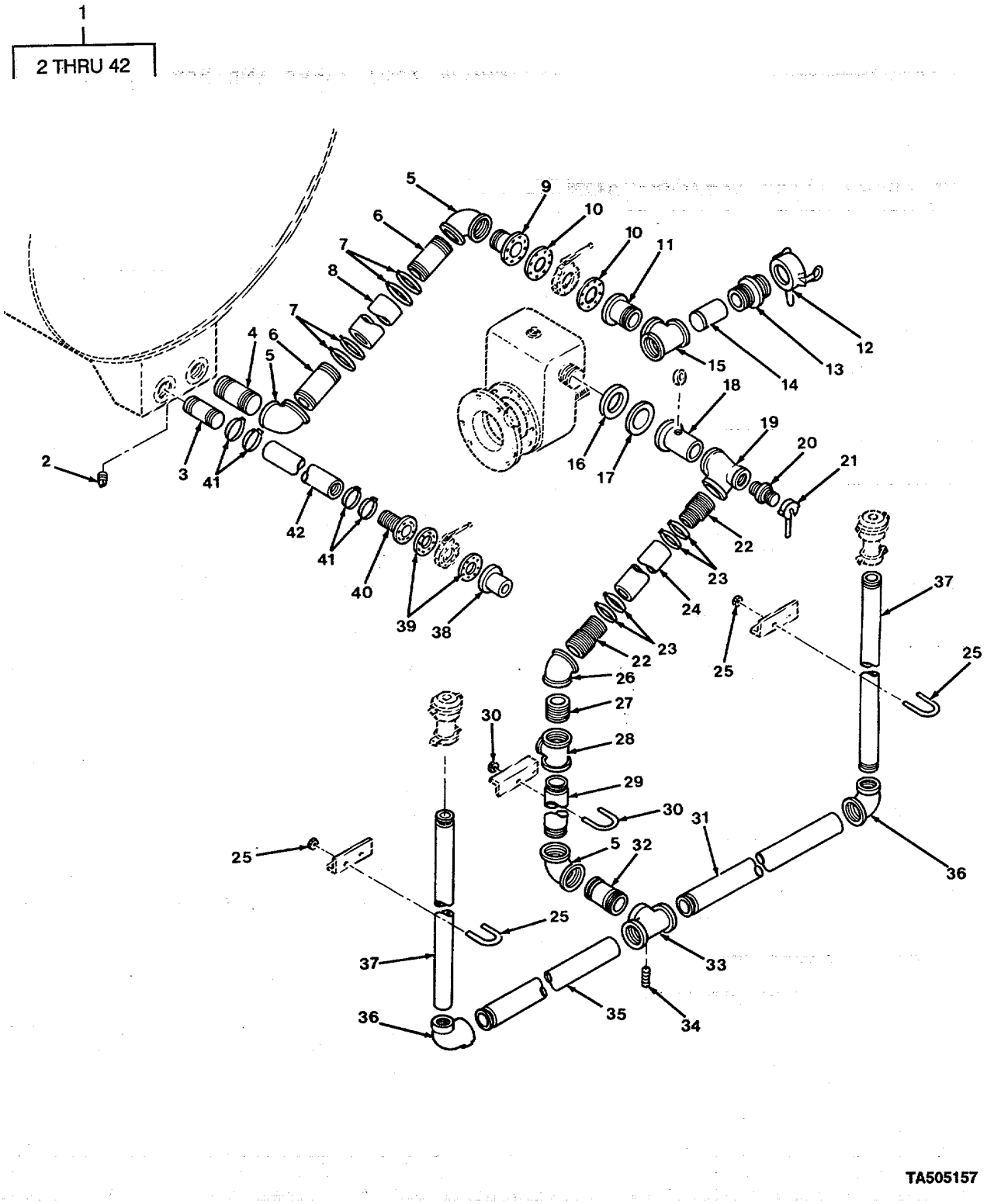

FIGURE 83. WATER PIPING ASSEMBLY.

	(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
					GROUP 7203 VALVES, FITTINGS, LINES	
					FIGURE 83 WATER PIPING ASSEMBLY	
	1	XDOOO	37562	81900-6000	WATER, PIPING ASSY	1
*	2	PAOZZ	81348	WW-P-471AASBCC	.PLUG, PIPE	1
	3	XDOZZ	37562	B1900-6034	.NIPPLE, SUMP	1
	4	XDOZZ	37562	S1900-6013	.PIPE, SUMP	1
	5	XDOZZ	72423	1001-600	.ELBOW, 90	3
	6	XDOZZ	37562	B1900-6010	.NIPPLE, CLOSE	2
	7	PAOZZ	96906	MS35842-16	.CLAMP, HOSE	4
	8	PAOZZ	37562	B1900-6011	.HOSE, NONMETALLIC	1
	9	XDOZZ	37562	B1900-6006	.VALVE NIPPLE ASSY	1
	10	XDOZZ	13226	RGA-4018A	.GASKET, FLANGE	2
	11	XDOZZ	37562	B1900-6005	.NIPPLE, VALVE	2
*	12	PAOZZ	96906	MS27028-18	.CAP, QUICK DISCONNEC	1
	13	PAOZZ	80691	F-4	.ADAPTER, BRONZE	1
	14	PFOZZ	37562	B1900-6003	.STRAINER ELEMENT, SE	1
	15	XDOZZ	72423	1021-600	.TEE, SUCTION	1
	16	XDOZZ	37562	B1900-6014	.FLANGE, DISCHARGE	1
	17	PAOZZ	37562	B1900-6015	.GASKET	1
	18	XDOZZ	37562	B1900-6016	.NIPPLE, GAGE PIPE	1
	19	XDOZZ	?2423	1021-565	.TEE, REDUCER	1
	20	PFOZZ	00912	361	.ADAPTER, STRAIGHT, PI	1
	21	XDOZZ	00912	B-1391	.CAP, PROTECTIVE, DUST	1
	22	XDOZZ	37562	B1900-6604	.NIPPLE, DISCHARGE	2
	23	PAOZZ	96906	MS35842-15	.CLAMP, HOSE	4
	24	PAOZZ	37562	B1900-6023	.HOSE, NONMETALLIC	1
	25	PAOZZ	37562	B1900-6047	.BOLT, U U-BOLT WITH NUTS AS A UNIT	2
	26	XDOZZ	72423	1002-600	.ELBOW, 45	1
	27	XDOZZ	37562	B1900-6026	.NIPPLE, CLOSE	1
	28	XDOZZ	72423	1021-590	.TEE, REDUCING	1
	29	XDOZZ	37562	B1900-6035	.PIPE, DISCHARGE	1
	30	PAOZZ	37562	81900-6048	.BOLT, U U-BOLT WITH NUTS AS A UNIT	1
	31	XDOZZ	37562	B1900-6042	.PIPE, HORIZONTAL, RH	1
	32	XDOZZ	37562	B1900-6037	.PIPE, DISCHARGE	1
	33	PAOZZ	37562	B1900-6038	.TEE, PIPE	1
	34	PAOZZ	96906	MS20913-2S	.PLUG. PIPE	2
	35	XDOZZ	37562	B1900-6039	.PIPE, HORIZONTAL, LH	1
	36	XDOZZ	72423	1001-598	.ELBOW, REDUCING, 90	2
	37	PFOZZ	37562	B1900-6044	.PIPE, METALLIC	2
	38	XDOZZ	37562	B1900-6028	.NIPPLE, DISCHARGE	1
	39	PAOZZ	13226	RCA301BN	.GASKET	2
	40	XDOZZ	37562	B1900-6029	.DISCHARGE. V NIPPLE	1
	41	PAOZZ	96906	MS35842-14	.CLAMP, HOSE	4
	42	PAOZZ	37562	B1900-6032	.HOSE, NONMETALLIC	1

END OF FIGURE

1

2 THRU 13

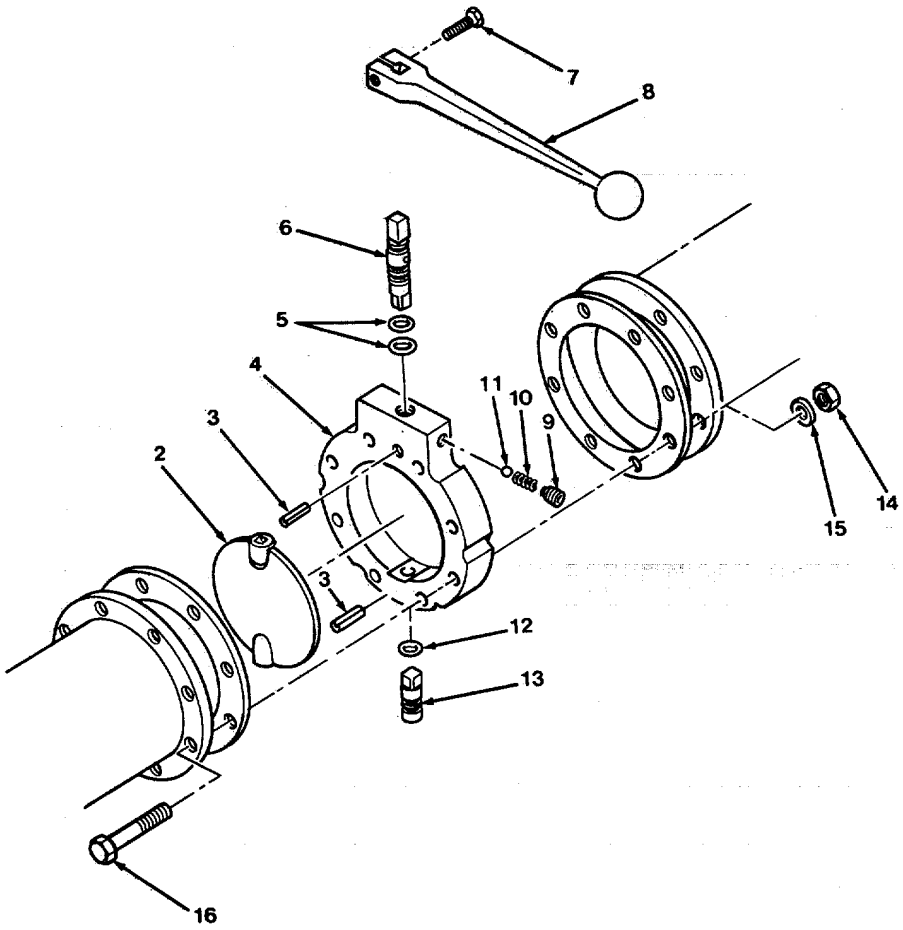

FIGURE 84. THREE INCH VALVE.

	(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
					GROUP 7203 VALVES, FITTINGS, LINES FIGURE 84 THREE INCH VALVE	
*	1	XDOOO	13226	WD301-AL-B	.VALVE, WAFER	1
	2	XDOZZ	13226	101-3-BN	..DISK, VALVE	1
	3	XDOZZ	13226	108-3	..PIN	2
	4	XDOZZ	13226	100D-3-D1	..BODY, VALVE	1
	5	PAOZZ	13226	WD105-BN	..PACKING, PREFORMED	2
*	6	PFOZZ	13226	104-3	..STEM, FLUID VALVE	1
	7	XDOZZ	13226	103-3	..SCREW, MACHINE	1
	8	PBOZZ	13226	102-3	..LEVER, MANUAL CONTRO	1
	9	XDOZZ	13226	111-3	..RETAINER, SPRING	1
	10	XDOZZ	13226	110-3	..SPRING, DETENT	1
	11	XDOZZ	13226	109-3	..BALL, DETENT	1
	12	PAOZZ	13226	W0144-BN	..PACKING, PREFORMED	1
	13	XDOZZ	13226	WD141MS	..STEM, FLUID VALVE	1
	14	PAOZZ	96906	MS35649-2382	.NUT, PLAIN, HEXAGON	8
	15	PAOZZ	96906	MS35338-46	.WASHER, LOCK	8
	16	PAOZZ	96906	MS90725-68	.SCREW, CAP, HEXAGON H	8

END OF FIGURE

1
2 THRU 13

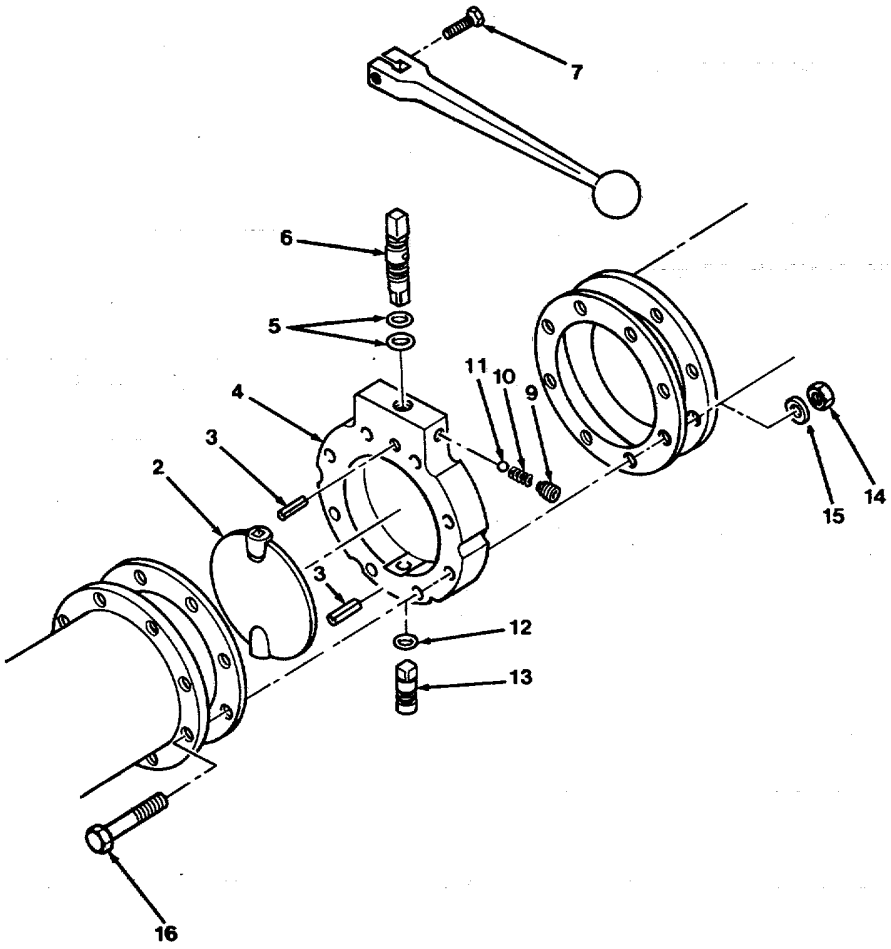

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FIGURE 85. FOUR INCH VALVE.

	(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
					GROUP 7203 VALVES, FITTINGS, LINES FIGURE 85 FOUR INCH VALVE	
	1	PAOOO	13226	WD401-ME-B	.VALVE, GATE	1
	2	XDOZZ	13226	101-4-BN	..DISC, VALVE	1
	3	PAOZZ	13226	WD108CP	..PIN, SPRING	2
	4	XDOZZ	13226	100D-4-01	..BODY, VALVE	1
	5	XDOZZ	13226	105-4	..PACKING, PREFORMED	2
*	6	XDOZZ	13226	104-4	..STEM, FLUID VALVE	1
	7	PAOZZ	13226	103-4	..SCREW, CAP, HEXAGON H	1
	8	PBOZZ	13226	WD135-CP	..HANDLE, BUTTERFLY VA	1
	9	XDOZZ	13226	111-4	..SCREW, RETAINER	1
	10	PAOZZ	13226	110-4	..SPRING, DETENT	1
	11	XDOZZ	13226	109-4	..BALL, DETENT	1
	12	PAOZZ	96906	MS28775-113	..PACKING, PREFORMED	1
*	13	PFOZZ	13226	106-4	..SHAFT, GATE VALVE	1
	14	PAOZZ	96906	MS35649-2382	.NUT, PLAIN, HEXAGON	8
	15	PAOZZ	96906	MS35338-46	.WASHER, LOCK	8
	16	PAOZZ	96906	MS90725-68	.SCREW, CAP, HEXAGON H	8

END OF FIGURE

1

2 THRU 12

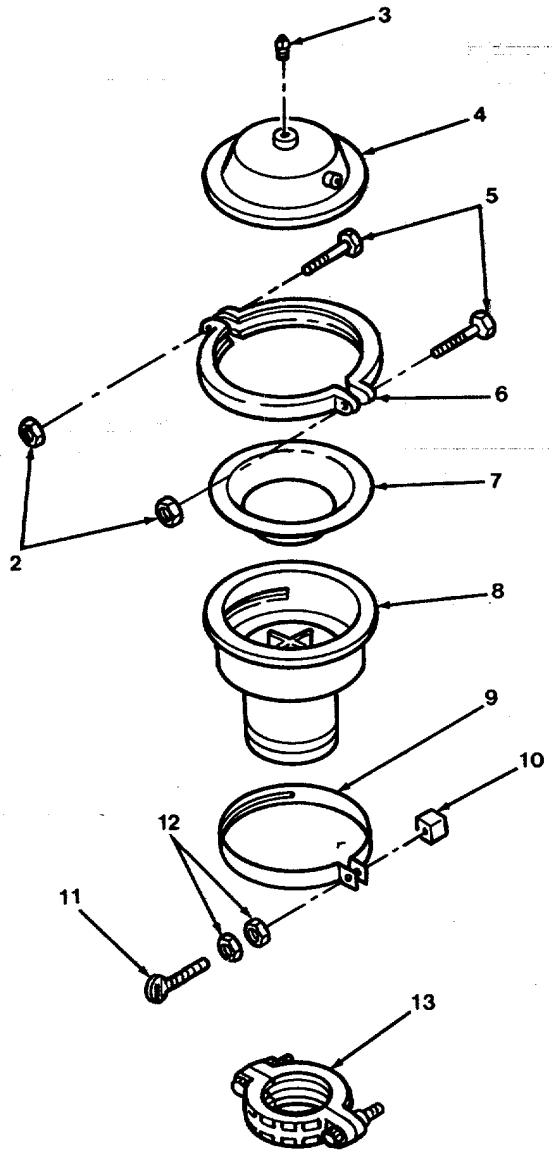

FIGURE 86. SPRINKLER VALVE.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
				GROUP 7203 VALVES, FITTINGS LINES	
				FIGURE 86 SPRINKLER VALVE	
1	XDOOO	37562	B1900-6046	.SPRINKLER VALVE.	1
2	PAOZZ	96906	MS35650-3382	.NUT, PLAIN, HEXAGON	2
3	PAOZZ	96906	MS20913-25	..PLUG, PIPE	1
4	PAOZZ	58J76	W-5202AT	..COVER, SPRINKLER	1
5	PAOZZ	96906	MS90726-67	..SCREW, CAP, HEXAGON H	2
6	PAOZZ	58076	W-5204R	..CLAMP, LOOP	2
7	PAOZZ	58076	W-5203AD	..DIAPHRAGM, SPRINKLER.	1
8	XDOZZ	37562	B1900-6070	..BODY, VALVE	1
9	XDOZZ	58076	W-5207AB	..BAND, ADJUSTING, SPRI	1
10	PAOZZ	58076	W-5210LN	..NUT, PLAIN, SQUARE	1
11	PAOZZ	58076	W-5208LN	..THUMBSCREW	1
12	PAOZZ	96906	MS35649-2382	..NUT, PLAIN, HEXAGON	2
13	PAOZZ	79154	C-030-77-OT	.COUPLING, CLAMP, PIPE	1

END OF FIGURE

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)		(6) QTY
				GROUP 94 REPAIR KITS		
				GROUP 9401 REPAIR KITS		
				FIGURE KIT		
	PAOZZ	78500	9001	PARTS KIT, BRAKE SHO.....		V
				BUSHING, ANCHOR PIN (	2)	20-8
				PIN, STRAIGHT, HEADLE(	2)	20-9
				RETAINER, BRAKE SHOE(	1)	20-12
				RING, RETAINING (	4)	20-6
				ROLLER, LINEAR-ROTAR(	2)	20-11
				SPRING, SHOE RETURN (	1)	20-1
				WASHER, FLAT (	4)	20 7
				END OF FIGURE		

	(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES(UOC)	(6) QTY
					GROUP 95 GENERAL USE STANDARDIZED PARTS	
					GROUP 9501 BULK MATERIEL	
					FIGURE BULK	
	1	PAOZZ	30327	C606-100	HOSE, NONMETALLIC.....	V
*	2	PBOZZ	01276	FC-300-06	HOSE, NONMETALLIC.....	V
	3	PAOZZ	65282	06642-0000	HOSE, NONMETALLIC.....	V
	4	PBOZZ	01276	2570-6	HOSE, NONMETALLIC.....	V
*	5	PBOZZ	01276	2570-8	HOSE, NONMETALLIC.....	V
	6	PBOZZ	13226	PB-64-0250	TUBING NONMETALLIC	V
	7	PBOZZ	13226	PB-86-0250	TUBING, NONMETALLIC	V
	8	PBOZZ	13226	PB-108-0100	TUBING, NONMETALLIC	V
	9	PAOZZ	78174	C10ER	WIRE, ELECTRICAL.....	V
	10	PAOZZ	78174	C12E	WIRE, ELECTRICAL.....	V
	11	XDOZZ	93316	1954Y	WIRE, ELECTRICAL.....	V
	12	PAOZZ	79550	57209	WIRE, ELECTRICAL.....	V
	13	PAOZZ	64488	81122S	WIRE, ELECTRICAL.....	V
	14	PAOZZ	64488	81123S	WIRE, ELECTRICAL.....	V
*	15	XDOZZ	64488	81162S	WIRE, ELECTRICAL.....	V
	16	PAOZZ	61928	954	WIRE, ELECTRICAL.....	V
					END OF FIGURE	

CROSS-REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5305-00-004-3162	30	3	3020-00-065-0231	58	4
2530-00-007-2271	21	2	2B15-00-066-1251	50	19
6240-00-003-1282	1	7	5360-00-066-1253	57	12
5940-00-020-0371	9	3	5305-00-068-0500	10	22
3120-00-042-4250	54	11	5305-00-068-0501	36	5
5310-00-044-3340	33	7	5305-00-068-0502	3	2
5310-00-045-3296	3	24		3	33
	4	2		9	11
	5	8		22	39
	6	2		29	2
	7	2		40	12
	8	9		69	5
	21	8	3930-00-069-3519	66	7
	35	5	5305-00-071-1315	32	32
	37	2		43	1
	41	4		43	12
	42	3		66	6
	43	9	5305-00-071-1786	38	1
4730-00-050-4203	21	1	5305-00-071-1789	48	2
5305-00-050-9227	4	1	5305-00-071-2069	29	3
	5	7		32	7
	10	26	5305-00-071-2241	47	8
	22	6	2910-00-071-2319	64	24
	47	1	2910-00-073-3201	64	25
5305-00-050-9229	3	11	4710-00-073-3209	64	28
	37	3	4710-00-073-3212	64	23
	42	4	5310-00-080-6004	25	11
	43	8		32	35
5305-00-050-9231	6	3	5305-00-087-2070	45	4
	7	3	5330-00-090-2128	24	7
	8	8	5310-00-113-3757	32	4
	35	3	3110-00-117-0759	32	46
	41	1	4820-00-142-3036	25	9
5305-00-051-0835	24	6	5940-00-143-4780	14	24
	47	4		15	5
5305-00-052-6913	44	4		15	10
3120-00-054-2149	52	5		15	15
5310-00-056-3395	25	1		15	20
	32	34		15	24
	67	11		15	30
	81	3		15	35
	84	14		15	40
	85	14		15	45
	86	12		16	2
2910-00-057-1421	71	29		16	7
5340-00-057-8689	10	21		16	21
	22	38		16	54
5310-00-058-1626	86	2		16	68
2640-00-060-3550	28	3	5940-00-143-4794	12	4
5310-00-063-6716	9	6		12	8

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5940-00-143-4794	12	12
	12	14
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	16	15
	16	25
	16	28
	16	32
	16	36
	16	42
	16	44
	16	50
	16	62
6220-00-159-2392	4	5
5306-00-159-5578	82	6
5310-00-161-9964	27	21
5305-00-165-8074	48	10
4730-00-172-0001	31	8
5330-00-184-2761	82	16
4730-00-187-4202	83	2
4730-00-187-7610	66	2
5315-00-187-9376	69	14
4730-00-194-0219	10	18
4730-00-196-1999	23	7
	25	7
9905-00-202-3639	37	4
4730-00-202-6491	22	57
2610-00-204-4033	28	1
9905-00-205-2795	37	5
5330-00-205-3583	21	3
5365-00-205-4693	21	6
5330-00-208-2208	21	13
5310-00-209-0965	38	3
	48	5
4930-00-216-6195	82	22
4730-00-217-2433	31	4
5310-00-220-6848	32	19
4730-00-221-2136	82	4
4730-00-221-2137	67	9
	82	43
	83	34
	86	3
4730-00-221-2139	51	14
4730-00-221-2140	82	15
4730-00-222-1838	40	7
5925-00-223-1842	43	7
5305-00-225-3843	47	13
	68	2
4730-00-227-7915	10	2
5315-00-234-1619	69	13
5315-00-236-8i57	26	5
	36	7
4730-00-244-9848	24	2
2590-00-247-6653	68	1
4730-00-253-4412	66	5
2610-00-260-7342	28	2
4730-00-263-5266	22	24
4730-00-265-6904	51	16
5305-00-269-2803	82	38
5305-00-269-2804	B1	4
	82	34
5305-00-269-2811	86	5
5305-00-269-3209	20	5
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5305-00-269-3211	32	48
5305-00-269-3218	81	1
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	85	16
5305-00-269-3219	32	37
5325-00-276-5954	9	13
4730-00-277-1921	31	2
4730-00-277-6324	6	4
	7	4
4730-00-278-3462	4	4
	5	10
4730-00-278-3912	23	14
4730-00-278-4575	18	1
5920-00-280-4007	1	3
5975-00-280-9193	10	9

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CROSS-REFERENCE INDEXES

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STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
9905-00-740-9721	24	1	9905-00-752-4649	16	45
9905-00-752-4649	12	3		16	48
	12	7		16	53
	12	11		16	56
	12	15		16	61
	12	19		16	66
	12	23	5365-00-753-4865	21	4
	12	27	5315-00-754-0848	68	5
	12	31	5325-00-754-1154	25	10
	13	3	5310-00-757-5449	52	9
	13	8	5310-00-763-8905	26	1
	13	13	5310-00-763-8921	39	7
	13	18		67	2
	13	23	5310-00-768-0318	29	12
	13	28		32	3
	13	33		47	17
	13	37		48	17
	13	41		65	3
	13	45		65	7
	13	49		82	12
	13	53	9905-00-774-4284	24	3
	13	57	4730-00-775-5785	67	7
	13	61	5340-00-779-5620	10	25
	14	3		22	10
	14	7	5315-00-784-0637	20	10
	14	11	5365-00-803-7303	27	17
	14	15	5310-00-809-3079	48	11
	14	19	5310-00-809-4058	9	7
	14	23		69	15
	14	29	5310-00-809-4061	10	7
	14	33	5310-00-809-8533	67	4
	15	3	2640-00-810-5861	28	4
	15	8	4730-00-817-6578	22	55
	15	13	5310-00-820-6653	26	3
	15	18		30	1
	15	23		46	3
	15	28		48	13
	15	33		65	16
	15	38		82	42
	15	43	5315-00-822-9460	32	15
	16	3	5310-00-823-8803	65	15
	16	8	5305-00-836-6680	30	4
	16	12	5315-00-836-9642	32	30
	16	16	5315-00-839-5822	68	4
	16	20	5315-00-844-5836	32	21
	16	24	6220-00-844-6471	4	11
	16	29		5	5
	16	33	6145-00-845-5959	BULK	10
	16	37	6145-00-845-9858	BULK	14
	16	40	5935-00-846-3883	3	4

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STOCK NUMBER	FIG.	ITEM
5935-00-846-3884	3	5
5310-00-851-2674	3	8
	3	32
	40	4
	43	3
	43	11
5310-00-851-2682	32	25
5305-00-855-0958	3	7
	8	5
5305-00-855-0961	40	8
2540-00-860-0575	29	8
3030-00-864-7398	76	3
2815-00-871-6892	57	22
2590-00-871-6894	51	9
	51	10
4820-00-871-6895	74	26
2815-00-871-6899	57	1
3120-00-872-6328	56	12
6680-00-872-6329	56	11
2815-00-872-6330	52	1
2815-00-875-8277	59	5
4710-00-876-8543	59	10
4730-00-876-8548	60	7
5310-00-880-2004	27	21
5310-00-880-7744	47	22
5310-00-880-7746	69	21
5310-00-880-8189	38	2
	48	6
5360-00-881-87B1	60	6
5365-00-881-8782	56	3
4820-00-884-5620	82	5
2530-00-886-1103	27	7
2920-00-890-5025	78	1
5310-00-896-0903	32	50
5330-00-897-5857	6	8
	7	8
	8	6
6220-00-897-5860	6	7
	7	7
5310-00-905-0762	29	7
	47	10
	66	9
	68	7
	69	3
6220-00-905-8494	5	1
6220-00-905-8496	6	5
5330-00-906-6254	62	1
2B15-00-906-6255	56	4
5330-00-906-6259	49	22
3020-00-906-6260	58	8
5340-00-906-6262	57	27
3120-00-906-6277	52	3
3120-00-906-6278	52	4
4320-00-908-3184	59	1
4730-00-908-6292	83	41
4730-00-908-6293	83	23
4730-00-908-6294	38	8
	83	7
5330-00-908-6658	75	7
5330-00-908-6659	75	5
2815-00-908-6661	50	6
5340-00-908-6662	57	24
2815-00-908-6663	57	23
3040-00-908-6665	57	2
2815-00-908-6680	57	25
5330-00-908-7278	49	23
2815-00-908-7286	56	8
3120-00-908-7287	56	6
2815-00-908-7288	57	14
5340-00-908-7289	57	11
2815-00-908-7291	57	29
5330-00-908-7296	49	34
5330-00-908-7297	49	19
5330-00-909-1893	58	19
2815-00-909-1897	50	7
5306-00-909-4372	49	30
2815-00-910-5287	57	28
5365-00-910-5288	55	7
5330-00-911-4790	55	8
6240-00-914-5572	4	8
	5	4
5310-00-915-4891	26	4
	30	2
	46	2
	48	14
5305-00-922-7994	39	2
5330-00-925-4293	51	6
5310-00-926-5870	65	11
5310-00-934-9751	3	15
	3	23
5310-00-934-9758	4	3
	5	9
	6	1
	7	1
	8	10
	35	4
	37	1
	41	3
	43	10
	47	19

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STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5310-00-935-9088	82	18	2530-01-083-1055	27	13
6240-00-946-9654	2	2	4330-01-084-0409	71	25
	6	6	4930-01-085-3774	72	6
4730-00-954-2637	11	8		72	9
5310-00-959-4675	32	5	5330-01-090-2107	27	15
	82	39	2940-01-093-9010	65	8
5975-00-962-7015	10	20	4730-01-095-5833	11	14
4730-00-995-1559	31	7		22	54
4730-00-999-8582	51	13		23	6
4720-01-003-6706	BULK	3	4730-01-095-7717	11	4
9905-01-008-1378	45	1	4820-01-095-8755	25	3
4730-01-010-9057	38	7	2530-01-097-7079	21	5
5330-01-010-9823	50	8	2815-01-098-1951	59	2
6220-01-011-8989	4	11	4730-01-098-4147	71	18
6145-01-020-1095	BULK	9	4730-01-098-4327	60	1
2815-01-020-7125	54	6	4730-01-098-5202	71	2
2815-01-021-0402	49	6	4730-01-098-5203	71	6
2815-01-021-1743	48	32	5340-01-098-5837	64	18
2815-01-021-5002	54	1	4730-01-098-6757	71	3
5305-01-021-6700	49	28	5310-01-098-9092	55	6
	50	1		64	4
	74	16	5365-01-098-9B15	71	5
2815-01-044-5430	54	2	4730-01-099-0189	71	17
4820-01-049-2552	84	6	2910-01-099-0220	70	7
4330-01-058-5455	61	5	5310-01-099-7017	49	31
5310-01-060-7259	32	18	5310-01-099-7150	50	10
3020-01-060-8945	32	14		71	10
3020-01-060-8946	32	13	5310-01-099-7889	50	3
3120-01-060-9315	32	20		71	15
5340-01-061-2943	32	17		77	11
5360-01-061-3204	32	38	5310-01-099-7901	51	3
5340-01-061-9023	32	45	5310-01-099-7943	58	3
3020-01-062-3840	32	40		62	6
5315-01-063-0461	32	41		64	12
4730-01-065-7552	31	6		73	6
3110-01-067-0307	32	39		77	5
5940-01-079-1375	14	25	6620-01-100-2530	80	1
	15	4	5330-01-101-4313	70	4
	15	9	5310-01-102-2713	71	14
	15	14	4730-01-105-4064	22	8
	15	19	5975-01-105-6804	10	17
	15	25	5975-01-105-6805	10	12
	15	29	2815-01-105-7501	58	25
	15	32	2815-01-105-7502	58	18
	15	37	2815-01-105-8642	53	14
	15	42	6210-01-105-8934	1	6
5940-01-079-1936	12	18	2815-01-105-9099	62	2
	16	26	2530-01-105-9169	32	1
	16	58	2815-01-105-9170	58	6
	16	63	2815-01-105-9171	60	54

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STOCK NUMBER	FIG.	ITEM
2590-01-115-0650	32	47
2815-01-115-0652	50	18
2590-01-115-0665	55	1
4710-01-115-0738	71	1
6150-01-115-0845	4	9
4720-01-115-0872	38	9
4720-01-115-0873	83	24
4720-01-115-0874	83	8
2590-01-115-0986	18	5
2530-01-115-0987	25	6
2815-01-115-1020	53	8
4710-01-115-1128	64	6
4710-01-115-1336	71	28
4710-01-115-1337	71	19
4820-01-115-1357	85	1
2530-01-115-1490	25	13
4820-01-115-1520	39	4
6685-01-115-1706	2	4
4720-01-115-2652	83	42
5430-01-115-2654	36	4
2910-01-115-2863	70	3
2530-01-115-2866	21	14
5140-01-115-2990	13	4
	13	9
	13	14
	13	19
	13	24
	13	27
5970-01-115-2992	3	27
6220-01-115-3026	4	5
6240-01-115-3070	7	6
4730-01-115-3373	74	14
4730-01-115-3374	74	28
4710-01-115-3425	71	21
4820-01-115-3453	23	13
4730-01-115-4977	74	7
2910-01-115-5010	64	15
4710-01-115-5043	71	24
5930-01-115-5122	1	4
5945-01-115-5171	43	13
4730-01-115-6643	22	14
4730-01-115-6680	32	33
2910-01-115-6722	64	26
5905-01-115-7162	3	29
5905-01-115-7172	3	21
4730-01-115-7362	22	40
4730-01-115-7364	22	4
	22	18
	22	31
	22	46
4730-01-115-8269	32	11
4730-01-115-8451	70	2
	72	3
4730-01-115-9533	63	3
5307-01-115-9774	48	22
5307-01-115-9775	57	10
3020-01-116-0029	52	8
5340-01-116-1131	49	17
5330-01-116-1147	4	6
5330-01-116-1148	49	7
5330-01-116-1149	51	18
5330-01-116-1150	51	11
	55	3
5330-01-116-1511	51	4
5330-01-116-1152	61	1
5330-01-116-1153	62	3
	73	4
5330-01-116-1154	63	4
5330-01-116-1155	72	8
5305-01-116-1162	63	7
5307-01-116-1175	51	19
5307-01-116-1176	64	5
5307-01-116-1177	64	17
5306-01-116-3543	49	21
5305-01-116-3544	53	13
5305-01-116-3545	53	21
5330-01-116-3595	36	2
5307-01-116-3667	57	7
4730-01-116-3729	82	27
5340-01-116-4684	26	6
5305-01-116-4700	21	7
3120-01-116-4701	21	12
5306-01-116-4735	50	11
	5	6
	77	9
5310-01-116-4762	21	9
5310-01-116-4763	49	12
5310-01-116-4765	27	6
5310-01-116-4766	48	20
	50	2
	53	5
	71	9
	74	12
	77	10
	78	4
5310-01-116-4767	48	24
5305-01-116-4814	33	8
5310-01-116-4831	48	23
3750-01-116-5020	86	7
5310-01-116-5297	77	7

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STOCK NUMBER	FIG.	ITEM
5310-01-116-5298	53	11
5310-01-116-5333	57	6
5306-01-116-5424	33	11
5306-01-116-5425	83	25
5306-01-116-5426	83	30
5305-01-116-5431	64	14
5305-01-116-5433	53	12
5306-01-116-5434	63	8
	76	4
5305-01-116-5435	85	7
5305-01-116-6437	3	20
5330-01-116-6441	58	28
5306-01-116-6464	63	6
3120-01-116-6471	54	7
5310-01-116-6474	53	16
5310-01-116-6475	53	20
5310-01-116-6480	57	13
5310-01-116-6509	49	9
5306-01-116-6619	74	13
5306-01-116-6620	77	3
5310-01-116-6638	86	10
5307-01-116-6697	49	13
5307-01-116-6698	78	3
5305-01-116-7348	51	21
	75	1
5305-01-116-7362	86	11
5305-01-116-7364	52	10
5305-01-116-7365	71	8
5306-01-116-7992	60	4
	74	24
5310-01-116-8008	76	5
5315-01-116-8010	36	8
5365-01-116-8013	53	18
5340-01-116-8048	64	11
5365-01-116-8053	54	3
5310-01-116-8056	74	20
5307-01-116-8061	49	8
5310-01-116-8968	33	9
5305-01-116-9169	64	19
5310-01-116-9186	70	6
5325-01-116-9209	48	18
	74	2
5360-01-116-9283	68	6
5340-01-116-9292	49	24
	50	13
5307-01-116-9323	64	1
4730-01-117-0090	70	1
	72	4
4730-01-117-0107	64	7
5330-01-117-1021	83	17
5305-01-117-1455	54	10
5310-01-117-1501	62	7
	73	7
5310-01-117-1510	71	13
5310-01-117-1511	74	3
5310-01-117-2404	27	5
2530-01-117-2888	23	1
5365-01-117-3227	71	12
5365-01-117-3228	71	11
5310-01-117-3291	74	22
5305-01-117-3401	48	21
5305-01-117-3402	49	18
5305-01-117-3410	33	4
5310-01-117-3430	49	11
5310-01-117-3431	64	8
5365-01-117-3529	34	6
5360-01-117-3769	69	17
5340-01-117-3995	69	18
5365-01-117-4067	49	5
5365-01-117-4068	49	26
5340-01-117-4084	71	20
5305-01-117-4188	48	29
	53	2
5310-01-117-4206	49	10
5310-01-117-4207	55	5
5310-01-117-4208	57	9
5310-01-117-4209	64	20
5310-01-117-4210	71	30
	74	11
	78	5
5340-01-117-4962	86	6
5365-01-117-4980	78	2
5930-01-117-6456	1	5
3750-01-117-7857	86	4
5315-01-118-0155	36	9
5305-01-118-0898	34	2
5306-01-118-1172	77	1
5310-01-118-1197	33	5
5310-01-118-1200	3	18
5305-01-118-2441	51	20
5310-01-118-2478	34	1
5330-01-118-3005	53	1
5315-01-118-5832	26	7
6620-01-118-6015	2	5
9905-01-119-2550	44	5
9905-01-119-2561	44	2
4730-01-119-6895	11	6
	22	42
5310-01-119-9358	3	26
9905-01-120-2134	44	1

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STOCK NUMBER	FIG.	ITEM
6220-01-123-9114	7	5
2510-01-124-0231	33	12
2590-01-124-0329	32	44
2815-01-124-5541	49	14
2590-01-124-5619	32	42
4720-01-124-6698	38	6
2590-01-124-7901	32	10
2590-01-124-7961	32	9
2940-01-124-8818	71	27
2530-01-124-8893	19	1
4820-01-124-9041	39	3
5315-01-124-9075	85	3
5330-01-134-1980	84	5
5330-01-134-1982	84	12
5310-01-136-2179	54	9
5305-01-144-1572	47	15
6680-01-153-2164	2	3
4730-01-155-5068	40	6
5975-01-158-0915	10	15
5315-01-159-4459	52	6
	58	10
5995-01-159-5905	79	1
5945-01-159-7703	69	7
4720-01-159-8901	63	2
4820-01-159-9731	23	11
5310-01-160-4548	59	7
5315-01-160-4648	70	5
5340-01-160-4697	49	33
2590-01-160-5880	51	12
4730-01-161-2053	40	14
5306-01-161-2568	75	8
	77	15
5360-01-162-0259	57	26
4710-01-164-1628	57	20
4730-01-171-3338	83	33
2590-01-173-1363	9	10
3040-01-173-8720	69	20
2510-01-185-8293	36	1
2530-01-187-2336	27	3
6680-01-199-6328	2	1
6140-01-210-1964	9	12
5315-01-213-5066	32	29
4820-01-215-7936	42	2
2530-01-216-2506	27	20
6145-01-229-4129	BULK	13
4720-01-232-5753	BULK	4
4320-01-233-3428	82	1
2590-01-238-2754	32	8
2510-01-243-7163	36	6
4720-01-251-3104	22	3
2510-01-251-7779	33	10
9905-01-253-1277	45	5
5940-01-254-2787	14	26
5940-01-254-2792	13	10
	13	20
	13	25
	13	63
4720-01-254-2955	BULK	8
4720-01-254-8693	BULK	7
5995-01-254-8735	11	1
9330-01-256-6413	BULK	6
6150-01-256-9040	17	1
3040-01-263-6504	38	5
2530-01-267-6070	34	3
4730-01-268-0282	83	14
9905-01-269-3377	45	3
2510-01-271-7090	29	10
5310-01-273-1591	47	14
5365-01-276-1026	82	31
5330-01-287-7317	83	39
5975-01-291-7444	3	1
9905-01-292-5564	45	6
2530-01-297-7315	27	19
2590-01-298-3323	74	27
2530-01-304-5600	25	5
5365-01-306-3450	33	13
2530-01-317-8263	27	10
4330-01-317-8275	72	7
4710-01-318-1495	83	37
2590-01-318-7961	69	8
3130-01-321-6631	82	32
3040-01-322-0965	82	29
4320-01-322-0995	82	24
4730-01-322-2640	83	20
7690-01-324-0839	45	2
	48	15
6680-01-326-7342	51	2
2530-01-330-8235	25	8
4820-01-336-9067	39	1
3040-01-353-5911	69	1

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
78500	A-333-U-2153	2530-01-317-8263	27	10
16662	AC-80571	2530-01-117-2888	23	1
16662	AC20209		22	2
			22	23
			22	26
			22	36
			22	48
16662	AC2476	4730-00-696-0522	22	22
			22	27
			22	37
			22	50
			23	4
			23	9
16662	AC97805	4730-01-105-4064	22	8
37562	A080963	2530-01-304-5600	25	5
63477	AE-85732	2530-01-330-8235	25	8
16662	AE83336	2530-01-115-0987	25	6
88044	AN939-4	4730-00-277-1921	31	2
75160	AT17387T	2910-00-057-1421	71	29
78500	Al-3236-A-1249		20	3
78500	A1229-W-2545	5310-01-116-4765	27	6
82807	A18-80-01		3	22
78500	A3275X596	2530-01-097-7079	21	5
41625	A37693	2990-00-451-4838	69	19
15175	A51655-14	3110-00-554-3079	82	30
78500	A7-3222-R-876	2530-01-105-9921	20	2
16662	A78889	4820-01-095-8755	25	3
99408	A86622		22	30
			22	44
16662	A86624	4730-01-115-7364	22	4
			22	18
			22	31
			22	46
82807	A9-48-01		3	14
00912	8-1391		83	21
13226	B-40JJ-CE-7		8	1
13226	B-40JTS	6220-01-123-9114	7	5
80204	B1821BH025C100N	5305-00-225-3843	47	13
			68	2
80204	B1821BH038C113N	5305-00-543-2419	67	13
80204	B1821BH038Cl38N	5305-00-688-2111	32	22
80204	B1821BH044C100N	5305-00-071-1786	38	1
80204	B1821BH050C075N	5305-00-732-0512	65	18
80204	B1821BH050C113N	5305-00-732-0511	29	9
			48	25
			82	2
80204	B1821BH050C150N	5305-00-071-2069	29	3
			32	7
80204	B1821BH063Cll3N	5305-00-432-3755	65	17
80204	B1821BH063Cl75N	5305-00-724-7221	46	1
			48	7

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
80204	B18218H063Cl7SN	5305-00-724-7221	82	41
80204	B18218H075C250N	5305-00-922-7994	39	2
14726	B1871BN	5940-01-079-1375	14	25
37562	B1900-1000		29	1
37562	B1900-1013		31	1
37562	B1900-1019		31	5
37562	B1900-1019-1		31	3
37562	B1900-120		36	3
37562	B1900-1200	2510-01-185-8293	36	1
37562	B1900-1300		29	4
37562	B1900-1405	2590-01-238-2754	32	8
37562	B1900-1550		30	5
37562	B1900-1601	2510-01-271-7090	29	10
37562	B1900-1602		29	5
37526	B1900-3000		35	1
37562	B1900-3050		35	2
37562	B1900-4200		22	1
37562	B1900-4214		22	43
37562	B1900-4214-1		22	45
37562	B1900-4215		23	3
37562	B1900-4216		22	20
37562	B1900-4216-1		22	21
37562	B1900-4217		22	25
37562	B1900-4217-1		22	28
37562	B1900-4218		23	8
37562	B1900-4219		22	34
37562	B1900-4219-1		22	35
37562	B1900-4220		22	17
37562	B1900-4220-1		22	19
37562	B1900-4221		22	29
37562	B1900-4221-1		22	32
37562	B1900-4222		22	47
37562	B1900-4222-1		22	49
37562	B1900-4225		22	56
37562	B1900-4226		22	16
			22	41
37562	B1900-4227		22	12
37562	B1900-4228		22	12
37562	B1900-4231		22	51
37562	B1900-424-1		22	5
37562	B1900-4241	4720-01-251-3104	22	3
37562	B1900-4248		22	7
37562	B1900-4800	2590-01-106-4067	40	1
37562	B1900-4801		40	2
37562	B1900-4811	5935-01-107-8397	3	3
			17	2
			40	11
			47	12
37562	B1900-4819		40	9
37562	B1990-4822	4730-01-113-0699	40	5
37562	B1900-4837	9905-01-269-3377	45	3

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
37562	B1900-4838	7690-01-324-0839	45	2
			47	11
			48	15
37562	B1900-4843	9905-01-292-5564	45	6
37562	B1900-4844	9905-01-253-1277	45	5
37562	B1900-4868A		40	13
37562	B1900-48688		40	15
37562	B1900-4872	2590-01-115-0986	18	5
37562	B1900-5101	2990-01-106-4708	47	7
37562	B1900-5109		51	15
37562	B1900-5111-A	4710-01-111-5869	72	5
37562	B1900-51118		46	4
37562	B1900-5125		48	4
37562	B1900-5126		48	3
37562	B1900-5127		48	9
37562	B1900-5128		47	5
37562	B1900-5129		69	9
37562	B1900-5130		47	2
37562	B1900-5133	5360-01-116-9283	68	6
37562	B1900-5200		67	1
37562	B1900-5206		67	6
37562	B1900-5217		67	10
37562	B1900-5218		67	5
37562	B1900-5225		67	8
37562	B1900-5301		68	3
37562	B1900-5304		69	12
37562	B1900-5306		69	16
37562	B1900-5310	5340-01-117-3995	69	18
37562	B1900-5312	5360-01-117-3769	69	17
37562	B1900-5313		43	4
37562	B1900-5317		43	5
37562	B1900-6000		83	1
37562	B1900-6003	4730-01-268-0282	83	14
37562	B1900-6005		83	11
37562	B1900-6006		83	9
37562	B1900-6010		83	6
37562	B1900-6011	4720-01-115-0874	83	8
37562	B1900-6013		83	4
37562	B1900-6014		83	16
37562	B1900-6015	5330-01-117-1021	83	17
37562	B1900-6016		83	18
37562	B1900-6017	6620-01-100-2530	80	1
37562	B1900-6023	4720-01-115-0873	83	24
37562	B1900-6026		83	27
37562	B1900-6028		83	38
37562	B1900-6029		83	40
37562	B1900-6032	4720-01-115-2652	83	42
37562	B1900-6034		83	3
37562	B1900-6035		83	29
37562	B1900-6037		83	32
37562	B1900-6038	4730-01-171-3338	83	33

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
37562	B1900-6039		83	5
37562	B3900-6042		83	31
37562	B1900-6044	4710-01-318-1495	83	37
37562	B1900-6046		86	1
37562	B1900-6047	5306-01-116-5425	83	25
37562	B1900-6048	5306-01-116-5426	83	30
37562	B1900-6070		86	8
37562	B1900-6600	4720-01-124-6698	38	6
37562	B1900-6602	4720-01-115-0872	38	9
37652	B1900-6604		38	11
			38	22
37562	B1900-6609	3040-01-263-6504	38	5
37562	B1900-6616		38	4
37562	B1900-7000		10	1
37562	B1900-7020		10	28
37562	B1900-7022		10	27
37562	B1900-7023		10	8
37562	B1900-7025		10	23
37562	B1900-7028		10	23
37562	B1900-7030		10	13
37562	B1900-7031		10	14
37562	B1900-7032		10	19
37562	B1900-7035	5975-01-158-0915	10	15
37562	B1900-7100	5975-01-291-7444	3	1
37562	B1900-7101-1		13	18
37562	B1900-7101-1-1		13	55
37562	B1900-7101-10		13	17
37562	B1900-7101-10-1		13	16
37562	B1900-7101-11		13	22
37562	B1900-7101-11-1		13	21
37562	B1900-7101-13		13	12
37562	B1900-7101-13-1		13	11
37562	B1900-7101-14		13	29
37562	B1900-7101-14-1		13	26
37562	B1900-7101-15		13	2
37562	B1900-7101-15-1		13	1
37562	B1900-7101-16		14	2
37562	B1900-7101-16-1		14	1
37562	B1900-7101-17		14	32
37562	B1900-7101-17-1		14	31
37562	B1900-7101-18		14	30
37562	B1900-7101-18-1		14	27
37562	B1900-7101-19		14	18
37562	B1900-7101-19-1		14	17
37562	B1900-7101-2		t3	32
37562	B1900-7101-2-		13	31
37562	B1900-7101-20		14	14
37562	B1900-7101-20-1		14	13
37562	B1900-7101-21		14	8
37562	B1900-7101-21-1		14	5
31562	B1900-7101-22		14	12

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
37562	B1900-7101-22-1		14	9
37562	B1900-7101-23		15	2
37562	B1900-7101-23-1		15	1
37562	B1900-7101-24		15	44
37562	B1900-7101-24-1		15	41
37562	B1900-7101-25		15	27
37562	B1900-7101-25-1		15	26
37562	B1900-7101-26		15	34
37562	B1900-7101-26-1		15	31
37562	B1900-7101-27		15	39
37562	B1900-7101-27-1		15	36
37562	B1900-7101-28		15	22
37562	B1900-7101-28-1		15	21
37562	B1900-7101-29		15	12
37562	B1900-7101-29-1		15	11
37562	B1900-7101-3		13	36
37562	B1900-7101-3-1		13	35
37562	B1900-7101-30		15	17
37562	B1900-7101-30-1		15	16
37562	B1900-7101-31		15	7
37562	B1900-7101-31-1		15	6
37562	B1900-7101-36		16	4
37562	B1900-7101-36-1		16	1
37562	B1900-7101-37		16	65
37562	B1900-7101-37-1		16	64
37562	B1900-7101-38		16	34
37562	B1900-7101-38-1		16	31
37562	B1900-7101-39		16	30
37562	B1900-7101-39-1		16	27
37562	B1900-7101-4		13	40
37562	B1900-7101-4-1		13	39
37562	B1900-7101-40		16	49
37562	B1900-7101-40-1		16	47
37562	B1900-7101-41		16	41
37562	B1900-7101-41-l		16	39
37562	B1900-7101-42		16	57
37562	B1900-7101-42-1		16	55
37562	B1900-7101-43		16	52
37562	B1900-7101-43-1		16	51
37562	B1900-7101-44		16	9
37562	B1900-7101-44-1		15	6
37562	B1900-7101-45		12	20
37562	B1900-7101-45-1		12	17
37562	B1900-7101-46		12	30
37562	B1900-7101-46-1		12	29
37562	B1900-7101-47		12	24
37562	B1900-7101-47-1		12	21
37562	B1900-7101-48		12	2
37562	B1900-7101-48-1		12	1
37562	B1900-7101-49		12	6
37562	B1900-7101-49-1		12	5

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
37562	B1900-7101-5		13	54
37562	B1900-7101-5-1		13	51
37562	B1900-7101-50		12	26
37562	B1900-7101-50-1		12	15
37562	B1900-7101-51		12	10
37562	B1900-7101-51-1		12	9
37562	B1900-7101-52		12	16
37562	B1900-7101-52-1		12	13
37562	B1900-7101-53		16	38
37562	B1900-7101-53-1		16	35
37562	B1900-7101-54		16	46
37562	B1900-7101-54-1		16	43
37562	B1900-7101-55		16	11
37562	B1900-7101-55-1		16	10
37562	B1900-7101-56		16	23
37562	B1900-7101-56-1		16	22
37562	B1900-7101-57		16	17
37562	B1900-7101-57-1		16	14
37562	B1900-7101-58		16	60
37562	B1900-7101-58-1		16	59
37562	B1900-7101-59		16	19
37562	B1900-7101-59-1		16	18
37962	B1900-7101-6		13	50
37562	B1900-7101-6-1		13	47
37562	B1900-7101-7		13	44
37562	B1900-7101-7-1		13	43
37562	B1900-7101-8		13	62
37562	B1900-7101-8-1		13	59
37562	B1900-7101-9		13	7
37562	B1900-7101-9-1		13	6
37562	B1900-7105H	6150-01-256-9040	17	1
37562	B1900-7116		3	6
37562	B1900-7201		10	5
37562	B1900-7202		10	3
37562	B1900-7204		10	4
37562	B1900-7300	5995-01-254-8735	11	1
37562	B1900-7301		11	13
37562	B1900-7302		11	11
37562	B1900-7303		11	10
37562	B1900-7304		11	7
37562	B1900-7305		11	2
37562	B1900-7306		11	15
37562	B1900-7309		11	9
37562	B1900-7314		11	5
37562	B1900-7400		9	1
37562	B1900-7402		9	9
37562	B1900-7403	2590-01-173-1363	9	10
37562	B1900-7408		9	8
37562	B1900-7416		9	5
37652	B1900-7418		9	2
37562	B1900-8001	9905-01-120-2134	44	1

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
37562	B1900-8002		44	3
37562	B1900-8005	9905-01-119-2550	44	5
37562	B1900-8006	9905-01-119-2561	44	2
13226	B40JAS-1		6	9
13226	B40JJCE7-10		8	3
13226	B40JTS-1		7	9
41625	B48722-000-0042.0	2590-01-318-7961	69	8
79154	C-030-77-P-TO		86	13
21585	C-12233-GR-12	2940-01-093-9010	65	8
80691	C-4	4730-01-010-9057	38	7
7B174	C10ER	6145-01-020-1095	BULK	9
7B174	C12E	6145-00-845-5959	BULK	10
30327	C606-100		BULK	1
ONG12	DFVS-40	4820-01-336-9067	39	1
09527	DK0002	6680-01-153-2164	2	3
06625	02I032	2510-01-124-0231	33	12
80691	E-4BRASS		38	10
13226	EV-1		8	2
80691	F-4		83	13
01276	FC-300-06	4720-00-717-1621	BULK	2
03743	FFL-50	5975-00-962-7015	10	20
ONG12	FVS-40		39	6
ONG12	FVSP-40		39	5
B1348	GROUP2/10.00-22/TA78A/ON CENTER	2610-00-260-7342	28	2
B1348	GROUP3/10.00-22/F/TBHR	2610-00-204-4033	28	1
10988	G10013	3030-00-864-7398	76	3
60038	HNM218210	3110-00-618-0249	27	11
60038	HM218248	3110-00-618-0248	27	12
06625	H230	5310-01-118-1197	33	5
77125	H75025	5306-01-116-5424	33	11
06625	H75809	5310-01-118-2478	34	1
77125	H75B14	5310-01-116-8968	33	9
77125	H76008		.33	6
06625	H80070	5305-01-117-3410	33	4
77125	H85050	5305-01-116-4B14	33	8
77125	H88755	5305-01-118-0898	34	2
80837	J-1219	5310-00-220-6848	32	19
80837	J-275X-3	5340-01-113-9708	32	36
80837	J-3237	5315-00-515-0495	32	43
80837	J-4514-3	2590-01-115-0650	32	47
80837	J-4928-1	5340-01-061-9023	32	45
80837	J-5309		32	28
80837	J-S310-1	3020-01-062-3840	32	40
80837	J-5311-1	3020-01-060-8945	32	14
80837	J-5312-1	3020-01-060-8946	32	13
80837	J-5313	3120-01-060-9315	32	20
80837	J-7043	2530-01-105-9169	32	1
91840	K-6110-12	5315-01-118-0155	36	9

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
91840	K-6716-9	2510-01-243-7163	36	6
91840	K-6820-9	5315-01-116-8010	36	8
91840	K-8020-24	5330-01-116-3595	36	2
77125	K1014	2510-01-251-7779	33	10
77125	K1036	5365-01-306-3450	33	13
77125	K1424		33	1
80837	LPR-2-30-444	2590-01-124-7961	32	9
77125	L1025		33	2
06625	L1032	5365-01-117-3529	34	6
13445	M-202	5945-01-115-5171	43	13
96906	MS15001-1	4730-00-050-4203	21	1
96906	MS16562-65	5315-00-844-5836	32	21
96906	MS16562-78	5315-00-822-9460	32	15
96906	MS16562-79	5315-00-836-9642	32	30
96906	MS16624-1075	5365-00-803-7303	27	17
96906	MS16624-3177	5365-01-276-1026	82	31
96906	MS20913-1S	4730-00-221-2136	82	4
96906	MS20913-2S	4730-00-221-2137	67	9
			82	43
			83	34
			86	3
96906	MS20913-4S	4730-00-221-2139	51	14
96906	MS20913-6S	4730-00-221-2140	82	15
96906	MS21333-11	5340-00-057-8689	10	21
			22	38
96906	MS21333-6	5340-00-779-5620	10	25
			22	10
96906	MS24629-20	5305-00-087-2070	45	4
96906	MS24629-33	5305-00-052-6113	44	4
96906	MS24629-35	5305-00-855-0961	40	8
96906	MS24629-45	5305-00-855-0958	3	7
			8	5
96906	MS24665-170	5315-00-234-1619	69	13
96906	MS24665-315	5315-00-187-9376	69	14
96906	M524665-353	5315-00-839-5822	68	4
96906	MS24665-368	5315-00-236-8357	26	5
			36	7
96906	MS24667-84	5305-00-004-3162	30	3
96906	MS24667-87	5305-00-836-6680	30	4
96906	MS25036-108	5940-00-143-4780	14	24
			15	5
			15	10
			15	15
			15	20
			15	24
			15	30
			15	35
			15	40
			15	45
			16	2
			16	7

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
96906	MS25036-108	5940-00-143-4780	16	21
			16	54
			16	68
96906	MS25036-112	5940-00-143-4794	12	4
			12	8
			12	12
			12	14
			12	22
			12	28
			12	32
			13	5
			13	15
			13	30
			13	34
			13	38
			13	42
			13	46
			13	48
			13	52
			13	56
			13	60
			14	4
			14	6
			14	10
			14	16
			14	20
			14	28
			14	34
			16	13
			16	15
			16	25
			16	28
			16	32
			16	36
			16	42
			16	44
			16	50
			16	62
96906	MS27028-18	4730-00-623-7537	83	12
96906	MS27183-10	5310-00-809-4058	9	7
			69	15
96906	MS27183-14	5310-00-080-6004	25	11
			32	35
96906	MS27183-15	5310-00-809-4061	10	7
96906	MS27183-19	5310-00-809-3079	48	11
96906	MS27183-21	5310-00-823-8803	65	15
96906	MS27183-23	5310-00-809-8533	67	4
96906	MS27769-2	4730-00-278-3462	4	4
			5	10
96906	MS27769-4	4730-00-277-6324	6	4
			7	4

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
96906	MS28775-113	5330-00-582-2855	85	12
96906	MS3367-3-9	5975-00-451-5001	10	11
			22	33
96906	MS35058-23	5930-00-655-1515	1	1
96906	MS35291-061	5305-00-543-2419	25	12
96906	MS35338-144	5310-00-926-5870	65	11
96906	MS5338-43	5310-00-045-3296	3	24
			4	2
			5	8
			6	2
			7	2
			8	9
			21	8
			35	5
			37	2
			41	4
			42	3
			43	9
96906	MS35338-44	5310-00-582-5965	3	9
			3	31
			29	6
			40	3
			43	2
			47	9
			66	8
			68	8
			69	4
96906	MS35338-45	5310-00-407-9566	3	1
			47	21
			82	25
96906	MS35338-46	5310-00-637-9541	20	4
			25	2
			67	12
			69	10
			72	2
			81	2
			82	35
			84	15
			85	15
96906	MS35338-47	5310-00-209-0965	38	3
			48	5
96906	MS35338-48	5310-00-584-5272	29	11
			32	2
			47	18
			48	27
			65	2
			65	6
			82	11
96906	MS35338-50	5310-00-820-6653	26	3
			30	1
			46	3

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
96906	MS35338-50	5310-00-820-6653	48	13
96906	MS35340-46	5310-00-959-4675	32	5
			82	39
96906	MS35387-1	9905-00-205-2795	37	5
96906	MS35387-2	9905-00-202-3639	37	4
96906	MS35426-14	5310-00-063-6716	9	6
96906	MS35430-21	5940-00-020-0371	9	3
96906	MS35489-49	5325-00-276-5954	9	13
96906	MS35489-71	5325-00-754-1154	25	10
96906	MS35649-202	5310-00-934-9758	4	3
			5	9
			6	1
			7	1
			8	0
			35	4
			37	1
			41	3
			43	10
			47	19
96906	MS35649-2382	5310-00-056-3395	25	1
			32	34
			67	11
			81	3
			84	14
			85	14
			86	12
96906	MS35650-302	5310-00-934-9751	3	15
			3	23
96906	MS35650-3382	5310-00-058-1626	86	2
96906	MS35650-3392	5310-00-113-3757	32	4
96906	MS35691-1	5310-00-851-2674	3	8
			3	32
			40	4
			43	3
			43	11
96906	MS35691-17	5310-00-851-2682	32	25
79146	MS35746-1	4730-00-595-0083	24	4
96906	MS35751-125	5306-00-159-5578	82	6
96906	MS35810-3	5315-00-754-0848	68	5
96906	MS35842-14	4730-00-908-6292	83	41
96906	MS35842-15	4730-00-908-6293	83	23
96906	MS35842-16	4730-00-908-6294	38	8
			83	7
96906	MS39230-2	4730-00-253-4412	66	5
96906	MS39233-2	4730-00-187-7610	66	2
96906	MS51095-420	5305-00-165-8074	48	10
96906	MS51331-3	2540-00-860-0575	29	8
96906	MS51377-1	2640-00-810-5861	28	4
96906	MS5150OA6	4730-00-995-1559	31	7
96906	MS51846-39	4730-00-222-1838	40	7
96906	MS51846-66		25	4

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
96906	MS51846-82	4730-00-196-1999	23	7
			25	7
96906	MS51953-788	4730-00-265-6904	51	16
96906	MS51957-61	5305-00-050-9227	4	1
			5	7
			10	26
			22	6
			47	1
96906	MS51957-63	5305-00-050-9229	3	11
			37	3
			42	4
			43	8
96906	MS51957-65	5305-00-050-9231	6	3
			7	3
			8	8
			35	3
			41	1
96906	MS51957-79	5305-00-071-1315	32	32
			43	1
			43	12
			66	6
96906	MS51957-94	5305-00-051-0835	24	6
			47	4
96906	MS51967-11	5310-00-880-8189	38	2
			48	6
96906	MS51967-12	5310-00-896-0903	32	50
96906	MS51967-14	5310-00-768-0318	29	12
			32	3
			47	17
			48	17
			65	3
			65	7
			82	12
96906	MS51967-21	5310-00-915-4891	26	4
			30	2
			46	2
			48	14
96906	MS51967-23	5310-00-763-8921	39	7
			67	2
96906	MS51967-3	5310-00-905-0762	29	7
			47	10
			66	9
			68	7
			69	3
96906	MS51967-5	5310-00-880-7744	47	22
96906	MS51968-20	5310-00-763-8905	26	1
96906	MS51968-5	5310-00-880-7746	69	21
96906	MS51983-3	5310-00-880-2004	27	21
96906	MS52149-1	6140-01-210-1964	9	12
96906	MS53068-2	2530-00-359-1162	27	18
96906	MS75021-1	5935-00-846-3883	3	4

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
96906	MS75021-2	5935-00-846-3884	3	5
96906	MS90725-10	5305-00-071-2241	47	8
96906	MS90725-135	5305-00-716-8206	65	10
96906	MS90725-3	5305-00-068-0500	10	22
96906	MS90725-5	5305-00-068-0501	36	5
96906	M590725-58	5305-00-269-3209	20	5
			69	11
			72	1
96906	MS90725-6	5305-00-068-0502	3	2
			3	33
			9	11
			22	39
			29	2
			40	12
			69	5
96906	MS90725-60	5305-00-269-3211	32	48
96906	N590725-68	5305-00-269-3218	81	1
			84	16
			85	16
96906	M590725-69	5305-00-269-3219	32	37
96906	N590726-60	5305-00-269-2803	82	38
96906	MS90726-61	5305-00-269-2804	81	4
			82	34
96906	MS90726-67	5305-00-269-2811	86	5
96906	M590727-112	5305-00-725-0154	32	6
96906	MS90728-88	5305-00-071-1789	48	2
96906	MS9468-18	5315-01-118-5832	26	7
77125	M109201		34	7
77125	M109202		34	5
77125	M209657	2530-01-267-6070	34	3
77125	M209693		34	4
81349	M43436/1-1	9905-00-752-4649	12	3
			12	7
			12	11
			12	15
			12	19
			12	23
			12	27
			12	31
			13	3
			13	8
			13	13
			13	18
			13	23
			13	28
			13	33
			13	37
			13	41
			13	45
			13	49
			13	53

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
81349	M43436/1-1	9905-00-752-4649	13	57
			13	61
			14	3
			14	7
			14	11
			14	15
			14	19
			14	23
			14	29
			14	33
			14	3
			15	8
			15	13
			15	18
			15	23
			15	28
			15	33
			15	38
			15	43
			16	3
			16	8
			16	12
			16	16
			16	20
			16	24
			16	29
			16	33
			16	37
			16	40
			16	45
			16	48
			16	53
			16	56
			16	61
			16	66
81349	M7928/5-4	5940-01-079-1375	15	4
			15	9
			15	14
			15	9
			15	25
			15	29
			15	32
			15	37
			15	42
81349	M7 928/5-5	5940-01-079-1936	12	18
			16	26
			16	58
			16	63
81349	N792815-4		14	22
			16	5
			16	67

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
81349	M792B15-4-1		14	21
80205	NAS1351-5440P		82	26
13446	NA002302		47	3
13446	NA002306		1	2
13446	NA002350		47	20
13446	NA002354		73	2
13446	NA002357	5310-01-273-1591	47	14
13446	NA002364		65	12
13446	NA002372		48	16
13446	NA002388	5305-01-144-1572	47	15
13446	NA002393	3040-01-173-8720	69	20
13446	NA002424		48	28
13446	NA002425		48	12
13446	NA002432		47	16
13446	NA002439		48	1
13446	NA002447		69	6
13446	NA003441	5995-01-159-5905	79	1
13446	NA003485		69	22
13446	NA003763		65	1
13446	NA003769		65	14
13446	NA004756	5945-01-159-7703	69	7
18265	P-10-5168	3930-00-069-3519	66	7
13226	PB-108-0100	4720-01-254-2955	BULK	8
13226	P8-64-0250	9330-01-256-6413	BULK	6
13226	PB-86-0250	4720-01-254-8693	BULK	7
13226	POJJ		8	4
13445	PL-36-RC	6210-01-105-8934	1	6
83827	R-5310	5905-01-115-7162	3	29
83827	R-5311	5905-01-115-7172	3	21
18265	RBXOO-2252	2910-00-400-6861	66	4
13226	RGA-401BA		83	10
13226	RGA301BN	5330-01-287-7317	83	39
98963	R21-02-000	4820-01-110-7177	41	2
13226	S-200-R	6220-01-115-3026	4	5
13226	S-200-R-1		4	7
13226	S-200-2-1		4	7
13226	S-200C-R-1		5	2
78500	S-266-C	5305-00-411-9331	27	1
78500	S-266-P	5305-01-116-4700	21	7
81495	S-738-11	4730-00-202-6491	22	57
03743	SEO-21	5975-01-105-6804	10	17
71400	SFE14	5920-00-280-4007	1	3
22337	SR263LB	2530-01-297-7315	27	19
14726	S09313F	5940-01-115-2990	13	4
			13	9
			13	14
			13	19
			13	24
			13	27
03743	TA75-M	5975-01-105-6805	10	12
09527	TD9489	6680-01-199-6328	2	1

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
66351	TM-B-1900-42		73	1
78500	TN4670-P	2530-01-124-8893	19	1
53421	T250R	5975-00-433-5339	18	3
83879	UNF-75S	5975-00-280-9193	10	9
58076	W-5202AT	3750-01-117-7857	86	4
58076	W-5203AD	3750-01-116-5020	86	7
58076	W-5204CR	5340-01-117-4962	86	6
58076	W-5207A8		86	9
58076	W-5208LN	5305-01-116-7362	86	11
58076	W-5210LN	5310-01-116-6638	86	10
78500	WA-15-C		27	2
13226	WD105-BN	5330-01-134-1980	84	5
13226	W0108CP	5315-01-124-9075	85	3
13226	WD13S-CP	4820-01-107-4259	85	8
13226	WD141MS		84	13
13226	WD144-BN	5330-01-134-1982	84	12
13226	W0301-AL-8		84	1
13226	WD401-ME-8	4820-01-115-1357	85	1
11331	WM388UlC2B	2590-00-247-6653	68	1
81348	WW-P-471AASBCA	4730-00-288-8055	49	25
			51	5
81348	WW-P-471AASBCC	4730-00-187-4202	83	2
77449	2-45-001	5940-01-254-2787	14	26
81348	22-H-461		18	4
13446	2280083		50	1
13446	2290005	2815-01-020-7125	54	6
12570	000-027-081	4730-00-595-2834	66	1
K5436	0050132	3120-00-316-6980	57	16
13446	0050358	3120-00-872-6328	56	12
13446	0095314	5305-01-117-1455	54	10
13446	0095315		64	3
13446	0095332		71	4
13446	0096208	5306-01-116-6619	74	13
13446	0096231	5306-01-116-5434	63	8
			76	4
13446	0096233	5306-01-116-6464	63	6
13446	0096234	5306-01-161-2568	75	8
			77	15
13446	0096235	5306-01-116-6620	77	3
13446	0096236	5305-01-116-7348	51	21
			75	1
13446	0096237	5305-01-116-1162	63	7
13446	0096238	5305-01-117-3402	49	18
13446	0096433	5306-01-116-4735	50	11
			53	6
			77	9
13446	0102202	5340-00-908-7289	57	11
13446	0150129	5340-00-908-6662	57	24
13446	0150144	2815-00-875-8277	59	5
13446	0150170	2590-01-298-3323	74	27
13446	0170033		57	3

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
13446	0170048	5365-01-109-6620	58	5
13446	0170052	5365-01-109-6619	56	10
13446	0170148	5365-01-109-6622	58	16
13446	0180108	4730-01-115-3374	74	28
13446	0180118	4730-01-115-9533	63	3
13446	0180637	5340-01-109-6611	64	21
13446	0181029	5340-01-117-4084	71	20
13446	0200666	2815-01-111-3956	50	9
13446	0201091	4730-01-098-5203	71	6
13446	0201297		49	29
13446	0201318	2815-00-871-6892	57	22
13446	0201526	4730-01-117-0107	64	7
13446	0230001	2815-00-908-6663	57	23
50153	030SB		26	2
13446	0350014		49	32
13446	0350017		53	7
13446	0380068		73	3
13446	0410277	3020-01-106-1821	53	9
13446	0470688	4720-01-159-8901	63	2
13446	0490184	5330-01-010-9823	50	8
13446	0490228	5330-01-116-1153	62	3
			73	4
13446	0490656	5330-00-906-6254	62	1
13446	0490724	5330-00-911-4790	55	8
13446	0490740	5330-00-908-7278	49	23
13446	0490775	5330-00-925-4293	51	6
13446	0490786	5330-01-116-1155	72	8
03479	05-35-252	6620-01-118-6015	2	5
13446	0500006	5315-01-159-4459	52	6
			58	10
13446	0560244	4730-01-098-4327	60	1
13446	0566002	4730-01-106-0213	57	21
			64	9
13446	0566004	4730-01-115-8451	70	2
			72	3
13446	0566007	4730-01-106-3760	59	8
13446	0571346	4730-01-117-0090	70	1
			72	4
13446	0571350	5310-01-117-4209	64	20
13446	0571351	4730-01-106-0637	57	19
13446	0571352	4730-01-106-0629	59	9
13446	0576001	5310-01-109-5918	58	20
13446	0576002	5310-01-109-6597	49	1
			51	17
			58	29
			64	2
			64	16
			74	5
			77	12
13446	0576051	5310-01-117-4210	71	30
			74	11

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
13446	0576051	5310-01-117-4210	78	5
13446	0576102	5310-01-117-4207	55	5
13446	0576111	5310-01-117-3431	64	8
13446	0576151	5310-01-109-6379	57	17
13446	0516153	5310-01-116-4831	48	23
13446	0576302	5310-01-117-4208	57	9
13446	0610011		59	3
13446	0610844	5315-01-112-1521	56	5
15446	0620571		51	22
13446	0623293	4710-00-876-8543	59	10
13446	0650204	5365-01-117-3227	71	12
13446	0650507		57	4
13446	0650563	5340-01-116-9292	49	24
			50	13
13446	0650576		50	15
13446	0650664	5340-01-109-6601	49	15
13446	0650685		50	12
13446	0650710	5340-01-116-1131	49	17
13446	0650717	5340-01-160-4697	49	33
13446	0650777	5340-01-109-6600	49	16
65282	06642-0000	4720-01-003-6706	BULK	3
13446	0700279	5315-01-160-4648	70	5
11446	0770790	5105-01-110-4730	57	18
13446	0726258	5305-01-116-3545	53	21
13446	0726264	5305-01-116-9169	64	19
13446	0730098	5330-01-116-6441	58	28
13446	0730116	5365-00-910-5288	55	7
13446	0730144	5330-01-118-3005	53	1
13446	0746052	5306-01-111-7516	58	2
13446	0746201	5305-01-109-9980	59	6
13446	0746252	5305-01-117-4188	48	29
			53	2
13446	0746253	5306-01-116-7992	60	4
			74	24
13446	0746254	5305-01-021-6700	49	28
			50	1
			74	16
13446	0746255	5305-01-111-9313	51	8
			58	7
			58	30
			74	23
13446	0746259	5306-01-116-3543	49	21
13446	0746260	5305-01-118-2441	51	20
13446	07A6355	5305-01-109-9930	8	1
13446	0746424	5305-01-116-3544	53	13
13146	0741453	5305-01-116-7365	71	8
13446	0746454	5305-01-117-3401	48	21
13446	0746461	5305-01-109-6638	56	1
13446	0746601	5306-01-118-1172	77	1
13446	0746652		61	4

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
13446	0746653	5305-01-116-5433	53	12
13446	0770101	4320-00-563-6609	56	13
13446	0780144	5360-01-162-0259	57	26
13446	0780261	5360-00-066-1253	57	12
13446	0780310	5360-00-881-8781	60	6
13446	0825219	5307-01-115-9775	57	10
13446	0826201	5307-01-114-3621	58	31
13446	0826210	5307-01-116-1175	51	19
13446	0826232	5307-01-116-1176	64	5
13446	0826242	5307-01-109-5973	62	5
			73	5
13446	0826244	5307-01-116-1177	64	17
13446	0826248	5307-01-109-5371	58	22
13446	0826249		49	4
13446	0826250	5307-01-116-3667	57	7
13446	0826260	5307-01-109-5974	62	8
13446	0826274	5307-01-116-9323	64	1
13446	0826477		74	19
13446	0826617	5307-01-115-9774	48	22
13446	0826631	5307-01-116-8061	49	8
13446	0827810	5307-01-116-6698	78	3
13446	0910060	2815-00-908-7291	57	29
13446	0910061	2815-00-910-5287	57	28
13446	0920051	5310-01-116-6475	53	20
13446	0920052	5310-01-109-5970	58	21
13446	0920053	5310-01-109-6761	48	30
			49	2
			51	7
			53	3
			57	8
			58	2
			60	3
			63	5
			64	13
			74	4
			75	2
			77	4
13446	0920054	5310-01-116-4766	48	20
			50	2
			53	5
			71	9
			74	12
			77	10
			78	4
13446	0920055	5310-01-116-4767	48	24
13446	0920112	5310-01-117-1510	71	13
K5436	0920113	5310-00-288-2552	64	22
13446	0920146	5310-01-102-2713	71	14
K5436	0920154	5310-00-288-2553	71	7
13446	0920464		65	13
13446	0920485	5310-01-116-5333	57	6

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
13446	0920488	5310-01-116-8056	74	20
13446	0920497	5310-01-117-1511	74	3
13446	0920645	5310-01-116-8008	76	5
13446	0920769	5325-01-116-9209	48	18
			74	2
13446	0921117	5340-00-906-6262	57	27
13446	0921118	3120-00-906-6278	52	4
13446	0921120	3120-00-906-6277	52	3
13446	0921122	5310-01-116-6480	57	13
13446	0921159	5340-01-109-6378	56	2
13446	0921249		50	20
13446	0940357	4730-01-105-9742	62	4
13446	0940990		50	4
13446	0941044	5365-00-881-8782	56	3
13446	0941221		53	4
13446	0994788		53	19
13446	0999573	2815-01-115-1020	53	4
13446	0999573-X		53	10
13446	0999659	5330-01-116-1151	51	4
03479	10 35 253	6685-al-115-1706	2	4
13226	100D-3-D1		84	4
13226	100D-4-DL		85	4
72423	1001-598		83	36
72423	1001-600		83	5
72423	1002-600		83	26
13226	101-3-BN		84	2
13226	101-4-BN		85	2
30076	101985	5310-01-099-7150	50	10
			71	10
13226	102-3	4820-01-106-1758	84	8
72423	1021-565		83	19
72423	1021-590		83	28
72423	1021-600		83	15
97907	102143	4820-00-142-3036	25	9
13226	103-3		84	7
13226	103-4	5305-01-116-5435	85	7
13226	104-3	4820-01-049-2552	84	6
13226	104-4		85	6
11331	104584		42	1
13226	105-4		85	5
80837	1051-A1	3110-01-067-0307	32	39
13226	106-4	3040-01-105-9934	85	13
13226	108-3		84	3
13226	109-3		84	11
13226	109-4		85	11
82807	11-300-172	5305-01-116-6437	3	20
82807	11-300-175	5305-01-109-7468	3	28
50153	11M018-1/2	5340-01-116-4684	26	6
13226	110-3		84	10
13226	110-4	5360-01-109-0016	85	10
80837	1102-A2	3110-00-117-0759	32	46

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
16764	1103133		77	8
13226	111-3		84	9
13226	111-4		85	9
16764	1113273	2920-00-890-5025	78	1
13445	11164	5330-01-109-2981	3	30
			40	10
11331	111814	4820-01-215-7936	42	2
19207	11662296-28	5330-00-208-2208	21	13
19207	11662296-9		20	6
03798	11701	2910-00-071-2319	64	24
78500	1199-N-118	5310-00-161-9964	27	21
78500	1199-X-115	2530-00-693-1029	27	18
82807	12-700-007	5310-01-119-9358	3	26
82807	12-700-011	5310-01-118-1200	3	18
82807	12-800-002		3	19
82807	12-800-006	5970-01-115-2992	3	27
78500	1205-P-1212	5330-01-090-2107	27	15
78500	1205X726	5330-00-205-3583	21	3
78500	1218-G-85	5315-00-784-0637	20	10
78500	1225-B496		20	8
78500	i225-X-804	3120-01-116-4701	21	12
78500	1227-B-756	5310-01-117-2404	27	5
78500	1227-C-549	2530-00-886-1103	27	7
78500	1229-B-1848		20	7
78500	1229-J-868	5365-00-753-4865	21	4
78500	1229-K-1597-2	5310-01-116-4762	21	9
78500	1229-2-1118	5365-00-205-4693	21	6
30076	125519	5310-01-099-7901	51	3
78500	1259-J-218		20	9
80837	1351-A3	4730-01-115-6680	32	33
80837	1351-A7	4730-01-115-8269	32	11
80837	1402A7	5310-01-060-7259	32	18
30076	140598	5310-01-099-7017	49	31
80837	1456-Al	5315-01-063-0461	32	41
79470	1469X6X2	4730-00-954-2637	11	8
79470	1469X8	4730-01-095-7717	11	4
79470	1469X8X4	4730-01-115-7362	22	40
79470	1469X8X8	4730-01-115-6643	22	14
79470	1472-8	4730-01-119-6895	22	42
79470	1472X6X6X6	4730-01-095-5833	11	14
			22	54
			23	6
79470	1472X8	4730-01-119-6895	11	6
79470	1472X8X6X6	4730-01-106-3975	11	12
38455	15127-02	4320-00-428-2749	82	9
38455	15128-02	4320-00-428-2750	82	7
38455	15636-00	4820-01-115-0614	82	8
30076	161315	5340-01-098-5837	64	18
38455	16147-000		82	14
29222	16797	2530-01-083-1055	27	13
94222	17-11-104-11	5305-00-441-0243	47	6

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
78500	1705-H-294		21	11
78500	1718-Y-103		20	12
78500	1779-R-18		20	11
08806	1895	6240-00-946-9654	2	2
			6	6
49349	19-61	4730-00-775-5785	67	7
82304	19083	2530-00-007-2271	21	2
80837	1914-AI	5315-01-213-5066	32	29
93316	1954Y		BULK	11
08806	199	6240-01-115-3070	7	6
16821	20-X-996	5307-00-467-3009	27	16
78500	20-X-997	5306-00-467-3010	27	16
13226	200-09-132	6220-00-905-8494	5	1
13226	201-A	6220-01-011-8989	4	11
13226	201-R	6220-00-844-6471	4	11
			5	5
06853	201499	9905-06-774-4284	24	3
13226	202	5330-00-464-7329	4	10
			5	6
38455	20831-00		82	33
01276	2089-8-8S	4730-00-289-2357	23	2
13226	209	5330-00-432-4218	4	6
13226	209R	5330-01-116-1147	4	6
01276	2090-8-8S	4730-00-263-5266	22	24
13226	210-05122	6220-00-159-2392	4	5
38455	21316-00	5330-00-184-2761	82	16
06853	213630	5330-00-090-2128	24	7
38455	21437-00	5330-00-561-8750	82	37
38455	21569-02		82	13
38455	21578-02		82	17
38455	21579-02		82	36
13446	2172692	5305-01-116-5431	64	14
13446	2188134	5310-01-117-1501	62	7
			73	7
82807	22-111-100		3	17
82807	22-114-100		3	25
78500	2208-N-430	5330-00-576-3028	27	4
78500	2210-M-2483	2530-01-115-2866	21	14
13446	2211305	5310-01-116-5297	77	7
38455	22471-02		82	3
78500	2258-2-416		20	1
06853	227177 SC-2	4820-01-159-9731	23	11
06853	227856	4820-00-618-5046	22	53
38455	22967-00	5315-00-411-9127	82	20
12603	23E10	5310-00-820-6653	82	42
80045	23MS35338-50	5310-00-820-6653	65	16
06853	240232		24	8
06853	240233	4730-01-106-1757	2	5
13445	24106		43	6
13446	2411157	5310-01-116-6474	53	16
13446	2431154		50	14

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
13446	2461163	4820-00-871-6895	74	26
13446	2481813	4730-01-115-3373	74	14
13446	2481820	4730-01-115-4977	74	7
13446	24858203	2930-01-106-4221	74	1
13446	24850016		74	6
13446	2485666	6620-00-372-4669	50	5
71763	24869	4820-01-115-1520	39	4
13446	24870001	5330-01-116-1150	51	11
			55	3
13446	2487841	2590-01-115-0665	55	1
13446	2487841-X		55	2
13446	2487845	2590-00-871-6894	51	9
			51	10
13446	2511447	3120-01-109-9368	58	12
38455	2535600	4930-00-216-6195	82	22
01276	2570-6	4720-01-232-5753	BULK	4
00624	2570-6-20		23	5
00624	2570-6-40		23	10
01276	2570-8		BULK	5
38455	25924-00	4730-01-116-3729	82	27
13446	2635164		74	21
13446	2641702	2910-01-115-2863	70	3
13446	2646522	2910-01-115-0491	64	27
13446	2654403	4330-01-058-5455	61	5
13446	2656084	4930-01-085-3774	72	6
			72	9
13446	2656084-X	4330-01-317-8275	72	7
13446	2656084-2		72	10
13446	2656613	4330-01-084-0409	71	25
13446	2656615	2940-01-124-8818	71	27
22337	27166	2530-01-216-2506	27	20
38455	27185-00		82	10
38455	27186-00	482000-884-5620	82	5
13446	2721-124	5365-01-116-8053	54	3
13446	2724436	5365-01-109-6621	58	9
06853	276068	4820-01-115-3453	23	13
06853	283071	2530-01-115-1490	25	13
38455	28745-02	3130-01-321-6631	82	32
38455	29235-02		82	28
27996	3A2707-1	3110-00-293-8998	27	8
12718	300S-3	5430-01-115-2654	36	4
13445	30055-8	5925-00-223-1842	43	7
13445	30410-20	5925-01-107-8776	3	12
38455	30586-00	5310-00-411-9121	82	19
41625	307142-0-32		69	2
41625	307941-003	3040-01-353-5911	69	1
13446	31134137		58	14
13446	31134145	3120-01-116-6471	54	7
13446	31146803		75	3
13446	31147633	3020-01-116-0029	52	8
13446	31171245	3020-01-t13-4584	58	13

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
13446	31171541	3020-00-906-6260	58	8
13446	31171542	3020-00-065-0231	58	4
13445	3125	5940-01-254-2792	13	10
			13	20
			13	25
			13	63
13446	31257137	2930-01-106-3738	76	1
13446	3135B117	2815-01-021-0402	49	6
13446	31415303	2815-00-908-7286	56	8
13446	31434152		56	7
13446	31434306		57	30
13446	31734129	5310-01-116-5298	53	11
13446	31742128	5360-01-109-6602	59	4
13446	31747838	6680-01-326-7342	51	2
13446	32114461	5365-01-116-8013	53	18
13446	32114471		53	17
13446	321144B1	5365-01-117-4068	49	26
13446	32161113	5365-01-117-3228	71	11
13446	32161114	5365-01-117-4067	49	5
13446	32162316	5305-01-116-7364	52	10
13446	32166216	5306-00-909-4372	49	30
79470	3220X12X6	4730-00-194-0219	10	18
79470	3220X8X6	4730-00-817-6578	22	55
63632	3249F010	2910-01-115-5010	64	15
13446	32517117		74	29
13446	32517124		74	10
13446	32524148	5307-01-116-6697	49	13
13446	32712715	2815-01-098-1951	59	2
13446	32726511	5340-01-109-5076	58	27
78500	3280-Q-3657		27	14
13446	32813106	5340-01-109-5865	56	9
13446	33115118	5310-01-109-6632	61	3
13446	33115121	5310-01-136-2179	54	9
13446	33115411	5310-01-116-4763	49	12
13446	33123411	2815-01-115-0652	50	18
13446	33124119	5310-00-757-5449	52	9
13446	33124146	5310-01-117-3291	74	22
13446	33124494	2815-01-114-9283	50	2
13446	33127109	5365-01-117-4980	78	2
13446	33132112		74	9
13446	33221115	5310-01-116-9186	70	6
13446	33221317	5310-01-117-4206	49	10
13446	33225412	4730-01-098-4147	71	18
13446	33225413	4730-01-098-5202	71	2
13446	33245114		77	13
13446	33261723	2815-00-909-1897	50	7
13446	3326T741	2815-00-908-6661	50	6
13446	33287314	5310-01-117-3430	49	11
13446	33423135	3120-01-113-8845	58	17
13446	33426516	2815-00-906-6255	56	4
03798	33435	2910-00-073-3201	64	25

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
13446	33472491	2815-01-105-7502	58	18
13446	33472494	2815-01-105-9170	58	6
13446	33473107	6680-00-872-6329	56	11
13446	33474003		52	7
79470	3350X8	4730-00-595-0143	22	52
			23	12
13446	33531117	5310-01-116-6509	49	9
13446	33532118		71	22
13446	33532121		60	2
13446	33555338		71	16
13446	33811112	4730-01-099-0189	71	17
13446	33811113		71	23
13446	33811115	4730-01-098-6757	71	3
13446	33817403	2815-00-908-6680	57	25
13446	33872312		55	10
13446	34237308	4710-01-115-0738	71	1
26151	343-4249	2530-01-187-2336	27	3
13446	34414122	4710-01-164-1628	57	20
13446	34416314	4710-01-115-1337	71	19
13446	34821425	4720-01-106-8011	74	8
13446	34828434	4720-01-106-4289	74	15
00912	350		35	6
13446	35343078	4710-00-073-3209	64	28
03798	35353247	4710-00-073-3212	64	23
13446	35354243		64	29
13466	35354244		64	10
13446	35587355	4710-01-115-1128	64	6
13446	35731143		55	9
13446	35737167	2815-01-105-9171	60	5
13446	35784459	2590-01-160-5880	51	12
13446	35842006	4710-01-115-1336	71	28
13446	35842068	4710-01-115-3425	71	21
13446	35843081	4710-01-115-5043	71	24
00912	361	4730-01-322-2640	83	20
13446	36151505	5365-01-109-5998	49	3
			58	26
13446	36151506	5330-01-109-5969	58	23
13446	36151507	5310-01-160-4548	59	7
13446	36155132		77	14
13446	36173452	2910-01-115-6722	64	26
13446	36178509	3120-00-908-7287	56	6
13446	36241316	2910-01-099-0220	70	7
13446	36243515		75	6
13446	36256717		49	27
38455	36442-02		82	21
13446	36444318		71	26
13446	3654414		74	18
13446	36644132	5340-01-116-8048	64	11
13446	36B12134	5330-01-116-1148	49	7
13446	36B13145	5330-00-909-1893	58	19
13446	36826114	5330-00-906-6259	49	22

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
13446	36834117	5330-01-116-1149	51	18
13446	36846412	5330-00-908-7296	49	34
13446	36846415	5330-01-116-1154	63	4
13446	36851113	5330-01-101-4313	70	4
13446	36862517	5330-01-116-1152	61	1
13446	36866421	5330-00-908-6658	75	7
13446	36866713	5330-00-908-6659	75	5
13446	36883107	5330-00-908-7297	49	19
13446	37138021	2815-01-105-8642	53	14
13446	37161104	2815-01-105-7501	58	25
13446	37171334		51	1
13446	37188137	2815-01-105-9996	55	4
13446	37413581		76	2
13446	37443591	2815-00-066-1251	50	19
13446	37554591		49	35
13446	37725448	4730-00-876-8548	60	7
13446	37764181		61	2
13446	37783543	2815-01-105-9099	62	2
13446	37786175	2815-01-106-0035	63	1
13446	38126226		48	8
13446	38126227		48	19
13446	38155177		48	31
13446	38155178		48	26
13446	38163111		77	2
13446	38342162		74	25
13446	38343115		74	17
13446	4.108SN108US877	2815-01-021-1743	48	32
38455	4C7-01		82	40
38455	4C7/SPEC Q6486AB	4320-01-233-3428	82	1
13226	40-03221	6220-00-905-8496	6	5
72962	41NTE164	5310-00-935-9088	82	18
01276	411-6S	4730-01-065-7552	31	6
13446	4115036		58	15
13446	41151448-X		57	15
13446	41151472	2815-00-908-7288	57	14
01276	412-4-6S	4730-00-217-2433	31	4
38455	41219-00	4320-01-322-0995	82	24
38455	41232-00		82	23
13446	41312471		75	4
13446	41314092	4320-00-908-3184	59	1
13446	41425781	2815-01-105-9490	58	11
38455	42524-00	3040-01-322-0965	82	29
24617	443340	5310-00-044-3340	33	7
21450	454087	4730-00-999-8582	51	13
24617	457184	3110-00-293-8997	27	9
04034	46202	5930-01-117-6456	1	5
13445	4626		3	10
13445	4721-P2		3	13
13226	5-200-2-1		5	3
04856	51930		65	4
04856	52029		65	5

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
28548	5228623	4730-00-244-9848	24	2
08805	53	6240-00-013-1282	1	7
58344	540	4820-01-124-9041	39	3
13226	55	6150-01-115-0845	4	9
13446	55286	3040-00-908-6665	57	2
13446	55286-X		57	5
34629	56842	4730-01-155-5068	40	6
34629	56944	4730-01-161-2053	40	14
79550	57209	6145-00-468-1260	BULK	12
04856	58249-1		65	9
13446	58529	2815-00-871-6899	57	1
81343	6-4 000102C		18	2
81343	6-4 120202BA(LON		11	3
	G NUT)		22	11
81343	6-6 120202BA	4730-00-289-0155	11	16
			22	15
97384	60244-90104	9905-00-740-9721	24	1
80837	6364-1		32	27
80837	6365-1	5360-01-061-3204	32	38
03479	65 35 37	6625-01-114-7301	2	6
80837	6884		32	23
80837	6943-2	3040-01-105-9768	32	24
80837	6948-1		32	26
80837	6956-1		32	12
80837	6997-3	2590-01-124-0329	32	44
19207	7014891	5310-00-701-4891	21	10
13226	71PS	5975-01-111-7119	8	7
13226	71R	6220-00-897-5860	6	7
			7	7
16428	71284		67	3
13226	72	5330-00-897-5857	6	8
			7	8
			8	6
16428	728007	5940-00-480-5785	9	4
19207	7373380	4730-00-335-1776	22	9
19207	7399088	4730-00-278-4575	18	1
24234	750005	2590-01-115-0427	32	49
19207	7535606	9905-01-008-1378	45	1
13226	79	5330-00-432-4219	6	10
			7	10
64488	81122S	6145-01-229-4129	BULK	13
64488	81123S	6145-00-845-9858	BULK	14
64488	81162S		BULK	15
03958	8169006	4730-00-278-3912	23	14
79470	8205X6X6		10	24
13446	83417-X		54	8
19207	8388931	4730-00-227-7915	10	2
79470	8425X6X6		10	16
13446	84417	2815-00-872-6330	52	1
13446	84417-X		52	2

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
13446	84992	3120-00-054-2149	52	5
13446	85037	3120-00-042-4250	54	11
77125	856834		33	3
13446	85758	2815-01-044-5430	54	2
13446	85758-X		54	4
13446	85758-Y		54	5
13446	86764	2815-01-021-5002	54	t
79470	8924X2	4730-00-350-9619	10	6
80837	8984	5340-01-061-2943	32	17
80837	8994		32	16
80837	8998-3-KIT	2590-01-124-5619	32	42
80837	8999-3	2590-01-124-7901	32	10
13445	90047-01	5930-01-115-5122	1	4
13446	90990		49	20
81336	910-08-2168-500	2640-00-060-3550	28	3
88277	912499	4730-00-172-0001	31	8
97907	9196130	4730-00-706-7761	66	3
13446	93654	2815-01-124-5541	49	14
80837	9366-3		32	31
61928	954		BULK	16
08108	97	6240-00-914-5572	4	8
			5	4
30076	981652	5365-01-098-9815	71	5
30076	985567	5310-01-098-9092	55	6
			64	4
30076	992025	5365-01-106-3697	53	15
30076	992629	5310-01-099-7943	58	3
			62	6
			64	12
			73	6
			77	5
30076	992630	5310-01-099-7889	50	3
			71	15
			77	11
30076	992632		77	6

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FIG.	ITEM	STOCK NUMBER	CADEC	PART NUMBER
BULK	1		30327	C606-100
BULK	2	4720-00-717-1621	01276	FC-300-06
BULK	3	4720-01-003-6706	65282	06642-0000
BULK	4	4720-01-232-5753	01276	2570-6
BULK	5		01276	2570-8
BULK	6	9330-01-256-6413	13226	PB-64-0250
BULK	7	4720-01-254-8693	13226	PB-86-0250
BULK	8	4720-01-254-2955	13226	PB-108-0100
BULK	9	6145-01-200-1095	78174	C1OER
BULK	10	6145-00-845-5959	78174	C12E
BULK	11		93316	1954Y
BULK	12	6145-00-468-1260	79550	57209
BULK	13	6145-01-229-4129	64488	81122S
BULK	14	6145-00-845-9858	64488	81123S
BULK	15		64488	81162S
BULK	16		61928	954
1	1	5930-00-655-1515	96906	MS35058-23
1	2		13446	NA002336
1	3	5920-00-280-4007	71400	SFE14
1	4	5930-01-115-5122	13445	90047-01
1	5	5930-01-117-6456	04034	46202
1	6	6210-01-105-8934	13445	PL-36-RC
1	7	6240-00-013-1282	03805	53
2	1	6680-01-199-6328	09527	TD9489
2	2	6240-00-946-9654	08806	1895
2	3	6680-01-153-2164	09527	DK0002
2	4	6685-01-115-1706	03479	10 35 253
2	5	6620-01-118-6015	03479	05-35-252
2	6	6625-01-114-7301	03479	65 35 37
3	1	5975-01-291-7444	37562	S1900-7100
3	2	5305-00-068-0502	96906	MS90725-6
3	3	5935-01-107-8397	37562	B1900-4B11
3	4	5935-00-846-3883	96906	MS75021-1
3	5	5935-00-846-3884	96906	MS75021-2
3	6		37562	B1900-7116
3	7	5305-00-855-0958	96906	MS24629-45
3	8	5310-00-851-2674	96906	MS35691-1
3	9	5310-00-582-5965	96906	MS35338-44
3	10		13445	4626
3	11	5305-00-050-9229	96906	MS51957-63
3	12	5925-01-107-8776	13445	30410-20
3	13		13445	4721-P2
3	14		82807	A9-48-01
3	15	5310-00-934-9751	96906	M535650-302
3	16	5310-00-407-9566	96906	MS35338-45
3	17		82807	22-111-100
3	18	5310-01-118-1200	82807	12-700-011
3	19		82807	12-800-002
3	20	5305-01-116-6437	82807	11-300-172
3	21	5905-01-115-7172	83827	R-5311
3	22		82807	A18-80-01

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CADEC	PART NUMBER
3	23	5310-00-934-9751	96906	MS35650-302
3	24	5310-00-045-3296	96906	MS35338-43
3	25		82807	22-114-100
3	26	5310-01-119-9358	82087	12-700-007
3	27	5970-01-115-2992	82807	12-800-006
3	28	5305-01-109-7468	82807	11-300-175
3	29	5905-01-115-7162	83827	R-5310
3	30	5330-01-109-2981	13445	11164
3	31	5310-00-582-5965	96906	MS35338-44
3	32	5310-00-851-2674	96906	MS35691-1
3	33	5305-00-068-0502	96906	MS90725-6
4	1	5305-00-050-9227	96906	MS51957-61
4	2	5310-00-045-3296	96906	MS35338-43
4	3	5310-00-934-9758	96906	MS35649-202
4	4	4730-00-278-3462	96906	MS27769-2
4	5	6220-00-159-2392	13226	210-05122
4	5	6220-01-115-3026	13226	S-200-R
4	6	5330-00-432-4218	13226	209
4	6	5330-01-116-1147	13226	209R
4	7		13226	S-200-R-1
4	7		13226	S-200-2-1
4	8	6240-00-914-5572	08108	97
4	9	6150-01-115-0845	13226	55
4	10	5330-00-464-7329	13226	202
4	11	6220-00-844-6471	13226	201-R
4	11	6220-01-011-8989	13226	201-A
5	1	6220-00-905-8494	13226	200-09-132
5	2		13226	S-20OC-R-1
5	3		13226	5-200-2-1
5	4	6240-00-914-5572	08108	97
5	5	6220-00-844-6471	13226	201-R
5	6	5330-00-464-7329	13226	202
5	7	5305-00-050-9227	96906	MS51957-61
5	8	5310-00-045-3296	96906	SM35338-43
5	9	5310-00-934-9758	96906	MS35649-202
5	10	4730-00-278-3462	96906	MS27769-2
6	1	5310-00-934-9758	96906	MS35649-202
6	2	5310-00-045-3296	96906	MS35338-43
6	3	5305-00-050-9231	96906	MS51957-65
6	4	4730-00-277-6324	96906	MS27769-4
6	5	6220-00-905-8496	13226	40-03221
6	6	6240-00-946-9654	08806	1895
6	7	6220-00-897-5860	13226	71R
6	8	5330-00-897-5857	13226	72
6	9		13226	B40JAS-1
6	10	5330-00-432-4219	13226	79
7	1	5310-00-934-9758	96906	M535649-202
7	2	5310-00-045-3296	96906	MS35338-43
7	3	5305-00-050-9231	96906	MS51957-65
7	4	4730-00-277-6324	96906	MS27769-4
7	5	6220-01-123-9114	13226	B-40JTS

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
7	6	6240-01-115-3070	00806	199
7	7	6220-00-897-5860	13226	71R
7	8	5330-00-897-5857	13226	72
7	9		13226	B40JTS-1
7	10	5330-00-432-4219	13226	79
8	1		13226	B-40JJ-CE-7
8	2		13226	EV-1
8	3		13226	B40JJCE7-10
8	4		13226	PDJJ
8	5	5305-00-855-0958	96906	MS24629-45
8	6	5330-00-897-5857	13226	72
8	7	5975-01-111-7119	13226	71PS
8	8	5305-00-050-9231	96906	MS51957-65
8	9	5310-00-045-3296	96906	MS35338-43
8	10	5310-00-934-9758	96906	MS35649-202
9	1		37562	B1900-7400
9	2		37652	B1900-7418
9	3	5940-00-020-0371	96906	MS35430-21
9	4	5940-00-480-5785	16428	728007
9	5		37562	8 1900-7416
9	6	5310-00-063-6716	96906	MS35426-14
9	7	5310-00-809-4058	96906	MS27183-10
9	8		37562	B1900-7408
9	9		37562	B1900-7402
9	10	2590-01-173-1363	37562	8 1900-7403
9	11	5305-00-068-0502	96906	MS90725-6
9	12	6140-01-210-1964	96906	MS52149-1
9	13	5325-00-276-5954	96906	MS35489-49
10	1		37562	B1900-7000
10	2	730-00-227-7915	19207	8388931
10	3		37562	B1900-7202
10	4		37562	31900-7204
10	5		37562	B1900-7201
10	6	4730-00-350-9619	79470	8924X2
10	7	5310-00-809-4061	96906	MS27183-15
10	8		37562	B1900-7023
10	9	5975-00-280-9193	83879	UNF-75S
10	10		37562	B1900-7025
10	11	5975-00-451-5001	96906	MS3367-3-9
10	12	5975-01-105-6805	03743	TA75-M
10	13		37562	B1900-7030
10	14		37562	B1900-7031
10	15	5975-01-158-0915	37562	B1900-7035
10	16		79470	8425X6X6
10	17	5975-01-105-6804	03743	SEO-21
10	18	4730-00-194-0219	79470	3220X12X6
10	19		37562	B1900-7032
10	20	5975-00-962-7015	03743	FFL-50
10	21	5340-00-057-8689	96906	MS21333-11
10	22	5305-00-068-0500	96906	MS90725-3
10	23		37562	B1900-7028

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
10	24		79470	8205X6X6
10	25	5340-00-779-5620	96906	MS21333-6
10	26	5305-00-050-9227	96906	MS51957-61
10	27		37562	B1900-7022
10	28		37562	81900-7020
11	1	5995-01-254-8735	37562	B1900-7300
11	2		37562	B1900-7305
11	3		81343	6-4 120202BA(LONG NUT)
11	4	4730-01-095-7717	79470	1469X8
11	5		37562	B1900-7314
11	64	730-01-119-6895	79470	1472X8
11	7		37562	31900-7304
11	84	730-00-954-2637	79470	1469X6X2
11	9		37562	81900-7309
11	10		37562	B1900-7303
11	11		37562	31900-7302
11	12	4730-01-106-3975	79470	1472XBX6X6
11	13		37562	B1900-7301
11	14	4730-01-095-5833	79470	1472X6X6X6
11	15		37562	B1900-7306
11	16	4730-00-289-0155	81343	6-6 120202BA
12	1		37562	B1900-7101-48-1
12	2		37562	B1900-7101-48
12	3	9905-00-752-4649	81349	M43436/1-1
12	4	5940-00-143-4794	96906	MS25036-112
12	5		37562	B1900-7101-49-1
12	6		37562	B1900-7101-49
12	7	9905-00-752-4649	81349	M43436/1-1
12	3	5940-00-143-4794	96906	MS25036-112
12	9		37562	81900-7101-51-1
12	10		37562	B1900-7101-51
12	11	9905-00-752-4649	81349	M43436/1-1
12	12	5940-00-143-4794	96906	MS25036-112
12	13		37562	31900-7101-52-1
12	14	5940-00-143-4794	96906	MS25036-112
12	15	9905-00-752-4649	81349	M43436/1-1
12	16		37562	B1900-7101-52
12	17		37562	31900-7101-45-1
12	18	5940-01-079-1936	81349	M7928/5-5
12	19	9905-00-752-4649	81349	M43436/1-1
12	20		37562	B1900-7101-45
12	21		37562	B1900-7101-47-1
12	22	5940-00-143-4794	96906	MS25036-112
12	23	9905-00-752-4649	31349	M43436/1-1
12	24		37562	B1900-7101-47
12	25		37562	B 1900-7101-5-1
12	26		37562	51900-7101-50
12	27	9905-00-752-4649	81349	M43436/1-1
12	28	5940-0O-143-4794	96906	MS25036-112
12	29		37562	81900-7101-46-1

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
12	30		37562	B1900-7101-46
12	31	9905-00-752-4649	81349	M43436/1-1
12	32	5940-00-143-4794	96906	MS25036-112
13	1		37562	B1900-7101-15-1
13	2		37562	B1900-7101-15
13	3	9905-00-752-4649	81349	M43436/1-1
13	4	5940-01-115-2990	14726	S09313F
13	5	5940-00-143-4794	96906	MS25036-112
13	6		37562	B1900-7101-9-1
13	7		37562	B1900-7101-9
13	8	9905-00-752-4649	81349	M43436/1-1
13	9	5940-01-115-2990	14726	S09313F
13	10	5940-01-254-2792	13445	3125
13	11		37562	B1900-7101-13-1
13	12		37562	B1900-7101-13
13	13	9905-00-752-4649	81349	M43436/1-1
13	14	5940-01-115-2990	14726	S09313F
13	15	5940-00-143-4794	96906	MS25036-112
13	16		37562	B1900-7101-10-1
13	17		37562	B1900-7101-10
13	18	9905-00-752-4649	81349	M43436/1-1
13	19	5940-01-115-2990	14726	S09313F
13	20	5940-01-254-2792	13445	3125
13	21		37562	31900-7101-11-1
13	22		37562	31900-7101-11
13	23	9905-00-752-4649	81349	M43436/1-1
13	24	5940-01-115-2990	14726	S09313F
13	25	5940-01-254-2792	13445	3125
13	26		37562	81900-7101-14-1
13	27	5940-01-115-2990	14726	S09313F
13	28	9905-00-752-4649	81349	M43436/1-1
13	29		37562	81900-7101-14
13	30	5940-00-143-4794	96906	MS25036-112
13	31		37562	B1900-7101-2-1
13	32		37562	B1900-7101-2
13	33	9905-00-752-4649	81349	M43436/1-1
13	34	5940-00-143-4794	96906	MS25036-112
13	35		37562	B1900-7101-3-1
13	36		37562	B1900-7101-3
13	37	9905-00-752-4649	81349	M43436/1-1
13	38	5940-00-143-4794	96906	MS25036-112
13	39		37562	B1900-7101-4-1
13	40		37562	B1900-7101-4
13	41	9905-00-752-4649	81349	M43436/1-1
13	42	5940-00-143-4794	96906	MS25036-112
13	43		37562	B1900-7101-7-1
13	44		37562	81900-7101-7
13	45	9905-00-752-4649	81349	M43436/1-1
13	46	5940-00-143-4794	96906	MS25036-112
13	47		37562	B1900-7101-6-1
13	48	5940-00-143-4794	96906	MS25036-112

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
13	49	9905-00-752-4649	81349	M43436/1-1
13	50		37562	B1900-7101-6
13	51		37562	B1900-7101-5-1
13	52	5940-00-143-4794	96906	MS25036-112
13	53	9905-00-752-4649	81349	M43436/1-1
13	54		37562	B1900-7101-5
13	55		37562	B1900-7101-1-1
13	56	5940-00-143-4794	96906	MS25036-112
13	57	9905-00-752-4649	81349	M43436/1-1
13	58		37562	B1900-7101-1
13	59		37562	B1900-7101-8-1
13	60	5940-00-143-4794	96906	MS25036-112
13	61	9905-00-752-4649	81349	M43436/1-1
13	62		37562	B1900-7101-8
13	63	5940-01-254-2792	13445	3125
14	1			37562 B1900-7101-16-1
14	2			37562 B1900-7101-16
14	3	9905-00-752-4649	81349	M43436/1-1
14	4	5940-00-143-4794	96906	MS25036-112
14	5		37562	B1900-7101-21-1
14	6	5940-00-143-4794	96906	MS25036-112
14	7	9905-00-752-4649	81349	M43436/1-1
14	8		37562	B1900-7101-21
14	9		37562	B1900-7101-22-1
14	10	5940-00-143-4794	96906	MS25036-112
14	11	9905-00-752-4649	81349	M43436/1-1
14	12		37562	B1900-7101-22
14	13		37562	B1900-7101-20-1
14	14		37562	B1900-7101-20
14	15	9905-00-752-4649	81349	M43436/1-1
14	16	5940-00-143-4794	96906	MS25036-112
14	17		37562	B1900-7101-19-1
14	18		37562	B1900-7101-19
14	19	9905-00-752-4649	81349	M43436/1-1
14	20	5940-00-143-4794	96906	MS25036-112
14	21		81349	M792815-4-1
14	22		81349	M792815-4
14	23	9905-00-752-4649	81349	M43436/1-1
14	24	5940-00-143-4780	96906	MS25036-108
14	25	5940-01-079-1375	14726	3187IBN
14	26	5940-01-254-2787	77449	Z-45-001
14	27		37562	B1900-7101-18-1
14	28	5940-00-143-4794	96906	MS25036-112
14	29	9905-00-752-4649	81349	M43436/1-1
14	30		37562	B1900-7101-18
14'	31		37562	B1900-7101-17-1
14	32		37562	B1990-7l01-l7
14	33	9905-00-752-4649	81349	M43436/1-1
14	34	5940-00-143-4794	96906	MS25036-112
15	1		37562	B1900-7101-23-1
15	2		37562	B1900-7101-23

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
15	3	9905-00-752-4649	81349	M43436/1-1
15	4	5940-01-079-1375	61349	M7928/5-4
15	5	5940-00-143-4780	96906	MS25036-108
15	6		37562	B1900-7101-31-1
15	6		37562	B1900-7101-44-1
15	7		37562	B1900-7101-31
15	8	9905-00-752-4649	81349	M43436/1-1
15	9	5940-01-079-1375	81349	M7928/5-4
15	10	5940-00-143-4780	96906	MS25036-108
15	11		37562	B1900-7101-29-1
15	12		37562	B1900-7101-29
15	13	9905-00-752-4649	81349	M43436/1-1
15	14	5940-01-079-1375	81349	M7928/5-4
15	15	5940-00-143-4780	96906	MS25036-108
15	16		37562	81900-7101-30-1
15	17		37562	B1900-7101-30
15	18	9905-00-752-4649	81349	M43436/1-1
15	19	5940-01-079-1375	81349	M7928/5-4
15	20	5940-00-143-4780	96906	MS25036-108
15	21		37562	B1900-7101-28-1
15	22		37562	B1900-7101-28
15	23	9905-00-752-4649	81349	M43436/1-1
15	24	5940-00-143-4780	96906	MS25036-108
15	25	5940-01-079-1375	81349	M7928/5-4
15	26		37562	B1900-7101-25-1
15	27		37562	81900-710125
15	28	9905-00-752-4649	81349	M43436/1-1
15	29	5940-01-079-1375	81349	M7928/5-4
15	30	5940-00-143-4780	96906	MS25036-108
15	31		37562	B1900-7101-26-1
15	32	5940-01-079-1375	81349	M7928/5-4
15	33	9905-00-752-4649	81349	M43436/1-1
15	34		37562	81900-7101-26
15	35	5940-00-143-4780	96906	MS25036-108
15	36		37562	B1900-7101-27-1
15	37	5940-01-079-1375	81349	M7928/5-4
15	38	9905-00-752-4649	81349	M43436/1-1
15	39		37562	B1900-7101-27
15	40	5940-00-143-4780	96906	MS25036-108
15	41		37562	B1900-7101-24-1
15	42	5940-01-079-1375	81349	M7928/5-4
15	43	9905-00-752-4649	81349	M43436/1-1
15	44		37562	B1900-7101-24
15	45	5940-00-143-4780	96906	MS25036-108
16	1		37562	B1900-7101-36-1
16	2	5940-00-143-4780	96906	MS25036-108
16	3	9905-00-752-4649	81349	M43436/1-1
16	4		37562	B1900-7101-36
16	5		81349	M792815-4
16	7	5940-00-143-4780	96906	MS25036-108
16	8	9905-00-752-4649	81349	M43436/1-1

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
16	9		37562	B1900-7101-44
16	10		37562	B1900-7101-55-1
16	11		37562	B1900-7101-55
16	12	9905-00-752-4649	81349	M43436/1-1
16	13	5940-00-143-4794	96906	MS25036-112
16	14		37562	B1900-7101-57-1
16	15	5940-00-143-4794	96906	MS25036-112
16	16	9905-00-752-4649	81349	M43436/1-1
16	17		37562	B1900-7101-57
16	18		37562	B1900-7101-59-1
16	19		37562	B1900-7101-59
16	20	9905-00-752-4649	81349	M43436/1-1
16	21	5940-00-143-4780	96906	MS25036-108
16	Z2		37562	B1900-7101-56-1
16	23		37562	81900-7101-56
16	24	9905-00-752-4649	81349	M43436/1-1
16	25	5940-00-143-4794	96906	MS25036-112
16	Z6	5940-01-079-1936	81349	M7928/5-5
16	27		37562	S1900-7101-39-1
16	28	5940-00-143-4794	96906	MS25036-112
16	29	9905-00-752-4649	81349	M43436/1-1
16	30		3756Z	31900-7101-39
16	31		37562	81900-7101-38-1
16	32	5940-00-143-4794	96906	MS25036-112
16	33	9905-00-752-4649	81349	M43436/1-1
16	34		37562	B1900-7101-38
16	35		37562	B1900-7101-53-1
16	36	5940-00-143-4794	96906	MS25036-112
16	37	9905-00-752-4649	81349	M43436/1-1
16	38		37562	B1900-7101-53
16	39		37562	B1900-7101-41-1
16	40	9905-00-752-4649	81349	M43436/1-1
16	41		37562	B1900-7101-41
16	42	5940-00-143-4794	96906	MS25036-112
16	43		37562	B1900-7101-54-1
16	44	5940-00-143-4794	96906	MSZ5036-112
16	45	9905-00-752-4649	81349	M43436/1-1
16	46		37562	B1900-7101-54
16	47		37562	31900-7101-40-1
16	48	9905-00-752-4649	81349	M43436/1-1
16	49		37562	B1900-7101-40
16	50	5940-00-143-4794	96906	MS25036-112
16	51		37562	B1900-7101-43-1
16	52		37562	31900-7101-43
16	53	9905-00-752-4649	81349	M43436/1-1
16	54	5940-00-143-4780	96906	MS25036-108
16	55		37562	B1900-7101-42-1
16	56	9905-00-752-4649	81349	M43436/1-1
16	57		37562	B1900-7101-42
16	58	5940-01-079-1936	81349	M7928/5-5
16	59		37562	B1900-7101-58-1

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FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
16	60		37562	B1900-7101-58
16	61	9905-00-752-4649	81349	M43436/1-1
16	62	5940-00-143-4794	96906	MS25036-112
16	63	5940-01-079-1936	81349	M7928/5-5
16	64		37562	81900-7101-37-1
16	65		37562	81900-7101-37
16	66	9905-00-752-4649	81349	M43436/1-1
16	67		31349	M792815-4
16	68	5940-00-143-4780	96906	MS25036-108
17	1	6150-01-256-9040	37562	B1900-7105H
17	2	5935-01-107-8397	37562	B1900-4811
18	1	4730-00-278-4575	19207	7399088
18	2		81343	6-4 010102C
18	3	5975-00-433-5339	53421	T250R
18	4		81348	ZZ-H-461
18	5	2590-01-115-0986	37562	B1900-4872
19	1	2530-01-124-8893	78500	TN4670-P
20	1		78500	2258-Z-416
20	2	2530-01-105-9921	78500	A7-3222-R-876
20	3		78500	A1-3236-A-1249
20	4	5310-00-637-9541	96906	MS35338-46
20	5	5305-00-269-3209	96906	MS90725-58
20	6		19207	11662296-9
20	7		78500	1229-B-1848
20	8		78500	1225-B-496
20	9		78500	1259-J-218
20	10	5315-00-784-0637	78500	1218-G-85
20	11		78500	1779-R-18
20	12		78500	1718-Y-103
21	1	4730-00-050-4203	96906	MS15001-1
21	2	2530-00-007-2271	82304	19083
21	3	5330-00-205-3583	78500	1205X726
21	4	5365-00-753-4865	78500	1229-J-868
21	5	2530-01-097-7079	78500	A3275X596
21	6	5365-00-205-4693	78500	1229-Z-1118
21	7	5305-01-116-4700	78500	S-266-P
21	8	5310-00-045-3296	96906	MS35338-43
21	9	5310-01-116-4762	78500	1229-K-1597-Z
21	10	5310-00-701-4891	19207	7014891
21	11		78500	1705-H-294
21	12	3120-01-116-4701	78500	1225-X-804
21	13	5330-00-208-2208	19207	11662296-28
Z1	14	2530-01-115-2866	78500	2210-M-2483
22	1		37562	81900-4200
22	2		16662	AC20209
22	3	4720-01-251-3104	37562	B1900-4241
22	4	4730-01-115-7364	16662	A86624
22	5		37562	B1900-424-1
22	6	5305-00-050-9227	96906	MS51957-61
22	7			37562 B1900-4248
22	8	4730-01-105-4064	16662	AC97805

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
22	9	4730-00-335-1776	19207	7373380
22	10	5340-00-779-5620	96906	MS21333-6
22	11		81343	6-4120202BA(LONG NUT)
22	12		37562	B1900-4228
22	13		37562	B1900-4227
22	14	4730-01-115-6643	79470	1469X8X8
22	15	4730-00-289-0155	81343	6-6120202BA
22	16		37562	B1900-4226
22	17		37562	81900-4220
22	18	4730-01-115-7364	16662	A86624
22	19		37562	B1900-4220-1
22	20		37562	B1900-4216
22	21		37562	31900-4216-1
22	22	4730-00-696-0522	16662	AC2476
22	23		16662	AC20209
22	24	4730-00-263-5266	01276	2090-8-8S
22	25		37562	B190O-4217
22	26		16662	AC20209
22	27	4730-00-696-0522	16662	AC2476
22	28		37562	B1900-4217-1
22	29		37562	B1900-4221
22	30		99408	A86622
22	31	4730-01-115-7364	16662	A86624
22	32		37562	B1900-4221-1
22	33	5975-00-451-5001	96906	MS3367-3-9
22	34		37562	81900-4219
22	35		37562	81900-4219-1
22	36		63477	AC20209
22	37	4730-00-696-0522	16662	AC2476
22	38	5340-30-057-8689	96906	MS21333-11
22	39	5305-00-068-0502	96906	MS90725-6
22	40	4730-01-115-7362	79470	1469X8X4
22	41		37562	B1900-4226
22	42	4730-01-119-6895	79470	1472-8
22	43		37562	B1900-4214
22	44		99408	A86622
22	45		37562	B1900-4214-1
22	46	4730-01-115-7364	16662	A86624
22	47		37562	81900-4222
22	48		16662	AC20209
22	49		37562	81900-4222-1
22	50	4730-00-696-0522	16662	AC2476
22	51		37562	81900-4231
22	52	4730-00-595-0143	79470	3350X8
22	53	4820-00-618-5046	06853	227856
22	54	4730-01-095-5833	79470	1472X6X6X6
22	55	4730-00-817-6578	79470	3220X8X6
22	56		37562	B1900-4225
22	57	4730-00-202-6491	81495	S-738-11
23	1	2530-01-117-2888	16662	AC-80571

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
23	2	4730-00-289-2357	01276	2089-8-8S
23	3		37562	B1900-4215
23	4	4730-00-696-0522	16662	AC2476
23	5		00624	2570-6-20
23	6	4730-01-095-5833	79470	1472X6X6X6
23	7	4730-00-196-1999	96906	MS51846-82
23	8		37562	B1900-4218
23	9	4730-00-696-0522	16662	AC2476
23	10		00624	2570-6-40
23	11	4820-01-159-9731	06853	227717 SC-2
23	12	4730-00-595-0143	79470	3350X8
23	13	4820-01-115-3453	06853	276068
23	14	4730-00-278-3912	03958	8169006
24	1	9905-00-740-9721	97384	60244-90104
24	2	4730-00-244-9848	28548	5228623
24	3	9905-00-774-4284	06853	201499
24	4	4730-00-595-0083	79146	M535746-1
24	5	4730-01-106-1757	06853	240233
24	6	5305-00-051-0835	96906	MS51957-94
24	7	5330-00-090-2128	06853	213630
24	8		06853	240232
25	1	5310-00-056-3395	96906	MS35649-2382
25	2	5310-00-637-9541	96906	MS35338-46
25	3	4820-01-095-8755	16662	A78889
25	4		96906	MS51846-66
25	5	2530-01-304-5600	37562	AD80963
25	6	2530-01-115-0987	16662	AE83336
25	7	4730-00-196-1999	96906	MS51846-82
25	8	2530-01-330-8235	63477	AE-85732
25	9	4820-00-142-3036	97907	102143
25	10	5325-00-754-1154	96906	MS35489-71
25	11	5310-00-080-6004	96906	MS27183-14
25	12	5305-00-543-2419	96906	MS35291-061
25	13	2530-01-115-1490	06853	283071
26	1	5310-00-763-8905	96906	MS51968-20
26	2		50153	030SB
26	3	5310-00-820-6653	96906	MS35338-50
26	4	5310-00-915-4891	96906	MS51967-21
26	5	5315-00-236-8357	96906	MS24665-368
26	6	5340-01-116-4684	50153	llM018-1/2
26	7	5315-01-118-5832	96906	MS9468-18
27	1	5305-00-411-9331	78500	S-255-C
27	2		78500	WA-15-C
27	3	2530-01-187-2336	26151	343-4249
27	4	5330-00-576-3028	78500	2208-N-430
27	5	5310-01-117-2404	78500	1227-B-756
27	6	5310-01-116-4765	78500	A1229-W-2545
27	7	2530-00-886-1103	78500	1227-C-549
27	8	3110-00-293-8998	27996	3A2707-1
27	9	3110-00-293-8997	24617	457184
27	10	2530-01-317-8263	78500	A-333-U-2153

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
27	11	3110-00-618-0249	60038	HM218210
27	12	3110-00-618-0248	60038	HM218248
27	13	2530-01-083-1055	29222	16797
27	14		78500	3280-Q-3657
27	15	5330-01-090-2107	78500	1205-P-1212
27	16	5306-30-467-3010	78500	20-X-997
27	16	5307-00-467-3009	16821	20-X-996
27	17	5365-00-803-7303	96906	MS16624-1075
27	18	2530-00-359-1162	96906	MS53068-2
27	18	2530-00-693-1029	78500	1199-X-115
27	19	2530-01-297-7315	22337	SR263LB
27	20	2530-01-216-2506	22337	27166
27	21	5310-00-161-9964	78500	1199-N-118
27	21	5310-00-880-2004	96906	MS51983-3
28	1	2610-00-204-4033	81348	GROUP3/10.00-22/ FJTBHR
28	2	2610-00-260-7342	81348	GROUP2/1.000-22/ TR78A/ON CENTER
28	3	2640-00-060-3550	81336	910-08-2168-500
28	4	2640-00-810-5861	96906	MS51377-1
29	1		37562	B1900-1000
29	2	5305-00-068-0502	96906	MS90725-6
29	3	5305-00-071-2069	80204	B1821BH05OC150N
29	4		37562	B1900-1300
29	5		37562	B1900-1602
29	6	5310-00-582-5965	96906	MS35338-44
29	7	5310-00-905-0762	96906	MS51967-3
29	8	2540-00-860-0575	96906	MS51331-3
29	9	5305-00-732-0511	80204	81821BH050C113N
29	10	2510-01-271-7090	37562	B1900-1601
29	11	5310-00-584-5272	96906	MS35338-48
29	12	5310-00-768-0318	96906	MS51967-14
30	1	5310-00-820-6653	96906	MS35338-50
30	2	5310-00-915-4891	96906	MS51967-21
30	3	5305-00-004-3162	96906	MS24667-84
30	4	5305-00-836-6680	96906	MS24667-87
30	5		37562	B1900-1550
31	1		37562	B1900-1013
31	2	4730-00-277-1921	88044	AN939-4
31	3		37562	B1900-1019-1
31	4	4730-00-217-2433	01276	412-4-6S
31	5		37562	B1900-1019
31	6	4730-01-065-7552	01276	411-6S
31	7	4730-00-995-1559	96906	MS51500A6
31	8	4730-00-172-0001	88277	912499
32	1	2530-01-105-9169	80837	J-7043
32	2	5310-00-584-5272	96936	MS35338-48
32	3	5310-00-768-0318	96906	MS51967-14
32	4	5310-00-113-3757	96906	MS35650-3392
32	5	5310-00-959-4675	96906	MS35340-46
32	6	5305-00-725-0154	96906	MS90727-112

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FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
32	7	5305-00-071-2069	80204	B1821BH05OC150N
32	8	2590-01-238-2754	37562	B1900-1405
32	9	2590-01-124-7961	80837	LPR-2-30-444
32	10	2590-01-124-7901	80837	8999-3
32	11	4730-01-115-8269	80837	1351-A7
32	12		80837	6956-1
32	13	3020-01-060-8946	80837	J-5312-1
32	14	3020-01-060-8945	80837	J-5311-1
32	15	5315-00-822-9460	96906	MS16562-78
32	16		80837	8994
32	17	5340-01-061-2943	80837	8984
32	18	5310-01-060-7259	80837	1402A7
32	19	5310-00-220-6843	80837	J-1219
32	20	3120-01-060-9315	80837	J-5313
32	21	5315-00-844-5836	96906	MS16562-65
32	22	5305-00-688-2111	80204	B1821BH038C138N
32	23		80837	6884
32	24	3040-01-105-9768	80837	6943-2
32	25	5310-00-851-2682	96906	MS35691-17
32	26		80837	6948-1
32	27		80837	6364-1
32	28		80837	J-5309
32	29	5315-01-213-5066	80837	1914-A1
32	30	5315-00-836-9642	96906	MS16562-79
32	31		80837	9366-3
32	32	5305-00-071-1315	96906	MS51957-79
32	33	4730-01-115-6680	80837	1351-A3
32	34	5310-00-056-3395	96906	MS35649-2382
32	35	5310-00-080-6004	96906	MS27183-14
32	36	5340-01-113-9708	80837	J-27BX-3
32	37	5305-00-269-3219	96906	MS90725-69
32	38	5360-01-061-3204	80837	6365-1
32	39	3110-01-067-0307	80837	1051-A1
32	40	3020-01-062-3840	80837	J-5310-1
32	41	5315-01-063-0461	80837	1456-AI
32	42	2590-01-124-5619	80837	8998-3-KIT
32	43	5315-00-515-0495	80837	J-3237
32	44	2590-01-124-0329	80837	6997-3
32	45	5340-01-061-9023	80837	J-4928-1
32	46	3110-00-117-0759	80837	1102-A2
32	47	2590-01-115-0650	80837	J-4514-3
32	48	5305-00-269-3211	96906	MS90725-60
32	49	2590-01-115-0427	24234	750005
32	50	5310-00-896-0903	96906	MS51967-12
33	1		77125	K1424
33	2		77125	L1025
33	3		77125	856834
33	4	5305-01-117-3410	06625	H80070
33	5	5310-01-118-1197	06625	H230
33	6		77125	H76008
33	7	5310-00-044-3340	24617	443340

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FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
33	8	5305-01-116-4814	77125	H85050
33	9	5310-01-116-8968	77125	H75814
33	10	2510-01-251-7779	77125	K1014
33	11	5306-01-116-5424	77125	H75025
33	12	2510-01-124-0231	06625	D21032
33	13	5365-01-306-3450	77125	K1036
34	1	5310-01-118-2478	06625	H75809
34	2	5305-01-118-0898	77125	H88755
34	3	2530-01-267-6070	77125	M209657
34	4		77125	M209693
34	5		77125	M109202
34	6	5365-01-117-3529	06625	L1032
34	7		77125	M109201
35	1		37526	B1900-3000
35	2		37562	B1900-3050
35	3	5305-00-050-9231	96906	MS51957-65
35	4	5310-00-934-9758	96906	MS35649-202
35	5	5310-00-045-3296	96906	MS35338-43
35	6		00912	350
36	1	2510-01-185-8293	37562	B1900-1200
36	2	5330-01-116-3595	91840	K-8020-24
36	3		37562	B1900-120
36	4	5430-01-115-2654	12718	300S-3
36	5	5305-00-068-0501	96936	MS90725-5
36	6	2510-01-243-7163	91840	K-6716-9
36	7	5315-00-236-8357	96906	MS24665-368
36	8	5315-01-116-8010	91840	K-6820-9
36	9	5315-01-118-0155	91840	K-6110-12
37	1	5310-00-934-9758	96906	MS35649-202
37	2	5310-00-045-3296	96906	MS35338-43
37	3	5305-00-050-92Z9	96906	MS51957-63
37	4	9905-00-202-3639	96906	MS35387-2
37	5	9905-00-205-2795	96906	MS35387-1
38	1	5305-00-071-1786	80204	B1821BH044C100N
38	2	5310-00-880-8189	96906	MS51967-11
38	3	5310-00-209-0965	96906	MS35338-47
38	4		37562	B1900-6616
38	5	3040-01-263-6504	37562	B1900-6609
38	6	4720-01-124-6698	37562	B1900-6600
38	7	4730-01-010-9057	80691	C-4
38	8	4730-00-908-6294	96906	MS35842-16
38	9	4720-01-115-0872	37562	B1900-6602
38	10		80691	E-4BRASS
38	11		37652	51900-6604
39	1	4820-01-336-9067	ONG12	OFVS-40
39	2	5305-00-922-7994	80204	B182l8H075C250N
39	3	4820-01-124-9041	58344	540-
39	4	4820-01-115-1520	7L763	24869
39	5		ONG12	FVSP-40
39	6		ONG12	FVS-40
39	7	5310-00-763-8921	96906	MS51967-23

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FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
40	1	2590-01-106-4067	37562	B1900-4800
40	2		37562	B1900-4801
40	3	5310-00-582-5965	96906	MS35338-44
40	4	5310-00-851-2674	96906	MS35691-1
40	5	4730-01-113-0699	37562	81900-4822
40	6	4730-01-155-5068	34629	56842
40	7	4730-00-222-1838	96906	MS51846-39
40	8	5305-00-855-0961	96906	MS24629-35
40	9		37562	81900-4819
40	10	5330-01-109-2981	13445	11164
40	11	5935-01-107-8397	37562	B1900-4811
40	12	5305-00-068-0502	96906	MS90725-6
40	13		37562	81900-4868A
40	14	4730-01-161-2053	34629	56944
40	15		37562	B1900-4868B
41	1	5305-00-050-9231	969C6	MS51957-65
41	2	4820-01-110-7177	98963	R21-02-000
41	3	5310-00-934-9758	96906	MS35649-202
41	4	5310-00-045-3296	96906	MS35338-43
42	1		11331	104584
42	2	4820-01-215-7936	11331	111814
42	3	5310-00-045-3296	96906	MS35338-43
42	4	5305-00-050-9229	96906	M551957-63
43	1	5305-00-071-1315	96906	M551957-79
43	2	5310-00-582-5965	96906	MS35338-44
43	3	5310-00-851-2674	96906	MS35691-1
43	4		37562	B1900-5313
43	5		37562	B1900-5317
43	6		13445	24106
43	7	5925-00-223-1842	13445	30055-8
43	8	5305-00-050-9229	96906	MS51957-63
43	9	5310-00-045-3296	96906	MS35338-43
43	10	5310-00-934-9758	96906	MS35649-202
43	11	5310-00-851-2674	96906	MS35691-1
43	12	5305-00-071-1315	96906	MS51957-79
43	13	5945-01-115-5171	13445	M-202
44	1	9905-01-120-2134	37562	B1900-8001
44	2	9905-01-119-2561	37562	81900-8006
44	3		37562	B1900-8002
44	4	5305-00-052-6913	96906	MS24629-33
44	5	9905-01-119-2550	37562	B1900-8005
45	1	9905-01-008-1378	19207	7535606
45	2	7690-01-324-0839	37562	B1900-4838
45	3	9905-01-269-3377	37562	81900-4837
45	4	5305-00-087-2070	96906	MS24629-20
45	5	9905-01-253-1277	37562	B1900-4844
45	6	9905-01-292-5564	37562	B1900-4843
46	1	5305-00-724-7221	80204	318215H063C175N
4S	2	5310-00-915-4891	96906	MS51967-21
46	3	5310-00-820-6653	96906	MS35338-50
46	4		37562	B1900-51113

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
47	1	5305-00-050-9227	96906	MS51957-61
47	2		37562	B1900-5130
47	3		13446	NA002302
47	4	5305-00-051-0835	96906	MS51957-94
47	5		37562	81900-5128
47	6	5305-00-441-0243	94222	17-11-104-11
47	7	2990-01-106-4703-	37562	B1900-5101
47	8	5305-00-071-2241	96906	MS90725-10
47	9	5310-00-582-5965	96906	MS35338-44
47	10	5310-00-905-0762	96906	MS51967-3
47	11		37562	B1900-4838
47	12	5935-01-107-8397	37562	B1900-4811
47	13	5305-00-225-3343	80204	B1821BH025C100N
47	14	5310-01-273-1591	13446	NA002357
47	15	5305-01-144-1572	13446	NA002388
47	16		13446	NA002432
47	17	5310-00-768-0318	96906	MS51967-14
47	18	5310-00-584-5272	96906	MS35338-48
47	19	5310-00-934-9758	96906	MS35649-202
47	20		13446	NA002350
47	21	5310-00-407-9566	96906	MS35338-45
47	22	5310-00-880-7744	96906	MS51967-5
48	1		13446	NA002439
48	2	5305-00-071-1789	96906	MS90728-86
48	3		37562	B1900-5126
48	4		37562	B1900-5125
48	5	5310-00-209-0965	96906	MS35338-47
48	6	5310-00-880-8189	96906	MS51967-11
48	7	5305-30-724-7221	80204	81821BHO63C175N
48	3		13446	38126226
48	9		37562	31900-5127
48	10	5305-00-165-8074	96906	MS51095-420
48	1}	5310-00-809-3079	96906	MS27183-19
48	12		13446	NA002425
48	13	5310-00-820-6653	96906	MS35333-50
48	14	5310-00-915-4891	96906	MS51967-21
43	15	7690-01-324-0839	37562	B1900-4838
48	16		13446	NA002372
48	17	5310-00-768-0318	96906	MS51967-14
48	i8	5325-01-116-9209	13446	0920769
48	19		13446	38126227
48	20	5310-01-116-4766	13446	0920054
48	21	5305-01-117-3401	13446	0746454
48	22	5307-01-115-9774	13446	0826617
48	23	5310-01-116-4831	13446	0576153
48	24	5310-01-116-4767	13446	0920055
48	25	5305-00-732-0511	80204	B182l8H05Cl13N
48	26		13446	38155178
48	27	5310-00-584-5272	96906	MS35338-48
48	23		13446	NA002424
48	2	5305-01-117-4188	13446	0746252

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
48	30	5310-01-109-6761	13446	0920053
48	31		13446	38155177
48	32	2815-01-021-1743	13446	4108SN108US877
49	1	5310-01-109-6597	13446	0576002
49	2	5310-01-109-6761	13446	0920053
49	3	5365-01-109-5998	13446	36151505
49	4		13446	0826249
49	5	5365-01-117-4067	13446	32161114
49	6	2815-01-021-0402	13446	31358117
49	7	5330-01-116-1148	13446	36812134
49	8	5307-01-116-8061	13446	0826631
49	9	5310-01-116-6509	13446	33531117
49	10	5310-01-117-4206	13446	33221317
49	11	5310-01-117-3430	13446	33287314
49	12	5310-01-116-4763	13446	33115411
49	13	5307-01-116-6697	13446	32524148
49	14	2815-01-124-5541	13446	93654
49	15	5340-01-109-6601	13446	0650664
49	16	5340-01-109-6600	13446	0650777
49	17	5340-01-116-1131	13446	0650710
49	18	5305-01-117-3402	13446	0096238
49	19	5330-00-908-7297	13446	36883107
49	20		13446	90990
49	21	5306-01-116-3543	13446	0746259
49	22	5330-00-906-6259	13446	36826114
49	23	5330-00-908-7278	13446	0490740
49	24	5340-01-116-9292	13446	0650563
49	25	4730-00-288-8055	81348	WW-P-471AASBCA
49	26	5365-01-117-4068	13446	32114481
49	27		13446	36256717
49	28	5305-01-021-6700	13446	0746254
49	29		13446	0201297
49	30	5306-00-909-4372	13446	32166216
49	31	5310-01-099-7017	30076	140598
49	32		13446	0350014
49	33	5340-01-160-4697	13446	0650717
49	34	5330-00-908-7296	13446	36846412
49	35		13446	37554591
50	1	5305-01-021-6700	13446	0746254
50	2	5310-01-116-4766	13446	0920054
50	3	5310-01-099-7889	30076	992630
50	4		13446	0940990
50	5	6620-00-372-4669	13446	485666
50	6	2815-00-908-6661	13446	33261741
50	7	2815-00-909-1897	13446	33261723
50	8	5330-01-010-9823	13446	0490184
50	9	2815-01-111-3956	13446	0200666
50	10	5310-01-099-7150	30076	101985
50	11	5306-01-116-4735	13446	0096433
50	12		13446	0650685
50	13	5340-01-116-9292	13446	0650563

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
50	14		13446	2431154
50	15		13446	0650576
50	16		13446	ZZ80083
50-	7	5340-01-109-6601	13446	0650664
50	18	2815-01-115-0652	13446	33123411
50	19	2815-00-066-1251	13446	37443591
50	20		13446	0921249
50	21	2815-01-114-9283	13446	33124424
51	1		13446	37171334
51	2	6680-01-326-7342	13446	31747838
51	3	5310-01-099-7901	30076	125519
51	4	5330-01-116-1151	13446	0999659
51	5	4730-00-288-8055	81348	WW-P-471AASBCA
51	6	5330-00-925-4293	13446	0490775
51	7	5310-01-109-6761	13446	0920053
51	8	5305-01-111-9313	13446	0746255
51	9	2590-00-871-6894	13446	2487845
51	10	2590-00-871-6894	13446	2487845
51	11	5330-01-116-1150	13446	24870001
51	12	2590-01-160-5880	13446	35784459
51	13	4730-00-999-8582	21450	454087
51	14	4730-00-221-2139	96906	MS20913-4S
51	15		37562	B1900-5109
51	16	4730-00-265-6904	96906	MS51953-78B
51	17	5310-01-109-6597	13446	0576002
51	18	5330-01-116-1149	13446	36834117
51	19	5307-01-116-1175	13446	0826210
51	20	5305-01-118-2441	13446	0746260
51	21	5305-01-116-7348	13446	0096236
51	22		13446	0620571
52	1	2815-00-872-6330	13446	84417
52	2		13446	84417-X
52	3	3120-00-906-6277	13446	0921120
52	4	3120-00-906-6278	13446	0921118
52	5	3120-00-054-2149	13446	84992
52	6	5315-01-159-4459	13446	0500006
52	7		13446	33474003
52	8	3020-01-116-0029	13446	31147633
52	9	5310-00-757-5449	13446	33124119
52	1o	5305-01-116-7364	13446	32162316
53	1	5330-01-118-3005	13446	0730144
53	2	5305-01-117-4188	13446	0746252
53	3	5310-01-109-6761	13446	0920053
53	4		13446	0941221
53	5	5310-01-116-4766	13446	0920054
53	6	5306-01-116-4735	13446	0096433
53	7		13446	0350017
53	8	2815-01-115-1020	13446	0999573
53	9	3020-01-106-1821	13446	0410277
53	10		13446	0999573-X
53	11	5310-01-116-5298	13446	31734129

FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
53	12	5305-01-116-5433	13446	0746653
53	13	5305-01-116-3544	13446	0746424
53	14	2915-01-105-8642	13446	37138021
53	15	5365-01-106-3697	30076	992025
53	16	5310-01-116-6474	13446	2411157
53	17		13446	32114471
53	18	5365-01-116-8013	13446	32114461
53	19		13446	0994788
53	20	5310-01-116-6475	13446	0920051
53	21	5305-01-116-3545	13446	0726258
54	1	2815-01-021-5002	13446	86764
54	2	2815-01-044-5430	13446	85758
54	3	5365-01-116-8053	13446	2721-124
54	4		13446	85758-X
54	5		13446	85758-Y
54	6	2815-01-020-7125	13446	ZZ90005
54	7	3120-01-116-6471	13446	31134145
54	8		13446	83417-X
54	9	5310-01-136-2179	13446	33115121
54	10	5305-01-117-1455	13446	0095314
54	11	3120-00-042-4250	13446	85037
55	1	2590-O1-115-0665	13446	2487841
55	2		13446	2487841-X
55	3	5330-01-116-1150	13446	24870001
55	4	2815-01-105-9996	13446	37188137
55	5	5310-01-117-4207	13446	0576102
55	6	5310-01-098-9092	30076	985567
55	7	5365-00-910-5288	13446	0730116
55	8	5330-00-911-4790	13446	0490724
55	9		13446	35731143
55	10		13446	33872312
56	1	5305-01-109-6638	13446	0746461
56	2	5340-01-109-6378	13446	0921159
56	3	5365-00-881-8782	13446	0941044
56	4	2815-00-906-6255	13446	33426516
56	5	5315-01-112-1521	13446	0610844
56	6	3120-00-908-7287	13446	36178509
56	7		13446	31434152
56	8	2815-00-908-7286	13446	31415303
56	9	5340-01-109-5865	13446	32813106
56	10	5365-01-109-6619	13446	0170052
56	11	6680-00-872-6329	13446	33473107
56	12	3120-00-872-6328	13446	0050358
56	13	4320-00-563-6609	13446	0770101
57	1	2815-00-871-6899	13446	58529
57	2	3040-00-908-6665	13446	55286
57	3		13446	0170033
57	4		13446	0650507
57	5		13446	55286-X
57	6	5310-01-116-5333	13446	0920485
57	7	5307-01-116-3667	13446	0826250

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
57	8	5310-01-109-6761	13446	0920053
57	9	5310-01-117-4208	13446	0576302
57	10	5307-01-115-9775	13446	085219
57	11	5340-00-908-7289	13446	0102202
57	12	5360-00-066-1253	13446	0780261
57	13	5310-01-116-6480	13446	0921122
57	14	2815-00-908-7288	13446	41151472
57	15		13446	41151448-X
57	16	3120-00-316-6980	K5436	0050132
57	17	5310-01-109-6379	13446	0576151
57	18	5305-01-110-4730	13446	0720790
57	19	4730-01-106-0637	13446	0571351
57	20	4710-01-164-1628	13446	34414122
57	21	4730-01-106-0213	13446	0566002
57	22	2815-00-871-6892	13446	0201318
57	23	2815-00-908-6663	13446	0230001
57	24	5340-00-908-6662	13446	0150129
57	25	2815-00-908-6680	13446	33817403
57	26	5360-01-162-0259	13446	0780144
57	27	5340-00-906-6262	13446	0921117
57	28	2815-00-910-5287	13446	0910061
57	29	2815-00-908-T291	13446	0910060
57	30		13446	31434306
58	1	5305-01-109-9930	13446	0746355
58	2	5310-01-109-6761	13446	0920053
58	3	5310-01-099-7943	30076	992629
58	4	3020-00-065-0231	13446	31171542
58	5	5365-01-109-6620	13446	0170048
58	6	2815-01-105-9170	13446	33472494
58	7	5305-01-111-9313	13446	0746255
58	8	3020-00-906-6260	13446	31171541
58	9	5365-01-109-6621	13446	2724436
58	10	5315-01-159-4459	13446	0500006
58	11	2815-O1-105-9490	13446	41425781
58	12	3120-01-109-9368	13446	2511447
58	13	3020-01-113-4584	13446	31171245
58	14		13446	31134137
58	15		13446	4115036
58	16	5365-01-109-6622	13446	0170148
58	17	3120-01-113-8845	13446	33423135
58	13	2815-01-105-7502	13446	33472491
58	19	5330-00-909-1893	13446	36813145
58	20	5310-01-109-5918	13446	0576001
58	21	5310-01-109-5970	13446	0920052
58	22	5307-01-109-5371	13446	0826248
58	23	5330-01-109-5969	13446	36151506
58	24	5306-01-111-7516	13446	0746052
58	25	2815-01-105-7501	13446	37161104
58	26	5365-01-109-5998	13446	36151505
58	27	5340-01-109-5076	13446	32726511
58	28	5330-01-116-6441	13446	0730098

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
58	29	5310-01-109-6597	13446	0576002
58	30	5305-01-111-9313	13446	0746255
58	31	5307-01-114-3621	13446	0826201
59	1	4320-00-908-3184	13446	41314092
59	2	2815-01-098-1951	13446	32712715
59	3		13446	0610011
59	4	5360-01-109-6602	13446	31742128
59	5	2815-00-875-8277	13446	0150144
59	6	5305-01-109-9980	13446	0746201
59	7	5310-01-160-4548	13446	36151507
59	8	4730-01-106-3760	13446	0566007
59	9	4730-01-106-0629	13446	0571352
59	10	4710-00-876-8543	13446	0623293
60	1	4730-01-098-4327	13446	0560244
60	2		13446	33532121
60	3	5310-01-1O9-6761	13446	0920053
60	4	5306-01-116-7992	13446	0746253
60	5	2815-01-105-9171	13446	35737167
60	6	5360-00-881-8781	13446	0780310
60	7	4730-00-876-8548	13446	37725448
61	1	5330-01-116-1152	13446	36862517
61	2		13446	37764181
61	3	5310-01-109-6632	13446	33115118
61	4		13446	0746652
61	5	4330-01-058-5455	13446	2654403
62	1	5330-00-906-6254	13446	0490656
62	2	2315-01-105-9099	13446	37783543
62	3	5330-01-116-1153	13446	0490228
62	4	4730-01-105-9742	13446	0940357
62	5	5307-01-109-5973	13446	0826242
62	6	5310-01-099-7943	30076	992629
62	7	5310-01-117-1501	13446	2188134
62	8	5307-01-109-5974	13446	0826260
63	1	2815-01-106-0035	13446	37786175
63	2	4720-01-159-8901	13446	0470688
63	3	4730-01-115-9533	13446	0180118
63	4	5330-01-116-1154	13446	36846415
63	5	5310-01-109-6761	13446	0920053
63	6	5306-01-116-6464	13446	0096233
63	7	5305-01-116-1162	13446	0096237
63	8	5306-01-116-5434	13446	0096231
64	1	5307-01-116-9323	13446	0826274
64	2	5310-01-109-6597	13446	0576002
64	3		13446	0095315
64	4	5310-01-098-9092	30076	985567
64	5	5307-01-116-1176	13446	0826232
64	6	4710-01-115-1128	13446	35587355
64	7	4730-01-117-0107	13446	0201526
64	8	5310-01-117-3431	13446	0576111
64	9	4730-01-106-0213	13446	0566002
64	10		13466	35354244

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
64	11	5340-01-116-8048	13446	36644132
64	12	5310-01-099-7943	30076	992629
64	13	5310-01-109-6761	13446	0920053
64	14	53O5-01-116-5431	13446	2172692
64	15	2910-01-115-5010	63632	3249F010
64	16	5310-01-109-6597	13446	0576002
64	17	5307-01-116-1177	13446	0826244
64	18	5340-01-098-5837	30076	161315
64	19	5305-01-116-9169	13446	0726264
64	20	5310-01-117-4209	13446	0571350
64	21	5340-01-109-6611	13446	0180637
64	22	5310-00-288-2552	K5436	0920113
64	23	4710-00-073-3212	03798	35353247
64	24	2910-00-071-2319	03798	11701
64	25	2910-00-073-3201	03798	33435
64	26	2910-01-115-6722	13446	36173452
64	27	2910-01-115-0491	13446	2646522
64	28	4710-00-073-3209	13446	35343078
64	29		13446	35354243
65	1		13446	NA003763
65	2	5310-00-584-5272	96906	MS35338-48
65	3	5310-00-768-0318	96906	MS51967-14
65	4		04856	51930
65	5		04856	52029
65	6	5310-00-584-5272	96906	MS35338-48
65	7	5310-00-768-0318	96906	MS51967-14
65	8	2940-01-093-9010	21585	C-12233-GR-12
65	9		04856	58249-1
65	10	5305-00-716-8206	96906	MS90725-135
65	11	5310-00-926-5870	96906	MS35338-144
65	12		13446	NA002364
65	13		13446	0920464
65	14		13446	NA003769
65	15	5310-00-823-8803	96906	MS27183-21
65	16	5310-00-820-6653	80045	23MS35338-50
65	17	5305-00-432-3755	80204	B1821BH063C113N
65	18	5305-00-732-0512	80204	B1821BHO50C075N
66	1	4730-00-595-2834	12570	000-027-081
66	2	4730-00-187-7610	96906	MS39233-2
66	3	4730-00-706-7761	97907	9196130
66	4	2910-00-400-6861	18265	RBX00-2252
66	5	4730-00-253-4412	96906	MS39230-2
66	6	5305-00-071-1315	96906	MS51957-79
66	7	3930-00-069-3519	18265	P-10-5168
66	8	5310-00-582-5965	96906	MS35338-44
66	9	5310-00-905-0762	96906	MS51967-3
67	1		37562	B1900-5200
67	2	5310-00-763-8921	96906	MS51967-23
67	3		16428	71284
67	4	5310-00-809-8533	96906	MS27183-23
67	5		37562	B1900-5218

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FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
67	6		37562	B1900-5206
67	7	4730-00-775-5785	49349	19-61
67	8		37562	B1900-5225
67	9	4730-00-221-2137	96906	MS20913-2S
67	10		37562	B1900-5217
67	11	5310-00-056-3395	96906	MS35649-2382
67	12	5310-00-637-9541	96906	MS35338-46
67	13	5305-00-543-2419	30204	B1821BH038C113N
68	1	2590-00-247-6653	11331	WM388U1C2B
68	2	5305-00-225-3843	80204	B1821BH025C100N
68	3		37562	B1900-5301
68	4	5315-00-839-5822	96906	MS24665-353
68	5	5315-00-754-0848	96906	MS35813-3
68	6	5360-01-116-9283	37562	B1900-5133
68	7	5310-00-905-0762	96906	MS51967-3
68	3	5310-00-582-5965	96906	MS35338-44
69	1	3040-01-353-5911	41625	307941-003
69	2		41625	307142-0-32
69	3	5310-00-905-0762	96906	MS51967-3
69	4	5310-00-582-5965	96906	MS35338-44
69	5	5305-00-068-0502	96906	MS90725-6
69	6		13446	NA002447
69	7	5945-01-159-7703	13446	NA004756
69	8	2590-01-318-7961	41625	B48722-000-0042 0
69	9		37562	B1900-5129
69	10	5310-00-637-9541	96906	MS35338-46
69	11	5305-00-269-3209	96906	MS90725-58
69	12		37562	81900-5304
69	13	5315-00-234-1619	96906	MS24665-170
69	14	5315-00-187-9376	96906	MS24665-315
69	15	5310-00-809-4058	96906	M527183-10
69	16		37562	B1900-5306
69	17	5360-01-117-3769	37562	81900-5312
69	18	5340-01-117-3995	37562	81900-5310
69	19	2990-00-451-4838	41625	A37693
69	20	3040-01-173-8720	13446	NA00Z393
69	21	5310-00-880-7746	96906	MS51968-5
69	22		13446	NA003485
70	1	4730-01-117-0090	13446	0571346
70	2	4730-01-115-8451	13446	0566004
70	3	2910-01-115-2863	13446	2641702
70	4	5330-01-101-4313	13446	36851113
70	5	5315-01-160-4648	13446	0700279
70	6	5310-01-116-9186	13446	33221115
70	7	2910-01-099-0220	13446	36241316
71	1	4710-01-115-0738	13446	34237308
71	2	4730-01-098-5202	13446	33225413
71	3	4730-01-098-6757	13446	33811115
71	4		13446	0095332
71	5	5365-01-098-9815	30076	981652

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FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
71	6	4730-01-098-5203	13446	0201091
71	7	5310-00-288-2553	K5436	0920154
71	8	5305-01-116-7365	13446	0746453
71	9	5310-01-116-4766	13446	0920054
71	10	5310-01-099-7150	30076	101985
71	11	5365-01-117-3228	13446	32161113
71	12	5365-01-117-3227	13446	0650204
71	13	5310-01-117-1510	13446	0920112
71	14	5310-01-102-2713	13446	0920146
71	15	5310-01-099-7889	30076	992630
71	16		13446	33555338
71	17	4730-01-099-0189	13446	33811112
71	18	4730-01-098-4147	13446	33225412
71	19	4710-01-115-1337	13446	34416314
71	20	5340-01-117-4084	13446	0181029
71	21	4710-01-115-3425	13446	35842068
71	22		13446	33532118
71	23		13446	33811113
71	24	4710-01-115-5043	13446	35843081
71	25	4330-01-084-0409	13446	2656613
71	26		13446	36444318
71	27	2940-01-124-8818	13446	2656615
71	28	4710-01-115-1336	13446	35842006
71	29	2910-00-057-1421	75160	AT17387T
71	30	5310-01-117-4210	13446	0576051
72	1	5305-00-269-3209	96906	MS90725-58
72	2	5310-00-637-9541	96906	MS35338-46
72	3	4730-01-115-8451	13446	0566004
72	4	4730-01-117-0090	13446	0571346
72	5	4710-01-111-5869	37562	B1900-5111-A
72	6	4930-01-085-3774	13446	2656084
72	7	4330-01-317-8275	13446	2656084-X
72	8	5330-01-116-1155	13446	0490786
72	9	4930-01-085-3774	13446	2656084
72	10		13446	2656084-Z
73	1		66351	TM-B-1900-42
73	2		13446	NA002354
73	3		13446	0380068
73	4	5330-01-116-1153	13446	0490228
73	5	5307-01-109-5973	13446	0826242
73	6	5310-01-099-7943	30076	992629
73	7	5310-01-117-1501	13446	2188134
74	1	2930-01-106-4221	13446	2485203
74	2	5325-01-116-9209	13446	0920769
74	3	5310-01-117-1511	13446	0920497
74	4	5310-01-109-6761	13446	0920053
74	5	5310-01-109-6597	13446	0576002
74	6		13446	24850016
74	7	4730-01-115-4977	13446	2481820
74	8	4720-01-106-8011	13446	34821425
74	9		13446	33!32112

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FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
74	10		13446	32517124
74	11	5310-01-117-4210	13446	0576051
74	12	5310-01-116-4766	13446	0920054
74	13	5306-01-116-6619	13446	0096208
74	14	4730-01-115-3373	13446	2481813
74	15	4720-01-106-4289	13446	34828434
74	16	5305-01-021-6700	13446	0746254
74	17		13446	38343115
74	18		13446	3654414
74	19		13446	0826477
74	20	5310-01-116-8056	13446	0920488
74	21		13446	2635164
74	22	5310-01-117-3291	13446	33124146
74	23	5305-01-111-9313	13446	0746255
74	24	5306-01-116-7992	13446	0746253
74	25		13446	38342162
74	26	4820-00-871-6895	13446	2461163
74	27	2590-01-298-3323	13446	0150170
74	28	4730-01-115-3374	13446	0180108
74	29		13446	32517117
75	1	5305-01-116-7348	13446	0096236
75	2	5310-01-109-6761	13446	0920053
75	3		13446	31146803
75	4		13446	41312471
75	5	5330-00-908-6659	13446	36866713
75	6		13446	36243515
75	7	5330-00-908-6658	13446	36866421
75	8	5306-01-161-2568	13446	0096234
76	1	2930-01-106-3738	13446	31257137
76	2		13446	37413581
76	3	3030-00-864-7398	10988	G10013
76	4	5306-01-116-5434	13446	0096231
76	5	5310-01-116-8008	13446	0920645
77	1	5306-01-118-1172	13446	0746601
77	2		13446	38163111
77	3	5306-01-116-6620	13446	0096235
77	4	5310-01-109-6761	13446	0920053
77	5	5310-01-099-7943	30076	992629
77	6		30076	992632
77	7	5310-01-116-5297	13446	2211305
77	8		16764	1103133
77	9	5306-01-116-4735	13446	0096433
77	10	5310-01-116-4766	13446	0920054
77	11	5310-01-099-7889	30076	992630
77	12	5310-01-109-6597	13446	0576002
77	13		13446	33245114
77	14		13446	36155132
77	15	5306-01-161-2568	13446	0096234
78	1	2920-00-890-5025	16764	1113273
78	2	5365-01-117-4980	13446	33127109
78	3	5307-01-116-6698	13446	0827810

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FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
78	4	5310-01-116-4766	13446	0920054
78	5	5310-01-117-4210	13446	0576051
79	1	5995-01-159-5905	13446	NA003441
80	1	6620-01-100-2530	37562	81900-6017
81	1	5305-00-269-3218	96906	MS90725-68
81	2	5310-00-637-9541	96906	MS35338-46
81	3	5310-00-056-3395	96906	MS35649-2382
81	4	5305-00-269-2804	96906	MS90726-61
82	1	4320-01-233-3428	38455	4C7/SPEC Q6486AB
82	2	5305-00-732-0511	80204	B1821BH050C113N
8Z	3		38455	22471-02
82	4	4730-00-221-2136	96906	MS20913-1S
82	5	4820-00-884-5620	38455	27186-00
82	6	5306-00-159-5578	96906	MS35751-125
82	7	4320-00-428-2750	38455	15128-02
82	8	4820-01-115-0614	38455	15636-00
82	9	4320-00-428-2749	38455	15127-02
82	10		38455	27185-00
82	11	5310-00-584-5272	96906	MS35338-48
82	12	5310-00-768-0318	96906	MS51967-14
82	13		38455	21569-02
82	14		38455	16147-000
82	15	4730-00-221-2140	96906	MS20913-6S
82	16	5330-00-184-2761	38455	21316-00
82	17		38455	21578-02
82	18	5310-00-935-9088	72962	41NTE164
82	19	5310-00-411-9121	38455	30586-00
82	20	5315-00-411-9127	38455	22967-00
82	21		38455	36442-02
82	22	4930-00-216-6195	38455	2535600
82	23		38455	41232-00
82	24	4320-01-322-0995	38455	41219-00
82	25	5310-00-407-9566	96906	MS35338-45
82	26		80205	NAS1351-5440P
82	27	4730-01-116-3729	38455	25924-00
82	28		38455	29235-02
82	29	3040-01-322-0965	38455	42524-O0
82	30	3110-00-554-3079	15175	A51655-14
82	31	5365-01-276-1026	96906	MS16624-3177
82	32	3130-01-321-6631	38455	28745-02
82	33		38455	20831-O0
82	34	5305-00-269-2804	96906	MS90726-61
82	35	5310-00-637-9541	96906	MS35338-46
82	36		38455	21579-02
82	37	5330-00-561-8750	38455	21437-O
82	38	5305-00-269-2803	96906	MS90726-60
82	39	5310-00-959-4675	96906	MS35340-46
82	40		38455	4C7-O1
82	41	5305-00-724-7221	80204	B1821BH063C175N
82	42	5310-00-820-6653	12603	23E10
82	43	4730-00-221-Z137	96906	MS20913-2S

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FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
83	1		37562	B1900-6000
83	2	4730-00-187-4202	81348	WW-P-471AASBCC
83	3		37562	31900-6034
83	4		37562	B1900-6013
83	5		72423	1001-600
83	6			37562 31900-6010
83	7	4730-00-908-6294	96906	MS35842-16
83	8	4720-01-115-0874	37562	B1900-6011
83	9			37562 B1900-6006
83	10			13226 RGA-401BA
83	11			37562 B1900-6005
83	12	4730-00-623-7537	96906	MS27028-18
83	13			80691 F-4
83	14	4730-01-268-0282	37562	B1900-6003
83	15			72423 1021-600
83	16			37562 B1900-6014
83	17	5330-01-117-1021	37562	B1900-6015
83	18			37562 81900-6016
83	19			72423 1021-565
83	20	4730-01-322-2643	00912	361
83	21		00912	B-1391
83	22		37562	B1900-6604
63	23	4730-00-908-6293	96906	MS35842-15
83	24	4720-01-115-0873	37562	81900-6023
83	25	5306-01-116-5425	37562	31900-6047
83	26		72423	1002-600
83	27		37562	B1900-6026
83	28		72423	1021-590
83	29		37562	B1900-6035
83	30	5306-01-116-5426	37562	31900-6048
83	31		37562	B1900-6042
-83	32		37562	B1900-6037
83	33	4730-01-171-3338	37562	B1900-6038
83	34	4730-00-221-2137	96906	MS20913-2S
83	35		37562	81900-6039
83	36		72423	1001-598
83	37	4710-01-318-1495	37562	B1900-6044
83	38			37562 8 1900-6028
83	39	5330-01-287-7317	13226	RGA3018N
83	40		37562	B1900-6029
83	41	4730-00-908-6292	96906	MS35842-14
83	42	4720-01-115-2652	37562	B1900-6032
84	1		13226	WD301-AL-8
84	2		13226	101-3-BN
84	3		13226	108-3
34	4		13226	100D-3-Dl
84	5	5330-01-134-1980	13226	WD105-BN
84	6	4820-01-049-2552	13226	104-3
84	7		13226	103-3
84	8	4820-01-106-1758	13226	102-3
84	9		13226	111-3

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FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
84	10		13226	110-3
84	11		13226	109-3
84	12	5330-01-134-1982	13226	W0144-3N
84	13		13226	W0141MS
84	14	5310-00-056-3395	96906	MS35649-2382
84	15	5310-00-637-9541	96906	MS35338-46
84	16	5305-00-269-3218	96906	MS90725-68
85	1	4820-01-115-1357	13226	WD401-ME-B
85	2		13226	101-4-BN
85	3	5315-01-124-9075	13226	W0108CP
85	4		13226	1000-4-D1
85	5		13226	105-4
as	-6		13226	104-4
85	7	5305-01-116-5435	13226	103-4
85	8	4320-01-107-4259	13226	WD135-CP
85	9		13226	111-4
85	10	5360-01-109-0016	13226	110-4
85	11		13226	109-4
85	12	5330-00-582-2855	96906	MS28775-113
85	13	3040-01-105-9934	13226	106-4
85	14	5310-00-056-3395	96906	MS35649-Z382
85	15	5310-00-637-9541	96906	MS35338-46
85	16	5305-00-269-3218	96906	MS90725-68
86	1		37562	B1900-6046
86	2	5310-00-058-1626	96906	MS35650-3382
86	3	4730-00-221-2137	96906	MS20913-ZS
86	4	3750-01-117-7857	58076	W-5202AT
86	5	5305-00-269-2811	96906	MS90726-67
86	6	5340-01-117-4962	58076	W-5204CR
86	7	3750-01-116-5020	58076	W-5203AD
86	8		37562	B1900-6070
86	9		58076	W-5207AB
86	10	5310-01-116-6638	58076	W-5210LN
86	11	5305-01-116-7362	58076	W-5208LN
86	12	5310-00-056-3395	96906	MS35649-2382
86	13		79154	C-030-77-P-T0

APPENDIX G
TORQUE LIMITS

G-1. SCOPE.

This appendix lists standard torque values, as shown in Table G-1, and provides general information for applying torque. Special torque values are indicated in the maintenance procedures for applicable components.

G-2. GENERAL.

a. Always use the torque values listed below when a specific torque value is not available.

b. Special attention should be observed when using SAE Grades 6,7, and 8 capscrews.

c. Unless otherwise specified, standard torque tolerance shall be ± 10%.

d. Torque values are based on clean, dry threads. Reduce torque by 10% when engine oil is used as a lubricant.

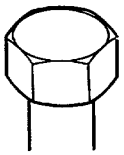
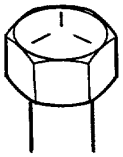
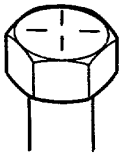
e. Reduce torque by 20% if new plated capscrews are used.

f. Capscrews threaded into aluminum may require reductions in torque of 30% or more of Grade 5 capscrew torque. Capscrews threaded into aluminum must also attain two capscrew diameters of thread engagement.

CAUTION

If replacement capscrews are of a higher grade than originally supplied, use torque specifications for the original. This will prevent equipment damage due to overtorquing.

Table G-1. Torque Limits.

Current Usage		Much Used		Much Used		Used at Times		Used at Times	
Quality of Material		Indeterminate		Minimum Commercial		Medium Commercial		Best Commercial	
SAE Grade Number		1 or 2		5		6 or 7		8	
Capscrew Head Markings Manufacturer's marks may vary These are all SAE Grade 5 (3 line)									
Capscrew Body Size Inches – Thread		Torque lb. -ft. (N•m)		Torque lb. -ft. (N•m)		Torque lb. -ft. (N•m)		Torque lb. -ft. (N•m)	
1/4	20	5	(7)	8	(11)	10	(14)	12	(16)
	28	6	(8)	10	(14)			14	(19)
5/16	18	11	(15)	17	(23)	19	(26)	24	(33)
	24	13	(18)	19	(26)			27	(37)
3/8	16	18	(24)	31	(42)	34	(46)	44	(60)
	24	20	(27)	35	(47)			49	(66)
7/16	14	28	(38)	49	(66)	55	(75)	70	(95)
	20	30	(41)	55	(75)			78	(106)
1/2	13	39	(53)	75	(102)	85	(115)	105	(142)
	20	41	(56)	85	(115)			120	(163)
9/16	12	51	(69)	110	(149)	120	(163)	155	(210)
	18	55	(75)	120	(163)			170	(231)
5/8	11	83	(113)	150	(203)	167	(226)	210	(285)
	18	95	(129)	170	(231)			240	(325)
3/4	10	105	(142)	270	(366)	280	(380)	375	(508)
	16	115	(156)	295	(400)			420	(569)
7/8	9	160	(217)	395	(536)	440	(597)	605	(820)
	14	175	(237)	435	(590)			675	(915)
1	8	235	(319)	590	(800)	660	(895)	910	(1234)
	14	250	(339)	660	(895)			990	(1342)

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THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0 01 Meters = 0 3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39 37 Inches
1 Kilometer = 1000 Meters = 0 621 Miles

WEIGHTS

1 Gram = 0 001 Kilograms = 1000 Milligrams = 0 035 Ounces
1 Kilogram = 1000 Grams = 2 2 Lb.
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1 1 Short Tons

LIQUID MEASURE

1 Milliliter = 0 001 Liters = 0 0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33 82 Fluid Ounces

SQUARE MEASURE

1 Sq Centimeter = 100 Sq Millimeters = 0 155 Sq Inches
1 Sq Meter = 10,000 Sq Centimeters = 10 76 Sq Feet
1 Sq Kilometer = 1,000,000 Sq Meters = 0 386 Sq Miles

CUBIC MEASURE

1 Cu Centimeter = 1000 Cu Millimeters = 0 06 Cu Inches
1 Cu Meter = 1,000,000 Cu Centimeters = 35 31 Cu Feet

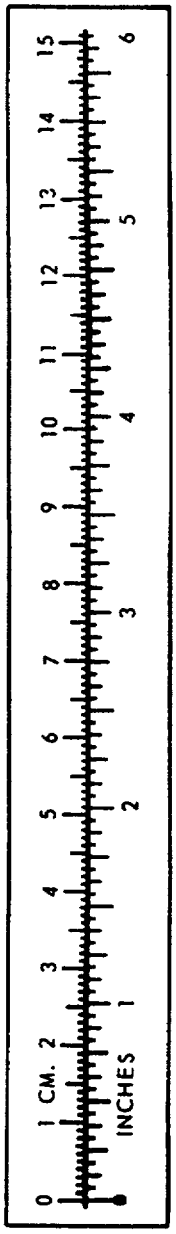
TEMPERATURE

$\frac{5}{9}(°F - 32) = °C$
212° Fahrenheit is equivalent to 100° Celsius
90° Fahrenheit is equivalent to 32 2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
$\frac{9}{5}\,°C + 32 = °F$

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2 540
Feet	Meters	0 305
Yards	Meters	0 914
Miles	Kilometers	1 609
Square Inches	Square Centimeters	6 451
Square Feet	Square Meters	0 093
Square Yards	Square Meters	0 836
Square Miles	Square Kilometers	2 590
Acres	Square Hectometers	0 405
Cubic Feet	Cubic Meters	0 028
Cubic Yards	Cubic Meters	0 765
Fluid Ounces	Milliliters	29 573
Pints	Liters	0 473
Quarts	Liters	0 946
Gallons	Liters	3 785
Ounces	Grams	28 349
Pounds	Kilograms	0 454
Short Tons	Metric Tons	0 907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6 895
Miles per Gallon	Kilometers per Liter	0 425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0 394
Meters	Feet	3 280
Meters	Yards	1 094
Kilometers	Miles	0 621
Square Centimeters	Square Inches	0 155
Square Meters	Square Feet	10 764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0 386
Square Hectometers	Acres	2 471
Cubic Meters	Cubic Feet	35 315
Cubic Meters	Cubic Yards	1 308
Milliliters	Fluid Ounces	0 034
Liters	Pints	2 113
Liters	Quarts	1.057
Liters	Gallons	0 264
Grams	Ounces	0 035
Kilograms	Pounds	2 205
Metric Tons	Short Tons	1 102
Newton-Meters	Pound-Feet	0 738
Kilopascals	Pounds per Square Inch	0.145
Kilometers per Liter	Miles per Gallon	2 354
Kilometers per Hour	Miles per Hour	0 621



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