*TM 10-4930-232-12&P

TECHNICAL MANUAL

OPERATOR AND UNIT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)

FOR

FUEL SYSTEM, SUPPLY POINT, PORTABLE, 60,000 GALLON (NSN 4930-00-142-5313)

* This manual supersedes TM 5-4930-232-12&P dated 24 May 1983.

HEADQUARTERS, DEPARTMENT OF THE ARMY

30 JULY 1993

WARNING

Before operating the fuel system be sure that all components are properly grounded. There shall be no smoking in the area of the fuel system at any time. Be sure that fire extinguishing equipment is available and operational. Failure to heed this warning can cause explosion and/or fire and can lead to personal injury or DEATH.

WARNING

FIRST AID

For First Aid treatment, refer to FM 21-11

Do not smoke, carry an open flame, or use any heat-producing device near hoseline during fuel displacement and vapor evacuation operations. Ensure that ejector is firmly grounded. Failure to observe this warning can result in fire, explosion, and DEATH.

WARNING

Open and close nozzles and valves gradually to prevent fuel pressure hammer and pressure surges which may burst hose and, in turn, cause bodily injury. Pressure hammer is the surge of pressure caused when a high velocity flow of fuel is abruptly shut off. The pressure exerted by the flowing fuel against the closed system can be as much as seven times the static pressure.

Never straddle hose while under pressure and never stand at either end in line with hose.

WARNING

Do not position hoseline in an area where leakage can contaminate drinking water. Failure to observe this warning can result in serious injury or death by poisoning.

WARNING

Prior to cleaning any parts, have safety personnel review the procedures and personal equipment to be used in the cleaning operations.

Potential health hazards result from inhalation of petroleum solvent vapors and from contact of solvent with skin. Use rubber gloves and hand cream for protection and work with adequate ventilation.

Petroleum solvents are highly flammable. Keep solvent container lids closed when not in use and to avoid all possible risks of igniting solvent vapors, keep away from open flame and excessive heat. Flash point of solvent is 100 to 133°F (38 to 59°C).

TM 10-4930-232-12&P
C2

CHANGE

NO. 2

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 30 September 1996

Operator and Unit Maintenance Manual
(Including Repair Parts and Special Tools List)

for

FUEL SYSTEM, SUPPLY POINT, PORTABLE, 60,000 GALLON
(NSN 4930-00-142-5313)

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

TM 10-4930-232-12&P, 30 July 1993, is changed as follows:

1. Remove and insert pages as indicated below. New or changed text material is indicated by a vertical bar in the margin. An illustration change is indicated by a miniature pointing hand.

Remove pages	Insert pages
i and ii	i and ii
1-1 and 1-2	1-1 and 1-2
2-3 and 2-4	2-3 and 2-4

2. Retain this sheet in front of manual for reference purposes.

By Order of the Secretary of the Army:

DENNIS J. REIMER
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
02724

DISTRIBUTION:
To be distributed in accordance with DA Form 12-25-E, block no. 6141, requirements for TM 10-4930-232-12&P.

CHANGE

NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 29 APRIL 1994

Operator and Unit Maintenance Manual
(Including Repair Parts and Special Tools List)
for
FUEL SYSTEM, SUPPLY POINT, PORTABLE 60,000 GALLON
(NSN 4930-00-142-5313)

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

TM 10-4930-232-12&P, 30 July 1993, is changed as follows:

1. Remove and insert pages as indicated below. New or changed text material is indicated by a vertical bar in the margin. An illustration change is indicated by a miniature pointing hand.

Remove pages	Insert pages
F-9 and F-10	F-9 and F-10
F-27 and F-28	F-27 and F-28

2. Retain this sheet in front of manual for reference purposes.

By Order of the 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
06725

DISTRIBUTION:
To be distributed in accordance with DA Form 12-25-E, block no. 6141, requirements for TM 10-4930-232-12&P.

TECHNICAL MANUAL

NO. 10-4930-232-12&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 30 July 1993

Operator and Unit Maintenance Manual
(Including Repair Parts and Special Tools List)
for
FUEL SYSTEM, SUPPLY POINT, PORTABLE, 60,000 GALLON
NSN 4930-00-142-5313

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 these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual directly to: Commander, US Army Aviation and Troop Command, ATTN: AMSAT-I-MP, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. You may also submit your recommended changes by E-mail directly to <mpmt%avma28 @ st-louis-emh7.army.mil>. A reply will be furnished directly to you. Instructions for sending an electronic 2028 may be found at the back of this manual immediately preceding the hard copy 2028.

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

TABLE OF CONTENTS

*This manual supersedes TM 5-4930-232-12&P dated 24 May 1983.

TABLE OF CONTENTS (cont)

TABLE OF CONTENTS (cont)

LIST OF ILLUSTRATIONS

LIST OF TABLES

HOW TO USE THIS MANUAL

This manual is designed to help you keep your supply point fuel system in good operating condition. The front cover index is provided for quick reference to important information. There is also an index located in the final pages for use in locating specific items of information.

A warning page is located in the front of this manual. You should learn the warnings before performing any maintenance of the equipment.

Paragraphs in this manual are numbered by chapter and order of appearance within a chapter. A subject index appears at the beginning of each chapter listing sections that are included in that chapter. A more specific index is located at the beginning of each section to help you find the exact paragraph you are looking for.

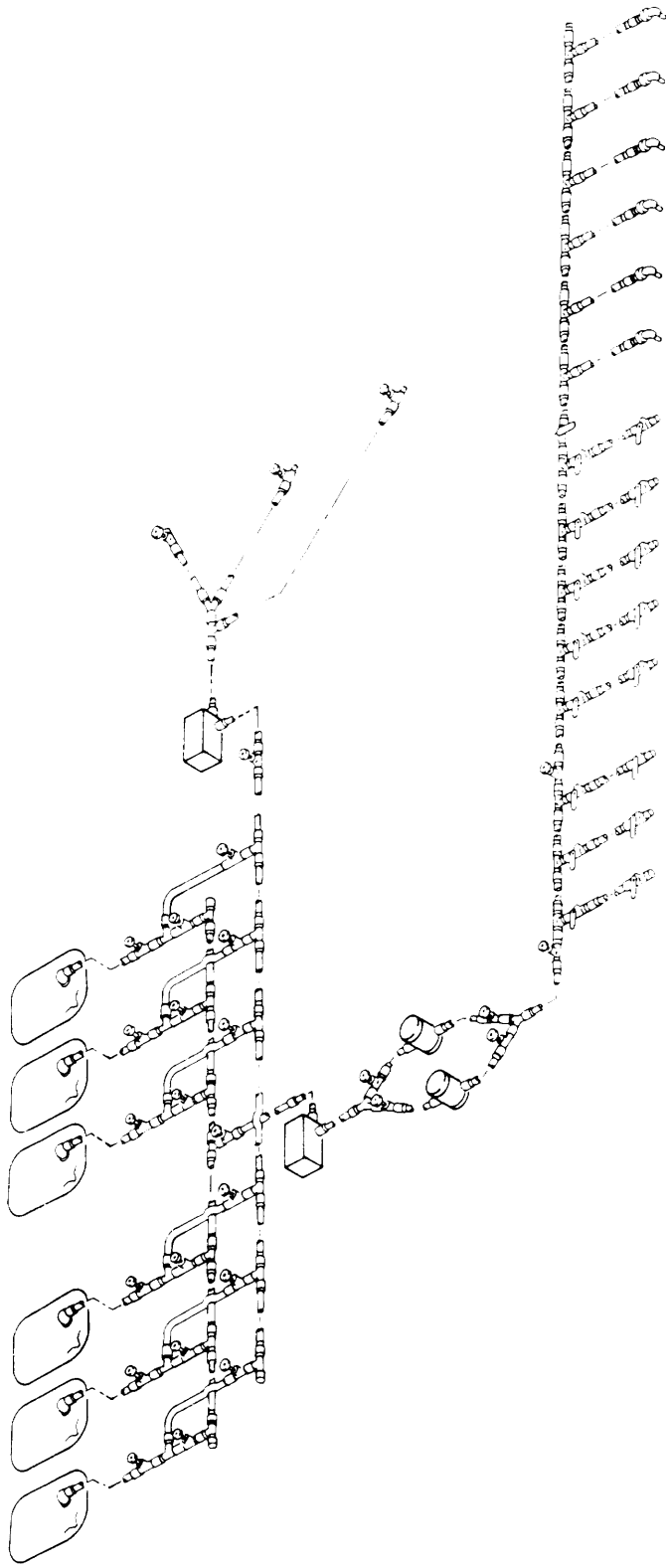


Figure 1-1. Supply Point Fuel System, NSN 4930-00-142-5313.

CHAPTER 1

INTRODUCTION

OVERVIEW

Chapter 1 contains general information pertinent to the Supply Point Fuel System and describes its components. It includes reporting procedures, processing equipment improvement recommendations and storage procedures. It also includes principles of operation, which explains the functioning of the system.

Section I. GENERAL INFORMATION

1-1. Scope.

a. Type of Manual. This technical manual provides operator and unit maintenance procedures for the Supply Point Fuel System (figure 1-1). Additional maintenance data relevant to designated components can be found in the applicable end item technical manual. This manual also provides a Repair Parts and Special Tools List located at Appendix F.

b. Equipment/Name. Fuel System, Supply Point, Portable 60,000-gallon capacity (NSN 4930-00-142-5313), hereinafter called the fuel system.

c. Purpose of Equipment. The fuel system is designed to provide storage and distribution of fuel under tactical conditions and be easily portable.

1-2. **Maintenance Forms and Records.** Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750, The Army Maintenance Management Systems (TAMMS). Refer to the latest issue of DA Pam 25-30 (Consolidated lndex of Army Publications and Blank Forms) to determine if there are new editions, changes or additional publications pertaining to the equipment.

1-3. **Destruction of Army Materiel to Prevent Enemy Use.** Destruction of Army equipment to prevent enemy use shall be in accordance with TM 750-244-3.

1-4. **Preparation for Storage or Shipment**. Refer to Chapter 4, Section VI for storage and shipment preparation data.

1-5. **Reporting of Equipment Improvement Recommendations (EIR).** If your fuel system 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 a SF 368 (Quality Deficiency Report). Mail it to: Commander, U.S. Army Aviation and Troop Command, ATTN: AMSAT-I-MDO, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. We will send you a reply.

Section II. EQUIPMENT DESCRIPTION AND DATA

1-6. **Equipment Characteristics, Capabilities and Features**. A summary of the characteristics, capabilities and features of the equipment is contained in the following subparagraphs.

a. Characteristics. The Fuel System is used to store and distribute quantities of bulk fuel to using units under tactical conditions.

b. Capabilities and Features.

(1) Capable of receiving fuel from tank truck, rail, pipeline or hoseline.

(2) Capable of storing 60,000 gallons of fuel.

(3) Capable of storing two different types of fuel at the same time.

(4) Capable of bypassing storage tanks and pumping fuel directly from receiving points to distribution points.

(5) Capable of performing any combination of the following distribution tasks at the same time:

(a) Bottom loading up to three tank trucks or semi trailers.

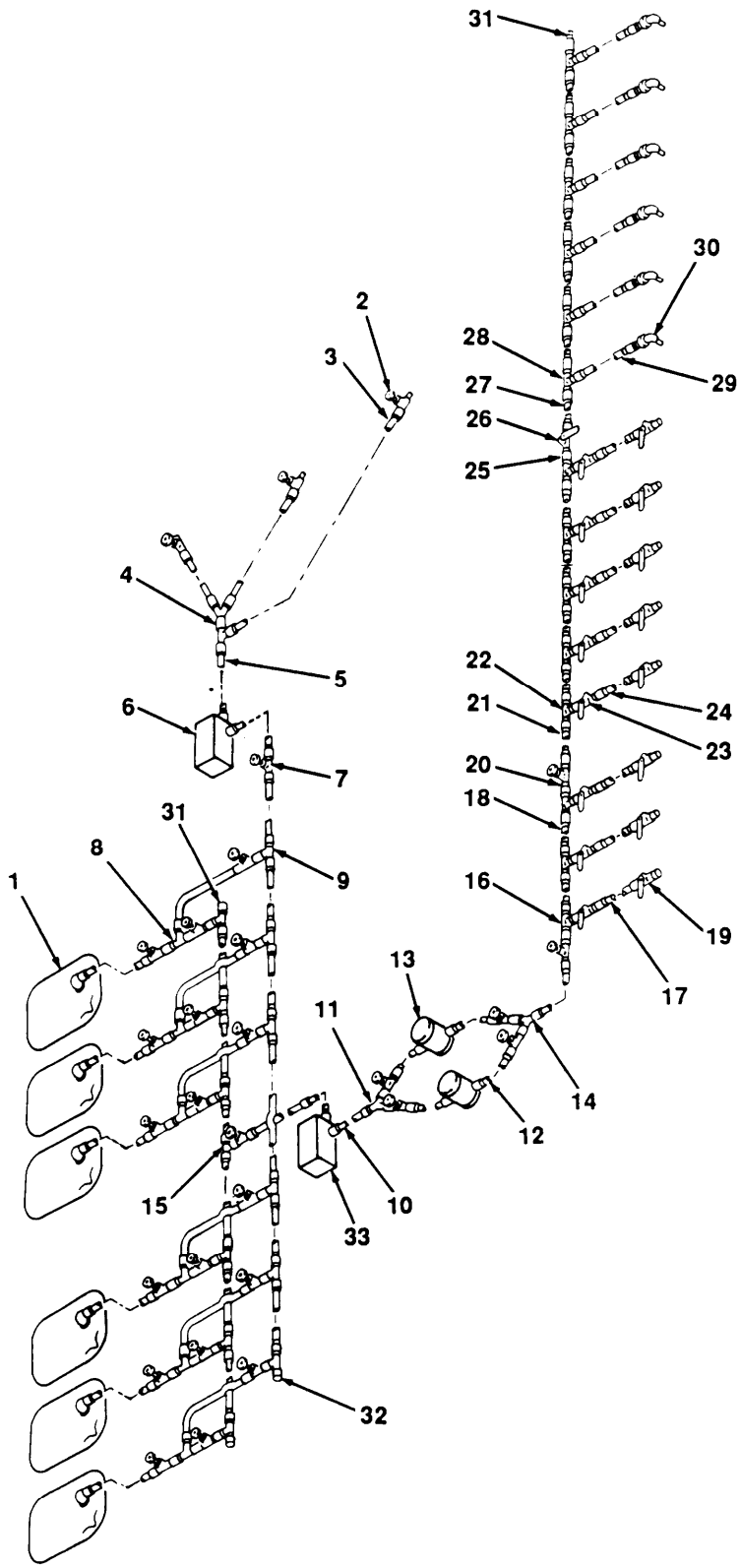
(b) Filling up to six vehicle fuel tanks.

(c) Filling up to five containers of either 5, 55, or 500 gallon capacity.

(6) Capable of being divided into two independent fuel systems.

(7) Components of the fuel system are lightweight and highly portable.

1-7. **Location and Description of Major Components**. The following subparagraphs contain locations and descriptions of major components (figure 1-2).



1. TANK
2. GATE VALVE
3. SUCTION HOSE
4. WYE AND TEE ASSY
5. SUCTION HOSE
6. PUMP
7. GATE VALVE
8. TEE ASSY
9. TEE ASSY
10. DISCHARGE HOSE
11. WYE ASSY
12. DISCHARGE HOSE
13. FILTER/SEPARATOR
14. WYE ASSY
15. TEE ASSY
16. TEE ASSY
17. DISCHARGE HOSE
18. DISCHARGE HOSE
19. QUICK-ACTING VALVE
20. REDUCER
21. DISCHARGE HOSE
22. TEE ASSY
23. QUICK-ACTING VALVE
24. DISCHARGE HOSE
25. REDUCER
26. QUICK-ACTING VALVE
27. DISCHARGE HOSE
28. TEE ASSY
29. DISCHARGE HOSE
30. NOZZLE
31. DUST PLUG
32. DUST CAP
33. PUMP

Figure 1-2. Components of Fuel System.

a. *Pumps* (figure 1-3). A 350 gpm centrifugal pump is used on the receiving side of the fuel system to move fuel into the collapsible tanks. An identical pump is used on the delivery side of the fuel system to move the fuel from the tanks to the dispensing units.

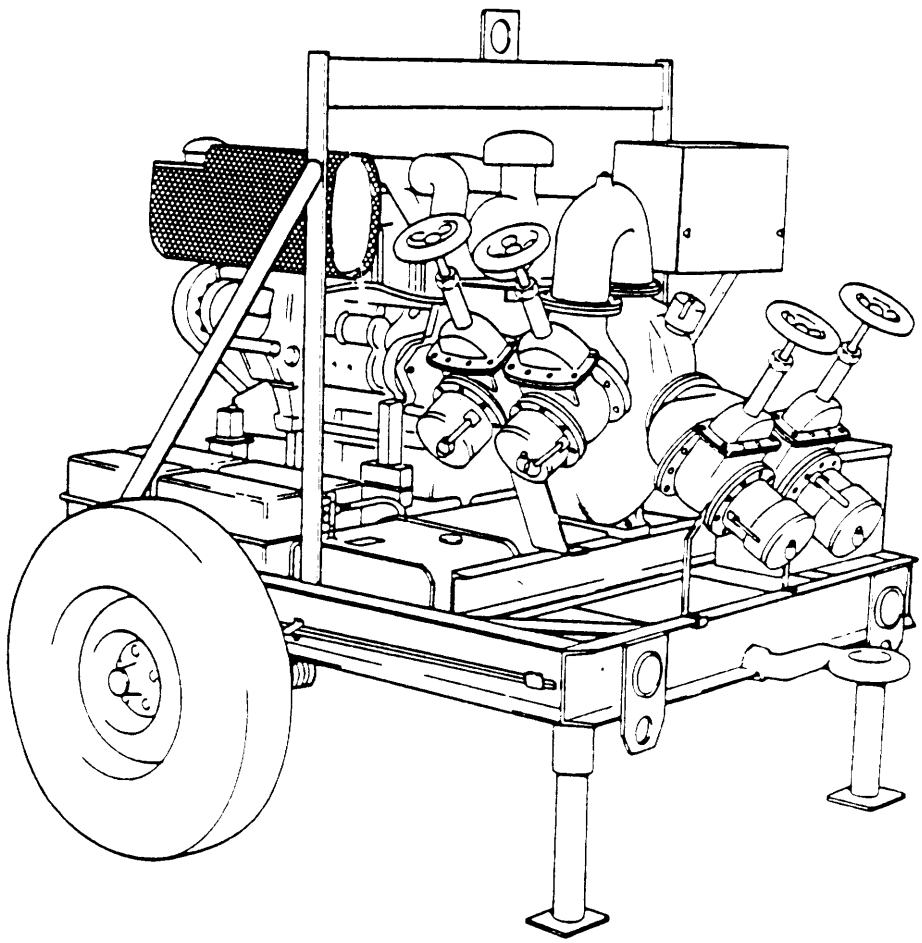


Figure 1-3. Centrifugal Pump, 350 Gallon Per Minute Capacity.

b. Filter/Separator (figure 1-4). Two 350 gpm filter/separators maybe connected in parallel on the delivery side of the system to remove entrained water and solid contaminants from fuel before it is dispensed into vehicles or containers.

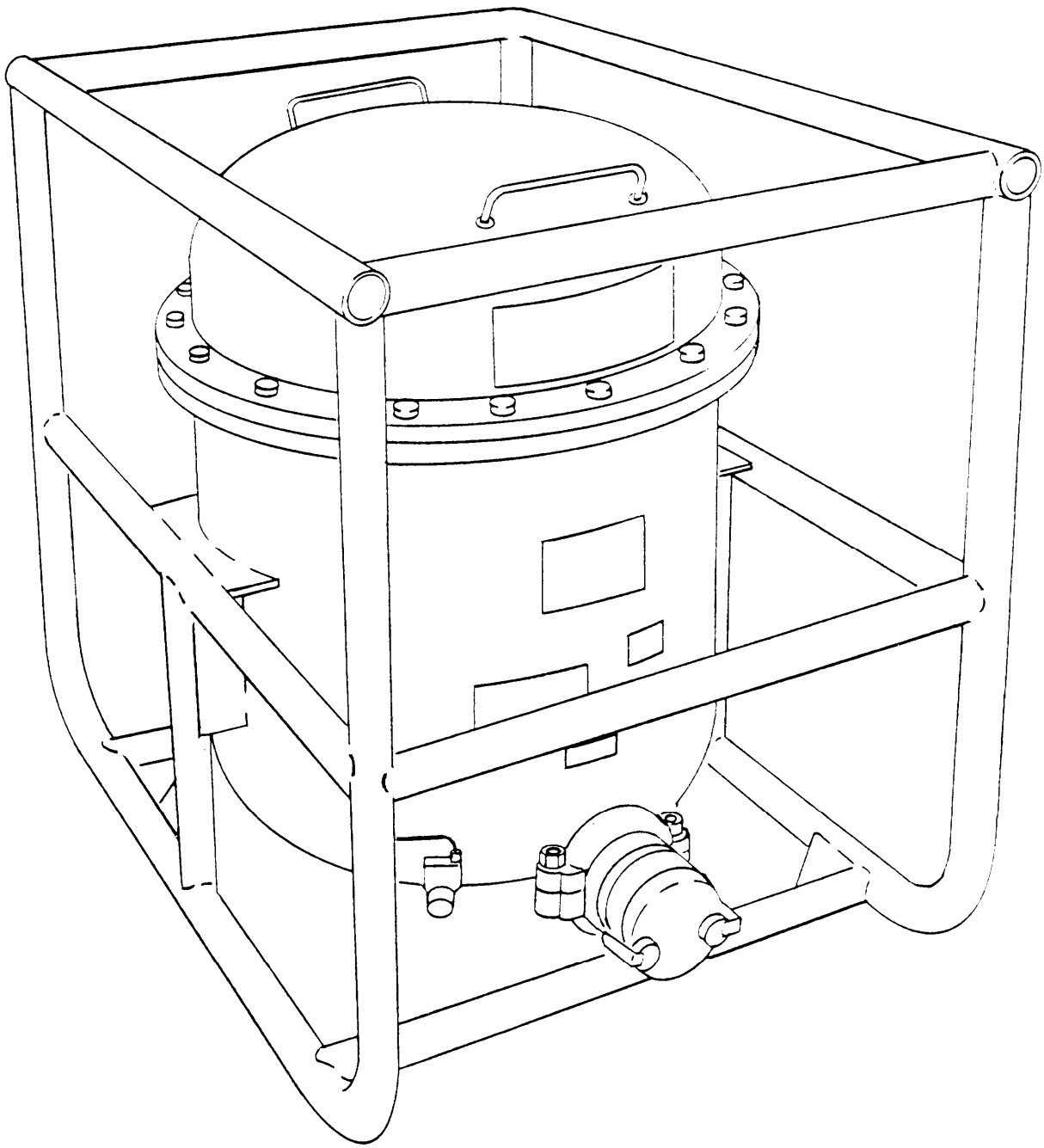


Figure 1-4. *Filter/Separator, 350 Gal/on Per Minute Capacity.*

c. Tanks (figure 1-5). Six 10,000 gallon collapsible fuel tanks store fuel.

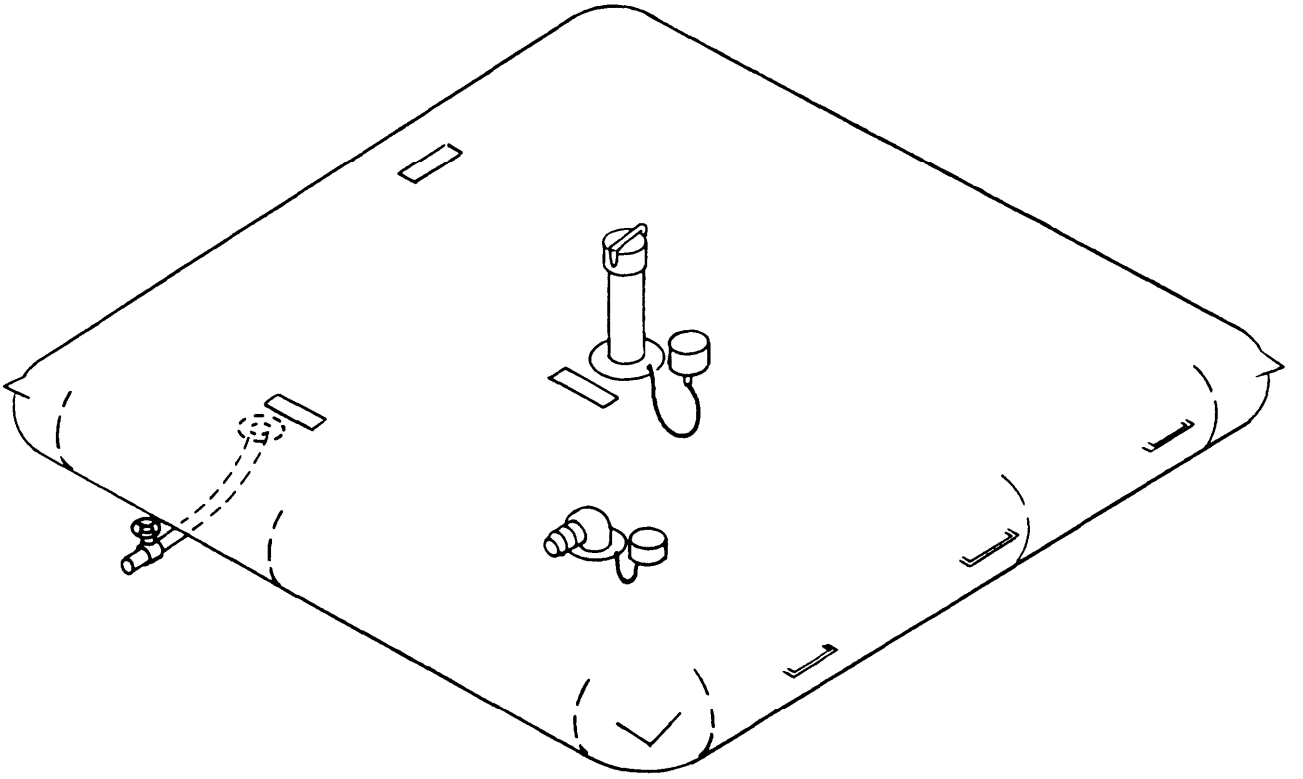


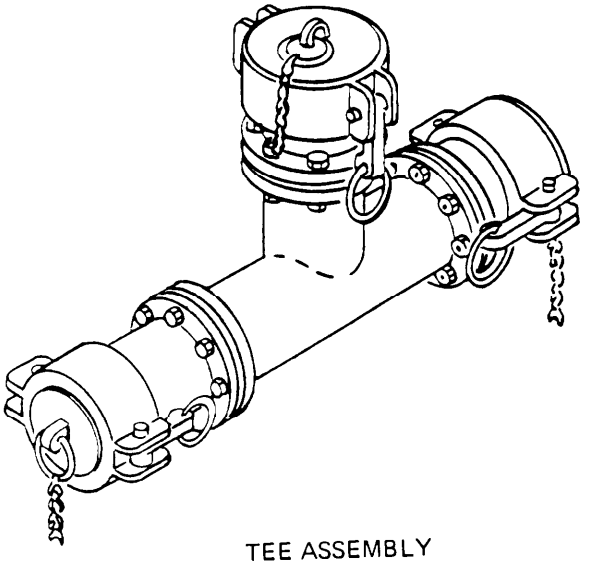
Figure 1-5. Collapsible Storage Tank, 10,000 Gallons.

d. Fittings (figure 1-6). There are eleven different sizes and types of fitting assemblies in the fuel system to connect hoses, valves and components together.

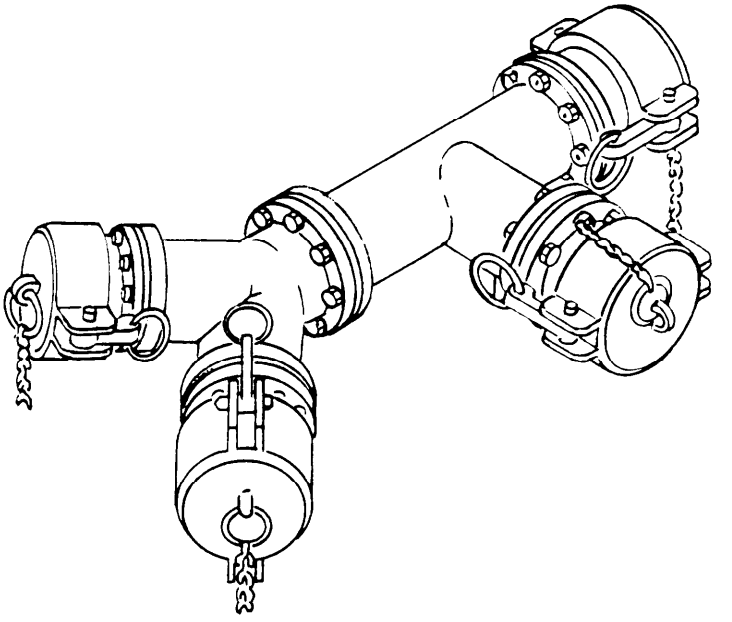
e. Hose Assemblies (figure 1-7). There are two types of hose assemblies used in the system. The suction hose assemblies have reinforcing wires spiraled throughout their length to keep the hose from collapsing and to act as bonding wires. The discharge hose assemblies are of a non-wire-reinforced type but have bonding wires embedded in the entire length of the assembly.

f. Nozzles (figure 1-8). Six nozzles provide a means of refueling vehicles or filling cans and drums. The nozzles are fuel and oil servicing, nonautomatic shutoff for use with 3/4-inch or 1-inch hose.

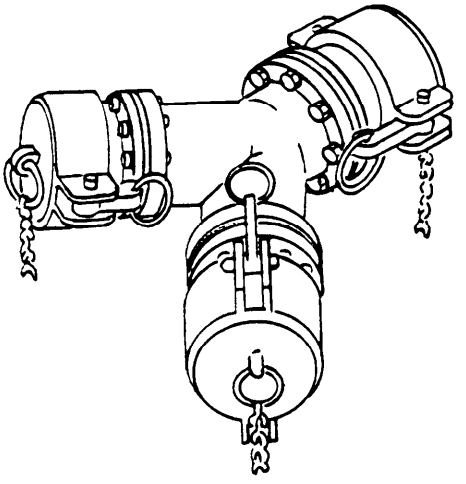
g. Value Assemblies. There are two types of valve assemblies used in the fuel system. A gate valve assembly is shown in figure 1-9, and a quick-acting valve assembly is shown in figure 1-10.



TEE ASSEMBLY



WYE AND TEE ASSEMBLY



WYE ASSEMBLY

Figure 1-6. Fuel System Fitting Assemblies.

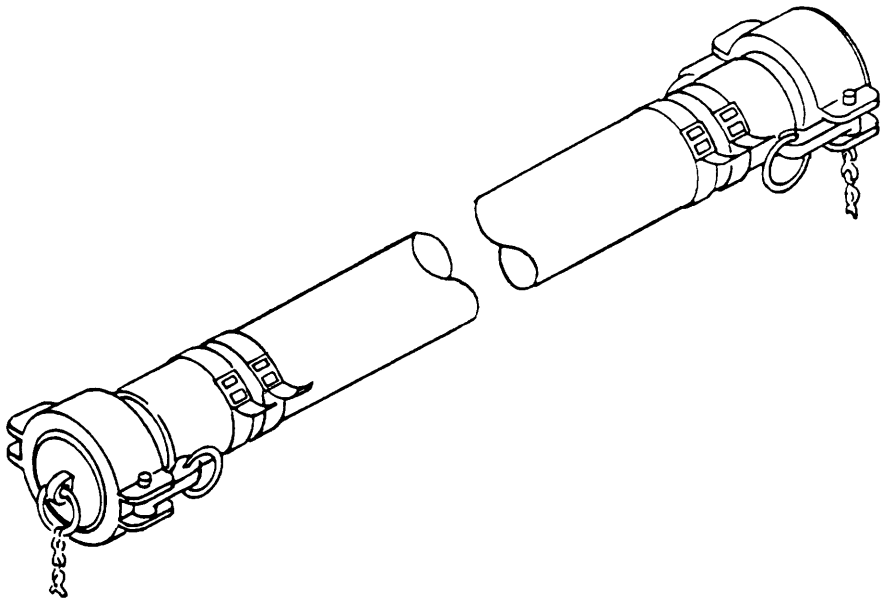


Figure 1-7. *Hose Assembly.*

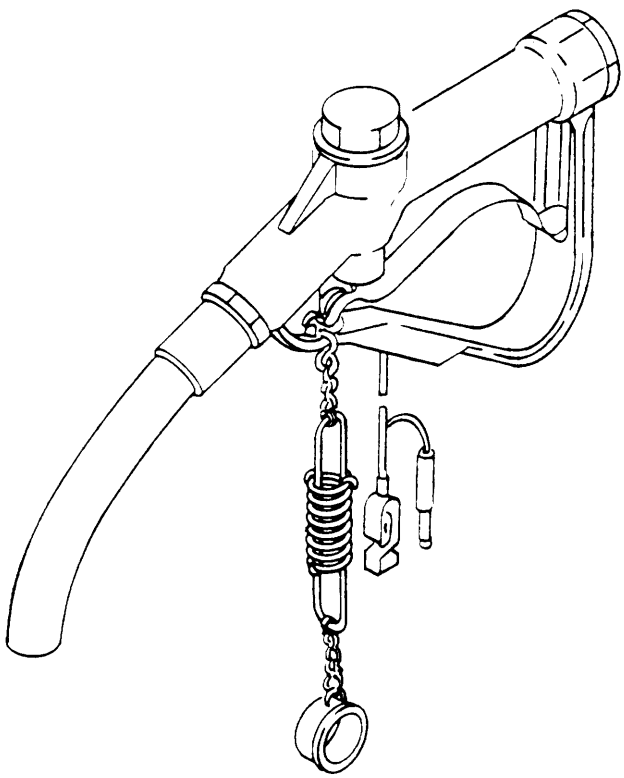


Figure 1-8. Nozzle Assembly (Typical).

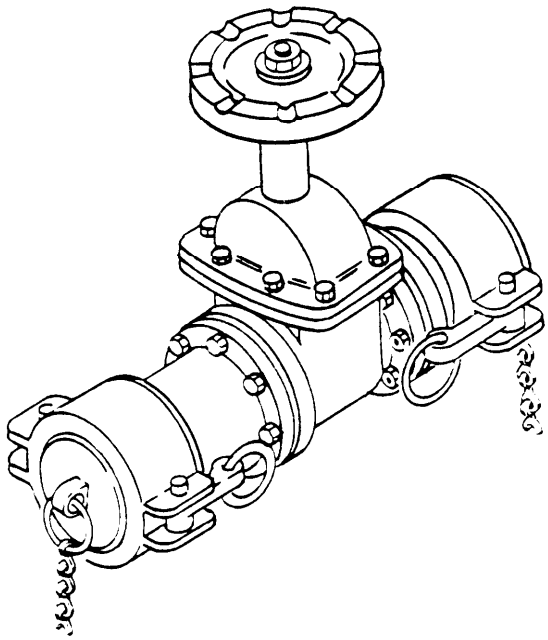


Figure 1-9. Gate Valve Assembly.

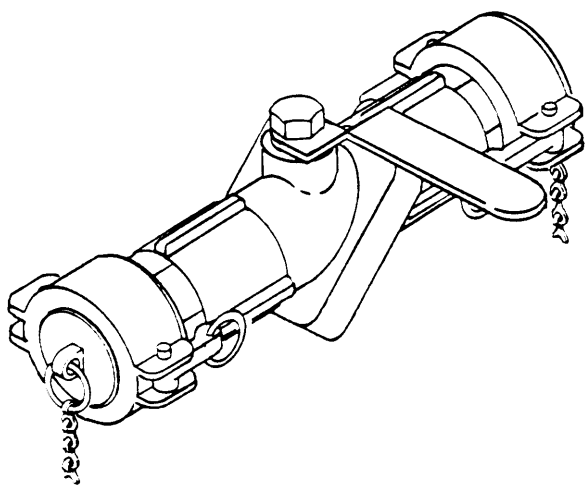


Figure 1-10. Quick-Acting Valve Assembly.

1-8. **Equipment Data.** The following listing summarizes the specific capabilities and limitations of the equipment and other critical data needed by the operator and unit maintenance personnel for maintenance of the fuel system.

Capacities
- Fuel system . . . . . 60,000 gallons (227,100 liters)
- Fuel tank . . . . . 10,000 gallons (37,850 liters)
- Pump assembly . . . .350 gpm (1324.68 Lpm)
- Filter/separator . . . .350 gpm (1324.68 Lpm)

Shipping weight . . . .9,000 Ibs (4,086 Kg)

Shipping dimensions (3 containers)

Container 1

Width . . . . . 76 in. (193 cm)
Length . . . . . 80 in. (203.2 cm)
Height, ... 59 in. (149.9 cm)

Container 2

Width . . . . . 64 in. (162.6 cm)
Length . . . . . .155 in. (393.7 cm)
Height . . . . . 60 in. (152.4 cm)

Container 3

Width . . . . . 52 in. (132. cm)
Length ... . 154 in. (391.2 cm)
Height . . . . . 59 in. (149.9 cm)

1-9. Safety, Care and Handling.

a. Safety. It is imperative that you observe all safety precautions specified on the warning page in the front of this manual. You must also observe specific warnings and cautions specified throughout this manual. The warnings are provided to tell you how to protect yourself from death or serious injury.

b. Care and Handling. Observe the following precautions:

(1) Use care in handling components of the fuel system as metal parts could cause personal injury.

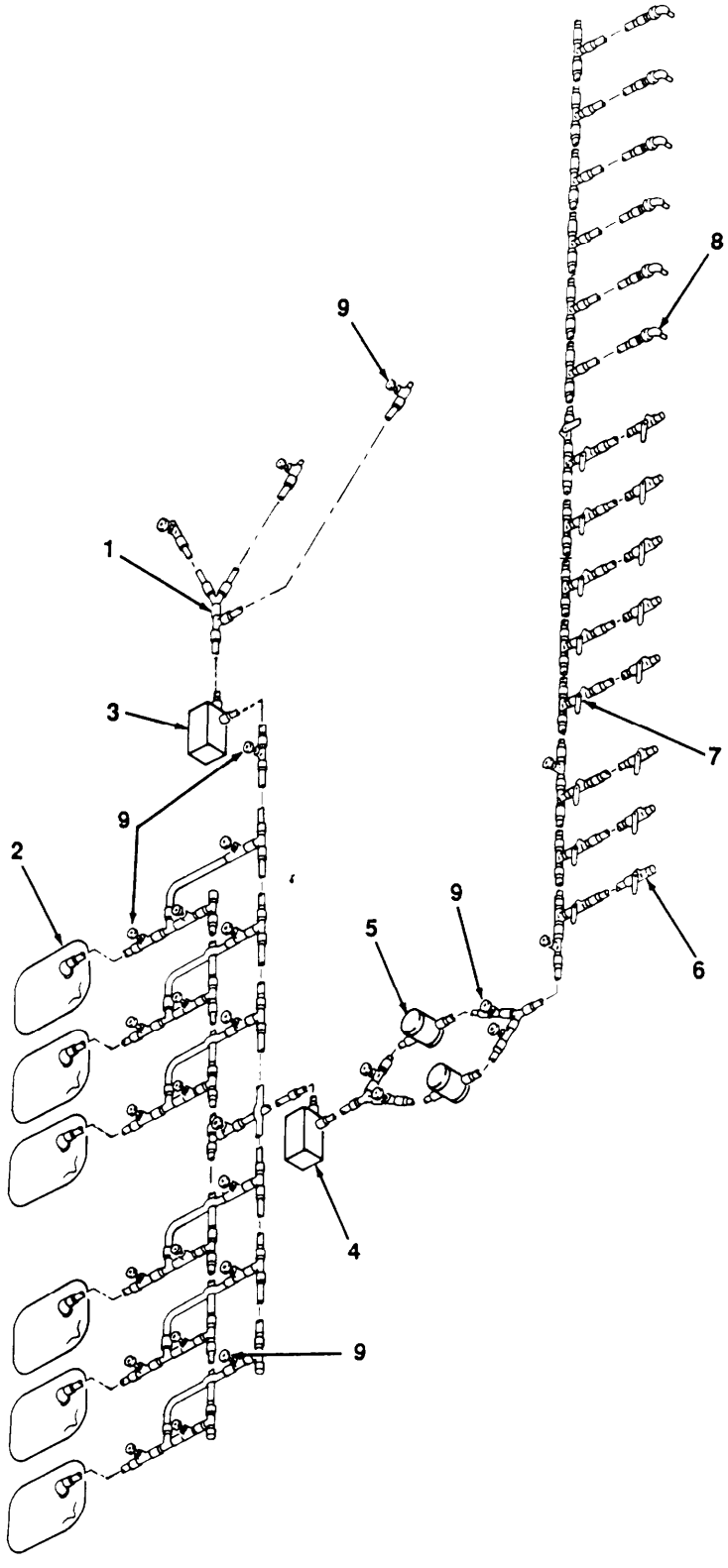
(2) Use every effort to protect the components of the fuel system from the weather elements, dust, dirt, oil grease, and acids.

(3) Store the fuel system in a dry, well-ventilated location, protected from pilferage, dampness, dirt, fire, insects, rodents, and direct sunlight.

Section III. PRINCIPLES OF OPERATION

1-10. **General.** The operation of the fuel system is described and illustrated in this section.

1-11. Operation (figure 1-11). Fuel enters fuel system through the wye and tee assembly (1). It is then moved into the six 10,000 gallon collapsible fabric tanks (2) by the first of two 350 gpm centrifugal pumps (3). It may also be moved by the fuel transporter or pipeline pumps. A second 350 gpm pump (4) moves the fuel from the collapsible tank through the filter/separator (5) to the quick-acting valves (6) and (7) and the dispensing nozzles (8). The gate valves (9) are used as shutoff valves to control the distribution of fuel through the system.



1. WYE AND TEE ASSY
2. TANK
3. PUMP
4. PUMP
5. FILTER/SEPARATOR
6. QUICK-ACTING VALVE
7. QUICK-ACTING VALVE
8. NOZZLE
9. GATE VALVE

Figure 1-11. Fuel System Flow Diagram.

CHAPTER 2

OPERATING INSTRUCTIONS

OVERVIEW

Chapter 2 contains references to equipment manuals for description of component controls and indicators. Operator Preventive Maintenance Checks and Services (PMCS) is presented in a tabular format. Procedures for operating the fuel system under usual and unusual conditions are given. For operation of collapsible tanks, pumps and filter/separators, refer to the designated components manual.

Section II DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

2-1. **General.** The operator controls and indicators for the system components, such as tanks, pumps and filter/separators, are covered in the components manuals (refer to Appendix A). There are no operator controls and indicators for the remainder of the system, which consists of hose assemblies, valves, tees, wyes, and fittings. The valve handle controls are self-indicating.

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

2-2. General. Preventive maintenance is the responsibility of the using organization. The services will be performed by the operator in accordance with Table 2-1 and the following:

a. Before you operate. Always keep in mind the CAUTIONS AND WARNINGS. Perform your "BEFORE" (B) PMCS.

b. While you operate. Always keep in mind the CAUTIONS AND WARNINGS. Perform your "DURING" (D) PMCS.

c. *After you operate.* Be sure to perform your "AFTER" (A) PMCS.

d. If your equipment fails cooperate, troubleshoot with proper equipment. Report any deficiencies, using the proper forms; refer to DA PAM 738-750.

2-3. **PMCS Procedures.** Table 2-1 lists and describes the minimum preventive maintenance services to be performed. Explanation of columns used in the table is as follows:

a. Item Number. A chronological order of checks and services to be performed, regardless of interval. When recording results of PMCS on DA Form 2404, Equipment Inspection and Maintenance Worksheet, this column shall be used as the source for the "TM Number" column.

b. Interval. A dot (•) in one of these columns indicates the interval at which each check is to be performed. Symbols used at the head of each column are explained in the table.

c. Item to be inspected. Describes the component on which check is to be performed.

d. Procedues. Describes the procedure by which the check is to be performed.

e. For readiness reporting, equipment is not ready/available if: Contains the criteria which will cause the equipment to be classified as "not ready" because of inability to perform its primary function.

NOTE

The terms ready/available and mission capable refer to the same status: Equipment is on hand and is able to perform its combat mission. Refer to DA Pam 738-750.

2-4. **Special Instructions.** Preventive maintenance is not limited to performing the checks and services listed in the PMCS table.

WARNING

Dry cleaning solvent used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged contact. Do not use near open flame or excessive heat. Flash point of solvent is 100° F-138°F (38°C-60°C).

a. Keep it clean. Dirt, grease, oil, debris get in the way and may cover up a serious problem. Clean as you work and as needed. Use drycleaning solvent on all metal surfaces. Use soap and water to clean rubber or plastic material.

b. Bolts, Nuts, and Screws. Check them all for obvious looseness, missing, bent, or broken condition. You can't try them all with a tool, but look for chipped paint, bare metal, or rust around bolt heads. If you find one you think is loose, tighten it, or report it to unit maintenance if you can't tighten it.

c. Fluid Lines. Look for wear, damage, and leaks. Make sure clamps and fittings are tight. Wet spots and stains around a fitting or connector can mean a leak. If a leak comes from a loose connector, tighten it, If something is broken or worn out, report it to unit maintenance.

d. Leakage Defintions. It is necessary for you to know how fluid leakage affects the status of your equipment. The following are definitions of the types/classes of leaks you need to know to be able to determine the status of your equipment. Learn and be familiar with them. When in doubt, NOTIFY YOUR SUPERVISOR!

Leakage Definitions:

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.

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

NOTE

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

Item No.	Interval	Item to Be Checked or Serviced	Procedure	Not Fully Mission If:
1	Before	Gate valves	Check for leaks at seal, gasket or fittings. Hardware missing or damaged	Leaks are observed or hardware is unserviceable.
2	Before	Wye and tee assemblies	Check for leaks at seal, gasket or fittings. Hardware missing or damaged	Leaks are observed or hardware is unserviceable.
3	Before	Couplings	Check for leaks at seal, gasket or fittings. Hardware missing or damaged	Leaks are observed or hardware is unserviceable.
4	Before	Hoses	Check for breaks, cracks, deterioration or damage.	Hose(s) unserviceable
5	Before	Quick-acting valves	Check for leaks at seal, gasket or fittings. Hardware missing or damaged	Leaks are observed or hardware is unserviceable.
6	Before	Collapsible tanks	Refer to PMCS in applicable technical manual.	
7	Before	Filter/separators	Refer to PMCS in applicable technical manual.	
8	Before	Pumps	Refer to PMCS in applicable technical manual.	
9	Before	Nozzles	Refer to PMCS in applicable technical manual.	
10	During	Gate valves	Check for leaks at seal, gasket or fittings. Hardware missing or damaged	Leaks are observed or hardware is unserviceable.
11	During	Wye and tee assemblies	Check for leaks at seal, gasket or fittings. Hardware missing or damaged.	Leaks are observed or hardware is unserviceable.
12	During	Hoses	Check for breaks, cracks, deterioration or damage.	Hose(s) unservicable

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

Item No.	Interval	Item to Be Checked or Serviced	Procedure	Not Fully Mission If:
13	During	Couplings	Check for leaks at seal, gasket or fittings. Hardware missing or damaged.	Leaks are observed or hardware is unservice-able.
14	During	Quick-acting valves	Check for leaks at seal, gasket or fittings. Hardware missing or damaged.	Leaks are observed or hardware is unservice-able.
15	During	Collapsible tanks	Refer to PMCS in applicable technical manual	
16	During	Filter/separators	Refer to PMCS in applicable technical manual	
17	During	Pumps	Refer to PMCS in applicable technical manual	
18	During	Nozzles	Refer to PMCS in applicable technical manual	

Section III. OPERATION UNDER USUAL CONDITIONS

2-5. **Installation**. Figure 2-1 shows a typical layout of the fuel system. It should be used only as a guide since terrain features of the site and specific application will dictate the final configuration. Plan the most efficient layout for the selected site, making the best use of natural cover and level terrain. Plan for good access for vehicles loading and unloading fuel.

NOTE

Make sure all dust caps and plugs remain in place on components, hoses, and fittings until they are connected into the system.

a. When setting up the system, select a site that will provide relatively level terrain to locate the equipment. Clear away dry leaves, grass and brush from the site where the pump assembly will be operated.

NOTE

All references to index numbers in the followings steps refer to figure 2-1.

b. Position major components of the fuel system first.

(1) Emplace the 10,000 gallon collapsible fuel tanks (1) in accordance with instructions contained in applicable technical manuals.

(2) Emplace the 350 gpm pump assemblies (2) in accordance with instructions contained in applicable technical manuals.

(3) Emplace the 350 gpm filter/separator units (3) in accordance with instructions contained in applicable manuals.

*** U.S. GOVERNMENT PRINTING OFFICE: 1996-554-024/48333**

1. TANK
2. PUMP
3. FILTER/SEPARATOR
4. WYE AND TEE ASSY (3 IN. X 4 IN.)
5. SUCTION HOSE ASSY (3 IN. X 12 FT)
6. GATE VALVE (3 IN.)
7. SUCTION HOSE ASSY (4 IN. X 10 FT)
8. GATE VALVE (4 IN.)
9. DISCHARGE HOSE ASSY (4 IN. X 50 FT)
10. DISCHARGE HOSE ASSY (4 IN. X 25 FT)
11. WYE ASSY (4 IN. W/1 FEMALE, 2 MALE)
12. WYE ASSY (4 IN. W/2 FEMALE, 1 MALE)
13. GATE VALVE (4 IN.)
14. TEE ASSY (4 IN. X 3 IN.)
15. REDUCER (4 IN. X 3 IN.)
16. DISCHARGE HOSE ASSY (3 IN. X 50 FT)
17. DISCHARGE HOSE ASSY (3 IN. X 25 FT)
18. TEE ASSY (3 IN.)
19. REDUCER (3 IN. X 2 IN.)
20. QUICK-ACTING VALVE (2 IN.)
21. DISCHARGE HOSE ASSY (2 IN. X 25 FT)
22. TEE ASSY (2 IN. X 1 IN.)
23. DISCHARGE HOSE ASSY (3 IN. X 25 FT)
24. QUICK-ACTING VALVE (3 IN.)
25. DISCHARGE HOSE ASSY (1-1/2 IN. X 25 FT)
26. QUICK-ACTING VALVE (1-1/2 IN.)
27. DISCHARGE HOSE ASSY (1 IN. X 25 FT)
28. NOZZLE
29. DUST CAP (2 IN.)
30. DUST CAP (4 IN.)
31. DUST PLUG (4 IN.)

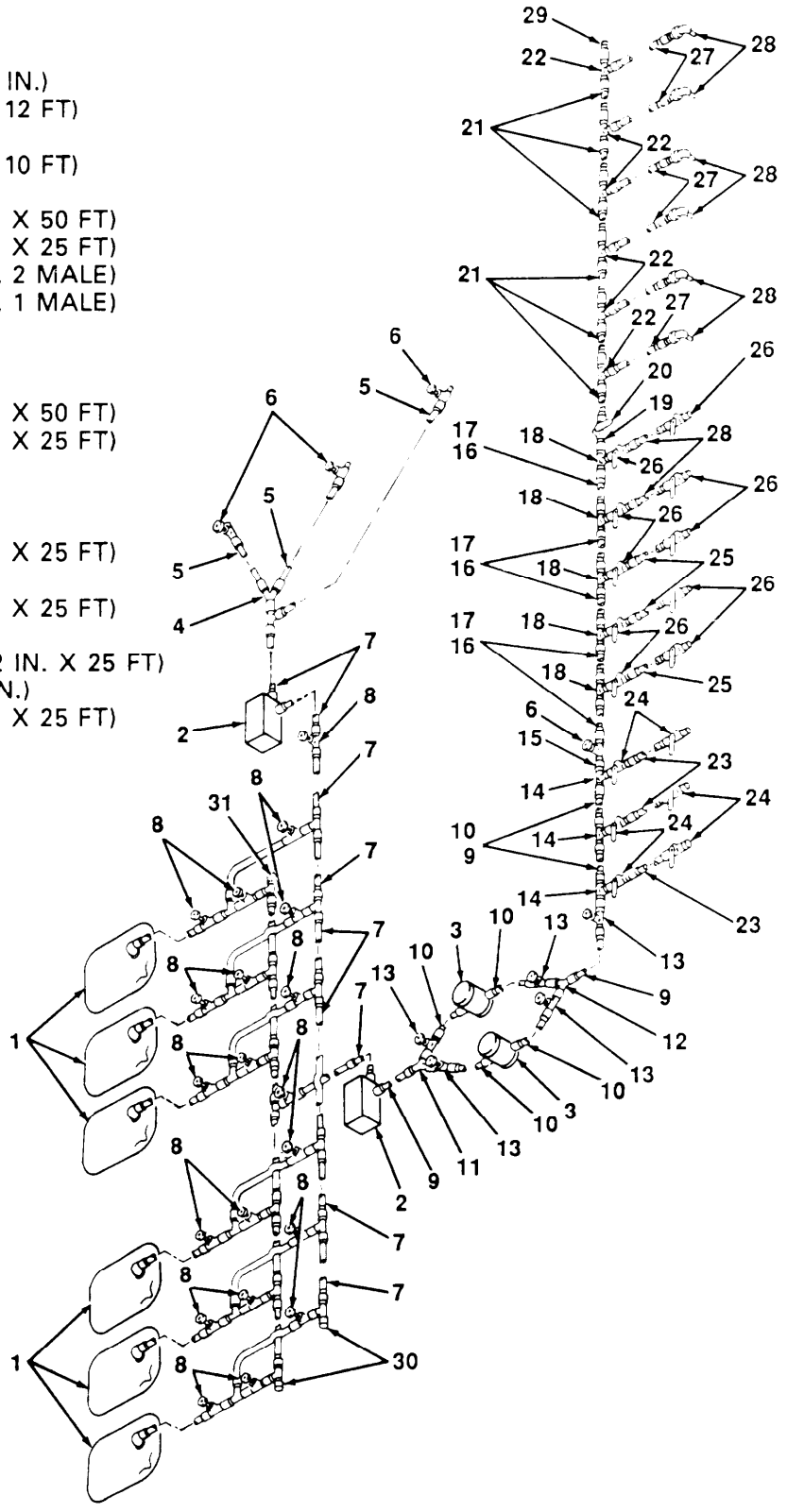


Figure 2-1. Typical Layout of Fuel System.

c. The wye and tee assembly (4) is the receiving manifold for the system. Grounding equipment should be used whenever fuel is received through the manifold, because contact between the manifold and the ground is not perfect.

d. Connect suction hose assemblies (5) between the wye and tee assembly (4) and gate valves (6). Connect the remaining suction hose assemblies (7) at the wye and tee assembly (4), pumps (2) and gate valves (8). Connect suction lines to tee assemblies, gate valves and hose assemblies supplied with the tanks (1).

e. Connect discharge hose assemblies (9 and 10), wye assemblies (11 and 12), gate valves (13) to pump (2), filter/separators (3) and tee assemblies (14). Connect reducer (15), discharge hose assemblies (16 and 17), tee assemblies (18), reducer (19), quick-acting valve (20), hose assemblies (21) and tee assemblies (22).

f. Connect hose assemblies (23) and quick-acting valves (24) to tee assemblies (14). Connect hose assemblies (25) and quick-acting valves (26) to tee assemblies. Connect hose assemblies (27) and nozzles (28) to tee assemblies (22).

g. Ensure dust caps (29 and 30) and dust plug (31) are in place.

CAUTION

Extreme care must be taken to prevent injury to fingers or hands when driving the ground rods. Do not place hands between the ram and drive collar. Gloves should be worn.

h. Remove nozzle grounding rods from accessory containers. Grounding rods are mandatory for use with the system. Ground system properly by driving rods into ground at least 36 inches before connecting nozzle ground cable clamps. Nozzle ground rods will be placed near the end of the discharge hose, so each nozzle can be hung on the bracket on the top of the grounding rod when the nozzle is not in use.

2-6. **Operating Procedures.** Perform the procedures in the following paragraphs to store and dispense fuel.

WARNING

Before operating the fuel system be sure that all components are properly grounded. There shall be no smoking in the area of the fuel system at any time. Be sure that fire extinguishing equipment is available and operational. Failure to heed this warning can cause explosion and/or fire and can lead to personal injury or DEATH.

CAUTION

Make certain that all valves are closed before starting any operation.

NOTE

All reference to index numbers in the following steps refer to figure 2-2.

a. *Fuel Storage.* Perform the following steps to store fuel in the collapsible tanks.

(1) Attach the gate valve (1) to the outlet of the fuel transporter or pipeline and open the gate valves.

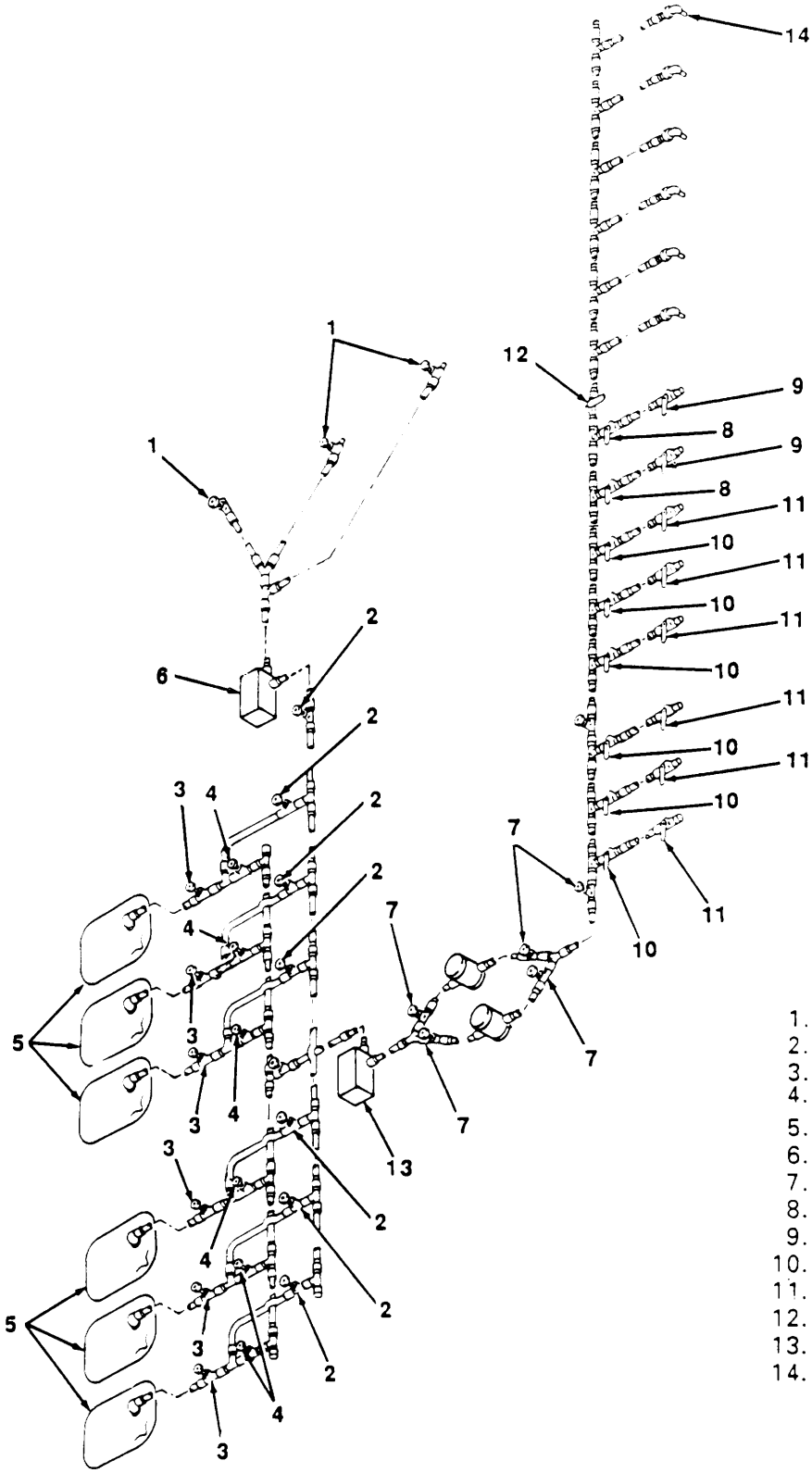


Figure 2-2. Fuel System Operation.

(2) Open gate valves (2) and (3) in the hoseline between the fuel transporters (or pipeline) and the fuel storage tanks (4) to permit flow of fuel to the tanks.

NOTE

Refer to applicable technical manual for pump operation before starting pump

(3) Start pump (5).

(4) When all fuel is transferred from transporter, or tanks are full, shut down the pump (5) and close gate valves (3, 2 and 1).

b. *Fuel Dispensing.* Perform the following steps for dispensing fuel:

NOTE

Fuel is normally drawn from one tank (5) at a time while valves (3 and 4) leading to other tanks (5) in the system are closed to minimize friction loss and reduction in pumping capacity.

(1) Open gate valves (3, 4 and 7). Ensure that quick-acting valves (8,9, 10, 11 and 12) are closed.

NOTE

Refer to applicable technical manual for pump operation before starting pump

(2) Operate pump (13).

(3) For dispensing through 3-inch quick-acting valve, open valve(s) (10) and valve(s) (11).

(4) For dispensing through 1-1/2-inch quick-acting valve, open valve(s) (8) and valve(s) (9).

(5) For dispensing through service nozzle, open valve (12) and operate lever on service nozzle (14).

(6) When dispensing operation is completed, release lever on service nozzle (14) and/or close all discharge valves. Shut down pump (13).

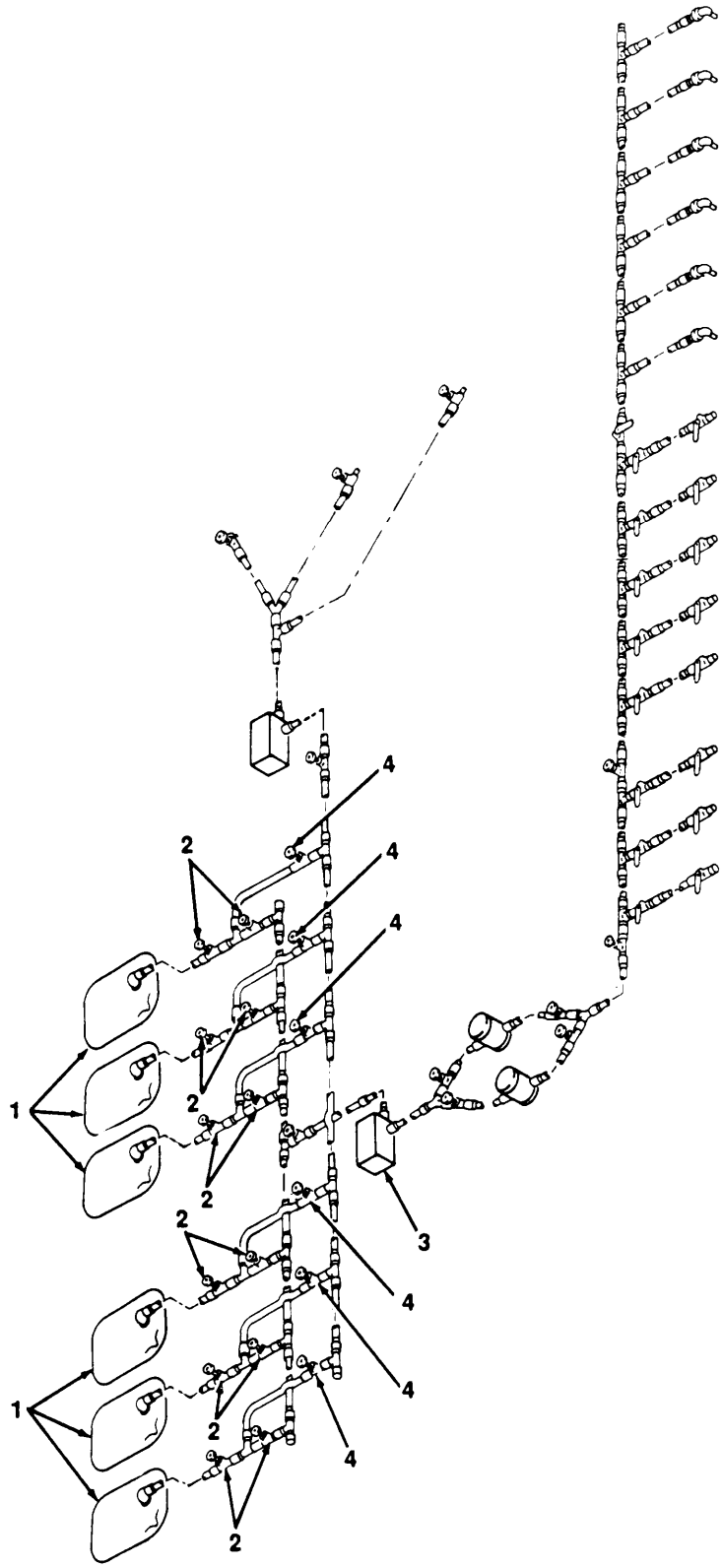
NOTE

Gate valves (3 and 4) may remain open unless dispensing operation is completely shut down, or fuel storage operation is to be performed.

2-7. **Preparation for Movement** (figure 2-3). Prepare the fuel system for movement to another site in accordance with the following procedure:

NOTE

All index number references in the following steps refer to figure 2-3.



1. TANK
2. GATE VALVE
3. PUMP
4. GATE VALVE

Figure 2-3. Preparation for Movement.

b. Have sufficient portable fuel containers on hand to collect the fuel that will be drained from the components of the system during disassembly.

c. Transfer as much of the stored fuel as possible to fuel transporters for shipment to the new site.

d. Manually drain fuel remaining in the 10,000 gallon tanks (1) into the suction hose assemblies and close valves (2) at each tank to prevent fuel from flowing back. Disconnect the tanks from the system, and manually drain residual fuel into proper containers.

e. With the dispensing pump (3) running for suction pressure, manually drain fuel remaining in the hose assemblies into the dispensing side of the fuel system.

f. Lift hose assemblies over the shoulder to create a siphoning action and walk the hoseline toward the pump (3), closing valve assemblies (4) as you go to prevent back flow.

g. Stop and disconnect the dispensing pump (3) and drain fuel from the remaining hose assemblies into suitable containers using the method described in step e, above.

h. Disconnect remaining components. Install all dust caps and plugs on the hose assemblies and fittings as they are dismantled.

i. Store hose assemblies and fittings in their original shipping boxes or other suitable containers for transportation.

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

Paragraph Page

2-8. **Operation in Extreme Cold.** The fuel system will operate in extreme cold weather. Use proper precautions when handling fuel. Protect hose connections and nozzles from ice and snow. Inspect sight gage and differential pressure gage on filter/separator more often. The low temperature operational limit is -25°F(-32°C).

2-9. **Operation in Extreme Heat.** The fuel system will operate in extreme heat when ordinary precautions are taken. The high temperature limit is 125°F (52°C).

CAUTION

A hose full of fuel and closed at both ends must not be exposed to the sun for extended periods. Expansion of the fuel will damage the hose. Open vent valve on fuel separator when not in use.

2-10. **Operation in Dusty or Sandy Areas.** The fuel system is affected by dusty or sandy conditions. The dispensing nozzles should be cleaned immediately before refueling operations start. Keep all dust caps in place except when in use.

2-11. **Operation Under Rainy or Humid Conditions.** Keep dispensing nozzles capped except when in use. Dry nozzles thoroughly before dispensing fuel.

2-12. **Operation in Salt Water Areas.** Operation in salt water areas presents corrosion problems. Keep exposed metal parts clean by washing with fresh water and drying thoroughly.

CHAPTER 3

OPERATOR MAINTENANCE INSTRUCTIONS

OVERVIEW

This chapter includes maintenance procedures to be performed by the operator to ensure that the fuel system remains mission capable.

Section I. INTRODUCTION

3-1. **General.** Operator maintenance of the fuel system is limited to locating and correcting operating troubles that may develop in the system, visually inspecting hose assemblies, fittings, valves, manifolds and nozzles, replacing components found to be defective, and cleaning nozzle screens. All components are connected with quick-disconnect cam-locking fittings which require no tools or detailed instruction.

Section II. OPERATOR TROUBLESHOOTING PROCEDURES

3-2. **General.** This section contains troubleshooting information for locating and correcting most of the operating troubles which may develop in the fuel system. Each malfunction for an individual component is followed by a test or inspection for probable causes and actions to take in correcting the malfunction.

3-3. **Troubleshooting Procedures.** Refer to the symptom index to locate the troubleshooting procedure for the observed malfunction. Malfunctions which may occur during operation are listed in Table 3-1. This manual cannot list all malfunctions which may occur nor all of the corrective actions. If a malfunction is not listed or is not corrected by listed corrective action, notify your supervisor.

NOTE

Before you use this table, be sure you have performed all applicable preventive maintenance checks and services listed in Table 2-1.

SYMPTOM INDEX

Table 3-1. Operator Troubleshooting Procedures

Malfunction Test or Inspection Corrective Action
1. PUMP FAILS COOPERATE
Refer to applicable technical manual.
2. FILTER/SEPARATOR INOPERATIVE
Refer to applicable technical manual.
3. FUEL LEAKS AT COUPLING
Step 1. Check for defective gasket inside female coupling half.
Refer to unit maintenance.
Step 2. Check for defective hose assembly
Refer to unit maintenance.
Step 3. Check for defective manifold couplings.
Refer to unit maintenance.
4. GATE VALVE LEAKS OR IS INOPERATIVE
Check for defective valve.
Refer to unit maintenance.
5. QUICK-ACTING VALVE LEAKS OR IS INOPERATIVE
Check for defective valve.
Refer to unit maintenance.

CHAPTER 4

UNIT MAINTENANCE INSTRUCTIONS

OVERVIEW

This chapter contains information necessary to maintain the fuel system at the unit maintenance level in accordance with the Maintenance Allocation Chart for the system. It includes the following.

a. Procedures for processing newer used components of the fuel system upon receipt.

b. Unit preventive maintenance procedures to ensure continued serviceability of all system components.

c. Procedures to identify and correct problems encountered during operation of the system at the unit maintenance level.

d. Component repair and replacement procedures.

e. Preparation of the system and its components for shipment and storage.

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

4-1. **Common Tools and Equipment.** For authorized common tools and equipment refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

4-2. **Special Tools, TMDE, and Support Equipment.** Special tools and equipment are listed in Appendix B, Section III, and Appendix F.

4-3. **Repair Parts.** Repair parts are listed and illustrated in Appendix F of this manual.

Section II. SERVICE UPON RECEIPT

4-4. **Unpacking.** Carefully remove any blocking, bracing, and unit containers. Remove all plugs and caps for visual inspection of system components; then replace them on components, hoses and fittings until they are connected into the system. Check unpacked equipment as follows:

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on SF 364, Report of Discrepancy.

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

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

4-5. **Inspection.** The following describes the procedure for inspecting the fuel system upon initial receipt.

a. Perform preventive maintenance checks and services (para. 4-8).

b. Inspect equipment for damage and/or missing parts. Carefully inspect hose assemblies for damaged couplings and inspect hoses for cuts and excessive wear. Report any damaged or missing parts on SF 364, Report of Discrepancy.

c. Check that ground cables are securely fastened to pump assembly and filter/separator assembly. Make sure that grounding clip and plug at free ends are securely fastened to the ground cable and that the cable is attached to the nozzle. Inspect all ground cables for broken or damaged condition.

4-6. **installation.** Refer to paragraph 2-5.

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

4-7. **General.** To ensure that the fuel system is ready for operation at all times, it must be inspected so that defects may be discovered and corrected before they result in serious damage or failure. Defects discovered during operation of the system shall be noted for future correction to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noted during operation, which would damage the equipment if operation were continued. If the equipment fails to operate, troubleshoot with the proper equipment. Report any deficiencies using the proper forms. (See DA PAM 738-750).

4-8. **PMCS Procedures.** Refer to Chapter 2, Section II for a description and listing of the necessary preventive maintenance checks and services and the intervals at which these checks and services shall be performed.

Section IV. UNIT TROUBLESHOOTING PROCEDURES

4-9. **General.** This section contains troubleshooting procedures to determine the probable cause of observed equipment malfunctions. Tests or inspections are provided to isolate the faulty component and corrective actions are provided to eliminate the malfunction.

4-10. **Unit Troubleshooting Procedures.** Refer to the symptom index to locate the troubleshooting procedure for the observed malfunction. Table 4-1 contains a listing of the common malfunctions that may occur during the operation or maintenance of the pump assembly. Perform the tests or inspections, and the recommended corrective action, in the order listed in the troubleshooting table. If the malfunction is corrected by a specific corrective action, do not continue with the remaining steps, if any, of the troubleshooting procedure. If the malfunction is not corrected by the listed corrective actions, notify your supervisor.

SYMPTOM INDEX

Table 4-1. Unit Troubleshooting Procedures

Malfunction Test or Inspection Corrective Action
1. PUMP FAILS COOPERATE.
Refer to applicable technical manual.
2. FILTER/SEPARATOR INOPERATIVE.
Refer to applicable technical manual.
3. FUEL LEAKS AT COUPLINGS.
Step 1. Check for defective hose assembly.
Repair hose assembly (para. 4-12).
Step 2. Check for defective manifold couplings.
Repair manifold (para. 4-15).
Step 3. Check for defective gaskets inside female couplings.
Replace gaskets (para. 4-12).
4. GATE VALVE LEAKS OR IS INOPERATIVE.
Step 1. Check for defective valve.
Repair valve (para. 4-13).
5. QUICK-ACTING VALVE LEAKS OR IS INOPERATIVE.
Step 1. Check for defective valve.
Repair valve (para. 4-14).
6. NOZZLE LEAKS OR IS INOPERATIVE.
Step 1. Check for defective nozzle.
Refer to applicable technical manual.

Section V. UNIT MAINTENANCE PROCEDURES

4-11. **General.** This section contains unit level maintenance procedures as authorized by the Maintenance Allocation Chart (MAC) in Appendix B of this manual. All maintenance procedures require only one person to perform.

4-12. **Hose Assembly.**

This task covers: Repair

INITIAL SETUP

Tools:

Clamping Tool, Strap Band, Item 4, Appendix B
General Mechanic's Tool Kit, Section III, Item 3, Appendix B

Materials/Parts:

Strapping, Hose Clamping, 1/2-inch w, Item 1, Appendix E

Materials/Parts (cont)

Strapping, Hose Clamping, 3/4-inch w, Item 2, Appendix E

Equipment Condition:

Inspected, paragraph 2-3
Disconnected and removed from fuel system

Repair. Repair Of the hose assembly is limited to replacement of defective parts. *Disassemble* and reassemble hose assembly as follows:

(1) Cut the hose clamps and remove them from the hose.

(2) Remove the couplings from the hose. Remove gasket from inside the female coupling.

(3) Remove damaged section of hose. Ensure static wire extends 1/4 inch.

(4) Using clamping tool, P/N C001 (70847), perform the following procedure (figure 4-1):

(a) Insert the coupling shank into the hose. Be sure the static wire makes contact with the coupling.

(b) Cut two bands from the 1/2-inch or 3/4-inch strapping roll which will encircle the hose and extend 8 to 10 inches beyond.

(c) Position each band over hose and coupling so they are evenly spaced over coupling shank.

(d) Hold the buckle with the prongs extending up and insert one end of the band through the toothed slot.

(e) Hook the band over the top of the buckle between the prongs.

(f) Bring the other end of the band around the hose and through the buckle.

(g) Insert part of the band drawn through the buckle into the tool slots. The nose of the tool should be flush against the buckle.

(h) Apply tension on the tension handle, keeping tension on the band gripper lever, and adjust the position of the tool as required. The lever will lock itself with the correct amount of tension.

CAUTION

The band may break unless the operator backs off tension on the tension handle through the entire length of the bend.

(i) Bend the band back over the buckle teeth and release the tension on the tension handle.

(j) Cut the band with the cutting handle.

(k) Remove the tool and hold the stub of the band down with the thumb.

(l) Clinch the stub by hammering down the prongs of the buckle.

(m) Repeat steps (a) through (k) for second clamp.

(n) Install a new or serviceable gasket inside the female coupling.

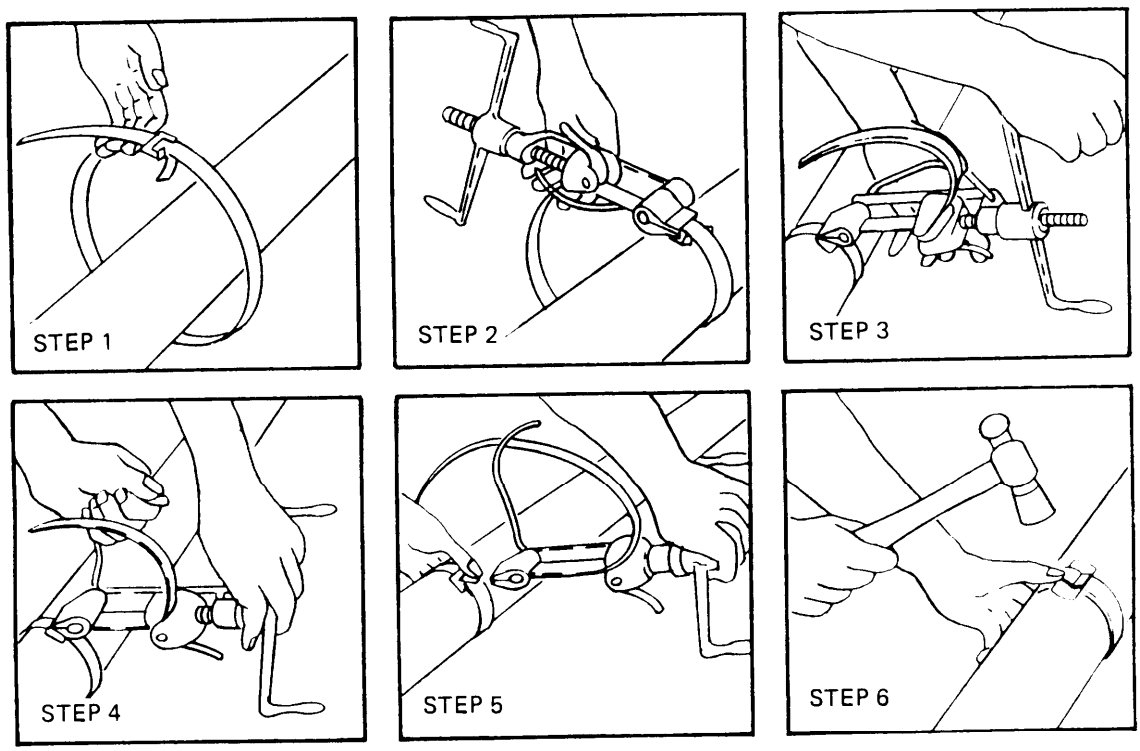


Figure 4-1. Hose *Assembly Repair Using Clamping Tool C001.*

4-13. **Gate Valve.**

This task covers: a. Replace b. Repair

INITIAL SETUP

Tools:

Wrench, 1 5/8 in., contained in Section III, item 3, Appendix B
General Mechanic's Tool Kit, Section III, Item 2, Appendix B

Materials/Parts:

Sealing Compound, Item 3, Appendix E
Gasket
Packing Compound

Equipment Condition:

Inspected, paragraph 2-3.
Disconnected and removed from fuel system.

a. Replace. Replace an unserviceable gate valve with a new item from stock.

b. Repair. Repair a serviceable valve by replacing any defective part or by packing as follows:

(1) *Replacement of gaskets* (figure 4-2). Perform the following steps to replace gaskets:

(a) Remove nuts (1), lockwashers (2), flat washers (3), capscrews (4) and flanged couplings (5 and 6). Remove gasket (7) from female coupling (5) and discard.

(b) Remove cork gaskets (8) from valve body and discard. Remove old sealing compound from flanges on valve body and couplings.

(c) Install new cork gaskets using sealing compound (MIL-S-7916).

(d) Attach couplings (5 and 6) to valve using capscrews (4), flat washers (3), lockwashers (2) and nuts (1). Install new gasket (7) in female coupling.

(2) *Replacement of packing* (figure 4-2). Perform the following steps to replace the packing.

(a) Remove the wheel nut (9) and handwheel (10).

(b) Remove stuff nut (11) and spring (12).

(c) Remove nuts (13), lockwashers (14), capscrews (15) and the bonnet (16) from body and valve stem (21).

(d) Remove gasket (17) from the valve body (18). Discard gasket. Remove old sealing compound from bonnet and valve body.

(e) Remove the packing gland (19) and packing (20) from the bonnet (16). Discard packing.

(f) Install new gasket (17) using sealing compound (MIL-S-7916).

(g) Attach the bonnet (16) overvalue stem (21) to the valve body (18) with capscrews (15), lockwashers (14) and nuts (13).

(h) install new packing (20), packing gland (19) and spring (12) in bonnet (16) and secure with stuff nut (11).

(i) Install handwheel (10) and wheel nut (9).

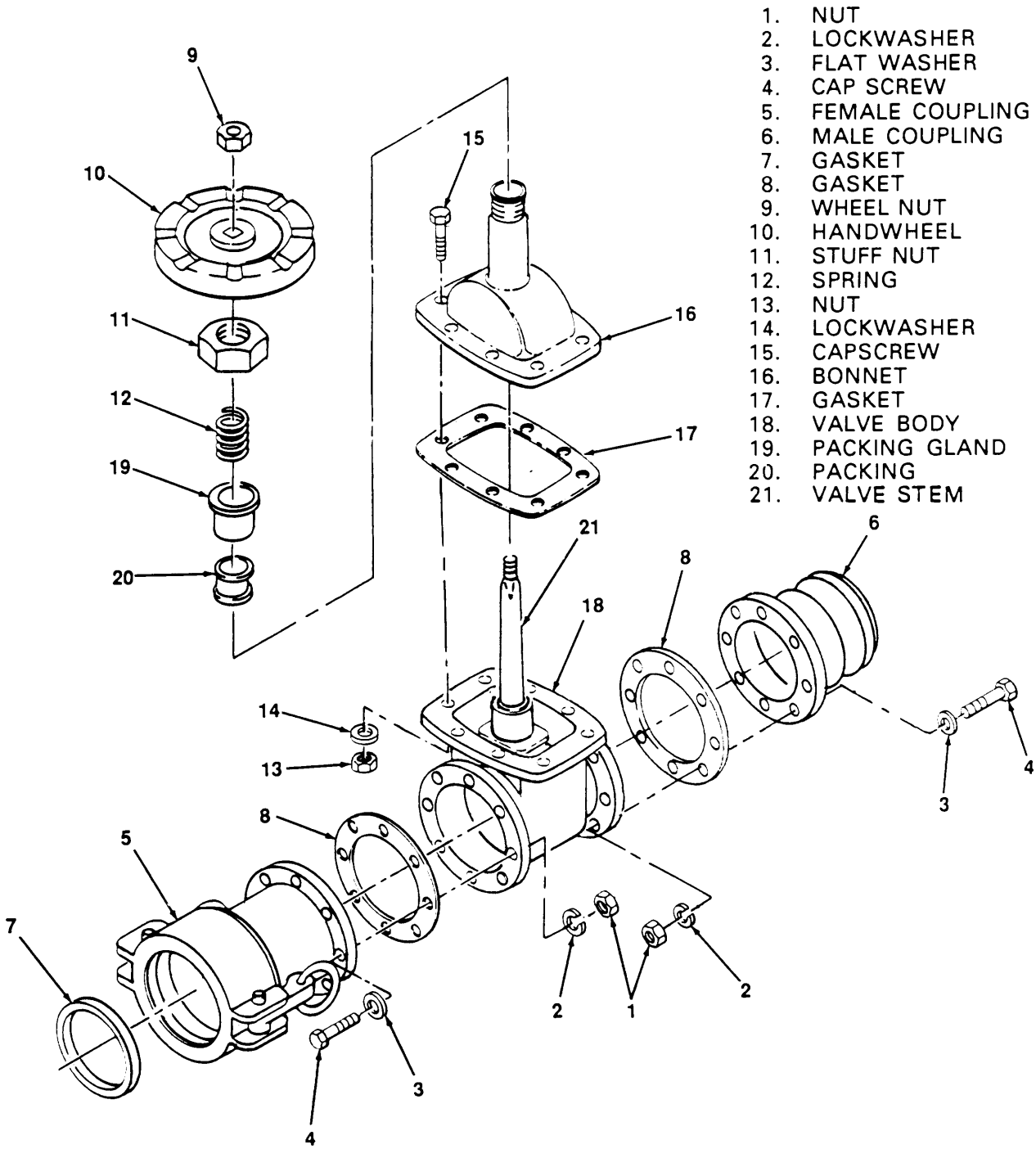


Figure 4-2. Gate Valve Repair.

4-14. Quick-Acting Valve.

This task covers: a. Replace b. Repair

INITIAL SETUP

Tools:

Wrench, Strap, contained in Section III, Item 3, Appendix B
Wrench, Pipe, 18-in., contained in Section III. Item 3, Appendix B
General Mechanic's Tool Kit, Section III, Item 2, Appendix B

Materials/Pads:

Sealing Compound, Item 3, Appendix E
Gasket

Equipment Condition:

Inspected, paragraph 2-3
Disconnected and removed from fuel system

a. Replace. Replace an unserviceable quick-acting valve with a new item from stock.

b. Repair. (figure 4-3) Repair a serviceable valve by replacing any defective part or by replacing gaskets as follows:

(1) Remove quick disconnect plug (1) and dust cap (2).

(2) Remove gasket (3) from coupling half (4) and discard.

(3) Remove coupling half (4) and coupling half (5) from ball valve (6) by unscrewing. Remove old sealing compound from coupling halves and ball valve.

(4) Install coupling halves (4 and 5) in ball valve (6), using sealing compound (MIL-S-7916) on threads.

(5) Install new gasket (3) in coupling half (4).

1. QUICK-DISCONNECT PLUG
2. DUST CAP
3. GASKET
4. QUICK-DISCONNECT COUPLING HALF
5. QUICK-DISCONNECT COUPLING HALF
6. BALL VALVE

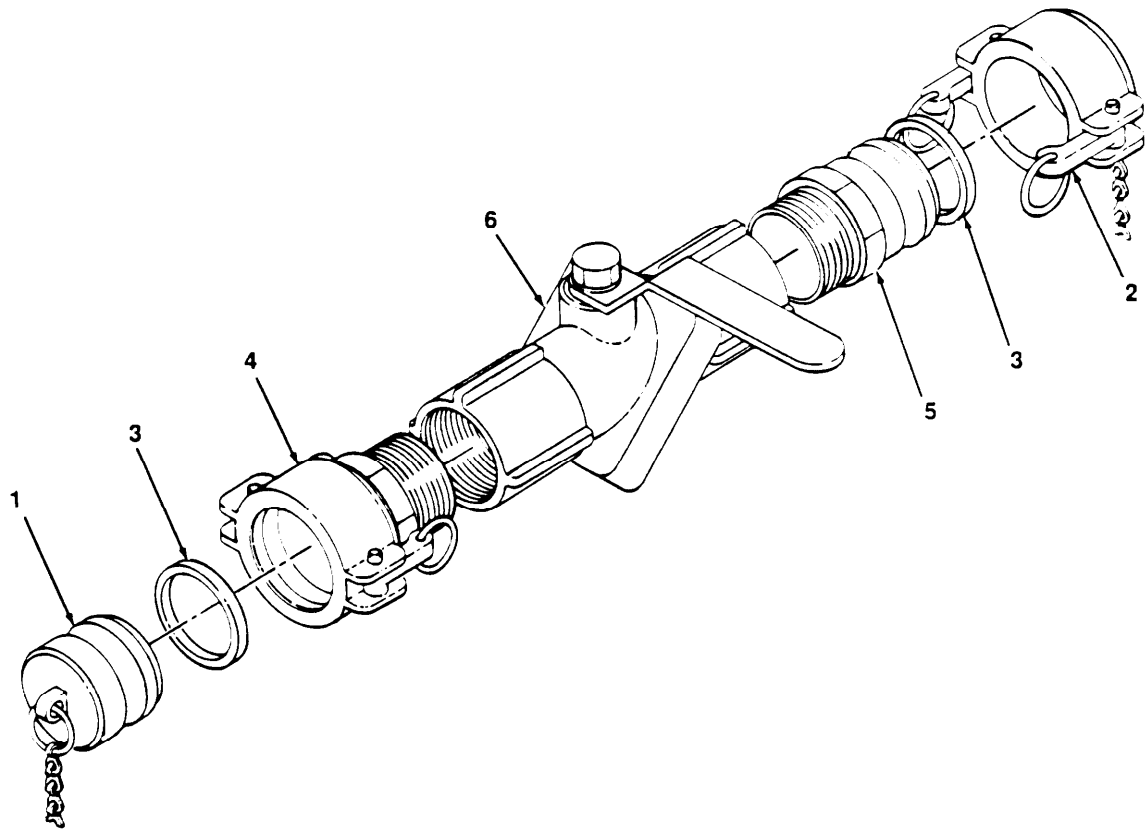


Figure 4-3. *Quick-Acting Valve Repair.*

4-15. **Manifolds.**

This task covers: a. Replace b. Repair

INITIAL SETUP

Tools:

General Mechanic's Tool Kit, Section III, Item 2, Appendix B

Materials/Parts:

Sealing Compound, Item 3, Appendix E
Gasket

Equipment Condition:

Inspected, paragraph 2-3.
Disconnected and removed from fuel system.

a. *Replace.* Replace an unserviceable manifold with a new item from stock.

b. Repair. There are three types of manifolds used in the fuel system, a wye and tee assembly, a wye assembly and a tee assembly. Repair of each of these assemblies is limited to replacement of any defective parts with a new item from stock.

(1) Wye *and tee assembly* (figure 4-4).

(a) Remove caps (1) from adapters (2).

(b) Remove cap (3) from coupling (4).

(c) Remove nuts (5), lockwashers (6), flat washers (7) and cap screws (8) to remove adapters (2) and coupling (4).

(d) Remove cork gaskets (9) from wye body (10) and tee body (11). Remove old sealing compound from flanges on wye body, tee body, adapters (2) and coupling (4).

(e) Install new cork gaskets using sealing compound (MIL-S-791 6).

(f) Install wye body (10), tee body (11), adapters (2) and coupling (4) using cap screws (8), flat washers (7), lockwashers (6) and nuts (5).

1. CAP
2. ADAPTER
3. CAP
4. COUPLING
5. NUT
6. LOCKWASHER
7. FLAT WASHER
8. CAP SCREW
9. GASKET
10. WYE BODY
11. TEE BODY

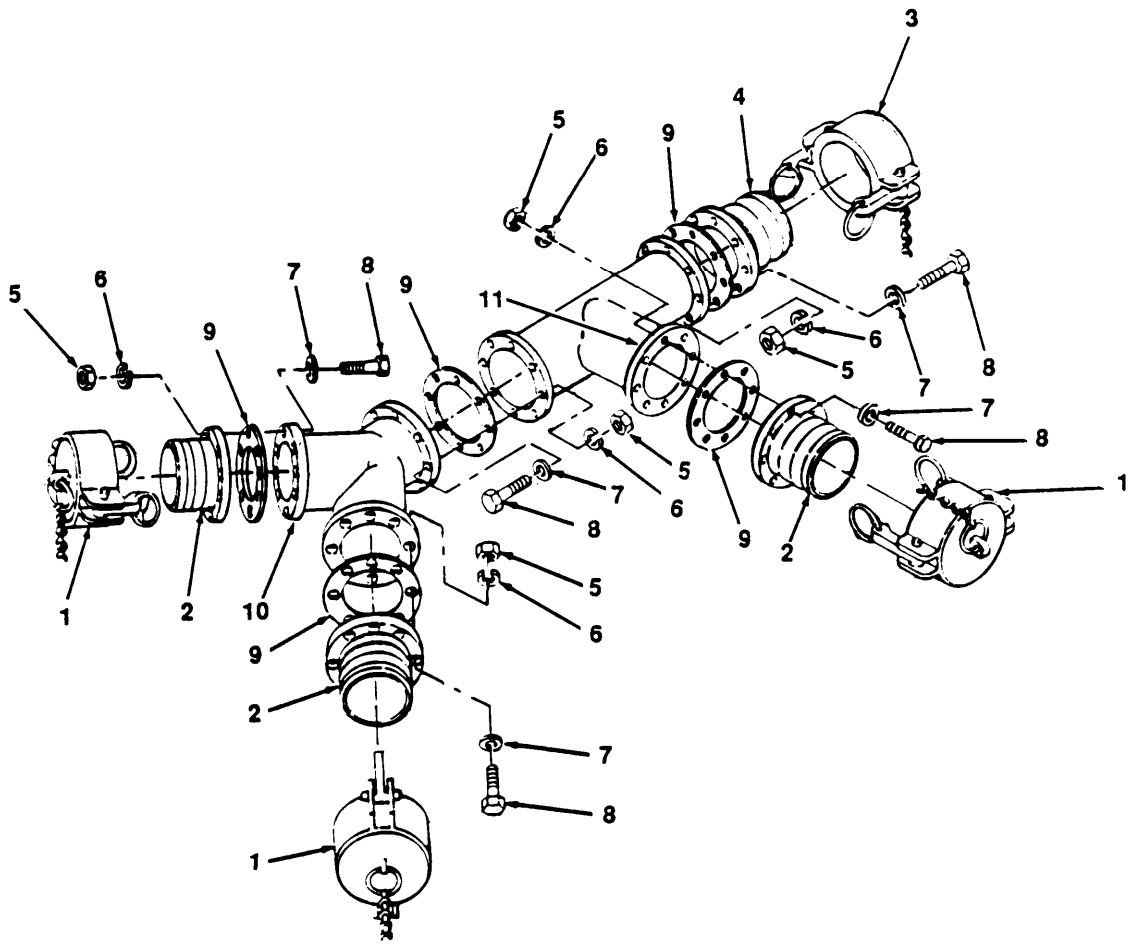


Figure 4-4. Wye and Tee Assembly Repair.

4-15. **Manifolds (Cont).**

(2) Wye assembly (figure 4-5).

(a) Remove caps (1) from coupling (2).

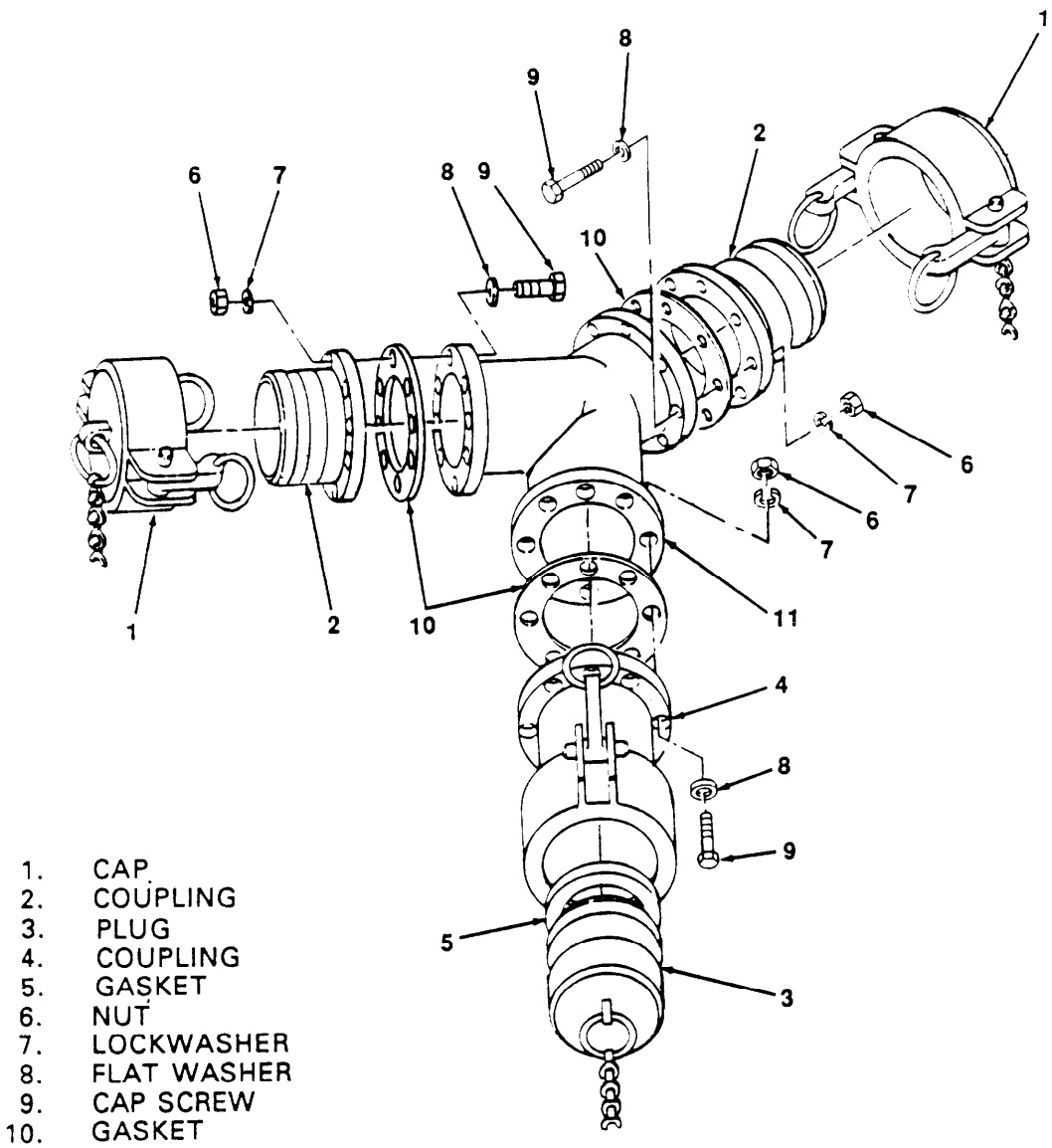
(b) Remove plug (3) from female coupling (4) and replace gasket (5).

(c) Remove nuts (6), lockwasher (7), flatwashers (8) and cap screws (9) and remove couplings (2 and 4).

(d) Remove cork gaskets (10) from wye body (11). Remove old sealing compound from flanges on wye body (11) and couplings (2 and 4).

(e) Install new cork gaskets (10) using sealing compound (MIL-S-791 6).

(f) Install wye body (11) and couplings (2 and 4) using cap screws (9), flat washers (8), lockwashers (7) and nuts (6).



1. CAP
2. COUPLING
3. PLUG
4. COUPLING
5. GASKET
6. NUT
7. LOCKWASHER
8. FLAT WASHER
9. CAP SCREW
10. GASKET
11. WYE BODY

Figure 4-5. Wye Assembly Repair.

4-15. Manifolds (Cont).

(3) Tee assembly (figure 4-6).

(a) Remove caps (1) from couplings (2).

(b) Remove plug (3) from female coupling (4) and replace gaskets (5).

(c) Remove nuts (6), lockwashers (7), flatwashers (8) and cap screws (9) and remove couplings (2 and 4).

(d) Remove cork gaskets (10) from tee body (11). Remove old sealing compound from flanges on tee body (11) and couplings (2 and 4).

(e) Install new cork gaskets (10) using sealing compound (MIL-S-7916).

(f) Install tee body (11) and couplings (2 and 4) using cap screws (9), flat washers (8), lockwashers (7) and nuts (6).

1. CAP
2. COUPLING
3. PLUG
4. COUPLING
5. GASKET
6. NUT
7. LOCKWASHER
8. FLAT WASHER
9. CAP SCREW
10. GASKET
11. TEE BODY

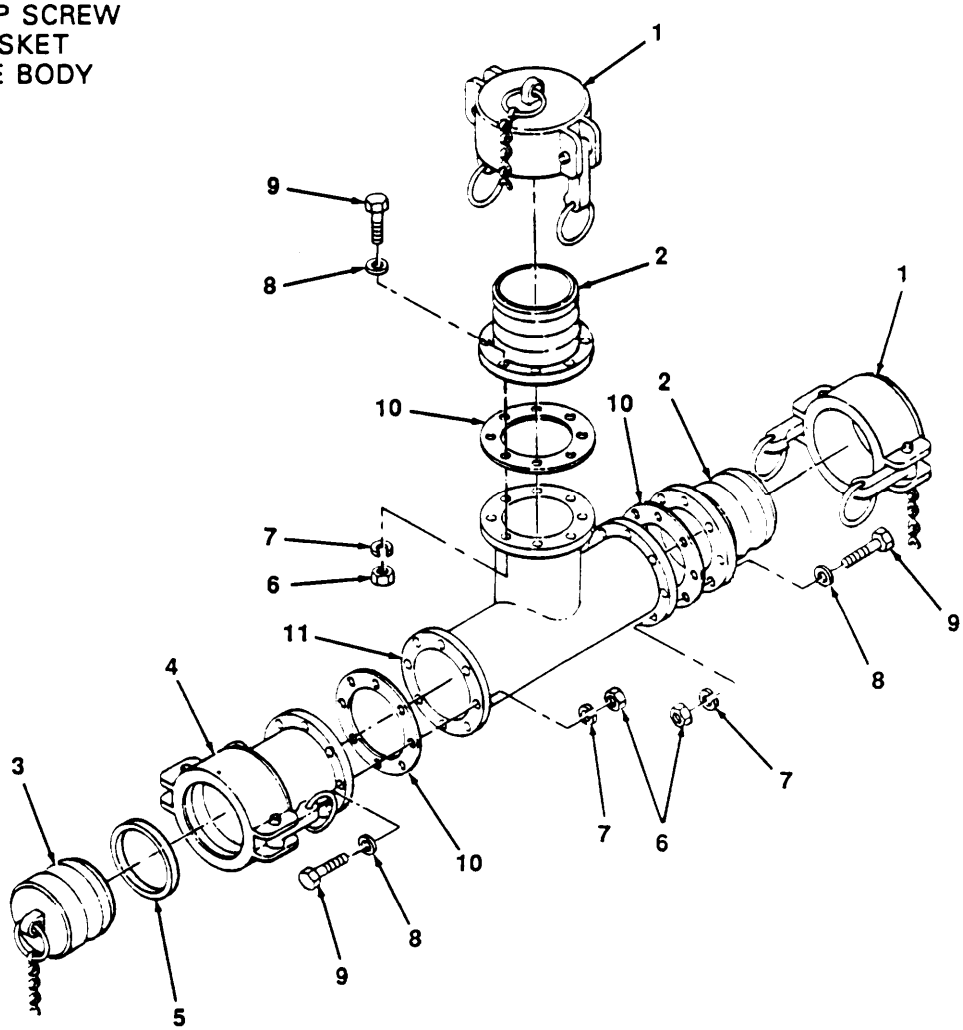


Figure 4-6. Tee Assembly Repair.

Section VI. PREPARATION FOR SHIPMENT OR STORAGE

4-16. **General.** This section describes the preparation procedures for shipment or storage of components of the fuel system.

4-17. **Preparation for Movement.** Prepare the fuel system for movement to another site in accordance with paragraph 2-7.

4-18. Storage and Shipment.

a. Administrative Storage.

(1) Placement of equipment in administrative storage should be for short periods of time when a shortage of maintenance effort exists. Items should be in mission readiness within 24 hours or within the time factors as determined by the directing authority. During the storage period appropriate maintenance records will be kept.

(2) Before placing equipment in administrative storage, current preventative maintenance checks and services should be completed, shortcomings and deficiencies should be corrected, and all modification work orders (MWO) should be applied.

(3) Storage site selection. Inside storage is preferred for items selected for administrative storage. If inside storage is not available, trucks, vans, conex containers and other containers may be used.

b. Storage Tanks. Each storage tank shall be dusted with talc or other anti-sticking compound to prevent adhesion to itself. Permanently attached fittings shall be cushioned with material conforming to PPP-C-795, or equivalent, and secured in place with tape conforming to PPP-T-97. Tanks shall be packed in a PPP-B-601 overseas style optional wood box, or equivalent, as applicable to the weight of the complete tank. The box shall be loosely lined with polyethylene material conforming to L-P-378, Type 1, Class 1, having a minimum thickness of .006 inch to prevent abrasion. The tank shall be cushioned, blocked and braced as needed for safe shipment to destination.

c. Fuel Pump and Connecting Piping. Interior surfaces of the pump and connecting piping shall be coated with lubricating oil conforming to MIL-L-21260, Grade 30, with excess oil drained. Draincock shall be left open. All valves shall be closed, with dust caps and plugs installed. Exterior surfaces, when required, shall have P-1 type preservative applied. The pumping assembly shall be prepared for mobile shipment. A plywood housing shall be placed over the components. The housing shall be secured in place by the use of lumber dunnage, using strapping as required for safe shipment to destination.

d. Engine Components. All internal engine components shall be preserved with oil conforming to Grade 10, 30, or 50, as applicable, in MIL-L-21260. All openings into the engine shall be sealed with plastic caps, plugs, or tape. Engines not exceeding 1,000 pounds shall be packed in an overseas wood box conforming to PPP-B-601, style optional. Engines exceeding 1,000 pounds shall be packed in a crate conforming to MIL-C-104, Type 1, Class 1 or 2, style optional. Block and brace as needed for safe shipment to destination.

e. Filter/Separator. The filter/separator with canisters and filter elements shall not require preservation; however, the water drain valve shall be opened with dust plug and cap installed. Each filter/separator shall be packed in a box conforming to PPP-B-601 overseas, Style A or B. Blocking and bracing to prevent movement of contents shall be accomplished as needed for safe shipment to destination.

f. Other Components. All other components not addressed in a. through d., above, shall be packed with cushioning, blocking and bracing, as necessary, in an overseas wood box, style optional, conforming to PPP-B-601.

APPENDIX A

REFERENCES

A-1. Scope.

This appendix lists all forms, field manuals, and technical manuals related to the operation and maintenance of the equipment covered by this manual.

A-2. Forms.

Report of Discrepancy . . . . . SF 364
Product Quality Deficiency Report . . . . . SF 368
Equipment inspection and Maintenance Worksheet . . . . . DA Form 2404
Maintenance Request . . . . . DA Form 2407
Recommended Changes to DA Publication . . . . . DA Form 2028

A-3. Field Manuals.

First Aid for Soldiers . . . . . FM 21-11
Petroleum Supply Point Equipment and Operations . . . . . FM 10-69

A-4. Technical Manuals.

Operator's, Organizational, Direct Support, General Support, and Depot Maintenance Manual for Pump, Centrifugal; Petroleum, Gasoline Driven, Trailer MTD, 4-Inch, 350 GPM, 275-Ft Head (Gorman-Rupp Models 04A12-MVG4D) (NSN 4320-00-691-1071) and (Model 04A12B-MVG4D) (4320-00-069-8494) (Reprinted w/Basic Incl C1-10) . . . . . TM 5-4320-218-15

Organizational Maintenance Repair Parts and Special Tools List: Pump, Centrifugal Petroleum, Gasoline Driven, Trailer Mounted, 4-Inch, 350 GPM, 275-Ft Head (German-Rupp Models 04A12MVG4D) (FSN 4320-00-691-1071) and (Model 04A12B-MVG4D) (4320-069-8494) (Reprinted w/Basic Incl C2-3) . . . . . TM 5-4320-218-20P

Operator's, Organizational, Direct Support, and General Support Maintenance Manual for Pumping Assembly, Diesel Engine Driven, Wheel Mtd, 350 GPM, 275 Ft Head, Model 13220E1070 (97403) (Fuel Use Only), (NSN 4320-01-092-3551); Head, with Regulator, Model 13226E2289 (97403) (Fuel Use Only), (4320-01-141-5154); Head, Model 13225E9200 (97403) (Water Use Only) (4320-01-158-2954); Head, Model LPP-TM (36024) (Fuel Use Only) (4320-01-215-7671); Head, Model LC 350 GPM (36024) (Fuel Use Only) (4320-01-259-5965) . . . . . TM 5-4320-226-14

Organizational, Direct Support and General Support Maintenance Repair Parts and Special Tools List for Pumping Assembly, Diesel Engine Driven, Wheel Mtd. 350 GPM; 275 Ft Head, Model 13220E1070 (97403) (Fuel Use Only) (NSN 4320-01-092-3551); 275 Ft Head, with Regulator, Model 13226E2289 (97403) (Fuel Use Only), (4320-01-141-5154) 13225E9200 (97403) (Water Use Only) (4320-01-158-2954); 275 Ft Head Model (36024) (Fuel Use Only) (4320-01-215-7671); 275 Ft Head, Model LC 350 GPM (36024) (Fuel Use Only) (4320-01 -250 -5965) . . . . TM 5-4320-226-24P

Operator's, Organizational, Direct Support and General Support Maintenance Manual, Pump Assembly, Flammable Liquid, Bulk Transfer; Gasoline Engine Driven, 350 GPM Capacity at 190 Foot Head, Wheel Mounted (German-Rupp Model 84C15-4A084) (NSN 4320-00-916-9172) and (Barnes Model US36ACG) (4320-00-407-2583) (Reprinted w/Basic Incl C1-2) . . . . . TM 5-4320-242-14

Organizational, Direct Support and General Support Maintenance Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools); Pumping Assembly, Flammable Liquid, Bulk Transfer, Gasoline Engine Driven, 350 GPM Capacity at 190 Ft Head; Wheel Mounted (German-Rupp Model 84C15-4A084) (NSN 4320-00-916-9172) and (Barnes Model US36ACG) (4320-00-407-2563) (Reprinted w/Basic Incl C1-2) . . . . . TM 5-4320-242-24P

Operation and Organizational Maintenance Manual for Pumping Assembly, Flammable Liquid, Bulk Transfer, Gasoline Engine Driven; 350 GPM Capacity, 275 Ft Total Dynamic Head, Wheel MTD (Peabody Barnes, Inc., Model US37ACG) (NSN 4320-00-195-4914) (Reprinted w/Basic Incl C1-3) . . . . . TM 5-4320-272-12

Organizational Maintenance Repair Parts and Special Tools List for Pumping Assembly, Flammable Liquid Bulk Transfer; Gasoline Engine Driven 350 CFM Capacity, 275 Ft Total Dynamic head/ Wheel Mtd (Peabody Barnes, Inc., Model US37ACC) (NSN 4320-00-195-4914) (Reprinted w/Basic Incl C1) . . . . . TM 5-4320-272-20P

Operator's, Organizational, Direct Support, and General Support Maintenance Manual for Pumping Assembly, Flammable Liquid, Bulk Transfer, GED, 350 GPM Capacity, 275-Ft Total Head, Wheel Mounted (German-Rupp Model 04A12C-MVG4D) (NSN 4320-00-600-7590) (Reprinted w/Basic Incl C1-3) . . . . . TM 5-4320-273-14

Organizational, Direct Support and General Support Maintenance, Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools) for Pumping Assembly, Flammable, Liquid, Bulk Transfer, GED, 350 GPM Capacity, 275 Total Head, Wheel Mtd (German-Rupp Model 04A12C-MVG4D) (NSN 4320-00-600-7490) . . . . TM 5-4320-273-24P

Operator and Organizational Maintenance Manual (Including Repair Parts and Special Tools List); Filter-Separator, 350 GPM Optimum Performance (General Steel Tank Co. Model 0217) (NSN 4330-00-150-61 23); (Beta Systems Inc., Model 010-2-001) (4330-00-177-8455), and (Keene Corporation, Model (844-18-V-350AL) and (GIL Inc., Model GFS-18-V-350) (4330-00-177-8485) (Reprinted w/Basic Incl C1-8) . . . . . TM 5-4330-211-12&P

Operator, Organizational, and Direct Support Maintenance Manual, Including Repair Paris and Special Tools List), Filter/Separator, Liquid Fuel, 350 GPM, Skid Mounted (General Steel Tank Model FS 0215) (FSN 4330-480-7343) . . . . . TM 5-4330-231-13

Operator and Organizational Maintenance Manual (Including Repair Parts and Special Tools List) for Nozzle assembly, Closed Circuit Refueling w/Strainer Assembly (E.B. Wiggins, Model CCN-101/14) (NSN 4930-00-117-4726) (Reprinted w/Basic Incl C1) . . . . . TM 5-4930-226-12&P

Operator's, Organizational and Direct Support Maintenance Manual and Repair Parts and Special Tools List for Closed Circuit Refueling Nozzle Model AE83206R (NSN 4930-01-194-2625) Model AE 83501R (NSN 4930-01-214-2909) . . . . . TM 5-4930-234-13&P

Operator and Organizational Maintenance Manual, Tank, Fabric, Collapsible, POL, 3,000 Gallon (11,355 Liter) (NSN 5430-00-268-8187), 10,000 Gallon (37,850 Liter) (NSN 5430-00-052-3412 and 5430-00-641-8552), 50,000 Gallon (189,250 Liter) (NSN 5430-00-182-8181), (Reprinted w/Basic Incl C1-7) . . . . . TM 5-5430-210-12

Unit and Intermediate Direct Support Maintenance Repair Parts and Special Tools List Tank, Fabric, Collapsible POL 3K (5430-00-268-8187), 10K (5430-00-052-3412), 10K (Extra Accessories) (5430-00-641-8552), 20K (5430-01-215-7525), 50K (5430-01-182-8181), 5K BBL (5430-01 -160 -3528) . . . . . TM 5-5430-219-23P

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

NOTE

Technical manuals for all pumps and all filter separators which may be used with the fuel system are listed in paragraph A-4. Only manuals for equipment in use are required.

A-5. DA Pamphlets.

Consolidated Index of Army Publications and Blank Forms . . . . . DA PAM 25-30
The Army Maintenance Management System (TAMMS) . . . . . DA PAM 738-750

A-6. Technical Bulletins.

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

APPENDIX B

MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. General.

a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance levels.

b. The Maintenance Allocation Chart (MAC) in Section II designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component will be consistent with the capacities and capabilities of the designated maintenance levels.

c. Section III lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from Section II.

d. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

B-2. **Maintenance Functions.** Maintenance functions will be limited to and defined as follows:

a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (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., 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 correction 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 my be the act of emplacing, seating or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

h. Replace. To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and is shown as the 3d position code 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 trouble 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 like new condition in accordance with original manufacturing standars. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation include the act of returning to 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, assemblies, subassemblies, and modules with the next higher assembly. End item group 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 detailed explanation of these functions, see paragraph B-2).

d. Column 4. Maintenance Level. Column 4 specifies, by the listing to 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 the function listed in 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 and 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 – Intermediate Direct Support Maintenance
H – Intermediate General Support Maintenance
D – Depot Maintenance

e. Column 5, Tools and Equipment. Column 5 specifies by code, those common tools sets (not individual tools) and special tools, TM DE, and support equipment required to perform the designated function.

f. *Column 5. Remarks.* This column shall, when applicable contain a letter code, in alphabetic order, which shall be keyed to the remarks contained in Section IV.

B-4. Explanation of Columns in Tool and Test Equipment Requirements, Section III.

a. *Column 1. Reference Code.* The tool and test equipment reference code relates to a code used in the MAC, Section II, Column 5.

D. *Column 2. Maintenance Category.* The lowest category of maintenance authorized to use the tool or test equipment.

c. *Column 3. Nomenclature.* Name or identification of the tool or test equipment.

d. *Column 4, National Stock Number.* The National stock number of the tool or test equipment.

e. *Column 5. Tool Number.* The manufacturer's part number.

B-5. Explanation of Columns in Remarks, in Section IV.

a. *Column 1. Referemce 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

PORTABLE SUPPLY POINT FUEL SYSTEM

(1)	(2)	(3)	(4) Maintenance level					(5)	(6)
			Unit		Intermediate		Depot	Tools and eqpt.	
Group number	Component/ assembly	Maintenance function	C	O	F	H	D		Remarks
01	Pump Assy (See applicable technical manual)								A
02	Filter-Separator Assembly (See applicable technical manual)								A
03	Tank Assembly (See applicable technical manual								A

PORTABLE SUPPLY POINT FUEL SYSTEM (Cont)

(1) Group number	(2) Component/ assembly	(3) Maintenance function	(4) Maintenance level					(5) Tools and eqpt.	(6) Remarks
			Unit		Intermediate		Depot		
			C	O	F	H	D		
04	Hose Assemblies	Inspect	0.2						
		Replace		0.4					
		Repair		1.0				1,2	
05	Valves	Inspect	0.2						
		Replace		0.2					
		Repair		1.0				2, 3	B
06	Manifolds	Inspect	0.5						
		Replace		0.5					
		Repair		1.5				2	B
07	Nozzles (See applicable technical manuals)								A

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

Tool or test equipment ref code (1)	Maintenance category (2)	Nomenclature (3)	National NATO stock number (4)	PN Tool number (5)
1	0	Clamping Tool, Strap Band, Hose (.75 in.)	5120-00-278-9975	(70847) COO1
2	0	Tool Kit, General Mechanic's Automotive	5180-00-177-7033	SC 5180-90-CL-N26
3	0	Shop Equipment, Automotive Maintenance and Repair: Organizational Maintenance Common No. 1, Less Power	4910-00-754-0654	SC 4910-95CL-A74

Section IV. REMARKS

Reference Code	Remarks/Notes
A	Refer to MAC in Operator's and Maintenance Manual in applicable technical manual found in Appendix A.
B	Repair by replacement of defective components and assembly.

APPENDIX C

COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

Section I. INTRODUCTION

C-1. **Scope.** This appendix lists components of end item and basic issue items for the fuel system 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.* This listing is for information 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 properly accounts. Illustrations are furnished to assist you in identifying the items.

b. *Section III. Basic Issue Items.* These are the minimum essential items required to place the fuel system in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged, BII must be with the fuel system during operation and whenever it is transferred between property accounts. The illustrations will assist you with the 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.** The following provides an explanation of columns found in the tabular listings:

a. *Columm (1) - Illustration Number (Illus Number).* This column indicates the number of the illustration in which the item is shown.

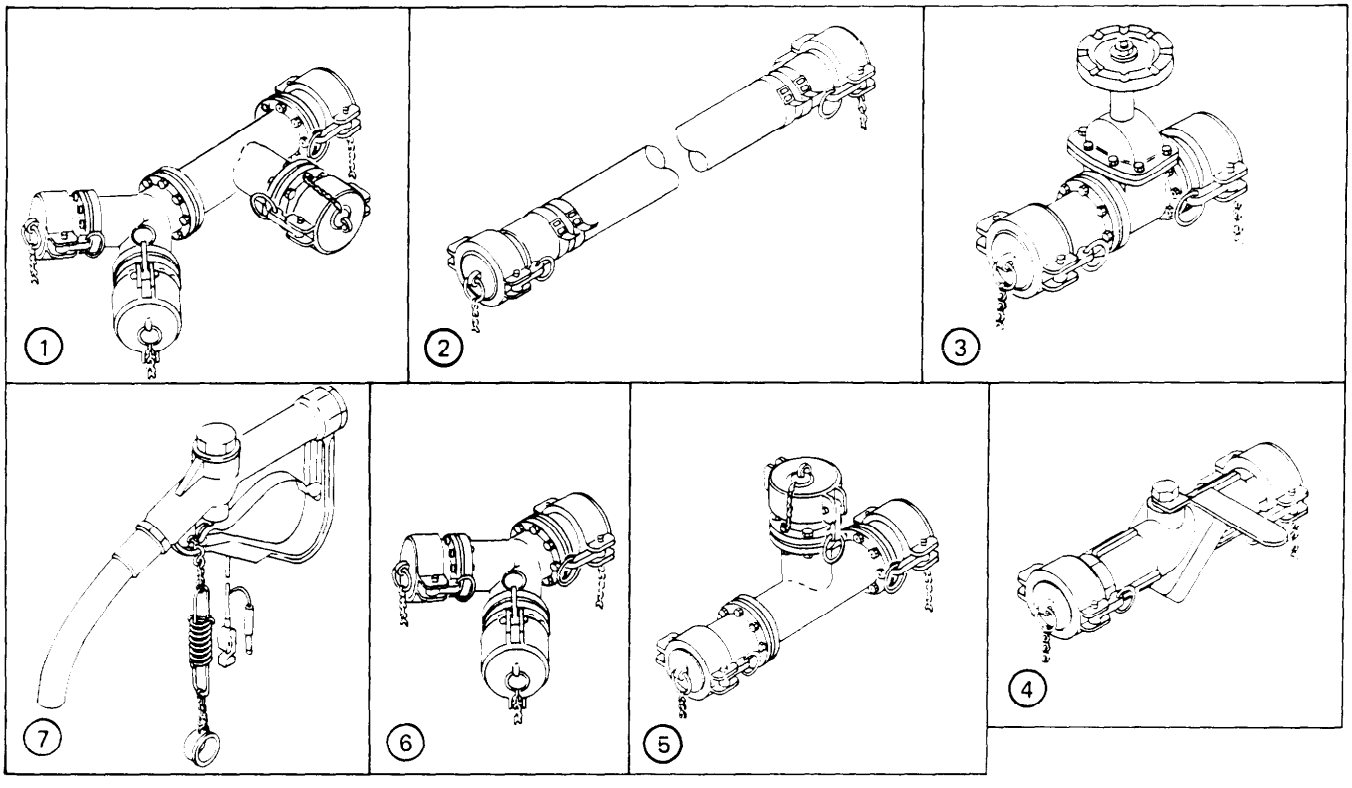
b. *Column (2) - National Stock Number.* Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

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 CAGE code (Contractor and Government Entities) (in parentheses) followed by the part number.

d. *Column (4) - Unit of meaure (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) - Quanity *required (Qty rqr).* Indicates the quantity of the item authorized to be used with/on the equipment).

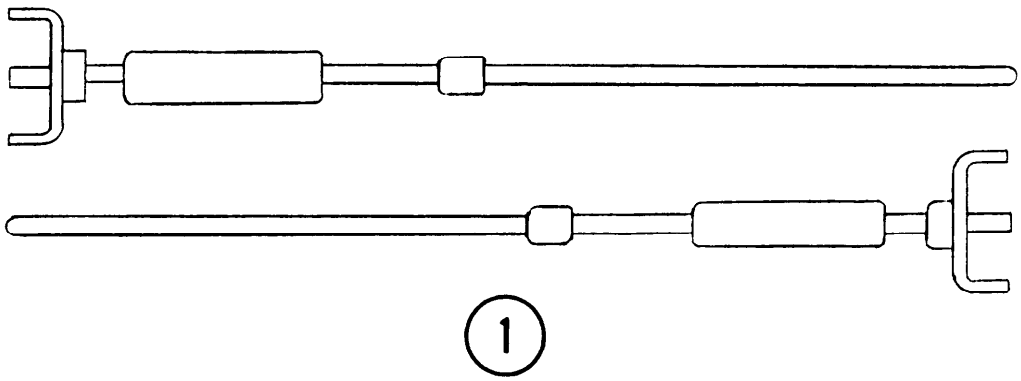
Section II. COMPONENTS OF END ITEM



(1) Illus Number	(2) National Stock Number	(3) Description CAGE and Part Number	Usable On Code	(4) U/M	(5) QtY Rqr
1	4730-01-096-1041	Wye and Tee Assembly (97403) 13222E9889		EA	1
2	4720-00-083-0045	Hose Assembly, Suction (81349) M370B08B2A1440		EA	16
2	4720-00-529-5538	Hose Assembly, Nonmetallic, 4-in. (81349) M370B09B2A12OO		EA	35
2		Hose Assembly, Nonmetallic, Discharge (81349) M11588-03-11-600		EA	5
2	4720-00-083-0047	Hose Assembly, Nonmetallic, Discharge (81349) M115888-03-11-300		EA	6
2		Hose Assembly, Nonmetallic, Discharge (81349) M11588-03-10-600		EA	5

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGE AND PART NUMBER	(4) U/M	(5) QTY RQR
2		HOSE ASSEMBLY, NONMETALLIC, DISHCARGE (81349)M11588-03-08-300	EA	7
2		HOSE ASSEMBLY, NONMETALLIC, DISHCARGE (81349) M11588-03-05-300	EA	6
2		HOSE ASSEMBLY, NONMETALLIC, DISCHARGE (81349) M370B05B2C3000	EA	5
3	4820-01-096-1069	VALVE ASSEMBLY, GATE (97403) 13222E9881	EA	4
3	4820-00-075-2404	VALVE ASSEMBLY, GATE (81337) 5-14-6768	EA	13
4	4820-01-098-3952	VALVE ASSEMBLY, QUICK DISCONNECT (98991) 2-435-T-SE	EA	1
4	4820-01-102-8757	VALVE ASSEMBLY, QUICK ACCESS (97403) 13222E9886	EA	10
4	4820-01-098-4925	VALVE, BALL (97403) 13222E9888	EA	6
5	4730-00-075-2405	FITTING ASSEMBLY (81337)5-14-676C	EA	1
5	4730-01-094-1040	TEE ASSEMBLY, QUICK DISCONNECT (97403) 13222E9885	EA	3
5	4730-01-096-1039	TEE ASSEMBLY, QUICK DISCONNECT (97403) 13222E9884	EA	5
5	4730-01-096-1038	TEE ASSEMBLY,REDUSCING (97403) 13222E9883	EA	6
6	4730-00-075-2407	WYE, QUICK DISCONNECT (81337)5-14-676ASSY H	EA	1
6	4730-00-075-2408	WYE, QUICK DISCONEECT (81337)5-14-676J	EA	1
7	4930-00-401-1053	NOZZLE, FUEL AND OIL (81718)811GA1	EA	6

Section III. BASIC ISSUE ITEMS LIST



(1) Illus Number	(2) National Stock Number	(3) Description CAGE and Part Number	Usable On Code	(4) U/M	(5) QtY Rqr
1	5975-01-050-5707	Rod, Grounding (97403) 1329D0462		1	14

APPENDIX D

ADDITIONAL AUTHORIZATION LIST

Section I. INTRODUCTION

D-1. Scope. This appendix lists additional items you are authorized for the support of the fuel system.

D-2. General. This list identifies items that do not have to accompany the equipment and that do not have to be turned in with it. These items are authorized to you by CTA, MOTE, TDA or JIA.

D-3. Explanation Of Listing. National stock number, descriptions and quantities are provided to help you identify and request the additional items you require to support this equipment. "USABLE ON" codes are identified as follows:

Code **Used** on

(Not Applicable)

Section II. ADDITIONAL AUTHORIZATION LIST

National Stock Number	Description CAGE and Part Number	Usable on Code	U/M	QtY Auth
4210-01-089-0875	Fire Extinguisher, Halon, IRA 4210-031-20 Lb (98752) 1211 20 Lb ABC		Ea	3
4320-01-067-0223	Pump Assembly, Wheel Mounted, 350 GPM Capacity, 275 Ft Head (81349) MIGP-52144, Type II		Ea	2
4330-00-177-8485	Filter/Separator, Liquid Fuel, Frame Mounted, 350 GPM Capacity (97403) 13217E9320		Ea	2
5430-00-641-8552	Tank Assy, Fabric, Collapsible, 10,000 Gal, Petroleum (81349) MIL-T-52983, M52983-2		Ea	6

APPENDIX E

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

E-1. **Scope.** This appendix lists expendable supplies and materials you will need to maintain the fuel system. These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).

E-2. Explanation of Columns.

a. *Column (1.) - Itern Number.* This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., "Use Sealing Compound, Item 3, Appendix E").

b. *Column (2) - Level.* This column identifies the lowest level of maintenance that requires the listed item (Enter as applicable).

C – Operator/Crew
O — Organizational Maintenance – Unit Maintenance
F – Direct Support Maintenance – Intermediate Maintenance
H – General Support Maintenance – Intermediate Maintenance
D – Depot Maintenance

c. *Column (3) - National Stock Number.* This is the National stock number assigned to the item; use it to request or requisition the item.

d. .*Column (4) - Description.* Indicates the Federal item name and, if required, a description to identify the item.

e. *Column (5) - Unit of Measure (U/M).* Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

SECTION II. EXPANDABLE/DURABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
1	O	5340-00-245-9438	STRAPPING, HOSE CLAMPING, 1/2 IN. W (70847)C204	RL
2	O	5340-00-245-9440	STRAPPING, HOSE CLAMPING, 3/4 IN. W (70847) C206	RL
3	O	8030-00-945-3499	SEALING COMPOUND (81347) MIL-S-7916	TU
4	O	5340-00-244-7325	SEALS, 1/2 IN. STRAPPING	EA
5	O	5340-00-244-7327	SEALS, 3/4 IN. STRAPPING	EA

APPENDIX F . UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

F-1. **SCOPE.** This RPSTL lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of unit, direct support, and general support maintenance of the Fuel System. 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 this section, 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. This 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 parts kits are listed separately in their own functional group within Section II. Repair parts for repairable special tools are also listed in this section. Items are shown in the associated illustration(s)/figure(s).

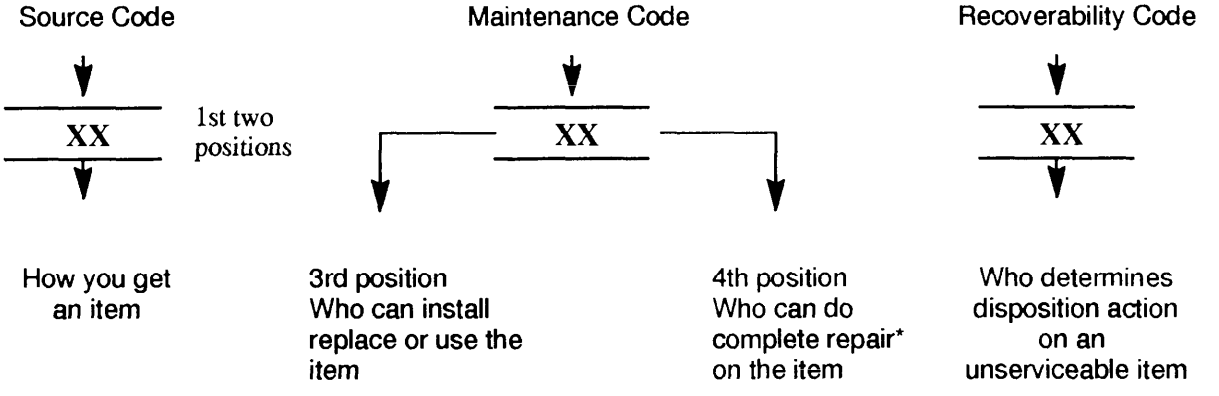
b. Section III. Special Tools List. A list of special tools, special TMDE, and other special support equipment authorized by this RPSTL (as indicated by Basis of Issue (BOI) information in DESCRIPTION AND USABLE ON CODE column) for the performance of maintenance.

c. Section IV. Cross-references 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 number in alphanumeric sequence and cross references NSN, CAGEC and part number.

F-3. **EXPLANATION OF COLUMNS (SECTIONS II AND 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 instruction, as shown in the following breakout:



*Complete Repair: Maintenance capacity, capability, and authority to perform all 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	Explanation
PA PB PC** PO PE PF PG	Stocked items; use the applicable NSN to requested/requisition items with these source codes. They are authorized to the category indicated by the code entered in the 3rd position of the SMR code. NOTE: Items coded PC are subject to deterioration.
KD KF KB	Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance category indicated in the 3rd position of the SMR code. The complete kit must be requisitioned and applied.
MO - (Made at org/AVUM Level) MP - (Made at DS/AVUM Level) MH - (Made at GS Level) ML - (Made at Specialized Repair Activity (SRA)) MD - (Made at Depot)	Items with these codes are not to be requested/requisitioned individually. They must be made from bulk material which is identified by the part number in the DESCRIPTION and USABLE ON CODE (UOC) column and listed in the Bulk Material group of the repair parts list in this RPSTL. If the item is authorized to you by the 3rd position code of the SMR code, but the source code indicates it is made at a higher level, order the item from the higher level of maintenance.
AO - (Assembled by org/AVUM Level) AF - (Assembled by DS/AVIM Level AH - (Assembled by GS Category) AL - (Assembled by SRA) AD - (Assembled by Depot)	Items with these codes are not to be requested/ requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the 3rd position code of the SMR code authorizes you to replace the item, but the source code indicates the items are assembled at a higher level, order the item from the higher level of maintenance.
XA - Do not requisition "XA''-coded item	Order its next higher assembly. (Also, refer to the NOTE below.)
XB - If an "XB" item is not available from salvage, order it using the CAGEC and part number given.	
xc - Installation drawing, diagram, instruction sheet, field service drawing, that is identified by Reciprocating Compressor manufacturer's part number.	
XD - Item is not stocked. Order an "XD''-coded item through normal supply channels using the CAGEC and part number given if no NSN is available.	

NOTE

Cannibalization or controlled exchange, when authorized, maybe 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 750—1.

(2) Maintenance Code. Maintenance codes tells 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 with unit or aviation unit maintenance.
O -	Unit 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 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 that 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:

Recoverability Codes	Application/Explanation
Z -	Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in 3d position of SMR Code.
O -	Reparable item. When not economically reparable, condemn and dispose of the item unit 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 not authorized below specialized repair activity (SRA).
A -	Item requires special handling or condemnation procedures because of specific reasons (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 Code (CAGEC) is a 5-digit numeric 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) The physical security classification of the item is indicated by the parenthetical entry, e.g., PhySec C1 – Confidential, PhySec C1 (S) – Secret, PhySec C1 (T) – Top Secret.

(3) Items that are included in kits and sets are listed below the name of the kit or set.

(4) Spare/repair parts that make up an assembled item are listed immediately following the assembled item 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).

(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.

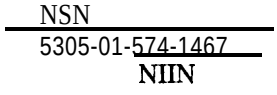
(1O)The indenture, shown as dots appearing before the repair part, indicates that the item is a repair part of the next higher assembly.

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 may vary from application to application.

F-4. EXPLANATION OF COLUMNS (SECTION IV).

a. NATIONAL STOCK NUMBER (NSN) INDEX.

(1) STOCK NUMBER 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.



When using this column to locate an item, ignore the first4 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 Code (CAGEC) is a 5-digit numeric 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) STOCK NUMBER column. This column lists the NSN for the associated part number and manufacturer identified in the PART NUMBER and CAGEC columns to the left.

(4) FIG. column. This column lists the number of the figure where the item is identified/located in Sections II and III.

(5) ITEM column. The item number is that number assigned to the item as it appears in the figure referenced in 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 Section 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) STOCK NUMBER column. This column lists the NSN for the item.

(4) CAGEC column. The Commercial and Government Entity Code (CAGEC) is a 5-digit numeric 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 lNFORMATION.

a. USABLE ON CODE. The usable on code appears in the lower corner of the Description column heading. Usable on codes are shown as "UOC:.." in the Description Column justified left) on the last line applicable item description/nomenclature. Uncoded items are applicable to all models.

Code	Used On

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 entry for the item to be manufactured/fabricated. Detailed fabrication instructions for the items source codes to be manufactured or fabricated are found in TM_____

c. ASSEMBLY INSTRUCTIONS. Detailed assembly instructions for items source coded to be assembled from component spare/repair parts are found in TM_____ Items that make up the assembly are listed immediately following the assembly item entry or reference is made to an applicable figure.

d. KITS. Line item entrues for repair parts kits appear in a group in Section II (see table of contents)

e. INDEX NUMBERS. Items which have the work 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.

f. ASSOCIATED PUBLICATIONS. The publications listed below pertains to the _____ _____ and its components.

Publication	Short Title
TM 9-6115-465-24	Generator Set, Diesel Engine Driven, Tactical Skid Mounted
TO 52C2-3-446-4	
NAVFAC P-8-625-24	
SL-4-06858B/068589D	

NOTE

Associated publications shall not be listed here in combined narrative and RPSTL listings

g. ILLUSTRATIONS - LISTING. The illustrations in this RPSTL are identical to those published in T M _____. (higher level P manuals) Only those parts codes "C" or "O" in the third position of the SMR Code are listed in the tabular listing; therefore, there may be a break in the item number sequence. Only illustrations containing Unit or Aviation unit authorized items appear in this RPSTL.

NOTE

The above statements shall appear in UNIT or aviation unit level RPSTL'S only.

F-6. HOW TO LOCATE REPAIR PARTS.

a. When National Stock Number or Part Number is NOT Known.

(1) First. 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 note the item number.

(4) Fourth. Refer to the Repair Parts List for the figure to find the part number for the item number noted on the figure.

(5) Fifth. Refer to the Part Number Index to find the NSN, if assigned.

b. When National Stock Number or Part Number is Known.

(1) First. Using the Index of National Stock Numbers and Part Numbers, find the pertinent National Stock Number or Part Number. The NSN index is in National item Identification Number (NIIN) sequence (see c-4a.(1)). The part numbers in the Part Number index are listed in ascending alphanumeric sequence (see paragraph c-4.b). Both indexes cross-reference you to the illustration figure and item number of the item you are looking for.

(2) Second. After finding the figure and item number, verify that the item is the one you are looking for, then locate the item number in the repair parts list for the figure.

F-7. ABBREVIATIONS. Abbreviations used in this manual are listed in MlL-STD-12.

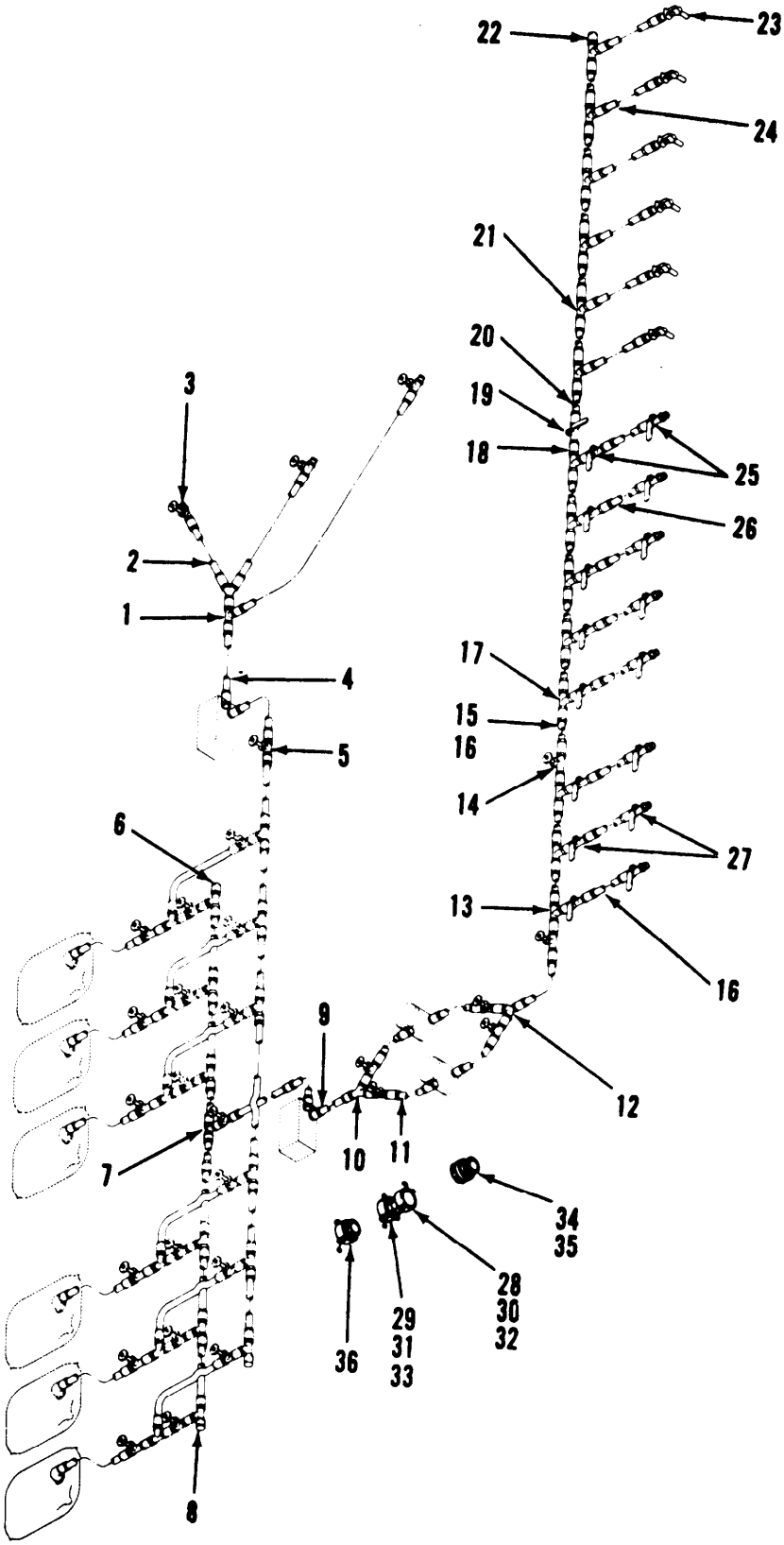


Figure F–1. Fuel System Supply Point

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
				GROUP 04 HOSE ASSEMBLIES AND FITTINGS		
				FIG. F-1 FUEL SYSTEM SUPPYLY POINT		
1	PAOZZ	4730-01-096-1041	97403	13222E9889	TEE,FLANGE SEE FIG.F-16 FOR BREAKDOWN	1
2	PAOOZ	4720-00-083-0045	81349	M370B08B2A1440	HOSE ASSEMBLY,NONME 3INCHES X 12 FOOT SEE FIG F-3 FOR BREAKDOWN	16
3	PAOOO	4820-01-096-1069	97403	13222E9881	GATE VALVE ASSEMBLY SEE FIG.F-11 FOR BREAKDOWN	3
4	PAOOZ	4720-00-529-5538	81349	M370B09B2A1400	HOSE ASSEMBLY,NONME 4 IN X 10 FOOT SEE FIG. F2 FOR BREAKDOWN	82
5	PAOOO	4820-00-075-2404	81337	5-14-676B	VALVE,GATE SEE FIG.F-12 FOR BREAKDOWN	19
6	PAOZZ	4730-00-640-6188	96906	MS27029-17	.PLUG,QUICK DISCONNE	1
7	PAOZZ	4730-00-075-2405	81337	5-14-676C	TEE,FLANGE SEE FIG.F-19 FOR BREAKDOWN	6
8	PAOZZ	4730-00-640-6156	96906	MS27028-17	.CAP,QUICK DISCONNEC	2
9	PAOOZ	4720-00-083-0046	81349	M11588-03-11-600	HOSE ASSEMBLY,NONME DISCHARGE 4IN X 50FOOT SEE FIG F-4 FOR BREAKDOWN	4
10	PAOOZ	4730-00-075-2407	81337	5-14-676ASSYH	WYE,QUICK DISCNNEC SEE FIG. F-17 FOR BREAKDOWN	1
11	PAOOZ	4720-00-083-0047	81349	M11588-03-11-300	HOSE ASSEMBLY,NONM DISCHARGE 4INCH X 25FOOT SEE FIG F-5 FOR BREAKDOWN	6
12	PAOOZ	4730-00-075-2408	81337	5-14-676J	WYE,QUICK DISCONNEC SEE FIG.F-18 FOR BREAKDOWN	1
13	PAOOO	4730-01-096-1040	97403	13222E9885	COUPLING ASSEMBLY,Q DISCONNECT SEE FIG.F-20 FOR BREAKDOWN	3
14	PAOZZ	4730-00-951-3293	96906	MS49000-1	.REDUCER,QUICK DISCO	1
15	PAOOZ	4720-00-083-0048	81349	M11588-03-10-600	HOSE ASSEMBLY,NONME DISCHARGE 3INCH X 50FOOT SEE FIG F-8 FOR BREAKDOWN	5
16	PAOZZ	4720-00-864-0300	01413	112704-15	HOSE ASSEMBLY,NONME DISCHARGE SEE FIG.F-7 FOR BREAKDOWN	7
17	PAOOO	4730-01-096-1039	97403	13222E9884	.COUPLING HALF,QUICK DISCONNECT SEE FIG.F-21 FOR BREAKDOWN	2
18	PAOZZ	4730-00-951-3294	96906	MS49000-3	COUPLING HALF,QUICK DISCONNECT	1
19	PAOZZ	4820-01-098-3952	98991	2-435-T-SE	VALVE ASSEMBLY,QUIC SEE FIG.F-15 FOR BREAKDOWN	1
20	XDOOO		81349	M11588-03-08-300	HOSE ASSEMBLY,NONME	7
21	PAOZZ	4730-01-096-1038	97403	13222E9883	.REDUCER,QUICK DISCO 2 INCH X 2 INCH X 1INCH TEE	6
22	PAOZZ	5340-00-823-5318	96906	MS27028-11	.CAP,PROTECTIVE,DUST	1
23	PAOOZ	4930-00-901-1053	81718	811GA1	NOZZLE,FUEL AND OIL SEE FIG.F-23 FOR BREAKDOWN	6
24	PAOOZ	4720-00-083-0049	81349	M11588-03-05-300	HOSE ASSEMBLY,NONME	6
25	PAOOO	4820-01-102-8757	97403	13222E9886	VALVE ASSY,QUICK AC SEE FIG.F-14 FOR BREAKDOWN	10
26	PAOOO	4720-01-215-7956	81349	M11588-03-07-300	HOSE ASSEMBLY,NONME DISCHARGE 11/2 INCH X 25FT. SEE FIG. F-6 FOR BREAKDOWN	5

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
27	PAOOZ	4820-01-098-4925	97403	13222E9888	VALVE,BALL SEE FIG.F-13 FOR BREAKDOWN	6
28	PAOZZ	4730-00-938-7998	96906	MS27024-15	.COUPLING HALF,QUICK DISCONNECT	3
29	PAOZZ	4730-00-873-4551	96906	MS27026-15	.COUPLING HALF,QUICK DISCONNECT	3
30	PAOZZ	4730-00-088-9286	96906	MS27024-17	.COUPLING HALF,QUICK DISCONNECT	2
31	PAOZZ	4730-00-649-9118	96906	MS27026-17	.COUPLING HALF,QUICK DISCONNECT	2
32	PAOZZ	4730-00-980-9411	96906	MS27024-9	.COUPLING HALF,QUICK DISCONNECT	5
33	PAOZZ	4730-00-203-1010	96906	MS27026-9	.COUPLING HALF,QUICK DISCONNECT	5
34	PAOZZ	4730-01-078-8130	96906	MS39352-15	.NIPPLE,QUICK-DISCON	2
35	PAOZZ	4730-00-935-1613	96906	MS39352-19	.NIPPLE,QUICK-DISCON	2
36	PAOZZ	4730-01-079-8234	96906	MS49000-21	.REDUCER,QUICK DISCO	1

END OF FIGURE

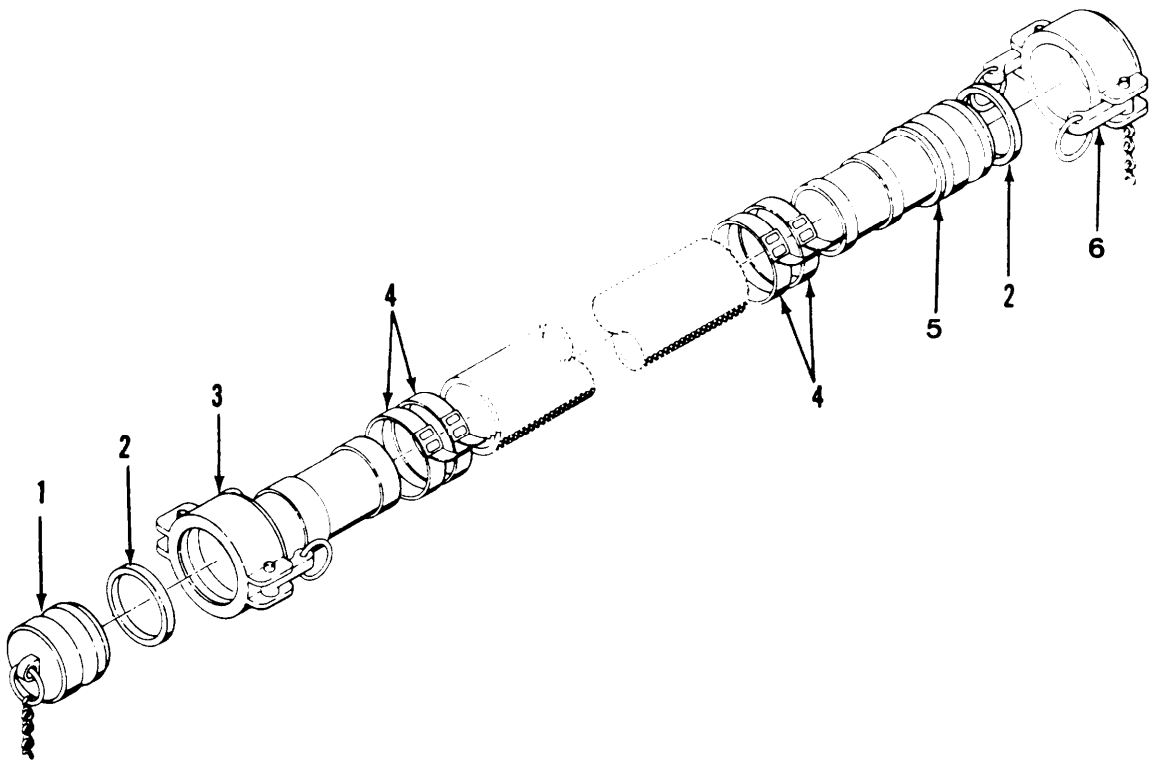


Figure F–2. Suction Hose Assembly, 4 In. X 10 Ft.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 04 HOSE ASSEMBLIES AND FITTINGS	
					FIG. F-2 SUCTION HOSE ASSEMBLY, 4 IN X 10 FT	
	PAOZZ	4720-00-529-5538	81349	M370B09B2A1200	HOSE ASSEMBLY,NONME NONMETALLIC SEE FIG.F-1 FOR TYPICAL ASSEMBLED CONFRIGURATION	35
1	PAOZZ	4730-00-640-6188	96906	MS27029-17	.PLUG,QUICK DISCONNE	1
2	PAOZZ	5330-00-899-4509	96906	MS27030-9	.GASKET	2
3	XDOZZ		96906	MS27025-17	.COUPLING HALF,QUICK DISCONNECT	1
4	PAOZZ	4730-00-078-2519	70847	J215	.CLAMP,HOSE	4
5	PAOZZ	4730-00-649-7388	96906	MS27021-17	.COUPLING HALF,QUICK DISCONNECT	1
6	PAOZZ	4730-00-640-6156	96906	MS27028-17	.CAP,QUICK DISCONNEC	1
					END OF FIGURE	

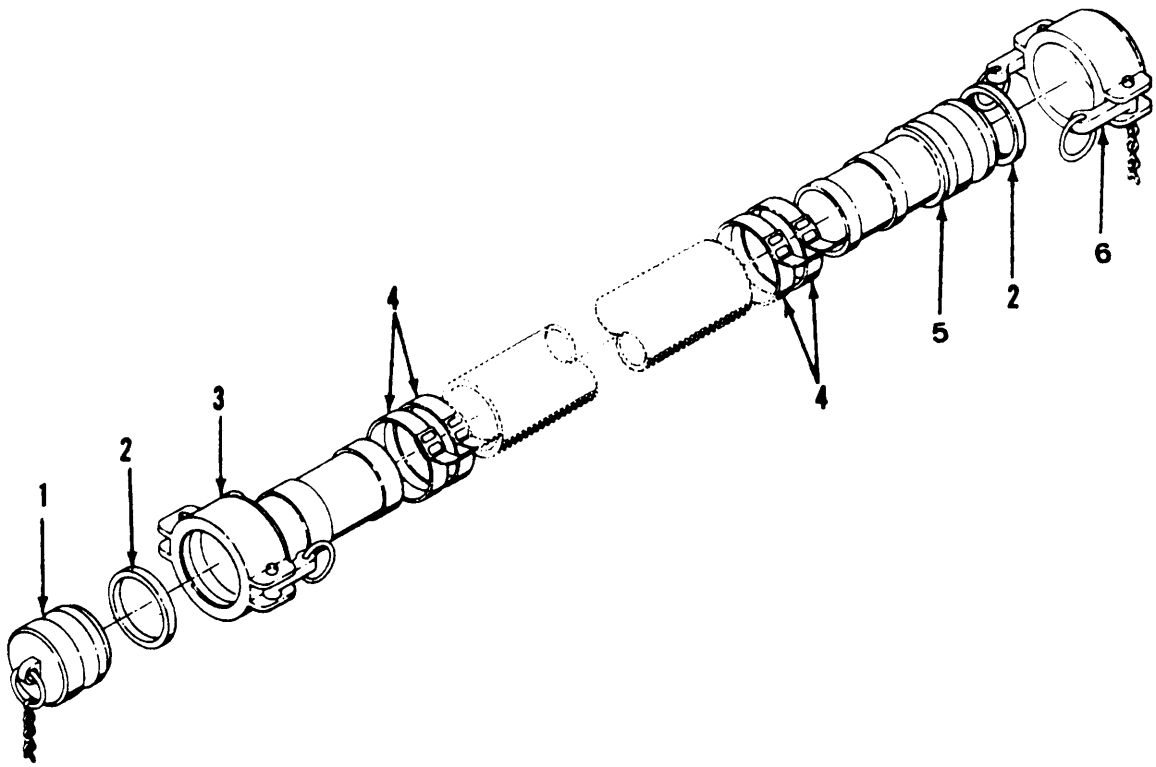


Figure F–3. Suction Hose Assembly, 3 In. X 12 Ft.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 04 HOSE ASSEMBLIES AND FITTINGS	
					FIG. F-3 SUCTION HOSE ASSEMBLY, 3 IN X 12 FT	
	PAOZZ	4720-00-083-0045	81349	M370B08B2A1440	HOSE ASSEMBLY,NONME SUCTION SEE FIG.F-1 FOR TYPICAL ASSEMBLED CONFIGURATION	16
1	PAOZZ	4730-00-929-0790	96906	MS27029-15	.PLUG,QUICK DISCONNE	1
2	PAOZZ	5330-00-088-9166	96906	MS27030-8	.GASKET	2
3	PAOZZ	4730-00-360-0942	96906	MS27025-15	.COUPLING HALF,QUICK DISCONNECT	1
4	PAOZZ	4730-00-965-6520	77414	0-16S	.CLAMP,HOSE	4
5	PAOZZ	4730-00-873-4535	96906	MS27021-15	.COUPLING HALF,QUICK DISCONNECT	1
6	PAOZZ	4730-00-929-0787	96906	MS27028-15	.CAP,QUICK DISCONNEC	1
					END OF FIGURE	

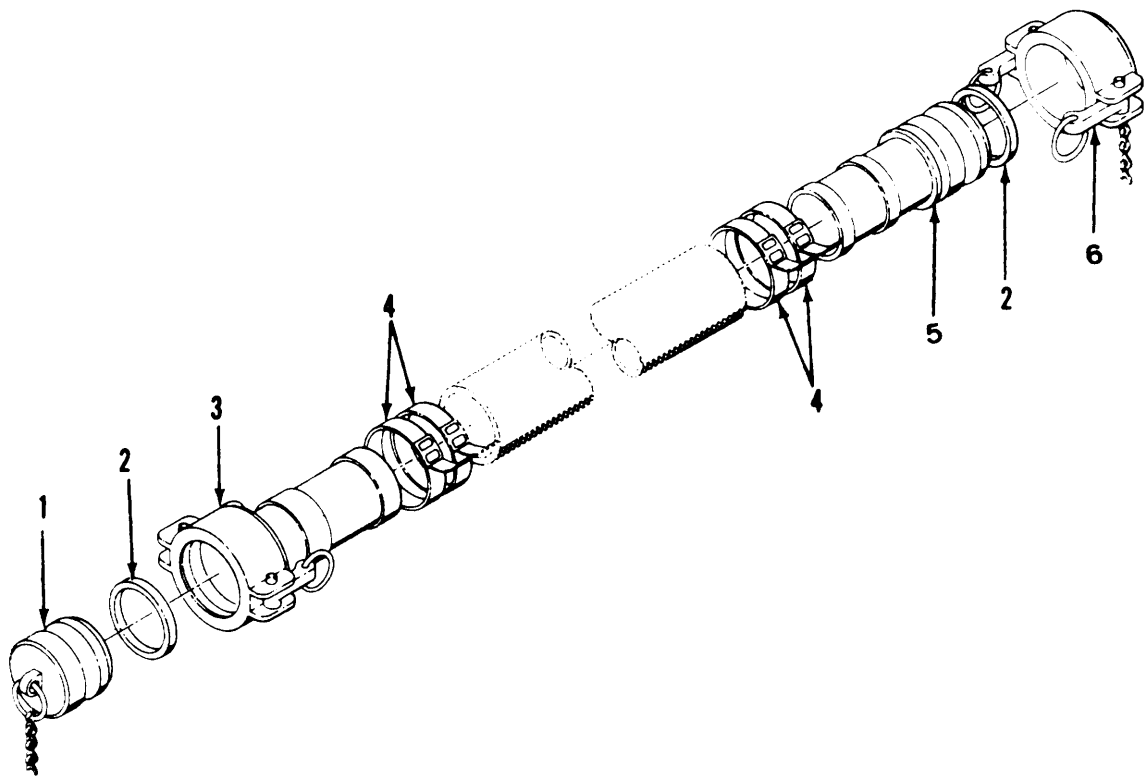


Figure F-4. Discharge Hose Assembly, 4 In. X 50 Ft.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 04 HOSE ASSEMBLIES AND FITTINGS	
					FIG. F-4 DISCHARGE HOSE ASSEMBLY, 4 IN. X 50 FT.	
	PAOZZ	4720-00-083-0046	81349	M11588-03-11-600	HOSE ASSEMBLY,NONME DISCHARGE SEE FIG.F-1 FOR TYPICAL ASSEMBLED CONFIGURATION	5
1	PAOZZ	4730-00-640-6188	96906	MS27029-17	.PLUG,QUICK DISCONNE	1
2	PAOZZ	5330-00-899-4509	96906	MS27030-9	GASKET	2
3	XDOZZ		96906	MS27025-17	COUPLING HALF,QUICK DISCONNECT	1
4	PAOZZ	4730-00-078-2519	70847	J215	CLAMP,HOSE	4
5	PAOZZ	4730-00-649-7388	96906	MS27021-17	COUPLING HALF,QUICK DISCONNECT	1
6	PAOZZ	4730-00-640-6156	96906	MS27028-17	.CAP,QUICK DISCONNEC	1
					END OF FIGURE	

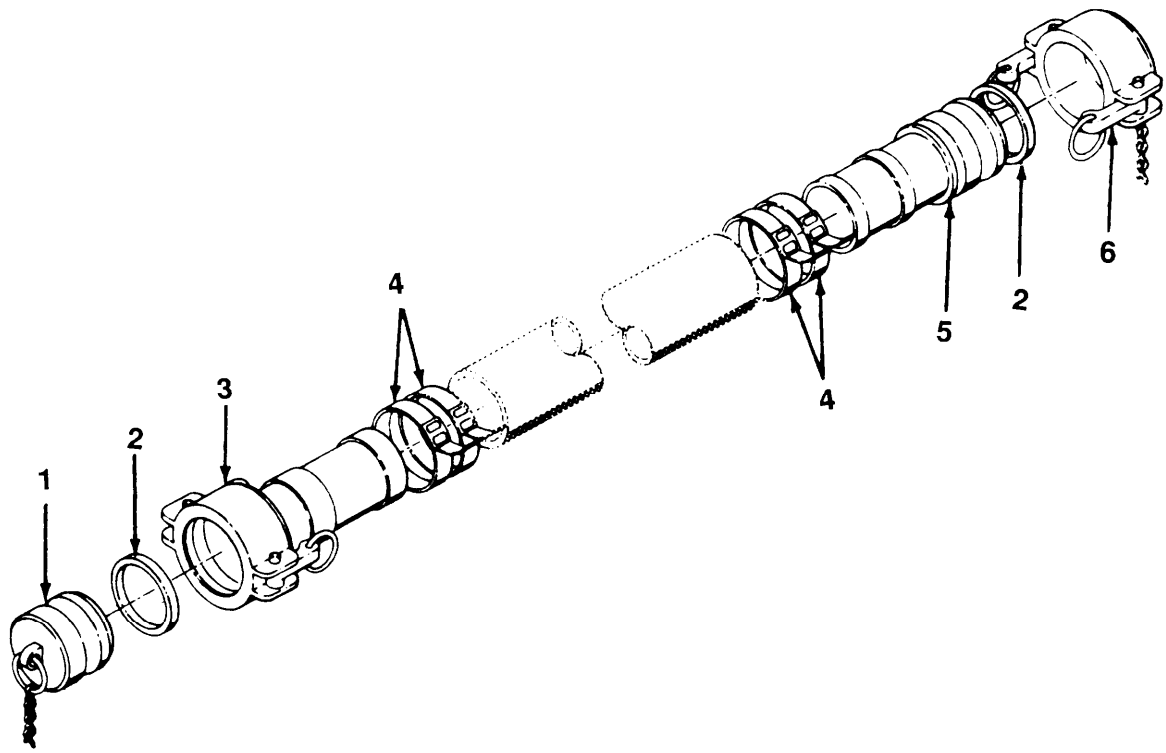


Figure F–5. Discharge Hose Assembly, 4 In. X 25 Ft.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
				GROUP 04 HOSE ASSEMBLIES AND FITTINGS		
				FIG. F-5 DISCHARGE HOSE ASSEMBLY, 4 IN. X 25 FT.		
	PAOOZ	4720-00-083-0047	81349	M11588-03-11-300	HOSE ASSEMBLY,NONM DISCHARGE SEE FIG.F-1 FOR TYPICAL ASSEMBLED CONFIGURATION	6
1	PAOZZ	4730-00-640-6188	96906	MS27029-17	.PLUG,QUICK DISCONNE	1
2	PAOZZ	5330-00-899-4509	96906	MS27030-9	.GASKET	2
3	XDOZZ		96906	MS27025-17	.COUPLING HALF,QUICK DISCONNECT	1
4	PAOZZ	4730-00-078-2519	70847	J215	.CLAMP,HOSE	4
5	PAOZZ	4730-00-649-7388	96906	MS27021-17	.COUPLING HALF,QUICK DISCONNECT	1
6	PAOZZ	4730-00-640-6156	96906	MS27028-17	.CAP,QUICK DISCONNEC	1
				END OF FIGURE		

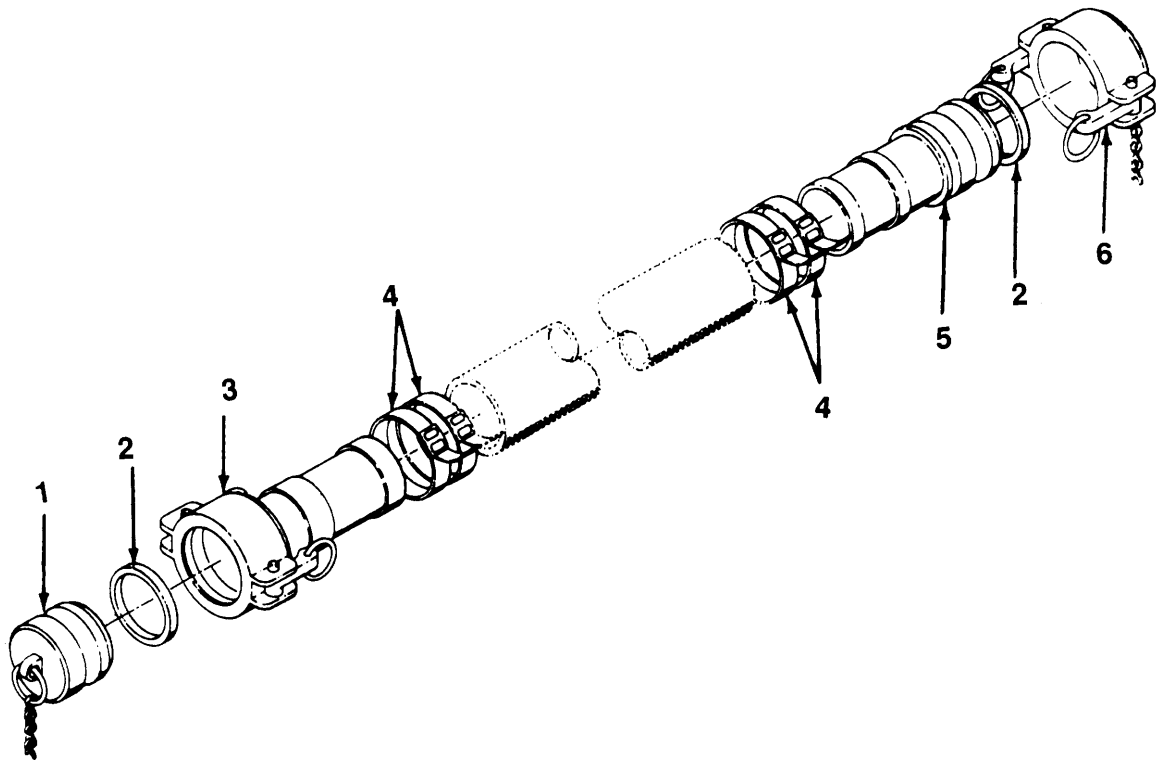


Figure F–6. Discharge Hose Assembly, 1 1/2 In. X 25 Ft.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
				GROUP 04 HOSE ASSEMBLIES AND FITTINGS		
				FIG. F-6 DISCHARGE AHOSE ASSEMBLY, 1 1/2 IN X 25 FT		
	PAOOO	4720-01-215-7956	81349	M11588-03-07-300	HOSE ASSEMBLY,NONME DISCHARGE 11/ 2INCH X 25FOOT	5
1	PAOZZ	4730-00-823-5316	96906	MS27029-9	.PLUG,PROTECTIVE,DUS	1
2	PAOZZ	5330-00-360-0595	96906	MS27030-5	.GASKET	2
3	PAOZZ	4730-00-948-1722	96906	MS27025-9	.COUPLING HALF,QUICK DISCONNECT	1
4	PAOZZ	4730-01-207-8349	70847	J209	.CLAMP,HOSE	4
5	PAOZZ	4730-00-360-0592	96906	MS27021-9	.COUPLING HALF,QUICK DISCONNECT	1
6	PAOZZ	4730-00-869-5246	96906	MS27028-9	.CAP,QUICK DISCONNEC	1
				END OF FIGURE		

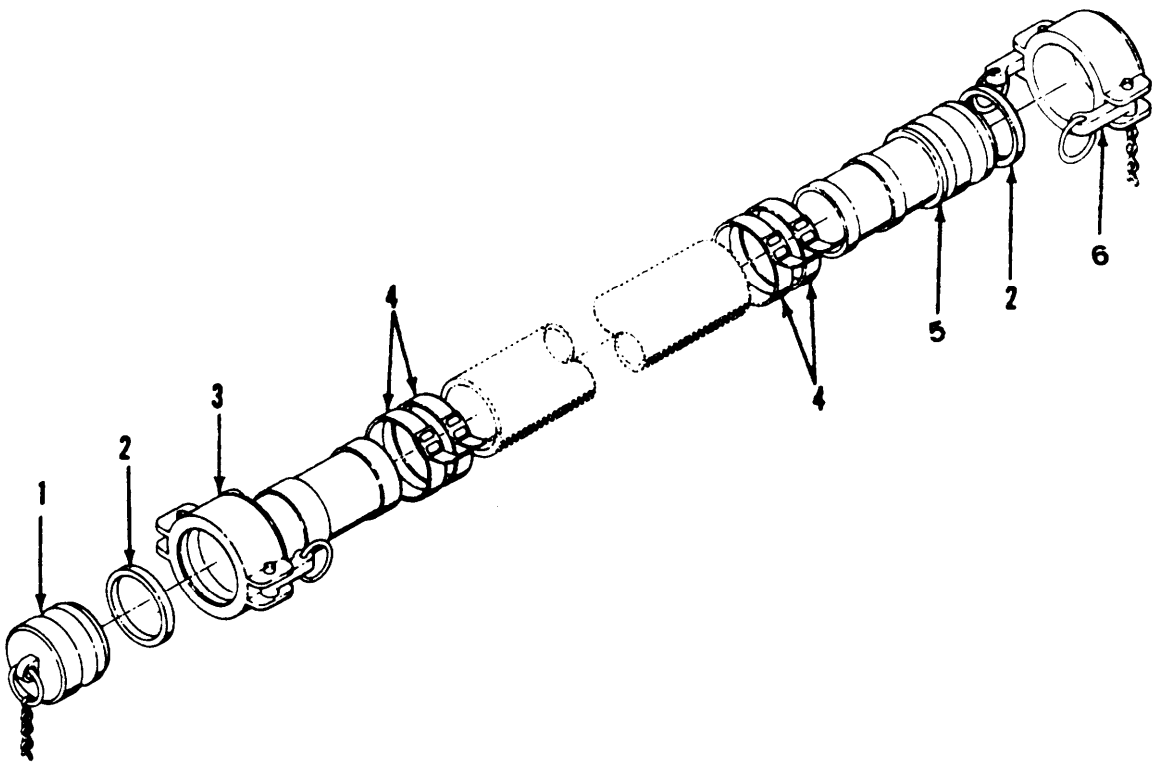


Figure F–7. Discharge Hose Assembly, 3 In. X 25 Ft.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
				GROUP 04 HOSE ASSEMBLIES AND FITTINGS		
				FIG. F-7 DISCHARGE HOSE ASSEMBLY, 3 IN X 25 FT		
	PAOOZ	4720-00-083-0048	81349	M11588-03-10-32	HOSE ASSEMBLY,NONME 3INCHX25FOOT MALEAND FEMALE CL CONFIGURATION	7
1	PAOZZ	4730-00-929-0790	96906	MS27029-15	.PLUG,QUICK DISCONNE	1
2	PAOZZ	5330-00-088-9166	96906	MS27030-8	.GASKET	2
3	PAOZZ	4730-00-360-0942	96906	MS27025-15	.COUPLING HALF,QUICK DISCONNECT	1
4	XDOZZ		70847	J213	.CLAMP,HOSE	4
5	PAOZZ	4730-00-873-4535	96906	MS27021-15	.COUPLING HALF,QUICK DISCONNECT	1
6	PAOZZ	4730-00-929-0787	96906	MS27028-15	.CAP,QUICK DISCONNEC	1
				END OF FIGURE		

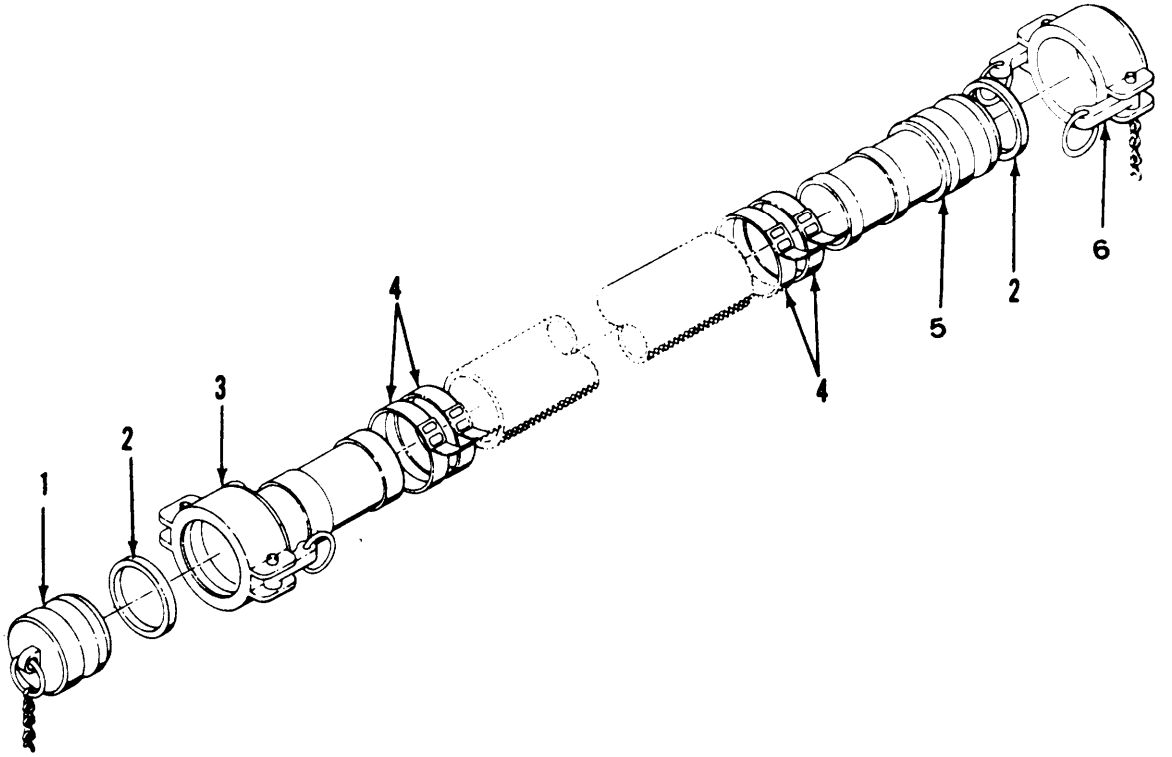


Figure F–8. Discharge Hose Assembly, 3 In. X 50 Ft.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
				GROUP 04 HOSE ASSEMBLIES AND FITTINGS		
				FIG. F-8 DISCHARGE HOSE ASSEMBLY, 3 IN. X 50 FT.		
	PAOOZ	4720-00-083-0048	81349	M11588-03-10-600	HOSE ASSEMBLY,NONME DISCHARGE SEE FIG.F-1 FOR TYPICAL ASSEMBLED CONFIGURATION	5
1	PAOZZ	4730-00-929-0790	96906	MS27029-15	.PLUG,QUICK DISCONNE	1
2	PAOZZ	5330-00-088-9166	96906	MS27030-8	.GASKET	2
3	PAOZZ	4730-00-360-0942	96906	MS27025-15	.COUPLING HALF,QUICK DISCONNECT	1
4	XDOZZ		70847	J213	.CLAMP,HOSE	4
5	PAOZZ	4730-00-873-4535	96906	MS27021-15	.COUPLING HALF,QUICK DISCONNECT	1
6	PAOZZ	4730-00-929-0787	96906	MS27028-15	.CAP,QUICK DISCONNEC	1
				END OF FIGURE		

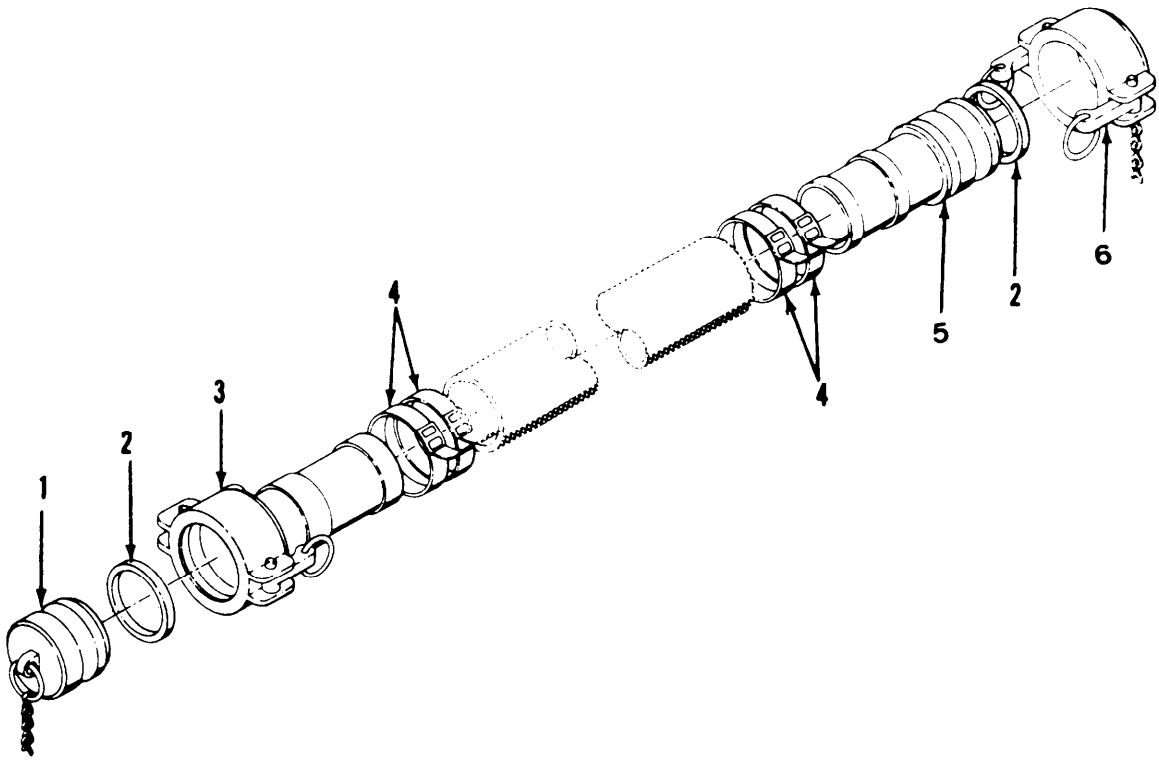


Figure F–9. Discharge Hose Assembly, 3 In. X 25 Ft.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 04 HOSE ASSEMBLIES AND FITTINGS	
					FIG. F-9 DISCHARGE HOSE ASSEMBLY, 3 IN. X 25 FT.	
	PAOOZ	4720-00-083-0049	81349	M11588-03-05-300	HOSE ASSEMBLY,NONME DISCHARGE SEE FIG.F-1 FOR TYPICAL ASSEMBLED CONFIGURATION	6
1	PAOZZ	4730-00-360-0715	96906	MS27029-5	.PLUG,QUICK DISCONNE	1
2	PAOZZ	5330-00-088-9167	96906	MS27030-3	.WASHER,FLAT	2
3	PAOZZ	4730-01-223-4931	96906	MS27025-5	.COUPLING HALF,QUICK DISCONNECT	1
4	PAOZZ	4720-00-203-9766	70847	J308	.CLAMP,HOSE	4
5	PAOZZ	4730-01-164-9254	96906	MS27021-5	.COUPLING HALF,QUICK DISCONNECT	1
6	PAOZZ	4730-00-929-0791	96906	MS27028-5	.CAP,QUICK DISCONNEC	1
					END OF FIGURE	

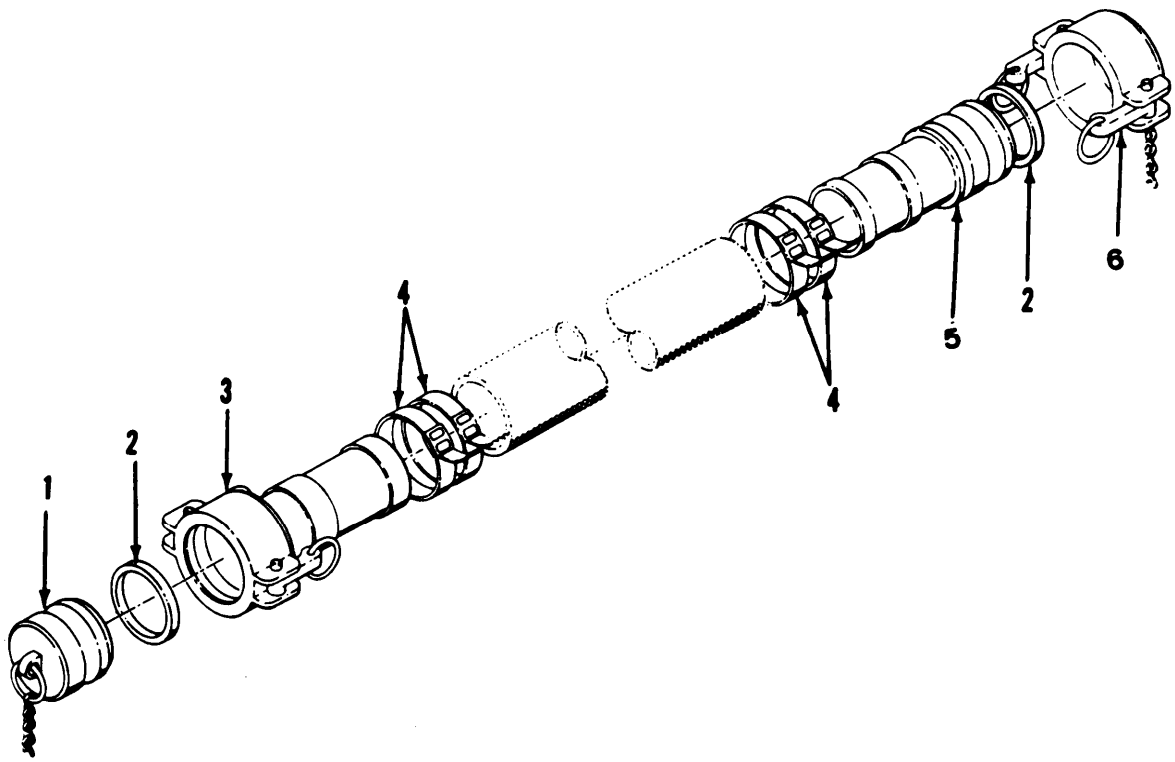


Figure F-10. Discharge Hose Assembly, 2 In. X 25 Ft.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1994 - 555-028/00289

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 04 HOSE ASSEMBLIES AND FITTINGS	
					FIG. F-10 DISCHARGE HOSE ASSEMBLY, 2 IN. X 25 FT.	
	XDOOO		81349	M11588-03-08-300	HOSE ASSEMBLY,NONME DISCHARGE SEE FIG.F-1 FOR TYPICAL ASSEMBLED CONFIGURATION	7
1	PAOZZ	4730-00-915-5127	96906	MS27029-11	.PLUG,QUICK DISCONNE	1
2	PAOZZ	5330-00-612-2414	96906	MS27030-6	.WASHER,FLAT	2
3	PAOZZ	4730-00-360-0943	96906	MS27025-11	.COUPLING HALF,QUICK DISCONNECT	1
4	XDOZZ		70847	J211	.CLAMP,HOSE	4
5	PAOZZ	4730-00-938-7996	96906	MS27021-11	.COUPLING HALF,QUICK DISCONNECT	1
6	PAOZZ	5340-00-823-5318	96906	MS27028-11	.CAP,QUICK DISCONNEC	1
					END OF FIGURE	

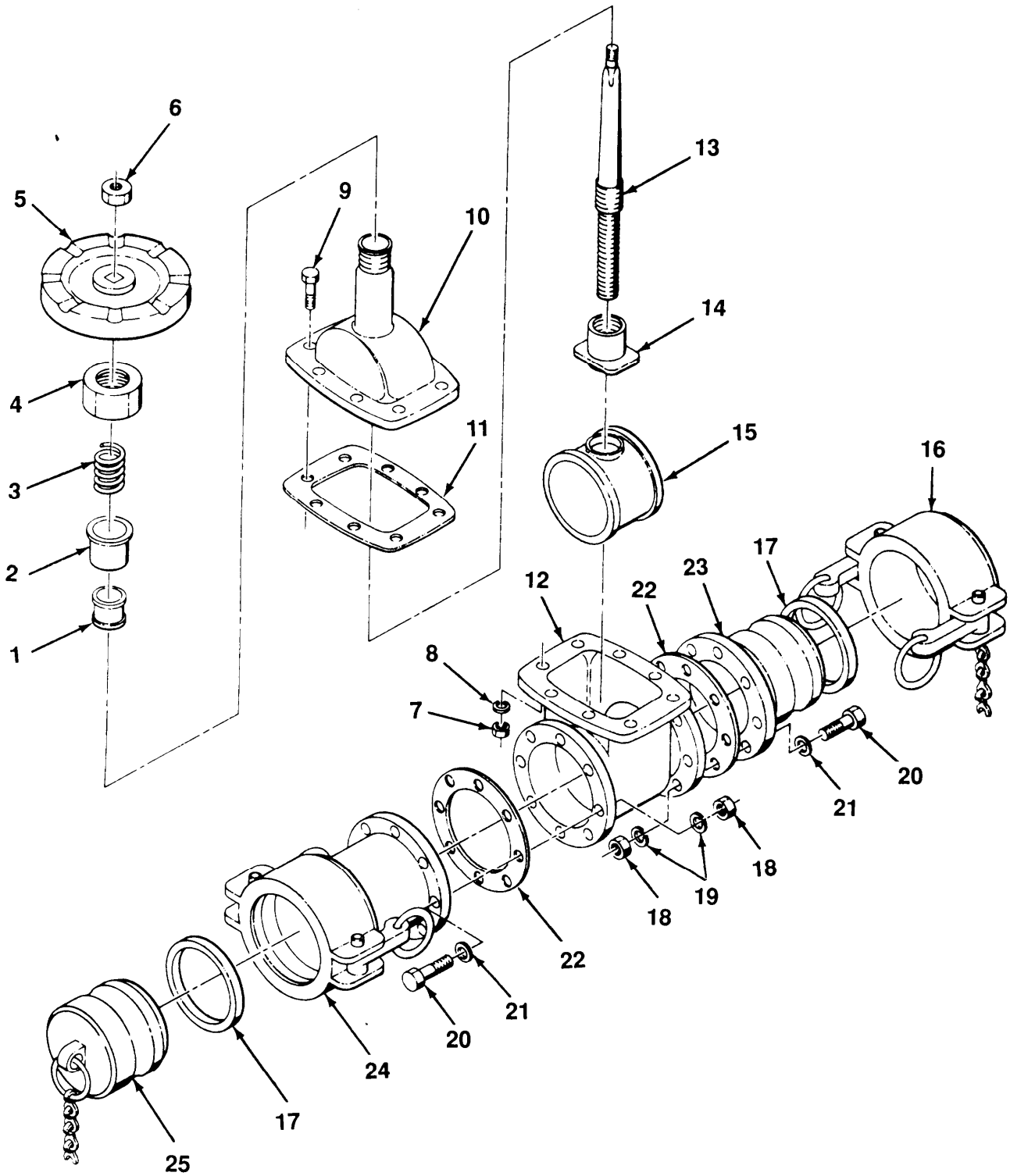


Figure F–11. Gate Valve Assembly, 3 In.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
				GROUP 05 VALVES		
				FIG. F-11 GATE VALVE ASSEMBLY, 3 IN		
	PAOOO	4820-01-096-1069	97403	13222E9881	GATE VALVE ASSEMBLY SEE FIG.F-1 FOR TYPICAL ASSEMBLED CONFIGURATION	4
	XAOOO		81349	MILV58039SIZE3TY PE1	.VALVE,GATE	1
1	PAOZZ	5330-00-889-5483	76364	6593-L	..PACKING,PREFORMED	1
2	PAOZZ	4930-00-653-0407	76364	363-G	..GLAND FOLLOWER	1
3	PBOZZ	5360-01-207-8294	76364	7013-G	..SPRING,GLAND	1
4	XBOZZ		51744	517442864-L	..NUT,STUFF	1
5	XBOZZ		51744	517447660-K	..HANDWHEEL	1
6	XBOZZ		51744	517443116-M	..NUT,WHEEL	1
7	XDOZZ		51744	517443198-B	..NUT,HEXAGON	8
8	XDOZZ		51744	5174438084-B	..WASHER,LOCK	8
9	XDOZZ		51744	517444247-E	..SCREW,BONNET	8
10	XBOZZ		51744	5174423194-L	..BONNET	1
11	PAOZZ	5330-00-563-8023	76364	6682-L	..GASKET	1
12	XBOZZ		51744	517442025-L	..BODY,VALVE	1
13	XBOZZ		51744	5174426264-L	..STEM	1
14	XBOZZ		51744	517443042-L	..NUT,PLULL	1
15	XBOZZ		51744	5174484168-L	..DISC ASSEMBLY	1
16	PAOZZ	4730-00-929-0787	96906	MS27028-15	.CAP,QUICK DISCONNEC	1
17	PAOZZ	5330-00-088-9166	96906	MS27030-8	.GASKET	2
18	PAOZZ	5310-00-851-2682	96906	MS35691-17	.NUT,PLAIN,HEXAGON	16
19	PAOZZ	5310-00-637-9541	96906	MS35338-46	.WASHER,LOCK	16
20	XDOZZ		96906	MS90725-64	.SCREW,CAP,HEXAGON H	6
21	PAOZZ	5310-00-087-7493	96906	MS27183-13	.WASHER,FLAT	16
22	XDOZZ		05443	10231-B	.GASKET	2
23	PAOZZ	4730-00-889-2380	96906	MS27023-15	.COUPLING HALF,QUICK DISCONNECT	1
24	PAOZZ	4730-00-889-2378	96906	MS27027-15	.COUPLING HALF,QUICK DISCONNECT	1
25	PAOZZ	4730-00-929-0790	96906	MS27029-15	.PLUG,QUICK DISCONNE	1
				END OF FIGURE		

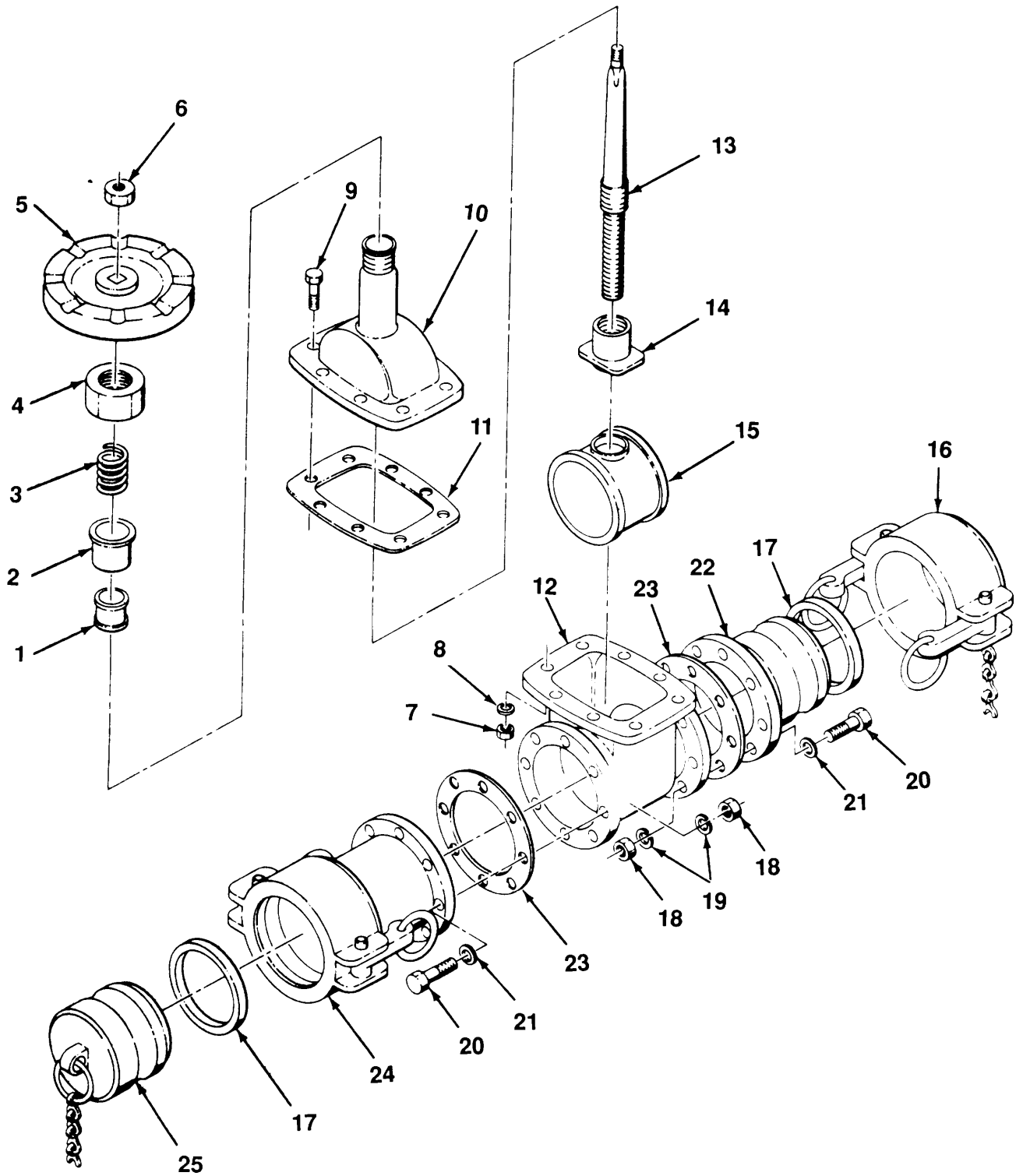


Figure F–12. Gate Valve Assembly, 4 In.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
				GROUP 05 VALVES		
				FIG. F-12 GATE VALVE ASSEMBLY, 4 IN		
	PAOOO	4820-00-075-2404	97403	13222E9882	VALVE,GATE SEE FIG.F-1 FOR TYPICAL ASSEMBLED CONFIGURATION	13
	PAOOF	4820-00-766-8191	81718	676-FR-4IN	.VALVE,GATE	1
1	PAOZZ	5330-00-400-3513	76364	65107-K	..PACKING	1
2	PAOZZ	5330-00-367-5005	76364	363-H	..RETAINER,PACKING	1
3	PBOZZ	5360-00-653-0395	76364	7013-H	..SPRING,HELICAL,COMP	1
4	XBOZZ		51744	517442855-L	..NUT,STUFF	1
5	XBOZZ		51744	517447660-K	..HANDWHEEL	1
6	XBOZZ		51744	517443116-M	..NUT,WHEEL	1
7	PAOZZ	5310-01-077-9426	76364	3198-C	..NUT	8
8	PAOZZ	5310-01-077-9647	76364	38084-C	..WASHER,LOCK	8
9	PAOZZ	5305-01-079-6771	76364	4256-L	..SCREW,CAP,HEXAGON H	8
10	XBOZZ		51744	5174423194-N	..BONNET	1
11	PAOZZ	5330-00-346-2732	76364	6686-N	..GASKET	1
12	XBOZZ		51744	517442025-N	..BODY,VALVE	1
13	XBOZZ		51744	5174426100-N	..STEM	1
14	XBOZZ		51744	517443042-N	..NUT,PULL	1
15	XBOZZ		51744	5174484168-N	..DISC ASSEMBLY	1
16	PAOZZ	4730-00-640-6156	96906	MS27028-17	.CAP,QUICK DISCONNEC	1
17	PAOZZ	5330-00-899-4509	96906	MS27030-9	.GASKET	2
18	PAOZZ	5310-00-851-2682	96906	MS35691-17	.NUT,PLAIN,HEXAGON	16
19	PAOZZ	5310-00-637-9541	96906	MS35338-46	.WASHER,LOCK	16
20	XDOZZ		96906	MS90725-64	.SCREW,CAP,HEXAGON H	16
21	PAOZZ	5310-00-087-7493	96906	MS27183-13	.WASHER,FLAT	16
22	PAOZZ	4730-00-840-5347	96906	MS27023-17	.COUPLING HALF,QUICK DISCONNECT	1
23	PAOZZ	5330-01-207-8302	05443	10231-C	.GASKET,BONNET	2
24	PAOZZ	4730-00-840-5348	96906	MS27027-17	.COUPLING HALF,QUICK DISCONNECT	1
25	PAOZZ	4730-00-640-6188	96906	MS27029-17	.PLUG,QUICK DISCONNE	1
				END OF FIGURE		

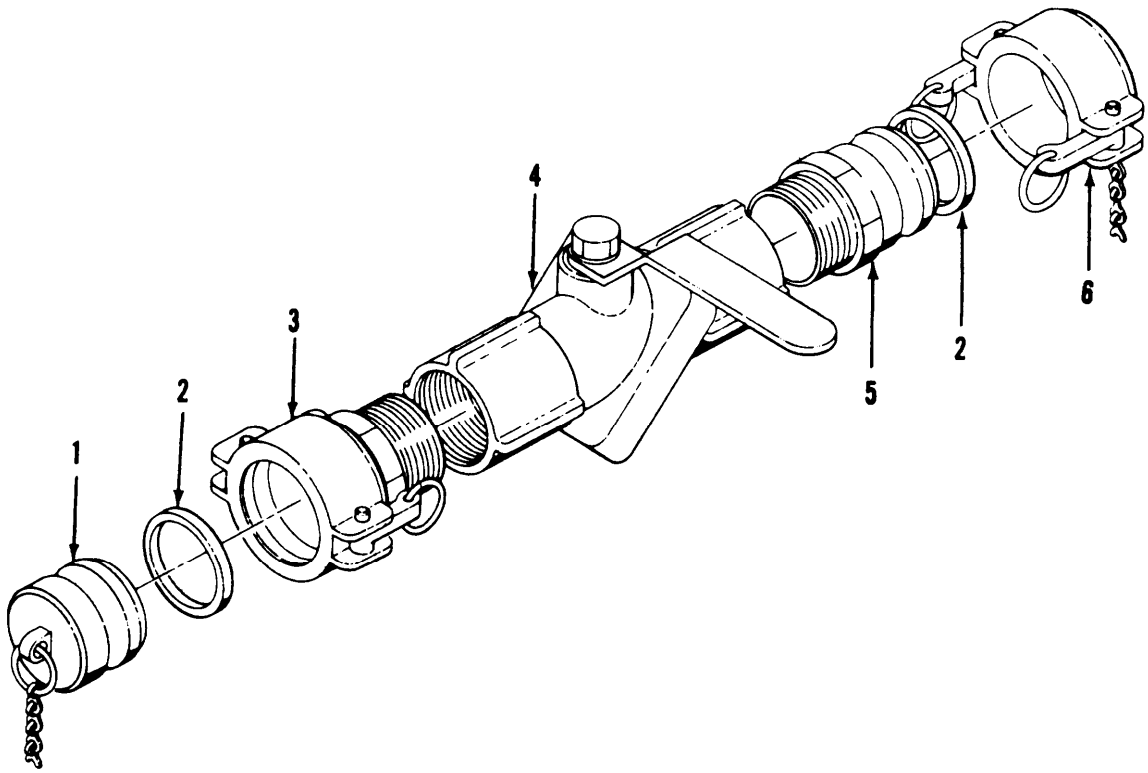


Figure F–13. Quick–Acting Valve, 3 In.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
				GROUP 05 VALVES		
				FIG F-13 QUICK-ACTING VALVE ASSEMBLY, 3 IN.		
	PAOOZ	4820-01-098-4925	97403	13222E9888	VALVE,BALL SEE FIG.F-1 FOR TYPICAL ASSEMBLED CONFIGURATION	6
1	PAOZZ	4730-00-929-0790	96906	MS27029-15	.PLUG,QUICK DISCONNE	1
2	PAOZZ	5330-00-088-9166	96906	MS27030-8	.GASKET	2
3	XDOZZ		92003	3020-B	.COUPLING HALF	1
4	XAOZZ		98991	3-4566-T-SE	.VALVE,BALL	1
5	PAOZZ	4730-01-N80-8300	24869	3020F	.ADAPTER,REDUCER	1
6	PAOZZ	4730-00-929-0787	96906	MS27028-15	.CAP,QUICK DISCONNE	1
				END OF FIGURE		

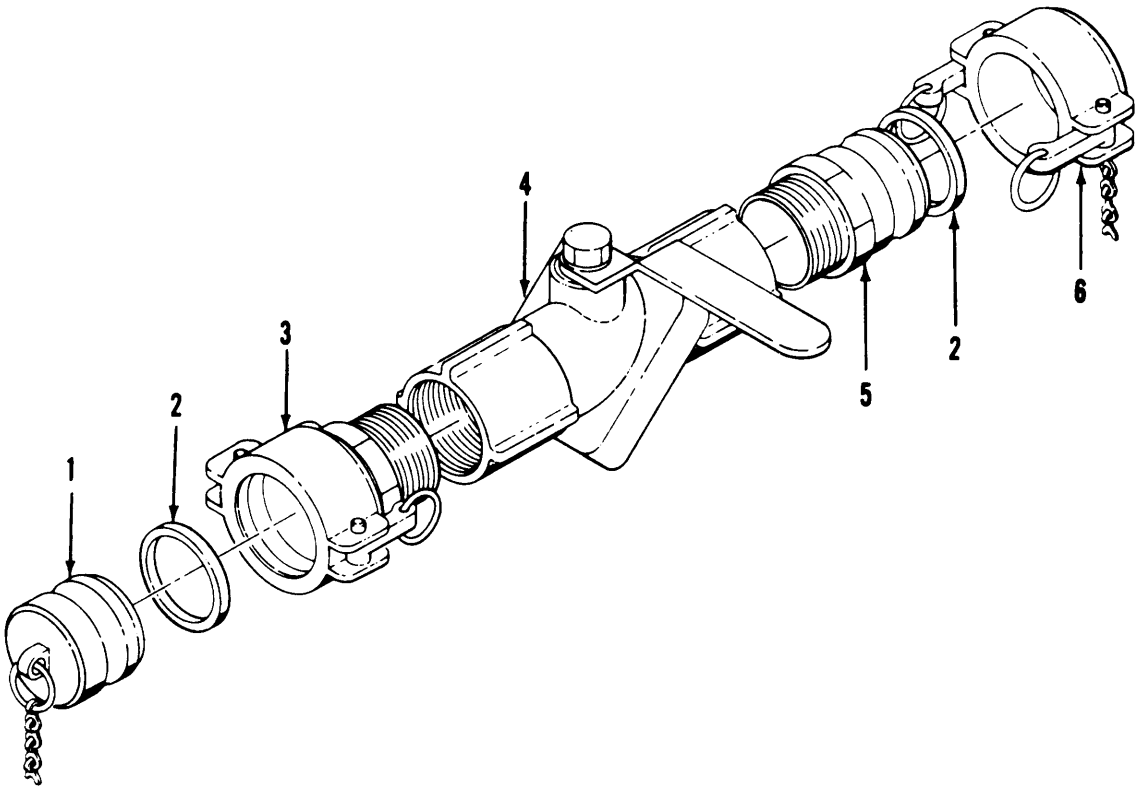


Figure F–14. Quick–Acting Valve, 1 1/2 In.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
				GROUP 05 VALVES		
				FIG. F-14 QUICK-ACTING VALVE ASSEMBLY, 1 1/2 IN.		
	PAOOO	4820-01-102-8757	97403	13222E9886	VALVE ASSY,QUICK AC SEE FIG. F-1 FOR TYPICAL ASSEMBLED CONFIGURATION	10
1	PAOZZ	4730-00-823-5316	96906	MS27029-9	.PLUG,PROTECTIVE,DUS	1
2	PAOZZ	5330-00-360-0595	96906	MS27030-5	.GASKET	2
3	PAOZZ	4730-00-203-1010	96906	MS27026-9	.COUPLING HALF,QUICK DISCONNECT	1
4	XAOZZ		98991	1 1/2-436-T-SE	.VALVE,BALL	1
5	PAOZZ	4730-00-360-0589	96906	MS27022-9	.COUPLING HALF,QUICK DISCONNECT	1
6	PAOZZ	4730-00-869-5246	96906	MS27028-9	.CAP,QUICK DISCONNEC	1
				END OF FIGURE		

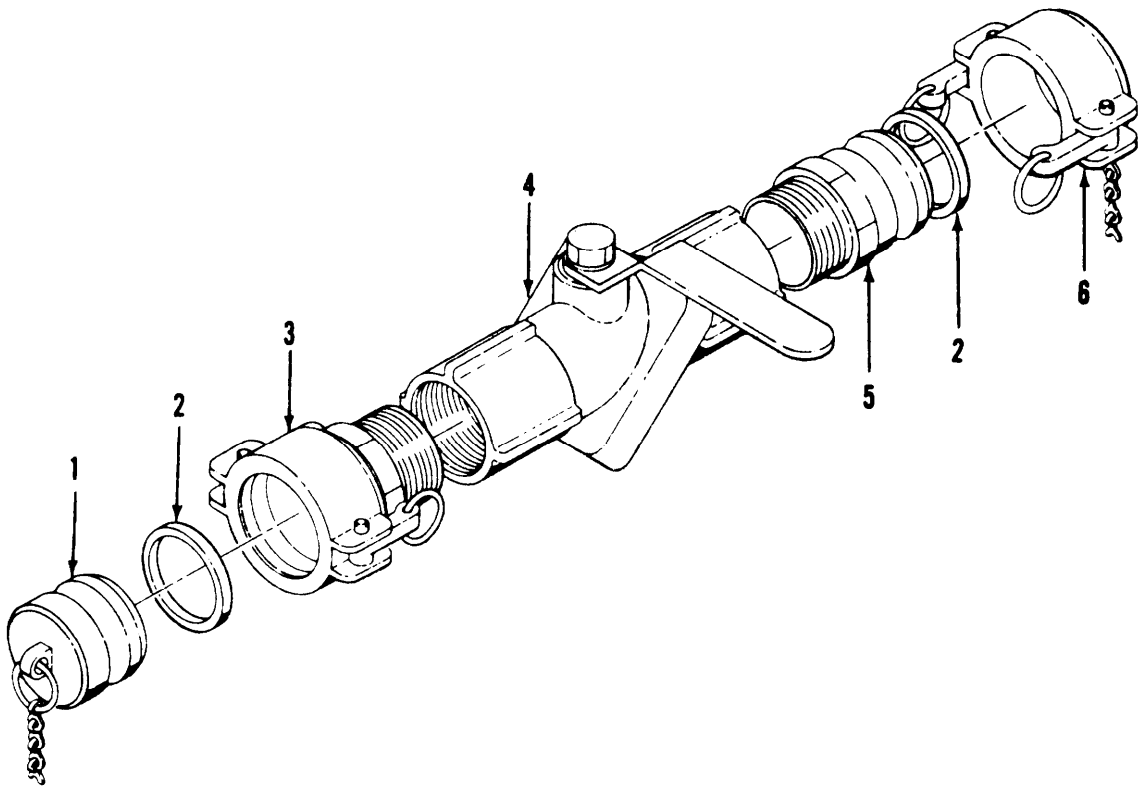


Figure F–15. Quick–Acting Valve, 2 In.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 05 VALVES	
					FIG. F-15 QUICK-ACTING VALVE ASSEMBLY, 2 IN.	
	PAOOZ	4820-01-098-3952	97403	133222E9887	VALVE ASEMBLY,QUIC 2INCH X2INCH SEE FIG F10 FOR BREAKDOWN	1
1	PAOZZ	4730-00-915-5127	96906	MS27029-11	.PLUG,QUICK DISCONNE	1
2	PAOZZ	5330-00-612-2414	96906	MS27030-6	.WASHER,FLAT	2
3	PAOZZ	4730-00-088-9285	96906	MS27026-11	.COUPLING HALF,QUICK DISCONNECT	1
4	XDOZZ		98991	2-436-T-SE	.VALVE,BALL	1
5	PAOZZ	4730-00-938-7997	96906	MS27022-11	.COUPLING HALF,QUICK DISCONNECT	1
6	PAOZZ	5340-00-823-5318	96906	MS27028-11	.CAP,PROTECTIVE,DUST	1
					END OF FIGURE	

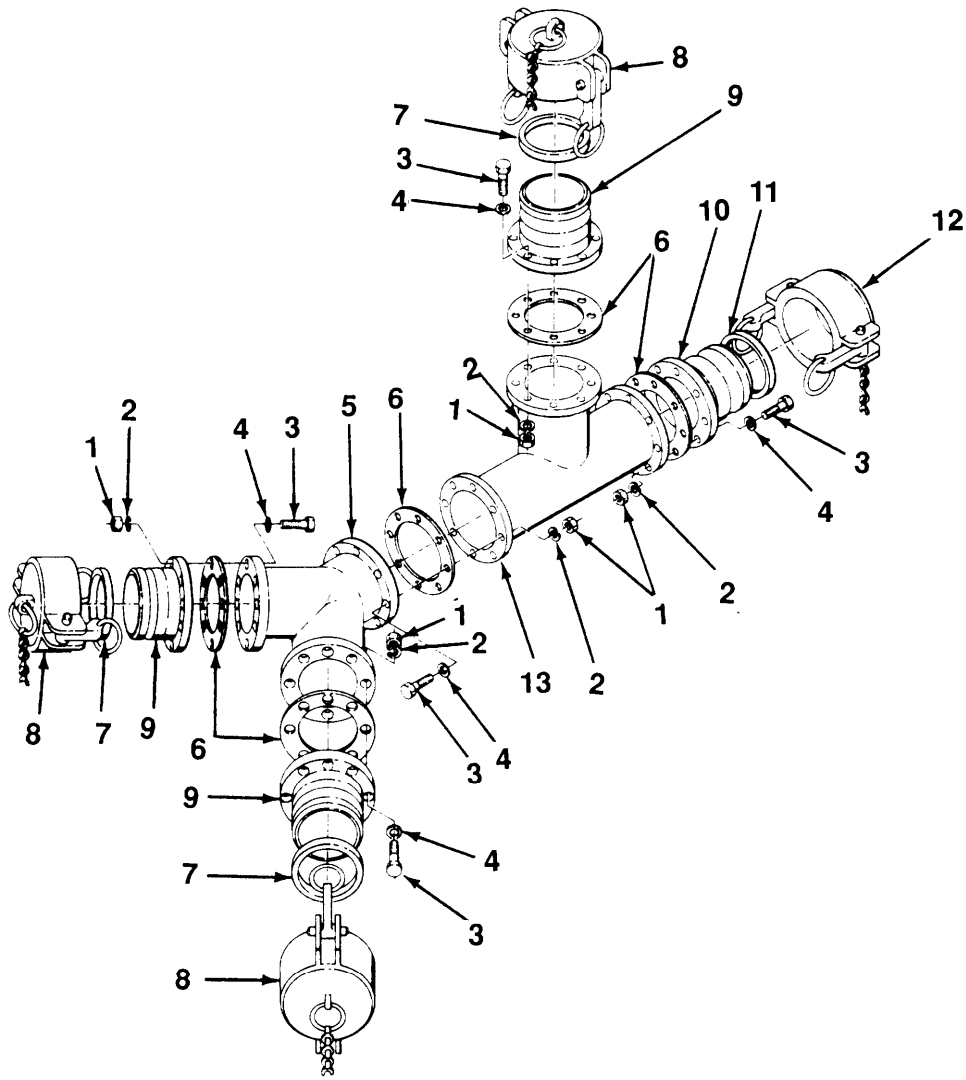


Figure F–16. Wye and Tee Assembly, 3 In. X 4 In.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 06 MANIFOLDS	
					FIG. F-16 WYE AND TEE ASSEMBLY, 3 IN. X 4 IN.	
	PAOOZ	4730-01-096-1041	97403	13222E9889	TEE,FLANGE SEE FIG. F-1 FOR TYPICAL ASSEMBLED CONFIGURATION	1
1	PAOZZ	5310-00-851-2682	96906	MS35691-17	.NUT,PLAIN,HEXAGON	40
2	PAOZZ	5310-00-637-9541	96906	MS35338-46	.WASHER,LOCK	40
3	XDOZZ		96906	MS90725-64	.SCREW,CAP,HEXAGON H	40
4	PAOZZ	5310-00-087-7493	96906	MS27183-13	.WASHER,FLAT	40
5	PBOZZ	4730-00-075-2421	81718	318F4	.WYE,TRUE,PIPE	1
6	PAOZZ	5330-01-207-8302	05443	10231-C	.GASKET,BONNET	5
7	PAOZZ	5330-00-088-9166	96906	MS27030-8	.GASKET	3
8	PAOZZ	4730-00-929-0787	96906	MS27028-15	.CAP,QUICK DISCONNEC	3
9	PAOZZ	4730-00-075-2423	81718	633LAT3X4	.COUPLING HALF,QUICK	3
10	PAOZZ	4730-00-840-5347	96906	MS27023-17	.COUPLING HALF,QUICK DISCONNECT	1
11	PAOZZ	5330-00-899-4509	96906	MS27030-9	.GASKET	1
12	PAOZZ	4730-00-640-6156	96906	MS27028-17	.CAP,QUICK DISCONNEC	1
13	PBOZZ	4730-00-840-5346	97403	13216E8243	.TEE,FLANGE	1
					END OF FIGURE	

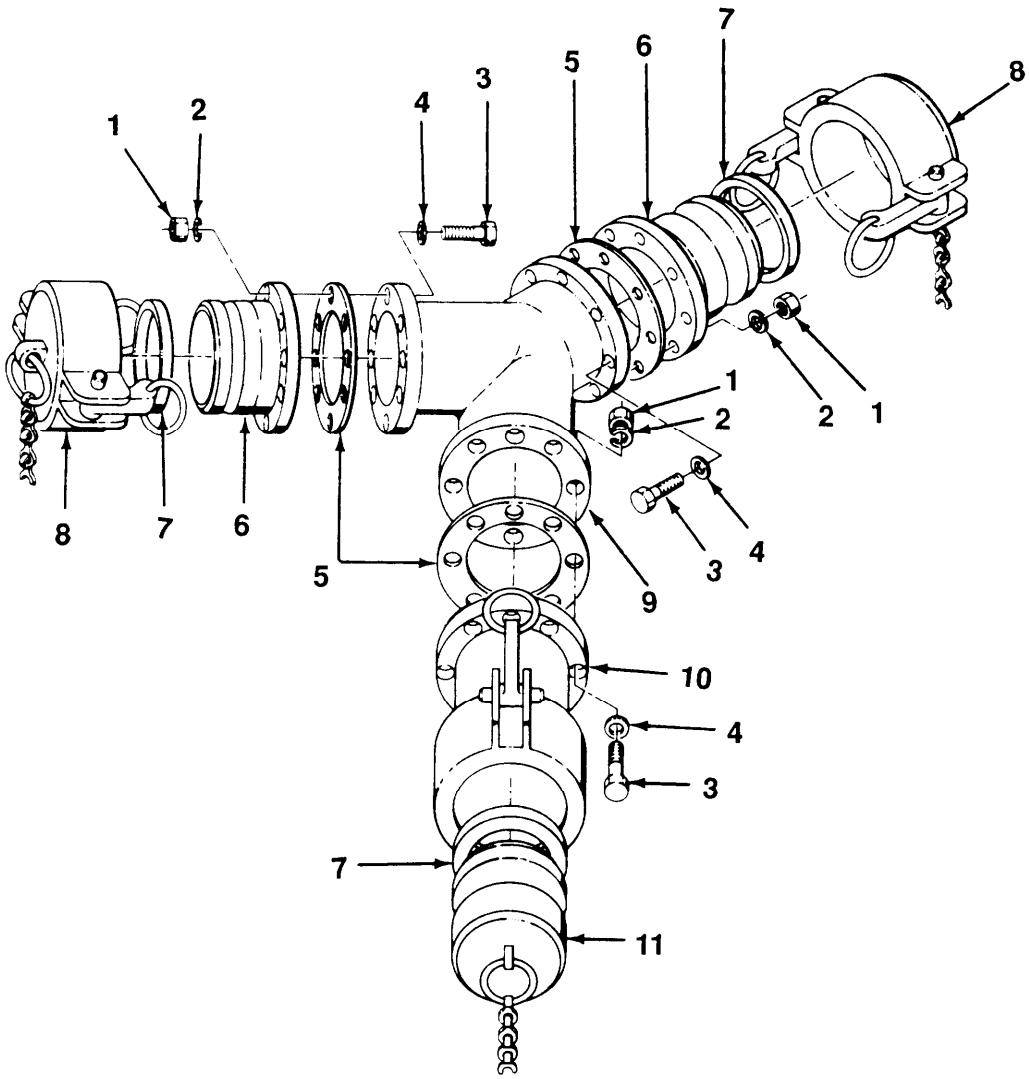


Figure F–17. Wye Assembly, 4 In., w/1 Female, 2 Male

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
				GROUP 06 MANIFOLDS		
				FIG. F-17 WYE ASSEMBLY, 4 IN. W/1 FEMALE, 2 MALE		
	PAOOZ	4730-00-075-2407	81337	5-14-676ASSYH	WYE,QUICK DISCONNEC SEE FIG.F-1 FOR TYPICAL ASSEMBLED CONFIGURATION	1
1	PAOZZ	5310-00-851-2682	96906	MS35691-17	.NUT,PLAIN,HEXAGON	24
2	PAOZZ	5310-00-637-9541	96906	MS35338-46	.WASHER,LOCK	24
3	XDOZZ		96906	MS90725-64	.SCREW,CAP,HEXAGON H	24
4	PAOZZ	5310-00-087-7493	96906	MS27183-13	.WASHER,FLAT	24
5	PAOZZ	5330-01-207-8302	05443	10231-C	.GASKET,BONNET	3
6	PAOZZ	4730-00-840-5347	96906	MS27023-17	.COUPLING HALF,QUICK DISCONNECT	2
7	PAOZZ	5330-00-899-4509	96906	MS27030-9	.GASKET	3
8	PAOZZ	4730-00-640-6156	96906	MS27028-17	.CAP,QUICK DISCONNEC	2
9	PBOZZ	4730-00-075-2421	81718	318F4	.WYE,TRUE,PIPE	1
10	PAOZZ	4730-00-840-5348	96906	MS27027-17	.COUPLING HALF,QUICK DISCONNECT	1
11	PAOZZ	4730-00-640-6188	96906	MS27029-17	.PLUG,QUICK DISCONNE	1
				END OF FIGURE		

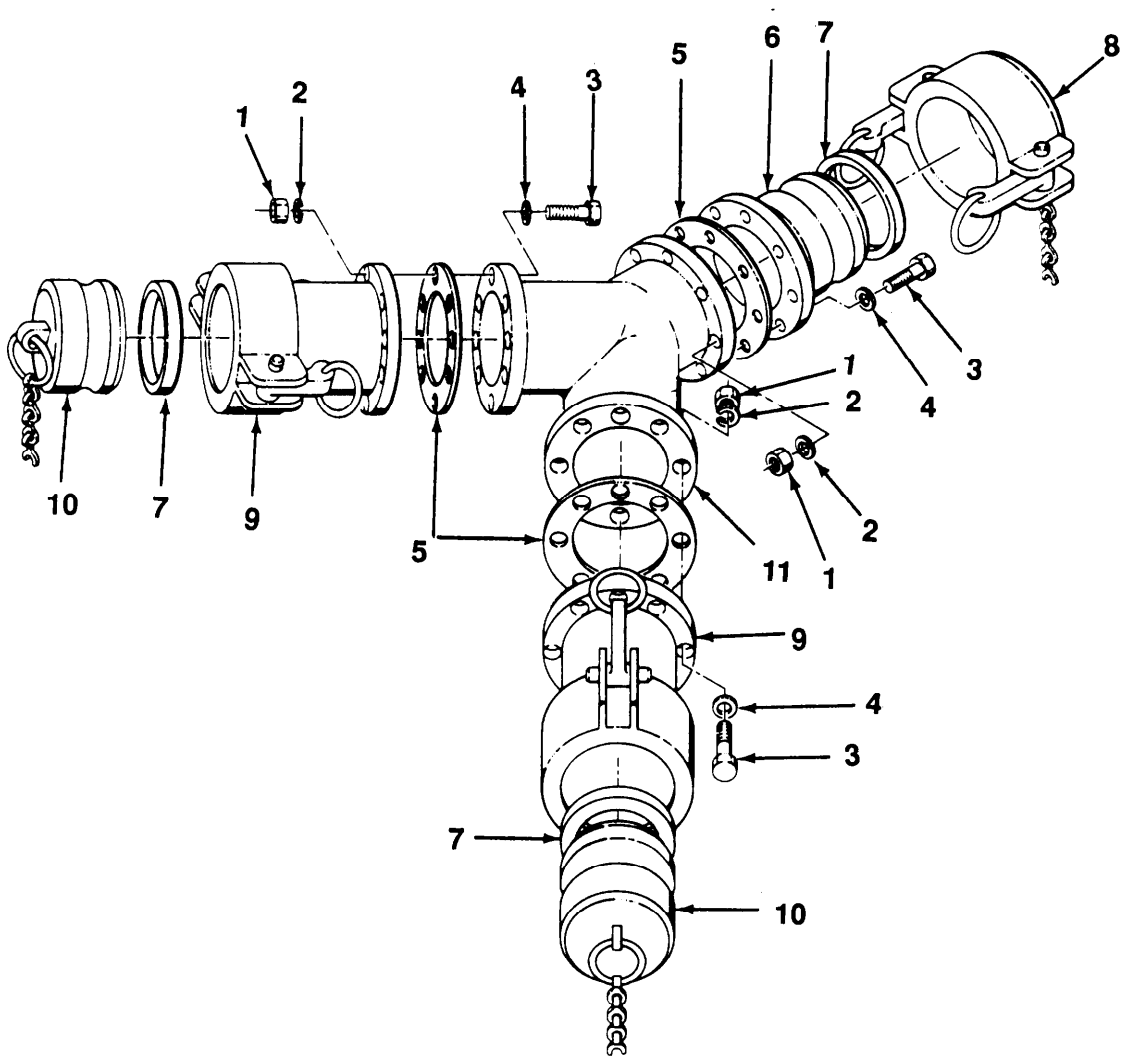


Figure F–18. Wye Assembly, 4 In., w/2 Female, 1 Male

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 06 MANIFOLDS	
					FIG. F-18 WYE ASSEMBLY, 4 IN W/2 FEMALE, 1 MALE	
	PAOOZ	4730-00-075-2408	81337	5-14-676J	WYE,QUICK DISCONNEC SEE FIG.F-1 FOR TYPICAL ASSEMBLED CONFIGURATION.	1
1	PAOZZ	5310-00-851-2682	96906	MS35691-17	.NUT,PLAIN,HEXAGON	24
2	PAOZZ	5310-00-637-9541	96906	MS35338-46	.WASHER,LOCK	24
3	XDOZZ		96906	MS90725-64	.SCREW,CAP,HEXAGON H.	24
4	PAOZZ	5310-00-087-7493	96906	MS27183-13	.WASHER,FLAT	24
5	PAOZZ	5330-01-207-8302	05443	10231-C	.GASKET,BONNET	3
6	PAOZZ	4730-00-840-5347	96906	MS27023-17	.COUPLING HALF,QUICK DISCONNECT	1
7	PAOZZ	5330-00-899-4509	96906	MS27030-9	.GASKET	3
8	PAOZZ	4730-00-640-6156	96906	MS27028-17	.CAP,QUICK DISCONNECT	1
9	PAOZZ	4730-00-840-5348	96906	MS27027-17	.COUPLING HALF,QUICK DISCONNECT	2
10	PAOZZ	4730-00-640-6188	96906	MS27029-17	.PLUG,QUICK. DISCONNE DISCONNECT	2
11	PBOZZ	4730-00-075-2421	81718	318F4	.WYE,TRUE,PIPE	1
					END OF FIGURE	

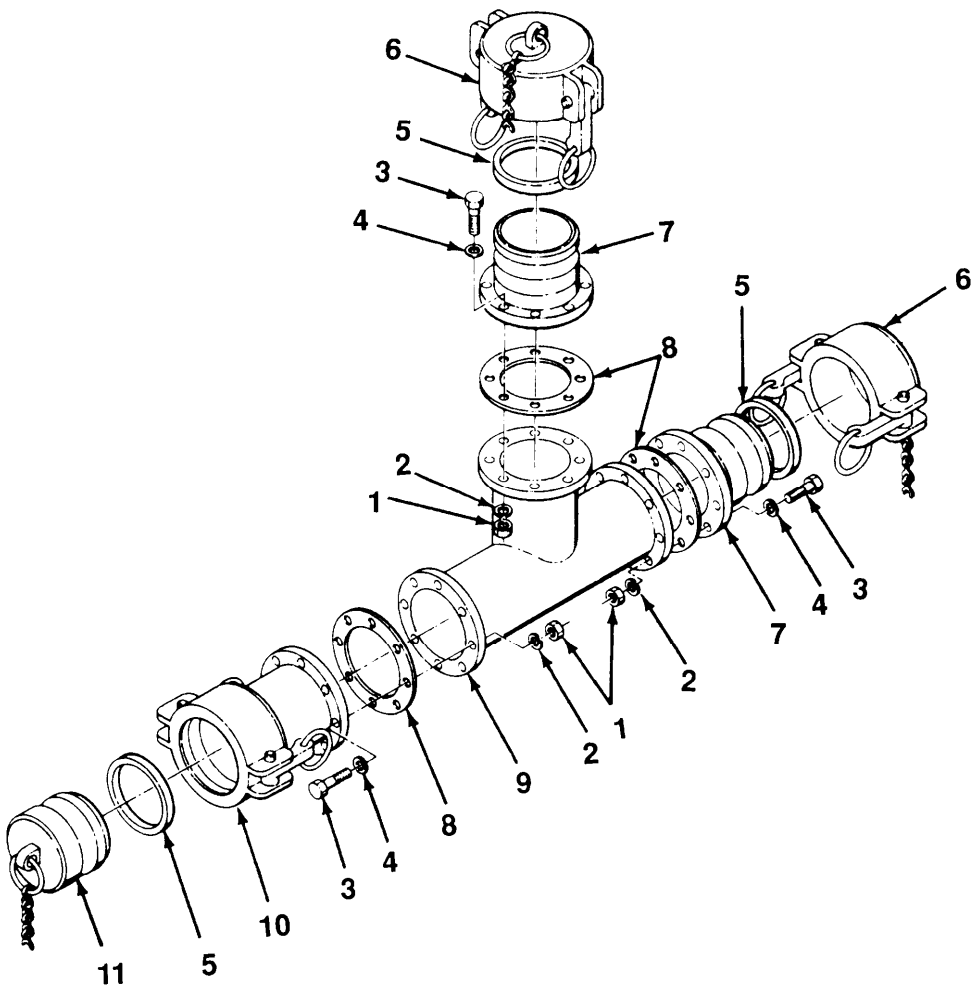


Figure F–19. Tee Assembly, 4 In.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 06 MANIFOLDS	
					FIG. F-19 TEE ASSEMBLY, 4 IN	
	PAOOZ	4730-00-075-2405	81337	5-14-676C	TEE,FLANGE SEE FIG.F-1 FOR TYPICAL ASSEMBLED CONFIGURATION	1
1	PAOZZ	5310-00-851-2682	96906	MS35691-17	.NUT,PLAIN,HEXAGON	24
2	PAOZZ	5310-00-637-9541	96906	MS35338-46	.WASHER,LOCK	24
3	XDOZZ		96906	MS90725-64	.SCREW,CAP,HEXAGON H	24
4	PAOZZ	5310-00-087-7493	96906	MS27183-13	.WASHER,FLAT	24
5	PAOZZ	5330-00-899-4509	96906	MS27030-9	.GASKET	3
6	PAOZZ	4730-00-640-6156	96906	MS27028-17	.CAP,QUICK DISCONNEC	2
7	PAOZZ	4730-00-840-5347	96906	MS27023-17	.COUPLIING HALF,QUICK DISCONNECT	2
8	PAOZZ	5330-01-207-8302	05443	10231-C	.GASKET,BONNET	3
9	PBOZZ	4730-00-840-5346	97403	13216E8243	.TEE,FLANGE	1
10	PAOZZ	4730-00-840-5348	96906	MS27027-17	.COUPLING HALF,QUICK DISCONNECT	1
11	PAOZZ	4730-00-640-6188	96906	MS27029-17	.PLUG,QUICK DISCONNE	1
					END OF FIGURE	

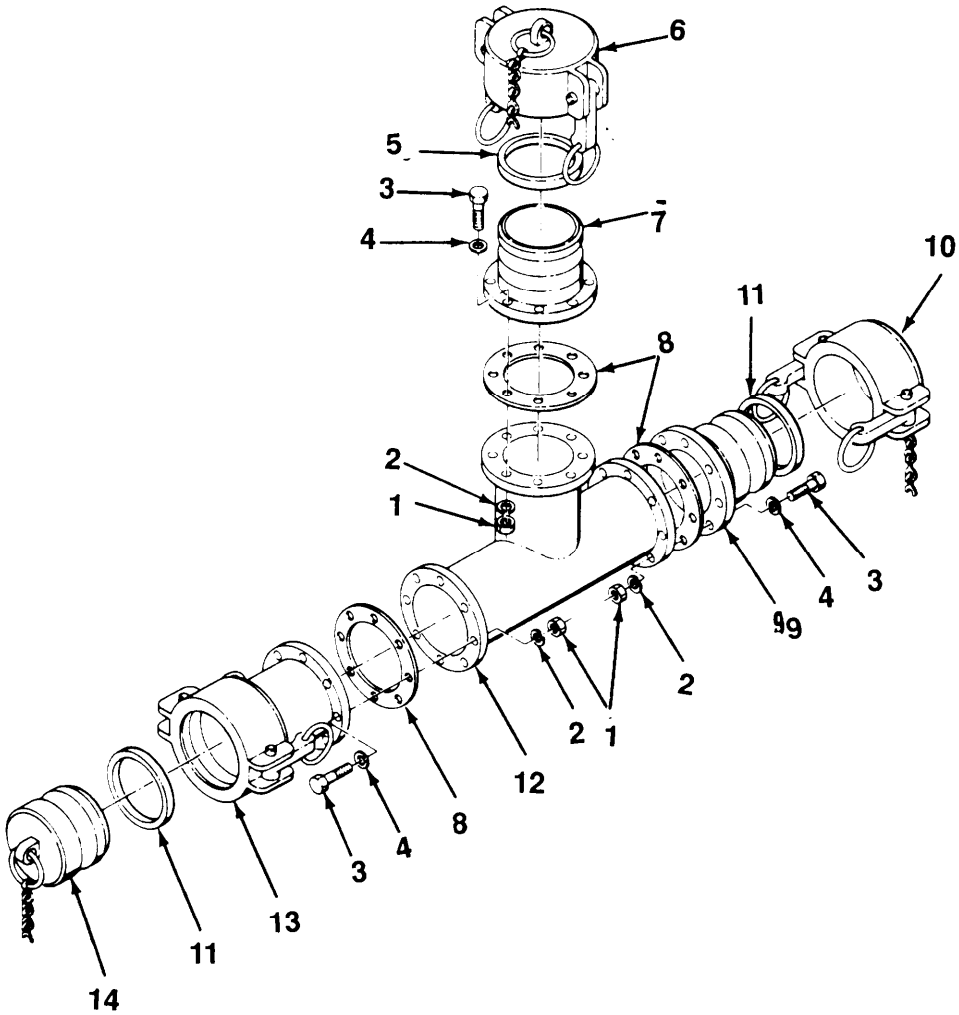


Figure F–20. Tee Assembly, w/4 In Male, 4 In Female and 3 In Male

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 06 MANIFOLDS	
					FIG. F-20 TEE ASSEMBLY, 13222E9885 (96906).	
	PAOOO	4730-01-096-1040	97403	13222E9885	COUPLING ASSEMBLY,Q DISCONNECT SEE FIG.F-1 FOR TYPICAL ASSEMBLED CONFIGURATION	3
1	PAOZZ	5310-00-851-2682	96906	MS35691-17	.NUT,PLAIN,HEXAGON	24
2	PAOZZ	5310-00-637-9541	96906	MS35338-46	.WASHER,LOCK	24
3	XDOZZ		96906	MS90725-64	.SCREW,CAP,HEXAGON H	24
4	PAOZZ	5310-00-087-7493	96906	MS27183-13	.WASHER,FLAT	24
5	PAOZZ	5330-00-088-9166	96906	MS27030-8	.GASKET	1
6	PAOZZ	4730-00-929-0787	96906	MS27028-15	.CAP,QUICK DISCONNEC	1
7	PAOZZ	4730-00-075-2423	81718	633LAT3X4	.COUPLING HALF,QUICK	1
8	PAOZZ	5330-01-207-8302	05443	10231-C	.GASKET,BONNET	3
9	PAOZZ	4730-00-840-5347	96906	MS27023-17	.COUPLING HALF,QUICK DISCONNECT	1
10	PAOZZ	4730-00-640-6156	96906	MS27028-17	.CAP,QUICK DISCONNEC	1
11	PAOZZ	5330-00-899-4509	96906	MS27030-9	.GASKET	2
12	PBOZZ	4730-00-840-5346	97403	13216E8243	.TEE,FLANGE	1
13	PAOZZ	4730-00-840-5348	96906	MS27027-17	.COUPLING HALF,QUICK DISCONNECT	1
14	PAOZZ	4730-00-640-6188	96906	MS27029-17	.PLUG,QUICK DISCONNE	1
					END OF FIGURE	

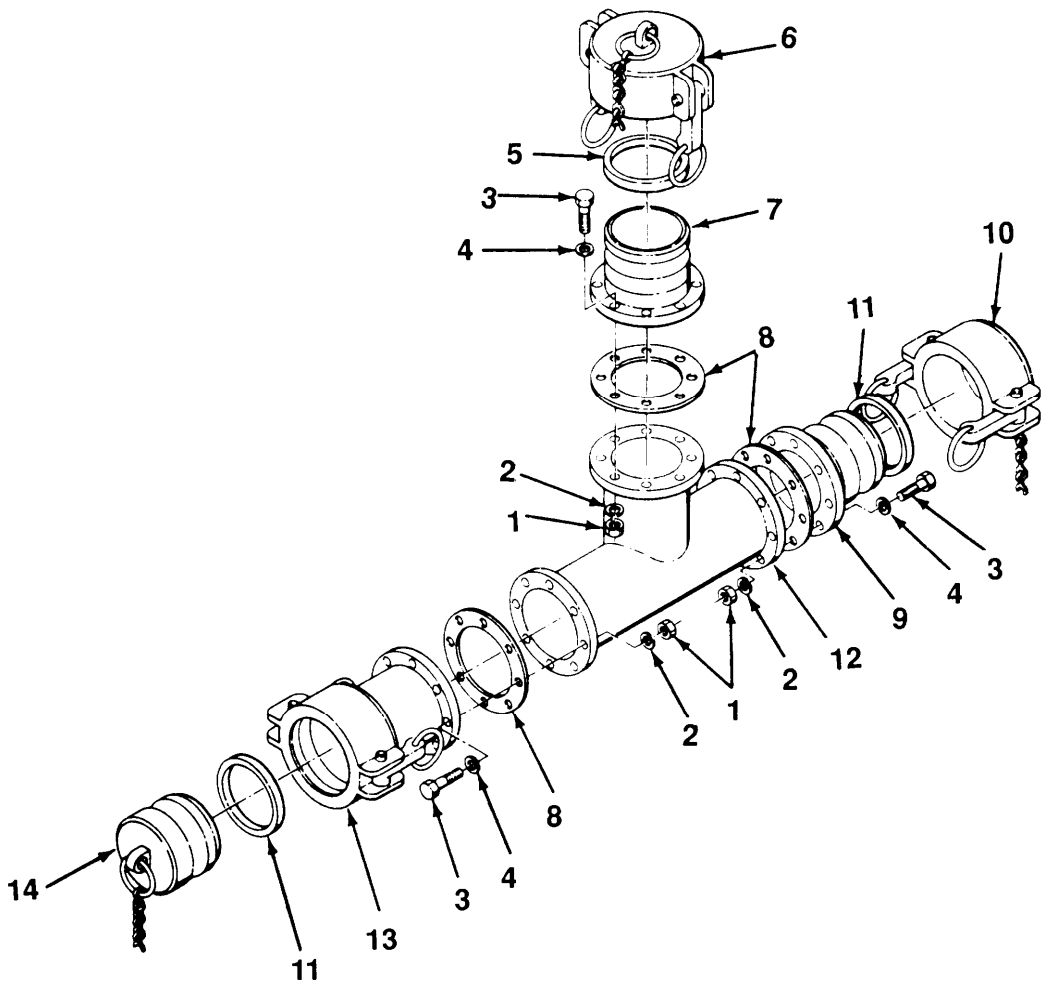


Figure F–21. Tee Assembly, 3 In., w/3 In Female, 3 In., Male and 1 1/2 In

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 06 MANIFOLDS	
					FIG. F-21 TEE ASSEMBLY, 4 IN X 3 IN	
	PAOOO	4730-01-096-1039	97403	13222E9884	COUPLING HALF,QUICK SEE FIG.F-1 FOR TYPICAL ASSEMBLED CONFIGURATION.	5
1	PAOZZ	5310-00-851-2682	96906	MS35691-17	.NUT,PLAIN,HEXAGON	24
2	PAOZZ	5310-00-637-9541	96906	MS35338-46	.WASHER,LOCK	24
3	XDOZZ		96906	MS90725-64	.SCREW,CAP,HEXAGON H	24
4	PAOZZ	5310-00-087-7493	96906	MS27183-13	.WASHER,FLAT	24
5	PAOZZ	5330-00-360-0595	96906	MS27030-5	.GASKET	1
6	PAOZZ	4730-00-869-5246	96906	MS27028-9	.CAP,QUICK DISCONNEC	1
7	PAOZZ	4730-01-207-8304	24869	1530ALT	.ADAPTER,FLANGED	1
8	XDOZZ		05443	10231-B	.GASKET	3
9	PAOZZ	4730-00-889-2380	96906	MS27023-15	.COUPLING HALF,QUICK DISCONNECT	1
10	PAOZZ	4730-00-929-0787	96906	MS27028-15	.CAP,QUICK DISCONNEC	1
11	PAOZZ	5330-00-088-9166	96906	MS27030-8	.GASKET	2
12	PBOZZ	4730-00-075-2420	81718	320F3	.TEE,FLANGE	1
13	PAOZZ	4730-00-889-2378	96906	MS27027-15	.COUPLING HALF,QUICK DISCONNECT	1
14	PAOZZ	4730-00-929-0790	96906	MS27029-15	.PLUG,QUICK DISCONNE	1
					END OF FIGURE	

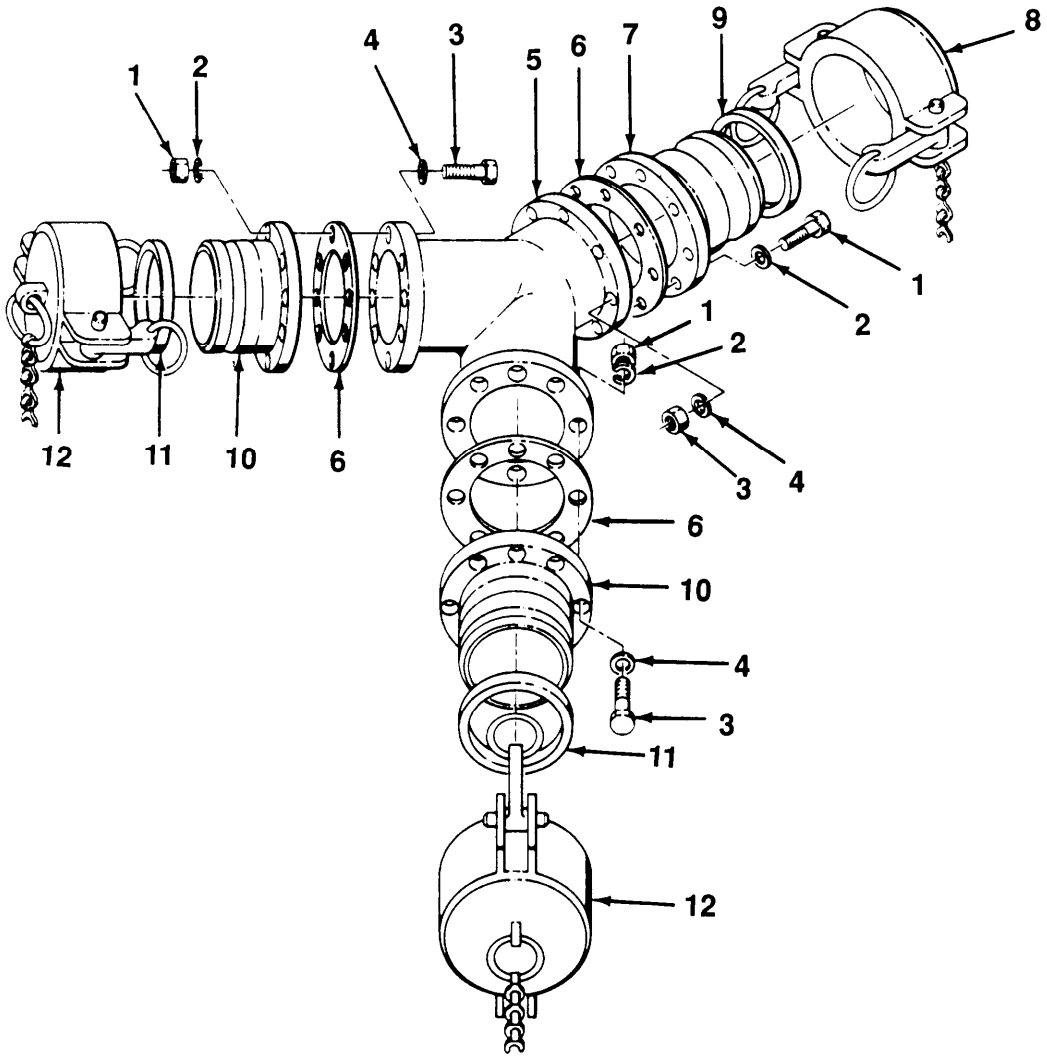


Figure F–22. Wye Assembly, W/2 3 In. Male and 1 4 In. Male.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 06 MANIFOLDS	
					FIG. F-22 WYE ASSEMBLY, 4 IN	
	PAOZZ	4730-01-096-1045	97403	13222E9893	WYE,QUICK DISCONNEC DISCONNECT	1
1	PAOZZ	5310-00-851-2682	96906	MS35691-17	.NUT,PLAIN,HEXAGON	24
2	PAOZZ	5310-00-637-9541	96906	MS35338-46	.WASHER,LOCK	24
3	XDOZZ		96906	MS90725-64	.SCREW,CAP,HEXAGON H	24
4	PAOZZ	5310-00-087-7493	96906	MS27183-13	.WASHER,FLAT	24
5	PBOZZ	4730-00-075-2421	81718	318F4	.WYE,TRUE,PIPE	1
6	PAOZZ	5330-01-207-8302	05443	10231-C	.GASKET,BONNET	3
7	PAOZZ	4730-00-840-5347	96906	MS27023-17	.COUPLING HALF,QUICK DISCONNECT	1
8	PAOZZ	4730-00-640-6156	96906	MS27028-17	.CAP,QUICK DISCONNEC	1
9	PAOZZ	5330-00-899-4509	96906	MS27030-9	.GASKET	1
10	PAOZZ	4730-00-075-2423	81718	633LAT3X4	.COUPLING HALF,QUICK	2
11	PAOZZ	5330-00-088-9166	96906	MS27030-8	.GASKET	2
12	PAOZZ	4730-00-929-0787	96906	MS27028-15	.CAP,QUICK DISCONNEC	2
					END OF FIGURE	

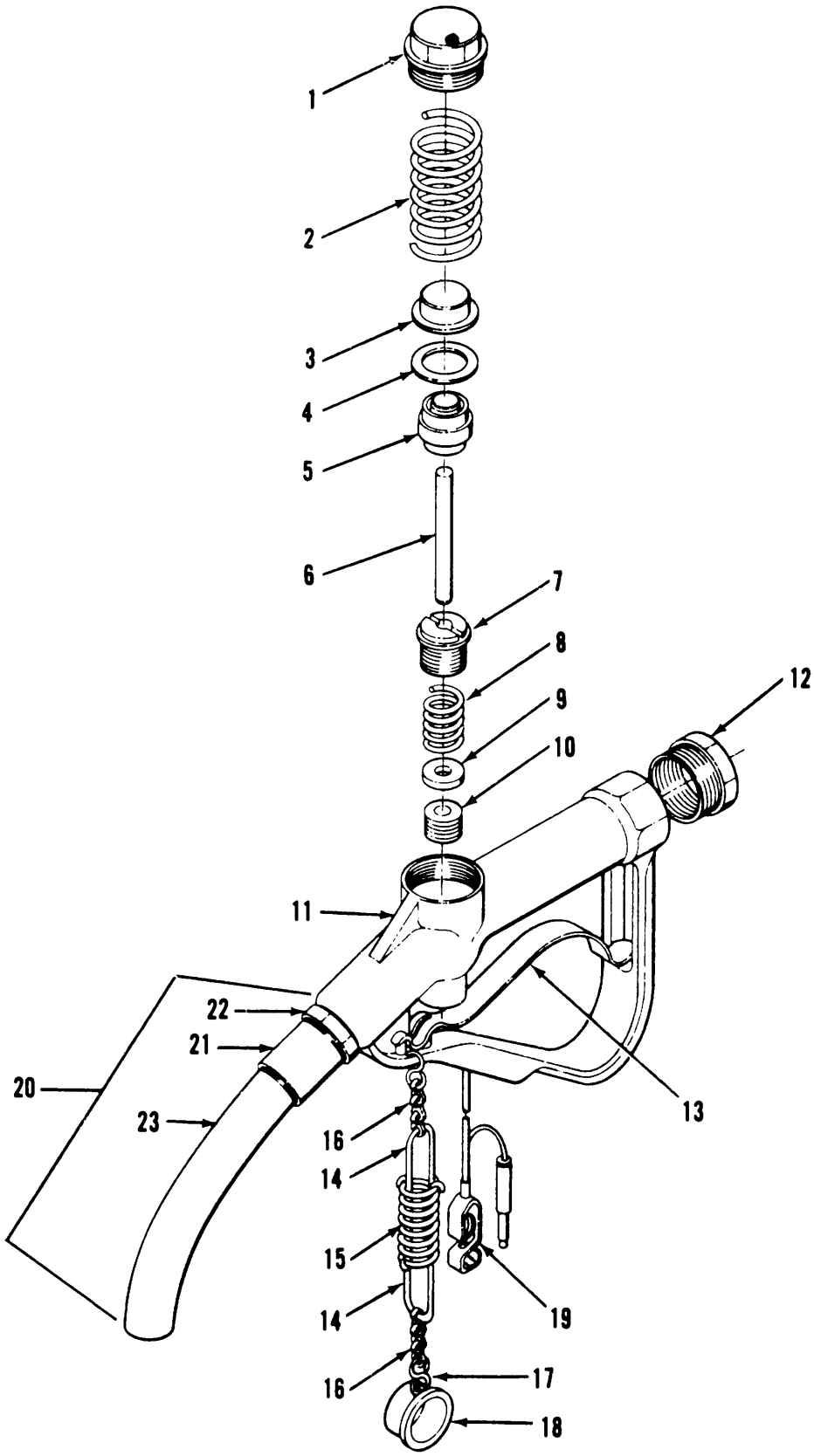


Figure F–23. Nozzle Valve Assembly

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 07 NOZZLES	
					FIG. F-23 NOZZLE VALVE ASSEMBLY, 811GA1 (81718).	
	PAOZZ	4930-00-901-1053	81718	811GA1	NOZZLE,FUEL AND OIL SEE FIG.F-1 FOR TYPICAL ASSEMBLED CONFIGURATION.	6
1	XBOZZ		81718	H-1621-D	.CAP	1
2	XBOZZ		81718	H-2061-M	.SPRING,MAIN	1
3	XBOZZ		81718	H-6535-M	.TOP PIECE	1
4	XBOZZ		81718	H-659-M	.DISC	1
5	PAOZZ	5340-01-207-8361	81718	C-2418-M	.COVER,ACCESS	1
6	PAOZZ	4930-01-230-6905	81718	H-3725-RE	.STEM	1
7	XDOZZ		81718	H-3727-RB	.RETAINER	1
8	XDOZZ		81718	H-5352-M	.SPRING,HELICAL,COMP	1
9	PAOZZ	5330-01-207-8353	81718	H-6495-M	.RETAINER,PACKING	1
10	XDOZZ		81718	H-714-M	.PACKING, PREFORMED	1
11	XAOZZ		81718	D-274-AG	.BODY	1
12	XBOZZ		81718	NO.28-R	.ADAPTOR	1
13	XBOZZ		81718	D-1199-M	.LEVER	1
14	XBOZZ		81718	H-9210-M	.DRAWBAR	2
15	XBOZZ		81718	H-9209-M	.SPRING,COMPRESSION	1
16	XBOZZ		81718	H-9112-RS	.CHAIN	1
17	XBOZZ		81718	H-3283-M	.LINK,CAP	2
18	PAOZZ	5340-01-207-8305	81718	H-9115-AG	.CAP,DUST	1
19	XBOZZ		81718	NO.616-W	.WIRE,GROUND	1
20	XBOZZ		81718	C-2866	.SPOUT SUB ASSEMBLY	1
21	XAOZZ		81718	H-9114-RAG	..ADAPTOR,SPOUT	1
22	XAOZZ		81718	C-2868-RAG	..LOCKNUT	1
23	XAOZZ		81718	C-2864-RAG	..SPOUT	1
					END OF FIGURE	

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 08 BULK	
					FIG. BULK	
1	XDOZZ		77414	205	CLAMP,HOSE	100
2	PAOZZ	5340-00-244-7325	70847	C254	SEAL,STRAPPING	100
3	PAOZZ	5340-00-244-7327	70847	C256	SEAL,STRAPPING	100
4	XDOZZ		81349	MIL-S-7916	SEALING COMPOUND	1
5	PAOZZ	5340-00-245-9438	70847	C204	STRAPPING	100
6	PAOZZ	5340-00-245-9440	70847	C206	STRAPPING	100
					END OF FIGURE	

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 09 SPECIAL TOOLS	
					FIG. F-24 SPECIAL TOOLS	
1	PAOZZ	5120-00-359-6587	77414	P38	CLAMPING TOOL,STRAP	
2	PAOZZ	5120-00-240-5328	80204	ANSI-B107.8	WRENCH,ADJUSTABLE	
3	PAOZZ	5120-00-357-8431	09310	E0610-001	WRENCH,COUPLING,TAN	
					END OF FIGURE	

CROSS-REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
4730-00-075-2420	F-21	12	5330-00-360-0595	F-21	5
4730-00-075-2421	F-16	5	4730-00-360-0715	F-9	1
	F-17	9	4730-00-360-0942	F-3	3
	F-18	11		F-7	3
	F-22	5		F-8	3
4730-00-075-2423	F-16	9	4730-00-360-0943	F-10	3
	F-20	7	5330-00-367-5005	F-12	2
	F-22	10	5330-00-400-3513	F-12	1
4730-00-078-2519	F-2	4	4720-00-529-5538	F-2	
	F-4	4	5330-00-563-8023	F-11	11
	F-5	4	5330-00-612-2414	F-10	2
4720-00-083-0045	F-1	2		F-15	2
	F-3		5310-00-637-9541	F-11	19
4720-00-083-0048	F-7			F-12	19
5310-00-087-7493	F-11	21		F-16	2
	F-12	21		F17	2
	F-16	4		F-18	2
	F-17	4		F-19	2
	F-18	4		F-20	2
	F-19	4		F-21	2
	F-20	4		F-22	2
	F-21	4	4730-00-640-6156	F-1	8
	F-22	4		F-2	6
5330-00-088-9166	F-3	2		F-4	6
	F-7	2		F-5	6
	F-8	2		F-12	16
	F-11	17		F-16	12
	F-13	2		F-17	8
	F-16	7		F-18	8
	F-20	5		F-19	6
	F-21	11		F-20	10
	F-22	11		F-22	8
5330-00-088-9167	F-9	2	4730-00-640-6188	F-1	6
4730-00-088-9285	F-15	3		F-2	1
4730-00-088-9286	F-1	30		F-4	1
4730-00-203-1010	F-1	33		F-5	1
	F-14	3		F-12	25
4730-00-203-9766	F-9	4		F-17	11
5120-00-240-5328	F-24	2		F-18	10
5340-00-244-7325	BULK	2		F-19	11
5340-00-244-7327	BULK	3		F-20	14
5340-00-245-9438	BULK	5	4730-00-649-7388	F-2	5
5340-00-245-9440	BULK	6		F-4	5
5330-00-346-2732	F-12	11		F-5	5
5120-00-357-8431	F-24	3	4730-00-649-9100	F-1	22
5120-00-359-6587	F-24	1		F-10	6
4730-00-360-0589	F-14	5		F-15	6
4730-00-360-0592	F-6	5	4730-00-649-9118	F-1	31
5330-00-360-0595	F-6	2	5360-00-653-0395	F-12	3
	F-14	2	4930-00-653-0407	F-11	2

CROSS-REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
4820-00-766-8191	F-12		4930-00-901-1053	F-1	23
4730-00-823-5316	F-6	1		F-23	
	F-14	1	4730-00-915-5127	F-10	1
4730-00-840-5346	F-16	13		F-15	1
	F-19	9	4730-00-929-0787	F-3	6
	F-20	12		F-7	6
4730-00-840-5347	F-12	22		F-8	6
	F-16	10		F-11	16
	F-17	6		F-13	6
	F-18	6		F-16	8
	F-19	7		F-20	6
	F-20	9		F-21	10
	F-22	7		F-22	12
4730-00-840-5348	F-12	24	4730-00-929-0790	F-3	1
	F-17	10		F-7	1
	F-18	9		F-8	1
	F-19	10		F-11	25
	F-20	13		F-13	1
5310-00-851-2682	F-11	18		F-21	14
	F-12	18	4730-00-929-0791	F-9	6
	F-16	1	4730-00-935-1613	F-1	35
	F-17	1	4730-00-938-7996	F-10	5
	F-18	1	4730-00-938-7997	F-15	5
	F-19	1	4730-00-938-7998	F-1	28
	F-20	1	4730-00-948-1722	F-6	3
	F-21	1	4730-00-951-3293	F-1	14
	F-22	1	4730-00-951-3294	F-1	18
4720-00-864-0300	F-1	16	4730-00-965-6520	F-3	4
4730-00-869-5246	F-6	6	4730-00-980-9411	F-1	32
	F-14	6	5310-01-077-9426	F-12	7
	F-21	6	5310-01-077-9647	F-12	8
4730-00-873-4535	F-3	5	4730-01-078-8130	F-1	34
	F-7	5	5305-01-079-6771	F-12	9
	F-8	5	4730-01-079-8234	F-1	36
4730-00-873-4551	F-1	29	4730-01-096-1038	F-1	21
4730-00-889-2378	F-11	24	4730-01-096-1039	F-1	17
	F-21	13		F-21	
4730-00-889-2380	F-11	23	4730-01-096-1040	F-1	13
	F-21	9		F-20	
5330-00-889-5483	F-11	1	4730-01-096-1041	F-1	1
5330-00-899-4509	F-2	2		F-16	
	F-4	2	4730-01-096-1045	F-22	
	F-5	2	4820-01-096-1069	F-1	3
	F-12	17		F-11	
	F-16	11	4820-01-098-3952	F-15	
	F-17	7	4820-01-098-4925	F-1	27
	F-18	7		F-13	
	F-19	5	4820-01-102-8757	F-1	25
	F-20	11		F-14	
	F-22	9	4730-01-164-9254	F-9	5

CROSS-REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5360-01-207-8294	F-11	3			
5330-01-207-8302	F-12	23			
	F-16	6			
	F-17	5			
	F-18	5			
	F-19	8			
	F-20	8			
	F-22	6			
4730-01-207-8303	F-13	5			
4730-01-207-8304	F-21	7			
5340-01-207-8305	F-23	18			
4730-01-207-8349	F-6	4			
5330-01-207-8353	F-23	9			
5340-01-207-8361	F-23	5			
4720-01-215-7956	F-1	26			
	F-6				
4730-01-223-4931	F-9	3			
4930-01-230-6905	F-23	6			

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
80204	ANSI-B107.8	5120-00-240-5328	F-24	2
81718	C-2418-M	5340-01-207-8361	F-23	5
81718	C-2864-RAG		F-23	23
81718	C-2866		F-23	20
81718	C-2868-RAG		F-23	22
70847	C204	5340-00-245-9438	BULK	5
70847	C206	5340-00-245-9440	BULK	6
70847	C254	5340-00-244-7325	BULK	2
70847	C256	5340-00-244-7327	BULK	3
81718	D-1199-M		F-23	13
81718	D-274-AG		F-23	11
09310	E0610-001	5120-00-357-8431	F-24	3
81718	H-1621-D		F-23	1
81718	H-2061-M		F-23	2
81718	H-3283-M		F-23	17
81718	H-3725-RE	4930-01-230-6905	F-23	6
81718	H-3727-RB		F-23	7
81718	H-5352-M		F-23	8
81718	H-6495-M	5330-01-207-8353	F-23	9
81718	H-6535-M		F-23	3
81718	H-659-M		F-23	4
81718	H-714-M		F-23	10
81718	H-9112-RS		F-23	16
81718	H-9114-RAG		F-23	21
81718	H-9115-AG	5340-01-207-8305	F-23	18
81718	H-9209-M		F-23	15
81718	H-9210-M		F-23	14
70847	J209	4730-01-207-8349	F-6	4
70847	J211		F-10	4
70847	J213		F-7	4
			F-8	4
70847	J215	4730-00-078-2519	F-2	4
			F-4	4
			F-5	4
70847	J308	4730-00-203-9766	F-9	4
81349	MIL-S-7916		BULK	4
81349	MILV58039SIZE3TYPE1		F-11	
96906	MS27021-11	4730-00-938-7996	F-10	5
96906	MS27021-15	4730-00-873-4535	F-3	5
			F-7	5
			F-8	5
96906	MS27021-17	4730-00-649-7388	F-2	5
			F-4	5
			F-5	5
96906	MS27021-5	4730-01-164-9254	F-9	5
96906	MS27021-9	4730-00-360-0592	F-6	5
96906	MS27022-11	4730-00-938-7997	F-15	5
96906	MS27022-9	4730-00-360-0589	F-14	5
96906	MS27023-15	4730-00-889-2380	F-11	23
			F-21	9

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
96906	MS27023-17	4730-00-840-5347	F-12	22
			F-16	10
			F-17	6
			F-18	6
			F-19	7
			F-20	9
			F-22	7
96906	MS27024-15	4730-00-938-7998	F-1	28
96906	MS27024-17	4730-00-088-9286	F-1	30
96906	MS27024-9	4730-00-980-9411	F-1	32
96906	MS27025-11	4730-00-360-0943	F-10	3
96906	MS27025-15	4730-00-360-0942	F-3	3
			F-7	3
			F-8	3
96906	MS27025-17		F-2	3
			F-4	3
			F-5	3
96906	MS27025-5	4730-01-223-4931	F-9	3
96906	MS27025-9	4730-00-948-1722	F-6	3
96906	MS27026-11	4730-00-088-9285	F-15	3
96906	MS27026-15	4730-00-873-4551	F-1	29
96906	MS27026-17	4730-00-649-9118	F-1	31
96906	MS27026-9	4730-00-203-1010	F-1	33
			F-14	3
96906	MS27027-15	4730-00-889-2378	F-11	24
			F-21	13
96906	MS27027-17	4730-00-840-5348	F-12	24
			F-17	10
			F-18	9
			F-19	10
			F-20	13
96906	MS27028-11	4730-00-649-9100	F-1	22
			F-10	6
			F-15	6
96906	MS27028-15	4730-00-929-0787	F-3	6
			F-7	6
			F-8	6
			F-11	16
			F-13	6
			F-16	8
			F-20	6
			F-21	10
			F-22	12
96906	MS27028-17	4730-00-640-6156	F-1	8
			F-2	6
			F-4	6
			F-5	6
			F-12	16
			F-16	12
			F-17	8
			F-18	8

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
96906	MS27028-17	4730-00-640-6156	F-19	6
			F-20	10
			F-22	8
96906	MS27028-5	4730-00-929-0791	F-9	6
96906	MS27028-9	4730-00-869-5246	F-6	6
			F-14	6
			F-21	6
96906	MS27029-11	4730-00-915-5127	F-10	1
			F-15	1
96906	MS27029-15	4730-00-929-0790	F-3	1
			F-7	1
			F-8	1
			F-11	25
			F-13	1
			F-21	14
96906	MS27029-17	4730-00-640-6188	F-1	6
			F-2	1
			F-4	1
			F-5	1
			F-12	25
			F-17	11
			F-18	10
			F-19	11
			F-20	14
96906	MS27029-5	4730-00-360-0715	F-9	1
96906	MS27029-9	4730-00-823-5316	F-6	1
			F-14	1
96906	MS27030-3	5330-00-088-9167	F-9	2
96906	MS27030-5	5330-00-360-0595	F-6	2
			F-14	2
			F-21	5
96906	MS27030-6	5330-00-612-2414	F-10	2
			F-15	2
96906	MS27030-8	5330-00-088-9166	F-3	2
			F-7	2
			F-8	2
			F-11	17
			F-13	2
			F-16	7
			F-20	5
			F-21	11
			F-22	11
96906	MS27030-9	5330-00-899-4509	F-2	2
			F-4	2
			F-5	2
			F-12	17
			F-16	11
			F-17	7
			F-18	7
			F-19	5
			F-20	11

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
96906	MS27030-9	5330-00-899-4509	F-22	9
96906	MS27183-13	5310-00-087-7493	F-11	21
			F-12	21
			F-16	4
			F-17	4
			F-18	4
			F-19	4
			F-20	4
			F-21	4
			F-22	4
96906	MS35338-46	5310-00-637-9541	F-11	19
			F-12	19
			F-16	2
			F-17	2
			F-18	2
			F-19	2
			F-20	2
			F-21	2
			F-22	2
96906	MS35691-17	5310-00-851-2682	F-11	18
			F-12	18
			F-16	1
			F-17	1
			F-18	1
			F-19	1
			F-20	1
			F-21	1
			F-22	1
96906	MS39352-15	4730-01-078-8130	F-1	34
96906	MS39352-19	4730-00-935-1613	F-1	35
96906	MS49000-1	4730-00-951-3293	F-1	14
96906	MS49000-21	4730-01-079-8234	F-1	36
96906	MS49000-3	4730-00-951-3294	F-1	18
96906	MS90725-64		F-11	20
			F-12	20
			F-16	3
			F-17	3
			F-18	3
			F-19	3
			F-20	3
			F-21	3
			F-22	3
81349	M11588-03-05-300		F-1	24
			F-9	
81349	M11588-03-07-300	4720-01-215-7956	F-1	26
			F-6	
81349	M11588-03-08-300		F-1	20
			F-10	
81349	M11588-03-10-32	4720-00-083-0048	F-7	
81349	M11588-03-10-600		F-1	15
			F-8	

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
81349	M11588-03-11-300		F-1	11
			F-5	
81349	M11588-03-11-600		F-1	9
			F-4	
81349	M370B08B2A1440	4720-00-083-0045	F-1	2
			F-3	
81349	M370B09B2A1200	4720-00-529-5538	F-2	
81349	M370B09B2A1400		F-1	4
81718	NO.28-R		F-23	12
81718	NO.616-W		F-23	19
77414	P38	5120-00-359-6587	F-24	1
77414	0-16S	4730-00-965-6520	F-3	4
98991	1 1/2-436-T-SE		F-14	4
05443	10231-B		F-11	22
			F-21	8
05443	10231-C	5330-01-207-8302	F-12	23
			F-16	6
			F-17	5
			F-18	5
			F-19	8
			F-20	8
			F-22	6
01413	112704-15	4720-00-864-0300	F-1	16
97403	13216E8243	4730-00-840-5346	F-16	13
			F-19	9
			F-20	12
97403	13222E9881	4820-01-096-1069	F-1	3
			F-11	
97403	13222E9882		F-12	
97403	13222E9883	4730-01-096-1038	F-1	21
97403	13222E9884	4730-01-096-1039	F-1	17
			F-21	
97403	13222E9885	4730-01-096-1040	F-1	13
			F-20	
97403	13222E9886	4820-01-102-8757	F-1	25
			F-14	
97403	13222E9888	4820-01-098-4925	F-1	27
			F-13	
97403	13222E9889	4730-01-096-1041	F-1	1
			F-16	
97403	13222E9893	4730-01-096-1045	F-22	
97403	133222E9887	4820-01-098-3952	F-15	
24869	1530ALT	4730-01-207-8304	F-21	7
98991	2-435-T-SE		F-1	19
98991	2-436-T-SE		F-15	4
77414	205		BULK	1
98991	3-4566-T-SE		F-13	4
92003	3020-B		F-13	3
24869	3020F	4730-01-207-8303	F-13	5
81718	318F4	4730-00-075-2421	F-16	5
			F-17	9

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
81718	318F4	4730-00-075-2421	F-18	11
			F-22	5
76364	3198-C	5310-01-077-9426	F-12	7
81718	320F3	4730-00-075-2420	F-21	12
76364	363-G	4930-00-653-0407	F-11	2
76364	363-H	5330-00-367-5005	F-12	2
76364	38084-C	5310-01-077-9647	F-12	8
76364	4256-L	5305-01-079-6771	F-12	9
81337	5-14-676ASSYH		F-1	10
			F-17	
81337	5-14-676B		F-1	5
81337	5-14-676C		F-1	7
			F-19	
81337	5-14-676J		F-1	12
			F-18	
51744	517442025-L		F-11	12
51744	517442025-N		F-12	12
51744	5174423194-L		F-11	10
51744	5174423194-N		F-12	10
51744	5174426100-N		F-12	13
51744	5174426264-L		F-11	13
51744	517442855-L		F-12	4
51744	517442864-L		F-11	4
51744	517443042-L		F-11	14
51744	517443042-N		F-12	14
51744	517443116-M		F-11	6
			F-12	6
51744	517443198-B		F-11	7
51744	5174438084-B		F-11	8
51744	517444247-E		F-11	9
51744	517447660-K		F-11	5
			F-12	5
51744	5174484168-L		F-11	15
51744	5174484168-N		F-12	15
81718	633LAT3X4	4730-00-075-2423	F-16	9
			F-20	7
			F-22	10
76364	65107-K	5330-00-400-3513	F-12	1
76364	6593-L	5330-00-889-5483	F-11	1
76364	6682-L	5330-00-563-8023	F-11	11
76364	6686-N	5330-00-346-2732	F-12	11
81718	676-FR-4IN	4820-00-766-8191	F-12	
76364	7013-G	5360-01-207-8294	F-11	3
76364	7013-H	5360-00-653-0395	F-12	3
81718	811GA1	4930-00-901-1053	F-1	23
			F-23	

INDEX

INDEX (cont)

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
04655

DISTRIBUTION:
To be distributed in accordance with DA Form 12–25–E, block no. 6141, requirements for TM 10–4930-232–12&P.

★U.S. GOVERNMENT PRINTING OFFICE 1993 755 120/60240

TEAR ALONG PERFORATED LINE

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE

BE EXACT. . .PIN-POINT WHERE IT IS

PAGE NO.	PARA-GRAPH	FIGURE NO	TABLE NO.

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE:

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

P.S.—IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

PIN: 071536-002

This fine document...

Was brought to you by me:

Liberated Manuals -- free army and government manuals

Why do I do it? I am tired of sleazy CD-ROM sellers, who take publicly available information, slap “watermarks” and other junk on it, and sell it. Those masters of search engine manipulation make sure that their sites that sell free information, come up first in search engines. They did not create it... They did not even scan it... Why should they get your money? Why are not letting you give those free manuals to your friends?

I am setting this document FREE. This document was made by the US Government and is NOT protected by Copyright. Feel free to share, republish, sell and so on.

I am not asking you for donations, fees or handouts. If you can, please provide a link to liberatedmanuals.com, so that free manuals come up first in search engines:

<A HREF=http://www.liberatedmanuals.com/>Free Military and Government Manuals</A>

- Sincerely
  Igor Chudov
  http://igor.chudov.com/
- Chicago Machinery Movers