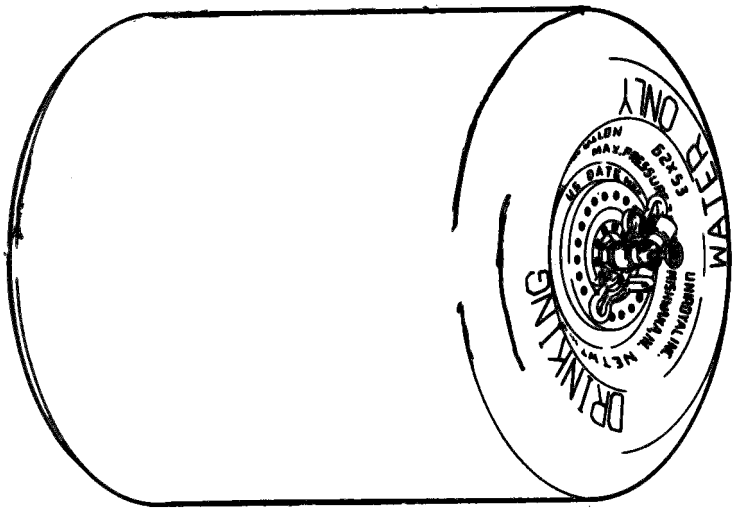
This copy is a reprint which includes current pages from changes 1 through 3.

TM 10-8110-202-13 & P

TECHNICAL MANUAL

OPERATOR'S, ORGANIZATIONAL, AND DIRECT SUPPORT MAINTENANCE MANUAL AND REPAIR PARTS AND SPECIAL TOOLS LIST



DRUM, FABRIC, COLLAPSIBLE, DRINKING WATER, 500 GALLON CAPACITY MODEL RD-610 (NSN 8110-01-122-0015)

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15 DECEMBER 1987

CHANGE

NO. 5

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WASHINGTON, D.C., 14 JUNE 1996

Operator, Organizational, and Direct Support
Maintenance Manual and Repair Parts and Special Tools List

DRUM, FABRIC, COLLAPSIBLE: DRINKING WATER
500 GALLON CAPACITY, MODEL GTA/WD500-S/01 (NSN 8110-01-409-0789),
MODELS RD-610 AND M43699-02,
(NSN 8110-01-122-0015)
KIT, TIEDOWN (NSN 8110-00-856-6245)
REPAIR KIT, EMERGENCY, TYPE I (NSN 5430-01-114-5392)
REPAIR KIT, EMERGENCY, TYPE II (NSN 5430-01-114-6668)
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5-5 and 5-6	5-5 and 5-6
--	5-35 through 5-38
B-3 and B-4	B-3 and B-4
C-7 and C-8	C-7 and C-8.
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500 GALLON CAPACITY, MODELS RD-610AND M43699-02
(NSN 8110-01-122-0015)
KIT, TIEDOWN (NSN 8110-00-856-6245)
REPAIR KIT, EMERGENCY, TYPE I (NSN 5340-01-114-5392)
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Operator, Organizational, and Direct Support
Maintenance Manual
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(NSN 8110-01-122-0015)
KIT, TIEDOWN (NSN 8110-00-856-6245)
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DRUM, FABRIC, COLLAPSIBLE: DRINKING WATER,
500 GALLON CAPACITY, MODELS RD-610 AND M43699-02
(NSN 8110-01-122-0015)

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---	1-5/1-6
2-1 through 2-6	2-1 through 2-6
2-11 through 2-14	2-11 through 2-14
5-5 through 5-8	5-5 through 5-8
5-11 and 5-12	5-11 and 5-12
5-21 and 5-22	5-21 and 5-22
---	5-29 through 5-34
B-3 through B-5/B-6	B-3 through B-5/B-6
C-9 and C-10	C-9 and C-10
F-1 and F-2	F-1 and F-2
Index 1 and Index 2	Index 1 and Index 2

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DISTRIBUTION:
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WARNING

DRINKING WATER ONLY

The drum is designed for use with drinking water only. Filling the drum with any other liquid could lead to sickness or death of your fellow crewmembers.

BEFORE DISPENSING WATER TO PERSONNEL

Check to make sure that the drum has been used only for drinking water. Failure to check the drum could lead to sickness or death. If there is any question about the quality of the water, do not use the drum.

Check coupler valve and adapter assembly for dirt, dust and any foreign matter which may contaminate drinking water. All coupler valve and assembly parts must be cleaned with a mild non-toxic detergent and assembled on a clean surface. Remember that the coupler valve and adapter assembly will be used to dispense drinking water. Dirty or contaminated parts could cause sickness or death to personnel drinking water from the drum. Replace coupler valve or adapter assembly if required.

METHYL ETHYL KETONE (MEK)

Methyl ethyl ketone (MEK) used for cleaning drum body repair areas is extremely flammable and is potentially dangerous to personnel and property. Keep container closed. Use in a well-ventilated area as the fumes are dangerous if inhaled. Avoid repeated and prolonged skin contact. Flash point of MEK is 240F (4.40C).

TOLUENE

Toluene used for cleaning drum body repair areas is extremely flammable and is potentially dangerous to personnel and property. Keep container closed. Use in a well-ventilated area as the fumes are dangerous if inhaled. Avoid repeated and prolonged skin contact. Flash point of Toluene is 450F (7.220C).

PREVENT INJURY

Put protective hood over your face before using rotary cutter to repair drum body.

Wear eye protection when removing or installing helical spring in the adapter assembly. Spring is compressed inside adapter body.

TECHNICAL MANUAL

NO. 10-8110-202-13&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *15 December 1987*

Operator, Organizational, and Direct Support Maintenance Manual (and Repair Parts and Special Tools List DRUM, FABRIC, COLLAPSIBLE: DRINKING WATER 500 GALLON CAPACITY, MODEL GTAiWD500-S/01 (NSN 8110-01-409-0789) MODELS RD-610 AND M43699-02 (NSN 8110-01-122-0015) KIT, TIEDOWN (NSN 8110-00-856-6245) REPAIR KIT, EMERGENCY, TYPE I (NSN 5430-01-114-5392) REPAIR KIT, EMERGENCY, TYPE II (NSN 5430-01-114-6668) TOWING AND LIFTING YOKE (NSN 8110-00-856-6243)

Current as of 30 November 1995

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 OA Form 2028 (Recommended Changes to Publications and Blank Forms), or OA 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 <mpmte/oavma28@st-louisemh7.army.mil>. A reply will be furnished directly to you. Instructions for sending electronic 2028 may be found at the back of this manual immediately preceding the hard copy 2028.

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CHAPTER 1
INTRODUCTION

SECTION I: GENERAL INFORMATION

1-1. SCOPE

Type of manual: Operator's, Organizational, and Direct Support Maintenance Manual and Repair Parts and Special Tools List

Model Number and Equipment Name: MODEL RD-610 Drum, Fabric, Collapsible: Drinking Water, 500 Gallon Capacity, manufactured by Uniroyal Plastics Company, Inc., Mishawaka, Indiana 46544; and MODEL M43699-02 Drum, Fabric, Collapsible: Drinking Water, 500 Gallon Capacity, manufactured by American Fuel Cell and Coated Fabrics Company, Magnolia, Arkansas 71753; and MODEL GTAIWD500OOS/01 Drum, Fabric, Collapsible: Drinking Water, 500 Gallon Capacity, manufactured by GTA Containers, Inc., South Bend, Indiana 46601.

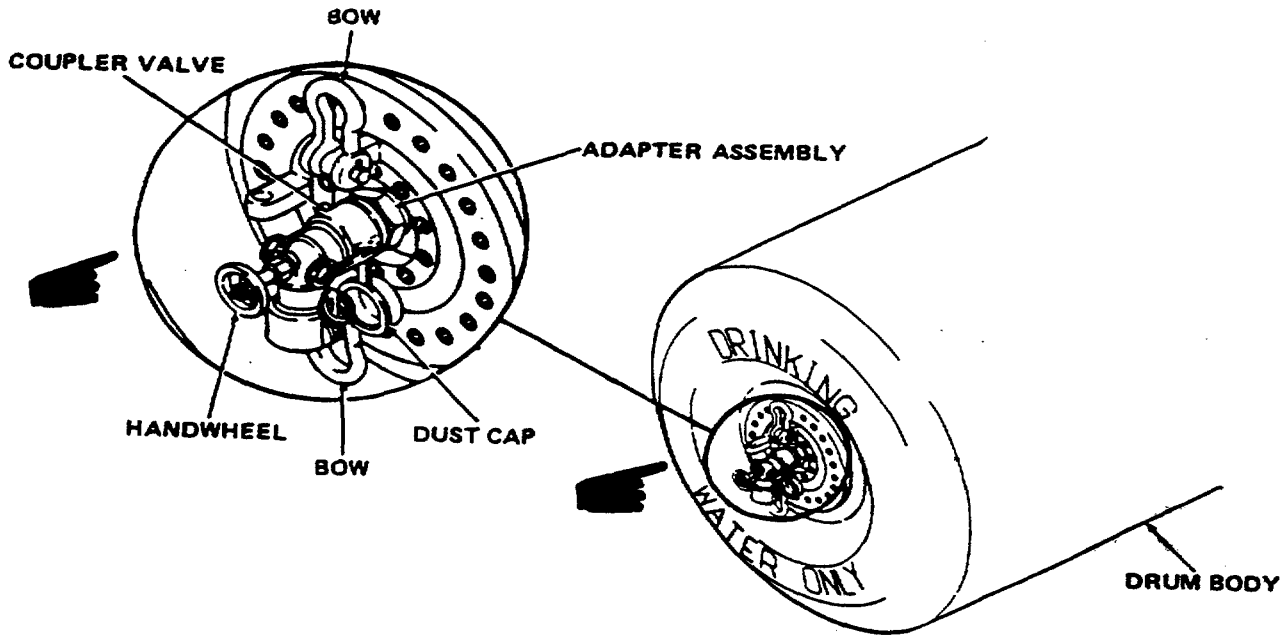
Purpose of the Equipment: Transports, stores, and dispenses drinking water. Empty drum collapses to 15% of filled size for easy storage and transportation.

1-2. MAINTENANCE FORMS AND RECORDS

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

1-3. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR'S)

If your drum needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment Let us know why you don't like the design or performance. Put it on an SF 368 (quality Deficiency Report). Mail it to us at: Commander, Headquarters, U.S. Army Aviation and Troop Command,, Ar7N: AMSAT-I-MDO, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. We will send you a reply.



MODELS RD-610, M4369902,
AND GTA/WD500-S/01 FABRIC DRUM

1-4. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

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

1-5. PREPARATION FOR STORAGE OR SHIPMENT

Instructions for preparation for storage and shipment are in paragraph 4-14.

1-6. NOMENCLATURE CROSS-REFERENCE LIST

For precise identification, simplified nomenclature has been established for clarity and is shown in the nomenclature cross-reference list.

NOMENCLATURE CROSS-REFERENCE LIST

This listing includes nomenclature cross-references used in this manual.

Common Name	Official Nomenclature
Coupler valve	Valve Assembly, 2X2
Adapter	Adapter Assembly
Drum	Drum, Fabric, Collapsible: Drinking Water, 500 Gallon Capacity

Section II. EQUIPMENT DESCRIPTION AND DATA

1-7. PURPOSE OF DRUM

Stores, transports, and dispenses drinking water. Ends of the drum have adapters for attaching coupler valves, which may be used to fill or dispense drinking water. A chiller may be connected for cooling the water.

1-8. CHARACTERISTICS, CAPABILITIES, AND FEATURES

- **Stores drinking water either indoors or outdoors.**
- **Transports drinking water by towing or trucking.**
- **Dispenses water either directly or through chiller.**
- **Light weight.**
- **Collapsible.**
- **Suspension capability from either end.**
- **Drop capability.**

1-9. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

(A) DRUM. Holds up to 500 gallons of drinking water.

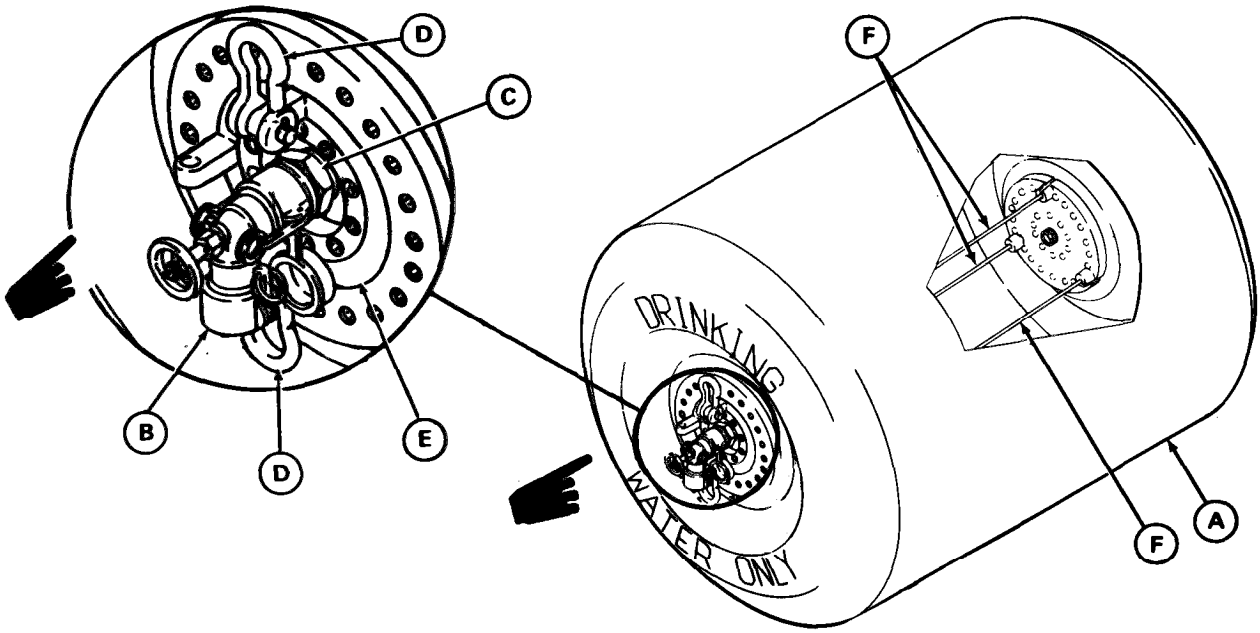
(B) COUPLER VALVE. Manual valve for filling and dispensing drinking water.

(C) ADAPTER ASSEMBLY. Contains check valve which closes when coupler valve is removed.

(D) BOWS. Means for suspending/lifting or tying down drum from either end. Mounted on swivel plate.

(E) SWIVEL PLATE. Provides attaching points for bows and tow bar.

(F) CABLE ASSEMBLIES. Limits endwise expansion of drum and controls its shape.



COMPONENTS OF DRUM

1-10. EQUIPMENT DATA (MODEL RD-610)

a. ***Drum.***

Manufacturer	**Uniroyal Plastics Company, Inc.**
Model number	**RD-61O**
Capacity	**500 gallons (1895 liters)**
Working pressure	**4.0 to 5.0 psi (0.2812 to 0.3515 kg/cm^2)**
Maximum proof pressure	**30 psi (2.109 kg/cm^2)**
Maximum towing speed	**10 mph (16 kilometers per hour)**
Overall dimensions and weight (filled).	
Length, maximum	**80.0 in. (2.03 m)**
Diameter, maximum	**47.0 in. (1.19 m)**
Weight	**4645.0 lb (2107 kg)**
Cubage	**70.0 cu ft (1.98 m^3)**
Vertical drop capability (filled)	**12.5 ft (3.81 m)**

Weight (empty)	
Crated	365.0 lb 166 kg) max
Uncrated	275.0 lb 125 kg) max
Dimensions (crated)	
Length	75.0 in. (1,91 m)
Width	33.0 in. (0.84 m)
Height	22.0 in. (0.56 m)
Cubage	31.5 cu ft (0.89 m')

b. *Repair Kit.*

Length	10.0 in. (0.25 m)
Width	7.0 in. (0.18 m)
Weight	1.5 lb (0.68 kg)

1-10.1. EQUIPMENT DATA (MODEL M43699-02)

a. *Drum.*

Manufacturer	American Fuel Cell and Coated Fabrics Company (Amfuel®)
Model number	M43699-02
Capacity	500 gallons (1895 liters)
Working pressure	4.0 to 5.0 psi (0.2812 to 0.3515 kg/cm^2)
Maximum proof pressure	30 psi (2.109 kg/cm^2)
Maximum towing speed	10 mph (16 kilometers per hour)
Overall dimensions and weight (filled)	
Length, maximum	58 in. (1.47 m)
Diameter, maximum	55 in. (1.40 m)
Weight	4432 lb (2010 kg)
Cubaqe	67 cu ft (1.89 m')
Vertical_drop capability (filled/horizontally positioned	5ft(1.52m)
Weight (empty)	
Crated	315.0 lb (143 kg) max
Uncrated	230.0 lb (104 kg) max
Dimensions (crated)	
Length	80.5 in. (2.04 m)
Width	41.5 in. (1.05 m)
Height:	18.5 in. (0.47 m)
Cubage	35.8 cu ft (1.01 m^3)

b. *Repair Kit.*

Length	10.0 in. (25 cm)
Width	7.0 in. (18 cm)
Weight:	1.5 lb (0.68 kg)

1-10.2. EQUIPMENT DATA (MODEL GTA/WD500-SI01)

a. Drum

Manufacturer ..... GTA Containers, Inc.
Model Number ..... GTA /WD500-S01
Capacity ..... 500 gallons (1892.5 liters)
Working Pressure ..... 4.0 to 5.0 psi (0.2812 to 0.3515 kg. cm3)
Maximum Proof Pressure ..... 30 psi (2.109 kg. cm.2)
Maximum Towing Speed ..... 10 mph (16 kilometers per hour)
Overall dimensions and weight (filled)
- Length, maximum ..... 58 in. (1.47 m.)
- Diameter, maximum ..... 55 in. (1.397 m.)

Weight ..... 4344 lbs. (1974.5 kg.)
Cubage 67cu.ft. (1.89 m3)
Vertical Drop Capability (filled) ..... 12.5 ft (3.81 m)
Weight (empty)
- Crated, including tie-down assembly ..... 420 lbs. (190.9 kg)
- Uncrated, drum only ..... 220 lbs. (100 kg)

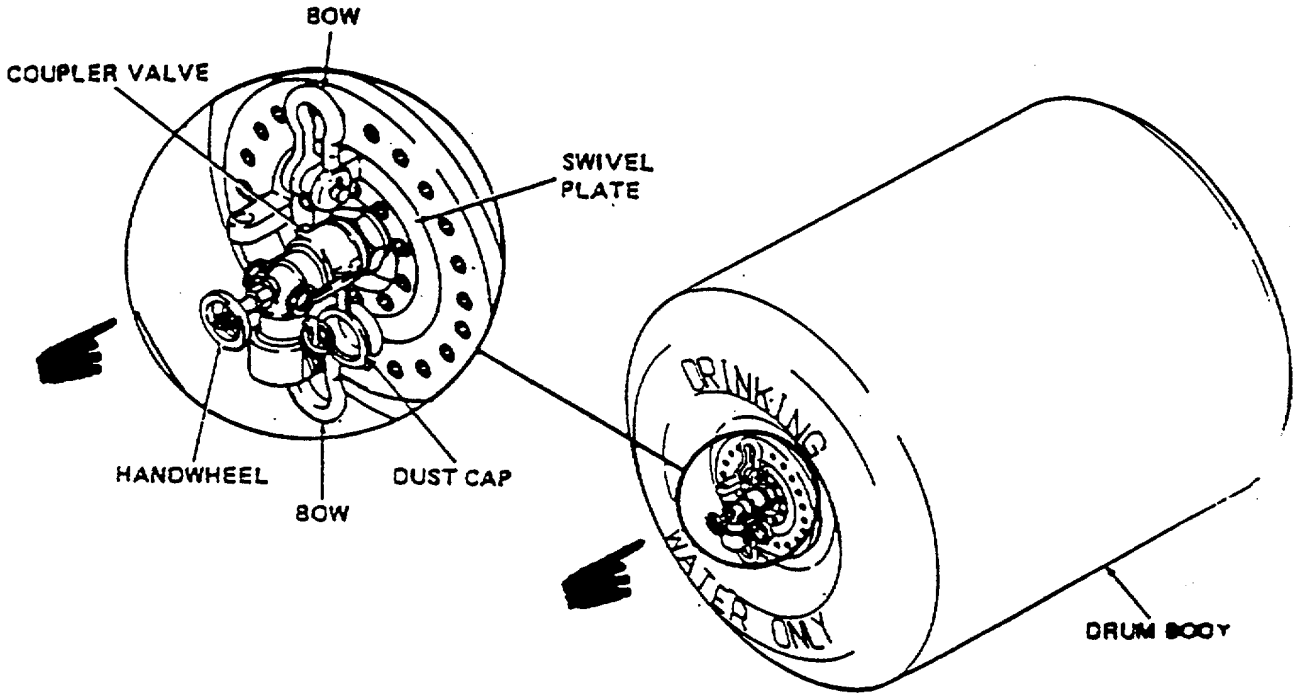
Dimensions (crated)
- Length ..... 81.25 in. (2.05 m)
- Width ..... 48 in. (1.22 m)
- Height ..... 16 in. (0.41 m)
- Cubage ..... 36.11 cu .ft. (1.02 m3)

b. Repair Kit

Length ..... 10.0 in. (0.25 m)
Width ..... 7.0 in. (0.18 m)
Weight ..... 1.5 lb. (0.68 kg)

Section III. TECHNICAL PRINCIPLES OF OPERATION

1.11. PRINCIPLES OF OPERATION AND USE



COUPLER VALVE - used to fill and dispense water from the fabric drum.

HANOWHEEL - manual control for coupler valve.

BOWS - located at both ends of drum; used to lift, suspend or tie down drum.

SWIVEL PLATE - contains lugs for mounting shackles and for attaching tow bar. Swivel rotates for towing drum behind vehicle.

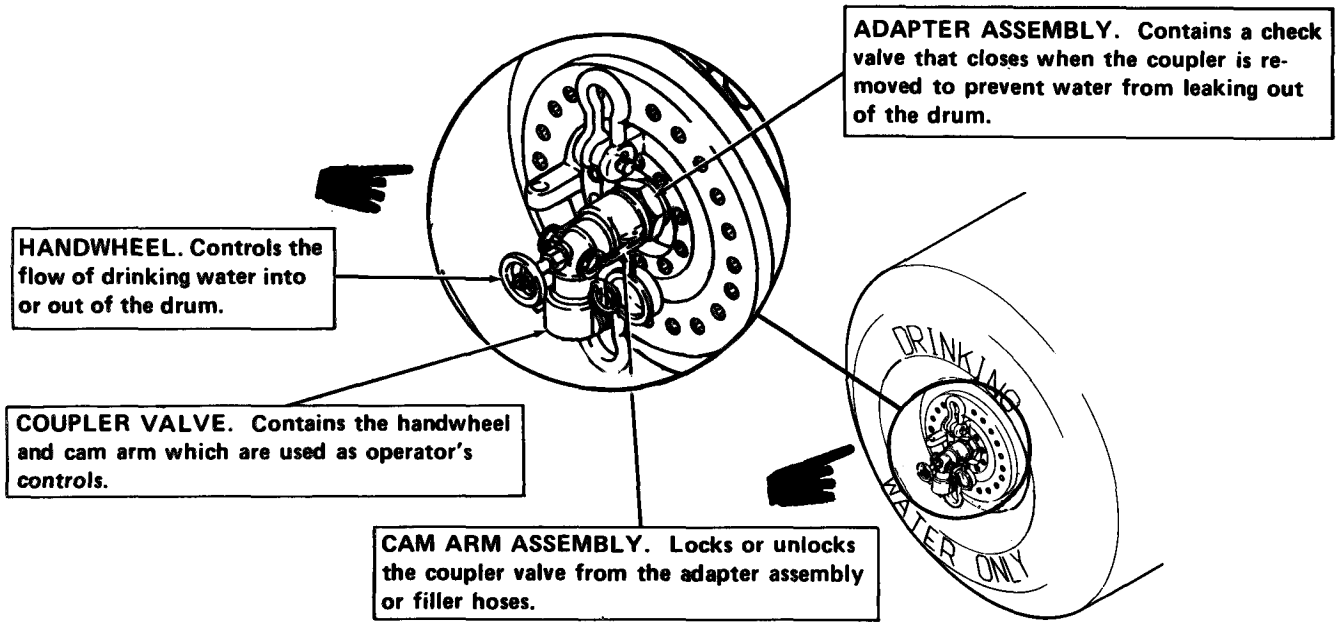
DRUM BODY - shaped like a large, wide wheel to transport drinking water by rolling.

CHAPTER 2
OPERATING INSTRUCTIONS

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

WARNING

The drum is only authorized to be filled with DRINKING WATER. The drum is designed and permanently labeled for use with DRINKING WATER ONLY. Filling the drum with any other liquid may cause sickness or death of your fellow crewmembers.



SectionII. OPERATOR/CREW Preventive MAINTENANCE CHECKS AND SERVICES (PMCS)

2-1. GENERAL

Preventive Maintenance Checks and Services (PMCS) are essential to the efficient operation of the drum and to prevent possible damage that might occur through neglect or failure to observe warning symptoms in a timely manner. Checks and services are limited to those functions which are described in Table 2-1. PMCS shall be performed in the following intervals of drum operation:

a. *Before you operate.* Always keep in mind the WARNINGS and CAUTIONS. Perform your before (B) PMCS.

b. *While you operate.* Always keep in mind the WARNINGS and CAUTIONS. Perform your during (D) PMCS.

c. After you operate. Be sure to perform your after (A) PMCS.

d. If your equipment fails to operate. Troubleshoot with proper equipment. Report any deficiencies using the proper forms. See DA Pam 738-750.

2-2. PMCS PROCEDURES

a. Table 2-1 lists the preventive maintenance checks and services which shall be performed at specified intervals by the operator/crew.

b. Item numbers are assigned to each check or service task. These numbers are to be used as a source of item numbers for the TM Number column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording results of PMCS.

c. The service intervals are divided into three categories; B - Before Operation; D - During Operation; A - After Operation. A dot (Ž) is placed in the INTERVAL column to indicate at what interval a particular check or service is to be performed. If the same check or service is made in two or more intervals, a dot is placed in each applicable column.

d. The ITEM TO BE INSPECTED column lists the item to be checked or serviced. This column is combined with the PROCEDURE column.

e. The PROCEDURE column describes the procedure by which the check or service is to be performed. Illustrations are included to assist in locating that part of the equipment requiring the check or service.

f. The EQUIPMENT IS NOT READY/AVAILABLE IF: column contains conditions that make the equipment not ready/available for readiness reporting purposes or will deny use of drum until corrective action is taken.

g. Notify your supervisor if any of the conditions in the “Equipment Is Not Ready/Available If:" column exist.

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

B – Before Operation **D - During Operation** **A - After Operation**

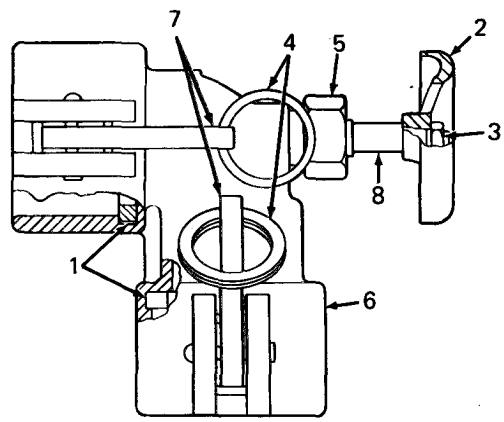
Item No.	Interval B	Interval D	Interval A	ITEM TO BE INSPECTED PROCEDURE	Equipment is Not Ready/ Available If:
1	•	Ž		Drum Assembly.	
				WARNING	
				The drum is authorized to be filled only with drinking water. Use of the drum for any other liquid may cause sickness or death of crewmembers.	
				Check whether the drum has been used with any other liquid other than drinking water. Failure to check the, drum could lead to sickness or death of your fellow crewmembers.	Any liquid that is not known to be water is located in drum.
2				Coupler Valve.	
				Coupler Valve Not Installed Onto Drum.	
					
				Check both coupler valves for:	Missing or damaged gasket (1), cracked or broken valve body (6), missing or damaged cam arm assembly (7), or if valve stem (8) binds or cannot be rotated.
	•			Missing or damaged gaskets (1).	
	•			Cracked or damaged handwheel (2).	
	•			Loose or missing handwheel nut (3).	
	•			Damaged or missing pull rings (4).	
	•			Loose packing nut (5).	
	•			Cracked or broken valve body (6).	
	•	Ž		Excessive wear or looseness of cam arm assemblies (7).	
	•	Ž		Binding or excessive looseness of valve stem (8), by turning handwheel (2).	

Table 2-1. Operator/Crew Preventive Maintenance Checks and Services - Continued

B - Before Operation **D - During Operation** **A - After Operation**

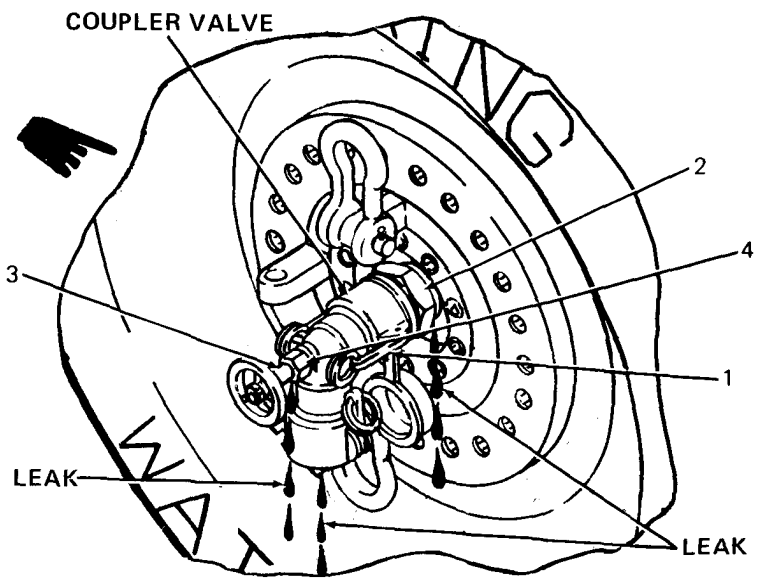
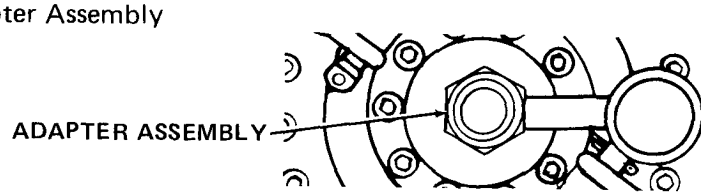
Item No.	Interval B	Interval D	Interval A	ITEM TO BE INSPECTED PROCEDURE	Equipment is Not Ready/ Available If:
				Coupler Valve Installed Onto Drum. 	
		Ž	•	Check both coupler valves for: Proper locking and unlocking operation of cam arm assemblies (1) when either installing or removing coupler valve from adapter assembly (2) or dispensing hose.	Cam arm assemblies will not properly lock coupler valve in place and if any leakage is discovered.
	•	•	•	Leaks where coupler valve connects to adapter assembly (2).	
	•	Ž		Leaks at coupler valve outlet when coupler valve is shut off.	
	•	Ž	•	Leaks at or around valve stem (3) and packing nut (4).	
3				Adapter Assembly 	
	•	Ž	•	Check adapter assemblies in both ends of drum for: Looseness and leakage.	Adapter assembly leaks or is loose.

Table 2-1. Oparator/Crew Preventive Maintenance Checks and Services - Continued

B - Before Operation **D - During Operation** **A - After Operation**

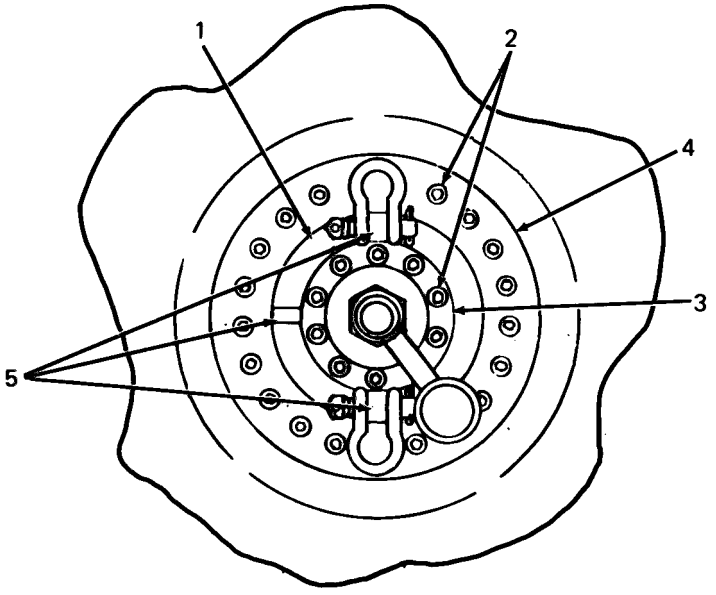
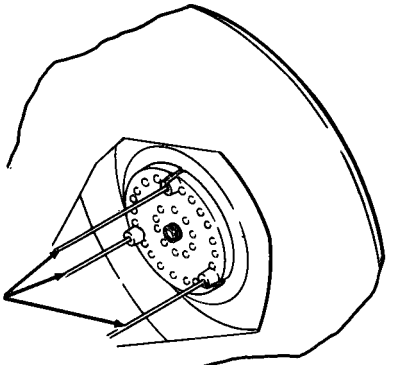
Item No.	Interval B	Interval D	Interval A	ITEM TO BE INSPECTED PROCEDURE	Equipment is Not Ready/ Available If:
4				Swivel Plate, Bearing Plate, and Closure Ring. 	
				Check both ends of the drum for:	
	•		Ž	Binding swivel plate (1).	Swivel plate (1) is binding or if swivel plate lug (5) for tow bar attachment is damaged.
	•			Loose or missing screws (2) in bearing plate (3) and closure ring (4).	
	•	Ž	Ž	Leaks at or around bearing plate (3) and closure ring (4).	Leaks are discovered.
	•		Ž	Damaged swivel plate lugs (5).	
5				Cable Assemblies. 	
	•	Ž	Ž	Check whether drum assembly is misshapen or distorted, indicating damaged cable assemblies.	Drum assembly is misshapen or distorted.

Table 2-1. Operator/Crew Preventive Maintenance Checks and Services - Continued

B - Before Operation D - During Operation A - After Operation

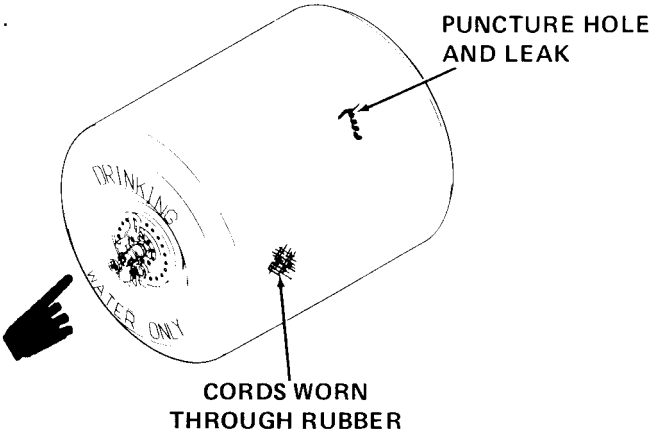
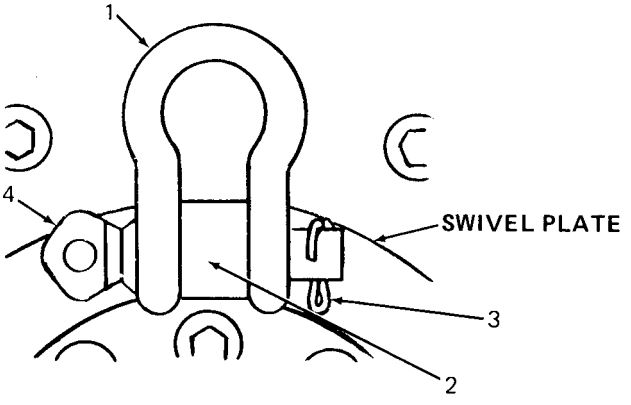
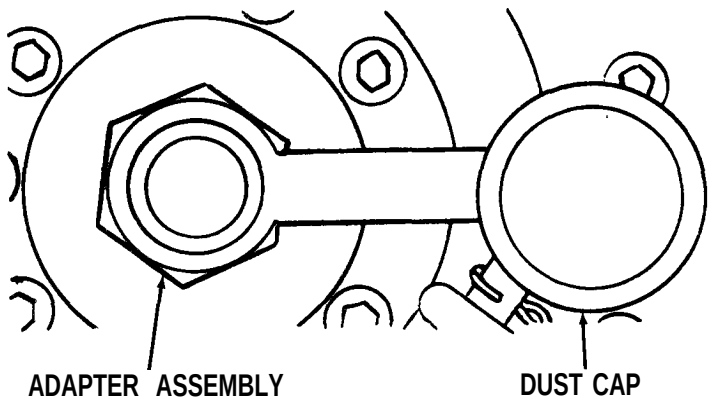
Item No.	Interval B	Interval D	Interval A	ITEM TO BE INSPECTED PROCEDURE	Equipment is Not Ready/ Available If:
6				Drum Body.  Check entire drum body surface for:	
	•		•	Punctures and leaks coming from puncture holes.	Drum has punctures or excessive wear.
	•		•	Excessive wear. No fabric cords in drum body should be showing through rubber.	
7				Bow, Shackle Screw Pin, and Cotter  Check all four shackle assemblies for:	
	•		•	Damaged or missing bow (1). Bow should pivot easily in swivel plate lugs (2).	The shackle assemblies are damaged or missing, or the cotter pin is missing.
	•			Missing cotter pin (3) in shackle screw pin (4).	
	•		•	Missing screw pin (4) or screw pin with damaged threads.	

Table 2-1. Operator/Crew Preventive Maintenance Checks and Services - Continued

B - Before Operation D - During Operation A - After Operation

[tern No.	Interval B	Interval D	Interval A	ITEM TO BE INSPECTED PROCEDURE	Equipment is Not Ready/ Available If:
8				Dust Cap.  Check for cracks, broken cap, and damaged or broken strap or loop.	

Section III. OPERATION UNDER USUAL CONDITIONS

2-3. FILLING THE DRUM

NOTE

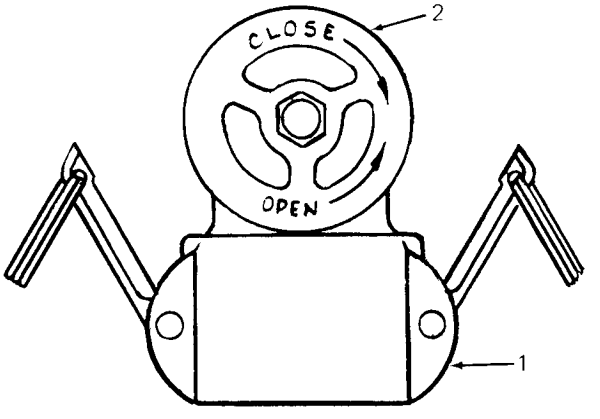
Services of organizational maintenance should be used for original unpacking and inspection.

a. Perform preventive maintenance checks and services (PMCS). See Table 2-1.

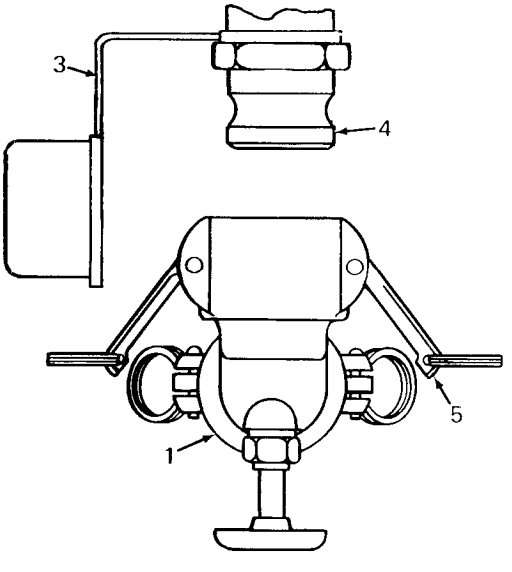
b. Locate the drum near source of water supply. Choose a site as level and firm as possible.

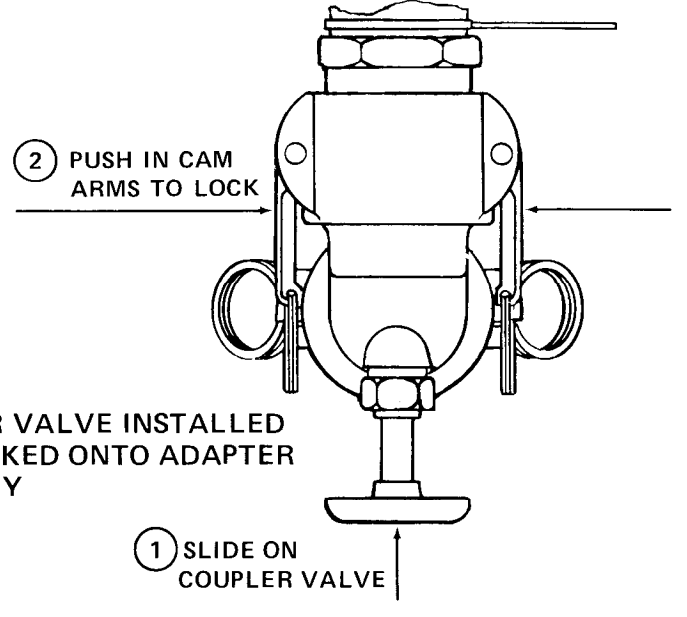
c. Fully collapse drum as follows:

(1) Take one of the two coupler valves (1) that come with the drum and turn its handwheel (2) counterclockwise all the way to completely open the coupler valve.



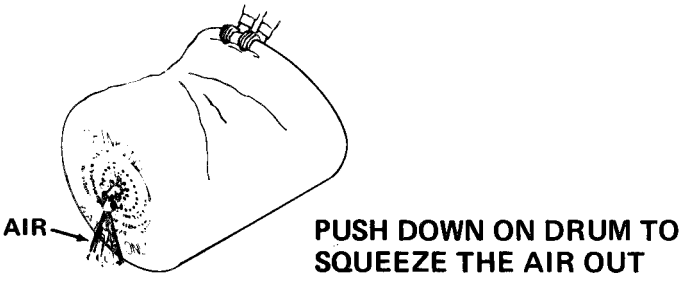
(2) At one end of the drum remove dust cap (3) from adapter assembly (4).



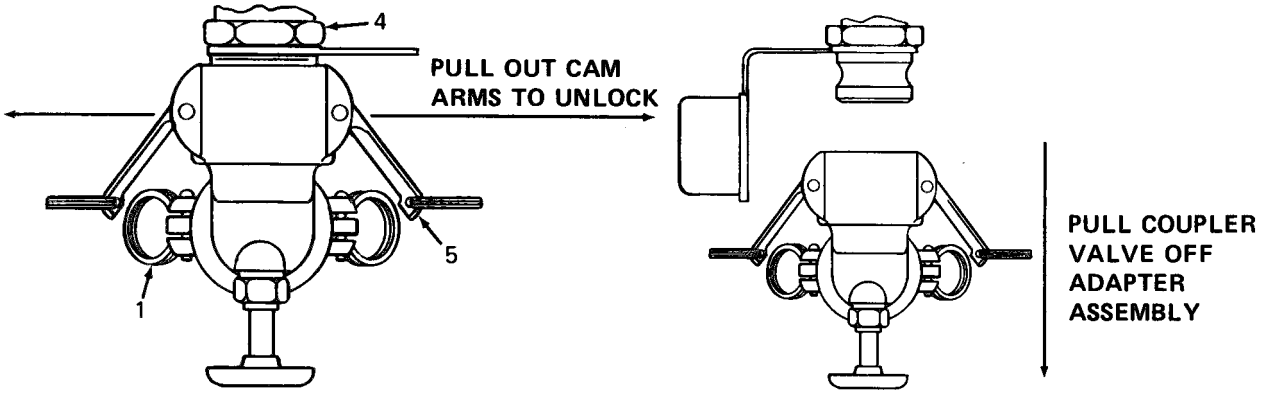


(3) Slide coupler valve (1) onto adapter assembly (4). Lock coupler valve (1) onto adapter assembly (4) by pushing in the cam arms (5).

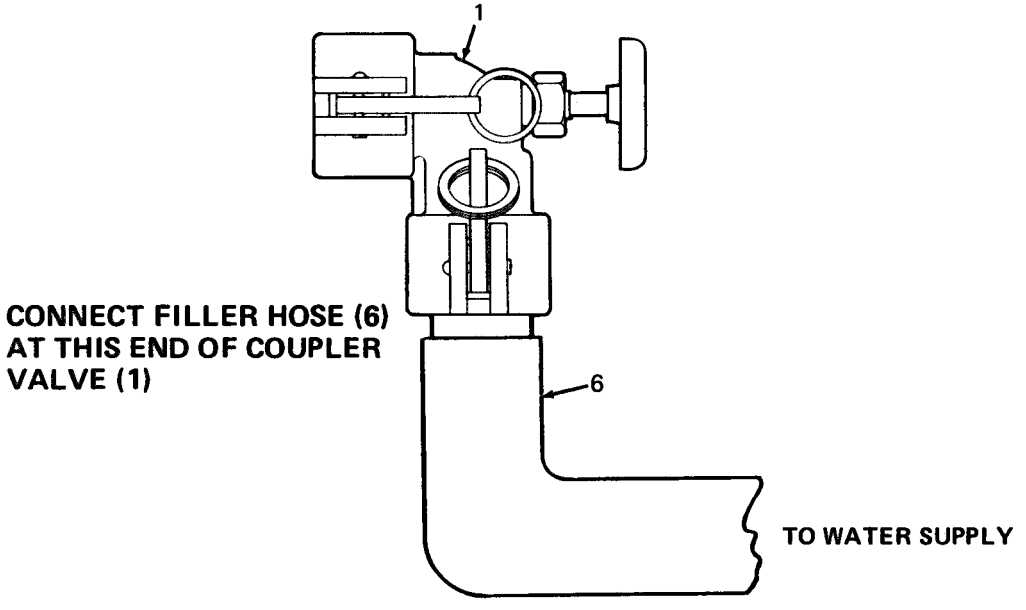
(4) Fully collapse the drum. Trapped air will rush out of the coupler valve (1).



(5) when the drum is fully collapsed, unlock and remove coupler valve (1) from adapter assembly (4). Unlock coupler valve (1) by pulling out cam arms (5). Pull coupler valve off drum.

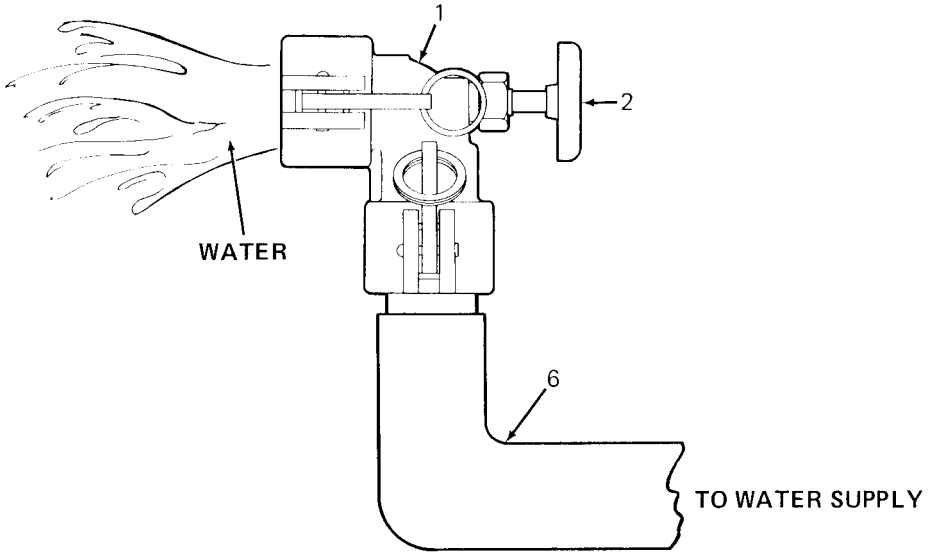


d. Lock courier valve (1) to drinking water supply filler hose (6). Lock the proper end of coupler valve (1) to filler hose (2) as illustrated below.



Refer to illustration on following page and remove air from filler hose (6) as follows. (This will prevent air in the filler hose from going into the drum, allowing more room in the drum for drinking

(1) With the coupler valve (1) locked onto the filler hose (6), turn the handwheel (2) clockwise all the way to close coupler valve.



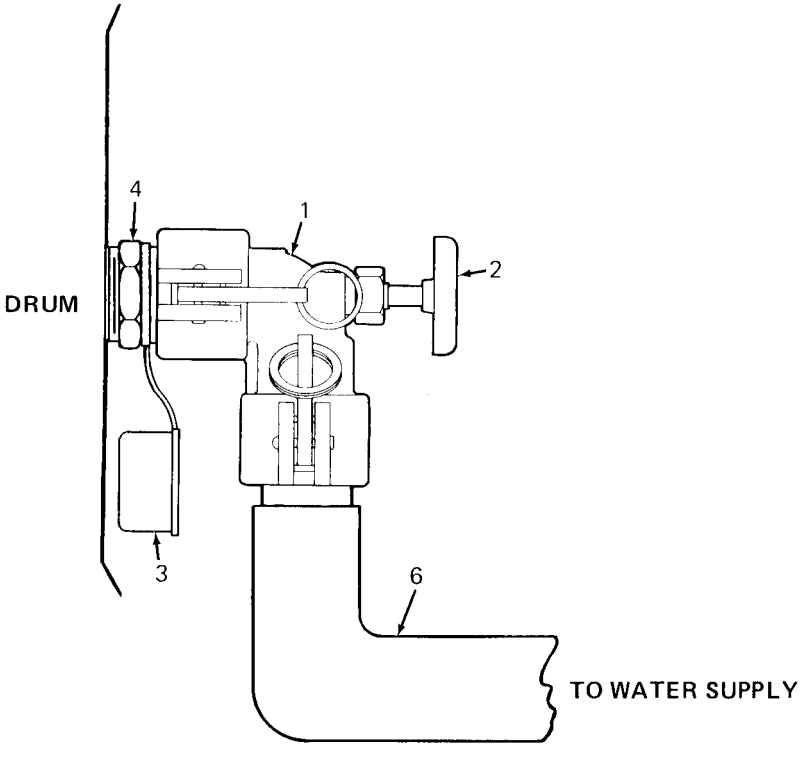
(2) Turn handwheel (2) counterclockwise two turns to slightly open coupler valve (1).

(3) Open valve at source of drinking water supply.

(4) When water flows from coupler valve (1), turn handwheel (2) clockwise to close coupler valve (1).

f. Lock coupler valve (1) onto adapter assembly (4).

g. Turn handwheel (2) counterclockwise all the way to open coupler valve (1) and allow drum to fill with drinking water.



h. When drum is completely filled (4.0-5.0 psi working pressure), turn handwheel (2) all the way clockwise to close coupler valve (1), thus shutting off water supply to the drum.

i. Unlock and remove coupler valve (1) from adapter assembly (4). Leave filler hose attached to the coupler valve and use this coupler valve to fill the other drums.

j. Install two coupler valves (1) onto filled drum.

k. Repeat steps c. through j. for each drum to be filled.

l. When last drum has been filled, shut off valve at drinking water source and disconnect filler hose (6) from the coupler valve (1) that was used to fill drums. Leave coupler valve installed on drum. Install another coupler valve onto the other end of drum.

CAUTION

Each drum comes with two coupler valves. After filling the drum leave the two coupler valves installed on the drum except during transportation. Remove the two coupler valves from the drum when it is being transported to prevent damage to the valves. During transport, the coupler valves must remain with the drum so they are not lot. Be sure coupler valves are protected from dirt and other foreign matter when not installed on the drum.

2-4. DISPENSING DRINKING WATER FROM DRUM

CAUTION

Do not overload transport vehicle with filled drums. Each model GTAIND500-S/01 filled drum weighs 4344 pounds (1974.5 kg). Each model RD-610 filled drum weighs 4645 pounds (2107 kg). Each Model M43699-02 filled drum weighs 4432 pounds (2010 kg).Check transport vehicle's weight limits before loading with drums.

a. Roll, tow, or otherwise transport filled drum to place of use.

b. Select a dispensing site that is as level and dirm as possible.

c. Perform daily Preventive Maintenance Checks and Services (PMCS). See Table 2-1.

d. Uncover one or both adapter assemblies (4) at either end of drum by removing dust caps (3).

e. Turn handwheel (2) all the way clockwise to close coupler valve (1).

WARNING

Check coupler valve (1) for dirt, dust, or any foreign matter which may contaminate drinking water. Clean or replace coupler valve if required.

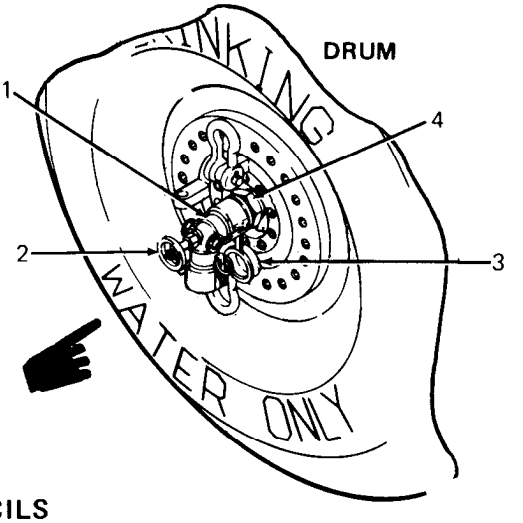
f. Install and lock a coupler valve (1) onto one or both adapter assemblies (4). See illustration to note which end of coupler valve (1) to install onto adapter assembly (4).

WARNING

Check whether the drum has been used with any liquid other than drinking water. Failure to check the drum could lead to sickness or death of your fellow crew-members. If there is any question about the quality of the water, do not use the drum.

g. Dispense drinking water from the drum by turning the handwheel (2) counterclockwise. Increase the flow of water by increasing the number of handwheel (2) counterclockwise turns. Shut off or decrease the flow of water by turning the handwheel (2) clockwise.

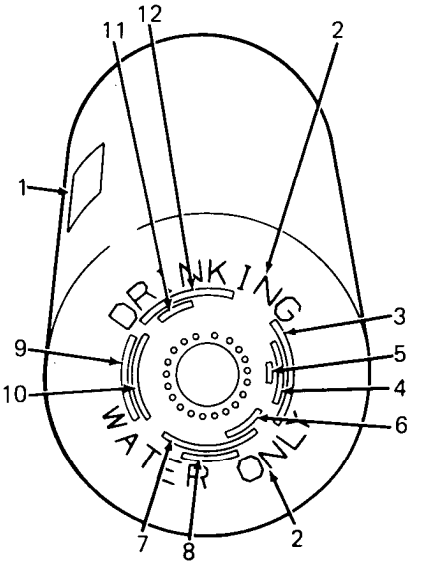
h. Push down on and collapse drum as water is emptied from it; this removes the maximum amount of water from the drum.



2-5. IDENTIFICATION LABELS AND INFORMATION STENCILS

Drum carries the following labels and stencils:

1. Identification label
2. DRINKING WATER ONLY (both ends of drum)
3. DRUM DRINKING WATER
4. 500 GAL SHORT
5. U.S.
6. Date manufactured
7. MAX. PRESSURE 30 PSIG
8. Size
9. Manufacturer's nameplate
10. Manufacturer's address plate
11. Net weight
12. Contract number



Section IV. OPERATION UNDER UNUSUAL CONDITIONS

2-6. GENERAL

The drum is designed to operate normally within a wide range of climatic conditions. However, some extreme conditions require special procedures to keep the drum operating properly and to prevent damage.

2-7. OPERATION IN EXTREME HEAT, ABOVE 135°F (57°C)

In addition to steps taken for operation under usual conditions (paragraphs 2-3 and 2-4), take the following steps as conditions allow:

CAUTION

It is important to take the following measures to keep the drum as cool as possible. As the water inside the drum heats up, the water will expand. This expansion of the water could increase the pressure inside the drum to a pressure above the maximum 5 psi operating pressure, which could lead to damage to the drum and loss of the valuable water supply.

a. Do not block air circulation around the drum.

b. Erect a tent or tarpaulin over drum to provide shade.

c. Place drum under shade of trees or cover with leafy branches.

d. Cover drum with wet burlap or other fabric, and keep fabric wet.

2-8. OPERATION IN FREEZING TEMPERATURES, 32°F (0°C) AND BELOW

In addition to steps taken for operation under usual conditions (paragraphs 2-3 and 2-4), take the following steps as conditions allow:

a. In freezing temperatures the drum could become brittle. Be careful when handling the drum to avoid cracking it.

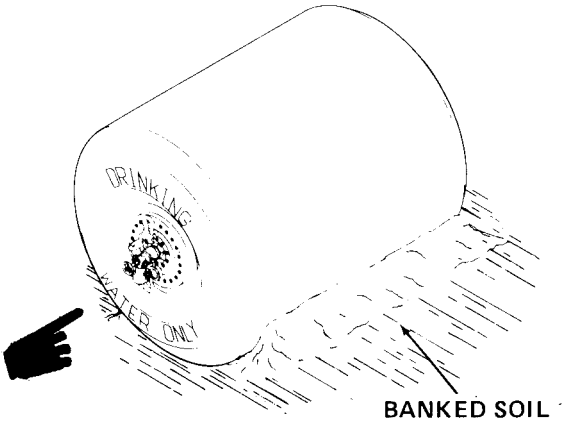
b. Remove snow, sleet, and ice from drum before installing coupler valve.

c. In temperatures below 32°F (0°C), store drum in a heated building, shelter, or tent and allow to thaw before dispensing water.

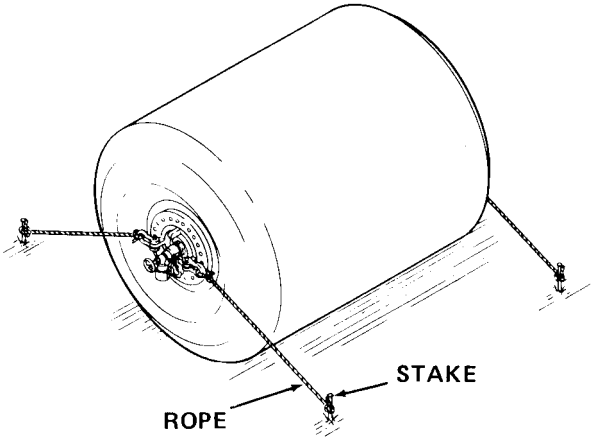
2-9. OPERATION IN STRONG WINDS

In addition to steps taken for operation under usual conditions (paragraphs 2-3 and 2-4), take the following steps as conditions allow:

a. Anchor drum by banking soil along its sides.



b. Tie down drum to structures, trees, or stakes using rope,



2-10. OPERATION IN SANDY AND DUSTY CONDITIONS

In addition to steps taken for operation in usual conditions (paragraphs 2-3 and 2-4), take the following precautions:

a. Always remove sand and dust from coupler valve and adapter assembly before use.

b. Keep dust cap installed when equipment is not in use.

c. Cover and store coupler valve where it is less likely to get dusty or dirty.

CHAPTER 3
OPERATOR MAINTENANCE INSTRUCTIONS

Section I. TROUBLESHOOTING PROCEDURES

3-1. TROUBLESHOOTING

a. Table 3-1 lists the common malfunctions which you may find during the operation or maintenance of the drum or its components. Perform the tests/inspections and corrective actions in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

Table 3-1. Operator/Crew Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
1. DRINKING WATER HAS UNUSUAL ODOR
WARNING **The drum is authorized to be filled only with drinking water. Use of the drum for any other liquid may cause sickness or death of crewmembers.**
If it has been determined during PMCS (Table 2-1) that the drum has been used with any other liquid other than drinking water, or if it is suspected that the drinking water may be contaminated, empty contents of drum and notify supervisor.
2. HAN DWHEEL ON COUPLER VALVE IS DIFFICULT OR IMPOSSIBLE TO TURN
Step 1. Coupler valve is binding or will not open or close. **Replace coupler valve.**

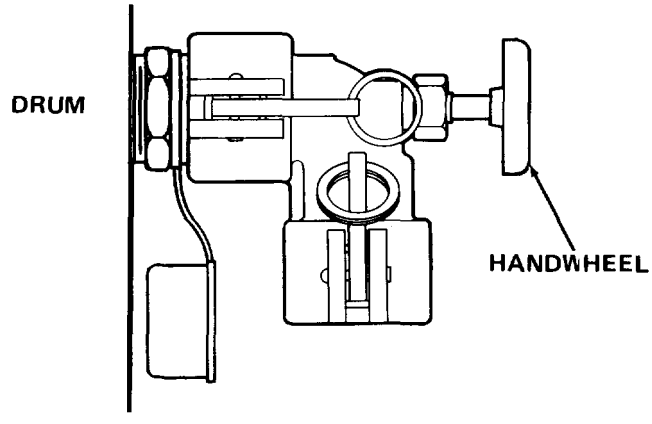
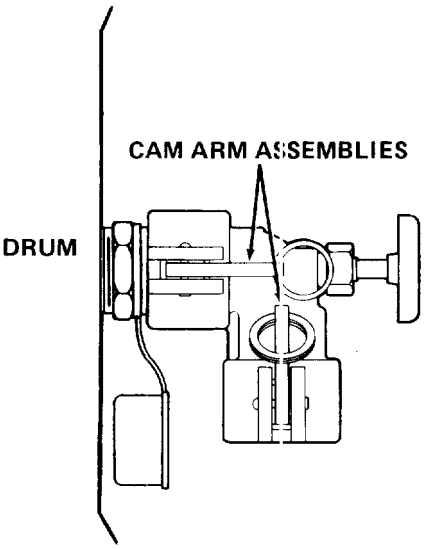


Table 3-1. Operator/Crew Troubleshooting – Continued

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
3. CAM ARM ASSEMBLIES WILL NOT LOCK OR HOLD COUPLER VALVE IN PLACE
Step 1. Check cam arm assemblies for wear. If cam arm assemblies are worn, replace coupler valve.
4. DRINKING WATER IS LEAKING FROM OR AROUND COUPLER VALVE
Step 1. Locate source of coupler valve leak. a. Water leaks from coupler valve-to-adapter assembly connection. 1. Make sure coupler valve is properly locked and installed in place. 2. If leakage continues, remove coupler valve from adapter assembly. If water is leaking from adapter assembly, notify next higher level of maintenance. 3. If adapter assembly is not leaking, reinstall coupler valve and lock back in place. 4. If leakage continues, replace coupler valve.



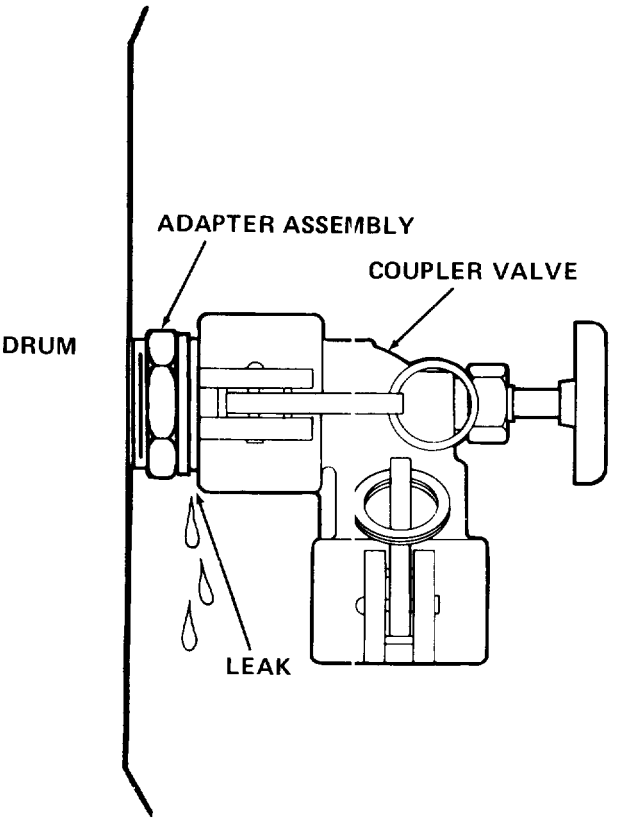
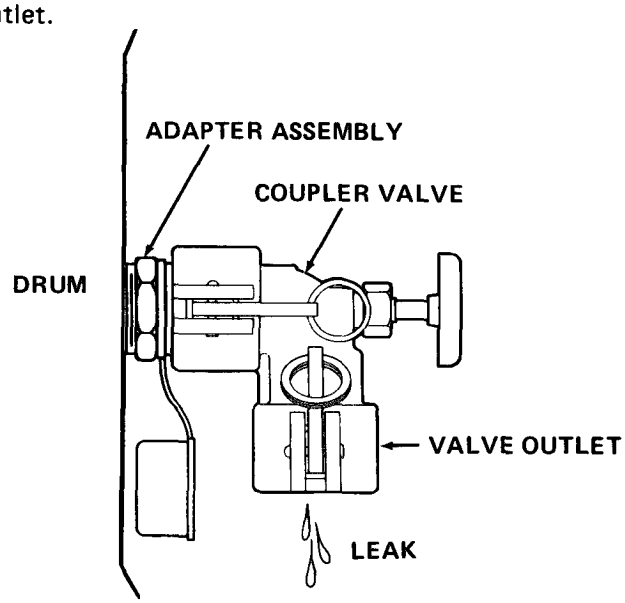


Table 3-1. Operator/Crew Troubleshooting - Continued

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
b. Coupler valve leaks at valve outlet. Replace coupler valve.



c. Coupler valve leaks at packing nut and valve stem.

Replace coupler valve.

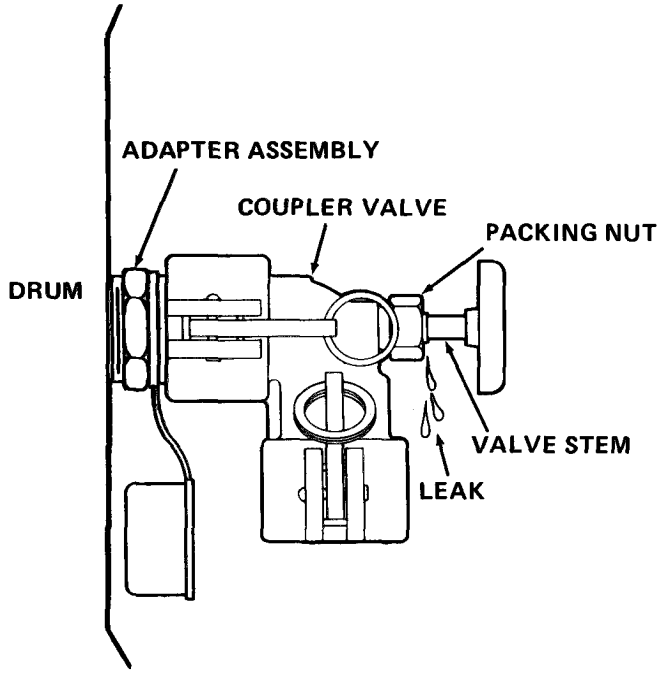


Table 3-1. Operator/Crew Troubleshooting - Continued

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
5. PUNCTURE OR LEAK IN DRUM BODY
Step 1. Locate puncture and/or leak.
Step 2. Check size of puncture hole.
If hole is 3/8 inch diameter or smaller, repair in accordance with paragraph 3-5.
If hole is larger than 3/8 inch in diameter, send damaged drum to next higher level of maintenance.

Section II. REPAIR PARTS, SPECIAL TOOLS, AND SUPPORT EQUIPMENT

3-2. GENERAL

a. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

b. Repair parts, tool kits, and special tools are listed and illustrated in the Repair Parts and Special Tools List (RPSTL), Appendix C.

Section III. MAINTENANCE PROCEDURES

INDEX

3-3. GENERAL INSTRUCTIONS

Maintenance instructions in this section will list resources required, and personnel required, for the start of the procedure. Note the following:

. Resources required are not listed unless they apply to the procedure.

. Personnel required are listed only if the task requires more than one. If PERSONNEL is not listed, it means one person can do the task.

NOTE

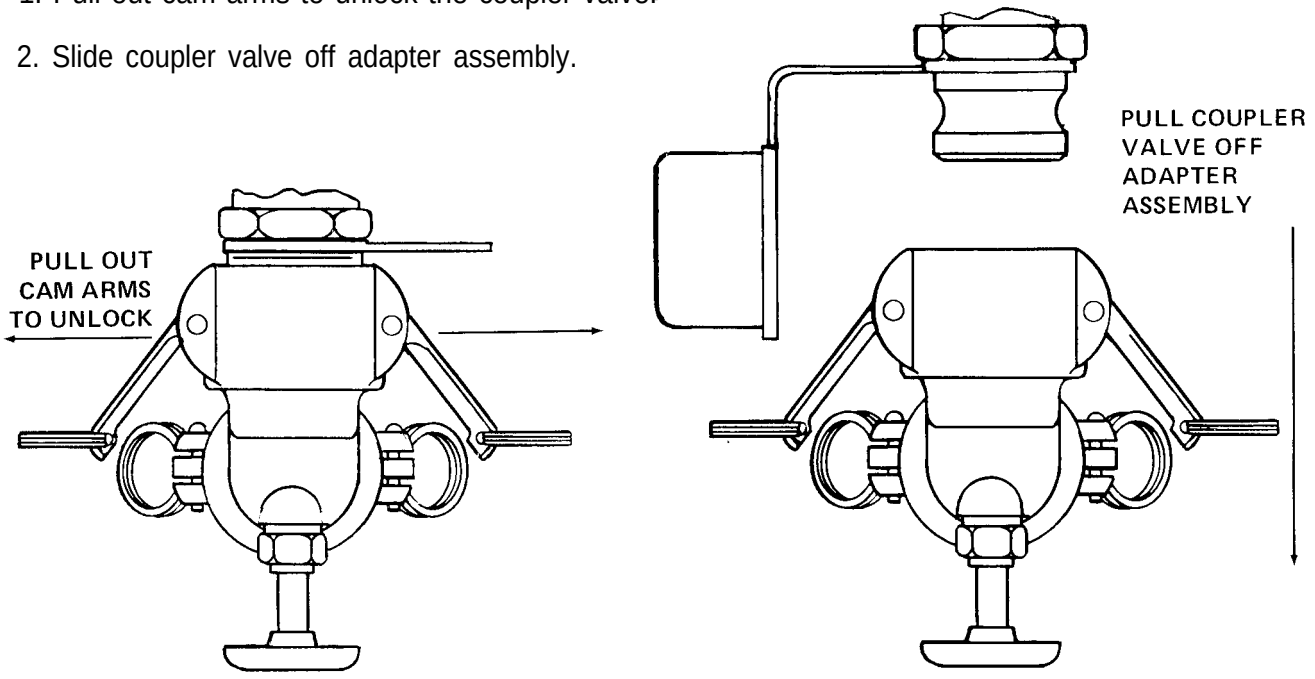
For operation and maintenance of the yoke and tie-down kit used with the fabric drum, reference TM 10-8110-201-14 & P.

3-4. REMOVE/INSTALL COUPLER VALVE

MATERIALS/PARTS: Coupler valve

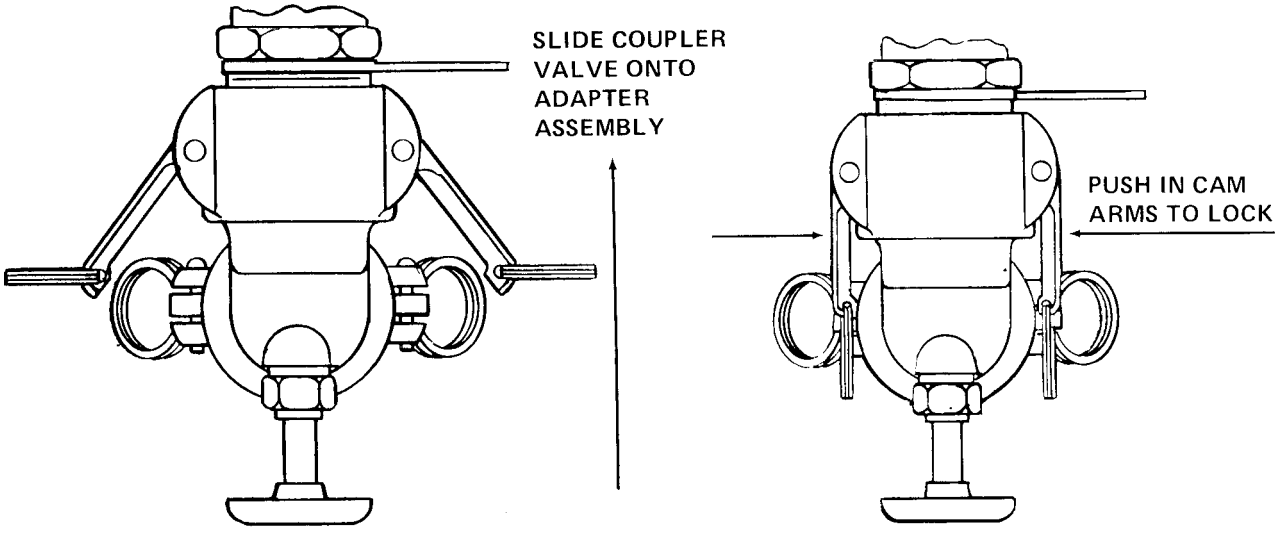
REMOVAL:

1. Pull out cam arms to unlock the coupler valve.
2. Slide coupler valve off adapter assembly.



INSTALLATION:

1. Slide coupler valve all the way onto adapter assembly.
2. Push in cam arms to lock coupler valve in place on adapter assembly.



3-5. DRUM BODY TEMPORARY REPAIR

MATERIALS/PARTS: Potable water drum repair kit, NSN 8110-00-856-6244

NOTE

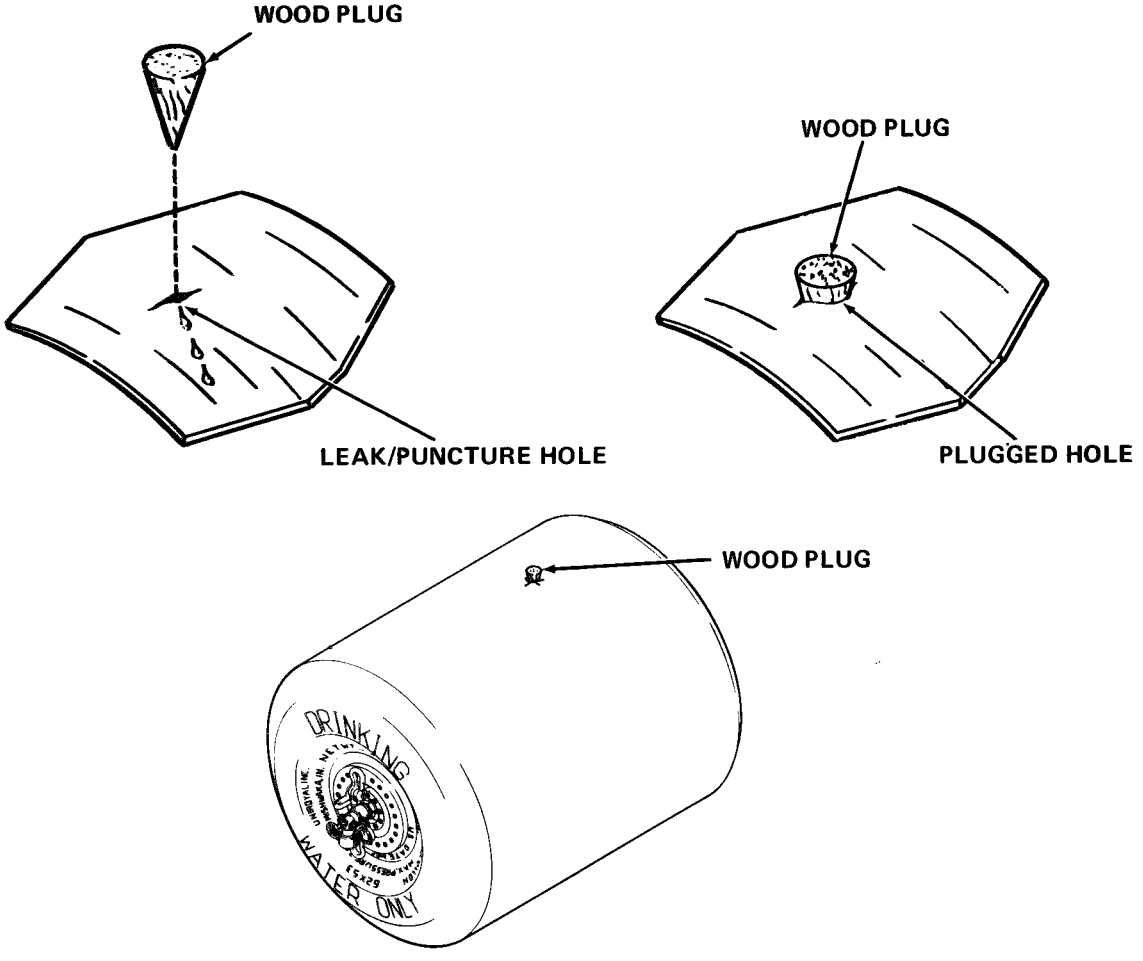
This procedure only applies if puncture hole in drum body is 3/8 inch diameter or less.

After temporary repair, the drum can only be used until empty.

METHOD 1:

1. Push a wood plug (part of repair kit, NSN 81 10-00-856-6244) into puncture hole, pointed end first.

2. Roll drum over so puncture hole is at top of drum.

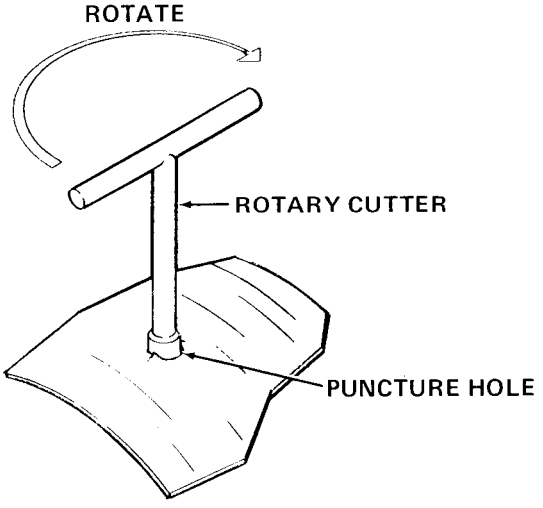


METHOD 2:

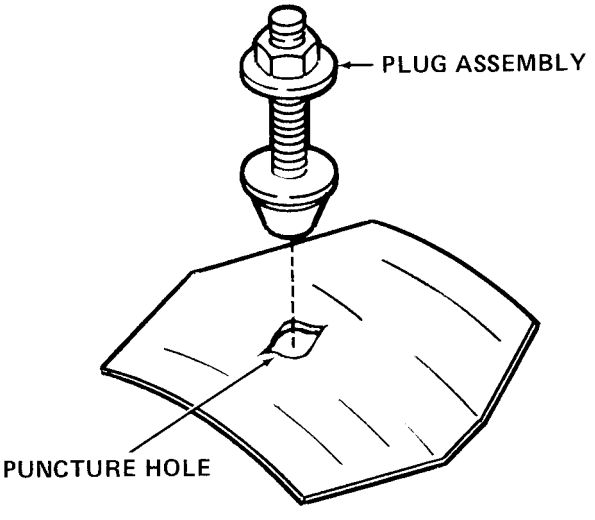
WARNING

Put on the protective hood (part of repair kit) over your face before proceeding.

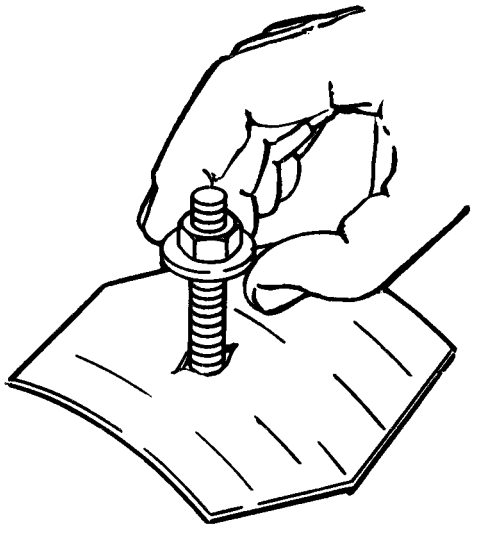
1. Using rotary cutter (part of repair kit, NSN 81 10-00-856-6244), cut a clean edge around puncture hole.



2. Push conical end of a plug assembly (part of repair kit, NSN 81 10-00-856-6244) through the prepared puncture hole.

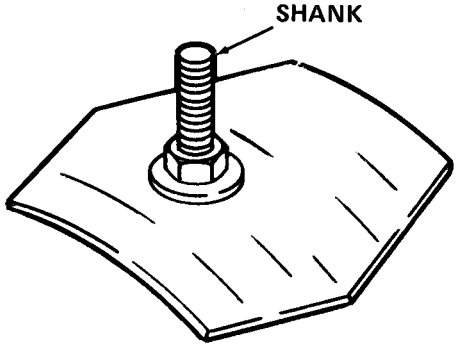


3. Pull plug assembly tight against interior of drum body.



4. Using pliers (part of repair kit, NSN 81 10-00-856-6244), tighten nut on plug assembly until it is tight against drum body.

5. Using the same pliers, cut off the excess plug assembly shank.



CHAPTER 4
ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

Section I. LUBRICATION

No lubrication is required.

Section II. 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 required to service the drum assembly are listed in the Repair Parts and Special Tools List (R PST L), Appendix C. Test, measurement, and diagnostic equipment (TM DE) and support equipment include standard equipment found in any organizational main maintenance shop.

4-3. REPAIR PARTS

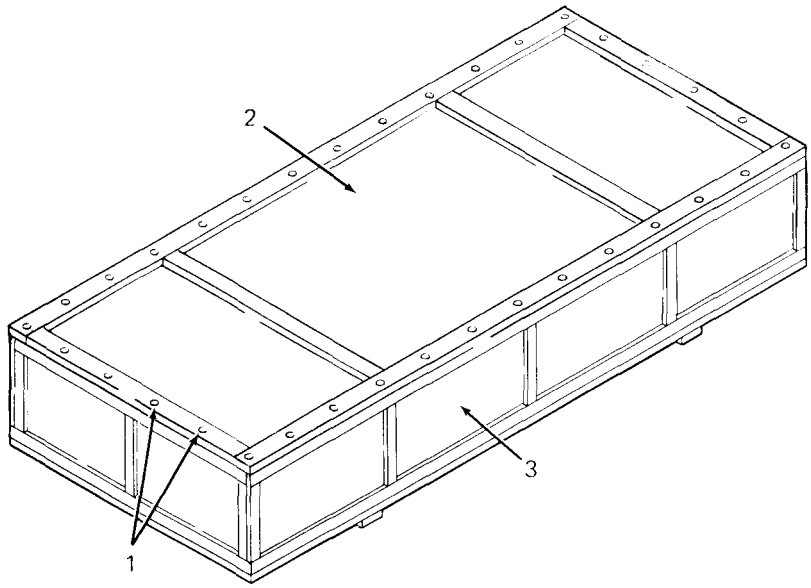
Repair parts are listed and illustrated in the Repair Parts and Special Toc Is List (R PST L), Appendix C.

Section III. SERVICE UPON RECEIPT

4-4. UNLOADING

The drum is packaged in a container designed for shipment. The base o f the container is constructed as a shipping pallet with provisions for insertion of fingers of a fork on materials handling equipment such as a forklift. After unloading, unpack as follows:

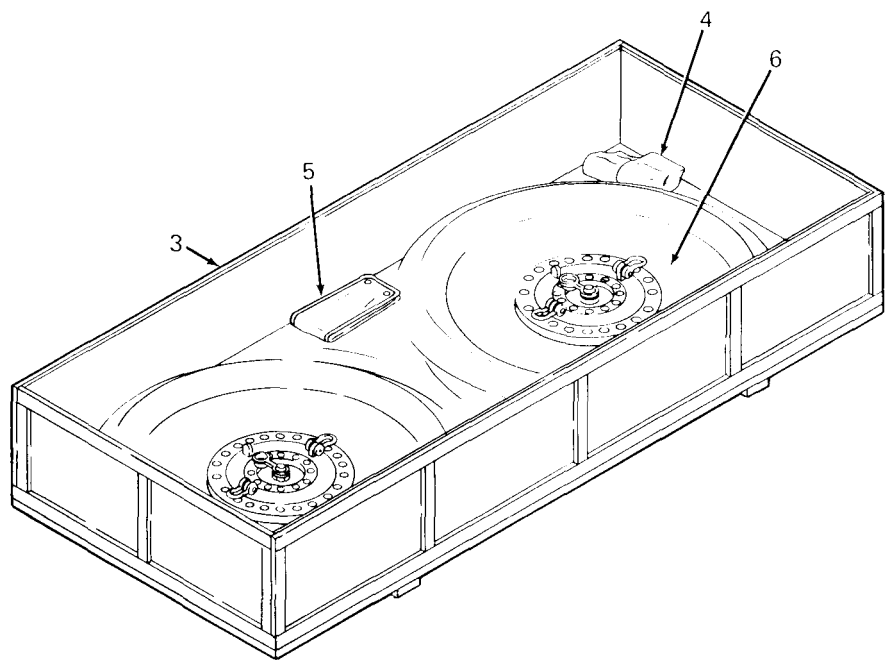
a. Remove nails (1) from the crate top, and remove crate top (2) from crate (3).



b. Remove two bags (4) containing coupler valves from crate (3).

c. Remove two coupler valves from bags (4) and then remove protective paper and tape from coupler valves. Save bags and put back into crate.

d. Remove repair kit (5) from crate (3).



e. Remove drum (6) from crate (3) and place it on a clean surface.

NOTE

Save the shipping crate for reuse. The shipping crate can be reused for mobility and shipment of drum.

4-5. INSPECTION

a. Inspect equipment for damage incurred during shipment. If the equipment has been damaged, report damage on DD Form 6, Packaging Improvement Report.

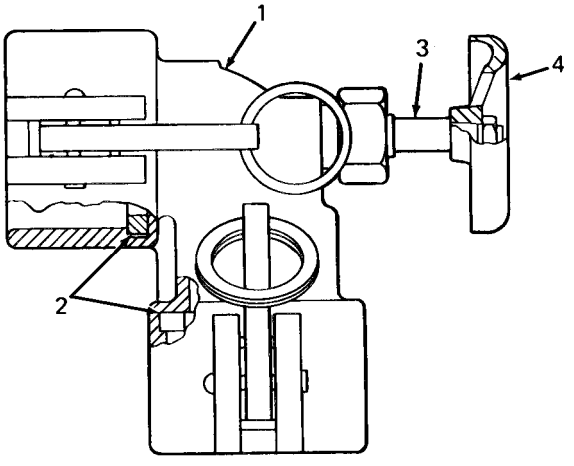
b. Check equipment against the packing slip to see if shipment is complete. Report all discrepancies in accordance with the instructions of DA Pam 738-750.

c. Inspect both coupler valves (1) for:

(1) Missing gaskets (2).

(2) Binding or stuck valve stem (3); check by turning handwheel (4).

(3) Missing, cracked, or broken parts.



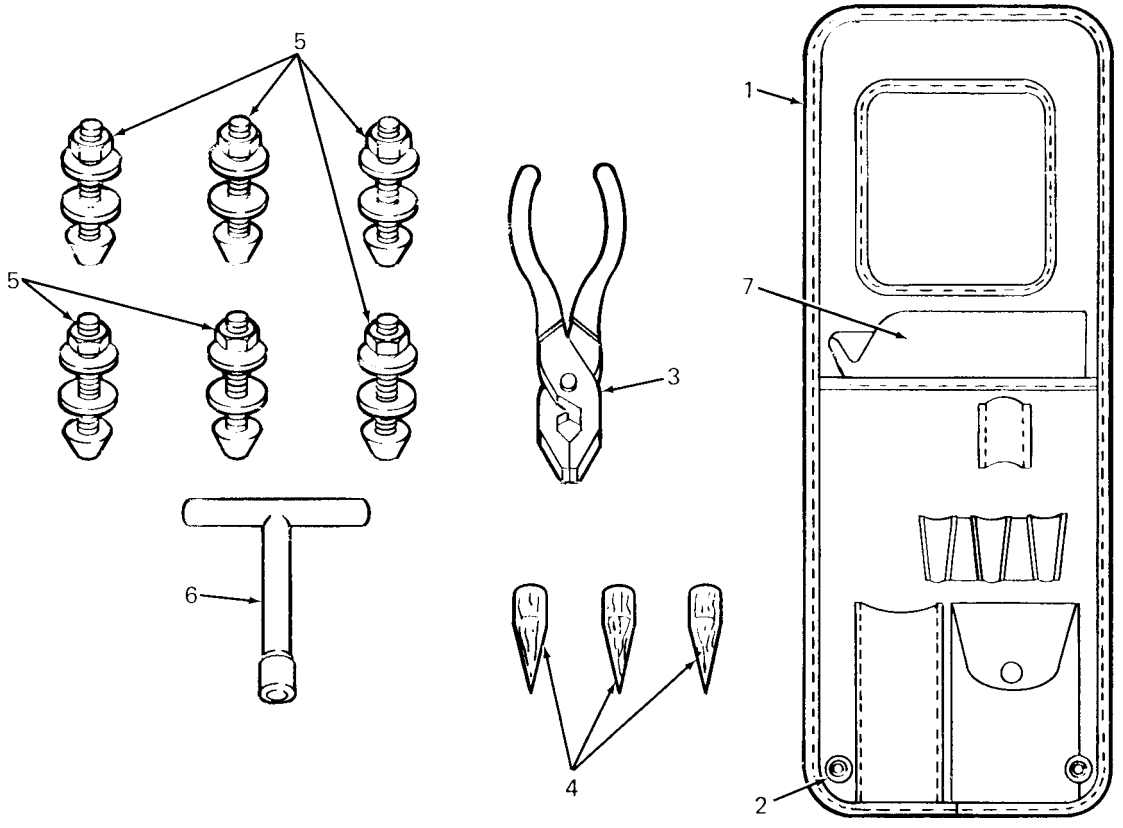
d. Refer to illustration on following page and inspect repair kit for:

(1) Ripped or dirty pouch (1). Also check the pouch for broken or missing snap fasteners (2).

(2) Missing or damaged pliers (3).

(3) Missing, cracked, or broken wood plugs (4). Repair kit should contain three wood plugs.

(4) Missing plug assemblies (5). Repair kit should contain six plug assemblies. Also check plug assemblies for deteriorated rubber, stripped threads, and missing parts.



(5) Missing or damaged rotary cutter (6).

(6) Missing or damaged face protective hood (7).

e. Inspect drum for:

NOTE

Inspect both ends of drum.

(1) Cuts, tears, excessive wear, and deterioration of drum body (1).

(2) Damaged or loose bearing plates (2).

(3) Missing or loose screws (3).

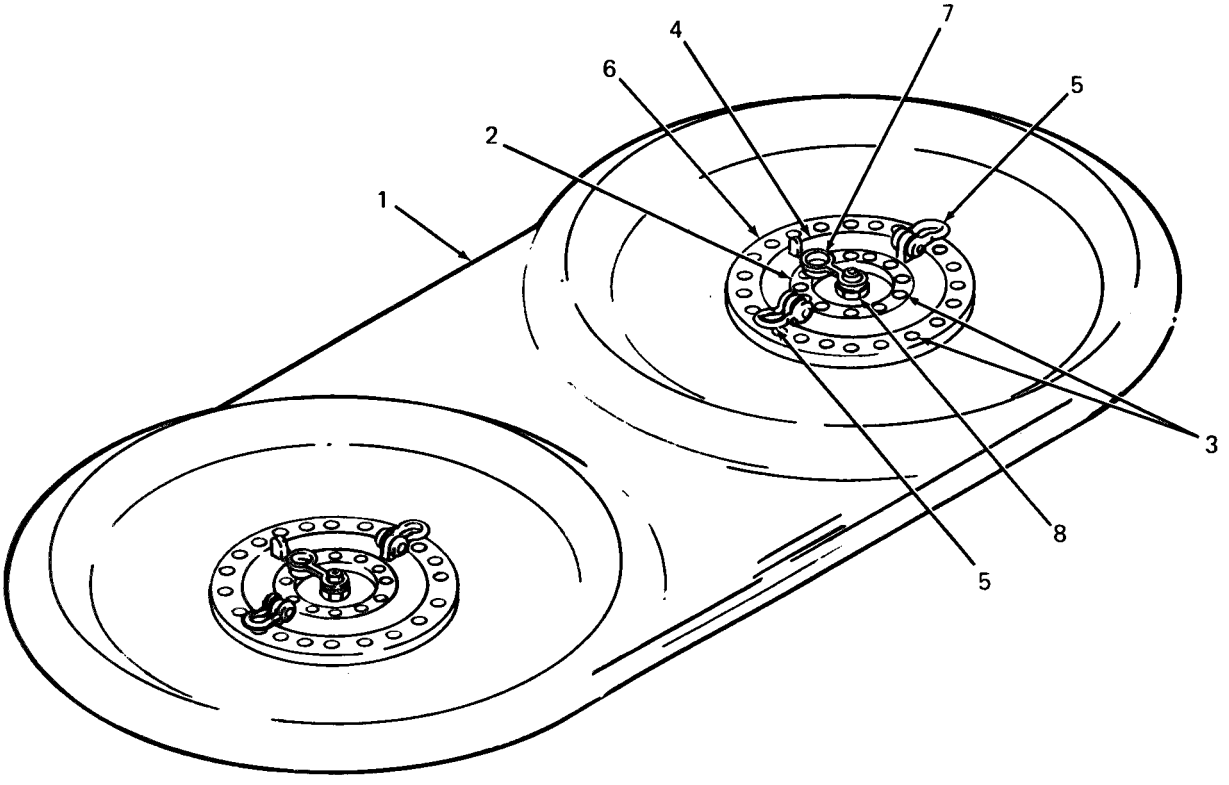
(4) Damaged or binding swivel plates (4).

(5) Damaged or missing bow (5).

(6) Damaged or loose closure ring (6).

(7) Damaged or missing dust caps (7).

(8) Loose or damaged adapter assemblies (8).



Section IV. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

4-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

All preventive maintenance checks and services (PMCS) will be performed on a daily or as-used basis by the operator/crew. Refer to Table 2-1.

Section V. TROUBLESHOOTING PROCEDURES

4-7. TROUBLESHOOTING

a. Table 4-1 lists the common malfunctions which you may find during the operation or maintenance of the drum or its components. Perform the tests/inspections and corrective actions in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

c. Only those functions within the scope of organizational maintenance are listed. For troubleshooting procedures within the scope of operator/crew maintenance, refer to Table 3-1.

4-8. SYMPTOM INDEX

Refer to the Symptom Index below. Locate the malfunction which is the same, or most nearly the same, as the trouble you are having with the drum. The Symptom Index lists the first page of troubleshooting information for that malfunction. Follow the steps one by one, and perform the corrective actions listed.

Table 4-1. Organizational Maintenance Troubleshooting

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

1. LIQUID HAS UNUSUAL ODOR

WARNING

The drum is authorized to be filled only with drinking water. Use of the drum for any other liquid may cause sickness or death of crewmembers.

If it has been determined during PMCS (Table 2-1) that the drum has been used with any liquid other than drinking water, or if it is suspected that the drinking water may be contaminated, empty contents of drum and notify next higher level of maintenance.

2. DRINKING WATER IS LEAKING FROM OR AROUND COUPLER VALVE

Step 1. Locate source of coupler valve leak.

a. Water leaks from coupler valve-to-adapter assembly connection.

1. Make sure coupler valve (1) is properly locked and installed in place.
2. If leakage continues, remove coupler valve from adapter assembly. If water is leaking from adapter assembly, replace adapter assembly.
3. If adapter assembly is not leaking, replace gasket (3) on coupler valve (1), Reinstall coupler valve onto adapter assembly (2).
4. If leakage continues, replace coupler valve (1) and send leaking coupler valve to next higher level of maintenance.

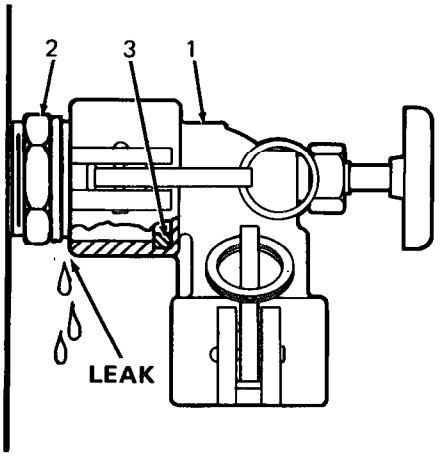


Table 4-1. Organizational Maintenance Troubleshooting - Continued

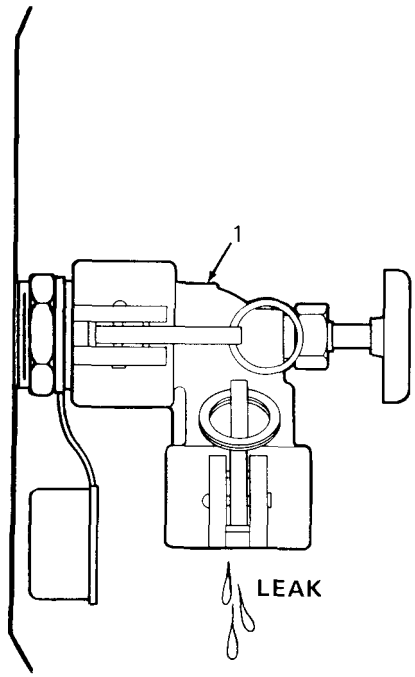
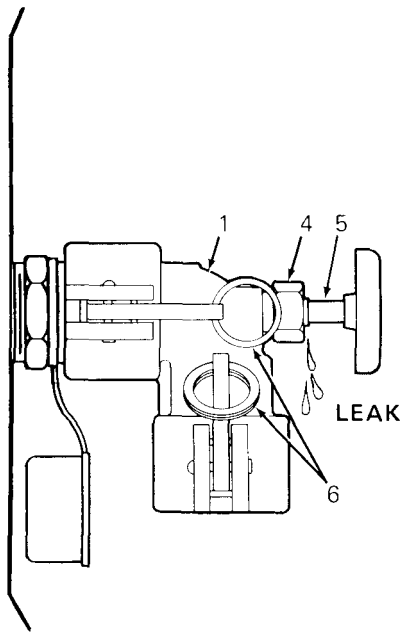
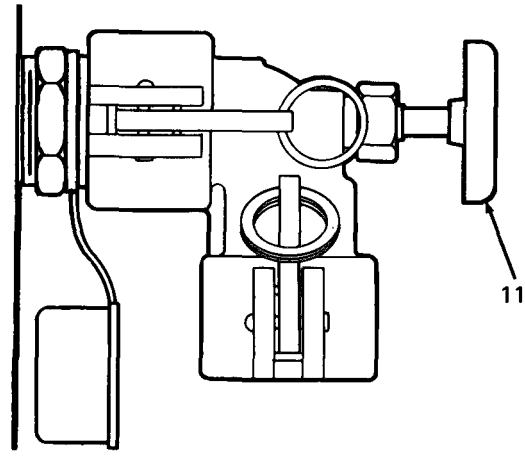
MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION	
b. Coupler valve (1) leaks at valve outlet. Replace coupler valve and send leaking coupler valve to next higher level of maintenance.	
c. Coupler valve (1) leaks at packing nut (4) and valve stem (5). Replace coupler valve (1) and send leaking coupler valve to next higher level of maintenance.	
3. CAM ARM ASSEMBLY IS HARD TO OPERATE	
Step 1. Check condition of ring (6). Replace damaged or missing ring.	

Table 4-1. Organizational Maintenance Troubleshooting - Continued

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
4. DAMAGED HANDWHEEL Step 1. Check condition of handwheel (11). Replace handwheel if damaged or cracked.
5. LEAKAGE THROUGH ADAPTER ASSEMBLY Step 1. Check condition of adapter assembly (2). Replace adapter assembly (2).
6. LEAKAGE AROUND OUTSIDE OF ADAPTER ASSEMBLY Step 1. Check adapter assembly (2) for looseness. Tighten adapter assembly (2). Step 2. Leakage continues. Replace adapter assembly (2). Step 3. Leakage continues. Notify next higher level of maintenance.



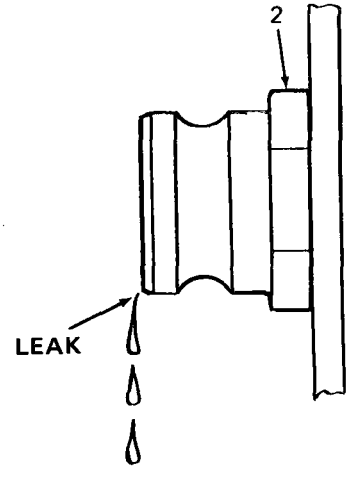


Table 4-1. Organizational Maintenance Troubleshooting - Continued

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
7. LEAKAGE AROUND BEARING PLATE (7), SWIVEL PLATE (8), OR CLOSURE RING (9)
Step 1. Check for loose screws (10).
Tighten screws (10).
Step 2. Leakage continues.
Notify next higher level of maintenance.

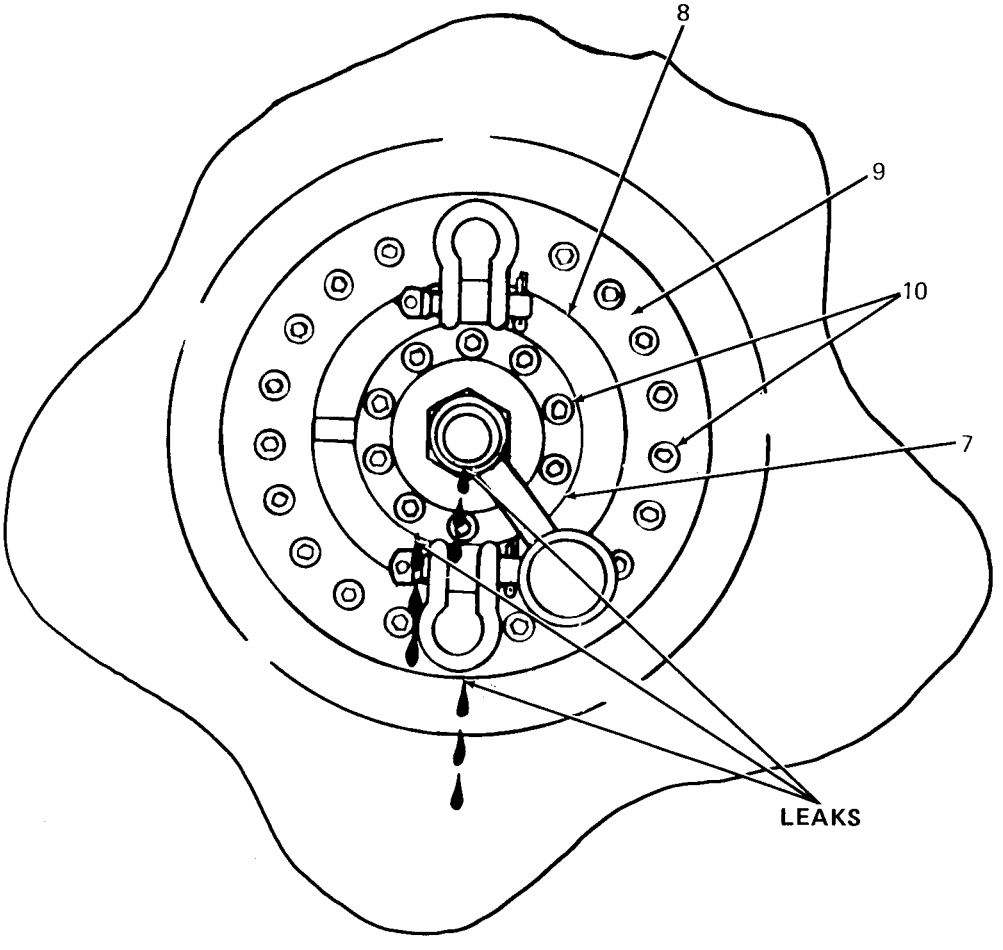


Table 4-1. Organizational Maintenance Troubleshooting - Continued

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

8. DAMAGED OR MISSING BOW

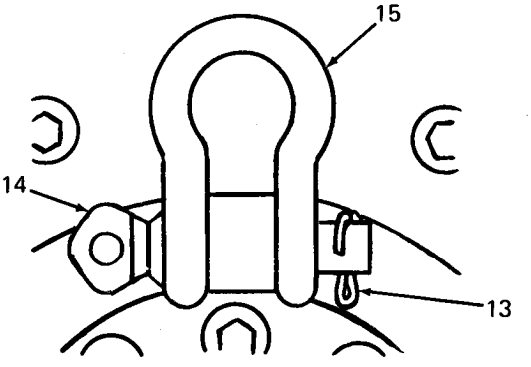
Step 1. Check condition of cotter pin (13), shackle screw pin (14), and bow (15).

Replace or install parts as required.

9. BOW WILL NOT PIVOT IN SWIVEL PLATE LUGS

Step 1. Check condition of bows.

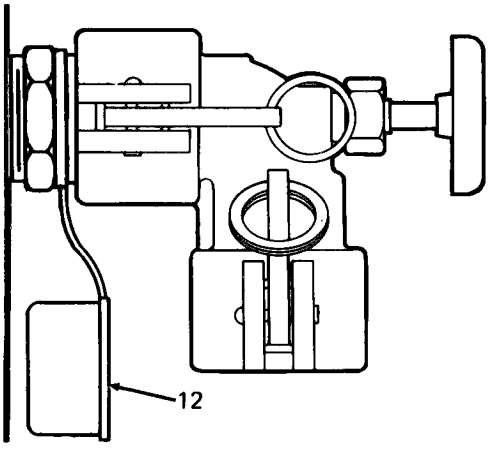
Disassemble and clean shackle screw pin (14) and bow (15). Replace parts as required.



10. DAMAGED OR MISSING DUST CAP

Step 1. Check condition of dust cap (12).

Replace dust cap if damaged or missing.



Section VI. MAINTENANCE PROCEDURES

INDEX

4-9. GENERAL INSTRUCTIONS

Maintenance instructions in this section will list resources required, personnel required, and equipment condition for the start of the procedure. Note the following:

- Resources required are not listed unless they apply to the procedure.
- Personnel required are listed only if the task requires more than one person. If PERSONNEL is not listed, it means one person can do the task.

4-10. REMOVING/INSPECTING/INSTALLING COUPLER VALVE COMPONENTS

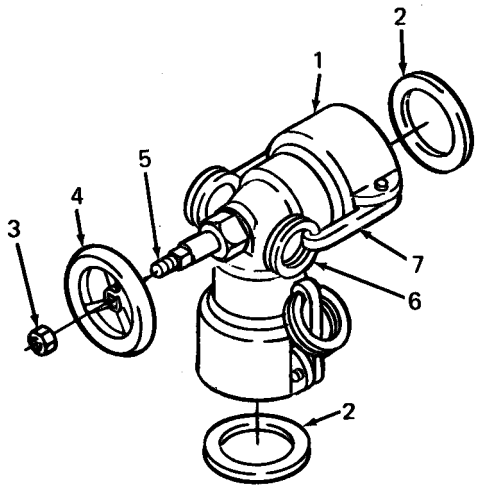
MATERIALS/PARTS: Gasket
Handwheel
Nut

NOTE

PRELIMINARY PROCEDURE: Coupler valve removed from drum (para 3-4).

REMOVAL:

1. Remove and discard gaskets (2) from each end of coupler valve (1).
2. Remove nut (3) that secures handwheel to coupler valve.
3. Pull handwheel (4) off valve stem (5).
4. If required, spread open pull ring (6) at slit, and slide it off cam arm (7).



INSPECTION:

1. Inspect nut (3) for damaged threads.
2. Inspect handwheel (4) for cracks or other damage.
3. Replace damaged or worn parts.

INSTALLATION:

1. If required, spread open new pull ring (6) at split, and slide it onto cam arm (7).
2. Slide handwheel (4) onto valve stem (5).
3. Thread nut (3) onto valve stem (5). Tighten nut.

CAUTION

New gaskets (2) must be used.

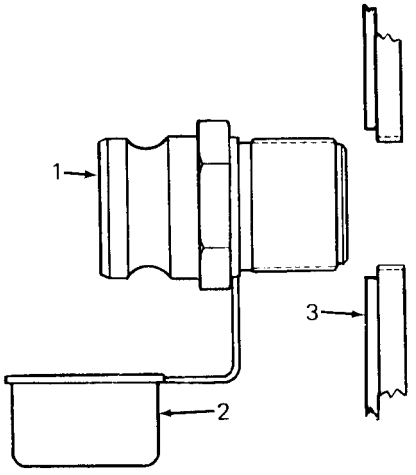
4. Install new gasket (2) into each end of coupler valve.

4-11. REMOVING/INSTALLING ADAPTER ASSEMBLY AND DUST CAP

MATERIALS/PARTS: Adapter assembly
Dust cap

NOTE

PRELIMINARY PROCEDURES: Drain drum. Coupler valve removed from drum (para 3-4).



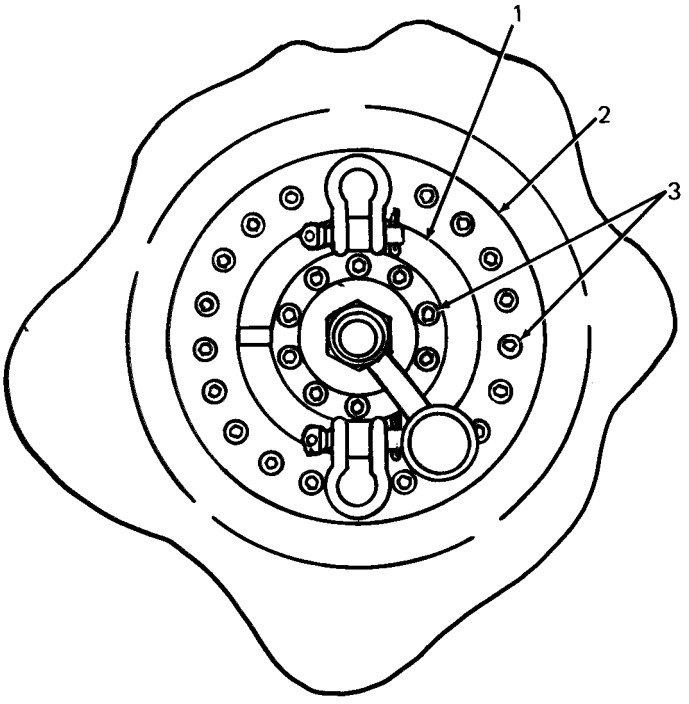
REMOVAL:

1. Using a wrench, remove adapter assembly (1) from drum (3).
2. Slide dust cap (2) off adapter assembly.

INSTALLATION:

1. Slide dust cap (2) onto adapter assembly.
2. By hand, install adapter assembly into drum. Then tighten, using wrench.

4-12. TIGHTENING CLOSURE RING AND BEARING PLATE SCREWS



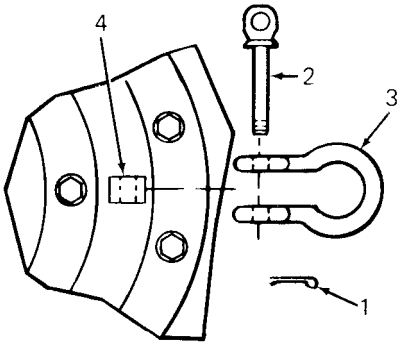
ADJUSTMENT:

Tighten loose closure ring (2) and bearing plate (1) screws (3) to 45 foot-pounds maximum torque.

4-13. REMOVING/CLEANING/INSPECTING/INSTALLING BOW

MATERIALS/PARTS: Cotter pin
Screw pin
Bow

REMOVAL:



1. Remove cotter pin (1) from screw pin (2). Discard cotter pin.
2. Remove screw pin (2) from bow (3). Bow will come loose from swivel plate lug (4).

CLEANING:

1. Clean screw pin (2) and bow (3) with wire brush. Remove all dirt and corrosion.

INSPECTION:

1. Check screw pin (2) for distortion and cracks, and for damaged threads. Replace screw pin (2), if necessary.
2. Check condition of bow (3). Replace bow (3) if distorted or cracked.

INSTALLATION:

1. Place bow (3) over swivel plate lug (4) alining bow eyelets with hole in swivel plate lug.
2. Note that one of the bow eyelets is threaded and the other is not. Insert screw pin (2) through the bow eyelet with no threads, and then through swivel plate lug (4) hole.
3. Thread screw pin (2) into bow (3) all the way.
4. Insert new cotter pin (1) into screw pin (2). Bend ends of cotter pin to secure screw pin.

Section VII. PREPARATION FOR STORAGE OR SHIPMENT

4-14. ADMINISTRATIVE STORAGE (45 days or less)

Administrative storage shall be in accordance with TM 740-90-1. It covers storage of equipment which can be readied for mission performance within 24 hours. Before placing item in administrative storaqe, preventive maintenance checks and services (PMCS) should be performed, all known de-ficien-ties corrected, and all current modification work orders applied. The administrative storage site should provide required protection from the elements and allow access for visual inspection when applicable.

a. Drain all water from drum.

b. Remove coupler valves from adapter assemblies.

c. Cover adapter assemblies with dust caps.

d. Place removed coupler valves in bags for protection.

e. Place drum and both coupler valves in shipping crate.

f. Check repair kit for missing parts. Replace missing parts.

g. Place a complete repair kit in shipping crate with drum.

h. Nail shipping crate cover onto shipping crate.

4-15. INTERMEDIATE AND LONG TERM STORAGE

No special procedures are required. Follow administrative storage procedures in paragraph 4-14.

4-16. PREPARATION FOR SHIPMENT

When transporting the fabric drum with the yoke and/or tie-down kit, reference TM 10-8110-201-14 & P for applicable procedures.

CHAPTER 5
DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

Section I. TROUBLESHOOTING PROCEDURES

5-1. TROUBLESHOOTING

a. Table 5-1 lists the common malfunctions which you may find during the operation or maintenance of the drum or its components. Perform the tests/inspections and corrective actions in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

c. Only those functions within the scope of direct support maintenance are listed. For troubleshooting procedures within the scope of operator/crew maintenance, refer to Table 3-1. For troubleshooting procedures within the scope of organizational maintenance, refer to Table 4-1.

5-2. SYMPTOM INDEX

Refer to the Symptom Index below. Locate the malfunction which is the same, or most nearly the same, as the trouble you are having with the drum. The Symptom Index lists the first page of troubleshooting information for that malfunction. Follow the steps one by one, and perform the corrective actions listed.

Table 5-1. Direct Support Maintenance Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

1. LIQUID HAS UNUSUAL ODOR; DRUM HAS UNUSUAL ODOR

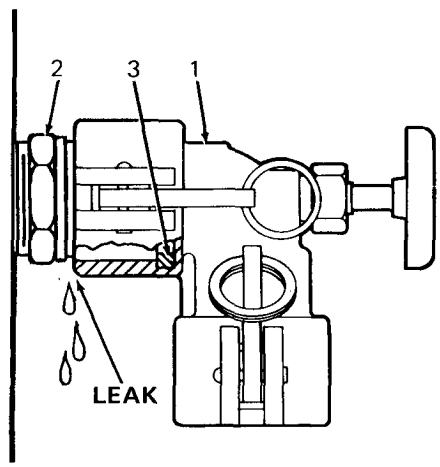
WARNING

The drum is authorized to be filled only with drinking water. Use of the drum for any other liquid may cause sickness or death of crewmembers.

If it has been determined during PMCS (Table 2-1) that the drum has been used with any liquid other than drinking water, or if it is suspected that the drinking water may be contaminated, empty contents of drum. Repair and clean coupler valve, adapter assembly, and drum (para 5-4, 5-6, and 5-8).

2. DRINKING WATER IS LEAKING FROM OR AROUND COUPLER VALVE

Step 1. Locate source of coupler valve (1) leak.



a. Water leaks from coupler valve-to-adapter assembly connection.

1. Make sure coupler valve (1) is properly locked and installed in place.

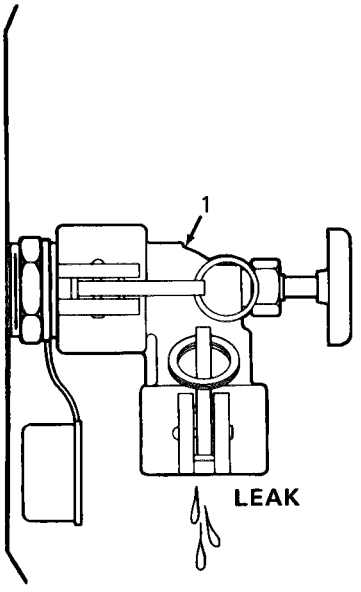
2. If leakage continues, remove coupler valve from adapter assembly (2). If water is leaking from adapter assembly, overhaul adapter assembly.

3. If adapter assembly is not leaking replace gasket (3) on coupler valve (1). Reinstall coupler valve onto adapter assembly (2).

4. If leakage continues, repair coupler valve (1) (para 5-6).

Table 5-1. Direct Support Maintenance Troubleshooting - Continued

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
b. Coupler valve leaks at valve outlet. Repair leaking coupler valve (para 5-6).



3. CAM ARM ASSEMBLIES WILL NOT LOCK COUPLER VALVE IN PLACE

Step 1. Check condition of cam arm assemblies (7).

Replace damaged cam arm assemblies (para 5-7).

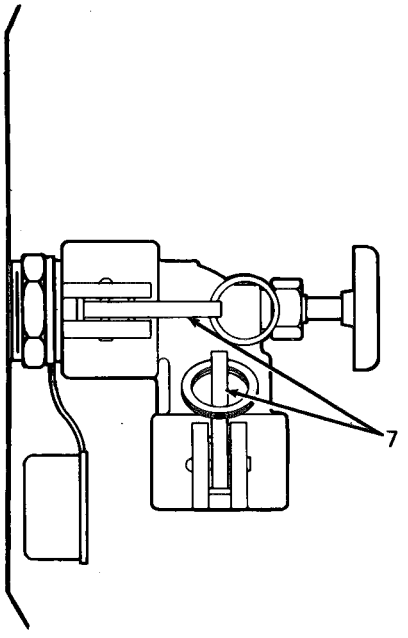
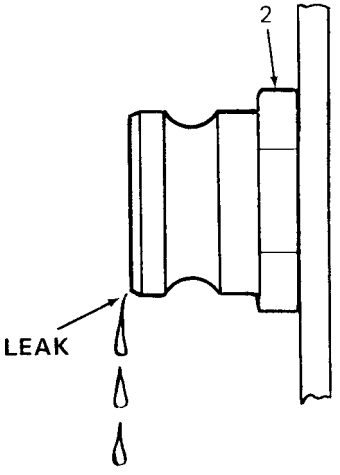
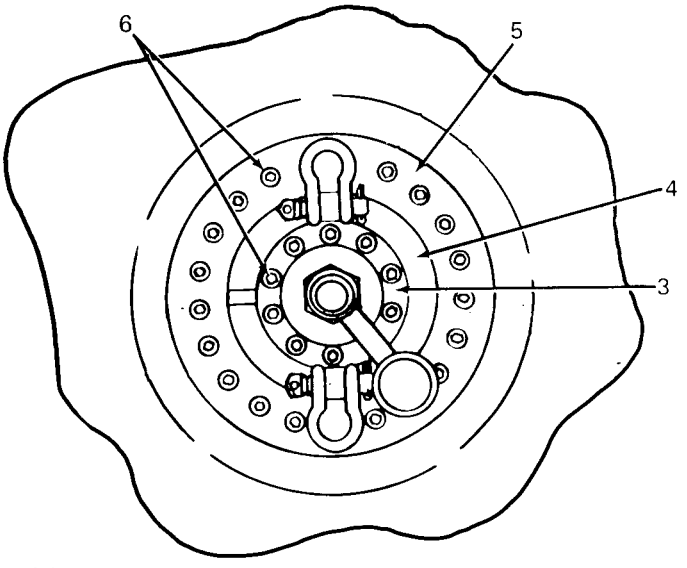
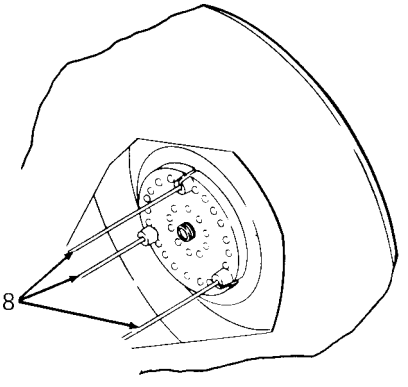


Table 5-1. Direct Support Maintenance Troubleshooting - Continued

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
4. LEAKAGE THROUGH ADAPTER ASSEMBLY Step 1. Check condition of adapter assembly (2). Repair adapter assembly (para 5-8).
5. LEAKAGE FROM AROUND BEARING PLATE (3), SWIVEL PLATE (4), OR CLOSURE RING (5) Step 1. Check for loose screws (6) Tighten screws. If leakage continues, repair drum (para 5-4).
6. BINDING SWIVEL PLATE Step 1. Check condition of swivel plate (4). Remove and clean bearing plate (3), swivel plate (4), and closure ring (5) (para 5-4, 5-9).
7. DRUM IS MISSHAPEN AND DISTORTED Step 1. Check condition of cable assemblies (8). Disassemble drum and replace cable assemblies as required (para 5-4, 5-10).
8. PUNCTURE AND LEAK IN DRUM BODY Step 1. Locate puncture and/or leak. Permanently repair puncture hole (para 5-11).







Section II. MAINTENANCE PROCEDURES

INDEX

5-3. GENERAL INSTRUCTIONS

Maintenance instructions in this section will list resources required, personnel required, and equipment condition for the start of the procedure. Note the following:

- Resources required are not listed unless they apply to the procedure.
- Personnel required are listed only if the task requires more than one person. If PERSONNEL is not listed, it means one person can do the task.
- Repair tasks will contain instructions for disassembly, inspection, and installation.

5-4. REPAIR DRUM

TOOLS: Tool kit, general mechanics
NSN 5180-00-177-7033

Stiff-bristle cleaning brush

MATERIALS/PARTS: Chalk (Item 4, Appendix F)
Detergent, mild non-toxic (Item 7, Appendix F)

TROUBLESHOOTING REFERENCE (Table 5-1):

Malfunctions 1, 5, 6, 7, and 8

GENERAL SAFETY INSTRUCTIONS:

Clean all parts before assembling.
Assemble parts on a clean surface.

NOTE

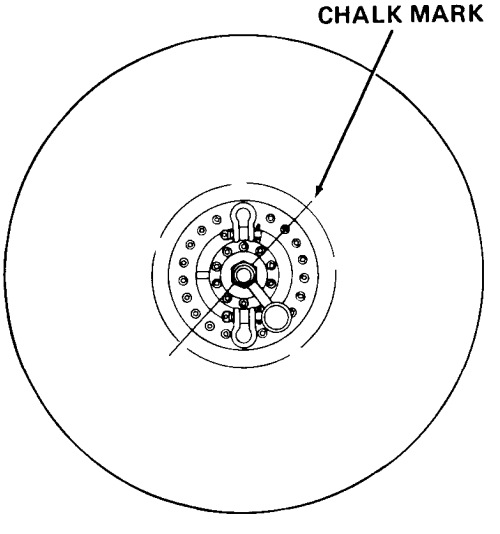
PRELIMINARY CONDITION: Coupler valve and adapter assembly removed from drum (para 3-4 and 4-11).

DISASSEMBLY:

CAUTION

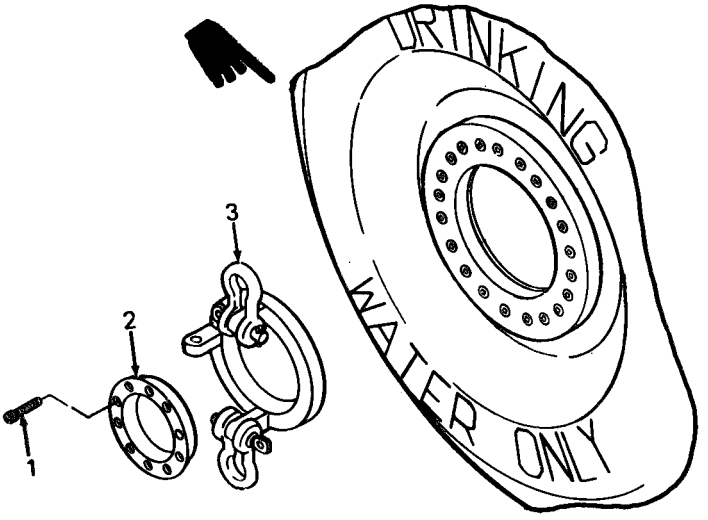
Place a chalk mark across both ends of the drum. This is to aid assembling drum parts and will ensure proper alinement when reassembled.

1. Place a chalk mark across each end of the drum.



2. Remove ten screws (1) that secure bearing plate (2).

3. Remove bearing plate (2) and swivel plate (3).

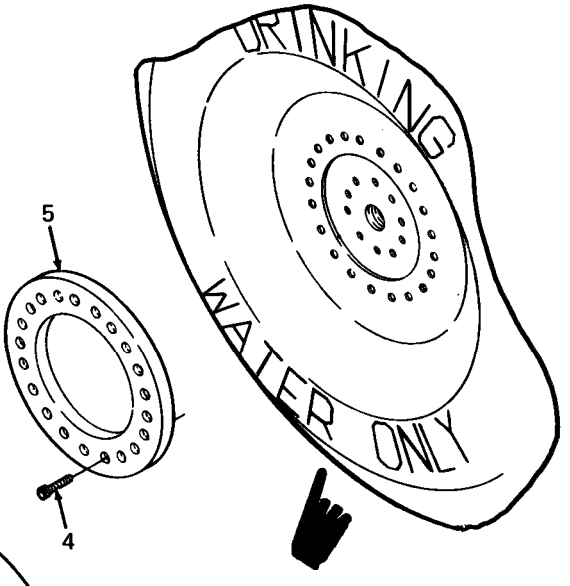


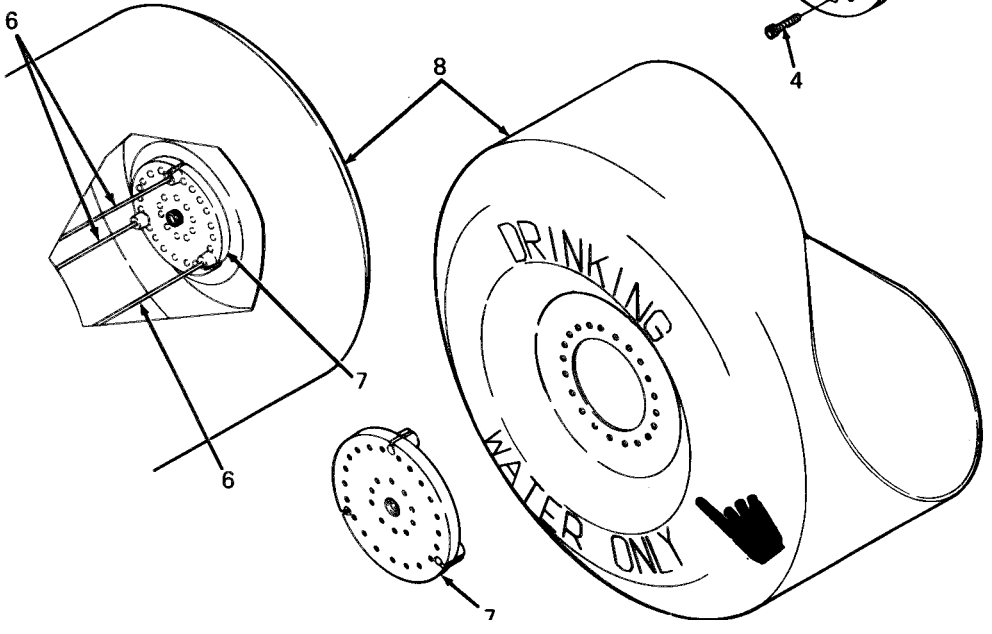
4. Remove 21 screws (4) that secure closure ring (5).

CAUTION

Sometimes the drum body will stick to the closure ring. Care should be taken to avoid damaging drum body when removing closure ring.

5. Carefully remove closure ring (5).



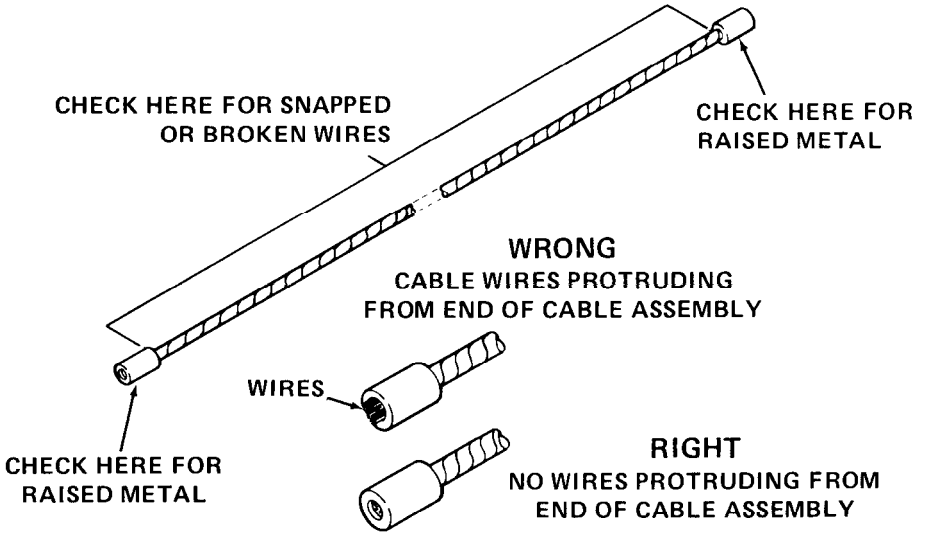


6. Reach inside drum body (8) and disconnect three cable assemblies (6) from closure plate (7).
7. Remove closure plate (7) from inside drum body (8).
8. Repeat steps 1 through 7 above for the other end of drum, then go on to INSPECTION.

INSPECTION:

1. Check screws (1 and 4) for damage.

2. Check the following parts for raised metal, corrosion, or damaged painted surfaces: bearing plate (2), swivel plate (3), and closure ring (5). For repair reference paragraph 5-9.



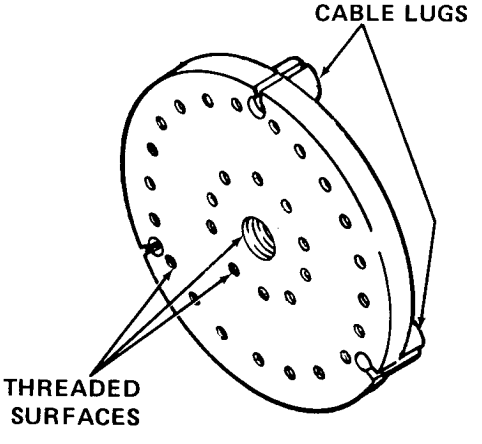
3. Inspect three cable assemblies (6) for:

   a. Corrosion.
   b. Raised metal on ends.
   c. Cable wires protruding from cable assembly ends.
   d. Snapped or broken wires.

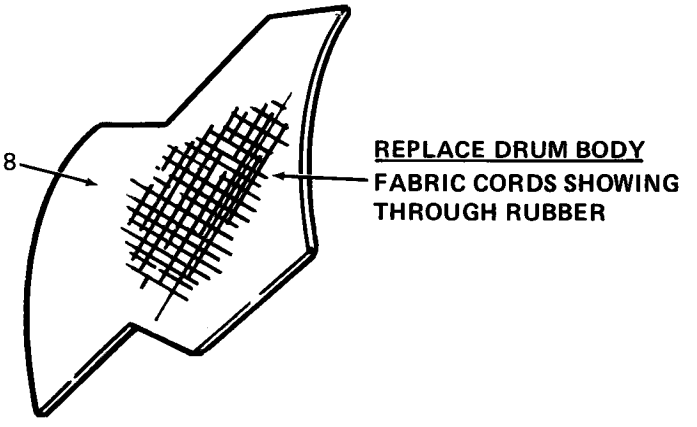
   For repair reference paragraph 5-10.

4. Check closure plate (7) for raised metal, corrosion, or damaged threaded surfaces.

   For repair reference paragraph 5-9.



5. Check drum body (8) for tears, puncture holes, or excessive wear. Wear is considered excessive if fabric cords show through rubber. For repair reference paragraph 5-11.

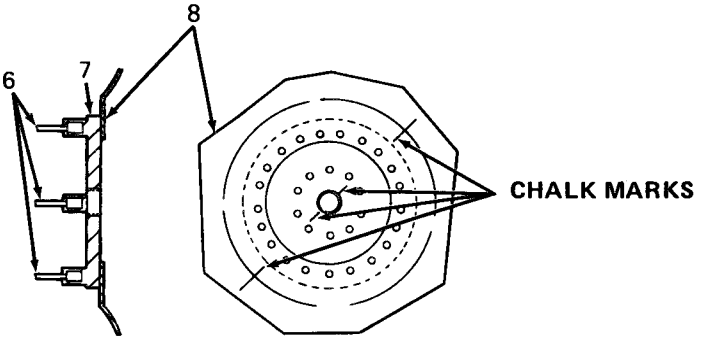


ASSEMBLY:

WARNING

All drum parts must be cleaned with a mild non-toxic detergent and assembled on a clean surface. Remember that the drum will be used to store and dispense drinking water. A dirty or contaminated drum could cause sickness or even death to personnel drinking from it.

1. Clean all drum parts with a mild non-toxic detergent and cleaning brush.



CAUTION

When assembling the drum it is very important to aline chalk marks to prevent twisting of cable assemblies (6).

2. Insert closure plate (7) into drum body (8).

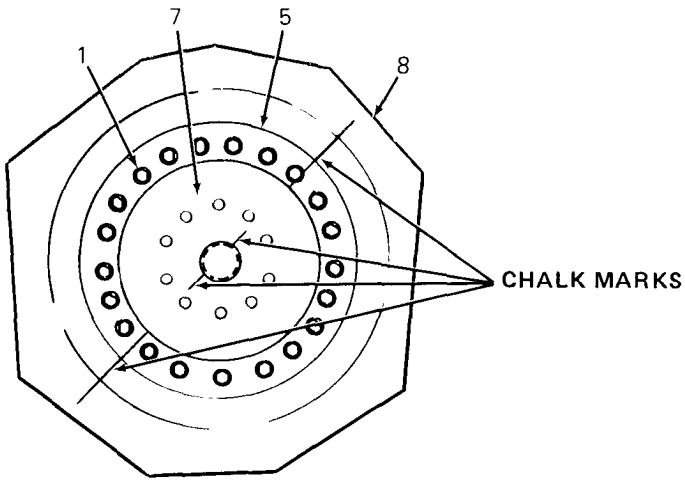
3. Attach three cable assemblies (6) to closure plate (7).

4, Aline chalk marks on closure plate (7) with chalk marks on drum body (8).

5. Place closure ring (5) onto closure plate (7) and aline the chalk marks.

6. Attach closure ring (5) to closure plate (7) using 21 screws (1).

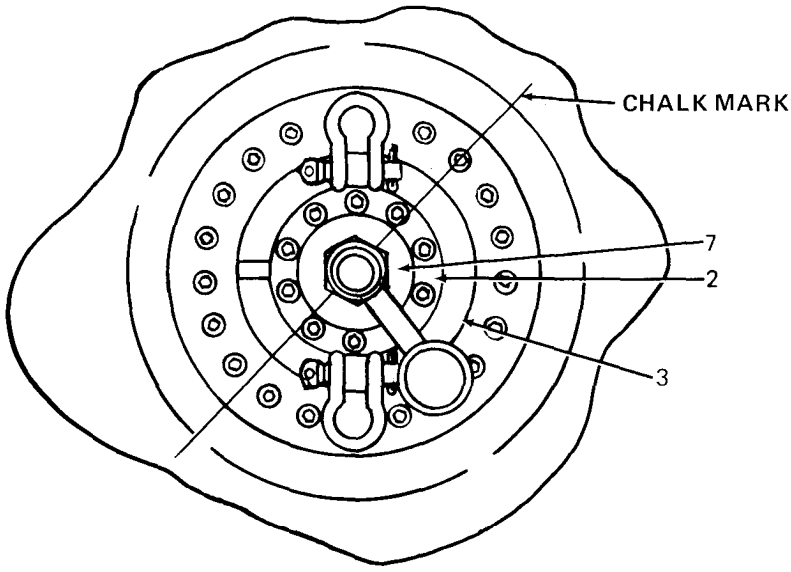
7. Tighten screws (1) to 45 foot-pounds maximum torque.



8. Place swivel plate (3) on closure plate (7).

9. Attach bearing plate (2) to closure plate (7) with ten screws (1).

10. Tighten screws (1) to 45 foot. pounds maximum torque.



CAUTION

When assembling the opposite side of drum, it is very important to aline the chalk marks to prevent twisting of cable assemblies (6).

11. Repeat ASSEMBLY steps 1 through 10 to assemble the opposite end of the drum, then proceed to step 12 below. Make sure that cable assemblies (6) are not twisted when assembling opposite end of drum.

12. Install both adapter assemblies (para 4-11).

13. Install both coupler valves (para 3-4).

14. Test drum in accordance with paragraph 5-5.

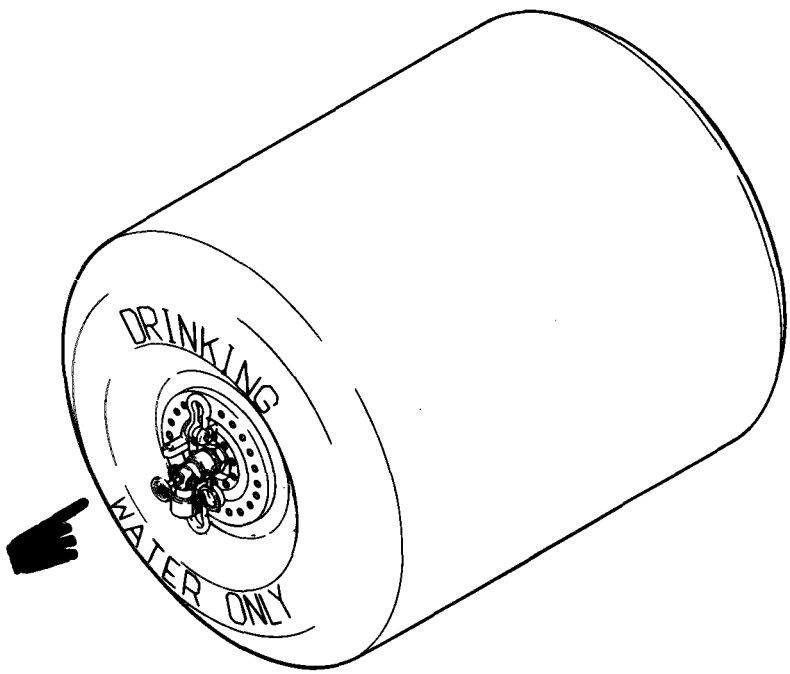
5-5. TEST DRUM

MATERIALS/PARTS: Drinking water

NOTE

PRELIMINARY CONDITION: Drum completely assembled (para 5-4).

1. Fill drum with drinking water in accordance with paragraph 2-3.
2. Perform PMCS, Table 2-1. Check for leaks.



5-6. REPAIR COUPLER VALVE

TOOLS: Tool kit, general mechanics
NSN 5180-00-177-7033

1-1/8 in. open end wrench
NSN 5120-00-277-1249

Stiff- bristle cleaning brush

MATERIALS/PARTS: Gasket (2)
Packing
Detergent, mild non-toxic (Item 7, Appendix F)

TROUBLESHOOTING REFERENCES (Table 5-1):
Malfunctions 1 and 2

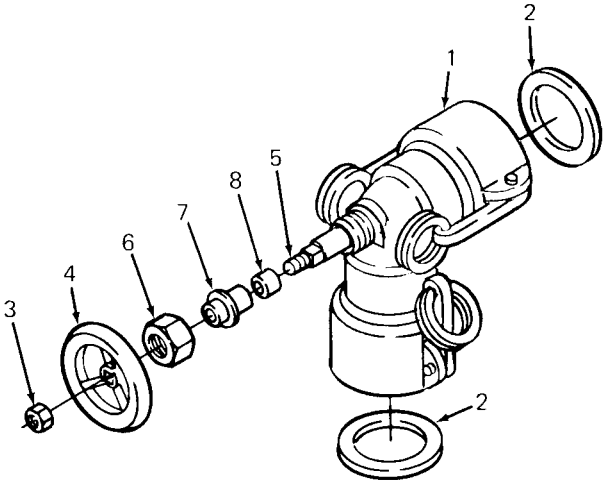
GENERAL SAFETY INSTRUCTIONS:
Clean all parts before assembling.
Assemble parts on a clean surface.

NOTE

PRELIMINARY CONDITION: Coupler valve removed from drum (para 3-4).

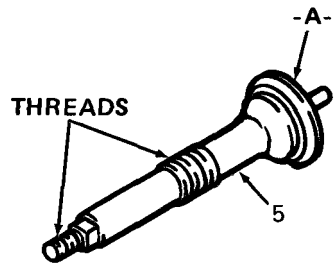
DISASSEMBLY:

1. Remove both gaskets (2) from valve body (1) and discard.
2. Remove nut (3).
3. Pull handwheel (4) off valve stem (5).
4. Remove packing nut (6) from valve body (1) using a 1-1/8 inch open end wrench.
5. Remove packing gland (7) from valve body (1).
6. Remove valve stem (5) from valve body (1) by turning valve stem counterclockwise.
7. Remove packing (8) from valve body (1) and discard.

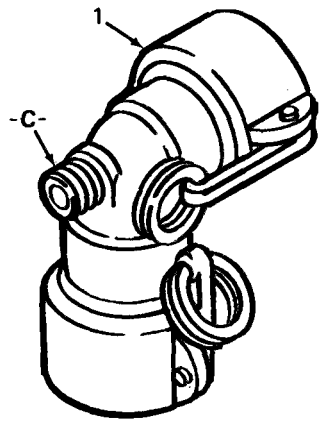


INSPECTION:

1. Check nut (3) for damaged threads. Replace nut (3) if damaged threads are found.
2. Replace damaged or cracked handwheel (4).
3. Replace packing nut (6) with damaged threads.
4. Replace distorted or worn packing gland (7).
5. Check stem valve (5) surface -A- for wear and roughness. Replace stem valve (5) with a rough or worn surface -A-. Replace bent or distorted stem valve (5). Check threads for damage. If threads are damaged replace stem valve (5).



6. Check ring seat (9) surface -B- for wear and roughness. Replace coupler valve body (1) if ring seat (9) has a rough or worn surface -B-.
7. Check valve body (1) for cracks and damaged threads at -C-. Replace cracked or damaged valve body (1).



ASSEMBLY/REPLACEMENT:

WARNING

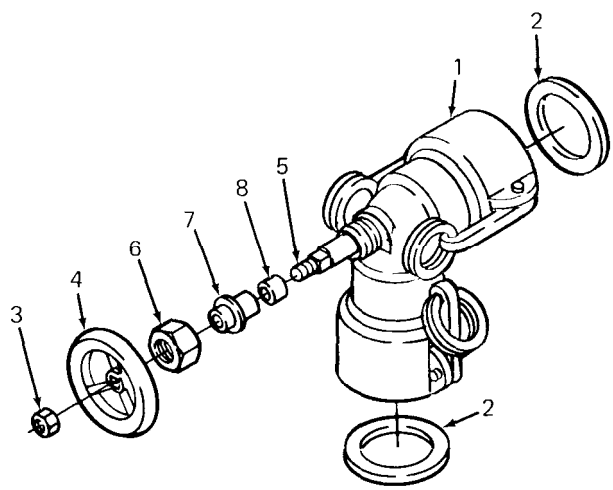
All coupler valve parts must be cleaned with a mild non-toxic detergent and assembled on a clean surface. Remember that the coupler valve will be used to dispense drinking water. A dirty or contaminated coupler valve part could cause sickness or death to personnel drinking water from the drum.

1. Clean all coupler valve parts with a mild non-toxic detergent and stiff-bristle cleaning brush.
2. Install valve stem (5) into valve body (1).

CAUTION

Only new gaskets (2) and packing (8) may be used in assembly procedures.

3. Insert a new packing (8) into valve body (1) over valve stem (5).
4. Install packing gland (7) into valve body (1) over valve stem (5).
5. Install packing nut (6) onto valve body (1) and tighten using a 1-1/8 inch open end wrench.
6. Install handwheel (4) onto valve stem (5).
7. Install nut (6) onto valve stem (5) and tighten.
8. Install two new gaskets (2) into valve body (1).



5-7. RENIOVING/INSTALLING CAM ARM ASSEMBLY

TOOLS: Tool kit, general mechanics
NSN 5180-00-177-7033

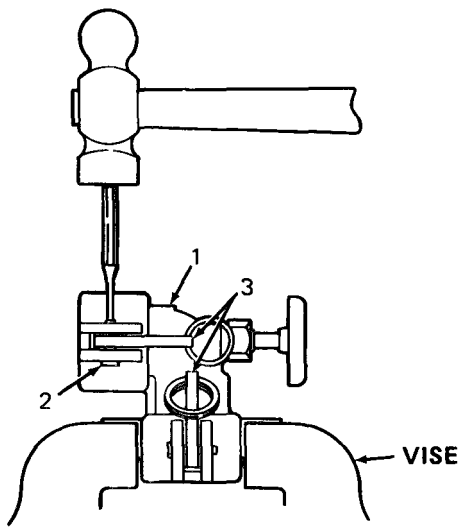
Vise

MATERIALS/PARTS: Pin
Cam arm

TROUBLESHOOTING REFERENCES (Table 5-1):
Malfunction 3

NOTE

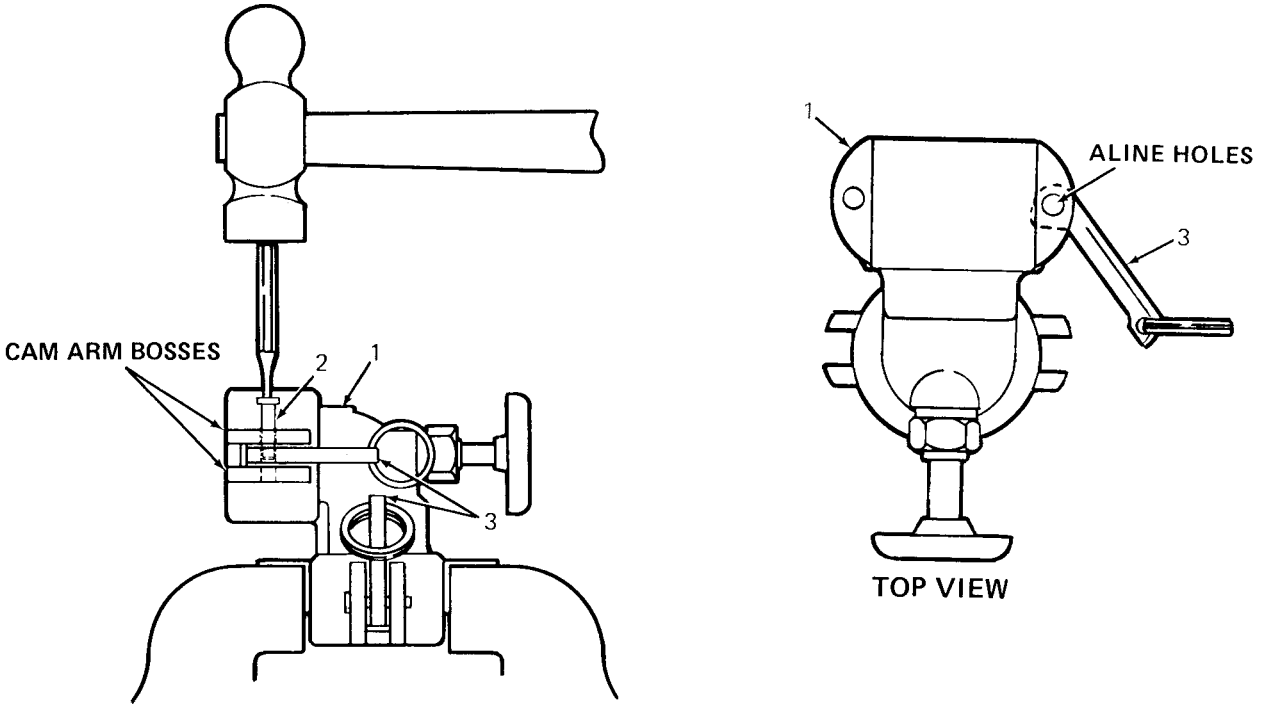
PRELIMINARY CONDITION: Coupler valve removed from drum (para 3-4).



REMOVAL:

1. Place coupler valve (1) in bench vise.

2, Using hammer and pin punch, drive out pin (2) to remove cam arm (3) from coupler valve.



INSTALLATION:

1. Place coupler valve (1) in bench vise.
2. Position cam arm (3) so that hole in cam arm alines with holes in cam arm bosses.
3. Using hammer and pin punch, drive pin (2) through cam arm bosses and cam arm.

5-8. REPAIR ADAPTER ASSEMBLY

TOOLS: Tool kit, general mechanics
NSN 5180-00-177-7033

Adjustable spanner wrench
NSN 5120-00-288-8746

vise

Stiff-bristle cleaning brush

MATERIALS/PARTS: Adapter gasket
Detergent, mild non-toxic (Item 7, Appendix F)

TROUBLESHOOTING REFERENCE (Table 5-1):

Malfunctions 1 and 4

GENERAL SAFETY INSTRUCTIONS:

Clean all parts before assembling.
Assemble parts on a clean surface.

NOTE

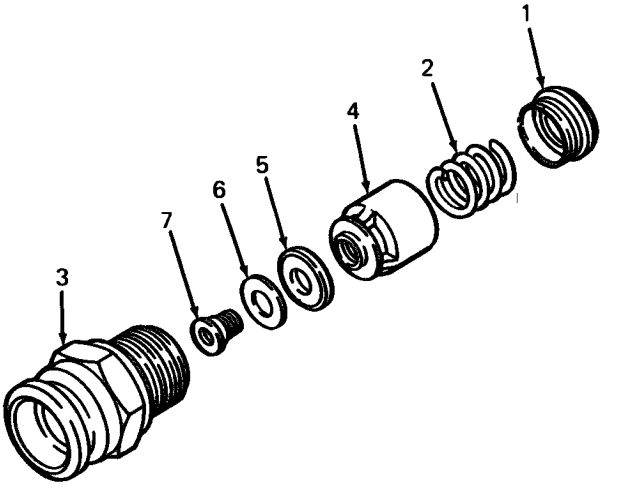
PRELIMINARY CONDITION: Coupler valve and adapter assembly removed from drum (para 3-4 and 4-11).

DISASSEMBLY:

WARNING

Helical spring is compressed inside adapter body. When spring retainer is removed, the helical spring may fly out. To prevent injury, wear proper eye protection.

1. Remove spring retainer (1) from adapter body (3) using adjustable spanner wrench.
2. Remove helical spring (2) from adapter body (3).
3. Pull spring housing (4) out of adapter body (3).
4. Remove guide pin (7) from spring housing (4).
5. Remove adapter gasket (5) and washer (6) from guide pin (7). Discard adapter gasket (5).



INSPECTION:

1. Replace damaged spring retainer (1).
2. Replace bent or distorted helical spring (2).
3. Replace spring housing (4) with damaged threads.
4. Replace guide pin (7) with damaged threads.
5. Replace bent or distorted washer (6).
6. Check adapter body (3) for damaged threads and general condition. Replace adapter body (3) if any damage is found.

ASSEMBLY:

WARNING

All adapter assembly parts must be cleaned with a mild non-toxic detergent and assembled on a clean surface. Remember that the adapter assembly will be used to dispense drinking water. A dirty or contaminated adapter assembly part could cause sickness or even death to personnel drinking water from the drum.

1. Clean all adapter assembly parts with a mild non-toxic detergent and cleaning brush.

CAUTION

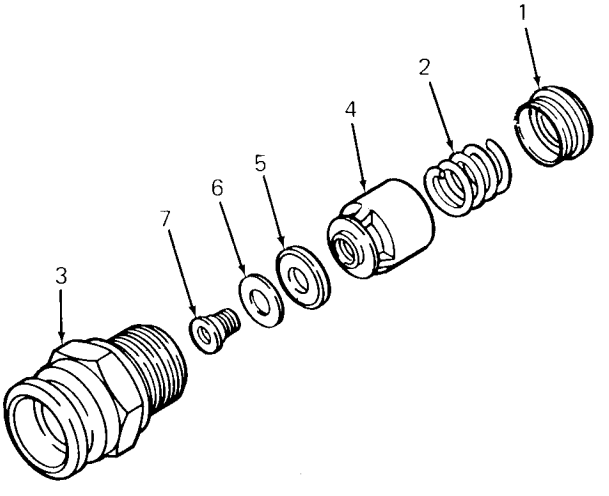
Only a new adapter gasket (5) may be used in assembly procedures.

2. Install washer (6) onto guide pin (7).
3. Install new adapter gasket (5) onto guide pin (7) with its chamfered edge toward the guide pin head.
4. Thread guide pin (7) into spring housing (4) and tighten.
5. Insert spring housing (4) into adapter body (3).

WARNING

Wear eye protection when installing the helical spring.

6. Install helical spring (2) into spring housing (4).
7. Thread spring retainer (1) into adapter body (3). Tighten spring retainer (1) with adjustable spanner wrench.



5-9. REPAIR BEARING PLATE, SWIVEL PLATE, CLOSURE RING, AND CLOSURE PLATE

TOOLS: Tool kit, general mechanics
NSN 5180-00-177-7033

Paint brush

MATERIALS/PARTS: Chemical conversion coating, MIL-C-5581 (Item 5, Appendix F)
Cloth, abrasive, 400 grit (Item 6, Appendix F)
Enamel, alkyd (Item 8, Appendix F)
Methyl ethyl ketone (MEK) (Item 10, Appendix F)

GENERAL SAFETY INSTRUCTIONS:

Well-ventilated area.

NOTE

PRELIMINARY CONDITION: Drum disassembled (para 5-4).

NOTE

The following procedures apply to all parts covered in this paragraph.

1. Remove raised metal and blend in depressions as follows:

   a. Use 400 grit abrasive cloth to remove raised metal or blend in depressions. Smoothness of repaired surface shall equal undamaged areas of same functional surface.

WARNING

Methyl ethyl ketone (MEK) used for cleaning drum body repair areas is extremely flammable and is potentially dangerous to personnel and property. Keep container closed. Use in a well-ventilated area as the fumes are dangerous if inhaled. Avoid repeated and prolonged skin contact. Flash point of MEK is 24° F (4.4°C).

   b. Clean repaired surface using MEK.

   c. Coat repaired surface with chemical conversion coating.

2. Remove corrosion as follows:

   a. Remove corrosion with wire brush.

   b. Clean surface with MEK.

   c. Coat repaired surfaces with chemical conversion coating.

3. Touch up painted surfaces as follows:

   a. Touch up repaired or damaged painted surfaces using alkyd enamel per Fed. Spec. TT-E-527, color number 30277, and a brush.

5-10. REPAIR CABLE ASSEMBLIES

TOOLS: Tool kit, general mechanics
NSN 5180-00-177-7033

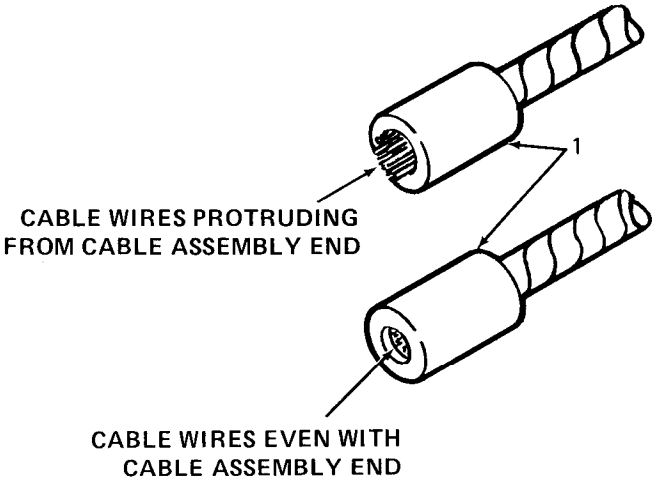
MATERIALS/PARTS: Cloth, abrasive, 400 grit (Item 6, Appendix F)
Methyl ethyl ketone (MEK) (Item 10, Appendix F)

GENERAL SAFETY INSTRUCTIONS:

Well-ventilated area.

NOTE

PRELIMINARY CONDITION: Drum disassembled (para 5-4).



1. Remove raised metal and blend in depressions on cable assembly ends (1) using 400 grit abrasive cloth. Smoothness of repaired surface shall equal undamaged area of same functional surface.

WARNING

Methyl ethyl ketone (MEK) used for cleaning drum body repair areas is extremely flammable and is potentially dangerous to personnel and property. Keep container closed. Use in a well-ventilated area as the fumes are dangerous if inhaled. Avoid repeated and prolonged skin contact. Flash point of MEK is 24°F (4.4°C).

2. Clean repaired area with MEK.

3. Using a file, remove cable wires protruding from cable assembly ends. Cable wires shall be even with cable assembly end.

WARNING

Methyl ethyl ketone (MEK) used for cleaning drum body repair areas is extremely flammable and is potentially dangerous to personnel and property. Keep container closed. Use in a well-ventilated area as the fumes are dangerous if inhaled. Avoid repeated and prolonged skin contact. Flash point of MEK is 24° F (4.4°C).

4. Clean repaired area with MEK.

5-11. REPAIR DRUM BODY - MODEL RD-610 ONLY

TOOLS: Pressure-type vulcanizer
Buffing tool
Roller
Stitcher
Stiff-bristle cleaning brush

MATERIALS/PARTS: Cement, 3201 (Item 1, Appendix F)
Cement, 3918 (Item 2, Appendix F)
Cement, 3980 (Item 3, Appendix F)
Detergent, mild non-toxic (Item 7, Appendix F)
Gum, 3156, 0.030 (Item 9, Appendix F)
Methyl ethyl ketone (MEK) (Item 10, Appendix F)
Paper, silicone, RM58B (Item 11, Appendix F)
Patch, material, 42118 (Item 12, Appendix F)
Patch, material, 42146 (Item 13, Appendix F)
Patch, material, 42153 (Item 14, Appendix F)

TROUBLESHOOTING REFERENCE (Table 5-1):
Malfunction 8

GENERAL SAFETY INSTRUCTIONS:
Repair in a clean, well-ventilated area.
Wash out drum body interior.

NOTE

PRELIMINARY CONDITION: Drum disassembled (para 5-4).

EXTERIOR REPAIR:

WARNING

Methyl ethyl ketone (MEK) used for cleaning drum body repair areas is extremely flammable and is potentially dangerous to personnel and property. Keep container closed. Use in a well-ventilated area as the fumes are dangerous if inhaled. Avoid repeated and prolonged skin contact. Flash point of MEK is 24° F (4.4°C).

CAUTION

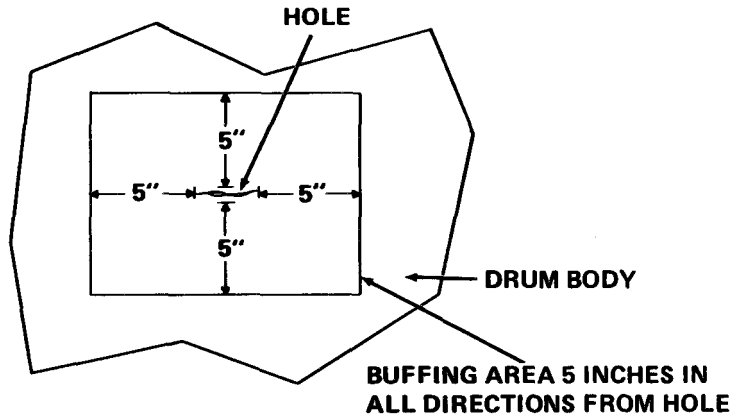
Holes in the drum body larger than 5 inches across in any one direction cannot be repaired. Replace the drum body.

1. Remove all dirt from area around hole to be repaired.

2. Wash area with MEK.

3. Using a buffing tool, thoroughly buff an area 5 inches in all directions from the edge of the hole.

4. Remove buffing dust and wash area with MEK.



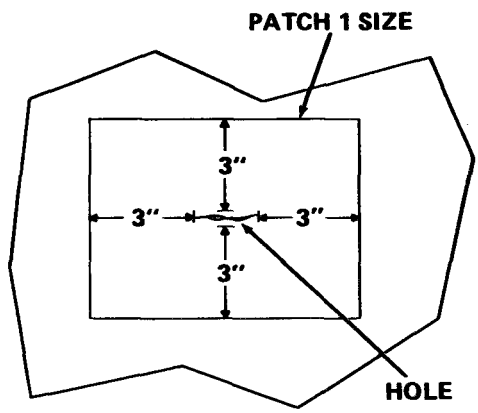
NOTE

Under normal atmospheric conditions the cement will dry in 2 to 3 minutes. Excessive humidity will require longer drying time. Do not mix applicator brushes with different cements.

5. Apply one coat of 3918 cement to entire buffed and cleaned area around hole. Allow cement to dry.

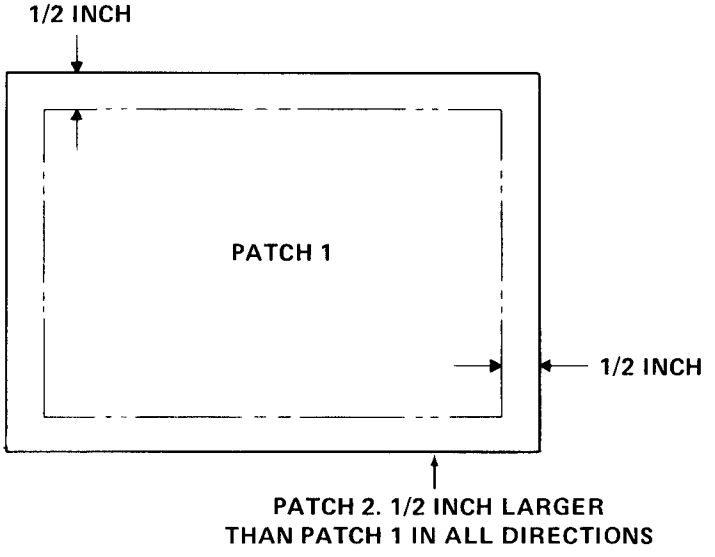
6. Apply a second coat of 3918 cement to buffed and cleaned area, and allow it to dry.

7. Cut out four patches as follows:



a. Patch 1. Cut a patch from 42153 patch material that is 3 inches larger than the hole in all directions.

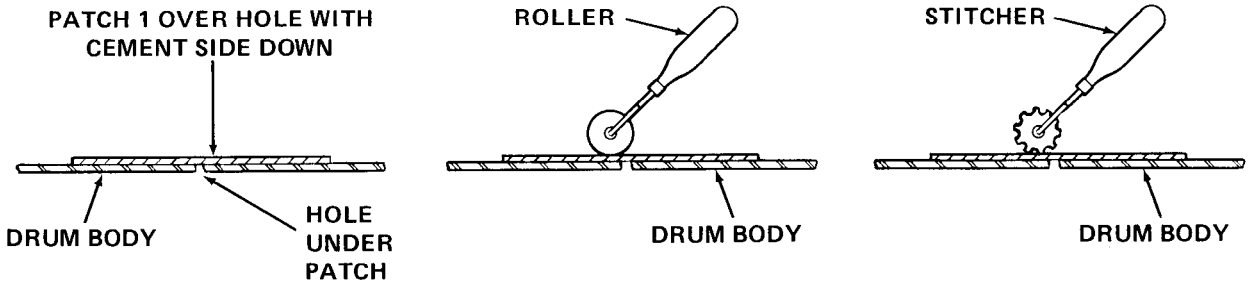
b. Patch 2. Cut a patch from 42153 patch material that is 1/2 inch larger than patch 1 in all directions.



c. Patch 3. Cut a third patch from 42153 patch material that is 1/2 inch larger than patch 2 in all directions.

d. Patch 4. Cut a fourth patch from 0.030 inch thick 3156 gum 1/2 inch larger than patch 3 in all directions.

8. Apply the four patches over exterior of hole as follows:

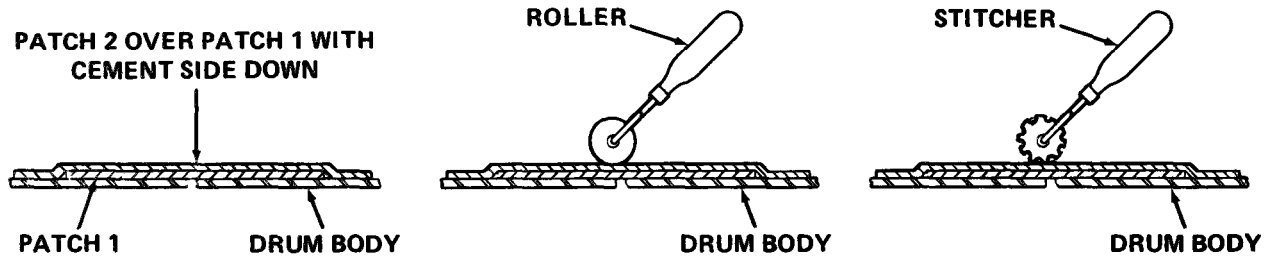


a. Apply one coat of 3918 cement to one side of patch 1 and allow to dry.

b. Position and center patch 1 over hole with the cement side down.

c. Roll and stitch patch 1 thoroughly using a roller and stitcher.

d. Apply one coat of 3918 cement to top side of patch 1 and allow to dry.



e. Apply one coat of 3918 cement to one side of patch 2 and allow to dry.

f. Position and center patch 2 over patch 1 with the cement side down.

9. Roll and stitch patch 2 thoroughly using a roller and stitcher.

h. Apply one coat of 3918 cement to top side of patch 2 and allow to dry.

i. Apply one coat of 3918 cement to one side of patch 3 and allow to dry.

j. Position and center patch 3 over patch 2 with the cement side down.

k. Roll and stitch patch 3 thoroughly using a roller and stitcher.

1. Apply one coat of 3918 cement to one side of patch 4 and allow to dry.

m. Position and center patch 4 over patch 3 with the cement side down.

n. Roll and stitch patch 4 thoroughly using a roller and stitcher.

NOTE

Exterior repair is now complete. Proceed to interior repair instructions, following.

INTERIOR REPAIR:

1. Remove all dirt from area around hole to be repaired.

2. Wash with mild non-toxic detergent and water.

3. Using a buffing tool, thoroughly buff an area 5 inches in all directions from the edge of the hole.

4. Remove buffing dust and wash area with non-toxic detergent and water.

NOTE

Under normal atmospheric conditions the cement will dry in 2 to 3 minutes. Excessive humidity will require longer drying time. Do not mix applicator brushes with different cements.

5. Apply one coat of 3980 cement to entire buffed and cleaned area around hole. Allow cement to dry.

6. Apply a second coat of 3980 cement to buffed and cleaned area.

7. Cut out three patches as follows:

   a. Patch 1. Cut a patch from 42118 patch material that is 3 inches larger than the hole in all directions.

   b. Patch 2. Cut a patch from 42118 patch material that is 1/2 inch larger than patch 1 in all directions.

   c. Patch 3. Cut a third patch from 42146 patch material that is 1/2 inch larger than patch 2 in all directions.

8. Apply the three patches over interior of hole as follows:

   a. Apply one coat of 3980 cement to one side of patch 1 and allow to dry.

   b. Position and center patch 1 over hole with the cement side down.

   c. Roll and stitch patch 1 thoroughly using a roller and stitcher.

   d. Apply one coat of 3980 cement to top side of patch 1 and allow to dry.

   e. Apply one coat of 3980 cement to one side of patch 2 and allow to dry.

   f. Position and center patch 2 over patch 1 with the cement side down.

   g. Roll and stitch patch 2 thoroughly using a roller and stitcher.

   h. Apply one coat of 3980 cement to top side of patch 2 and allow to dry.

   i. Apply one coat of 3980 cement to one side of patch 3 and allow to dry.

   j. Position and center patch 3 over patch 2 with the cement side down.

   k. Roll and stitch patch 3 thoroughly using a roller and stitcher.

1. Apply one coat of 3980 cement to top side of patch 3 and allow to dry.

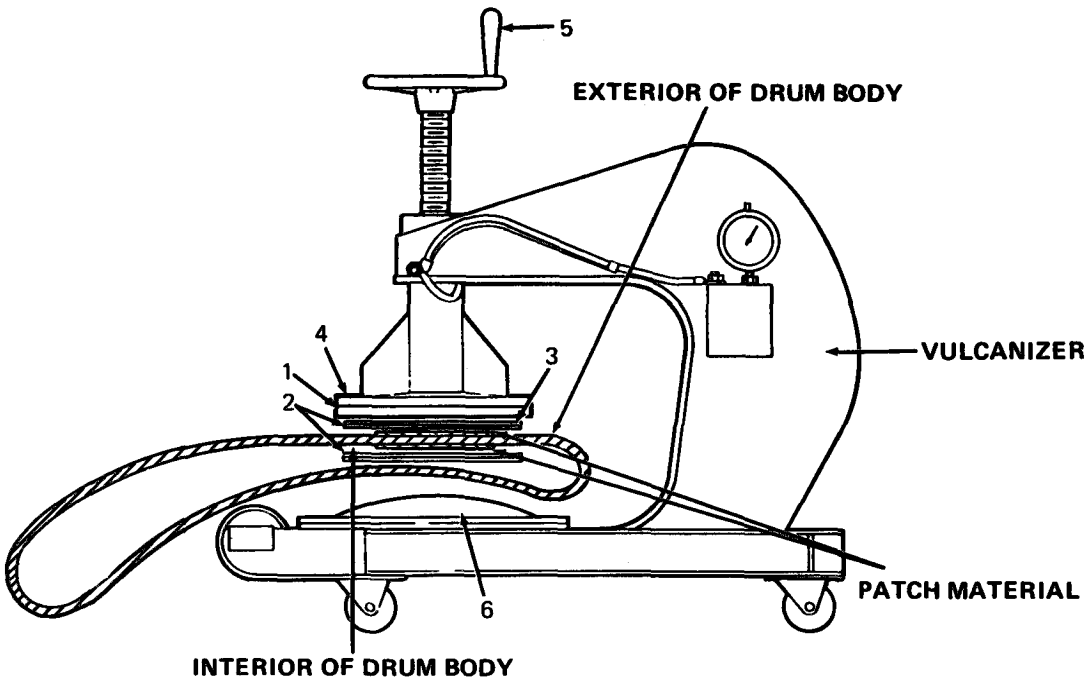
NOTE

The interior repair is now complete. Proceed to curing instructions, following.

CURING:

NOTE

VULCANIZER MAY NOT BE AS PICTURED.



1. Place drum body in the jaw of pressure-type vulcanizer so that the exterior repair is facing heating element (1) of the vulcanizer.

2. Slip a sheet of RM58B silicone paper (2) between the interior surfaces of drum body.

3. Slip a second sheet of RM58B silicone paper (2) plus a pad between the exterior repair and vulcanizer top jaw (4).

4. Close the vulcanizer's jaws by turning handwheel (5).

NOTE

See illustration on previous page for the following steps.

5. Inflate vulcanizer bladder (6).
6. Turn on the vulcanizer's heating element (1) to 300°F (149°C).
7. Cure repair for 75 minutes.
8. Turn off heating element and allow repair to cool for 45 minutes with the vulcanizer's jaws still closed and bladder (6) still inflated.
9. Deflate bladder and open the vulcanizer's jaws.
10. Remove drum body from vulcanizer.
11. Remove the two sheets of RM58B silicone paper from the repairs.
12. Check both exterior and interior patches for smoothness and security.
13. Thoroughly wash out the interior of the drum body using a stiff-bristle cleaning brush, mild non-toxic detergent, and water.

NOTE

Assemble drum (para 5-4) and test (para 5-5).

5-12. REPAIR DRUMBODY - MODEL M43699-02 ONLY

TOOLS: Pressure-type vulcanizer
Buffing tool
Roller
Stitcher
Stiff-bristle cleaning brush

MATERIALS/PARTS: Cement, exterior, PT-659 (Item 15, Appendix F)
Cement, interior, PT-589 (Item 16, Appendix F)
Detergent, mild non-toxic (Item 7, Appendix F)
Gum, exterior, SA-174-1, 0.030 (Item 17, Appendix F)
Gum, interior, SA-131-3, 0.030 (Item 18, Appendix F)
Methyl ethyl ketone (MEK) (Item 10, Appendix F)
Paper, anti-stick, 10950 (Item 19, Appendix F)
Patch, exterior, PS-693 (Item 20, Appendix F)
Patch, interior, PS-692 (Item 21, Appendix F)

TROUBLESHOOTING REFERENCE (Table 5-1):
Malfunction 8

GENERAL SAFETY INSTRUCTIONS:
Repair in a clean, well-ventilated area.
Wash out drum body interior.

NOTE

PRELIMINARY CONDITION: Drum disassembled (para 5-4).

EXTERIOR REPAIR:

WARNING

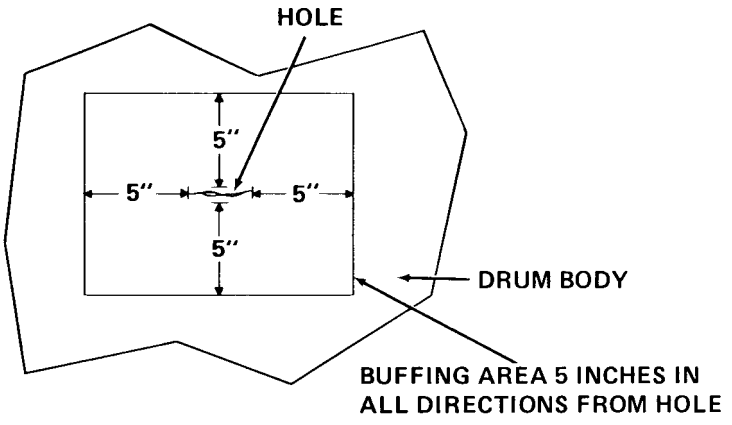
Methyl ethyl ketone (MEK) used for cleaning drum body repair areas is extremely flammable and is potentially dangerous to personnel and property. Keep container closed. Use in a well-ventilated area as the fumes are dangerous if inhaled. Avoid repeated and prolonged skin contact. Flash point of MEK is 24°F (4.4°C).

CAUTION

Holes in the drum body larger than 5 inches across in any one direction cannot be repaired. Replace the drum body.

1. Remove all dirt from area around hole to be repaired.

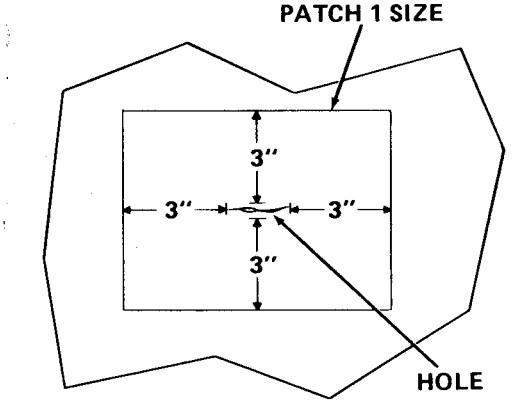
2. Wash area with MEK.
3. Using a buffing tool, thoroughly buff an area 5 inches in all directions from the edge of the hole.
4. Remove buffing dust and wash area with MEK.



NOTE

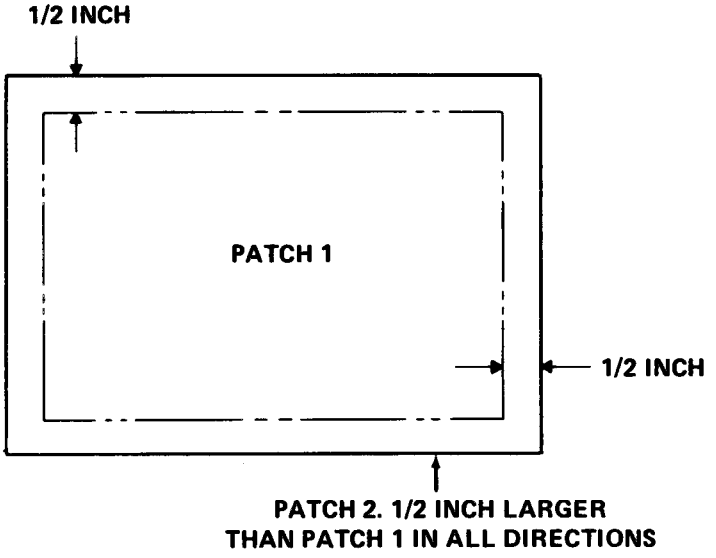
Under normal atmospheric conditions the cement will dry in 1 to 3 minutes. Excessive humidity will require longer drying time. Do not mix applicator brushes with different cements.

5. Apply one coat of PT-659 cement to entire buffed and cleaned area around hole. Allow cement to dry.
6. Apply a second coat of PT-659 cement to buffed and cleaned area, and allow it to dry.
7. Cut out two patches as follows:

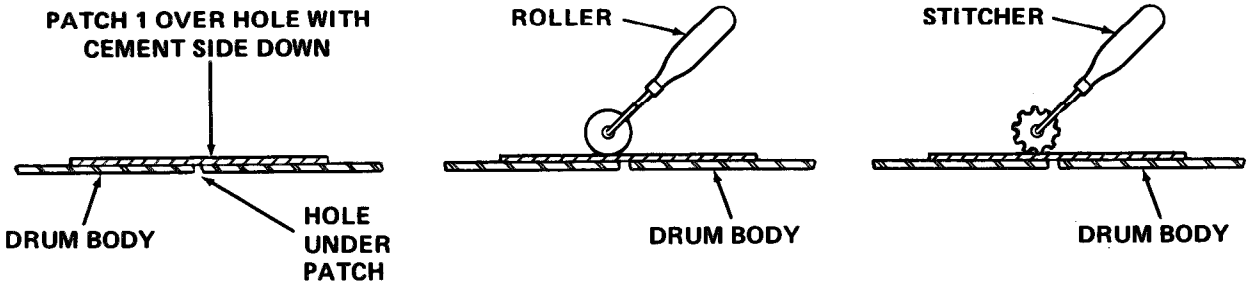


a. Patch 1. Cut a patch from PS-693 patch material that is 3 inches larger than the hole in all directions.

b. Patch 2. Cut a patch from PS-693 patch material that is 1/2 inch larger than patch 1 in all directions.



8. Apply the two patches over exterior of hole as follows:

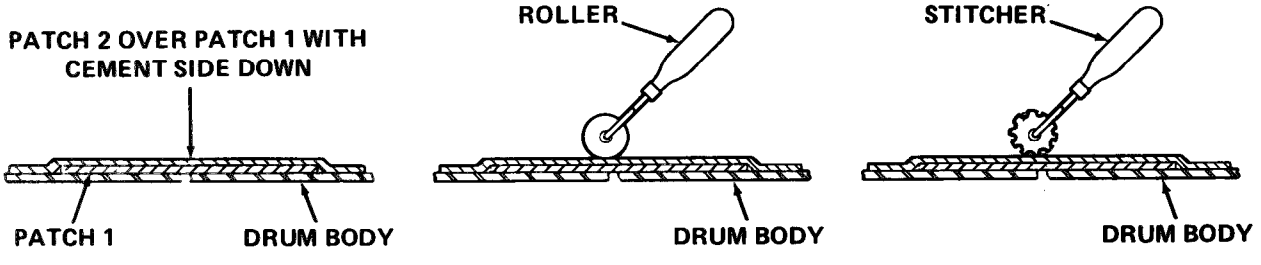


a. Apply one coat of PT-659 cement to one side of patch 1 and allow to dry.

b. Position and center patch 1 over hole with the cement side down.

c. Roll and stitch patch 1 thoroughly using a roller and stitcher.

d. Apply one coat of PT-659 cement to top side of patch 1 and allow to dry.



e. Apply one coat of PT-659 cement to one side of patch 2 and allow to dry.

f. Position and center patch 2 over patch 1 with the cement side down.

g. Roll and stitch patch 2 thoroughly using a roller and stitcher.

NOTE

Exterior repair is now complete. Proceed to interior repair instructions, following.

INTERIOR REPAIR:

1. Remove all dirt from area around hole to be repaired.
2. Wash with mild non-toxic detergent and water.
3. Using a buffing tool, thoroughly buff an area 5 inches in all directions from the edge of the hole.
4. Remove buffing dust and wash area with non-toxic detergent and water.

NOTE

Under normal atmospheric conditions the cement will dry in 1 to 3 minutes. Excessive humidity will require longer drying time. Do not mix applicator brushes with different cements.

5. Apply one coat of PT-659 cement to entire buffed and cleaned area around hole. Allow cement to dry.
6. Apply a second coat of PT-659 cement to buffed and cleaned area.
7. Cut out two patches as follows:
   a. Patch 1. Cut a patch from PS-692 patch material that is 3 inches larger than the hole in all directions.
   b. Patch 2. Cut a patch from PS-692 patch material that is 1/2 inch larger than patch 1 in all directions.
8. Apply the two patches over interior of hole as follows:
   a. Apply one coat of PT-589 cement to one side of patch 1 and allow to dry.
   b. Position and center patch 1 over hole with the cement side down.
   c. Roll and stitch patch 1 thoroughly using a roller and stitcher.
   d. Apply one coat of PT-589 cement to top side of patch 1 and allow to dry.
   e. Apply one coat of PT-589 cement to one side of patch 2 and allow to dry.

f. Position and center patch 2 over patch 1 with the cement side down.

g. Roll and stitch patch 2 thoroughly using a roller and stitcher.

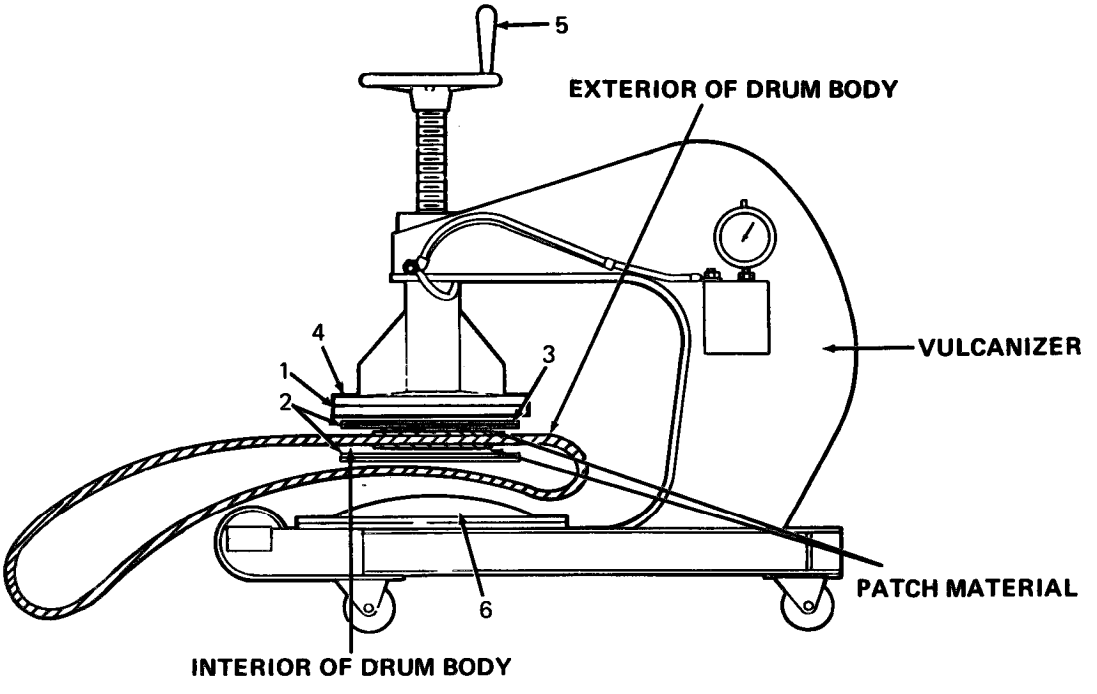
NOTE

The interior repair is now complete. Proceed to curing instructions, following.

CURING:

NOTE

VULCANIZER MAY NOT BE AS PICTURED.



1. Place drum body in the jaw of pressure-type vulcanizer so that the exterior repair is facing heating element (1) of the vulcanizer.
2. Slip a sheet of 10950 anti-stick paper (2) between the interior surfaces of drum body.
3. Slip a second sheet of 10950 anti-stick paper (2) plus a pad between the exterior repair and vulcanizer top jaw (4).
4. Close the vulcanizer's jaws by turning handwheel (5).

NOTE

See illustration on previous page for the following steps.

5. Inflate vulcanizer bladder (6).
6. Turn on the vulcanizer's heating element (1) to 300F (149°C).
7. Cure repair for 75 minutes.
8. Turn off heating element and allow repair to cool for 45 minutes with the vulcanizer's jaws still closed and bladder (6) still inflated.
9. Deflate bladder and open the vulcanizer's jaws.
10. Remove drum body from vulcanizer.
11. Remove the two sheets of 10950 anti-stick paper from the repairs.
12. Check both exterior and interior patches for smoothness and security.
13. Thoroughly wash out the interior of the drum body using a stiff-bristle cleaning brush, mile non-toxic detergent, and water.

NOTE

Assemble drum (para 5-4) and test (para 5-5).

5-13. REPAIR DRUM BODY - GTA/WD500-S/01

TOOLS: Buffing tool
Roller
Stitcher
Stiff-bristle cleaning brush

MATERIALSIPARTS: Adhesive, GTA4100 (Item 22, Appendix F)
Toluene (Item 23, Appendix F)
Polyethylene sheet (Item 24, Appendix F)

TROUBLESHOOTING REFERENCE (Table 5-1):

Malfunction 8

GENERAL SAFETY INSTRUCTIONS:

Repair in a clean, well-ventilated area.
Wash out drum body interior after repairing

NOTE
PRELIMINARY CONDITION: Drum disassembled (para 5-4).

EXTERIOR REPAIR:

WARNING

Toluene used for cleaning drum body repair areas Is extremely flammable and is potentially dangerous to personnel and property. Keep container closed. Use in a well-ventilated area as the fumes are dangerous if inhaled. Avoid repeated and prolonged skin contact. Flash point of Toluene is 45 F (7.22 C).

CAUTION

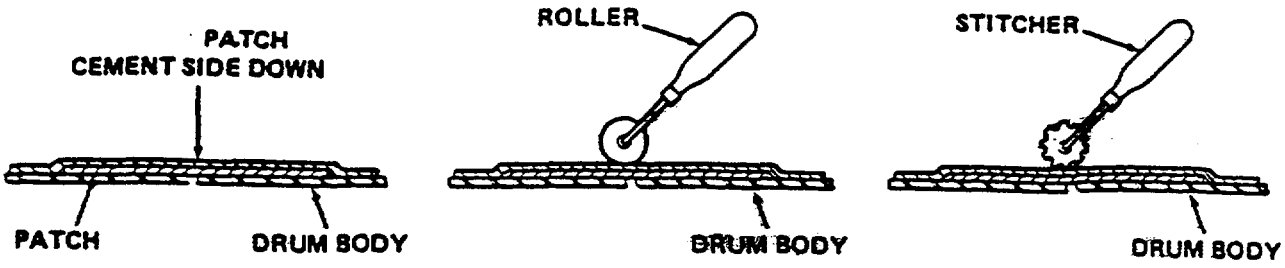
Holes in the drum body larger than 5 inches across in any one direction cannot be repaired. Replace the drum body.

1. Remove all dirt from area around hole to be repaired.
2. Wash area with Toluene.
3. Using a buffing tool, thoroughly buff an area 6 inches in all directions from the edge of the hole.
4. Remove buffing dust and wash area with Toluene.

NOTE

Under normal atmospheric conditions the adhesive will dry in 10 to 15 minutes. Excessive humidity will require a longer drying time. Do not mix applicator brushes with other adhesives.

5. Apply one coat of GTA4100 adhesive to entire buffed and cleaned area around hole. Allow adhesive to dry for 10 to 15 minutes.
6. Apply a second coat of GTA-4100 adhesive to buffed and cleaned area, and allow it to dry for 10 to 15 minutes.
7. Cut out two coated fabric patches from patch material each being 5 inches larger than the hole in all directions.
8. Apply one patch over the exterior of the hole, as follows:
   a. Wash one side of patch with Toluene.
   b. Using buffing tool, buff washed side of patch.
   c. Remove buffing dust, and wash area again with Toluene.
   d. Apply one coat of GTA-4100 adhesive to the buffed area and allow the adhesive to dry for 10 to 15 minutes.
   e. Apply another coat of GTA-4100 adhesive to the buffed area, and again allow to dry for 10 to 15 minutes.
   f. Activate the adhesive on the drum body and prepared patch, by washing both with rymple cloth dipped in Toluene.
   g. Immediately position and center patch over hole and laminate patch to the drum.
   h. Roll and stitch the patch thoroughly using roller first and then stitcher. Make sure that no air is trapped between the patch and the drum.



NOTE

Exterior repair is now complete. Proceed to interior repair instructions, following. (Procedure is same as for exterior repair.)

INTERIOR REPAIR:

1. Remove all dirt from area around hole to be repaired.
2. Wash area with Toluene.
3. Using a buffing tool, thoroughly buff an area 6 inches in all directions from the edge of the hole.
4. Remove buffing dust and wash area again with Toluene.

NOTE

Under normal atmospheric conditions the adhesive will dry in 10 to 15 minutes. Excessive humidity will require longer drying time. Use clean adhesive applicator brush.

5. Apply one coat of GTA-4100 adhesive to entire buffed and cleaned area around hole. Allow adhesive to dry for 10 to 15 minutes.
6. Apply a second coat of GTA-4100 adhesive to buffed and cleaned area, and allow it to dry for 10 to 15 minutes.
7. Cut out two coated fabric patches from patch material each being 5 inches larger than the hole in all directions. One patch for exterior repair, the other for interior repair.
8. Apply one patch over the exterior of the hole, as follows:
   a. Wash one side of patch with Toluene.
   b. Using buffing tool, buff washed side of patch.
   c. Remove buffing dust, and wash area again with Toluene.
   d. Apply one coat of GTA-4100 adhesive to the buffed area and allow the adhesive to dry for 10 to 15 minutes.
   e. Apply another coat of GTA-4100 adhesive to the buffed area, and again allow to dry for 10 to 15 minutes.
   f. Activate the adhesive on the drum body and prepared patch, by washing both with rymple cloth dipped in Toluene.
   g. Immediately position and center patch' over hole and laminate patch to the drum.

h. Roll and stitch the patch thoroughly using roller first and then stitcher. Make sure that no air is trapped between the patch and the drum.

NOTE

Repair is now complete. Let drum sit, unassembled for a minimum of 5 days to permit curing of adhesive. At conclusion of 5 days, assemble drum (para 5-4) and test (para 5-5).

APPENDIX A
REFERENCES

A-1. PUBLICATIONS INDEX

The following index should be consulted frequently for latest changes or revisions of references given in this appendix and for new publications relating to material covered in this manual.

Index of Army Publications and Blank Forms . . . . . DA Pam 25-30

A-2. FORMS AND RECORDS

Equipment Inspection and Maintenance Worksheet . . . . . DA Form 2404
Quality Deficiency Report . . . . . SF 368
Recommended Changes to Publications and Blank Forms . . . . . DA 2028

A-3. TECHNICAL MANUALS

Administrative Storage Requirements . . . . . TM 740-90-1
Drums, Fabric Collapsible Non-Vented . . . . . TM 10-8110-201-14&P
Painting Instructions for Field Use . . . . . TM 43-0139
Procedures for Destruction of Equipment to Prevent Enemy Use . . . . . TM 750-244-3
The Army Maintenance Management System (TAMMS) . . . . . DA Pam 738-750

APPENDIX B
MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. GENERAL

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

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

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

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

B-2. MAINTENANCE FUNCTIONS

Maintenance functions will be limited to and defined as follows:

a. *Inspect*. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).

b. *Test.* To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. *Service.* Operations required periodically to keep an item in proper operating condition, i.e., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.

d. *Adjust.* To maintain or regulate, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.

e. Aline. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. *Calibrate.* To determine and cause corrections to be made or to be adjusted on instruments or test, measuring, and diagnostic equipments used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. Remove/Install. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

h. *Replace.* 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 troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

j. Overhaul. That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications (i.e., DMWR). Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

k. *Rebuild.* Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of 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 number shall be 00.

b. *Column (2) - Component/Assembly.* Column 2 contains the names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. *Column (3) - Maintenance Function.* Column 3 lists the functions to be performed on the item listed in Column 2. (For detailed explanation of these functions, see paragraph B-2.)

d. *Column (4) - Maintenance Category.* Column 4 specifies, by the listing of a work time figure in the appropriate subcolumn(s), the category of maintenance authorized to perform the function listed in Column 3, This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate work time figures will be shown for each category. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various maintenance categories are as follows:

C	Operator or crew
O	Organizational Maintenance
F	Direct Support Maintenance
H	General Support Maintenance
D	Depot Maintenance

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

f. *Column (6) - Remarks.* This column shall, when applicable, contain a letter code, in alphabetical order, which shall be keyed to the remarks contained in Section IV.

B-4. EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, SECTION Ill

a. Column (1) - Reference Code. The tool and test equipment reference code correlates with a code used in the MAC, Section II, Column 5.

b. Column (2) - Maintenance Category. The lowest category of maintenance authorized to use the tool or test equipment.

c. Column (3) - Nomenclature. Name or identification of the tool or test equipment.

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

e. Column (5) - Tool Number. The manufacturer's part number.

B-5. EXPLANATION OF COLUMNS IN REMARKS, SECTION IV

a. *Column (1) - Reference Code.* The code recorded in column 6, Section II.

b. *Column (2) -Remarks.* This column lists information pertinent to the maintenance function being performed as indicated in the MAC, Section II.

Section II. MAINTENANCE ALLOCATION CHART FOR DRUM, FABRIC, COLLAPSIBLE, DRINKING WATER, MODELS GTAIWD500-SI01, RD-610 AND M43699-02

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
01	ORUM ASSEMBLY	Inspect	0.1						A
		Replace		0.4					
		Repair			5.0				
	VALVE ASSEMBLY COUPLER	Inspect	0.1						
		Replace		0.1					
		Repair			0.2				
	ADAPTER	Inspect	0.1						
		Replace		0.2					
		Repair			0.3				
	PLATE ASSEMBLY. SEARING. SWIVEL AND CLOSURE	Inspect	0.1						
		Replace			0.5				
		Repair			0.5				
	CABLE ASSEMBLY	Inspect			0.1				
		Replace			0.1				
		Repair			0.2				
	CASING	Inspect	0.1						
		Replace			2.0				
		Repair			3.0			01.02.03	
02	YOKE, TOWING AND LIFTING	Inspect		0.1					8
		Replace			0.1				
		Repair			1.0				
03	TIE-DOWN KIT	Inspect		0.1					8
		Replace		0.1					
		Repair		1.0					
04	KIT EMERGENCY REPAIR	Inspect	0.1						
		Replace	0.1						

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

(1) Tool or Test Equipment Ref Code	(2) Maintenance Category	(3) Nomenclature	(4) National/ NATO Stock Number	(5) Tool Number
01	F	Stitcher	5120-00-293-0392	
02	F	Roller		D3755 (00333 and 05476)
03	F	Vulcanizer, Commercial	4910-01-250-7723	GT-2(51266)

Section IV. REMARKS

(1) Reference Code	(2) Remarks
A	There are two types of repair authorized for the drum body. The first is a temporary repair to be performed by crew/operator. The second is a permanent repair performed by direct maintenance.
B	For maintenance of the yoke and/or tie-down kit, reference TM 10-81

APPENDIX C

ORGANIZATIONAL AND DIRECT SUPPORT

MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST

SECTION I. INTRODUCTION

C-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 organizational and direct support maintenance of the 500 Gallon Water Fabric Drum, Drinking. It authorizes the requisitioning, issue, and disposition of spares, repair parts and special tools as indicated by the source, maintenance and recoverability (SMR) codes.

C-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. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Bulk materials are listed in item name sequence. Repair 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 listed are shown on the associated illustration(s)/figure(s).

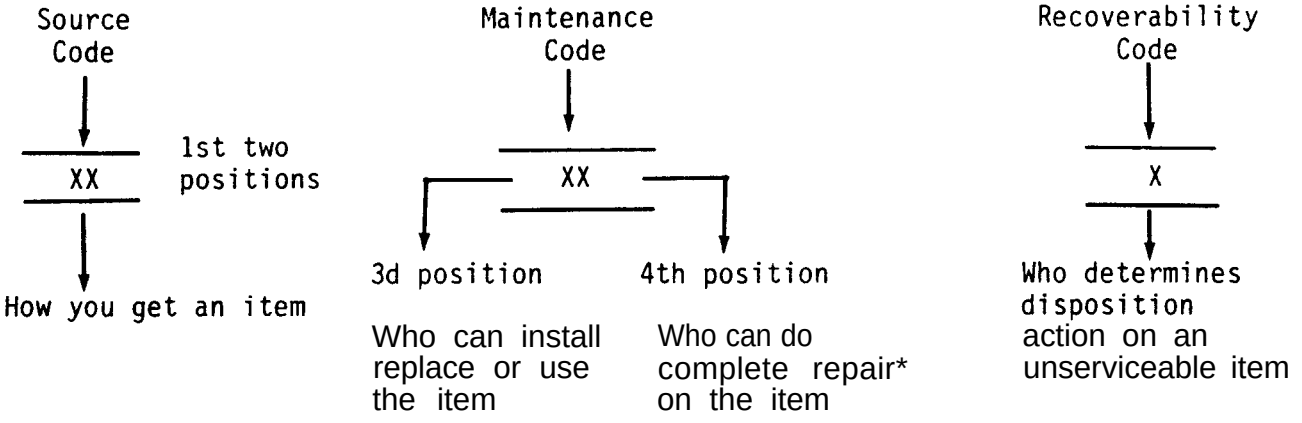
b. Section III. Special Tools List. A list of special tools, special TMDE, and other special support equipment authorized by this RPSTL (as indicated by Basis of Issue (BOI) information in DESCRIPTION AND USABLE ON CODE column) for the performance of maintenance.

c. Section IV. Cross-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, FSCM and part number.

C-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** PD PE PF PG	Stocked items; use the applicable NSN to request/requisition items with these source codes. They are authorized to the category indicated by the code entered in the 3d 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 3d position of the SMR code. The complete kit must be requisitioned and applied.

Code	Explanation
MO--(Made at org. AVUM Level MF--(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 3d 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.

	Explanation
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 3d 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.

Code	Explanation
XA	--Do not requisition an "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 FSCM and part number given.
XC	--Installation drawing, diagram, instruction sheet, field service drawing, that is identified by manufacturer's part number.
XD	--Item is not stocked. Order an "XD"-coded item through normal supply channels using the FSCM and part number given, if no NSN is available.

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes, except for those source coded "XA" or those aircraft support items restricted by requirements of AR 700-42.

(2) Maintenance Code. Maintenance codes 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 within organizational or aviation unit maintenance.
O	--Organizational 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 --Organizational 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.

Recoverability Codes	Application/Explanation
O	--Reparable item. When uneconomically reparable, condemn and dispose of the item at organizational 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. FSCM (Column (3)). The Federal Supply Code for Manufacturer (FSCM) 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., Phy Sec C1 - Confidential , Phy Sec C1 (S) - Secret, Phy Sec 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.

(10) 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.

C-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. (5305-01-574-1467). (NSN / NIIN)

When using this column to locate an item, ignore the first 4 digits of the NSN. However, the complete NSN should be used when ordering items by stock number.

(2) FIG. column. This column lists the number of the figure where the item is identified/located. The figures are in numerical order in Section II and Section III.

(3) ITEM column. The item number identifies the item associated with the figure listed in the adjacent FIG. column. This item is also identified by the NSN listed on the same line.

b. PART NUMBER INDEX. Part numbers in this index are listed by part number in ascending alphanumeric sequence (i.e., vertical arrangement of letter and number combination which places the first letter or digit of each group in order A through Z, followed by the numbers 0 through 9, and each following letter or digit in like order).

(1) **FSCM column**. The Federal Supply Code for Manufacturer (FSCM) 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 FSCM 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 Section 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-5. SPECIAL INFORMATION.

USABLE ON CODE. The usable on code appears in the lower left comer 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. Identification of the usable on codes used in this RPSTL are:

Code	Used On
DUR	Model RD610
EUZ	Model M43699-02
FLZ	Model GTA/WD500-S/01

C-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 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 4a (1)). The part numbers in the Part Number index are listed in ascending alphanumeric sequence (see paragraph 4b). 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.

C-7 **ABBREVIATIONS**. Abbreviations used in this manual are listed in MIL-STD-12.

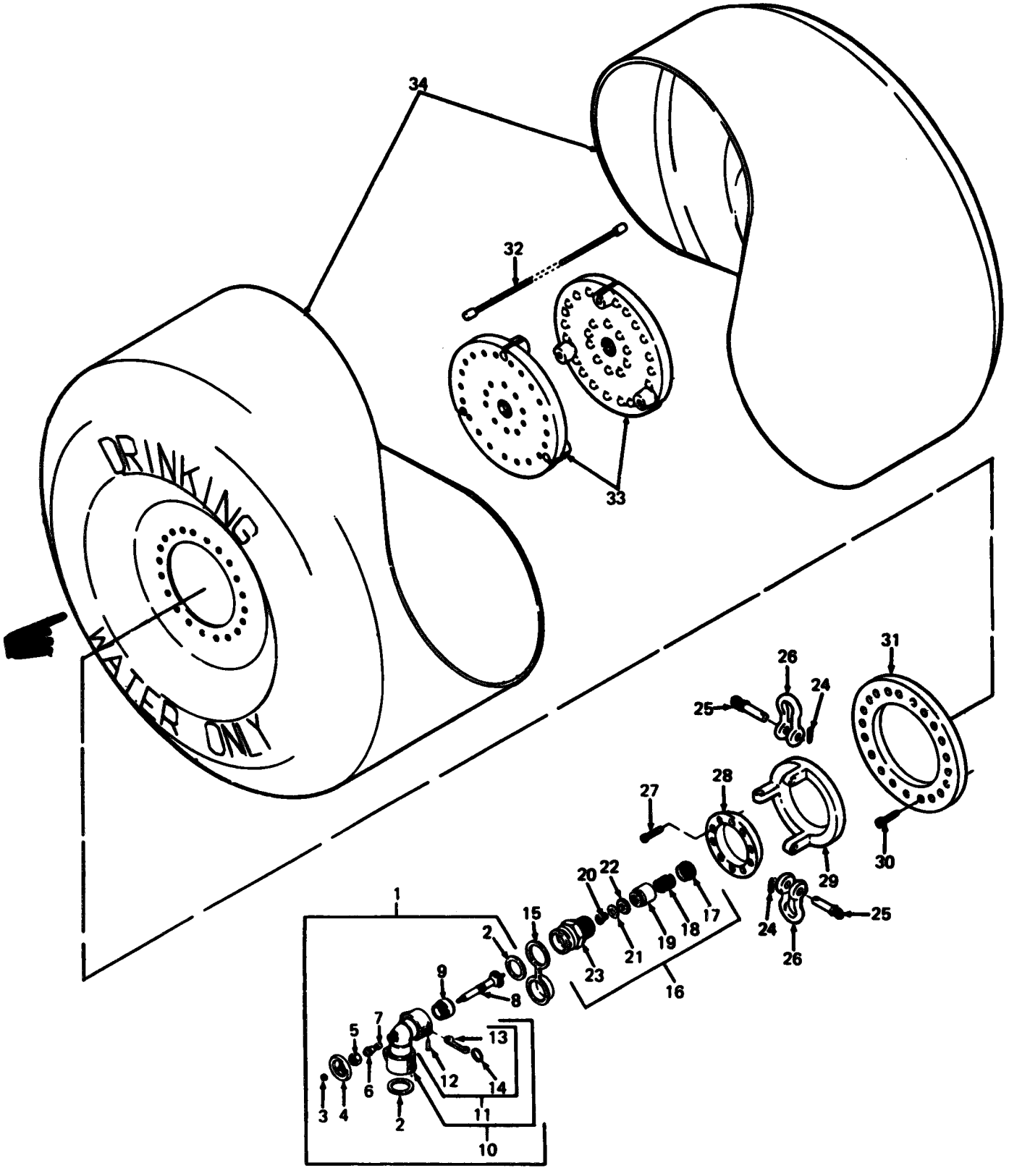


Figure C-1. 500 Gallon Capacity Drinking Water Collapsible Fabric Drum

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODE (UOC)	(6) QTY
				GROUP 01 DRUM ASSEMBLY	
				FIG.C-1 500 GALLON CAPACITY DRINKING WATER COLLAPSIBLE FABRIC DRUM	
1	PBOOO	97403	13216E9190	VALVE ASSEMBLY,2X2	2
2	PAOZZ	96906	MS27030-6	WASHER,FLAT	2
3	PAOZZ	96906	MS35649-2255	NUT,PLAIN HEXAGON	1
4	XDOZZ	97403	13217E2997	WHEEL,HAND	1
5	XDOZZ	97403	13217E2995	NUT,PACKING	1
6	XDOZZ	97403	13217E2996	PACKING,GLAND	1
7	PBOZZ	96906	MS28775-116	PACKING,PREFORMED	1
8	PBOZZ	97403	13217E2993	STEM,VALVE	1
9	XDOZZ	97403	13216E9178	RING,SEAT	1
10	XDOOO	97403	13217E2992	VALVE,BODY,COUPLER	1
11	PBOZZ	81718	H1829	ARM ASSEMBLY,CAM	4
12	XDOZZ	81718	H977ORE	PIN	1
13	XDOZZ	81718	C3378M	ARM,CAM	1
14	PBOZZ	81718	H6451-RI	RING	1
15	PBOZZ	97403	13216E9192	CAP,PROTECTIVE,DUST	2
16	PAOZZ	97403	13216E9191	ADAPTER ASSEMBLY	2
17	XDOZZ	97403	13216E9182	RETAINER,SPRING	1
18	XDOZZ	97403	13216E9187	SPRING,HELICAL	1
19	XDOZZ	97403	13216E9179	HOUSING,SPRING	1
20	PBOZZ	97403	13216E9184	GUIDE,PIN	1
21	XDOZZ	97403	13216E9185	WASHER	1
22	PBOZZ	97403	13216E9176	GASKET	1
23	XAOZZ	97403	13216E9173	BODY,ADAPTER	1
24	PAOZZ	96906	MS24665-383	PIN,COTTER	4
25	XDOZZ	00333	HC-496-2	SCREW-PIN,SHACKLE	4
26	XDOFF	00333	HC-496-1	BOW	4
27	PAOZZ	96906	MS16997-101	SCREW,CAP,SOCKET,HE	62
28	XDOZZ	00333	HC-434-1	PLATE,BEARING	2
29	XDOZH	97403	13216E9163	PLATESWIVEL	2
30	PAOZZ	96906	MS16997-101	SCREW,CAP,SOCKET HE	62
31	XDOZZ	00333	HD-637-1	RING,CLOSURE	2
32	XDOZZ	97403	13216E9167	CABLE ASSEMBLY	3
33	XDOZZ	97403	13216E9166	PLATE,CLOSURE	2
34	XDOFF	00333	RD-619	BODY.DRUM,500 GAL	1
				END OF FIGURE	

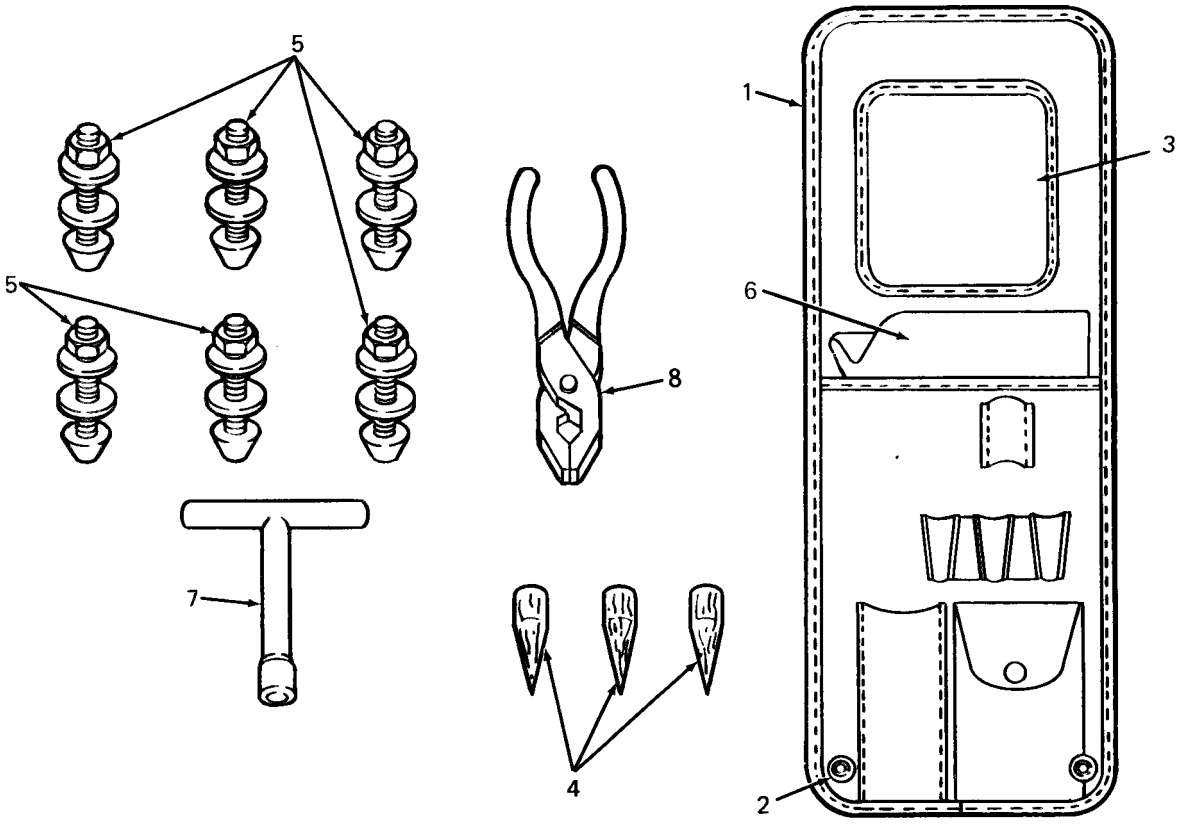


Figure C-2. Potable Water Drum Repair Kit

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODE (UOC)	(6) QTY
				GROUP 02 YOKE TOWING AND LIFTING GROUP 03 TIE-DOWN KIT (REFER TO TM 10-8110-201-14&P FOR REPAIR PARTS AND SPECIAL TOOLS LIST)	
				GROUP 04 KIT EMERGENCY	
				FIG. C-2 POTABLE WATER DRUM REPAIR KIT	
1	PAOZZ	81349	M55255TYP1	REPAIR KIT,POTABLE	1
2	PBOZZ	81349	M55255FIG1	POUCH	1
3	PBOZZ	81349	M55255FIG6	SHEET,TECHNICAL	1
4	PAOZZ	81349	M55255FIG3-5/8	PLUG,WOOD	3
5	PAOZZ	81349	M55255FIG4	PATCH ASSY,MECH	6
6	PBOZZ	81349	M55255FIG11I11	HOOD,FLEXIBLE	1
7	PAOZZ	81349	M52255FIG2	CUTTER ROTARY, WRENCH	1
8	PAOZZ	81349	M52255FIG714	PLIERS,DIAGONAL CUT	1
				END OF FIGURE	

SECTION III. SPECIAL TOOLS LIST

(Not Applicable)

CROSS-REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5330-00-579-3156	C-1	7			
5330-00-612-2414	C-1	2			
5310-00-855-1102	C-1	3			
4930-00-973-2589	C-1	1			
5305-00-978-9396	C-1	27			
	C-1	30			
5330-01-109-1369	C-1	22			
5340-01-119-7584	C-1	15			
8110-01-258-6497	C-1	23			

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

FSCM	PART NUMBER	STOCK NUMBER	FIG.	ITEM
81718	C3378M		C-1	13
00333	HC-434-1		C-1	28
00333	HC-496-1		C-1	26
00333	HC-496-2		C-1	25
00333	HD-637-1		C-1	31
81718	H1829		C-1	11
81718	H6451-RE		C-1	14
81718	H977ORE		C-1	12
96906	MS16997-101	5305-00-978-9396	C-1	27
			C-1	30
96906	MS24665-383		C-1	24
6906	MS27030-6	5330-00-612-2414	C-1	2
96906	MS28775-116	5330-00-579-3156	C-1	7
96906	MS34649-2255	5310-00-855-1102	C-1	3
81349	M52255FIG2		C-2	7
81349	M52255FIG714		C-2	8
81349	M55S55FIG1		C-2	2
81349	M55255FIG11/11		C-2	6
81349	M55255FIG3-5/8		C-2	4
81349	M55255FIG4		C-2	5
81349	M55255FIG6		C-2	3
81349	M55255TYP1		C-2	1
00333	RD-619		C-1	34
97403	13216E9163		C-1	29
97403	13216E9166		C-1	33
97403	13216E9167		C-1	32
97403	13216E9173	8110-01-258-6497	C-1	23
97403	13216E9176	5330-01-109-1369	C-1	22
97403	13216E9178		C-1	9
97403	13216E9179		C-1	19
97403	13216E9782		C-1	17
97403	13216E9184		C-1	20
97403	13216E9185		C-1	25
97403	13216E9187		C-1	18
97403	13216E9190	4930-00-973-2589	C-1	1
97403	13216E9191		C-1	16
97403	13216E9192	5340-01-119-7584	C-1	15
97403	13217E2992		C-1	10
97403	13217E2993		C-1	8
97403	13217E2995		C-1	5
97403	13217E2996		C-1	6
97403	13217E2997		C-1	4

CROSS-REFERENCE INDEXES

FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	FSCM	PART NUMBER
C-1	1	4930-00-973-2589	97403	13216E9190
C-1	2	5330-00-612-2414	96906	MS27030-6
C-1	3	5310-00-855-1102	96906	MS35649-2255
C-1	4		97403	13217E2997
C-1	5		97403	13217E2995
C-1	6		97403	13217E2996
C-1	7	5330-00-579-3156	96906	MS28775-116
C-1	8		97403	13217E2993
C-1	9		97403	13216E9178
C-1	10		97403	13217E2992
C-1	11		81718	H1829
C-1	12		81718	H977ORE
C-1	13		81718	C3378M
C-1	14		81718	H6451-RE
C-1	15	5340-01-119-7584	97403	13216E9192
C-1	16		97403	13216E9191
C-1	17		97403	13216E9182
C-1	18		97403	13216E9187
C-1	19		97403	13216E9179
C-1	20		97403	13216E9184
C-1	21		97403	13216E9185
C-1	22	5330-01-109-1369	97403	13216E9176
C-1	23	8110-01-258-6497	97403	13216E9173
C-1	24		96906	MS24665-383
C-1	25		00333	HC-496-2
C-1	26		00333	HC-496-1
C-1	27	5305-00-978-9396	96906	MS16997-101
C-1	28		00333	HC-434-1
C-1	29		97403	13216E9163
C-1	30	5305-00-978-9396	96906	MS16997-101
C-1	31		00333	HD-637-1
C-1	32		97403	13216E9167
C-1	33		97403	13216E9166
C-1	34		00333	RD-619
C-2	1		81349	M55255TYPE1
C-2	2		81349	M55255FIG1
C-2	3		81349	M55255FIG6
C-2	4		81349	M55255FIG3-5/8
C-2	5		81349	M55255FIG4
C-2	6		81349	M55255FIG11/11
C-2	7		81349	M52255FIG2
C-2	8		81349	M52255FIG714

APPENDIX D. COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS

INTRODUCTION

D-1 . SCOPE.

This appendix lists components of the end item and basic issue items for the 500 Gallon Collapsible Drum to help you inventory the items for safe and efficient operation of the equipment.

D-2. GENERAL.

The Components of End Item and Basic Issue items (BII) 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 500 Gallon Collapsible Drum, but they are to be removed and separately packaged for transportation or shipment. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations are furnished to help you find and identify the items.

b. Section III, Basic Issue items. These essential items are required to place the 500 Gallon Collapsible Drum in operation, operate it, and to do emergency repairs. Although shipped separately packaged, BII must be with the 500 Gallon Collapsible Drum during operation and when it is transferred between property accounts. Listing items is your authority to request/requisition them for replacement based on authorization of the end item by the TOE/MTOE. Illustrations are furnished to help you find and identify the items.

D-3. EXPLANATION OF COLUMNS.

The following provides an explanation of columns in the tabular listings:

a. Column(1), Illustration Number, gives you the number of the item illustrated.

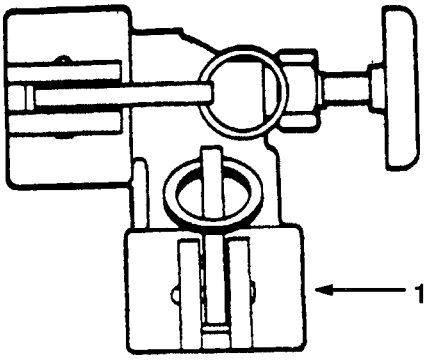
b. Column (2), National Stock Number, identifies the stock number of the item to be used for requisitioning purposes.

c. Column (3), Description and Useable On Code, identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the CAGEC (commercial and Government entity code) (in parenthesis) and the part number.

d. Column (4), U/I (unit of issue), indicates how the item is issued for the National ‘Stock Number shown on column two.

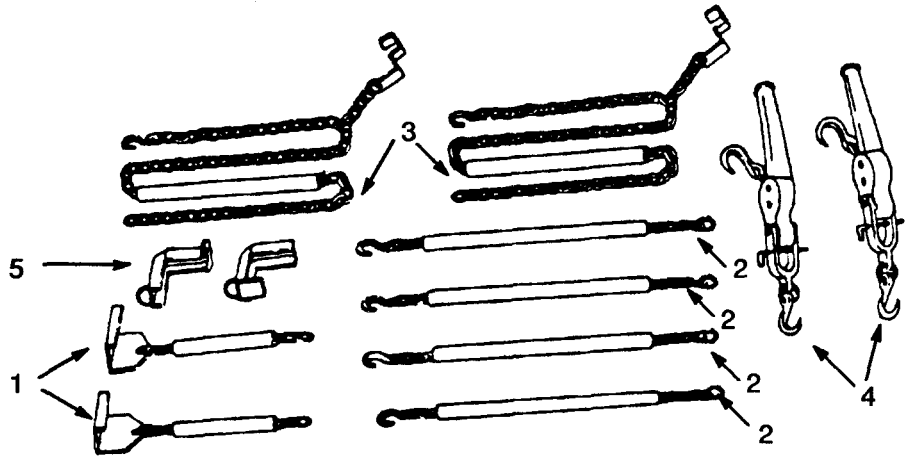
e. Column (5), Qty Rqd, indicates the quantity required.

SECTION II. COMPONENTS OF END ITEM LIST
for
DRUM, COLLAPSIBLE, DRINKING WATER, 500 GALLON



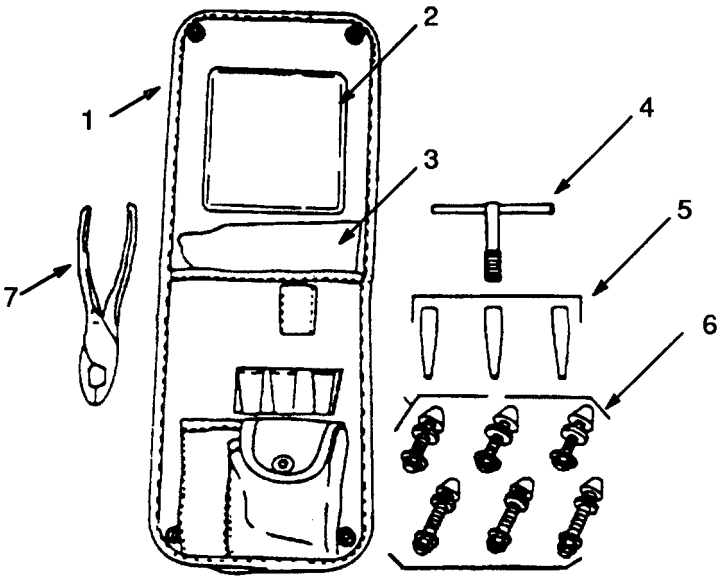
(1) Illus Number	(2) National Stock Number	(3) Description CAGEC and Part Number	Usable On Code	(4) U/I	(5) Qty rqr
1	4930-00-973-2589	COUPLER VALVE ASSEMBLY (81718) 13217E2991		EA	1
		Item 2 is deleted		EA	1

SECTION II. COMPONENTS OF END ITEM LIST (continued)
for
KIT, TIEDOWN
(NSN 8110-00-856-6245)



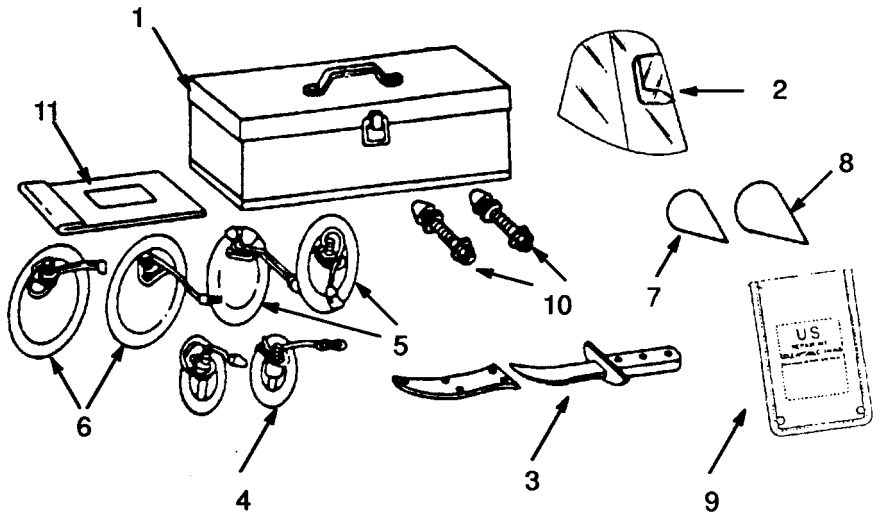
(1) Illus Number	(2) National Stock Number	(3) Description CAGEC and Part Number	Usable On Code	(4) U/I	(5) Qty rqr
1	8110-01-197-5945	CHAIN ASSEMBLY, FRONT (97403) 13226E2256		EA	2
2	8110-00-937-3882	CHAIN ASSEMBLY, INTERMEDIATE (97403) 13226E2257		EA	4
3	4010-00-174-4056	CHAIN ASSEMBLY REAR (97403) 13226E2258		EA	2
4	8110-01-180-7587	BINDER LOAD (97403) 13226E2255–4		EA	2
5		BRACKET, REAR (97403) 13226E2253		EA	2

SECTION II. COMPONENTS OF END ITEM LIST (continued)
for
REPAIR KIT, EMERGENCY, TYPE I
(NSN 8110-00-856-6244)



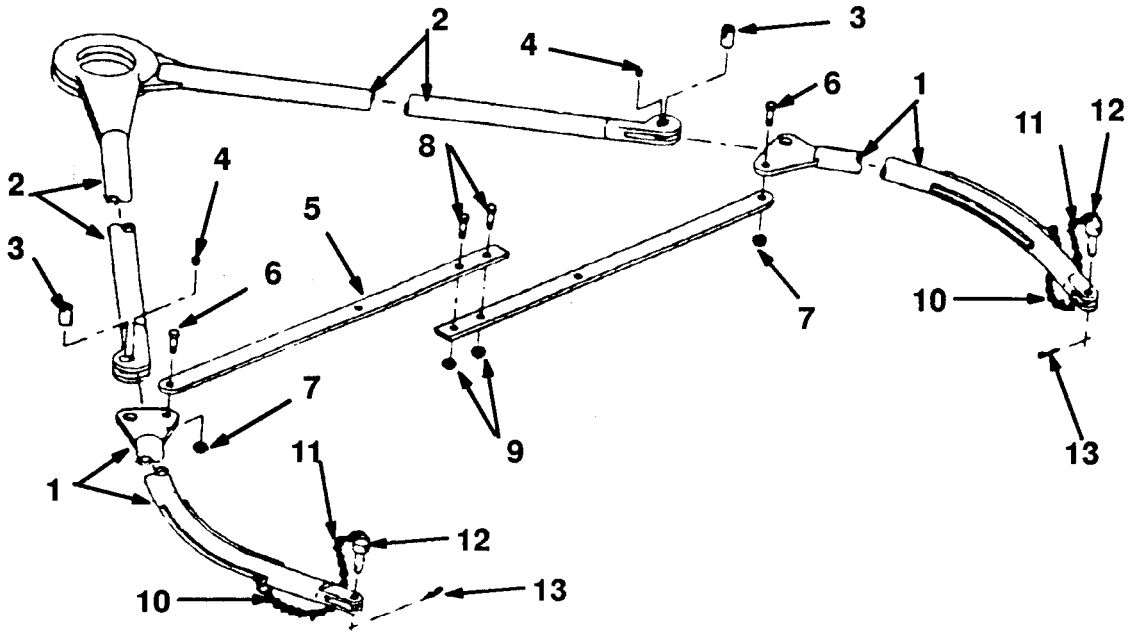
(1) Illus Number	(2) National Stock Number	(3) Description CAGEC and Part Number	Usable On Code	(4) U/I	(5) Qty rqr
1	5430-01-114-5392	POUCH, REPAIR KIT		EA	1
2	7610-01-122-3771	SHEET, TECHNICAL		EA	1
3	8110-01-120-7824	HOOD, FLEXIBLE		EA	1
4	5430-01-114-4597	ROTARY CUTTER,WRENCH		EA	1
5	5510-01-115-0893	PLUG, WOOD, 0.625 IN		EA	3
6	5430-01-114-4598	PATCH ASSEMBLY, MECH, 3/4 IN		EA	6
7	5110-01-119-4173	PLIERS. DIAGONAL CUT		EA	1

SECTION II. COMPONENTS OF END ITEM LIST (continued)
for
REPAIR KIT, EMERGENCY, TYPE II
(NSN 8110-00-856-6246)



(1) Illus Number	(2) National Stock Number	(3) Description CAGEC and Part Number	Usable On Code	(4) U/I	(5) Qty rqr
1	5430-01-248-1662	CONTAINER, REPAIR KIT		EA	1
2	8110-01-120-7824	HOOD FLEXIBLE		EA	1
3	5430-01-123-3082	KNIFE AND SHEATH ASSEMBLY		EA	1
4	5430-00-720-8864	PATCH, MECHANICAL, FLEXIBLE, 3 INCH		EA	2
5	5430-00-720-8863	PATCH, MECHANICAL, FLEXIBLE, 5 INCH		EA	2
6	5430-00-720-8858	PATCH, MECHANICAL, FLEXIBLE, 7.5 INCH		EA	2
7		PLUG, WOOD 1 1/2 INCH (81349)) M52255FIG3-2		EA	2
8	5510-01-119-5995	PLUG, WOOD 2 INCH		EA	2
9	8110-00-856-6224	REPAIR KIT, EMERGENCY, TYPE I		EA	1
10		PATCH ASSEMBLY, MECH, 2 INCH (81349) M52255FIG5		EA	2
11	7610-01-128-1852	SHEET, TECHNICAL		EA	1

Section II. COMPONENTS OF END ITEM (continued)
for
TOWING AND LIFTING YOKE
(NSN 8110-00-856-6243)



(1) Illus Number	(2) National Stock Number	(3) Description CAGEC and Part Number	Usable On Code	(4) U/I	(5) Qty rqr
1	(97403) 13216E7992	LEG, CONNECTING		EA	2
2	(97403) 13216E7993	LEG, UPPER		EA	2
3	5315-01-105-7350	PIN, STRAIGHT		EA	2
4	5305-00-723-9387	SETSCREW		EA	2
5	(97403) 1321677994	BRACE		EA	2
6	5305-00-941-3579	SCREW, CAP, HEXAGON		EA	2
7	5310-00-245-8826	NUT, SELF-LOCKING		EA	2
8	5305-00-727-6804	SCREW, CAP, HEXAGON		EA	2
9	5310-00-241-6667	NUT, SELF-LOCKING		EA	2
10	4010-01-119-7382	CHAIN		EA	2
11	4030-00-948-7315	HOOK, CHAIN		EA	4
12	5315-01-105-9474	PIN, CLEVIS		EA	2
13	5315-00-839-5821	PIN, COTTER		EA	2

* U.S. GOVERNMENT PRINTING OFFICE: 1995-655-121/20254

SECTION III. BASIC ISSUE ITEMS

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	USABLE ON CODE	(4) U/M	(5) QTY RQR
NA	NA	TM 10-8110-202-13&P		EA	1

APPENDIX E

ADDITIONAL AUTHORIZATION LIST

Section I. INTRODUCTION

E-1. SCOPE

This appendix lists additional items that you are authorized for support of the drum.

E-2. GENERAL

This list identifies items that do not have to accompany the drum and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

E-3. EXPLANATION OF LISTING

National stock numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment. The items are listed in alphabetical sequence by item name under the type of document (i.e., CTA, MTOE, TDA, or JTA) which authorizes the item(s) to you.

Section II. ADDITIONAL AUTHORIZATION LIST

(1) National Stock Number	(2) Description CAGEC And Part Number	(3) U/M	(4) Qty Rqr
5430–01–114–5392	81349 P/N X–3063; REPAIR KIT, EMERGENCY, TYPE I	EA	1
5430–01–114–6668	81349 P/N X–3067; REPAIR KIT, EMERGENCY, TYPE II	EA	1
81	97403 P/N 5–14–673; KIT, TIEDOWN ASSEMBLY	EA	1
8110–00–856–6243	97403 P/N 1321 ; YOKE, TOWING AND LIFTING	EA	1

APPENDIX F
EXPENDABLE/DURABLE SUPPLIES AND MATERIAL LIST

Section I. INTRODUCTION

F-1. SCOPE

This appendix lists expendable/durable supplies and materials you will need to operate and maintain the drum. These items are authorized to you by CTA 50-970, Expendable Items (except Medical, Class V, Repair Parts, and Heraldic Items).

F-2. EXPLANATION OF COLUMNS

a. *Column (Y) - Item 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 silicone adhesive sealant (Item 1, Appendix F).

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

C - Operator/Crew
O - organizational Maintenance
F - Direct Support Maintenance

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

d. *Column (4) - Description.* Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Federal Supply Code for Manufacturer (FSCM) in parentheses followed by the part number.

e. Column (5) - Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

SECTION II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
1	F		CEMENT, 3201 (00333)	QT
2	F		CEMENT, 3918 (00333)	QT
3	F		CEMENT, 3980 (00333)	QT
4	F		CHALK, 1 STICK	EA
5	F		CHEMICAL CONVERSION COATING, MIL-C-5541 (ALODINE)	PT
6	F		CLOTH, ABRASIVE, 400 GRIT	SH
7	F		DETERGENT, MILD NON-TOXIC	GL
8	F		ENAMEL, ALKYD, LUSTERLESS, FED. SPEC. TT-E-527, COLOR NUMBER 30277	GL
9	F		GUM, 3156, 0.030 (00333)	SH
10	F		METHYL ETHYL KETONE, TECHNICAL TT-M-261	GL
11	F		PAPER, SILICONE, RM58B (00333)	SH
12	F		PATCH MATERIAL, 42118 (00333)	SH
13	F		PATCH MATERIAL, 42146 (00333)	SH
14	F		PATCH MATERIAL, 42153 (00333)	SH
15	F		CEMENT, EXTERIOR, PT-659 (05476)	QT
16	F		CEMENT, INTERIOR, PT-589 (05476)	QT
17	F		GUM, EXTERIOR, SA-174-1, 0.030 (05476)	SH
18	F		GUM, INTERIOR, SA-131-3, 0.030 (05476)	SH
19	F		PAPER, ANTI-STICK, 10950 (05476)	SH
20	F		PATCH, EXTERIOR, PS-693 (05476)	SH
21	F		PATCH, INTERIOR, PS-692 (05476)	SH

Section II. EXPENDABLEIDURABLE SUPPUES AND MATERIALS LIST, cont.

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION PART NO. AND FSCM	(5) UNIT OF MEAS.
22	F		Adhesive, OCBB4, GTA-4100	1 qt
23	F		Toluene, OC8B4, GTA-4101	1 qt
24	F		Polyethylene Sheet, 4 mil., OCBB4, GTA-4102	1 sq.yd.

APPENDIX G TORQUE LIMITS

Paragraph Reference	Item	Torque Value ft-lb (N-m)
4-12	Closure ring and bearing plate screws	45 (61)
5-4, step 7	Closure ring screws	45 (61)
5-4, step 10	Bearing plate screws	45 (61)

GLOSSARY

Section I. ABBREVIATIONS

°C	Degree Celsius
Cuft	Cubic feet, foot
°F	Degree Fahrenheit
gal	Gallon
in.	Inch
Kg	Kilogram
Kg/cm^2	Kilogram per square centimeter
lb	Pound
m	Meter
mph	Miles per hour
m^3	Cubic meter
N-m	Newton meters
PMCS	Preventive Maintenance Checks and Services
psi	Pounds per square inch
psig	Pound-force per square inch gage
TMDE	Test, measurement, and diagnostic equipment

Section II. DEFINITION OF UNUSUAL TERMS

A

ABRASION – A scraped or scuffed area. A hose may become abraded if an unshielded portion of it rubs against a piece of bracket or another hose.

ALINE –To arrange in a line vertically and/or horizontally.

ASSEMBLY – A combination of parts that maybe taken apart without destruction, which hasno application or useof itsown but is needed for the completeness of a more complex item with which it is combined, orto which it is attached.

B

BINDING – Holding or restraining.

C

CAPACITY – The volume, amount, or quantity that can be held or contained.

CHAMFERED –To cut a groove in; to make a bevel on.

COMPONENT - A part or a combination of parts which together accomplish a function.

CONTAMINATION - To make impure by contact or mixture.

CORROSION - A gradual wearing away caused by chemical action. Metals exposed to salt water are likely to corrode.

CURING - To preserve by drying and/or heating.

D

DEFICIENT - Lacking an essential element; incomplete.

DETERIORATE - A worsening of condition usually as a result of age or hostile environment, as opposed to mechanical damage.

F

FLASH POINT - The lowest temperature at which the vapors of a solvent will ignite and burn.

G

GASKET - A seal or packing used between matched machine parts or around pipe joints to prevent the escape of gas or fluid.

M

MALFUNCTION - Occurs when a unit fails to operate normally.

MANUALLY - By hand; employing human rather than mechanical energy.

MANUFACTURER - The company which makes an item or piece of equipment for sale.

MATERIEL – Equipment, apparatus, and supplies of an organization such as an army.

P

PIVOT - To rotate.

POTABLE - Suitable for drinking.

R

RECOMMENDATIONS - Suggestions for change; advice given usually to make an improvement.

REQUIRE - To demand or need.

S

SHACKLE - U-shaped fastening device secured by a bolt or pin through holes in the end of the two arms.

T

TORQUE - Force around an axis. It produces a rotary or twisting motion, and is measured in foot pounds (ft-lb) or newton-meters (NŽm).

TOXIC - Harmful; deadly; poisonous.

V

VALVE - A device used to control the flow of a fluid.

VENTILATE - To provide with a source of fresh or uncontaminated air.

VISUAL - Visible; detected by the unaided eye.

VULCANIZER - A device used to apply pressure and heat during the bonding and curing process of drum repair.

ALPHABETICAL INDEX

By order of the Secretary of the Army:

CARL E. VUONO
General, United States Army
Chief of Staff

Official:

R.L. DILWORTH
Brigadier General, United States Army
The Adjutant General

DISTRIBUTION:
To be distributed in accordance with DA Form 12-25A, Operator, Unit and Direct Support Maintenance requirements for Drum, Fabric, Collapsible (GA14).

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These are the instructions for sending an electronic 2028

The following format must be used if submitting an electronic 2028. The subject line must be exactly the same and all fields must be included; however only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9,10, 13,15,16,17, and 27.

From: "Whomever" <whomever@avma27.army.mil>
To: mpmt%avma28@st-louis-emh7.army.mil
Subject: DA Form 2028

1. ***From***: Joe Smith
2. *Unit*: home
3. ***Address***: 4300 Park
4. ***City***: Hometown
5. ***St***: MO
6. ***Zip***: 77777
7. ***Date Sent***: 19-OCT-93
8. ***Pub no***: 55-2840-229-23
9. ***Pub Title***: TM
10. ***Publication Date***: 04-JUL-85
11. *Change Number*: 7
12. *Submitter Rank*: MSG
13. ***Submitter FName***: Joe
14. ***Submitter MName***: T
15. ***Submitter LName***: Smith
16. ***Submitter Phone***: 123-123-1234
17. ***Problem:*** 1
18. *Page*: 2
19. *Paragraph*: 3
20. *Line*: 4
21. *NSN*: 5
22. *Reference*: 6
23. *Figure*: 7
24. *Table*: 8
25. *Item*: 9
26. *Total*: 123
27. ***Text***:

This is the text for the problem below line 27.

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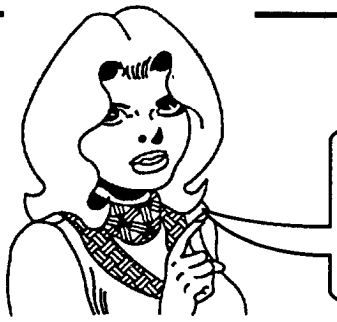

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FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)
PFC John DOE
CO A 3rd Engineer Bn
Ft. Leonardwood, MO 63108

DATE SENT 22 August 1992

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 1-1520-250-10	15 June 1992	Operator's manual MH60K Helicopter

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO
6	2-1 a		
B1		4-3	

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

In line 6 of paragraph 2-1a the manual states the engine has 6 cylinders. The engine on my set only has 4 cylinders. Change the manual to show 4 cylinders.

Callout 16 on figure 4-3 is pointed at a bolt. In key to figure 4-3, item 16 is calle a shim. Please correct one or the other

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER
JOHN DOE, PFC (268) 317-7111

SIGN HERE
JOHN DOE John Doe

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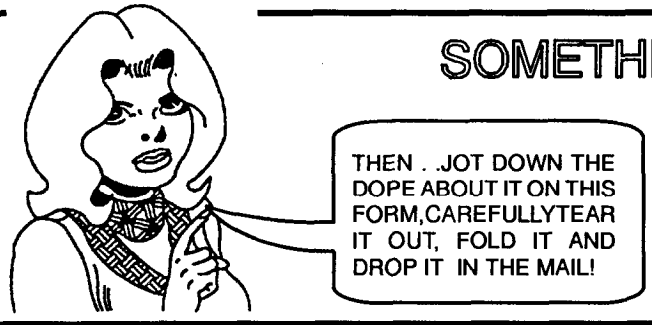

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The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 dekagram = 10 grams = .35 ounce
1 hectogram = 10 dekagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

PIN: 063232-005