

MoPeCo® GENERATOR—HEATER—VENTILATOR

DESCRIPTION AND OPERATION

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1. GENERAL

1.01 This section covers the description and operation of the MoPeCo Generator-Heater-Ventilators which are intended for supplying electrical power and for ventilating manholes with fresh heated or unheated air

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1.02 This section is reissued to include information on the new PEG-8A and PEG-12A MoPeCo Generator-Heater-Ventilators.

1.03 The operator should be familiar with the following sections *prior* to using the Generator-Heater-Ventilators.

SECTION	TITLE
620-140-501	Testing and Ventilating Manholes
081-330-116	B and C Propane Cylinders
649-500-111	C Engine
649-510-115	Blower Hoses
1.04	By running the blower at top output for about 2 minutes with no tent or other covering over the opening, the air in the manhole

should be adequately replaced. The air input *should not* be reduced during the entire work operation. This does not eliminate the need to test manholes prior to entry and at intervals as detailed in Section 620-140-501.¶

1.05 The B or C Propane Cylinder, E Pressure Hose, and 15-foot blower hose are used in conjunction with the generator-heater-ventilator.

1.06 The terms propane and LP-gas are used interchangeably throughout this practice.

2. DESCRIPTION

2.01 The MoPeCo Generator-Heater-Ventilators (Models PEG 8, 8A, 12, 12A) contain the following:

(a) A blower and detachable belt driven generator powered by an LP-gas (liquified petroleum) engine.

(b) A burner and heat exchanger enclosed by a protective frame.

(c) The fuel for the burner and engine can be supplied by either the B or C Propane Cylinder.

(d) An additional tubed heat exchanger (B Heat Exchanger) to vaporize the liquid fuel so it may be ignited is available to modify PEG-8 and PEG-12 models now in the field and a similar unit is available on an optional basis for PEG-8A and PEG-12A models.

(e) A dual valve (Bastial Blessing No. 8556B) is also required if a dual fuel system is used with the added tube type heat exchanger outlined in 2.01(d). This valve permits withdrawal of fuel either as a liquid or as a vapor through a common outlet from a B or C Propane Cylinder. This valve is installed on the cylinder.

2.02 Fig. 1 illustrates the PEG-8 and Fig. 2 illustrates the PEG-8A.

NOTICE

This document is either
 AT&T - Proprietary, or WESTERN
 ELECTRIC - Proprietary

Pursuant to Judge Greene's Order of August 5, 1982, beginning on January 1, 1984, AT&T will cease to use "Bell" and the Bell symbol, with the exceptions as set forth in that Order. Pursuant thereto, any reference to "BELL" and/or the BELL symbol in this document is hereby deleted and "expunged".

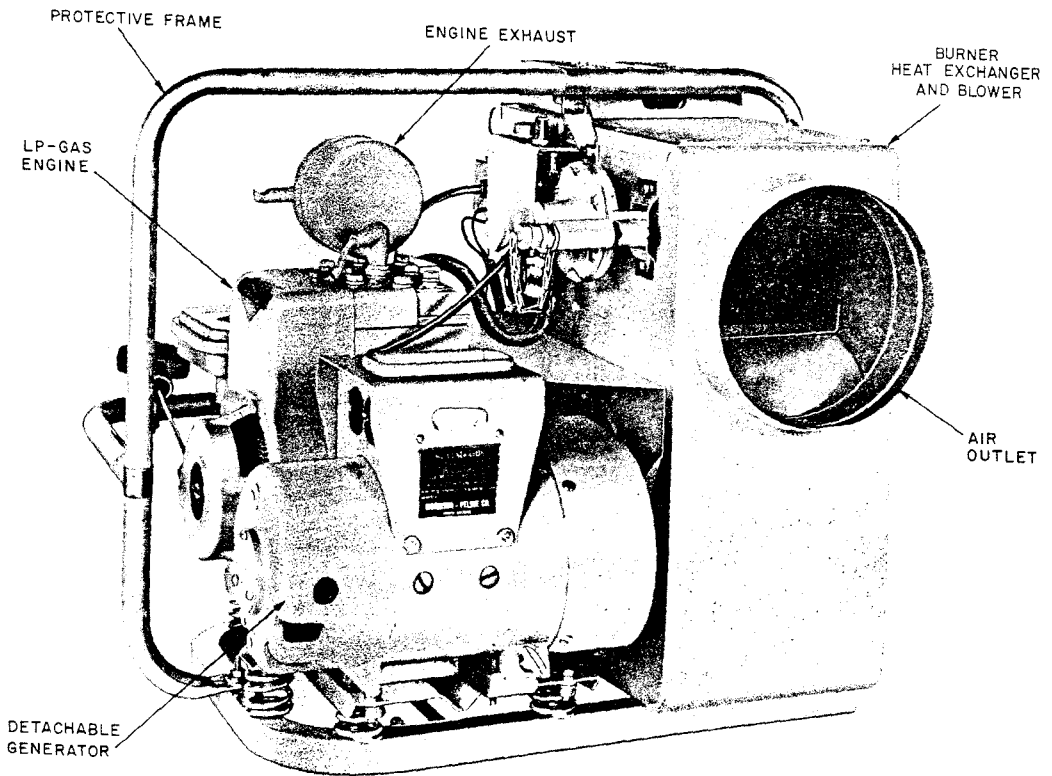


Fig. 1—MoPeCo® Model PEG-8 Generator-Heater-Ventilator

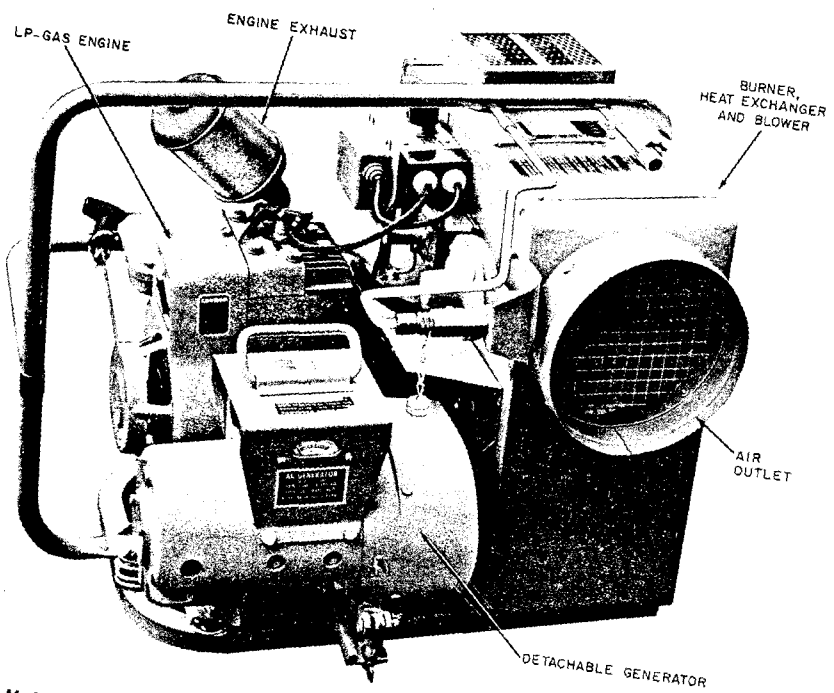


Fig. 2—MoPeCo® Model PEG-8A Generator-Heater-Ventilator With B Heat Exchanger

2.03 ♦A description of the controls and major components of the generator-heater-ventilator is listed in (a) through (g). Fig. 3 illustrates the PEG-8 controls and Fig. 4 illustrates the PEG-8A controls.♦

(a) ♦The engine is an LP-gas air-cooled Briggs and Stratton, one-cylinder 4-cycle engine. Model PEG-8 and -8A use a 3hp engine and Model PEG-12 and -12A use a 6hp engine. Additional information on the 3hp engine is found in Section 649-500-111. Maintenance information contained in Section 649-500-111 can be used for the 6hp engine. See Table A for characteristics of these models.♦

(b) ♦The generator is a detachable belt driven unit with an output of 110 volts at 60Hz.

The generator used with the PEG-8 and -8A delivers 800 watts, and the one used with the PEG-12 and -12A delivers 1200 watts. It contains an ac voltmeter to indicate the output voltage and four receptacles for making electrical connections to the generator.♦

(c) ♦The blower consists of a multiblade centrifugal fan driven by a belt that is attached to a pulley on the engine shaft.♦

(d) ♦The burner and heat exchanger is used to heat the ventilating air. The temperature of the fresh ventilating air can be regulated by the burner control valve (burner knob).♦

(e) ♦The primer button is a spring loaded control used for priming the engine before starting.♦

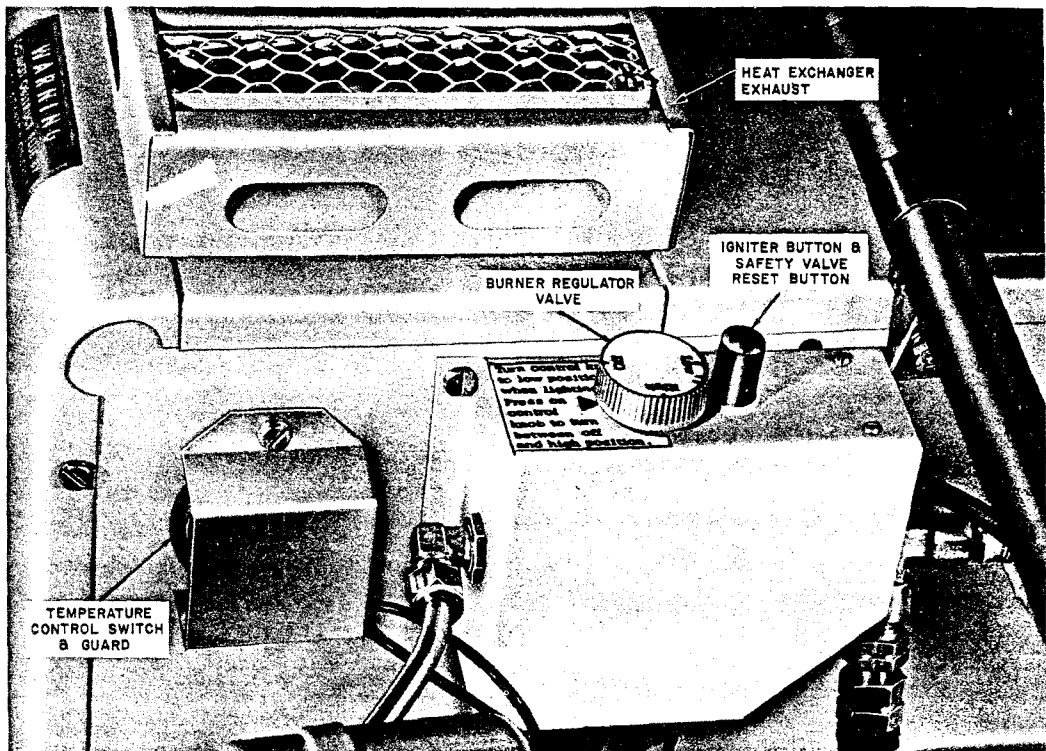


Fig. 3—Generator-Heater-Ventilator—PEG-8 Controls

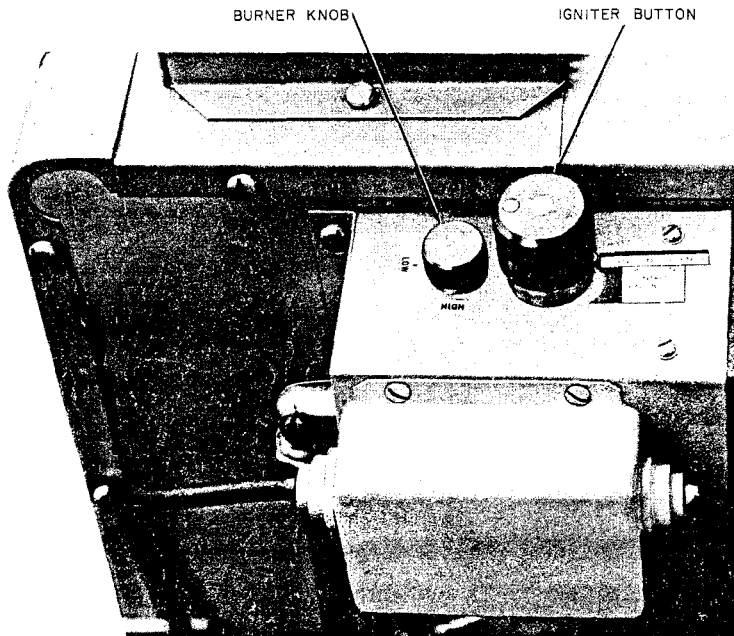


Fig. 4—Generator-Heater-Ventilator—PEG-8A Controls

TABLE A — CHARACTERISTICS OF MOPECO GENERATOR-HEATER-VENTILATOR

MODEL	ENGINE	VOLTS AT 60 Hz	WATTS	AIR DELIVERY (CFM)	BURNER RATING BTU	WEIGHT OF UNIT WITH GENERATOR	DIMENSIONS		
							L	W	H
PEG-8	3HP	110	800	500 MAX	35,000	109	21 in.	23 in.	21 in.
PEG-8A	3HP	110	800	600 MAX	45,000	109	21 in.	23 in.	21 in.
PEG-12	5HP	110	1200	500 MAX	35,000	135	22 in.	24 in.	21 in.
PEG-12A	6HP*	110	1200	600 MAX	45,000	135	22 in.	24 in.	21 in.

* Earlier Models had 5 HP.

It is located in the center of the engine carburetor regulator.♦

(f) ♦The burner regulator valve (burner knob) is used to regulate the flow of LP-gas into the burner.♦

(g) ♦The igniter button is a spring loaded control used for igniting the burner.♦

3. PRECAUTIONS

3.01 Follow all precautions contained in the sections listed in 1.04.

3.02 Do not operate the generator-heater-ventilator in an enclosed space, such as a manhole tent, unless there is adequate ventilation and never operate or store it in a manhole.

- 3.03 Locate the generator-heater-ventilator so the exhaust fumes will not blow into the manhole.
- 3.04 Do not place the generator-heater-ventilator on the upgrade side of the manhole opening.
- 3.05 *Never lower a blower hose into a manhole or leave it in a manhole unless the engine is running. Failure to follow this procedure may cause an explosion.*
- 3.06 Always operate the generator-heater-ventilator a minimum of one minute in order to thoroughly purge the hose before placing the blower hose in the manhole.
- 3.07 Remove the blower hose from the manhole while the generator-heater-ventilator is still operating.
- 3.08 Do not store blower hose in manhole.
- 3.09 Do not cover the blower air intake screen, or in any way restrict the flow of air into the blower. (Fig. 5).
- 3.10 Do not attempt to remove or install the generator while the generator-heater-ventilator is operating.
- 3.11 Avoid body contact with heated parts.
- 3.12 Keep flammable materials such as clothes, wood, rope, canvas, etc, away from the generator-heater-ventilator when in use.
- 3.13 Prior to pulling the recoil starter rope, ensure there are no objects to interfere with free body movement.
- 3.14 Due to the adverse effects that moisture from condensation, snow, or rain can have on the electrical components of the unit, do not leave it exposed to the elements for extended periods of time, such as overnight, when not in use.

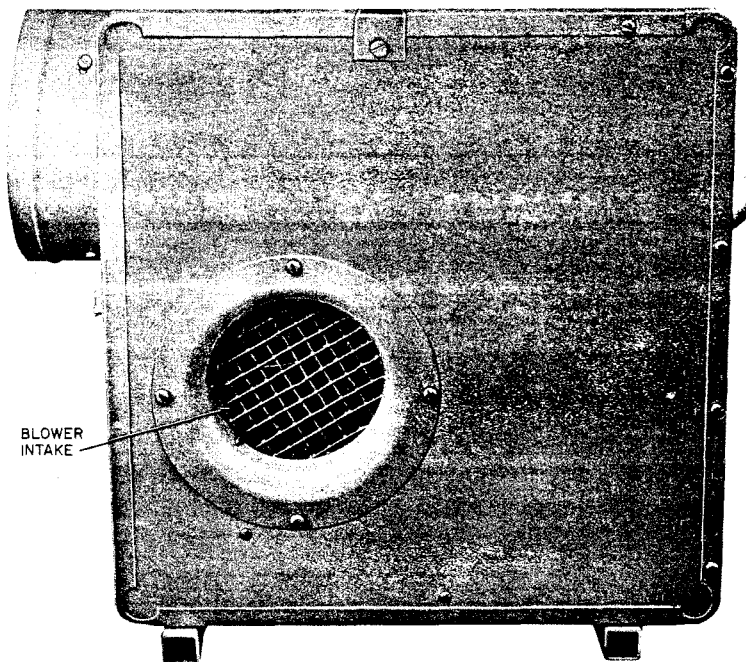


Fig. 5—Blower Intake for PEG-8A

3.15 Do not locate the generator-heater-ventilator so it will be subject to damage, obstruct traffic, or be hazardous to pedestrians.

3.16 Do not connect electrical apparatus that will exceed the load limit of the generator.

4. OPERATION

4.01 Prior to starting the LP-gas engine, perform the operations outlined in (a) through (d).

(a) Close the burner regulator valve if using a PEG-8 or PEG-12. When a PEG-8A or PEG-12A is being used, place the burner regulator valve in the LOW position.

(b) Level the engine and check the oil level in the crankcase.

(c) If the crankcase is not filled, fill it to the top of the filler hole with a clean high quality motor oil. Replace the oil filler plug.

Note: Use SAE 30 oil or 10W for temperature above freezing. Use SAE 10 oil for temperature below freezing. SAE 10W-30 oil may be used for all seasons. In extremely cold weather SAE 5W-20 oil may be used.

(d) If electrical power is required, install the generator as described in (1) through (4).

(1) Standing at the air outlet side of the generator-heater-ventilator, tilt the top of the generator toward the engine and insert the generator base pins in the two holes on the generator mounting bracket (Fig. 6 and 7).

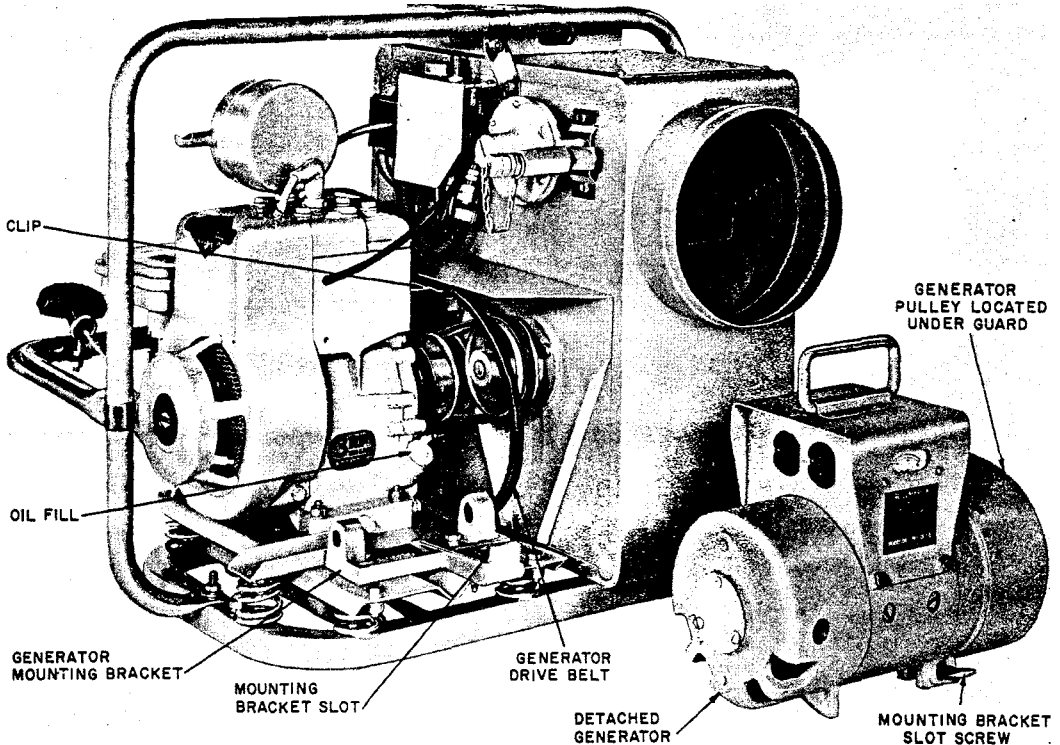


Fig. 6—Generator Detached from PEG-8

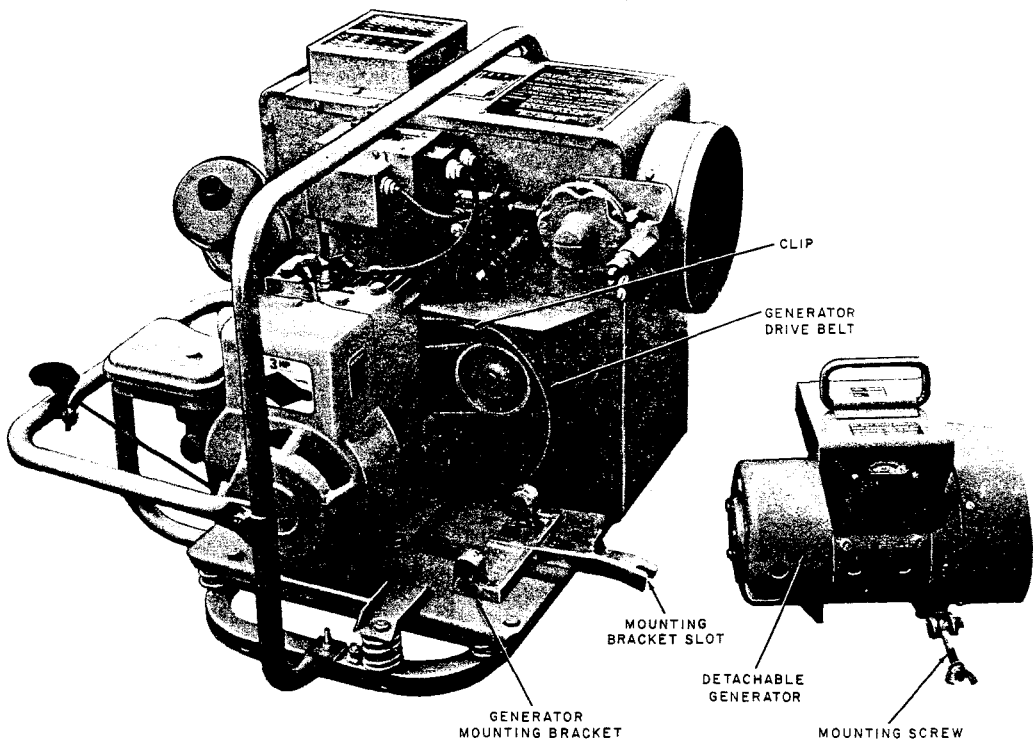


Fig. 7—Generator Detached from PEG-8A

- (2) While holding the top of the generator toward the engine, remove the loose generator drive belt from the clip and place over the generator pulley.
 - (3) Release the generator and allow the generator base to fit into the generator mounting bracket slot.
 - (4) Tighten the mounting bracket slot screw.
 - (e) Attach and secure the blower hose to the air outlet tube if the blower is to be used.
- Do not place the end of the blower hose in the manhole at this time.**
- (f) Connect one end of the E Pressure Hose to the pressure regulator mounted on the B or C Propane Cylinder and the other end to

the LP-gas connection on the generator-heater-ventilator as shown in Fig. 8.

- 4.02 Open the valve on the propane cylinder and set the pressure regulator for an indication of 45 psi and check for leaks. If a dual valve is used, open the vapor valve and set the pressure regulator for 45 psi and check for leaks. Make sure that the liquid control valve is closed. **Never check for leaks with a flame.**

STARTING LP-GAS ENGINE

- 4.03 Depress the primer button for a maximum of 2 seconds to clear air from the fuel line and then **start the engine immediately**, as outlined in (a) and (b).

- (a) Open the engine choke.

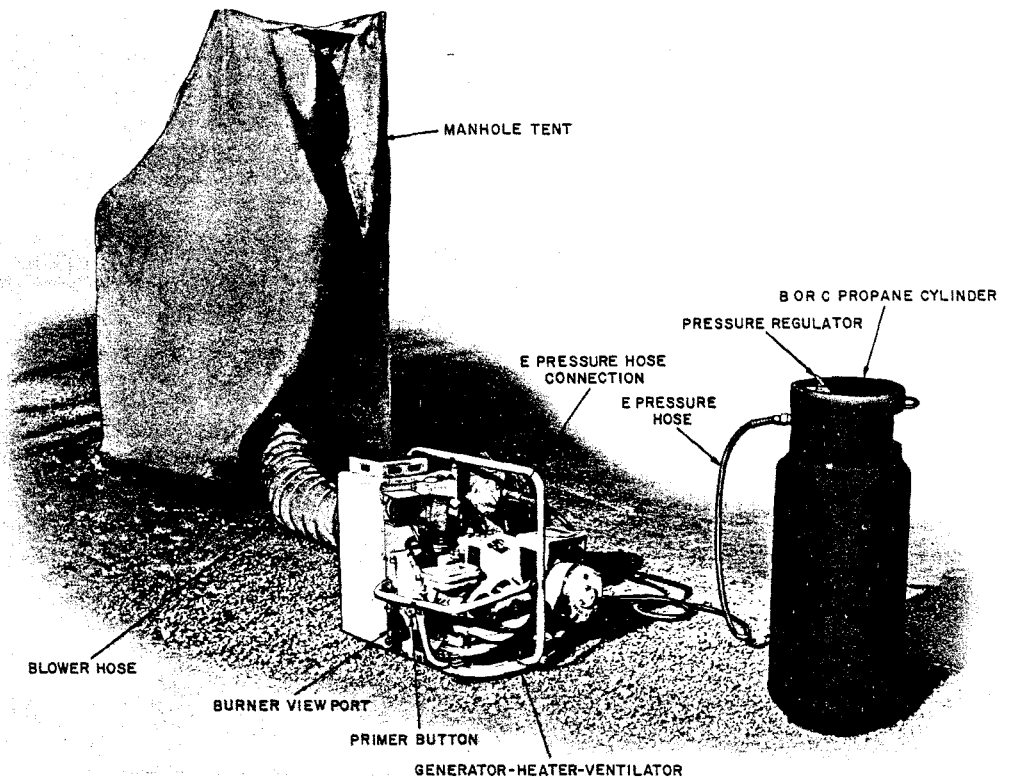


Fig. 8—Typical Arrangement of Generator-Heater-Ventilator and Associated Components

(b) Pull the rope of the recoil starter slowly until the starter clutch engages, then pull until the resistance of compression is felt. Continue to pull slowly about 2 or 3 inches until compression ceases. Allow the starter rope to recoil and again pull out slowly until the starter clutch engages. Pull with a quick steady pull to start the engine.

4.04 If the engine fails to start after being cranked 4 or 5 times refer to Part 5 of this section.

4.05 After the engine has started, allow a sufficient warm-up period before using the generator, blower, or burner. In cold weather it may be necessary to leave the choke partially open until the engine warms up.

BLOWER OPERATION

4.06 With the blower hose *out* of the manhole, check the end of the hose for proper air discharge. **Do not lower the blower hose into the manhole at this time.**

4.07 After the blower has operated for a minimum of 1 minute, which thoroughly purges the blower hose, lower the end of the hose into the manhole. Adjust the hose so it runs directly into the manhole without any unnecessary bends. The optimum position of the output end of the blower hose is on the cable rack or on other support at the midpoint of a side wall, with the hose opening directed toward an end wall.

4.08 The volume of air delivered by the blower is determined by the engine speed. When

the engine is running at maximum governed speed, the air output is approximately 500 cfm.

BURNER OPERATION

4.09 *Do not light the burner unless the engine is running smoothly after the warm-up period* and the blower hose is properly secured in place on the air outlet.

4.10 To light the burner perform the following procedures:

- (a) Place the burner regulator valve (burner knob) to the LOW position.
- (b) Depress the igniter button.
- (c) After the burner lights continue to depress the igniter button for approximately 30 seconds, then release the button. The flame can be seen through the burner view port (Fig. 9).

When the burner reaches operating temperature, the fuel system can be switched to liquid by opening the liquid control valve. This procedure will eliminate the refrigeration effect on the vapor in cold weather by use of the B Heat Exchanger. If the burner is not to be lit, *do not* switch to liquid heat but continue to operate on vapor.

4.11 If the flame in the burner extinguishes, repeat 4.10. If the burner does not stay lit refer to Part 5 of this section.

4.12 *Do not* ignite the burner with anything other than the igniter button.

4.13 The temperature of the ventilating air is varied by means of the burner regulator valve (burner knob).

4.14 If it is desired to shut off the supply of heated air but keep the unit running as a

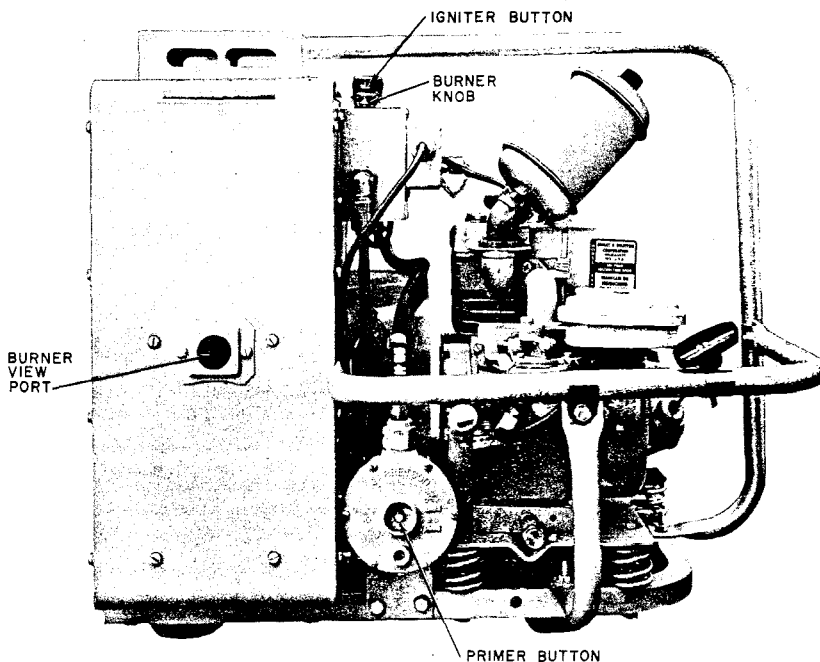


Fig. 9—Burner View Port for PEG-8A

source of power and blower ventilation, rotate the burner regulator valve (burner knob) to the OFF position when using the PEG-8 or PEG-12. If a PEG-8A or PEG-12A is being used, the LP-gas must be shut off at the tank until the burner is extinguished. The engine must then be restarted.

GENERATOR OPERATION

4.15 The generator output voltage is determined by the engine speed. Proper engine operation is necessary for efficient generator performance.

SAFETY FEATURES

4.16 If for any reason the blower, engine, or burner should stop operating, a thermostatic temperature control automatically shuts off the propane supply to the burner.

4.17 A safety valve in the carburetor fuel regulator prevents any LP-gas from entering the carburetor when the engine is not running.

4.18 Prior to turning off the engine, perform the operations outlined in (a) through (c).

- (a) Disconnect all electrical equipment from the generator.
- (b) Remove the blower hose from the manhole.

(c) Extinguish the burner flame by rotating the burner regulator valve (burner knob) to the OFF position when using the PEG-8 or PEG-12. In the case of PEG-8A or PEG-12A, the burner is shut off by closing the tank valve which also shuts off the engine.

STOPPING GAS (LP) ENGINE

4.19 Stop the operation of the engine by closing the shutoff valve on the propane cylinder.

Do not stop the engine by shorting the spark plug. When stopping an engine that has been operating on LP-gas in the liquid phase, shut the cylinder valve in the usual manner. It will be noted that it will require longer for the engine to stop than when operating on vapor. This is a normal condition.

Note: Ensure that the instructions outlined in 4.18 are followed prior to stopping the engine.

5. TROUBLESHOOTING

5.01 If the engine will not start check the controls of the propane cylinder. The vapor valve should be open and the pressure regulator set at 45 psi. If a dual valve is used, the liquid control valve should be closed (Fig. 10). If the engine still will not start, return for repair in accordance with local instructions.

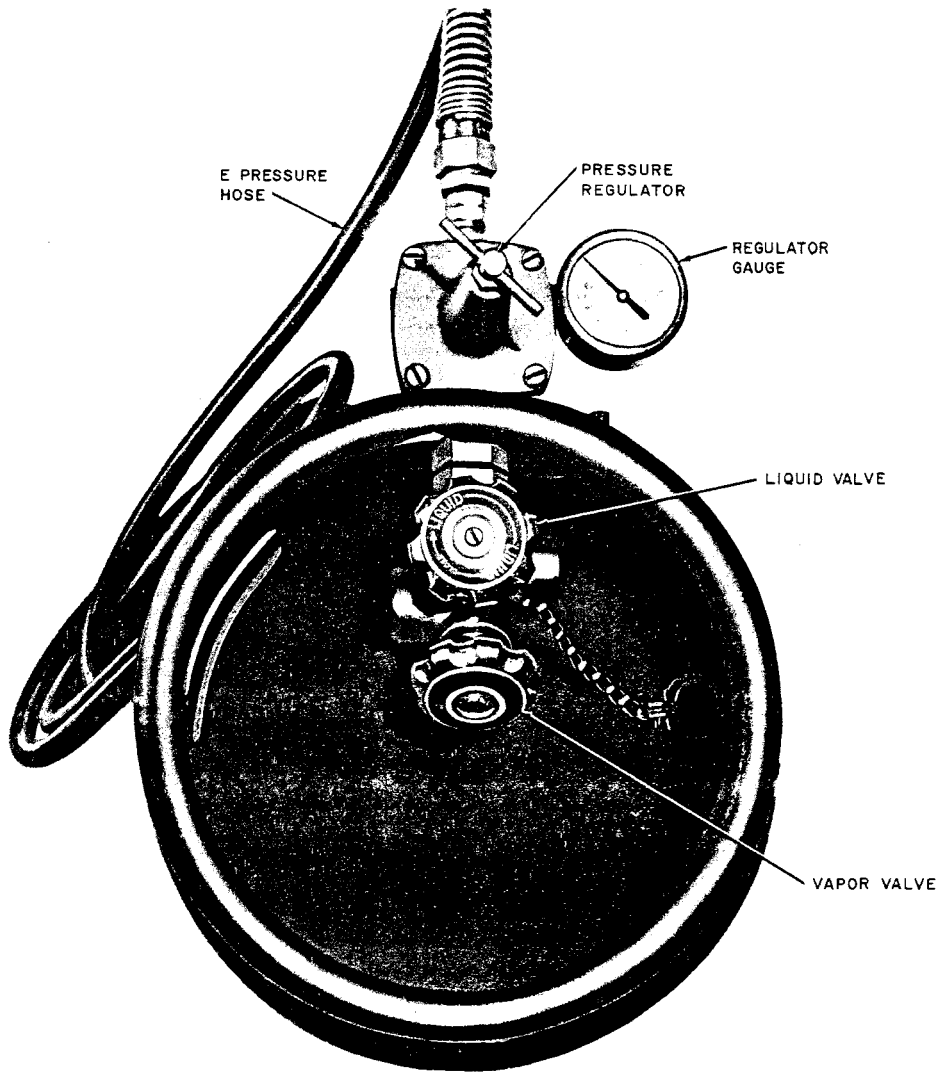


Fig. 10—B or C Propane Cylinder with Dual Valve

5.02 If the engine starts but will not continue to run, check procedures in 5.01. If the propane cylinder is frosted, remove any additional propane-powered tools that may be supplied by the same propane cylinder and, if necessary, use two propane cylinders to supply the engine. If the engine fails to operate properly, return the unit for repair in accordance with local instructions.

5.03 If the burner will not ignite or remain lighted check items outlined in 5.01 and 5.02. If the burner still does not operate properly, return the unit for repair in accordance with local instructions.

6. LUBRICATION, MAINTENANCE, AND STORAGE

6.01 Lubrication, maintenance, and storage for a LP-gas engine are outlined in Section 649-500-111.

6.02 It is not necessary to remove the generator from the unit after each use. Secure the generator drive belt to the clip (Fig. 11) when the generator is removed.

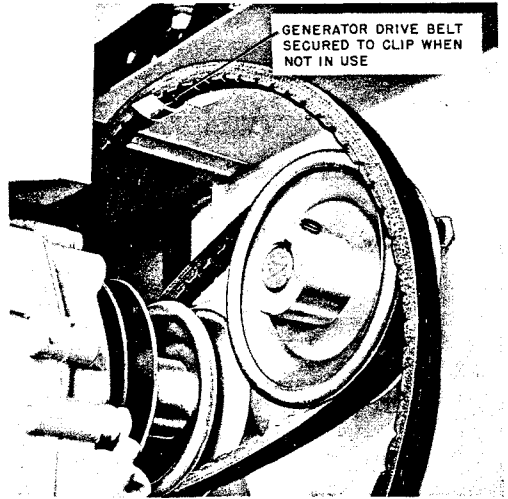


Fig. 11—Drive Belt Secured to Clip