

RULES FOR SAFE OPERATION

1. Read the Owners Manual and these Rules for Safe Operation carefully.
2. Check that all applicable state and local codes regarding installation have been followed. The supplier of the propane gas is usually an expert in this regard.
3. Check that minimum clearances to combustible materials have been maintained.
4. When igniting the burners, have lighted match ready when the burners are turned on.
5. Never light matches in the vicinity if the odors of gas are noted.
6. A window or other air vent should be opened slightly while using the range counter unit. Gas burner flames consume oxygen which has to be replaced to assure proper combustion.
7. Do not tamper with the burner orifices or change their size.

GENERAL

1. Your Range Counter Unit has been certified for safety by The Underwriter's Laboratory for use with liquefied petroleum gases only.
2. Burner inputs are shown on a plate attached to each appliance. Refer to this plate for ratings and minimum clearances. The orifices have been sized at the factory at a pressure of 11 inches water column for liquefied petroleum gases (LPG).

ASSEMBLY

Your new range is fully assembled. The grate is applied loosen and locked by two plugs. The burner fids can slightly be uncovered by turning fourth part counter — clock wise.

INSTALLATION

1. Consider the following when selecting the location for your range counter unit:
 - A. Location of gas supply and routing of gas line.
 - B. Minimum clearances of unit from combustible materials. These clearances are:
 - Sides — 6 inches as measured from center of closest burner head.
 - Rear — 6 inches as measured from center of closets burner head.
 - Top — 24 inches as measured from top of unit to bottom of any overhanging cabinet or shelf.
 - C. Location with respect to windows where hanging curtains could be blown over the range and possibly be ignited from the burners.
2. After selecting the best location, cut opening in counter top as shown in the cabinet cutout drawing.
3. Remove burner knobs, and the valve panel assembly. This will expose the gas manifold on both units.
4. Set range unit in place and secure with four No. wood screws (not furnished). Holes for accomodating the screws are provided in the top side of the top assembly.

5. Install gas supply and route gas line (not furnished) to range counter unit. Here you should seek the assistance of a qualified service man. Usually the supplier of the gas will be able to provide expert help in this respect. Too, he will be able to provide the necessary parts, including the copper gas line. The following should be carefully considered:
 - A. The gas tank must be located in a protected place and cannot UNDER ANY CIRCUMSTANCES be located within the confines of the trailer or camper. The supplier of the gas will be acquainted with the appliable codes with respect to the location of the gas supply tank.
 - B. Gas supply line should be copper and should be routed in protected locations so as not to be damaged. A single, continuous line is recommended.
 - C. No connections should be made in the gas line where the connections would be concealed after completion of the installation. All parts used in making connections must be of type acceptable for this purpose. Gas line should not make any sharp bends nor have any kinks. The line should not be under strain.
6. After installing the gas supply and making all connections, check thoroughly for possible gas leaks. Turn the valves on the counter unit to their „off“ positions. Open valve on gas supply tank. Using a soap and water solution, check each gas connection one-at-a-time by brushing the soap and water solution over the connection. Presence of bubbles will indicate a leak. Tighten fitting and recheck for leaks. If impossible to correct leak, replace fitting. UNDER NO CIRUMSTANCES USE MATCHES OR FLAME FOR CHECKING LEAKS.
7. Replace the valve panel assembly. Push burner knobs on the valve stems.
8. Place burner grates in position.
9. Your range counter unit is now ready for use. When lighting, do not turn on the burners before a lighted match is available. Sometimes the burners will not ignite immediately and seem to „blow“ slightly when they do ignite. This is usually due to the presence of air in the gas lines which will clear itself within several seconds. This is a normal condition.

HOW TO ORDER REPAIR PARTS

The Type Number will be found stamped on the rating plate located out side the burner box. Always mention the Type Number when requesting service or repair parts for your Range Counter Unit.

All parts listed herein may be ordered through

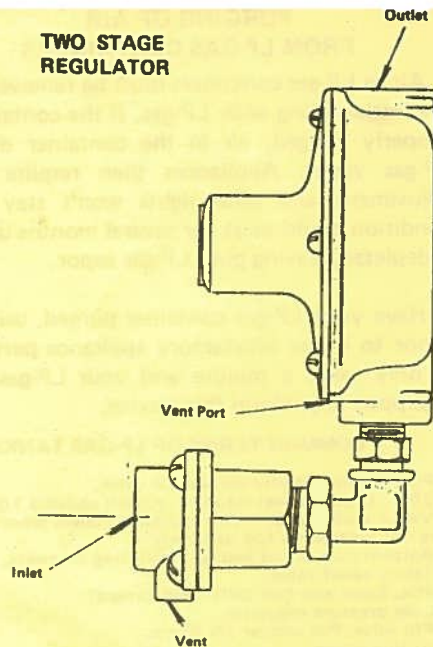
Delta Six Industries • 5517 Cleon Street • North Hollywood, CA 91601

or any of its authorized service centers. When ordering parts by mail, selling prices will be furnished on request or parts will be shipped at prevailing prices and you will be billes accordingly.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST.

1. The Part Number
2. The Part Description
3. The Type Number
4. The Name of ITEM . . . Range Counter Unit

TWO STAGE REGULATOR



ADVANTAGES OF TWO-STAGE REGULATION

Reduced Freeze-Up Problems — A two-stage regulator greatly reduces the possibility of freeze-ups because (1) larger orifice sizes can be used in the regulators, and (2) heat can be transferred through the walls of two regulators instead of just one.

Improved Regulation — The second stage regulator receives a relative uniform pressure from the first stage regulator. This helps the second stage regulator to maintain appliance pressure at a nearly constant 11" water capacity because it does not have to adjust to varying inlet pressures.

LP-Gas Regulator Enclosure



If your LP-gas system is not equipped with these safety options, contact Manchester for name of nearest dealer.

SOME BASIC PRACTICES TO INSURE SAFETY AND TROUBLE-FREE USE

1. Never allow your tank to be filled above the legal liquid level capacity indicated by the liquid level gauge.
2. Do not use a wrench or pliers to close the POL service valve or liquid level gauge on your tank. These valves are designed to be closed leak-tight by hand. If wrenches are necessary to stop a leak, the valve probably needs repairs or replacement.
3. When tightening the POL nut (left hand) on the service valve, draw it up snug with a proper wrench — don't jam it. This is a machined male brass fitting which seats securely against a female seat in the POL valve — no pipe dope is necessary.
4. When using tank, open POL service valve all the way, then close $\frac{1}{4}$ turn. This will always enable you to determine whether valve is open or closed.
5. Check all tank and line connections periodically to be sure they are tight. When testing for leaks, use soapy water — not matches.
6. Make certain your tank is properly fastened in place.
7. On dual tank installation, turn tanks with open part of tank guard towards trailer (travel trailer installation). This protects valve and regulator against flying rocks and mud which may be thrown to the rear on gravel or dirt roads.
8. If you take your LP-gas tank to an LP-gas dealer for filling, transport it in the proper position in which it is used, with the valves closed. Secure the tank against falling or rolling.
9. Since LP-gas is non-corrosive, you need not worry about the inside of your tank. However, the outside should be kept from rusting by a periodical coat of good paint.
10. Practice safety at all times. If you have questions about the operation of your appliance or LP-gas system, contact your local LP-gas dealer.

2880 Norton Ave., Lynwood, Calif. 90262
2738 Lithonia Industrial Blvd., Lithonia, Ga. 30058
P.O. Box 1338 Lubbock, Texas 79408
No. 2 Lexington Park Dr., Elkhart, Indiana 46514

HELPFUL INFORMATION ABOUT

LP-GAS AND LP-GAS CONTAINERS



SO YOU MAY ENJOY USING
THE WORLD'S MOST VERSATILE FUEL

LP-gas (liquid petroleum gas) is a true gas compressed into liquid form for easy transportation and storage. It is also known as butane, propane or bottle gas. It is safe and economical, and because of its portability, provides modern living conveniences no matter where you travel.

BASIC FACTS ABOUT LP-GAS

	PROPANE	BUTANE
Pounds per gallon	4.24	4.81
Specific gravity of gas	1.53	2.00
Specific gravity of liquid	0.51	0.58
Cu. ft. gas per gallon liquid ...	36.3	31.2
Cu. ft. gas per pound	8.55	6.50
BTU per gallon	91,600	102,032
BTU per pound	21,591	21,221
BTU per cu. ft.	2,516	3,280
Dew point in degrees F	-44°	32°
Vapor pressure at 0 F	28	0
Vapor pressure at 70 F	120	16
Vapor pressure at 100 F	190	37
Vapor pressure at 110 F	220	46

Average LP-gas capacities (PROPANE)
(allow 20% for vapor space)

	Lbs of gas	B.T.U.'s
1 — 5 gal. DOT tank	20	431,820
2 — 5 gal. DOT tanks	40	863,640
1 — 7 gal. DOT tank	28	604,548
1 — 10 gal. DOT tank	40	863,640

11" OF WATER COLUMN

6 - $\frac{1}{4}$ OZS. PER SQ. IN. PRESSURE

To find out how long your LP-gas supply will last, simply total the BTU demand of all your gas appliances and the BTU capacity of your containers at 80% full. Divide container BTU capacity by total appliance demand.

CAUTION USE LP-GAS TANKS AND CYLINDERS IN PROPER POSITION

Use vapor only. All LP-gas appliances for cooking, heating, lighting, water heating and refrigeration are designed to operate on LP-gas vapor only. Therefore, all LP-gas tanks and cylinders designed for vapor service must be transported, installed and used in the proper position. Do not transport, install or use a vertical cylinder (see Fig. No. 3) in a horizontal or upside down position. Never use a horizontal cylinder or tank (see Fig. No. 4) on its side or upside down. Liquid LP-gas could enter the system designed for vapor only, creating a hazardous condition.

Manchester LP-gas containers are permanently marked with either a "top tab" welded to the tank or stamped in the guard or bracket "Arrows Must Point Up" to identify proper position.

All LP-gas tanks and cylinders must be securely attached to the recreation vehicle thru utilization of all brackets provided.

FILLING YOUR LP-GAS CONTAINER

Caution! Overfilling is hazardous! Do not overfill your LP-gas container. Stop filling when liquid appears at the fixed liquid gauge. Most LP-gas containers are equipped with a fixed liquid level gauge (often called a 10% valve) which contacts the liquid level at 80% of container capacity allowing 20% for expansion.

LP-gas containers must not be filled over 80% of total capacity. Only qualified personnel should fill your container. If overfilled, excessive pressure could develop within the container causing the relief valve to open, relieving pressure to a safe level at which time it will automatically close.

The fixed liquid level gauge is used only to determine safe fill levels and does not indicate lower levels. LP-gas containers are available with visible gauges that monitor the amount of gas in the container at all times, reading from full to empty. If your tank is not equipped with a gauge your dealer may exchange it for one with a gauge for additional cost.

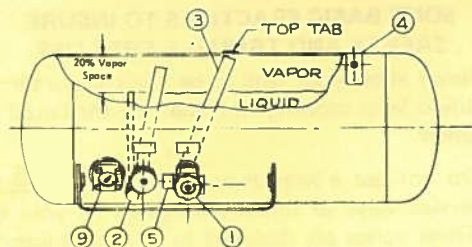


FIG. No. 1

ASME Horizontal Motor home tank

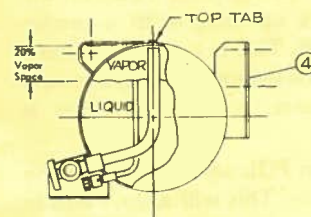


FIG. No. 2
Side View FIG. No. 1

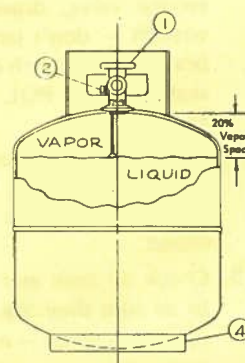


FIG. NO. 3 Standard vertical
20 lb. DOT cylinder

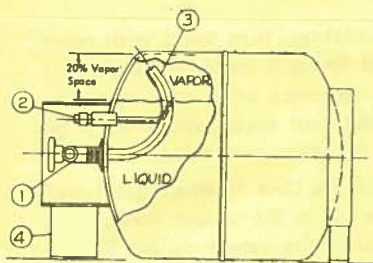


FIG. NO. 4 DOT 20 lb. cylinder
designed for horizontal use.

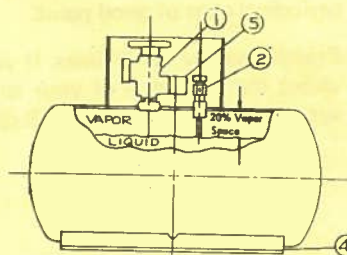


FIG. No. 5
ASME standard
horizontal tank.

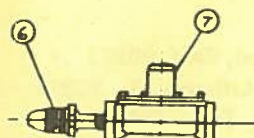


FIG. No. 6
Regulator

PURGING OF AIR FROM LP-GAS CONTAINERS

Air in LP-gas containers must be removed prior to the initial filling with LP-gas. If the container is not properly purged, air in the container dilutes the LP-gas vapor. Appliances then require constant adjustment and pilot lights won't stay lit. This condition could exist for several months until all air is depleted, leaving pure LP-gas vapor.

Have your LP-gas container purged, using LP-gas vapor to insure satisfactory appliance performance. It only takes a minute and your LP-gas dealer is equipped to perform this service.

COMMON TERMS OF LP-GAS TANKS

1. POL-Vapor withdrawal service valve.
2. 20% Liquid Level Gauge — (Often called a 10% valve).
3. Vapor withdrawal tube — (Used on tanks where POL Valve is not located on top of tank).
4. Bottom ring, stand legs, or mounting brackets.
5. Safety relief valve.
6. POL Spud and Nut (left hand thread)
7. Low pressure regulator
8. Fill valve. Pol and/or 1 1/4 Acme.
9. Visible gauge.

DOT AND ASME TANKS

- Generally speaking, LP-gas tanks are built to the specifications of either the ASME or DOT pressure vessel code. Both are nationally safe codes, which are used extensively. Basically, the difference between the two codes is that valves, fittings and brackets may be located on the ends only on DOT tanks, while on the ASME tanks they may be located on ends as well as sides.
- All valves, fittings and gauges on Manchester tanks are listed by UL. Production and testing methods are the most modern available to assure top quality.

LP-GAS REGULATORS

LP-gas regulators reduce the pressure of LP-gas vapor from tank pressure to 6 1/2 oz. or 11" W.C. for use at the appliances. The regulator is the heart of the LP-gas system and although it seldom requires service, care should be taken to protect it from the elements which could cause it to malfunction. In addition, your LP-gas system should be kept free of moisture which could cause regulator freeze-up. Installation of a good regulator enclosure will protect your regulator and anhydrous methanol injected into your LP-gas container will help to prevent freeze-ups.

CAUTION — ALWAYS BE SURE THAT THE REGULATOR VENT IS POINTING DOWN OR HORIZONTAL.

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