TECHNICAL MANUAL

OPERATOR'S AND ORGANIZATIONAL

MAINTENANCE MANUAL

SERVICE KIT, PORTABLE

FLAMETHROWER-RIOT

CONTROL AGENT

FSN 1040-736-3230

HEAD QUARTERS, DEPARTMENT OF THE ARMY

NOVEMBER 1971

WARNING

GASOLINE, FLAME FUEL, AND PRESSURIZED AIR are used in the operation of this equipment.

DEATH

or severe injury may result if personnel fail to observe warnings.

TECHNICAL MANUAL
No. 3-1040-221-12

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC *23 November 1971*

TECHNICAL MANUAL
OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL
SERVICE KIT, PORTABLE FLAMETHROWER-RIOT CONTROL AGENT
FSN 1040-736-3230

*This manual supersedes TM 3-1040-221-12, 12 September 1962, Including an changes.

ILLUSTRATIONS

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope

These instructions are for use by the operator and organizational maintenance personnel. They apply to the Service Kit, Portable Flame- thrower-Riot control Agent Dispenser, M27.

2. Record and Report Forms

a. Report accidents involving injury to personnel or damage to materiel as specified in AR 385-40.

b. Report accidents or malfunctions in combat or training as specified in AR 75-1.

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

d. 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.

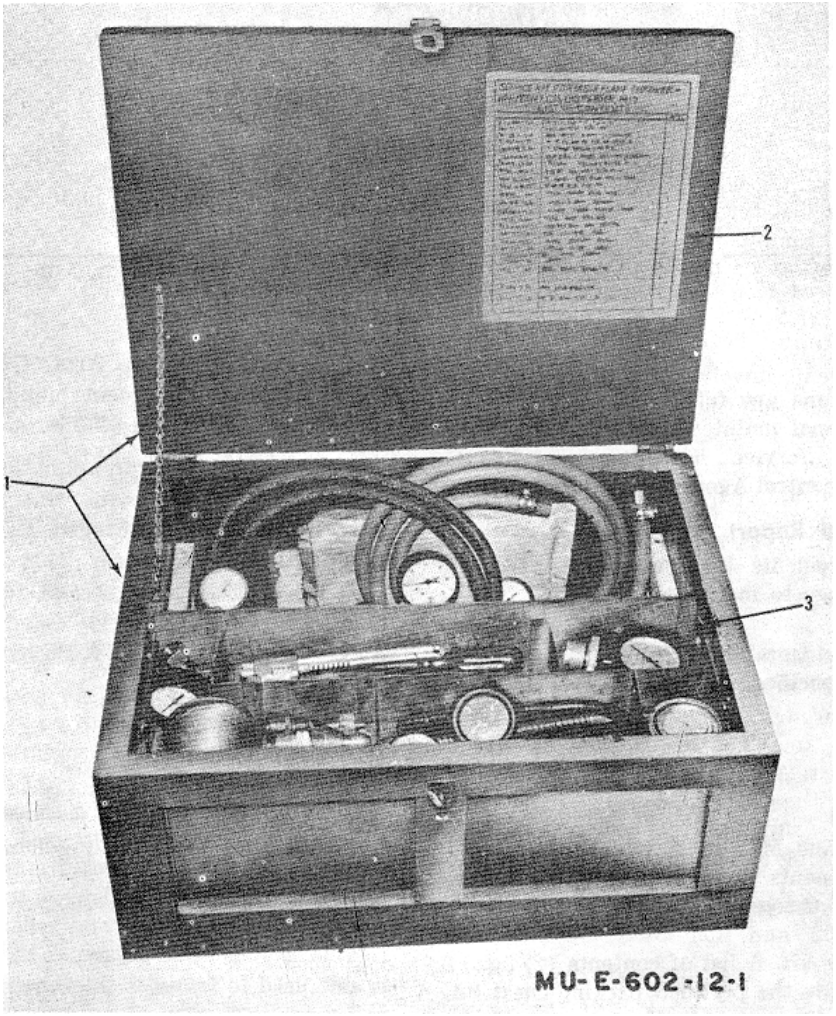
Section II. DESCRIPTION AND DATA

3. Description

a. General. The M27 service kit (fig. 1) consists of components described in b through n below (figs. 2 through 5). Two copies of SC 1040-94-CL-E02 and TM 3-1040-221-12 are packed with the kit. A list of contents (2, fig. 1) is attached inside the plywood packing-chest lid. A metal tray (3) supports the components in the chest. The packing chest is marked SERVICE KIT, PORTABLE FLAMETHROWER-RIOT CONTROL AGENT DISPENSER, M27, FSN 1040-736-3230. The M27 service kit, combined with a pressure source, is used to charge commercial air cylinders, pressure tanks, and high- pressure spheres. And it is used to test and adjust pressure regulators of portable flamethrowers and riot control agent dipsersers. The M27 service kit is also used to transter thickened or unthickened fuel from a 55-gallon drum or a 5-gallon gasoline can to portable flamethrowers or flame land mines (table 1).

Table 1. Uses of M27 Service Kit

Pressure source	Air charging				Flame-fuel filling			
	ABC–M9–7 and M9A1–7 flame-thrower	M2A1–7 flame-thrower	M3 RCA disperser	M5 RCA disperser	Commercial air cylinder	ABC–M9–7 and M9A1–7 flame-thrower	M2A1–7 flame-thrower	Flame landmine
AN–M4 compressor	X	X	X	X	X	X	X	X
M1A1 compressor	X	X	X	X	X	X	X	X
M2A1–7 flame-thrower pressure tank						X	X	X
Commercial air cylinder	X	X	X			X	X	X
ABC–M9–7 and M9A1–7 flame-thrower high-pressure spheres						X	X	X



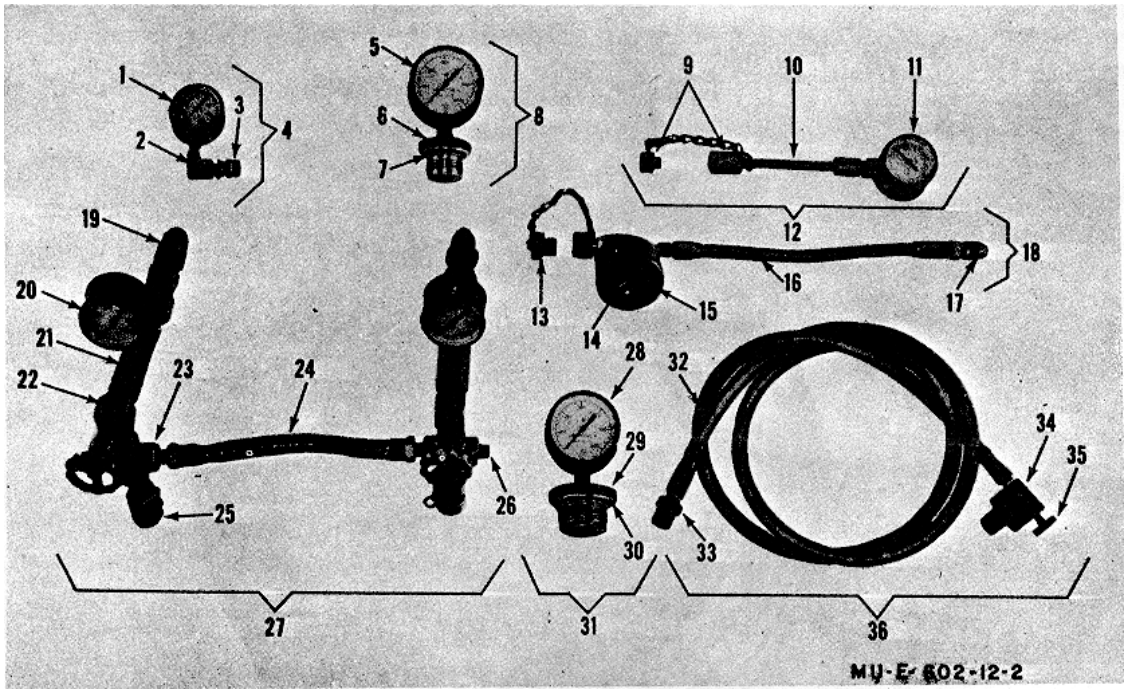
1 Packing chest

Figure 1. M27 service kit (packed).

b. Charging Hose Assembly. The charging hose assembly (18, fig. 2) consists of a dial-indicating pressure gage (14), which is encased in a protective rubber boot (15), a pneumatic hose assembly (16), a female quick-disconnect coupling half (17), and a safety plug assembly (13). The pressure gage is scaled from zero to 3000 psi in increments of 1,000 psi. The charging hose assembly (18) is used with the AN-M4 compressor to air charge commercial air cylinders, high-pressure spheres, and pressure tanks of portable flamethrowers or riot control agent dispersers.

c. Hose Assembly. The hose assembly (36) consists of a 6-foot rubber hose (32) that has a charging line adapter (33) on one end and a valve assembly (34) on the other end. Rotating the bleeder valve (35) clockwise closes the valve; rotating it counterclockwise opens the valve. The hose assembly (36) is used to transfer air from a pressure source to a commercial air cylinder, high-pressure sphere, or pressure tank. It is also used to transfer air to a flamefuel container when filling portable flamethrower fuel tanks.

d. Filling Line Assembly. The filling line assembly (27) consists of two pressure cylinder adapters (19), two pressure gages (20), which are scaled from zero to 3000 psi in increments of 100 psi, two connector-and-adapter assemblies (21), two angle valves (22), two pipe plugs (26),



1 Pressure gage
2 Right angle adapter
3 Quick-disconnect coupling half
4 Agent tank test gage assembly
5 Pressure gage
6 Testing gage adapter
7 Preformed packing
8 Fuel tank test gage assembly
9 Safety plug assembly
10 Gage extension assembly
11 Pressure gage
12 Pressure cylinder test gage assembly
- 13 Safety plug assembly
14 Pressure gage
15 Boot
16 Pneumatic hose assembly
17 Quick-disconnect coupling half
18 Charging hose assembly
19 Pressure cylinder adapter
20 Pressure gage
21 Connector-and-adapter assembly
22 Angle valve
23 Straight cross adapter assembly
24 Flexible metal hose assembly
25 Safety plug assembly
26 Pipe plug
27 Filling line assembly
28 Pressure gage
29 Testing gage adapter
30 Pieformed packing
31 Fuel tank test gage assembly
32 Hose
33 Charging line adapter
34 Valve assembly
35 Bleeder valve
36 Hose assembly

Figure 2. Filling line assembly, test gages, charging hose assembly, and hose assembly.

two safety plug assemblies (25) with straight cross adapter assemblies (23), and a flexible metal hose assembly (24). The filling line assembly (27) is used to attach pressure lines to commercial air cylinders. An extra metal hose is provided to join two or more filling line assemblies.

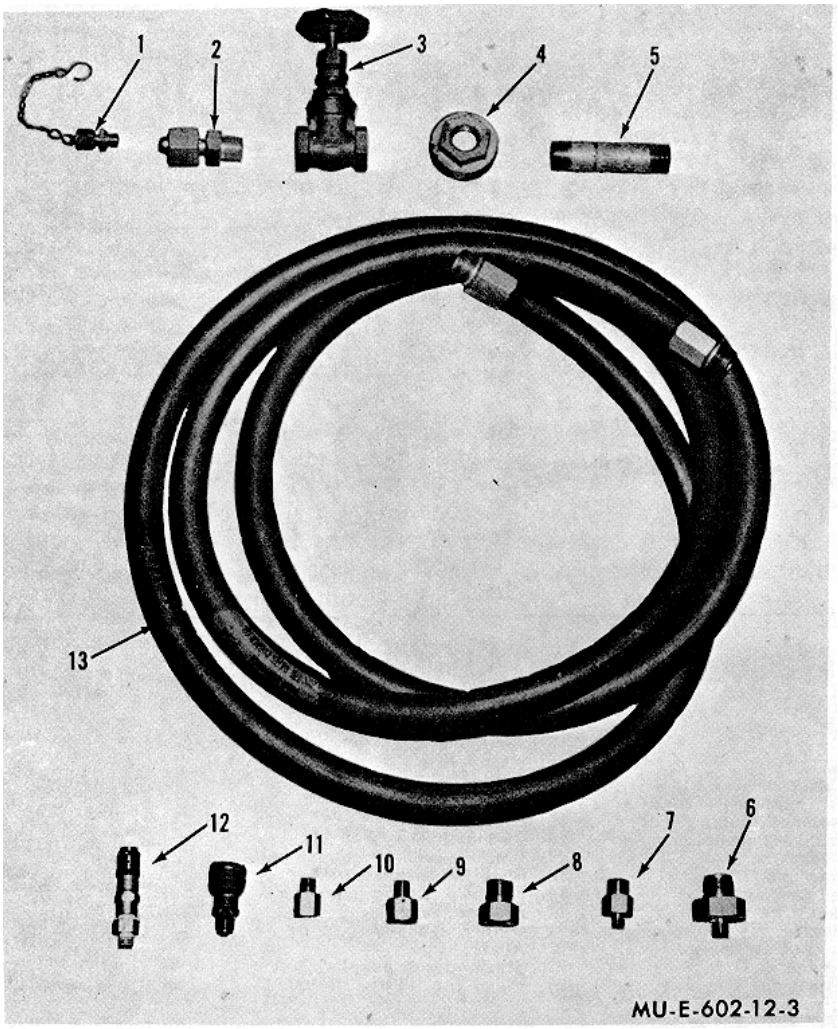
e. Pressure Cylinder Test Gage Assembly. The pressure cylinder test gage assembly (12) consists of a pressure gage (11), which is scaled from zero to 3000 psi in increments of 100 psi, a gage extension assembly (10), and a safety plug assembly (9). The test gage assembly (12) is used to determine the pressure of the M2A1-7 flamethrower pressure tank.

f. Fuel Tank Test Gage Assembly. The fuel tank test gage assembly (8) consists of a pressure gage (5), which is scaled from zero to 600 psi in increments of 20 psi, a testing gage adapter (6), and a preformed packing (7). The test gage assembly (8) is used to test and adjust pressure regulators on M2A1-7 flamethrowers.

g. Agent Tank Test Gage Assembly. The agent tank test gage assembly (4) consists of a pres- sure gage (1), which is scaled from zero to 160 psi in increments of 20 psi, a right angle adapter (2), and a quick-disconnect coupling half (3).

The test gage assembly (4) is used to test and adjust the pressure regulator on the M3 riot control agent disperser.

h. Fuel Tank Test Gage Assembly. The fuel tank test gage assembly (31) consists of a pressure gage (28), which is scaled from zero to 600 psi in increments of 20 psi, a testing gage



1	Check valve assembly	5	Pipe nipple	10	Adapter (pipe to tube)
2	Pressure regulator adapter	6	Adapter (pipe to tube)	11	Quick-disconnect coupling half
3	Gate valve	7	Tube reducer	12	Quick-coupling adapter assembly
4	Pipe bushing	8	Tube reducer	13	Rubber hose
9	Tube reducer				

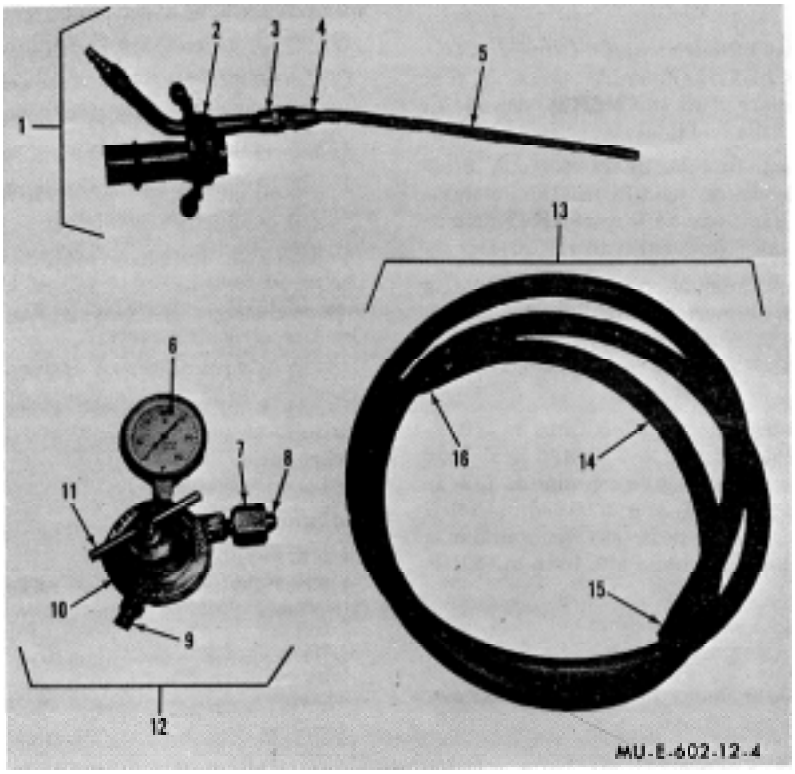
Figure 3. Hose assembly, adapters, tube reducers, and valves.

adapter (29), and a preformed packing (30).
The test gage assembly (31) is used to test the pressure regulator on the ABC-M9-7 or M9A1-7 flamethrower.

i. Hose Assembly. The hose assembly (fig. 3) consists of a 15-foot rubber hose (13) with male fittings on each end, a nonrising-stem gate valve (3), a pipe bushing (4), and a pipe nipple (5). The hose assembly is used to transfer fuel from a 55-gallon drum to the fuel tanks of portable flamethrowers.

j. Compressed Air Pressure Regulator. The compressed air pressure regulator (12, fig. 4) consists of a pressure gage (6), which is scaled from zero to 60 psi, a cylinder connection nut (7), a cylinder connection gland (8), an outlet connection adapter (9), a pressure regulator (10), and an adjusting screw (11). The compressed air pressure regulator is used to regulate and reduce pressure from the pressure source to the pressure required for flame-fuel-filling operations.

k. Hose Assembly. The hose assembly (13, fig.



1	Fuel transfer cap	7	Nut	12	Compressed air pressure regulator
2	Filling plug assembly	8	Gland		
3	Tube fitting	9	Outlet connection adapter	13	Hose assembly
4	Coupling	10	Pressure regulator	14	Hose
5	Tube	11	Adjusting screw	15	Female fittings
6	Pressure gage			16	Clamps

Figure 4. Pressure regulator, fuel transfer cap, and hose assembly.

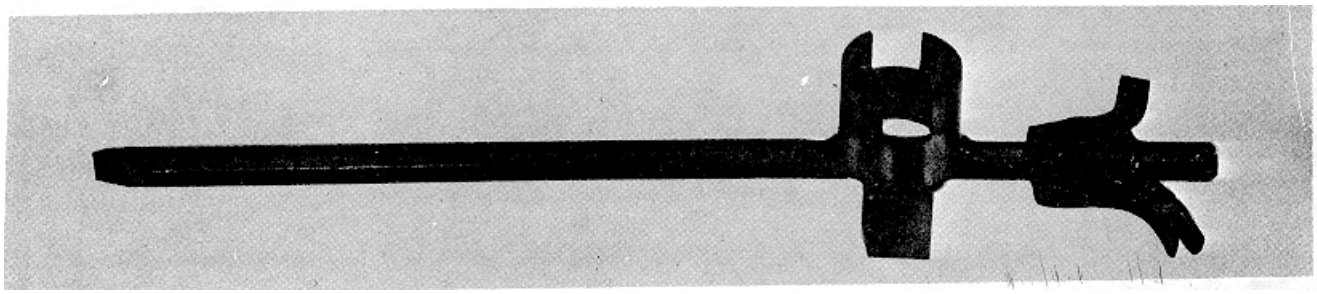


Figure 5. Bung wrench.

4) consists of an 8-foot rubber hose (14), two female fittings (15), and two clamps (16). The hose assembly is used to transfer pressure from the compressed air pressure regulator to a 55- gallon drum or 5-gallon gasoline can during flame-fuel filling of a portable flamethrower.

l. Fuel Transfer Cap. The fuel transfer cap (1, fig. 4) consists of a filling plug assembly (2) with a male tube fitting (3). A brass coupling (5) attaches the tube fitting (3) to a copper tube (5). The fuel transfer cap is used with a pressure source to transfer fuel from a

5-gallon gasoline can to a portable flamethrower fuel tank.

m. Adapters, Quick-Disconnect Coupling Half, Tube Reducers, and Check Valve Assembly. The following items are used in the M27 service kit to assemble pressure or fuel lines:

(1) Two pipe-to-tube adapters (one 9/16- in.-18NF male thread by 3/4-in.-14NPT male thread (6, fig. 3); and one 6/8-in.-18NF female thread by 1/4-in.-18NPT male thread (10)).

(2) One quick-coupling adapter assembly (12), one quick-disconnect coupling half (11), one pressure regulator adapter (2), three tube reducers (7, 8, and 9), and one check valve assembly (1).

(3) One tube reducer (7) (contains a 1/2- in.-13NC male thread and a 3/4-in.-16NF male thread). One tube reducer (8) (contains a 1/2- in.-20NF female thread and a 0.093-in.-14NS male thread). One tube reducer (9) (contains a 5/8-in.-18NF female thread and a 9/16-in.-18NF male thread).

(4) One check valve assembly (1).

n. Tools, Antiseize Compound, and Wire. The following items are included in the M27 service kit. The tools are used to connect and disconnect air-pressure lines and fuel-filling lines.

(1) A 15-inch open-end adjustable wrench.

(2) A 9-inch adjustable wrench.

(3) An 8-inch open-end adjustable wrench.

(4) A multiple-head bung wrench (fig. 5).

(5) A pair of 8-inch slip-joint pliers.

(6) A flat-tip screwdriver,

(7) Two 5/32-inch sockethead screw keys. The screw keys are used to test and adjust pressure regulators on portable flamethrowers and riot control agent dispersers.

(8) A 1/4-pound-can of antiseize compound.

(9) A 1/2-pound coil of carbon-steel wire.

The wire is used to clean the atomizer hole in a flamethrower.

4. Tabulated Data

All data are approximate.

Weight of complete kit in packing chest	85 lb.
Length	24 % in.
Width	19% in.
Height	11% in.
Cubage	3.5 cu. ft.

WARNINGS

Do not use a commercial air cylinder if its markings are missing or defaced. Do not tamper with safety devices in commercial air cylinder valves.

Keep commercial air cylinder valves closed when the cylinder is hot in use.

Use only authorized gages, regulators, hose, pipe, and tubing on commercial air cylinders high-pressure spheres, and pressure tanks. DO NQT IMPROVISE.

Before removing the manifold machine plug-on the MIA1 compressor, see that the manifold bleeder valve of the section in use is open. Insure that no pressure is indicated on the manifold pressure gage (2, fig. 11) in that section.

Do not drop commercial air cylinders, high-pressure spheres, or pressure tanks. Handle them with care and store them away from heat.

Use ONLY COMPRESSED AIR when charging commercial air cylinders, high-pressure spheres, or pressure tanks.

Keep protection caps on commercial air cylinder valves when the cylinder is not in use.

Do not attempt to alter or repair a commercial air cylinder.

Do not use any compressed air handling unit, component, or device that is internally contaminated with grease, oil, or flame fuel. If grease, oil, or flame fuel is detected in commercial air cylinders, high-pressure spheres, pressure tanks, valve assemblies, connections, or hose, clean parts with an approved cleaning solvent (Type I, regular, Federal Specification O-T-620) and dry before using.

Be sure that there are no personnel in front of an open valve.

Always open valves slowly.

Always secure commercial air cylinders to prevent them from falling, rolling, or moving

Section I. AIR-CHARGING PRESSURE TANK FOR M2A1-7 FLAMETHROWER AND M3 DISPERSER

5. Using AN-M4 Compressor

a. Attaching Charging Line to Compressor.

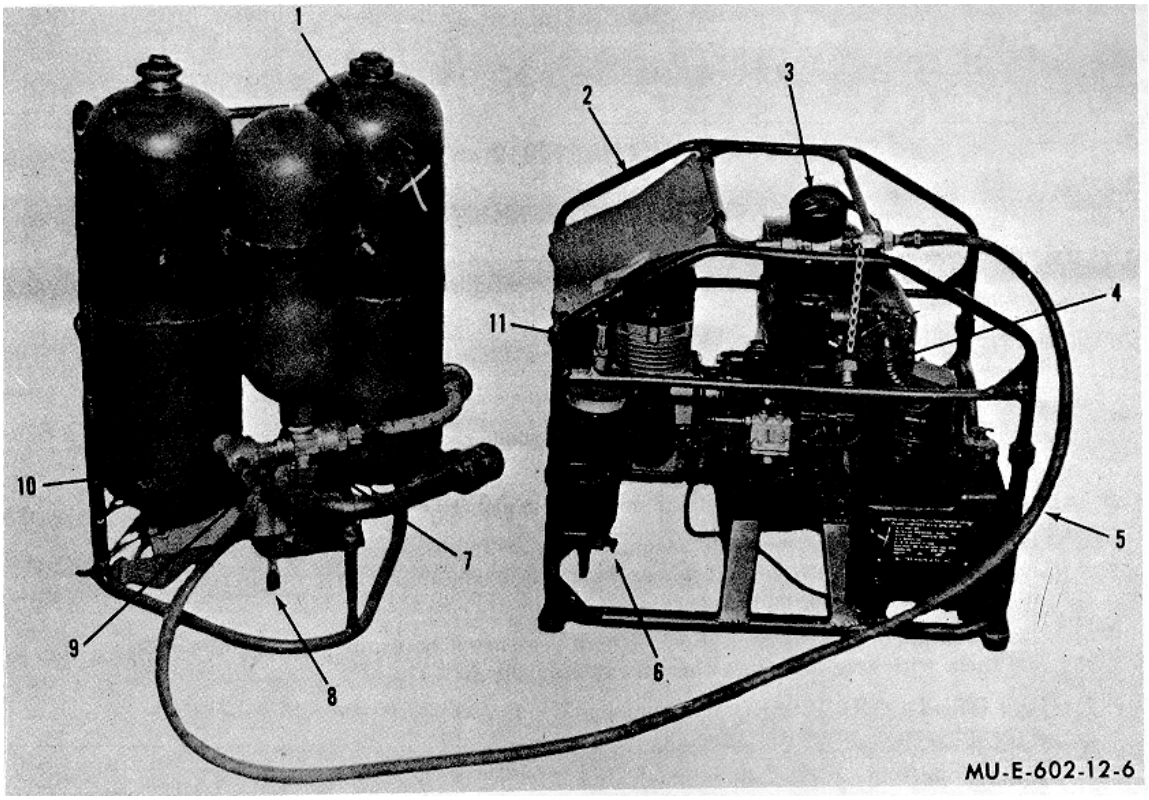
WARNING

See that the locking collar on the quick- disconnect coupling half is fully re- tracted and resting against the first wrenching surface. Do not push locking collar forward since this will release the coupling half from the charging fitting.

(1) Slide the charging hose assembly (11, fig. 6) through the frame of the AN-M4 com- pressor (2). Attach the quick-disconnect coup- ling half (17, fig 20) to the male coupling half on the compressor as shown in figure 6.

(2) Unscrew the safety plug (4, fig. 6) from the charging hose assembly.

(3) Screw the female fitting that is on the end of the charging hose assembly onto the charging line adapter (33, fig. 2) that is on the end of one 6-foot rubber hose assembly (5, fig. 6)



1 M2A1-7 flamethrower
2 AN-M4 compressor
3 Pressure gage
4 Safety plug
5 Hose
6 Globe valve
7 Pressure tank valve
8 Check valve cap
9 Check valve
10 Bleeder valve
11 Charging hose assembly

Figure 6. Charging M2A1-7 flamethrower with AN-M4 compressor.

b. Attaching Charging Line to Pressure Tank.

WARNING

Operating personnel must always position themselves away from the charging hose assembly during charging opera- tions. If either the charging hose or connector fail, the remaining portion of the charging hose will "whip around" and may injure personnel in its path.

(1) Close the pressure tank value (7) on the M2A1-7 flamethrower (1).

(2) Unscrew the check valve cap (8) from the check value (9).

(3) Connect the valve assembly (34, fig.

2) that is on the 6-foot rubber hose (5, fig. 6) to the check valve.

(4) Close the bleeder valve (10).

c. Charging.

(1) Open the globe valve (6) that is on the separator of the AN-M4 compressor.

NOTE

Opening the globe valve prevents pressure buildup during starting and relieves the starting load on the engine.

(2) Start the engine.

NOTE

There are four models of the AN-M4 compressor. Refer to applicable technical manual (appendix) for the type of compressor being used.

(3) Close the globe valve.

(4) During charging, check the pressure gage (3) to make sure that the pressure is increasing at a uniform rate.

WARNING

Open glove valve with caution. The oil, water, and air emulsion released under pressure can cause Injury to personnel.

(5) When the pressure tank has been charged to a pressure of 2,000 psi, open the globe valve one-half turn to permit the high- pressure air to escape and blow down the oil, water, and other material accumulated in the separator.

(6) Stop the engine.

d. After-Charging Procedure.

(1) Open the bleeder valve (10) one- fourth turn.

(2) Disconnect the rubber-hose valve assembly (34, fig. 2) from the pressure tank check valve (9, fig 6) Replace and tighten the check valve cap (8)

6. Using M1A1 Compressor

Connect the 6-foot rubber hose assembly (2, fig. 7) between the M2A1-7 flamethrower (1) and the charging line adapter on the MIA1 compressor. Charge the pressure tank (TM 3-1040- 203-12).

7. Using Commercial Air Cylinder

a. Volume and Pressure Full commercial air cylinders contain 200 to 220 cubic feet of air. All cylinders must have a minimum pressure of 600 psi. One or more of the cylinders must have a pressure of at least 1,800 psi. If available, at least two cylinders, and preferably four or more, should be used together to acquire maximum pressure.

b. Charging Capacity. Full commercial air cylinders can charge the approximate number of pressure tanks listed below:

No of full commercial are cylinders	*No (approx) of pressure tanks that can be charged*
1	2
2	6
4	24
5	36
6	48

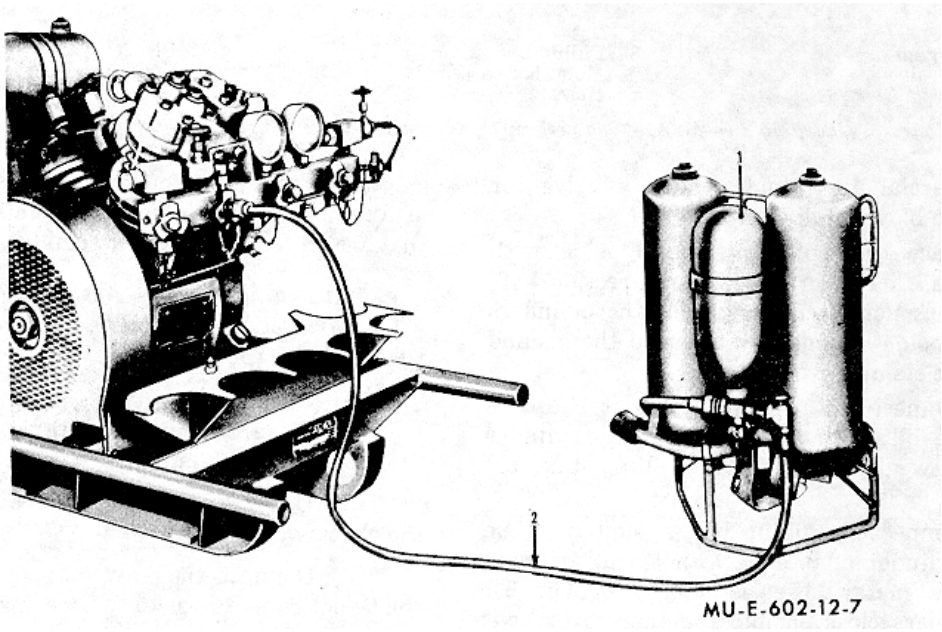
c. Apparatus. Use two 6-foot rubber hose assemblies (36, fig. 2) and a filling line assembly (27) to charge two M2A1-7 flamethrower pressure tanks from two commercial air cylinders.

Use one 6-foot rubber hose assembly (36) and cap the unused safety plug assembly (25).

d. Attaching Filling Lines to Commercial Air Cylinders. Charge two M2A1-7 flamethrower pressure tanks from two commercial air cylinders (fig. 8) as follows:

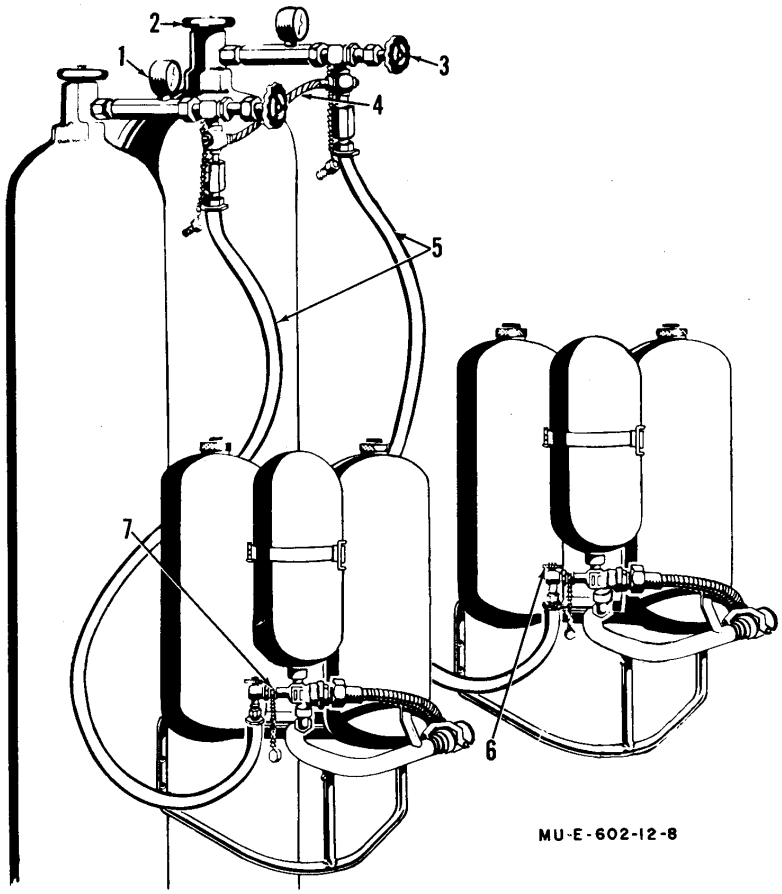
(1) Remove the protection caps from the valves of the cylinders.

(2) Immediately before coupling a fitting



1 M2A1-7 flamethrower 2 Hose assembly

Figure 7. Charging M2A1-7 flamethrower with M1A1 compressor.



1 Pressure gage
2 Cylinder valve
3 Fllling line valve
4 Metal hose assembly
5 Hose
6 Bleeder valve
7 Check valve

Figure 8. Charging two M2A1-7 flamethrower pressure tanks with two commercial air cylinders.

to a commercial air cylinder, open a valve for an instant to blow out dirt.

(3) Place the cylinders side by side with both outlets facing in the same direction. (If the ground is not level enough for the cylinders to stand up side by side, lay them on the ground with the outlets up.)

(4) Connect the pressure cylinder adapters (19) of the filling line assembly to the cylinder outlets. Blow dust out of the filling line assembly (27, fig. 2).

(5) Connect the filling line assembly to the pressure cylinder adapters. Do not kink or bend the flexible metal hose assembly (4, fig. 8) Place cylinders close enough together to prevent strain on the metal hose assembly.

(6) Attach a 6-foot rubber hose (5) to each of the two safety plug assemblies (25, fig. 2) that are on the filling line assembly.

e. Attaching Hose Assembly to M2A1-7 Flamethrower Pressure Tanks. Attach the 6-foot rubber hose (36) to the pressure tanks as follows:

(1) Close the pressure tank valve (7, fig. 6) on the M2A1-7 flamethrower (1).

(2) Unscrew the check valve cap (8) from the check valve (9).

(3) Connect the valve assembly that is on the 6-foot rubber hose to the check valve.

(4) Close the bleeder valve (6, fig. 8).

f. Charging.

(1) Close both filling line valves (3).

(2) Open the air cylinder valves (2).

(3) Determine from the pressure gages (1) which cylinder has the lower pressure.

Open the filling line valve (3) at the gage that shows the lower pressure. Fill the pressure tanks to the pressure shown on the gage. Close the filhng line valve. Open the other filling line valve and fill the pressure tanks until they reach at least 1,700 psi pressure.

(4) When the pressure tanks are filled, close the filling line valves (3). Open the bleeder valves (6) on the rubber hoses (5). Remove the hose fittings from the check valves (7). Screw the threaded caps onto the check valves; wrench- tighten the caps.

g. Attaching Two Filling Lines to Four Commercial Air Cylinders. If many pressure tanks must be charged, combine the filling line assemblies (27), fig. 2) in two or more kits for more efficient charging. An additional metal hose is provided in each kit for connecting two filling line assemblies. When connecting two filling line assemblies, remove one pipe plug from each assembly and screw the metal hose into the openings. The procedure for charging is similar to the one used for two cylinders (d above).

Air is taken first from the cylinder with the lowest pressure and last from the cylinder with the highest pressure.

h. Proper Pressure. Insure that the air delivered to the flamethrower pressure tank is at a minimum of 1,700 psi pressure; 2,000 psi pressure is recommended.

CAUTION

Do not overtighten the packing nut on the filling line valve (3, fig. 8). Over- tightening can damage the packing and mating threads and cause the valve to jam.

(1) If a filling-line valve leaks, wrench- tighten the packing nut.

(2) When the highest pressure shown on the gage (1, fig. 8) is less than 1,700 psi, close both cylinder valves (2) and bleed the pressure from the rubber hose by opening the bleeder valve. Close the filling line valves (3). Remove the cylinder having the lowest pressure and replace it with a fully charged cylinder to complete the charging operation. With chalk, mark the lowest pressure on the removed cylinder.

i. After-Charging Procedure. When charging is completed, proceed as follows:

(1) Close the filling line valves (3). Observe the pressure indicated on each gage (1).

With chalk, mark the pressure on each cylinder.

(2) Close the valves on the cylinder.

(3) Open the filling line valves.

(4) Bleed all rubber hoses. Disconnect the bleeder valve assemblies from the check valves.

Replace the threaded caps on the check valves (7); wrench tighten the caps.

(5) Disconnect the filling lines from the cylinder adapters (19, fig. 2). Use two wrenches and take care not to twist or kink the metal hose (4, fig. 8). Support the lines during the operation so that their full weight does not hang on the metal hose.

(6) Remove cylinder adapters from cylinders.

(7) Replace the safety plug assembly (25, fig. 2).

(8) Replace the commercial air cylinder protection cap.

8. Alternate Method of Charging From Commercial Air Cylinder

The following method can be used to charge one M2A1-7 flamethrower pressure tank, when it is removed frbm the flamethrower or riot control agent disperser:

a. Attach the filling line assembly to commercial air cylinders (para 7d(1) through (5)).

b. Cap the unused safety plug (9, fig. 9) of the filling line assembly. Screw a tube reducer (7, fig. 3) into the tube reducer (3, fig. 9).

c. Connect the bleeder valve assembly (35, fig. 2) of the 6-foot rubber hose (4) to the tube reducer (3). Be sure that the bleeder valve is closed.

d. Unscrew the charging line adapter (33, fig. 2) from the other end of the rubber hose and screw a tube reducer (9), fig. 3) into the hose.

e. Screw a quick-disconnect coupling half (7, fig. 9) into the tube reducer (8).

f. Attach the quick-disconnect coupling half to the male quick-disconnect half on the M2A1-7 flamethrower pressure tank.

g. Unscrew the metal cap from the check valve (7, fig. 8) on the pressure tank. Moisten the end of the check valve with water or saliva. (Moisture prevents damage to the rubber wash-

1 Filling line valve
2 Cylinder valve
3 Tube reducer
4 Hose
5 Pressure cylinder test gage assembly
6 Pressure tank valve
7 Quick-disconnect coupling half
8 Tube reducer
9 Safety plug

Figure 9. Charging M2A1-7 flamethrower pressure tank (removed from flamethrower) with commercial air cylinder.

er.) Screw the pressure cylinder test gage assembly (5, fig. 9) onto the check valve.

h. Open the pressure tank valve (6).

i. Close the filling line valves (1).

j. Open the cylinder valves (2).

k. Read the pressure gages to determine which cylinder has the lower pressure. Open the filling line valve (1) at the gage showing the lower pressure.

I. Observe the pressure cylinder test gage until the needle stops rising or reaches at least 1,700 psi. When the gage reaches the desired pressure, turn off the filling line valves (1). II necessary, continue using cylinders with higher pressure (para 7h(2)) to reach 1,700 psi. When the highest pressure shown on the filling line gage is less than 1,700 psi, close both cylinder valves and bleed the pressure from the rubber hose. Close all filling line valves and re- move the cylinder having the lowest pressure. Replace it with a fully charged cylinder. With chalk, mark the lowest pressure on the removed cylinder.

m. When the pressure tank is charged, close the pressure tank valve (7, fig. 6), open the bleeder valve (6, fig. 8) to reduce pressure in the hose, and remove the hose (4, fig. 9) and pressure cylinder gage (5) from the tank. Screw the cap on 'the check valve (7, fig. 8) and wrenchtighten.

n. When all pressure tanks have been charged, follow directions in paragraph 7i.

9. Testing Pressure in Pressure Tank

a. Unscrew the cap from the check valve (7, fig. 8).

b. Moisten the end of the check valve with water or saliva.

c. Screw the pressure cylinder test gage (5, fig. 9) on the check valve (7, fig. 8).

d. Read the gage (1) to determine the pres- sure in the pressure tank.

e. Unscrew the gage and replace the check valve cap.

Section II. AIR-CHARGING ABC-M9-7 or M9A1-7 FLAMETHROWER

10. Using AN-M4 Compressor

Charge the ABC-M9-7 or M9-A1-7 high-pressure spheres as follows:

a. Attaching Charging Hose Assembly (18, fig. 2) to Compressor. Follow directions given in paragraph 5a.

b. Attaching Hose Assembly to High-Pressure Sphere.

(1) Close the high-pressure sphere valve (2, fig. 10).

(2) Disconnect the pressure hose (1) from the plug on the high-pressure sphere valve.

(3) Screw the quick-coupling adapter assembly (12, fig. 3) into the bleeder valve assembly that is on the 6-foot rubber hose (36, fig. 2).

WARNING

See that the locking collar on the quick-disconnect coupling half is fully retracted and resting against the first wrenching surface. Do not push locking collar forward since this will release the coupling half from the charging fitting.

(4) Connect the quick-coupling adapter as- sembly (12, fig. 3) to the male coupling half on the high-pressure sphere valve (2, fig. 10).

(5) Close the bleeder valve (6, fig. 8).

c. Charging.

(1) Open the globe valve (6, fig. 6) on the separator of the compressor.

(2) Start the engine.

NOTE

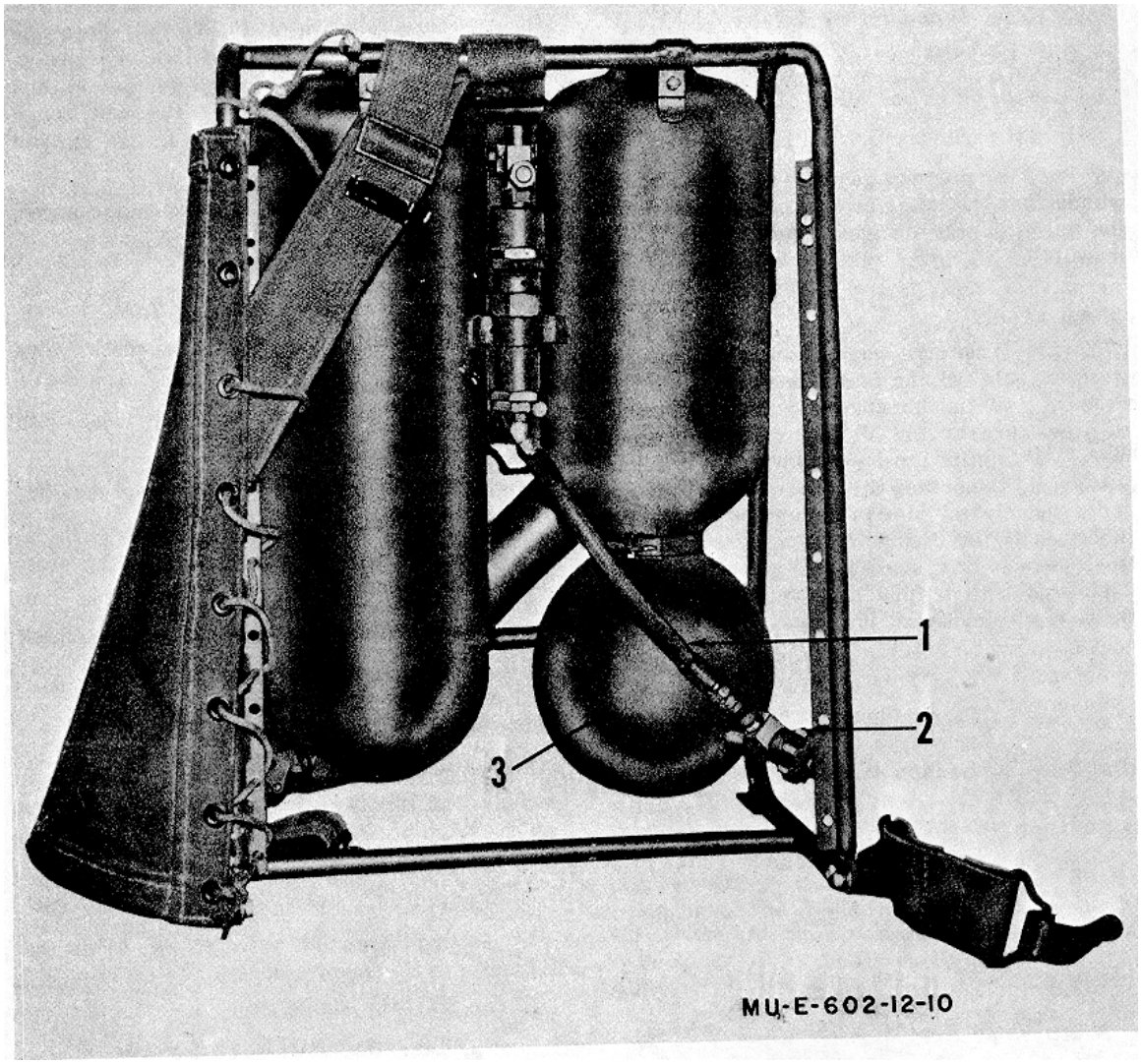
There are four models of the AN-M4 compressor. Refer to applicable technical manual (appendix) for the type of compressor being used.

(3) Close the globe valve.

WARNING

Operating personnel must always position themselves away from the charging hose assembly during charging operations. If either the charging hose or connector fail, the remaining portion of the charging hose will "whip around" and may injure personnel in its path.

(4) Open the high-pressure sphere valve (2, fig. 10).



1 Pressure hose 2 High-pressure sphere valve 3 High-pressure sphere

Figure 10. M9 tank group.

(5) During charging, check the pressure gage to make sure that the pressure is increasing at a uniform rate.

(6) When the high-pressure sphere has been charged to a pressure of 2,000 psi, close the high-pressure sphere valve.

WARNING

Open globe valve with caution. The oil, water, and air emulsion released under pressure can cause injury to personnel.

(7) Open the globe valve (6, fig. 6) one- half turn.

NOTE

There are four models of the AN-M4 compressor. Refer to applicable technical manual (appendix) for the type of compressor being used.

(8) Stop the engine.

d. After-Charging Procedure.

(1) Open the bleeder valve (6, fig. 8) on the 6-foot rubber hose one-fourth turn.

(2) Remove the charging line from the plug on the high-pressure sphere valve (2, fig. 10).

(3) Connect the pressure hose to the plug on the high-pressure sphere valve.

11. Using M1 A1 Compressor

Charge the ABC-M9-7 or M9A1-7 flamethrower high-pressure sphere as follows:

a. Attaching Hose Assembly (36, fig. 2) to Compressor.

(1) Close the manifold intake valve (1, fig. 11) on the unused side of the' charging manifold. Close the bleeder valve (2, fig. 12) that is in the aftercooler condensate leg (3).

(2) Leave the charging manifold bleeder valves (1) in the open position.

WARNING

Before removing the manifold machine plug, see that the manifold bleeder valve of the section in use is open. Insure that no pressure is indicated on the manifold pressure gages (2, fig. 11) in that section.

(3) Remove the manifold machine plug (4) from the hammer lug locknut (3).

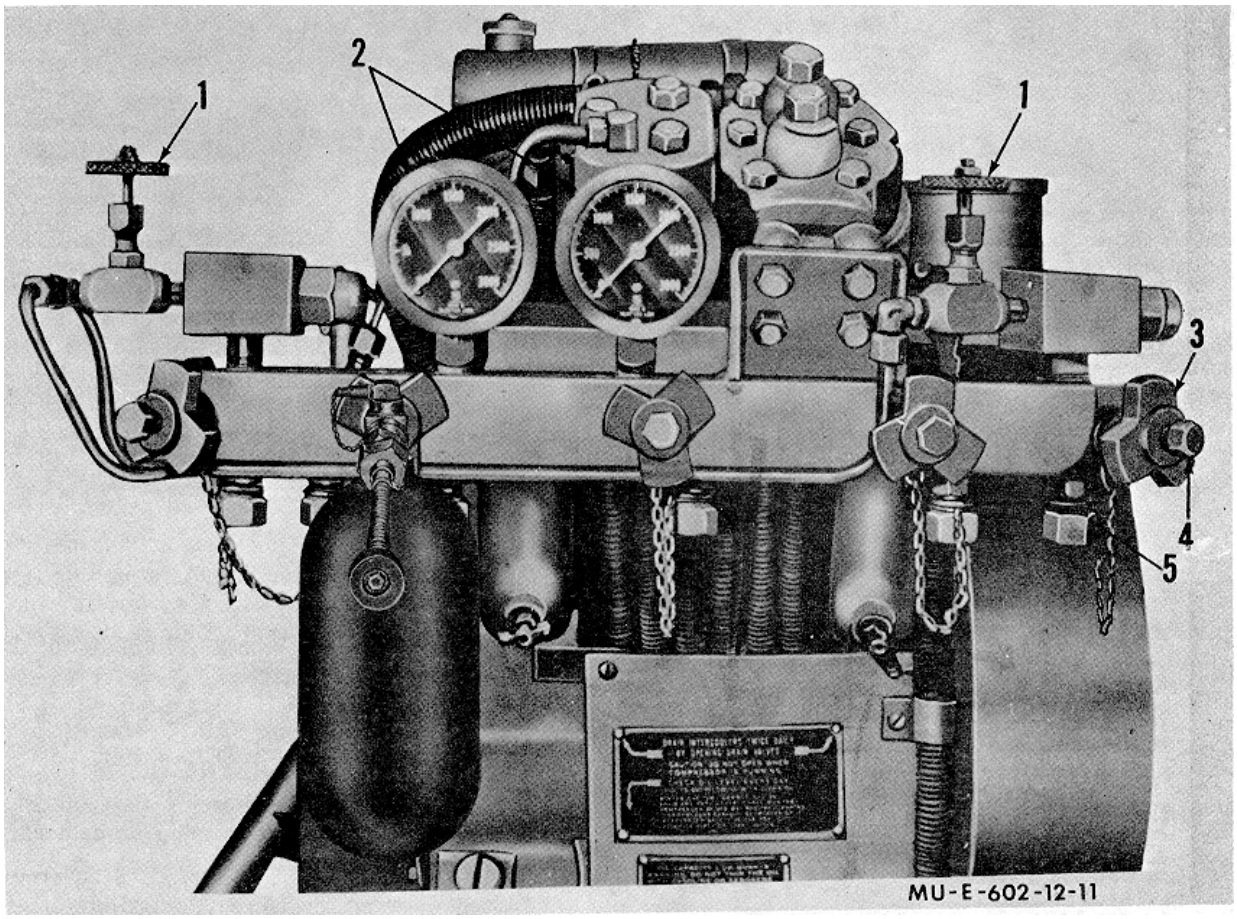
(4) Unscrew the charging line adapter (5) from the manifold and screw it into the hammer lug locknut (3).

(5) Screw the adapter that is on the 6- foot rubber hose assembly (36, fig. 2) into the charging line adapter (5, fig. 11). Tighten the hammer lug locknut.

b. Attaching Charging Hose (18, fig. 2) to High-Pressure Sphere. Attach the charging line to the high-pressure sphere (para 10b).

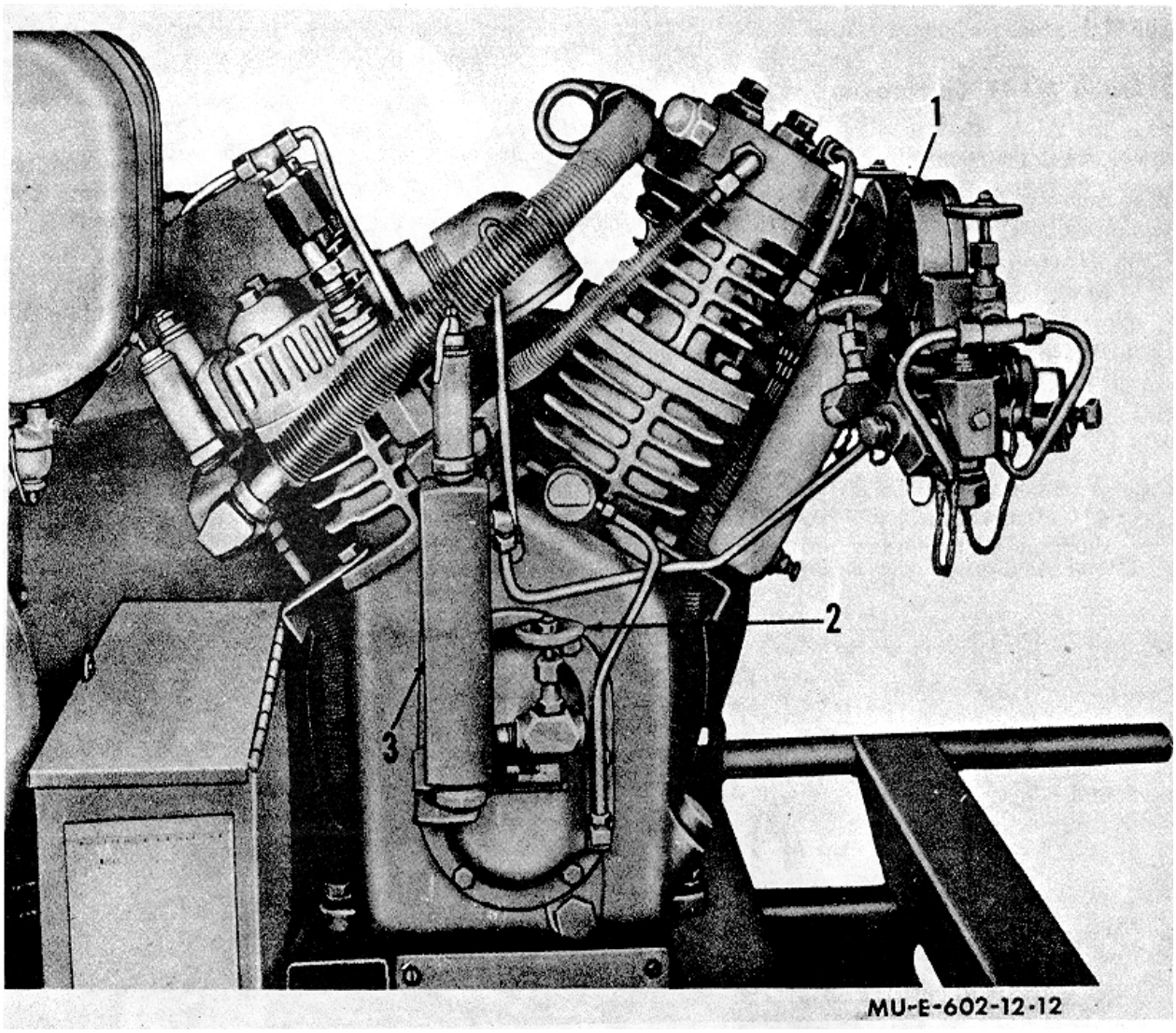
c. Charging.

(1) Start the compressor engine (TM 3- 1040-203-12)



1 Manifold intake valves
2 Pressure gages
3 Hammer lug locknut
4 Manifold machine plug
5 Charging line adapter

Figure 11. Charging manifold section of M1A1compressor.



1 Charging manifold bleeder valve 2 Bleeder valve 8 Aftercooler condensate leg

Figure 12. M1A1 compressor, side view.

WARNING

Operating personnel must always position themselves away from the charging hose assembly during charging operations. If either the charging hose or connector fail, the remaining portion of the charging hose will "whip around" and may injure personnel in its path.

(2) Close the bleeder valve (1 or 2, fig.12) on the side of the manifold to which the charging line is attached.

(3) Open the high-pressure sphere valve (2, fig. 10).

(4) Observe the pressure gage (2, fig. 11) for the tank being charged. When the gage indicates 2,000 psi, close the high-pressure sphere valve. Open the bleeder valve on the section of the manifold to which the charging line is connected.

d. After-Charging Procedure. Follow the directions in paragraph 10d.

12. Using Commercial Air Cylinder

WARNING

Do not use a commercial air cylinder if its markings are missing or defaced.

a. General. Paragraph 7a gives information on volume and pressure. Paragraph 7b gives cylinder charging capacities.

b. Apparatus. Use a 6-foot rubber hose assembly (36, fig. 2), quick-coupling adapter assembly

(12, fig. 3), and filling line assembly (27, fig. 2) to charge the ABC-M9-7 or M9A1-7 flamethrower high-pressure sphere from two commercial air cylinders. Cap the unused safety plug assembly (25) of the filling line assembly.

c. Attaching Filling Line to Commercial Air Cylinders.

(1) Remove the protection caps from the valves of the cylinders.

(2) Immediately before coupling a fitting to a commercial air cylinder, open a valve for an instant to blow out dirt.

(3) Place the cylinders side by side with both outlets facing the same direction. (If the ground is not level enough for the cylinders to stand up side by side, lay them on the ground with the outlets UP.)

(4) Connect the pressure cylinder adapters (19) from the filling line assembly to the air cylinders. Connect the filling line assembly to the pressure cylinder adapters (19)Do not kink or bend the metal hose. Cylinders must be close enough together to prevent strain on the metal hose. Be sure that one safety plug assembly (25) is closed with the safety plug. Blow dust out of the filling line assembly (27, fig. 2).

(5) Connect a 6-foot rubber hose to the other safety plug assembly on the filling line assembly.

d. Attaching Hose Assembly (36, fig. 2) to High-Pressure Sphere. Follow directions given in paragraph 10b.

e. Charging. Charge one sphere by using two commercial air cylinders as follows:

(1) Close both filling line valves on the filling line assembly.

(2) Open the high-pressure sphere valve (2, fig. 10).

(3) Open the air cylinder valves.

(4) Read the gages on the filling line assembly to determine which air cylinder has the lower pressure. Open the filling line valve at the gage showing the lower pressure and fill the high-pressure sphere to the pressure shown by the gage. Close the filling line valve. Open the other filling line valve and fill the high-pressure sphere until it reaches a pressure of at least 1,700 psi as shown by the gage on the filling line assembly.

f. After-Charging Procedure.

(1) Close the high-pressure sphere valve.

(2) Close the filling line valves.

(3) Open the bleeder valve on the 6-foot rubber hose until the pressure in the hose is released.

(4) Close the bleeder valve in the rubber hose.

(5) Disconnect the high-pressure sphere from the rubber hose.

g. Attaching Two Filling Lines to Four Commercial Air Cylinders. If many high-pressure spheres must be charged, combine the filling line assemblies (27, fig. 2) on two or more kits for more efficient charging. An additional metal hose is provided in each kit for connecting two filling line assemblies. When connecting two filling line assemblies, remove one pipe plug from each assembly and screw the metal hose into the openings from which the pipe plugs were removed The procedure for charging is similar to the one used for two cylinders (e above). Air is taken first from the cylinder with the lowest pressure and last from the cylinder with the highest pressure.

h. Charging Two High-Pressure Spheres with Commercial Air Cylinders. To charge two high-pressure spheres at one time, set up a second charging line as follows:

(1) Connect a 6-foot rubber hose assembly to a coupling nut on the filling line assembly.

(2) Screw the tube reducer (7, fig. 3) into the valve assembly on the rubber hose.

(3) Screw the charging hose assembly on the tube reducer.

(4) Close the high-pressure sphere valve (2, fig. 10).

(5) Disconnect the pressure hose (1)' from the plug on the high-pressure sphere valve.

(6) Connect the quick-disconnect end of the charging hose assembly to the plug on the high-pressure sphere valve.

(7) Open the high-pressure sphere valve.

i. Proper Pressure.

(1) If a filling line leaks, wrench tighten the packing nut.

(2) When the highest pressure shown on the gage (1, fig. 8) is less than 1,700 psi, close both cylinder valves (2) and high pressure sphere valve and bleed the pressure from the rubber hose by opening the bleeder valve. Close the filling line valves (3. Remove the cylinder having the lowest pressure and replace it with a fully charged cylinder to complete the charging operation. With chalk, mark the lowest pressure on the removed cylinder.

j. After-Charging Procedure.

(1) Close the high-pressure sphere valve.

(2) Close the filling line valves (3). Observe the pressure indicated on each gage (1). With chalk, mark the pressure on each cylinder.

(3) Close the valves on the cylinder.

(4) Open the filling line valves.

(5) Bleed all rubber hoses. Disconnect the bleeder valve assemblies from the check valves. Replace the threaded caps on the check valves (7); wrenchtighten the caps.

(6) Disconnect the filling lines from the cylinder adapters (19, fig. 2). Use two wrenches and take care not to twist or kink the metal hose (4, fig. 8). Support the lines during the operation so that their full weight does not hang on the metal hose.

(7) Remove cylinder adapters from cylinders.

(8) Replace the safety plug assembly (25, fig. 2).

(9) Replace the commercial air cylinder protection cap.

13. Testing Pressure in a High-Pressure Sphere

a. Verify that the high-pressure sphere valve is closed.

b. Disconnect the pressure hose from the plug on the high-pressure sphere.

WARNING

See that the locking collar on the quick-disconnect coupling half is fully retracted and resting against the first wrenching surface. Do not push locking collar forward since this will release the coupling half from the charging fitting.

c. Screw the safety plug (3, fig. 13) into the end of the charging hose assembly. Attach the quick-disconnect coupling half (2) that is on the other end of the charging hose to the plug on the high-pressure sphere valve (2, fig. 10).

d. Open the high-pressure sphere valve.

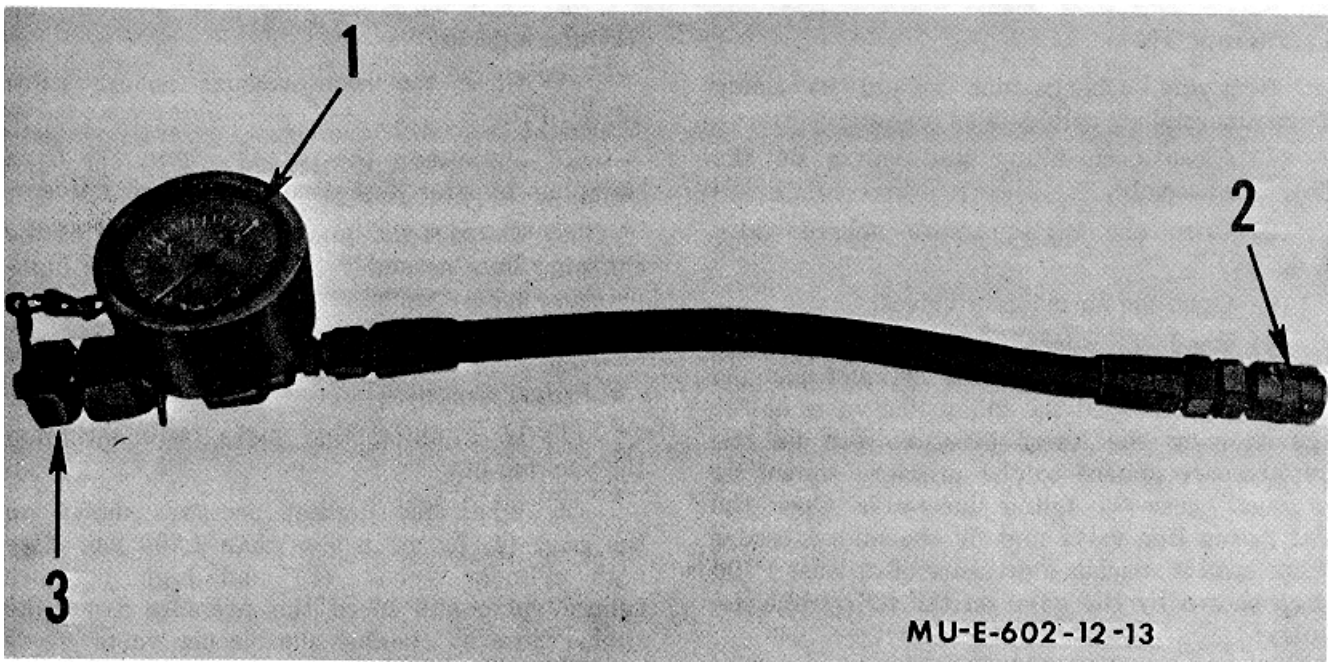
e. Read the gage (1, fig. 13) on the charging hose to determine the pressure in the pressure tank.

f. Close the high-pressure sphere valve and remove the charging hose assembly.

WARNING

See that the locking collar on the quick-disconnect coupling half is fully retracted and resting against the first wrenching surface. Do not push locking collar forward since this will release the coupling half from the charging fitting.

g. Connect the pressure hose to the plug on the high-pressure sphere valve.



1 Gage2 Quick-disconnect coupling half 3 Safety plug

Figure 13. Charging hose assembly ready to teat the pressure of ABC-M9-7 or M9A1-7 flamethrower high-pressure sphere.

Section III. AIR-CHARGING M5 RIOT CONTROL AGENY DISPERSER

14. Using AN-M4 Compressor

a. Attaching Hose Assembly (36, fig. 2) to Compressor. Follow directions given in paragraph 5a.

b. Attaching Charging Hose Assembly (18, fig. 2) to Charging Fitting (2, fig. 14).

(1) Close the low-pressure valve (7, fig. 14) by turning it counterclockwise.

(2) Open the high-pressure valve (5) by turning it counterclockwise.

(3) Open the charging valve (1) by turn-ing counterclockwise.

(4) Screw the quick-coupling adapter (12, fig. 3) into the valve assembly (34, fig. 2) that is on the end of the 6-foot hose.

WARNING

See that the locking collar on the quick-disconnect coupling half is fully retracted and resting against the first wrenching surface. Do not push locking collar forward since this will release the coupling half from the charging fitting.

(5) Connect the quick-coupling adapter to the charging fitting (2, fig. 14).

(6) Close the bleeder valve on the 6-foot rubber hose assembly.

c. Charging.

WARNING

Operating personnel must always position themselves away from the charging hose assembly during charging operations. If either the charging hose or connector fail, the remaining portion of the charging hose will "whip around" and may injure personnel in its path.

(1) Open the globe valve on the separator of the compressor.

(2) Start the engine.

NOTE

There are four models of the AN-M4 compressor. Refer to applicable technical manual (appendix) for the type of compressor being used.

(3) Close the globe valve.

(4) When the compressed gas cylinder has been charged to 2,000 psi pressure as shown on the high-pressure gage (3), close the charging valve by turning it clockwise.

WARNING

Open globe valve with caution. The oil, water, and air emulsion released under pressure can cause injury to personnel.

(5) Open the globe valve on the bottom of the separator one-half turn.

(6) Stop the engine.

d. After-Charging Procedure.

(1) Open the bleeder valve on the 6-foot rubber hose one-fourth turn.

(2) Remove the charging line from the charging fitting.

(3) Test the pressure regulator (6). The low-pressure gage (4) should read approximately 60 psi with the low-pressure valve closed and the high-pressure valve open. Activate the relief valve (8) manually several times. The low-pressure gage should drop to approximately 45 to 55 psi and return after each valve release to the original pressure reading.

(4) Close the high-pressure valve.

15. Using M1A1 Compressor

a. Attaching Hose Assembly (36, fig 2) to Compressor. Follow directions given in paragraph 11a.

b. Attaching Charging Hose Assembly (18, fig. 2) to Charging Fitting (2, fig. 14). Follow directions given in paragraph 14b.

c. Charging.

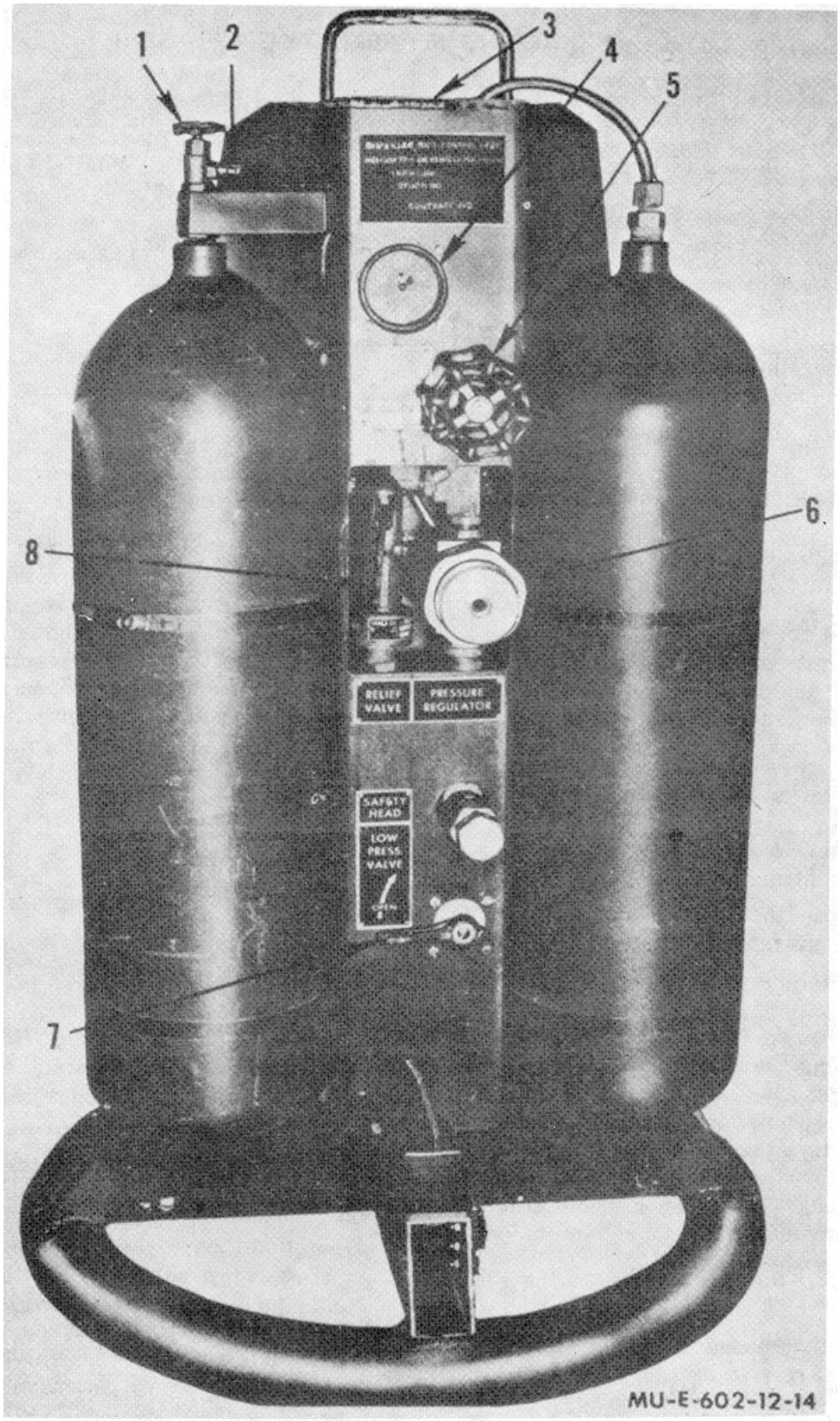
WARNING

Operating personnel must always position themselves away from the charging hose assembly during charging operations. If either the charging hose or connector fail, the remaining portion of the charging hose will "whip around" and may injure personnel in its path.

(1) Start the compressor engine (TM 3-1040-203-12).

(2) Close the charging manifold bleeder valve (1, fig. 12) on the side of the manifold where the charging line is attached.

(3) When the compressed gas cylinders have been charged to 2,000 psi pressure, as shown



1	Charging valve	3	High-pressure gage (recessed)	5	High-pressure valve	7	Low-pressure valve
2	Charging fitting	4	Low-pressure gage	6	Pressure regulator	8	Relief valve

Figure 14. Pressure group of M5 riot control agent disperser.

on the high-pressure gage, close the charging valve and open the bleeder valve.

d. After-Charging Procedure. Follow directions given in paragraph 14d.

Section IV. AIR-CHARGING COMMERCIAL AIR CYLINGERS

16. Using AN-M4 Compressor

a. Attaching Charging Hose Assembly (18, fig. 2) to Compressor. Follow directions given in paragraph 5a.

b. Attaching Filling Line Assembly (27, fig. 2) to Commercial Air Cylinder.

(1) Remove the protection caps from the valves on the cylinders.

(2) Place the cylinders side by side with both outlets facing in the same direction. (If the ground Is not level enough for the cylinders to stand up side by side, lay them on the ground with the outlets UP.)

(3) Using compressor, blow dust out of the filling line assembly and cylinder valve.

(4) Connect the pressure cylinder adapters (19, fig. 2) of the filling line assembly to the cylinders.

(5) Connect the filling line assembly to the cylinder adapters. Do not kink or bend the metal hose (4, fig. 8). Place cylinders close enough together to prevent strain on the metal hose

(6) Attach a 6-foot rubber hose (5) to each of the two safety plug assemblies (25, fig. 2) (with safety plugs removed) on the filling line assembly.

(7) Screw the tube reducer (7, fig. 3) into the safety plug assembly that is on the filling line connected to the cylinder Close the other safety plug assembly with the safety plug (9, fig. 9).

(8) Screw the valve assembly of the 6-foot rubber hose on the tube reducer. See that the bleeder valve is closed.

(9) Open the valve on the filling line as-sembly that is on the side being charged. See that the valve on the other side is closed.

c. Charging.

WARNING

Operating personnel must always position themselves away from the charging hose assembly during charging operations. If either the charging hose or connector fail, the remaining portion of the charging hose will "whip around" and may injure personnel in its path.

(1) Open the globe valve on the separator of the compressor.

(2) Start the engine.

NOTE

There are four models of the AN-M4 compressor. Refer to applicable technical manual (appendix) for the type of compressor being used.

(3) Close the globe valve.

(4) Open the cylinder valve

(5) During charging, check the gage on the filling line assembly to make sure that the pressure is increasing at a uniform rate.

(6) When the cylinder has been charged to 2,000 psi pressure, close the cylinder valve.

(7) Stop the engine.

WARNING

Open globe valve with caution. The oil, water, and air emulsion released under pressure can cause injury to personnel.

(8) Open the globe valve on the bottom of the separator one-half turn

d. After-Charging Procedure for Commercial Air Cylinder.

(1) Open the bleeder valve (35, fig. 2) that is on the 6-foot rubber hose (32) one-fourth turn

(2) Remove the filling line assembly (27) from the air cylinder

e. Charging Two or More Commercial Air Cylinders Simultaneously Charge two or more commercial air cylinders simultaneously (a through d above) and perform the following:

(1) Attach cylinders in series with filling line assemblies.

(2) Charge commercial air cylinders (c and d above).

17. Using M1Al Compressor

a. Attaching Hose Assembly (36, fig. 2) to Compressor. Follow directions given in paragraph 11a.

b. Attaching Filling Line Assembly (27, fig. 2) to Commercial Air Cylinder. Follow directions given in paragraph 16b.

c. Charging.

(1) Start the compressor engine (TM 3-1040-203-12).

(2) Open the cylinder valve (2, fig. 9).

(3) Close the charging manifold bleeder valve (1, fig. 12) that is on the side of the manifold where the charging line is attached.

(4) Observe the discharge pressure gage (2, fig. 11) on the manifold and the pressure gage (20, fig 2) of the filling line assembly.

When either gage shows 2,000 psi, close the cylinder valve and open the bleeder valve.

d. After Charging Procedure for Commercial Air Cylinder. Follow directions given in paragraph 16d.

e. Charging Two or More Commercial Air Cylinders Simultaneously. Charge two or more commercial air cylinders simultaneously (a through d above) and perform the following:

(1) Attach cylinders in series with filling line assemblies.

(2) Before filling, open, all cylinder valves (2, fig. 9) and filling line valves (1).

(3) Charge commercial air cylinders (c and d above).

Section V. TESTING AND ADJUSTING PRESSURE REGULATOR ON PORTABLE FLAMETHROWERI OR RIOT CONTROL AGENT DISPERSER

18. M2A1-7 Flamethrower

Use the M2A1-7 portable flamethrower fuel tank test gage assembly and the 5/32-inch sockethead screw keys (para 3n(7)) to test and adjust the pressure regulators on the M2A1-7 portable flamethrower (TM 3-1040-204-14).

19. M3 Riot Control Agent Disperser

Use the agent tank test gage assembly and the sockethead screw keys (para 3n(7)) to test and adjust the pressure regulator on the M3 riot control agent disperser (TM 3-1040-214-12).

20. ABC-M9-7 or M9A1-7 Flamethrower

Use the ABC-M9-7 flamethrower fuel tank test gage assembly to test the pressure regulator on the ABC-M9-7 or M9A1-7 portable flame-thrower (TM 3-1040-211-30 or TM 3-1040-257-12).

Section VI. USING KIT FOR FUEL FILLING

WARNINGS

Do not smoke within 50 feet of a flame-fuel filling operation.

To prevent any irritation, all parts of the body that come in contact with gasoline or a flame fuel must be washed with soap and water.

Never move a flame-fuel drum while pressure is being applied.

Use ONLY flame fuel per TM 3366 when filling flamethrowers or flame landmines for flame operations.

Never use gasoline to fill flamethrowers or flame landmines.

Do not kink flame-fuel hose or gasoline hose. Do not let hoses contact hot surfaces.

Keep carbon-dioxide or dry-type fire ex-
tinguishers or containers of sand or earth at flame-fuel filling site for use on gasoline or flame-fuel fires. DO NOT USE WATER ON BURNING FLAME FUEL OR GASOLINE.

When applying pressure to a fuel drum, always use the pressure regulator sup-plied with the kit. Using a different pressure regulator may cause the flame-fuel drum to explode.

Do not permit open flames, heated stoves, or the operation of electrical apparatus or equipment that cause sparks within 50 feet of fuel-filling operations. Never store gasoline tanks or flame-fuel tanks near heat.

Remove spilled flame fuel or gasoline immediately.

Use only appliances approved for use in atmospheres containing flammable vapors.

Do not inhale gasoline fumes; they are toxic.

Report gasoline-container or flame-fuel-container leaks to the local commander immediately Gasoline and flame fuels are flammable.

21. General

This section gives instructions for using the service kit to fill portable flamethrowers and flame landmines with fuel from 55-gallon drums by using the following as pressure sources: AN-M4 or M1A1 compressors, commercial air cylinders, M2A1-7 flamethrower pressure tanks, and ABC-M9-7 or M9A1-7 flamethrower high-pressure spheres.

a. Steel Drums. Use only clean, dry unrusted 55-gallon steel drums in filling operations. Do not use 55-gallon drums if they are made from steel that is lighter than 18 gage. Suitable 55-gallon drums are stamped DOT-SB or DOT-17E, followed by three numbers, for example, 18-9-70. The first number indicates gage of metal; the second number indicates month of manufacture; and the third number indicates year of manufacture.

WARNING

Use ONLY COMPRESSED AIR when charging commercial air cylinders, high-pressure spheres, or pressure tanks.

b. Pressure. When using 55-gallon drums, the pressure should not exceed 15 psi. Do not use more pressure than is necessary for efficient operation. The compressed air pressure regulator (12, fig. 4) supplied with the kit reduces pressure delivered from the pressure source to the required operating pressure. Sources of pressure to be connected to filling equipment include the following:

(1) Commercial air cylinders.

(2) Air compressors on AN-M4 or M1A1 compressors.

(3) Pressure tanks on M2A1-7 flame-thrower or high-pressure spheres on ABC-M9-7 or M9A1-7 flamethrowers.

22. Preparation for Fuel Filling from 55-Gallon Drums

a. Fuel Filling Hose. Connect the fuel filling hose to the 55-gallon drum as follows:

(1) Rotate the drum so that the bunghole to which the fuel filling hose is to be connected is UP.

(2) Unscrew the bung with the bung wrench (fig. 5).

(3) Screw the pipe bushing (4, fig. 3) into the bunghole (5, fig. 15).

(4) Screw one end of the 15-foot rubber hose (6) into the pipe bushing.

(5) Screw the gate valve (8) onto the other end of the 15-foot rubber hose. Make sure that the valve is closed.

(6) Screw the pipe nipple (7) into the gate valve.

(7) Rotate the drum so that the bunghole to which the hose is connected is down. Chock the drum securely to prevent rolling.

b. Pressure Line from AN-M4 Compressor. Connect the pressure line to the 55-gallon drum as follows:

(1) With the unused bunghole UP, unscrew the bung with a bung wrench (fig. 5).

(2) Screw the adapter (6, fig. 3) into the bunghole.

(3) Screw the end of the 8-foot rubber hose (14, fig. 4) onto the adapter.

(4) Connect the other end of the 8-foot rubber hose (14) to the outlet connection adapter (9) on the pressure regulator (12).

(5) Screw the tube reducer (8, fig. 3) into the cylinder connection nut (7, fig. 4) of the pressure regulator.

(6) Screw the check valve assembly (1, fig. 3) into the tube reducer.

(7) Screw the valve assembly (34, fig. 2) of the 6-foot rubber hose assembly (36) onto the check valve. See that the bleeder valve (35) is closed.

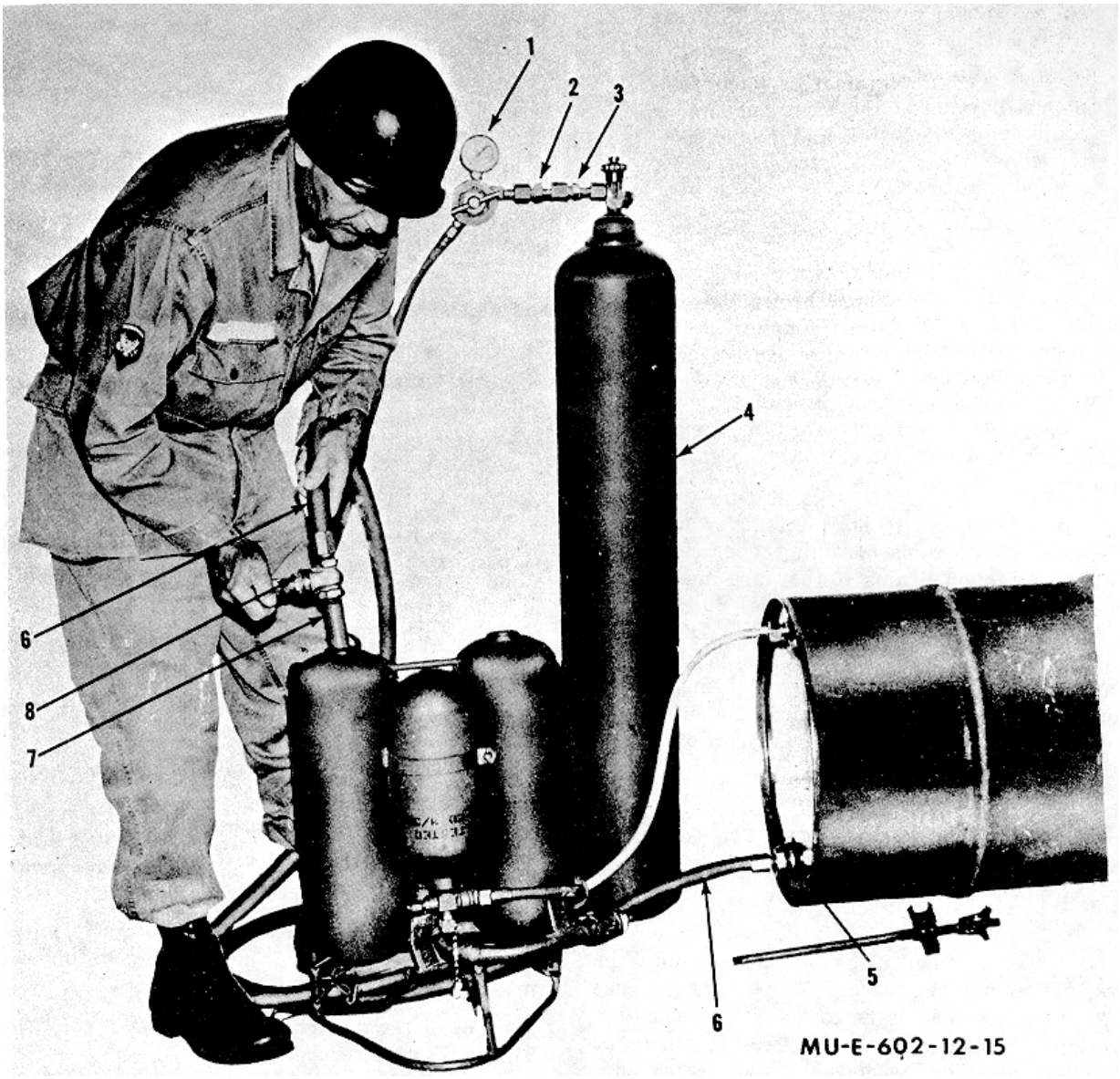
(8) Screw the charging hose assembly (18) onto the charging line adapter (33) on the other end of the 6-foot rubber hose.

(9) Attach the female quick-disconnect coupling half end of the charging hose assembly (11, fig. 6) to the male quick-disconnect coupling on the compressor.

c. Pressure Line from M1A1 Compressor.

(1) Set up the charging line (b(1) through (7) above).

(2) Attach the charging line to the compressor (para 11a).



1	Pressure regulator	4	Commercial air cylinder	6	Hose
2	Pressure regulator adapter	5	Pipe bushing screwed into bunghole	7	Pipe nipple
3	Cylinder adapter			8	Gate valve

Figure 15. Filling M2A1-7 flamethrower from 55-gallon drum by using commercial air cylinder.

d. Pressure Line from M2A1-7 Flamethrower Pressure Tank.

(1) Set up the charging line (b(1) through (7) above).

(2) Remove the charging line adapter (33, fig. 2) from the end of the 6-foot rubber hose.

(3) Screw the pipe-to-tube adapter (2, fig.16) into the end 6f the 6-foot rubber hose (3).

(4) Screw the quick-disconnect coupling half (1) into the adapter (2).

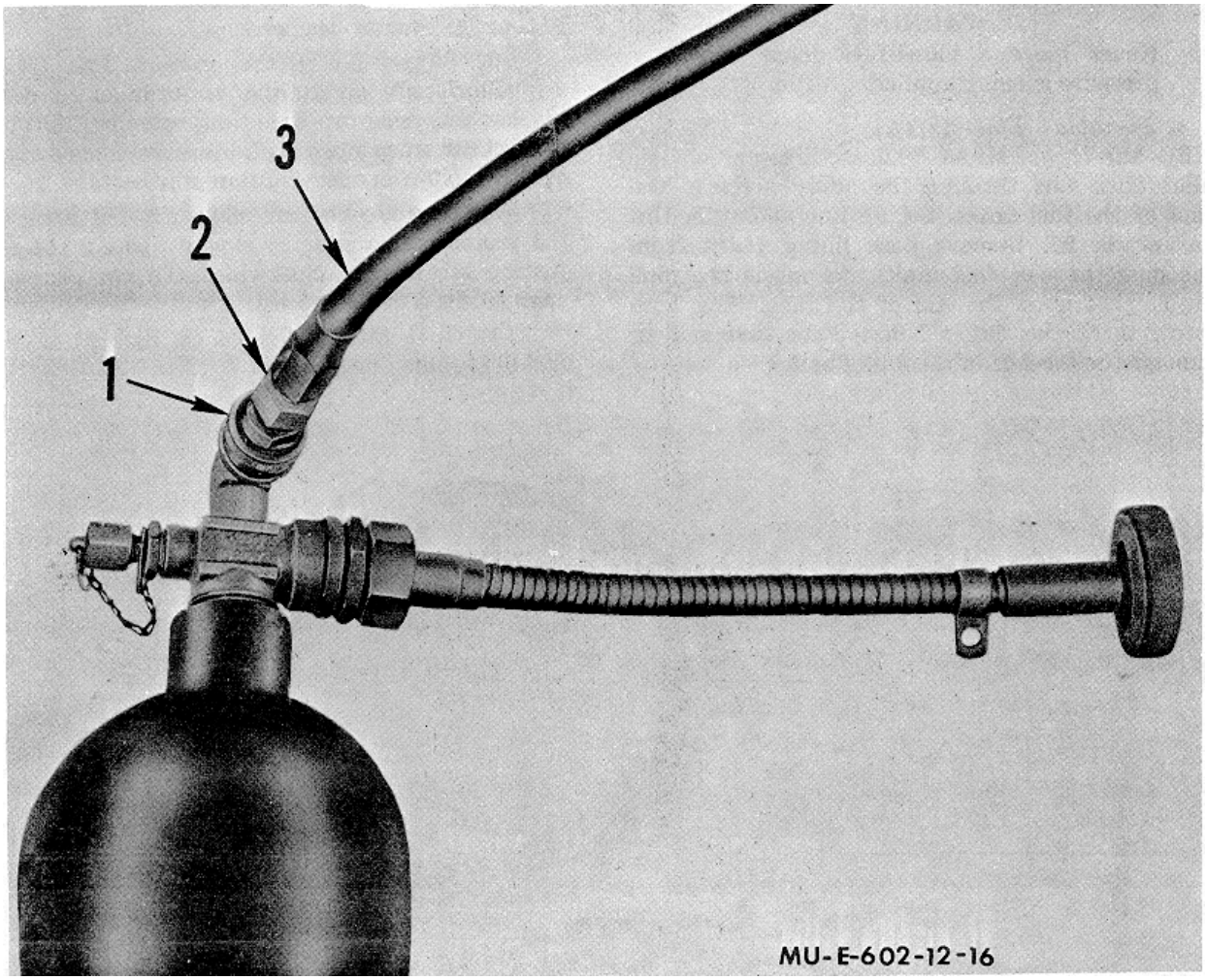
(5) Connect the quick-disconnect coupling half (1) to the male coupling on the pressure tank as shown in figure 16.

e. Pressure Line From Commercial Air Cylinder.

WARNING

Always secure commercial air cylinders to prevent them from falling, rolling, or moving.

(1) Prepare a drum of fuel, an 8-foot rub-



1 Quick-disconnect coupling half 2 Adapter 3 Hose

Figure 16. Attaching charging line to pressure tank (removed from M2A1-7 flamethrower).

ber hose, and the pressure regulator (b (1) through (4) above).

(2) Screw the pressure regulator adapter (2, fig. 15) into the fitting of the pressure regulator (1).

(3) Screw the cylinder adapter (3) from the filling line assembly (27, fig. 2) into the pressure regulator adapter.

(4) Connect the cylinder adapter to the commercial air cylinder (4, fig. 15).

f. Pressure Line from ABC-M9-7 or M9A1-7 Flamethrower High-Pressure Sphere.

(1) Set up the charging line (b(1) through (8) above).

(2) Attach the female quick-disconnect end of the charging hose assembly (18, fig. 2) to the male quick-disconnect coupling on the high-pressure sphere (3, fig. 10).

23. Filling Portable Flamethrower and Flame Landmine from 55-Gallon Drums

WARNING

Use only authorized gages, regulators, hose, pipe, and tubing on commercial air cylinders, high-pressure spheres, and pressure tanks. DO NOT IMPROVISE.

WARNING

When applying pressure to a fuel drum, always use the pressure regulator supplied with the kit. Using a different

pressure regulator may cause the flame-fuel drum to explode.

WARNING

Never move a flame-fuel drum while pressure is being applied.

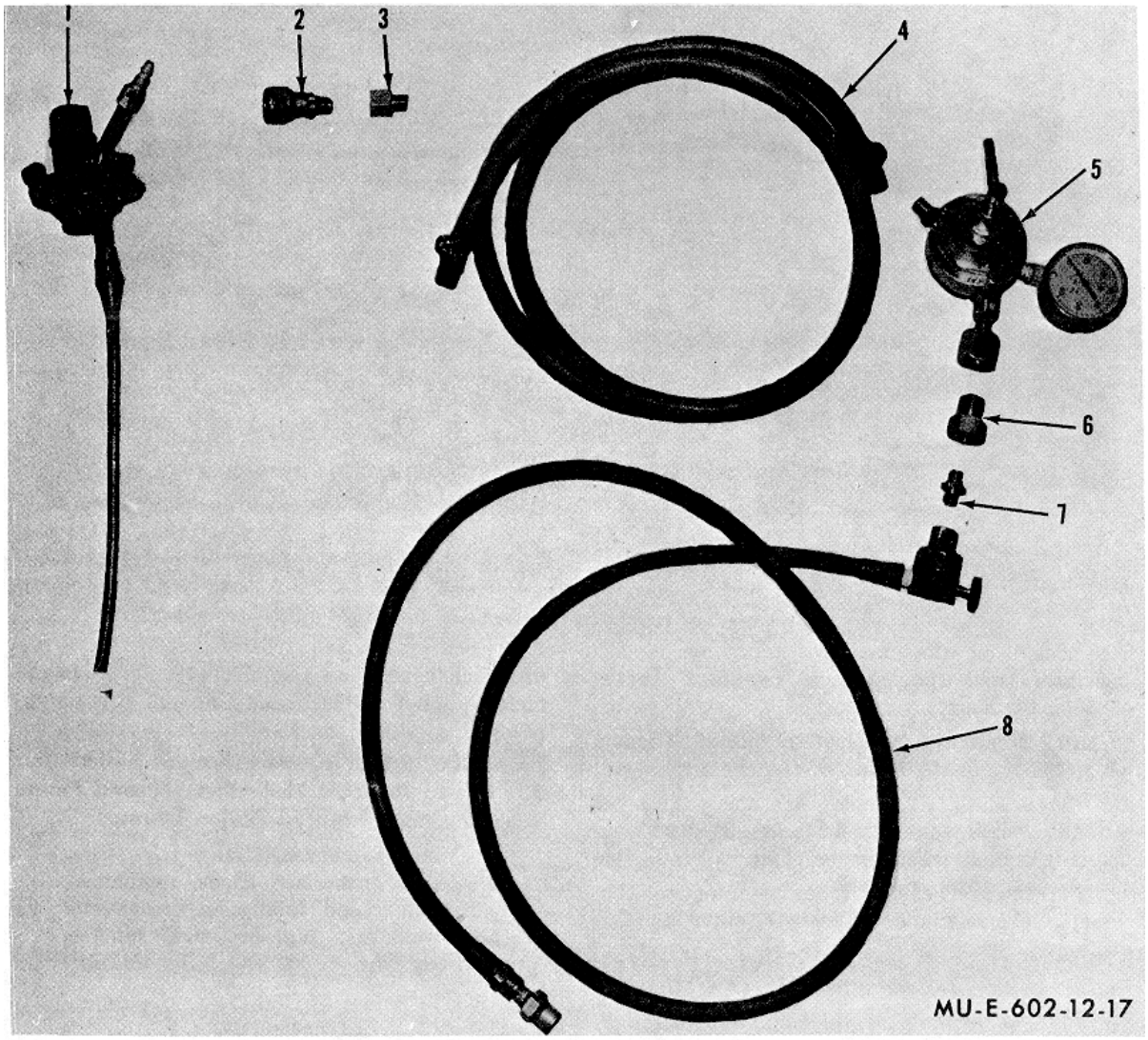
a. Portable Flamethrowers. The M2A1-7, ABC-M9-7, or M9A1-7 flamethrower can be filled with fuel through the filling holes in the tops of the fuel tanks. Set up line as outlined in paragraph 22. Remove both filling plugs from the flamethrower fuel tanks and insert the pipe nipple that is on the end of the fuel filling hose into one of the filling holes. Take care not to damage the threads in the filling hole.

(1) Set the pressure regulator (1, fig. 15) at zero by turning the pressure adjusting screw (11, fig. 4) counterclockwise.

(2) Supply air to the pressure line (start air compressor, open valve on cylinder of compressed air, open pressure tank valve on M2A1-7 flamethrower, or open high-pressure sphere valve on ABC-M9-7 or M9A1-7 flamethrower).

(3) Increase the air pressure delivered by the pressure regulator by slowly turning the adjusting screw (11) clockwise until the pressure gage (6, fig. 4) reads 15 psi.

(4) Open the gate valve (8, fig. 15) in the fuel filling line.



1	Fuel transfer cap	3	Tube reducer	5	Pressure regulator	7	Check valve
2	Quick-disconnect coupling half	4	Hose	6	Tube reducer	8	Hose

Figure 17. Pressure line for fuel filling from 5-gallon gasoline can.

(5) Observe the tanks' fuel level through the filling holes. Both tanks must be filled to within approximately 2 inches of the top, thus leaving the proper void. Close the valve as soon as the fuel reaches this level.

b. Flame Landmines. To fill flame landmines (FM 2033), insert the pipe nipple that is on the fuel filling hose into the filling hose of the mine and follow procedure in a(l) through (4) above. Leave approximately 10 percent air space to allow for expansion.

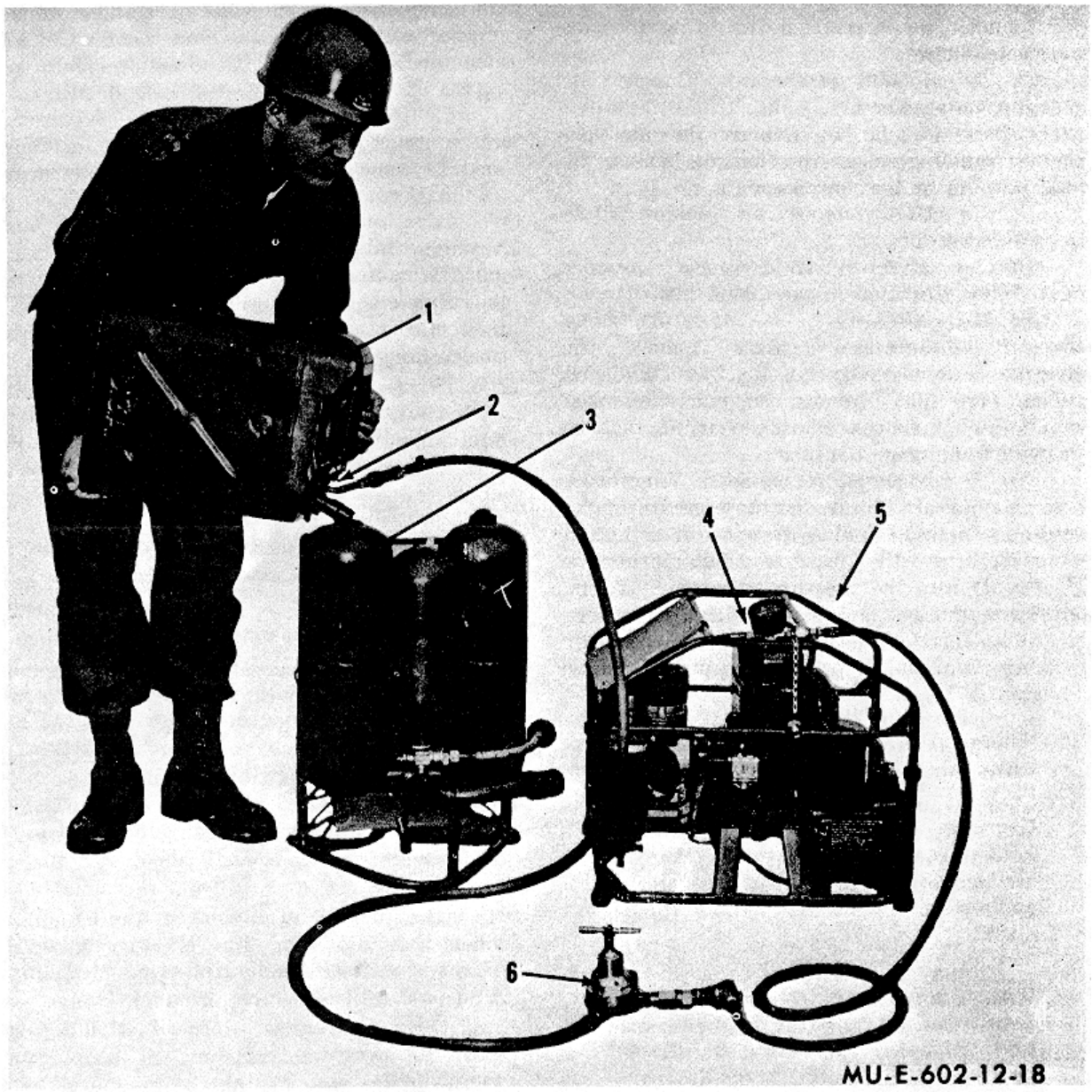
24. Preparation for Fuel Filling from 5-Gallon Gasoline Cans

Connect the 5-gallon gasoline can to a pressure source as follows:

a. Replace the cap on the 5-gallon gasoline can with a fuel transfer cap (1, fig. 17).

b. Screw the tube reducer (3) into one end of the 8-foot rubber hose (4).

c. Screw the quick-disconnect coupling half (2) into the tube reducer.



1 5-gallon gasoline can
2 Fuel transfer cap
3 Flamethrower fuel tank
4 Charging hose assembly
5 Compressor
6 Pressure regulator

Figure 18. filling portable flamethrower from 5-gallon gasoline can by using AN-M4 compressor.

d. Connect the quick-disconnect coupling half to the male coupling half on the fuel transfer cap (1).

e. Connect the other end of the 8-foot rubber hose to the pressure regulator (5).

f. Screw the tube reducer (6) into the fitting of the pressure regulator (5).

g. Screw the check valve (7) into the tube reducer (6).

h. Connect the valve assembly of the 6-foot rubber hose (8) to the check valve (7).

i. Connect the assembled line to a pressure source as follows:

(1) To AN-M4 compressor. Connect the charging hose assembly (4, fig. 18) to the 6-foot rubber hose (36, fig. 2). Connect the quick-disconnect coupling end of the charging hose to the male coupling on the compressor (5, fig. 18).

(2) To M1A1 compressor. Follow directions in paragraph 11a.

(3) To M2A1-7 flamethrower pressure tank. Follow directions in paragraph 22d.

(4) To ABC-M9-7 or M9A1-7 flame-thrower high-pressure sphere. Connect the charging hose assembly (18, fig. 2) to the 6-foot rubber hose (36). Connect the quick-disconnect coupling (17) that is on the charging hose to the male coupling on the sphere.

(5) To commercial air cylinder. When using a commercial air cylinder as the pressure source, set up the pressure line as described in a through e above. Screw the pressure regulator adapter (2, fig. 3) into the pressure regulator (12, fig. 4). Screw the cylinder adapter (19, fig. 2) from the filling line assembly onto the commercial air cylinder. Connect the pressure regulator adapter (2, fig. 3) to the cylinder adapter.

25. Filling Portable Flamethrower and Flame Land Mine from.5-Gallon Gasoline Cans

WARNING

Use only authorized gages, regulators, hose, pipe, and tubing on commercial air cylinders, high-pressure spheres, and pressure tanks. DO NOT IMPRO-VISE.

WARNING

When applying pressure to a fuel drum, always use the pressure regulator sup-plied with the kit. Using a different pressure regulator may cause the flame-fuel drum to explode.

WARNING

Never move a flame-fuel drum while pressure is being applied.

a. Portable Flamethrowers. Remove the filling plugs from the fuel-tank (3, fig. 18) filling holes. Install the fuel transfer cap (2) into a 5-gallon gasoline can (1) of fuel and connect the cap to a pressure source (para 24). Invert the 5-gallon gasoline can and insert the fuel outlet pipe of the fuel transfer cap (2) in the fuel-tank filling hole

(1) Set the pressure regulator (6) at zero pressure by turning the adjusting screw counter-clockwise.

(2) Supply air to the pressure line (start air compressor, open valve on cylinder of compressed air, open pressure tank valve on M2A1-7 flamethrower, or open high-pressure sphere valve on the ABC-M9-7 or M9A1-7 flamethrower).

(3) Increase the air pressure delivered by the pressure regulator by slowly turning the adjusting screw clockwise until the pressure gage (6, fig. 4) reads between 3 and 5 psi.

(4) Observe the fuel level in the tanks through the filling holes. Both tanks must be filled to within approximately 2 inches of the top, thus leaving the proper void. As soon as the fuel reaches this level, stop fuel flow by tilting the gasoline drum down.

b. Flame Landmines. To fill flame landmines (FM 20-33), insert the fuel outlet pipe of the fuel transfer cap in the fuel opening of the mine and follow the procedure in a(1) through (3) above.

26. After-Filling Procedures for Portable Flamethrower or Flame Landmine

If equipment is not to be used in the immediate future, proceed as follows:

a. Stop the compressor, close the commercial air cylinder valve, close the pressure tank valve on the M2A1-7 flamethrower, or close the high-pressure sphere valve on the ABC-M9-7 or M9A1-7 flamethrower.

b. Hold the free end of the fuel filling hose. Point hose away from personnel and toward an area where spilling a small amount of fuel will do no harm.

c. Turn the fuel drum so that the bunghole to which the fuel filling line is connected is UP. Handle the drum gently and avoid dropping or striking it while it is under pressure.

d. Open the valves in the fuel filling hose. Bleed the pressure from the fuel drum through the fuel filling hose.

e. When the pressure has been relieved, close the filling-hose valves and set the pressure regulator at zero pressure by turning the adjusting screw counterclockwise.

f. Disconnect the pressure line and the fuel hose from the 55-gallon drum, or disconnect the pressure line from the 5-gallon gasoline can. Remove the fuel transfer cap from the gasoline can and replace the cap in the gasoline can or replace the bung in the 55-gallon drum.

CHAPTER 3

MAINTENANCE INSTRUCTIONS

Section I. OPERATOR'S MAINTENANCE

27. General

Keep the M27 service kit components in the packing chest when not in use. Make sure that all threaded components contain the plastic thread protectors.

28. Cleaning

WARNING

To prevent any irritation, all parts of the body that come in contact with gasoline or a flame fuel must be washed with soap and water.

WARNING

Do not use kerosene, fuel oil, or gasoline on interiors of the pressure regulator, cylinder valves, or cylinders because pressurized conditions can cause an explosion.

Clean all M27 service kit components and equipment. Give particular attention to connections. Clean the kit components and equipment with a clean cloth after the kit has been used to fill equipment with fuel. If thickened fuel has been used to fill equipment, pour gasoline through the fuel hose to remove any thickened fuel.

Section II. ORGANIZATIONAL MAINTENANCE

29. General

Check the contents of the kit (para 3) for condition and completeness. The kit's components are shipped assembled, except for the filling line assembly, fuel transfer cap, and pressure regulator, which must be assembled before use. Wrenchtighten threaded connections.

30. Removal of Preservatives

Remove all preservative compounds, barrier material, and tape from the kit's components. Use cleaning solvent (Type I, regular, Federal Specification O-T-620) to remove preservative compounds. Leave plastic thread protectors in place until the equipment is used. Put protectors back on the threads after use (replacement thread protectors are not available).

31. Assembly

CAUTION

Do not apply antiseize compound on female threads, because it may enter the lines.

a. Filling Line Assembly. Put antiseize compound (Federal Specification TFA-580) on the male ends of one of the metal hose assemblies (24, fig. 2). Screw the ends of the metal hose assembly into the straight cross adapter assemblies (23).

b. Fuel Transfer Cap. Screw the brass coupling (4, fig. 4) that is on the end of the copper tube (5) onto the male tube fitting (3)

c. Pressure Regulator. Screw the adjusting screw (11) into the pressure regulator (10).

32. Inspection

Visually inspect the kit's components for physical damage, such as cracks in hoses, broken lenses on gages, and damaged threads. Replace damaged or defective parts (SC 1040-94-CL E02). Test high-pressure hoses, 6-foot rubber hose, and charging hose assembly in accordance with TB 742-93-1.

CHAPTER 4

SHIPMENT, ADMINISTRATIVE STORAGE, AND DESTRUCTION TO PREVENT ENEMY USE

Section I. SHIPMENT AND ADMINISTRATIVE STORAGE

33. Shipment

Clean the service kit thoroughly before it is shipped. Ship service kit in its packing chest.

34. Administrative Storage

Clean service kit before it is stored. Store service kit In its packing chest Refer to TM 740-90-1 for administrative storage instructions.

Section II. DESTRUCTION TO PREVENT ENEMY USE

35. General

When capture of equipment by the enemy is imminent, destroy or render the equipment useless. The military commander will determine when destruction is to be undertaken.

36. Method

a Mutilate the threads and scatter small parts of the kit over a wide area. Cut hoses with a knife, ax, machete, or other sharp instrument. Smash pressure regulator assembly, test gages, and fuel transfer cap with an ax or other heavy tool.

b. Totally submerge components of kit in a body of water. Salt water will do the greatest damage.

APPENDIX A

REFERENCES

AR 75-1	Malfunctions Involving Ammunition and Explosives.
AR 385-40	Accident Reporting and Records.
AR 700-68	Storage and Handling of Compressed Gas Cylinders.
FM 20-33	Combat Flame Operations.
SC 1040-94-CL-E02	Service Kit, Portable Flame Thrower-Riot Control Agent Dispenser, M27.
TB 742-93-1	Inspection and Test of Air and Other Gas Compressors.
TM 3-366	Flame Fuels.
TM 3-1040-203-12	Operator and Organizational Maintenance: Compressor, Reciprocating, Power Driven, 7 cfm, M1A1.
TM 3-1040-204-14	Operators Organizational, DS, and GS Maintenance Manual (Including Repair Parts and Special Tool Lists): Flamethrower, Portable, M2A1-7, FSN 1040-586-4560.
TM 3-1040-210-12	Operator and Organizational Maintenance Manual: Compressor, Reciprocating, Power-Driven, Flame Thrower, 31/2 cfm, AN-M4.
TM 3-1040-211-12	Operator and Organizational Maintenance Manual: Flamethrower, Portable, ABC-M9-7.
TM 3-1040-211-30	Direct Support Maintenance Manual: Flamethrower, Portable, ABC-M9-7.
TM 3-1040-211-45	General Support and Depot Maintenance Manual: Flamethrower, Portable, ABC-M9-7.
TM 3-1040-214-12	Operator and Organizational Maintenance Manual: Dispenser, Riot Control Agent, Portable, M3.
TM 3-1040-224-12	Operator's and Organizational Maintenance Manual: Compressor, Reciprocating, Power-Driven, Flamethrower, 31/2 cfm, AN-M4B.
TM 3-1040-244-12	Operator's and Organizational Maintenance Manual: Compressor, Reciprocating, Power-Driven, Flamethrower, 31/2 cfm, AN-M4C.
TM 3-1040-257-12	Operator and Organizational Maintenance Manual: Flamethrower, Portable, M9E1-7.
TM 3-1040-263-12	Operator's and Organizational Maintenance Manual: Compressor, Reciprocating, Power-Driven, Flamethrower, 31/2 cfm, AN-M4D.
TM 38-750	The Army Maintenance Management System (TAMMS).
TM 740-90-1	Administrative Storage of Equipment.

By Order of the Secretary of the Army:

W. C. WESTMORELAND,
General, United States Army,
Chief of Staff.

Official:

VERNE L. BOWERS,
Major General, United States Army,
The Adjutant General.

Distribution:

To be distributed in accordance with DA Form 12-28 (qty rqr block No. 118), requirements for Riot Control Agent Dispersers, Portable.

☆U.S. GOVERNMENT PRINTING OFFICE: 1996-406-421/50194

TEAR ALONG PERFORATED LINE

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE

BE EXACT. . .PIN-POINT WHERE IT IS

PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.

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

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE:

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ▸ ARE OBSOLETE.

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

PIN: 024655-000