DEPARTMENT OF THE ARMY TECHNICAL MANUAL

DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL

DISPERSER, RIOT CONTROL AGENT

PORTABLE M3

FSN 1040-711-8296

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

HEADQUARTERS, DEPARTMENT OF THE ARMY
FEBRUARY 1972

WARNINGS

Purge the air in the air pressure system before attempting any maintenance or modification to the pressure system.

The trigger spring is under tension. Care must be exercised when removing or installing the spring.

LIST OF EFFECTIVE PAGES

Insert latest changes pages; dispose of superseded pages in accordance with applicable regulations.

NOTE

On a changed page, the portion of the text affected by the latest change is indicated by vertical line in the outer margin of the page.

Total number of pages in this manual is 26 consisting of the following:

Page No.	Change No.*
Warning page	0
A	1
i	0
ii Blank	0
1-1 - 1-2	0
2-1 - 2-10	0
3-1	1
3-2 - 3-7	0
3-8 Blank	0
A-1	0
A-2 Blank	0

° Zero in this column indicates an original page.

TECHNICAL MANUAL

No. 3-1040-214-34

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *17 February 1972*

DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL

DISPERSER, RIOT CONTROL AGENT, PORTABLE M3

FSN 1040-711-8296

LIST OF ILLUSTRATIONS

*This manual supersedes TM 3-1040214-35, 5 June 1962 including all changes.

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope

These instructions are for use by direct support and general support maintenance personnel. They apply to the Disperser, Riot Control Agent, Portable, M3 (fig. 1-1).

1-2. Record and Report Forms

a. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750.

b. The reporting of errors, omissions, and recommendations for improving this manual by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to Commanding Officer, Edgewood Arsenal, ATTN: SMUEA-DE-ET, Edgewood Arsenal, Md. 21010.

Section II. DESCRIPTION AND DATA

1-3. Description

TM 3-1040-214-12 contains a description of the M3 disperser.

1-4. Tabulated Data

a. General. TM 3-1040-214-12 contains tabulated data. All data are approximate.

b. Recommended Wrench Torque for Steel Nuts and Bolts.

National fine		*National coarse*	
Thread size	*Torque (pound-feet)*	*Thread size*	*Torque (pound-feet)*
8-32	1-2	8-32	1-2
10-32	1-2	10-24	1-2
1/4-28	5/8	1/4-20	4-6
5/16-24	10-15	5/16-18	8-12
3/8-24	18-27	3/8-15	15-22
7/16-20	28-42	7/16-14	24-36
1/2-20	45-68	1/2-13	37-56
9/-18	64-7	9/ 2	56-83
9/16-18	64-97	9/16-12	56-83
5/8-18	98-138	5/8-11	75-112
3/4-16	158-242	3/4-10	137-200
7/8-14	258-384	7/8-9	216-316
1-14	400-600	1-8	316-484

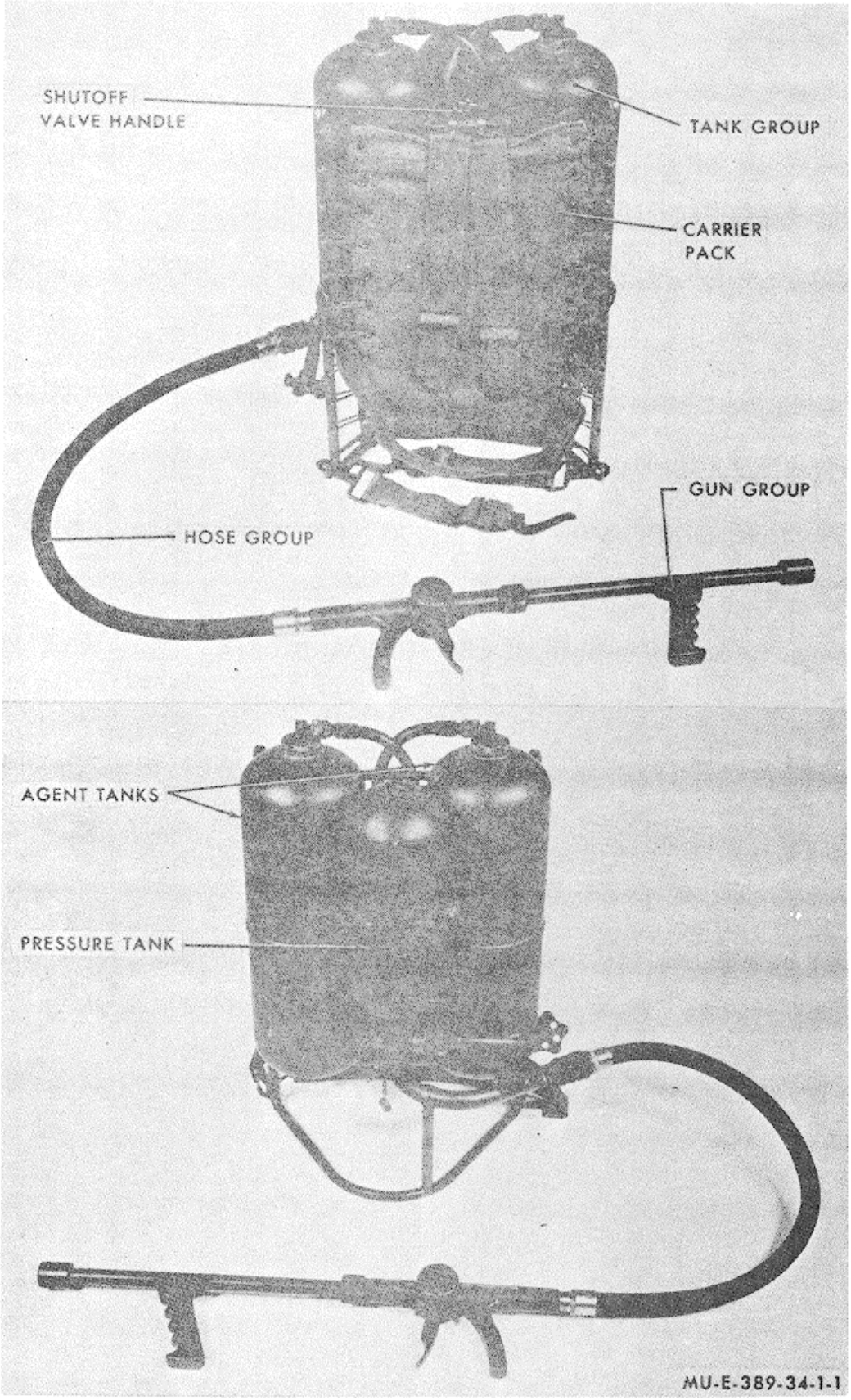


Figure 1-1. MS portable riot control agent disperser.

CHAPTER 2

DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

Section I. GUN GROUP

2-1. M9 Gun

Direct support maintenance personnel are authorized to replace the valve body of the gun group.

WARNING

Purge the air in the air pressure system before attempting any maintenance or modification to the pressure system.

a. *Disassembly and Removal*.

(1) Close the pressure tank valve by turning the valve handle (B, fig. 2-1) clockwise.

(2) Open the shutoff valve by turning the handle (fig. 1-1) counterclockwise.

(3) Rotate the ball depressing ring (C, fig. 2-1) on the quick-disconnect coupling half until the slot in the ring is in line with the lock pin.

(4) Pull the ring back and remove the hose assembly from the agent delivery coupling.

(5) Remove the coupling cap (B, fig. 2-1) from the holder. Install the coupling cap on the agent delivery pipe coupling (A).

(6) Using a wrench, disconnect the hose assembly coupling (fig. 2-2) from the M9 gun.

(7) Loosen the collar setscrews (C, fig. 2-3).

(8) Remove and retain the collar.

(9) Remove and retain the sleeve.

(10) Depress the trigger safety and squeeze and hold the trigger.

(11) Remove and retain connector with rubber tube. Release the trigger.

(12) Loosen the locknut completely and disconnect the valve section from barrel section.

(13) Remove the trigger and associated parts, if serviceable (para 2-2*a*).

(14) Replace the damaged valve section.

b. *Assembly and Installation*.

(1) If removed, install the trigger and associated parts (para 2-2*b* and *c*).

(2) Moisten and install the small tapered end of the connector (A, fig. 2-3) into the end of the tubber tube.

(3) With the right hand, depress the trigger safety. Squeeze and hold the trigger (B, fig. 2- 3).

(4) Slide the rubber tube into the valve section until the connector is seated in the valve body.

(5) With the trigger depressed, pull and stretch the hose to remove the slack in the hose.
While the hose is under tension, release the trigger. Release the rubber tube.

(6) Slide the loose end of the rubber tube into the barrel section (C, fig. 2-3). Engage the key on the barrel with the slot in the threaded portion of the valve section.

CAUTION

Do not use a wrench to tighten the locknut.

(7) Hand tighten the locknut to the valve section (C, fig. 2-3).

(8) Moisten and install the small tapered end of the sleeve into the open end of the rubber tube at the barrel end. The sleeve should wedge the end of the rubber tube against the gun barrel's inner wall.

(9) Slide the collar over the sleeve and the end of the gun barrel. Tighten setscrews.

(10) Apply antiseize compound or tape on the hose assembly coupling threads (fig. 2-2).

(11) Slide the hose assembly coupling over the connector.

(12) Using a wrench, tighten the coupling to the valve section. Do not overtighten.

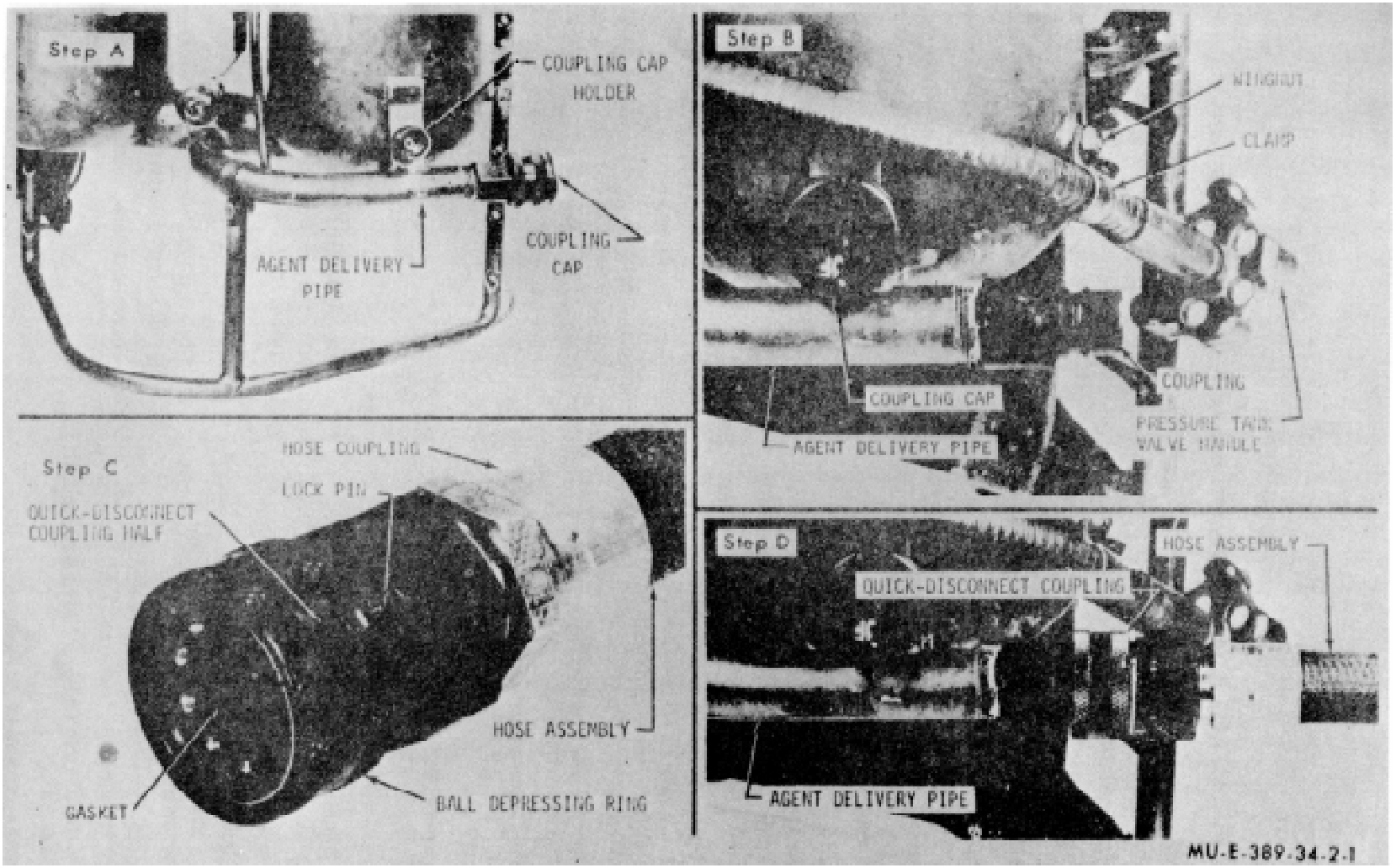


Figure 2-1. Connecting hose group to tank group.

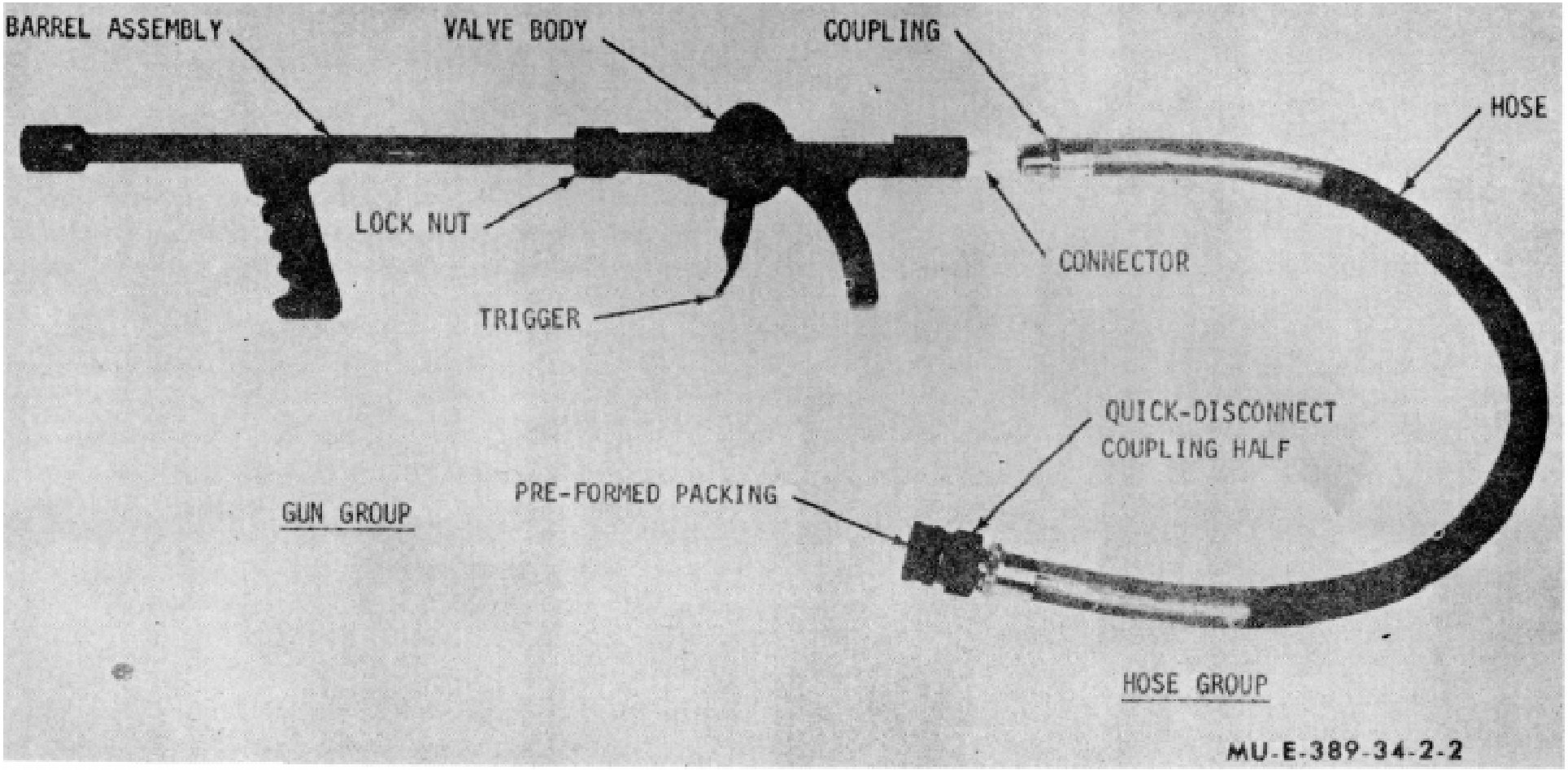


Figure 2-2. Hose group and gun group.

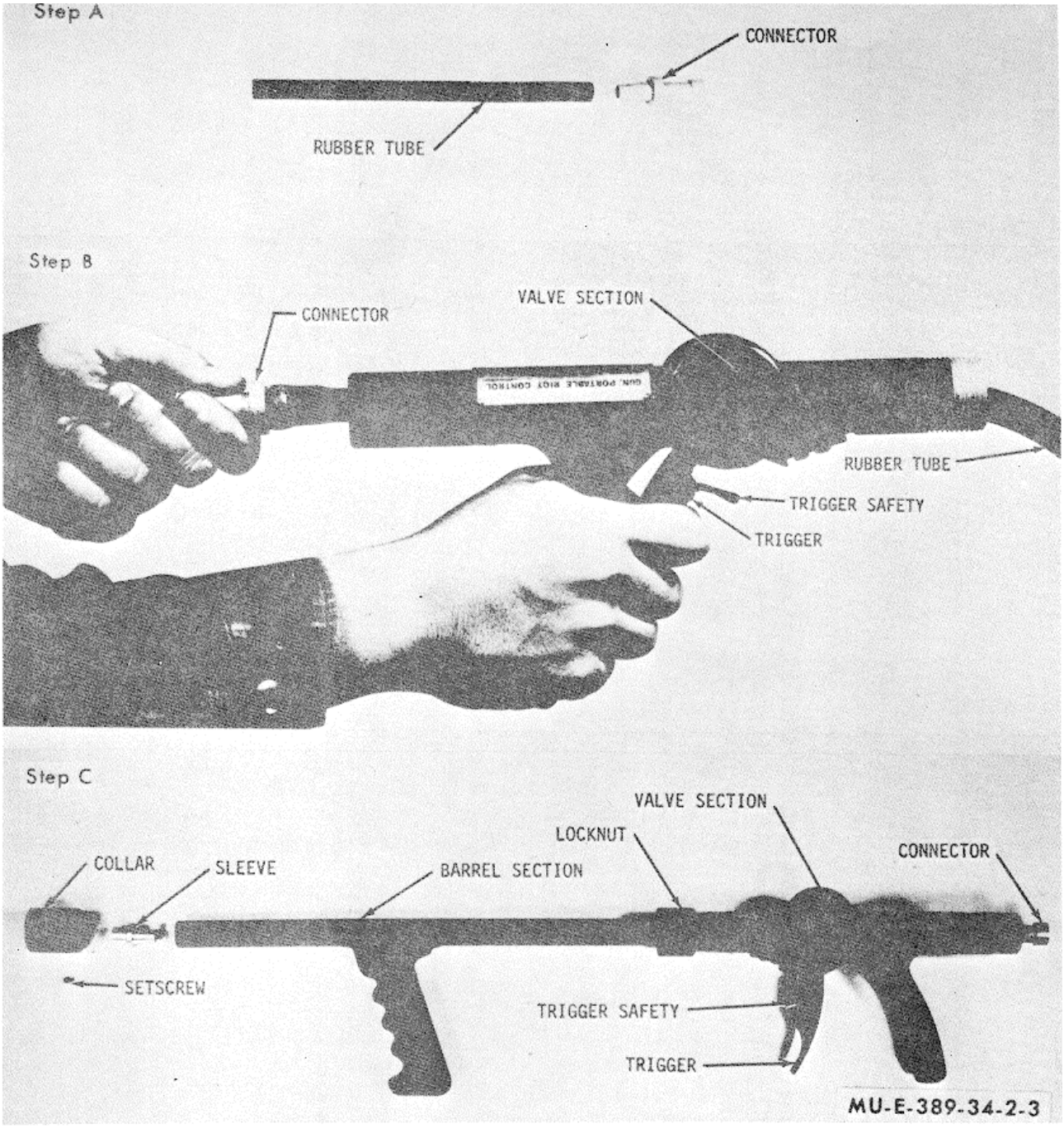


Figure 2-3. Assembling gun group.

2-2. Trigger, Trigger Safety, Spring, and Pin

Direct support maintenance personnel are authorized to replace the trigger, trigger safety, spring, and pin.

WARNING

Purge the air in the air pressure system before attempting any maintenance or modification to the pressure system.

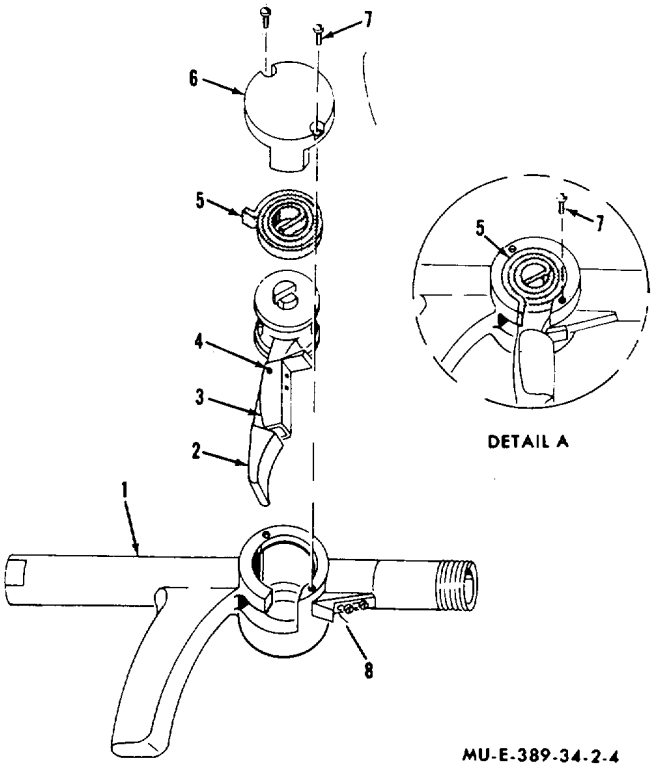
a. *Disassembly and Removal.*

(1) Perform the operations in 2-la(1) through (11) inclusive.

(2) Remove screws (7, fig. 2-4) and cover plate (6).

WARNING

The trigger spring is under tension.



1	Valve body	5	Spring
2	Trigger	6	Cover plate
3	Trigger safety	7	Screw
4	Pin	8	Safety catch

Figure 2-4. Trigger and safety assembly.

Care must be exercised when removing the spring.

(3) Remove the spring (5) and trigger (2) from the valve body cavity.

(4) If the trigger safety must be replaced perform the following:

(a) Remove the pin (4).

(b) Remove the trigger safety (3) from the trigger (2).

b. Cleaning and Lubricating.

(1) Clean the removed serviceable parts if required.

(2) Clean the valve body cavity.

(3) Before installing the trigger, apply silicon lubricant to the trigger cavity.

c. Assembly and Installation

(1) If the trigger safety has been removed, perform the following:

(a) Place the trigger safety (3) on the trigger (2).

(b) Install the pin (4) to secure the trigger safety (3) to the trigger (2).

(c) Apply silicon lubricant on the trigger.

(2) Install the trigger (2) in the valve body cavity.

(3) Position the trigger safety (3) so that it engages the safety catch (8).

(4) Place the spring (5) on top of the trigger (2). The center of the spring should be engaged in the slot in the trigger shaft as shown in detail A, fig. 2-4.

WARNING

The spring must be installed under tension. Care must be exercised when in- stalling the spring.

(5) Install temporarily a screw (7) as shown in detail A.

(6) With a pair of pliers, squeeze the ex- tended end of the spring (5) and temporarily in- stall screw (7) until the extended end of the spring is seated properly in the valve body cavity.

(7) Remove screw (7, detail A).

(8) Install the cover plate (6) and two screws (7).

(9) Install the removed parts (para 2-1*b*).

Section II. PRESSURE SECTION

2-3. Valve Shaft Assembly

Direct support maintenance personnel are authorized to replace the valve handle, clamp, eye- let, and coupling nut.

a. Removal.

(1) Close the pressure tank valve (17, fig. 2-5) by turning the handle (9) clockwise.

(2) Disconnect the coupling nut (12) from the pressure tank valve (17).

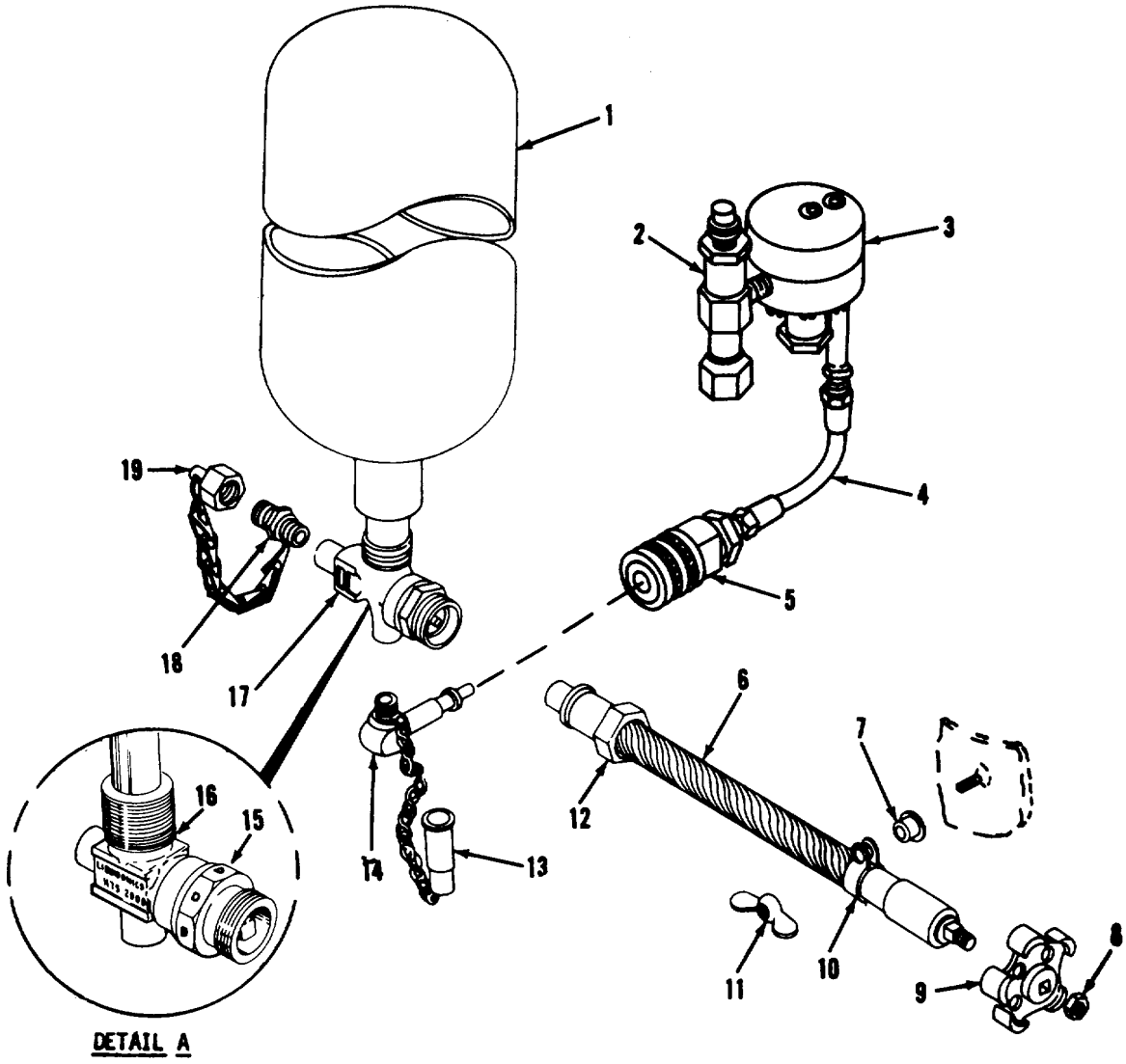
(3) Remove the wing nut (11), eyelet (7), and clamp (10).

(4) Remove the nut (8) and handle (9).

b. Inspection.

(1) Inspect the removed parts, including the coupling nut (12) and valve shaft (6), for possible damage. Check especially the threads on the nut.

(2) Replace unserviceable parts.



1	Pressure tank	6	Valve shaft	11	Wing nut	16	Valve body
2	Safety valve	7	Eyelet	12	Nut	17	Pressure tank valve
3	Pressure regulator	8	Nut	13	Cap	18	Check valve assembly
4	Tube assembly	9	Handle	14	Plug assembly	19	Cap
5	Quick-disconnect coupling half	10	Clamp	15	Spool		

Figure 2-5. Pressure tank and valve assembly

c. Assembly and Installation

.

(1) Slide the coupling nut (12) on the valve shaft (6).

(2) Install the handle (9). Install and tighten the nut (8).

(3) Connect the valve shaft (6) to the pressure tank valve (17). Connect and tighten the coupling nut (12).

(4) Install the clamp (10) and eyelet (7). Tighten the clamp and valve shaft to the stud on the agent tank with the wing nut (11).

2-4. Adapter

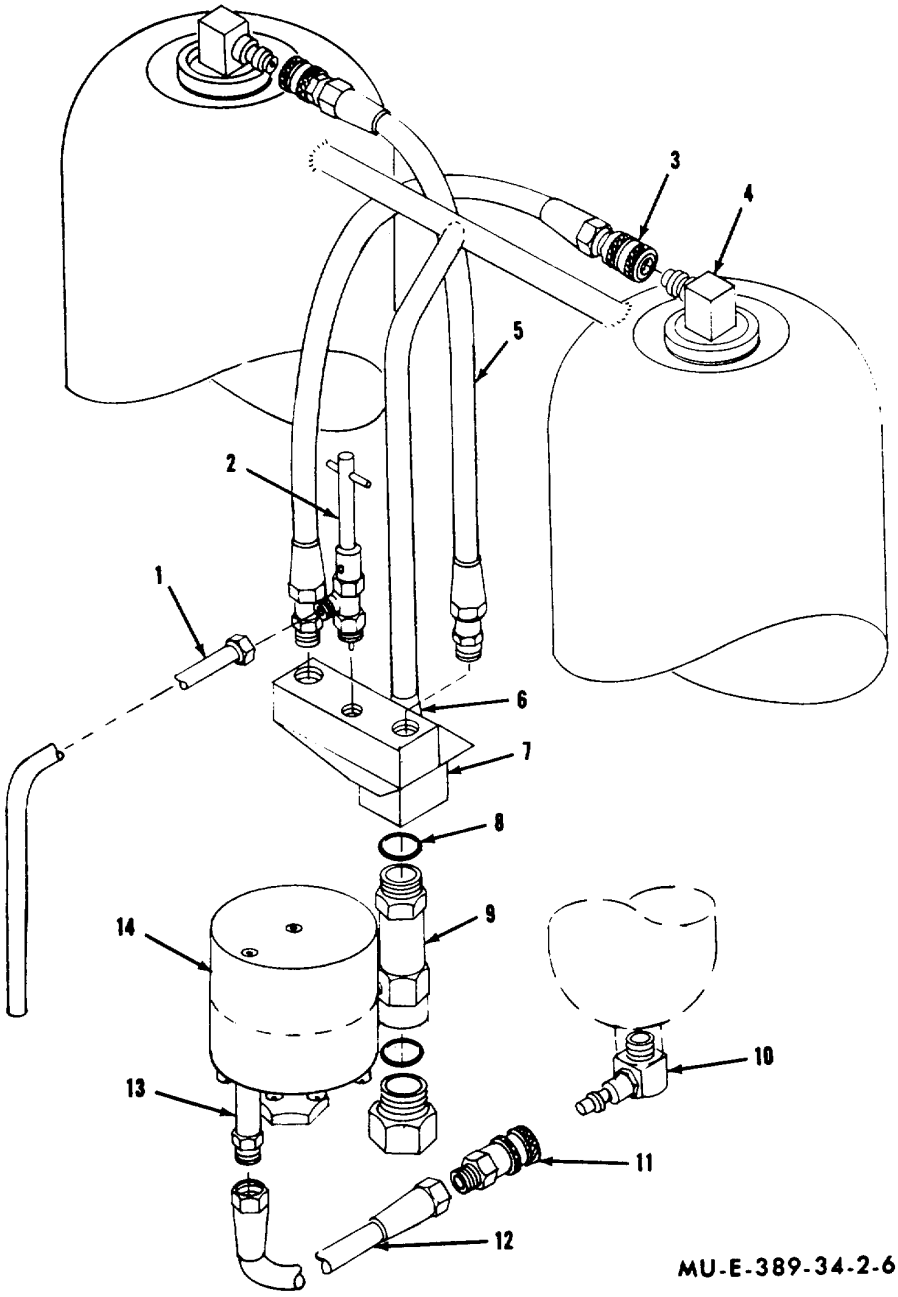
Direct support maintenance personnel are authorized to replace the safety valve adapter.

a. Removal.

(1) Close the pressure tank valve by turning the valve handle (B, fig. 2-1) clockwise.

(2) Open the shutoff valve by turning the handle (fig. 1-1) counterclockwise.

(3) Remove the pressure tank and valve assembly. Refer to TM 3-1040-214-12.



1 Tube
2 Shutoff valve
3 Quick-discount ocupling half
4 Pipe and cap assembly
5 Hose assembly
6 Nut
7 Adapter
8 Preformed packing
9 Safety valve
10 Coupling plug
11 Quick-disconnect coupling half
12 Tube assembly
13 Adapter
14 Pressure regulator

Figure 2-6. Pressure regulator, safety valve, and tube assembly.

(4) Unlace one side of the carrier pack.

(5) Disconnect the quick-disconnect coupling half (3, fig. 2-6) from each pipe and cap assembly (4).

(6) Holding the pressure regulator (14) disconnect the nut (6).

(7) Disconnect both hose assemblies (5) from the adapter (7).

(8) Remove the shutoff valve (2) and tube (1) from the adapter (7).

(9) Disconnect the safety valve (9) from the adapter (7) and remove the preformed packing (8).

(10) Replace the adapter (7).

b. Assembly.

(1) Place a preformed packing (8) on the threads of the safety valve (9).

(2) Connect the safety valve (9) to the adapter (7).

(3) Connect the shutoff valve (2) to the adapter (7). Connect the tube (1) to the shutoff valve (2).

(4) Use antiseize compound or tape on the hose fitting threads. Connect both hose assemblies (5) to the adapter (7).

(5) Holding the pressure regulator (14) connect the adapter (7) to the nut (6).

(6) Cross both hose assemblies (5) and connect the quick-disconnect coupling (3) to the pipe and cap assembly (4).

(7) Lace the carrier pack to the frame.

(8) To install the pressure tank and valve assembly refer to TM 3-1040-214-12.

Section III. AGENT SECTION

2-5. Outer Hinge

Direct support maintenance personnel are authorized to replace the outer hinge on the agent tank.

a. Removal.

(1) Remove the pressure tank and valve assembly. Refer to TM 3-1040-214-12.

(2) Install the dust cap (13, fig. 2-5) on the plug.

(3) Remove the rivet (2, fig. 2-7) and outer hinge (1).

b. Assembly and Installation.

(1) Install the outer hinge (1) and rivet (2).

(2) Peen the end of the rivet to hold the outer hinge in place.

(3) Install the pressure tank and valve assembly. Refer to TM 3-10410-214-12.

2-6. Agent Tanks

Direct support maintenance personnel are authorized to replace the agent tank. No welding is authorized on the agent tanks. Unserviceable agent tanks, including the tank connector, diffusion pipe assembly, and agent delivery pipe, must be replaced as a unit.

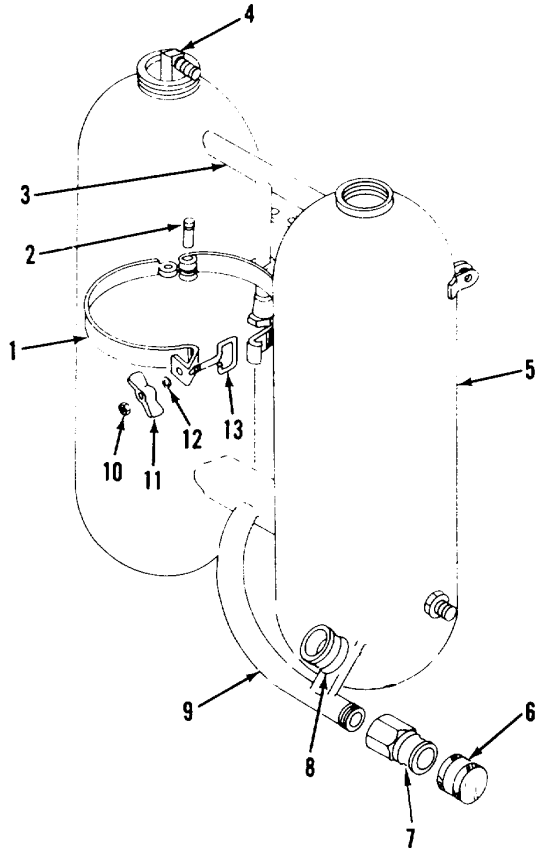
a. Removal.

(1) Remove the pressure tank and valve assembly. Refer to TM 3-1040-214-12.

(2) Remove the cords (9, fig. 2-8) and carrier pack.

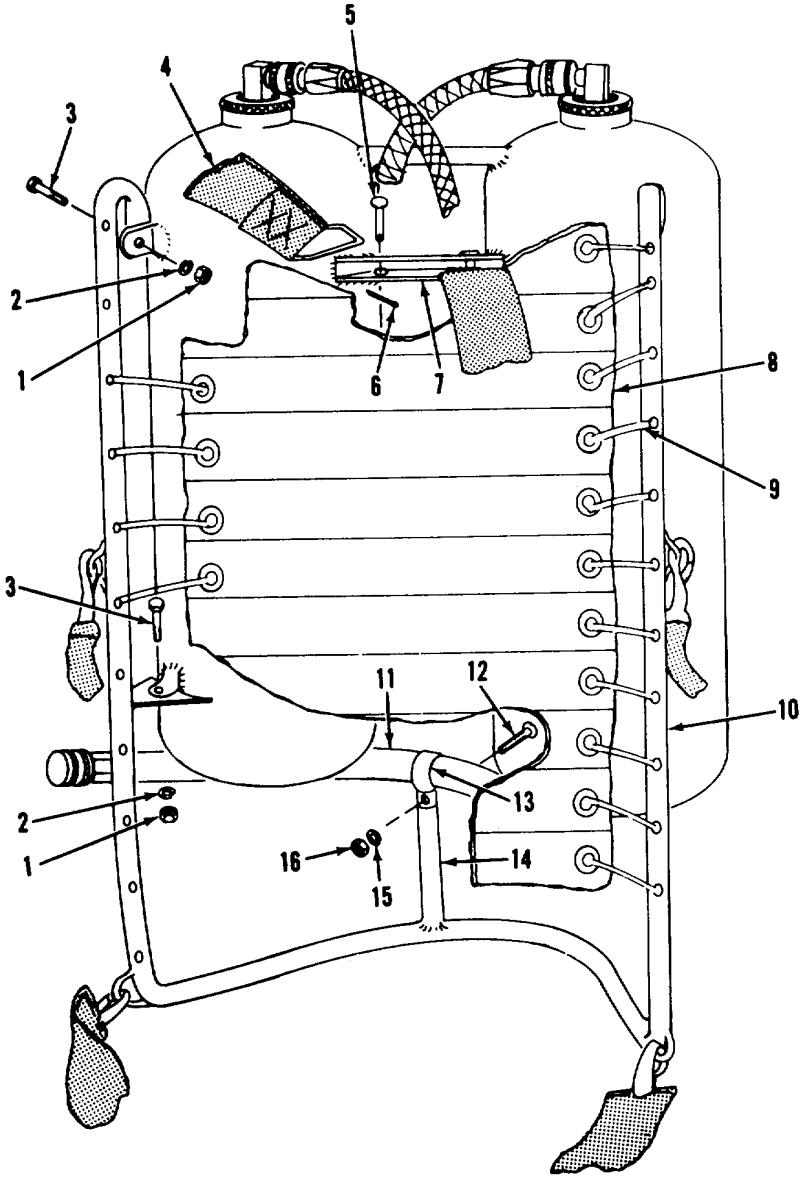
(3) Disconnect the quick-disconnect coupling half, (3, fig. 2-6) on each hose assembly.

(4) Hold the pressure regulator (14) and disconnect the diffusion tube nut (6) from the adapter (7).



1	Outer hinge	7	Coupling
2	Rivet	8	Cap holder
3	Diffusion pipe assembly	9	Agent delivery pipe
4	Pipe and cap assembly	10	Washer
5	Agent tank	11	Wing out
6	Coupling cap	12	Washer
		13	Hingle link

Figure 2-7. Agent tanks



1 Nut	5 Pin	9 Cord	13 Clamp
2 Washer	6 Cotter pin	10 Frame	14 Support
3 Screw	7 Bracket	11 Agent delivery pipe	15 Washer
4 Upper stamp assembly	8 Carrier pack	12 Screw	16 Nut

Figure 2-8. Carrier section.

(5) Disconnect and remove all strap assemblies from the frame (10, fig. 2-8).

(6) Remove the attaching hardware to remove the frame (10) from the agent tanks.

b. Assembly.

(1) Connect the agent tanks to the frame with the hardware removed in a(16) above.

(2) Connect the adapter (7, fig. 2-6) to the diffusion tube nut (6).

(3) Cross both hose assemblies (5) and connect the quick-disconnect coupling half (3) that is on each hose to the pipe and cap assembly (4).

(4) Install the pressure tank and valve assembly. Refer to TM 3-1040-214-12.

(5) Perform test in *c* below.

(6) Connect the carrier pack (8, fig 2-8) to the frame with the cords (9) removed in a(2) above.

(7) Connect the straps (removed in *a*(5) above) to the frame.

c Test.

(1) Close the shutoff valve (2, fig 2-6) by turning the handle clockwise.

(2) Check to see that the coupling cap (A, fig 2-1) is installed.

(3) Open the pressure tank valve by turning the valve handle (B, fig 2-1) counterclockwise.

(4) Apply soapy water around all the connections and fittings and check for leaks.

(5) Retighten all fittings if leaks are found and perform (4) above.

Section IV. PAINTING

2-7. General

Direct support maintenance personnel are authorized to repaint the disperser.

2-8. Paints to be Used

a. Primer. Prime all worn and scratched surfaces with one coat of appropriate primer.

b. Enamel. Repaint all previously painted surfaces with green lusterless enamel.

CHAPTER 3

GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

3-1. Serviceability Tests

General support maintenance personnel are responsible for recalling all dispersers from using units for hydrostatic-volumetric testing.

a. Agent Tanks. Agent tanks will be subjected to a hydrostatic test at least once every 4 years. The date the test is performed will be either stenciled on the agent tanks or stamped on aluminum tape. Fasten the aluminum tape around the diffusion pipe located between the agent tanks. Test procedures will be performed in accordance with TM 3-1040-251-15.

b. Pressure Tank. The air pressure tank will be subjected to a hydrostatic-volumetric test at least once every 4 years. The date the test is performed will be either stenciled on the pressure tank or stamped on aluminum tape. Fasten the aluminum tape around the neck of the pressure tank. Test procedures will be performed in accordance with TM 3-1040-251-15.

3-2. Pressure Tank Check Valve and Plug Assemblies

General support maintenance personnel are authorized to replace the pressure tank check valve assembly and the plug assembly.

a. Removal.

1) Close the pressure tank check valve by turning the handle (B, fig. 2-1) clockwise.

(2) Open the shutoff valve by turning the handle (fig. 1-1) counterclockwise.

(3) Place the agent tanks in a horizontal position with the pressure tank on top.

(4) Loosen the wingnut, and disconnect the hinged clamp that holds the pressure tank in place.

(5) Remove and retain the wingnut (11, fig. 2-5) and eyelet (7).

CAUTION

Exercise care when disconnecting the quick-disconnect coupling half from the pressure tank coupling plug to prevent possible damage to the tube.

(6) Disconnect the quick-disconnect coupling half (5) from the pressure tank coupling plug assembly (14). Remove and retain the pressure tank.

(7) Vent the air under pressure in the pressure tank by turning the handle counterclockwise.

(8) Install the dust cap (13) on the plug assembly (14).

(9) If the plug assembly must be replaced, remove the plug assembly (14) from the pressure tank valve (17).

(10) If the check valve assembly (18) must be replaced, remove the check valve assembly (18) from the pressure tank valve (17).

b. Assembly.

(1) If the check valve assembly (18) has been removed, apply antiseize compound or tape on the threads. Install and tighten the check valve assembly on the pressure tank valve (17).

(2) If the plug assembly (14) has been re- moved, apply antiseize compound or tape on the threads. Install and tighten the plug assembly on the pressure tank valve (17).

c. Servicing.

(1) Charge and test the pressure tank for leaks according to instructions in TM 3-1040- 221-12.

(2) Use approved compressors listed in TM 3-1040-214-12.

(3) Apply soapy water around the check valve assembly and the plug assembly and check for possible leaks.

(4) If leaks occur, reinspect all connections. Tighten or replace the assembly. Perform step (1) above after tightening or replacing the assembly.

d. Installation.

(1) Place the agent tanks in a horizontal position, with the carrier pack on the bottom.

(2) Check to see that the valve handle (step B, fig. 2-1) is closed (counterclockwise).

(3) Remove the cap (13, fig. 2-5), from the plug assembly (14).

(4) Place the pressure tank on the agent tanks.

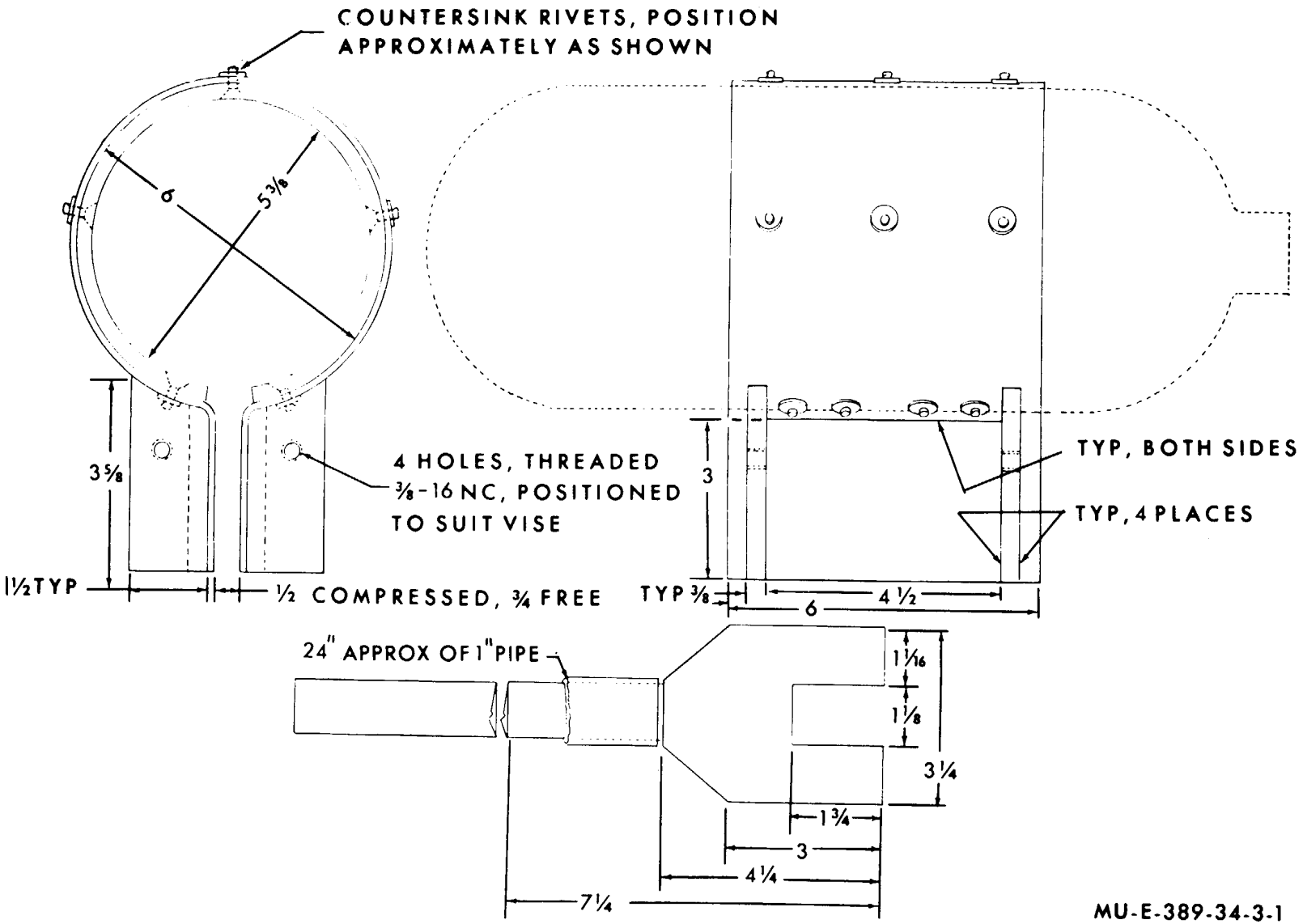


Figure 3-1. Holding device and valve wrench.

(5) Aline and connect the plug assembly (14) to the quick-disconnect coupling half (5).

(6) Test to see that the plug is engaged and locked in the quick-disconnect coupling half. If the knurled ring on the quick-disconnect coupling half is connected properly, it should not slide freely.

(7) Close the hinged clamp around the pressure tank aid fasten the attached wingnut.

(8) Fasten the valve shaft (6) to the stud on the agent tank with the clamp (10, eyelet (7), and wingnut (11).

3-3. Pressure Tank Valve

General support maintenance personnel are authorized to replace the pressure tank valve.

a. Inspection. Check the pressure tank valve for the following identification:

(1) The letter D must be stamped on the spool (15, fig. 2-5) in six places, and 1175-200D must be stamped on the valve body (16). If the letter D appears on the spool and valve body, it is the authorized type of valve.

(2) If the spool and valve body are not identified properly ((1) above), they must be modified. Modify valves according to MWO 3- 1040-204-45/1, 31 July 1970.

(3) Check the operation of the pressure tank valve (17) by turning the valve handle (9) clockwise and counterclockwise. The valve should operate with ease. Replace the valve if it is difficult to operate.

b. Manufacture. To prevent damage to the pressure tank, a locally fabricated valve wrench and holding device is recommended.

(1) Valve wrench. Select a block of steel 1 1/4 by 3 1/4 by 4 1/4 inches (fig. 3-1). Along the 3 1/4-inch surface, measure 1 1/16 inches in from one end and mark the surface. Measure 1 1/16 inches in from the other end and mark that surface also. Along the 4 1/4-inch surface, measure a depth of 1 3/4 inches in from the two 1 1/16-inch-marked places. Cut out the 1 3/4- inch piece from the steel block. Measure 3 inches along the two sides of the 4 1/4-inch surface and mark the surfaces. Measure 1 inch in toward the center of the block from both ends along the uncut 3 1/4-inch surface and mark the surfaces. Cut off the excess steel in the angles between the 3-inch marks and the 1-inch marks. Drill a hole in the steel block for a depth of about 1/2 inch to suit the inside diameter of a 1-inch pipe. Select a solid round of steel of the diameter to fit the hole and cut a piece 3 ½ inches long. Cut a 24-inch length of 1-inch pipe to use as a handle. Weld the handle, the bar stock, and the steel block together.

(2) Holding device. Select a piece of steel 1/8 by 6 by 25 inches (fig. 3-1). From it into a 6-inch diameter circle starting from the center (12 1/2 in.). When the circle is completed, bend the two ends approximately 3 inches out from the circle. Make up two pieces of steel each 3/8 by 3 by 4 1/2 inches and four pieces of steel each 3/8 by 1 1/2 by 3 5/8 inches. Along the four pieces of steel that have a length of 3 5/8 inches, taper the 1 1/2-inch surface to butt against the outside contour of the 6-inch circle. Weld one piece of steel 3/8 by 3 by 4 1/2 inches and two pieces of steel 3/8 by 1 1/2 by 3 5/8 inches to each end projecting from the circle. Drill four holes threaded 3/8-16NC in the four 3/8 by 1 1/2 by 3 5/8-inch steel pieces positioned to suit the vise. Install four screws. Drill 17 holes, which will be used for rivets, in the 1/8 by 6 by 25- inch piece of steel at locations similar to those shown in figure 3-1. Prepare a piece of leather 5/16 by 6 by 18 inches and rivet it in place inside the steel circle using approximately 17 countersunk rivets and washers as shown in figure 3-1. The holding device has a spread of about 3/4 inch when free and a spread of about 1/2 inch when compressed.1

c. Removal.

(1) Perform the operations in 2-3a(1) through (8).

(2) Disconnect the coupling nut (12, fig. 2-5) from the pressure tank valve (17) and re- move the valve shaft (6).

(3) Secure the pressure tank in the holding device (fig. 3-1). Place the parts in a vise shown in figure 3-2.

(4) Remove the plug assembly (14, fig. 2-5) and dust cap (13).

(5) Remove the check valve assembly (18) and the dust cap (19).

(6) With the wrench (fig. 3-2) remove the pressure tank valve from the pressure tank. The use of a propane torch or blow torch on the neck of the pressure tank will make it easier to re- move the pressure tank valve.

d. Assembly.

NOTE

Use antiseize compound or tape on pipe threads before assembly.

(1) Screw the pressure tank valve into the opening of the pressure tank and tighten with the wrench (fig. 3-2).

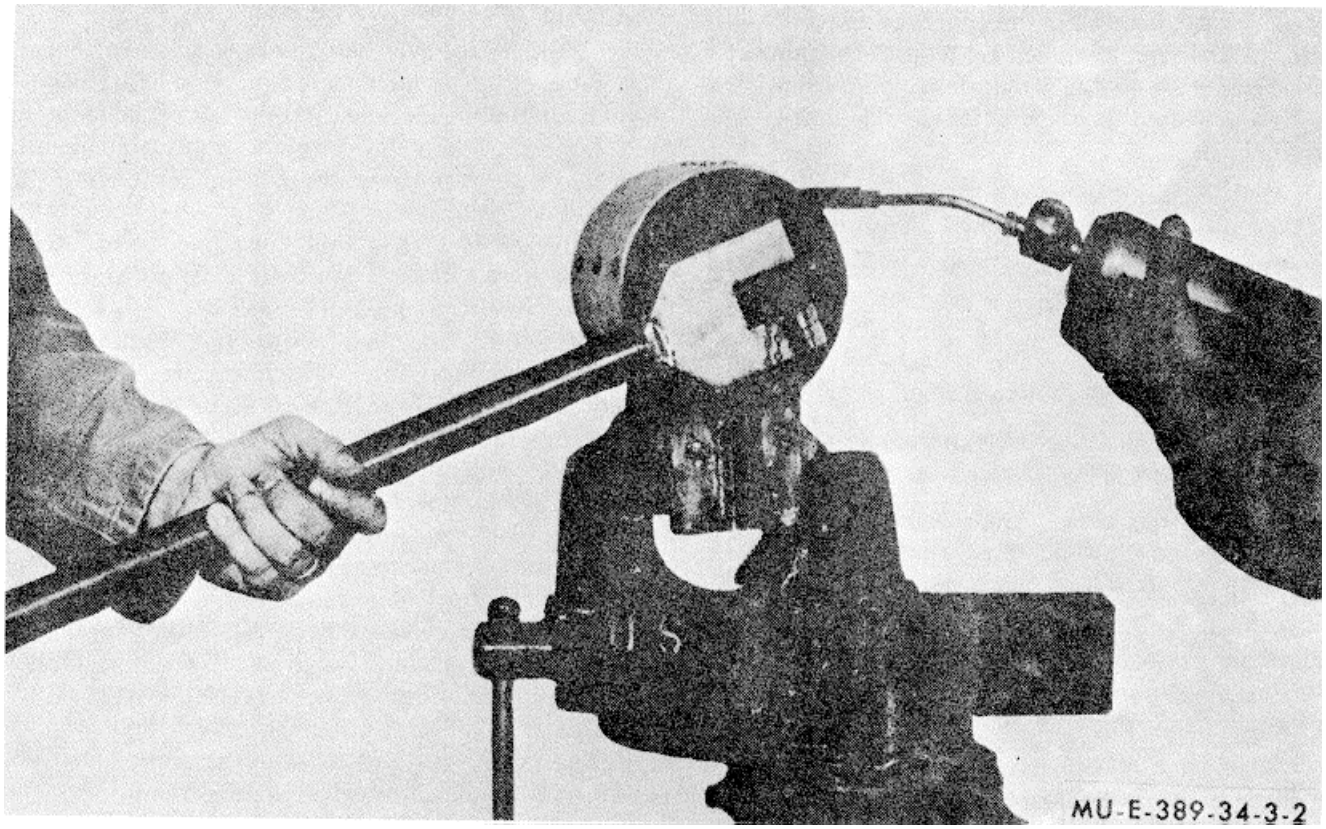


Figure 3-2. Pressure tank & pressure tank valve.

(2) Screw a check valve assembly (18, fig. 2-5) to the side of the pressure tank valve (17) and tighten.

(3) Screw a plug assembly (14) to the bottom of the pressure tank valve (17) and tighten.

e. Charging and Testing Pressure Tank. Charge and test the pressure tank for leaks (TM 3-1040-221-12).

f. Installation.

(1) Connect the open end of the valve shaft (6, fig. 2-5) to the pressure tank valve (17).

(2) Connect the nut (12) that is on the valve shaft (6) to the pressure tank valve.

(3) Install the pressure tank to the agent tanks. Refer to TM 3-1040-214-12.

3-4. Pressure Regulator

Genera! support maintenance personnel are authorized to replace the diaphragm, springs, strainer, valve adapters, and related hardware.

a. Removal.

(1) Remove the pressure tank and valve assembly. Refer to TM 3-1040-214-12.

(2) To gain access to the pressure regulator, remove one cord attaching the carrier pack to the frame.

(3) Disconnect the quick-disconnect coupling half (3, fig. 2-6) on each hose assembly.

(4) Hold the pressure regulator (14) and disconnect the diffusion tube nut (6) from the adapter (7).

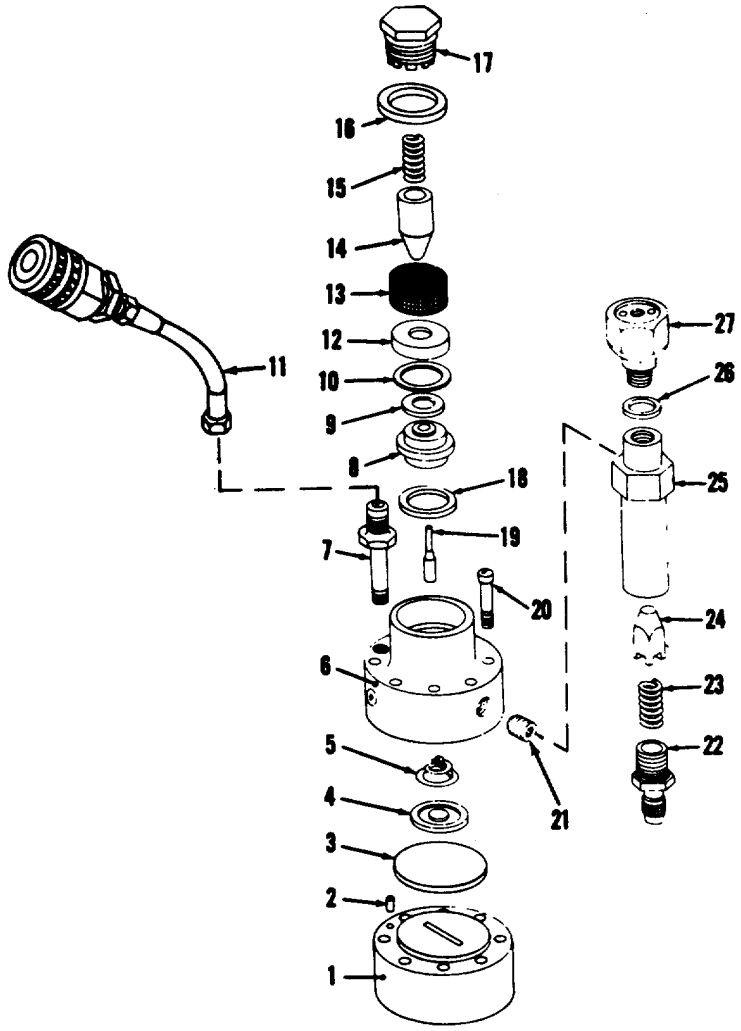
(5) Remove the tube assembly (11, fig. 3- 3) and adapter (7).

(6) Unscrew the safety valve and nipple (21) from the pressure regulator.

(7) Loosen the spring retaining plug (17) and remove it slowly to prevent the spring (15) from popping out of the cavity.

(8) Remove the preformed packing (16), spring (15), strainer (13), seal retainer (12), washer (10), seal (9), valve seat (8), gasket (18), and push rod (19).

(9) Remove eight screws (20). Slowly separate the pressure regulator body (6) from the dome (1) to prevent losing the compression spring (5).



1	Dome	8	Valve seat	15	Spring	22	Reducer
2	Pin	9	Seal	16	Preformed packing	23	Spring
3	Diaphragm	10	Washer	17	Retaining plug	24	Needle
4	Plate	11	Tube assembly	18	Gasket	25	Valve body
5	Spring	12	Retainer	19	Push rod	26	Washer
5	Regulator body	13	Strainer	20	Screw	27	Safety head
7	Adapter	14	Valve	21	Pipe nipple		

Figure 3-3. Pressure regulator and safety valve.

(10) Remove the compression spring (5) diaphragm plate (4), and diaphragm (3) from the dome.

b. Inspection and Cleaning.

(1) Clean all parts with dry-cleaning sol- vent.

(2) Inspect all parts for damage, wear, deterioration, and serviceability.

c. Assembly and Installation.

(1) Press the outer coil of the spring (5) into the plate (4). Install both parts into the cavity of the regulator body (6).

(2) Place the diaphragm on top of the plate (4).

(3) Aline the pin (2) in the dome (1) with the mating hole in the body (6). Press the dome (1) to the regulator body (6).

(4) Install the eight screws (20) and tighten all screws.

(5) Position the push rod (19) in the body (6).

(6) Install the gasket (18), valve seat (8), valve seat seal (9), washer (10), seal retainer (12). and strainer (13).

(7) Install the valve (14) so that the depression in the valve is seated over the end of the push rod (19).

(8) Install the spring (15).

(9) Slide the preformed packing over the threaded portion of the plug (17). Screw the plug (17) into the body (6).

(10) Apply antiseize compound or tape to the threads on the nipple (21).

(11) Screw the nipple (21) into the regulator body (6).

(12) Screw the side of the valve body (25) to the nipple (21).

(13) Tighten the pressure regulator (14, fig. 2-6) to the safety valve (9) by hand until it is tight and inline with one another as shown in figure 2-6.

(14) Install the adapter (13) and tighten.

(15) Install a preformed packing (8) on the safety valve (9).

(16) Connect the safety valve (9) to the adapter (7).

(17) Connect the adapter (7) to the diffusion tube nut (6).

(18) Loosely connect the tube assembly (12) to the inlet adapter (13).

(19) Locate the quick-disconnect coupling half (11) so that is an equal distance between the agent tanks. Tighten the tube assembly nut to the adapter (13).

(20) Cross both hose assemblies (5). Connect the quick-disconnect coupling half (3) that is on each hose to the pipe and cap assembly (4).

(21) Connect the carrier pack to the frame with the cord (fig. 2-8).

(22) Install the pressure tank and valve assembly. Refer to TM 3-1040-214-12.

3-5. Safety Valve

General support maintenance personnel are authorized to replace the needle, spring, and reducer in the safety valve.

a. Removal.

(1) Remove the pressure tank and valve assembly. Refer to TM 3-1040-214-12.

(2) To gain access to the safety valve, re- move one cord attaching the carrier pack to the frame.

(3) Disconnect the quick-disconnect coupling half (3, fig. 2-6) on each hose assembly.

(4) Hold the pressure regulator (14) and disconnect the diffusion tube nut (6) from the adapter (7).

(5) Remove the safety valve (9) and preformed packing (8) from the adapter (7).

(6) Remove the reducer (22, fig. 3-3), spring (23), and needle (24).

b. Inspection. Inspect all parts for damage, wear, and serviceability.

c. Assembly and Installation.

(1) Install the needle (24) and spring (23) into the safety valve body (25). Install reducer (22) and tighten.

(2) Install a preformed packing (8, fig. 2-6) on the safety valve (9).

(3) Connect the safety valve (9) to the adapter (7).

(4) Connect the adapter (7) to the diffusion tube nut (6).

(5) Cross both hose assemblies (5). Connect the quick-disconnect coupling half (3) that is on each hose to the pipe and cap assembly (4).

(6) Connect the carrier pack to the frame with the cord removed (fig. 2-8).

(7) Install the pressure tank and valve assembly. Refer to TM 3-1040-214-12.

3-6. Agent Tank and Frame Hardware

General support maintenance personnel are authorized to replace the hardware that attaches the agent tanks to the frame.

a. Inspection. Visually inspect the hardware that attaches the agent tanks to the frame (fig. 2-8). Check for damaged and missing hardware.

b. Removal. Remove the hardware that attaches the agent tanks to the frame (fig. 2-8).

c. Installation. Install the attaching hardware removed in *b* above.

3-7. Carrier Frame

General support maintenance personnel are authorized to replace the carrier frame.

a. Inspection. Check the frame (10, fig. 2-8) for possible damage. Check the welds around the plates and D-rings that are welded to the frame.

b. Removal.

(1) Remove the cords (9) and carrier pack (8).

(2) Disconnect all the straps attached to the carrier frame.

(3) Remove the hardware that attaches the frame to the agent tanks.

c. Assembly and Installation.

(1) Connect the upper strap assemblies (4) with the hardware removed in b(2) above.

(2) Connect the frame to the agent tanks with the hardware removed in b(3) above.

(3) Connect the carrier pack (8) to the frame (10) with the cords (9).

APPENDIX A

REFERENCES

TM 3-1040-214-12	Operator's and Organizational Maintenance Manual, Disperser, Riot Control Agent, Portable, M3
TM 3-1040-221-12	Operator's and Organizational Maintenance Manual, Service Kit, Portable, Flamethrower-Riot Control Agent Disperser, M27
TM 3-1040-251-15	Operator, Organizational, DS, GS, and Depot Maintenance Manual: Test Set, Flame-Thrower-Riot Control Agent Disperser, Hydrostatic-and-Volumetric, 6,000 psi, M5
TM 38-750	The Army Maintenance Management System (TAMMS)

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