BELL SYSTEM PRACTICES
Outside Plant Construction and Maintenance

SECTION G81.835.1
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AT&T Co Standard

B PROPANE FURNACE

Contents **Page**

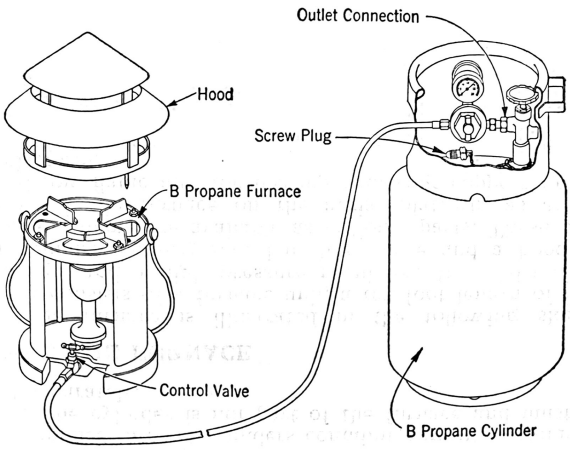
1. GENERAL

1.01 This section replaces Section G81.950.1. It describes the B Propane Furnace used in heating splicing materials and outlines the precautions that should be followed in using the furnace.

1.02 The propane gas used as a fuel in the furnace is supplied in steel cylinders containing twenty pounds of propane. The cylinder is not part of the furnace and must be ordered separately.

2. B PROPANE FURNACE

2.01 The furnace is illustrated in the following sketch. It consists of a furnace unit, a ten-foot length of hose with fittings and a high pressure regulator. It weighs about fifteen pounds. A thirty-foot length of hose and a hood for covering the flame are available as optional parts. These parts permit using the furnace on the aerial platform as a tent heater at low flame and for heating soldering coppers on the aerial platform.



2.02 The standard listing for the furnace, cylinder and optional parts is given below and should be used for ordering purposes.

Furnace, Propane, B

Cylinder, Propane, B

Hood, for B Propane Furnace

Hose, 30 ft., for B Propane Furnace

Plug, for B Propane Cylinder

2.03 For heating paraffin and solder, the regulator should be set to deliver gas at a pressure of 45 pounds per square inch. When operating the furnace on an aerial platform, the regulator should be set to deliver gas at a pressure of about 4 pounds. The flame can be controlled by the control valve on the furnace.

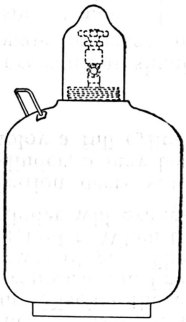
2.04 The B Regulator Wrench should be used for tightening connections on the regulator and hose.

2.05 The standard solder pot shields can be used with the propane furnace.

3. B PROPANE CYLINDER

3.01 Propane gas is supplied in the B Propane Cylinder shown in paragraph 2.01, or in an approved equivalent of the type shown in the following sketch. The B cylinder is a

refillable steel container having a capacity of 20 pounds of fuel. It is equipped with a combination shut-off valve and safety release valve that conforms to the Interstate Commerce Commission requirements. A screw plug is provided for sealing the outlet connection to prevent the escape of gas due to tampering with the hand valve when the regulator is removed. The plug is attached to the cylinder by means of a chain drawn in a noose around the valve.



Approved Type Cylinder

3.02 Rental cylinders should be equipped with a combination shut-off and safety release valve approved by the Interstate Commerce Commission and the Underwriters Laboratories. The shut-off valve for releasing gas from the cylinder is manually operated by means of a hand wheel. The safety release valve is a spring loaded valve which automatically relieves excessive pressure in the cylinder that may result from overheating.

3.03 The use of a cylinder without a hand valve should be avoided, if practicable. In this type cylinder, gas is automatically released when the regulator is connected to the cylinder.

3.04 Each cylinder must be inspected periodically to meet the Interstate Commerce Commission requirements. The cylinder is marked to indicate when it is due for inspection and should be returned for inspection by that date. The weight of the cylinder without fuel is also shown.

3.05 The quantity of gas in a cylinder is determined by weighing and subtracting the weight stamped on the cylinder. A spring scale with a capacity of 50 pounds is suitable for weighing.

3.06 The cylinder should not be dropped, struck or otherwise damaged.

4. PROPANE

4.01 Propane is supplied as a liquid gas under pressure. When the pressure is reduced by withdrawing gas, the remaining liquid vaporizes and in the process absorbs heat from the surrounding atmosphere. The rate of vaporization and consequently the speed of heating with propane decreases with decrease in the temperature of the surrounding air, level of fuel in the cylinder which determines the area of contact with the cylinder wall and the length of operation. **When in use, the cylinder must be kept in a vertical position;** otherwise, liquid propane may be forced out of the cylinder.

4.02 Propane is a non-toxic colorless gas containing an odorant to facilitate the detection of leaks. The gas is heavier than air and burns, when properly mixed, in a clean almost colorless flame. The gauge pressure of propane gas is approximately zero at —44° F., 45 pounds at 20° F., 120 pounds at 70° F., and 210 pounds at 110° F.

4.03 **Cold Weather.** Since the pressure drops rapidly after the furnace is lighted, the pot should be placed on the furnace as soon as it is lighted and the furnace turned off when the material has been heated, in order to allow the pressure in the cylinder to build up. Placing the cylinder in the sun and wind will increase the vaporization. Frost on the cylinder indicates too rapid withdrawal of gas. This should be avoided as the frost insulates the cylinder. When the furnace is turned off, the pressure in the cylinder will gradually recover.

4.04 As the vaporization decreases with the level of the liquid in the cylinder, it may be necessary at extremely low temperature to employ a full cylinder of propane.

5. PRECAUTIONS

5.01 The following precautions should be observed in using and storing propane furnaces and cylinders:

(a) The cylinder should never be stored in a manhole. The cylinder may be stored in the trailer or truck or chained to the manhole guard or telephone pole.

(b) Keep the cylinder away from fire and heat.

(c) The orifice in cylinder valve should be cleared by opening the valve momentarily before the regulator is connected.

(d) Keep the hose and connections free from dirt to minimize clogging of the regulator valve or furnace orifice.

(e) Do not attempt to repair the regulator. Examine the vent in the regulator to ensure that it is free of foreign material. If the regulator does not function properly, tag and return it.

(f) Always keep the cylinder valve closed when the furnace is not in use.

(g) Do not hold the hand in front of the cylinder valve when blowing out the opening.

(h) Propane should not be allowed to escape in large quantity in the open as it is heavier than air and will spread over the ground and at the same time mix with air forming a blanket of explosive mixture which may drift with the wind to a considerable distance before becoming too diluted to burn.

6. INSPECTION

6.01 Leaky connections are dangerous and wasteful of propane. Large leaks may be detected by the odor of escaping gas. The furnace should be tested as follows: Connect the regulator to the cylinder, turn off the valve at the furnace unit and open the cylinder valve. The regulator and furnace connections should be painted with soap, exercising care so as not to get soapsuds on the face of the regulator. The hose should be immersed in water to test for leaks. **Never test for leaks with an open flame.**

6.02 No attempt should be made to repair a leak other than to tighten connections.