

Diplomat 2007

LP-Gas Systems — Section 7

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LP-GAS SYSTEMS

This section contains safety information and operating instructions of the Liquefied Petroleum Gas (LP-Gas) system and related equipment in the motorhome. Some items discussed may not be applicable to all motorhomes. More detailed information with **CAUTION** or **WARNING** instructions for various equipment other than items within this section, can be found in the equipment manufacturer's manual in the owner's information box.

The LP-Gas tank mounted in the motorhome contains LP-Gas that is under high pressure.

As fuel is used, the liquid vaporizes and passes through the primary tank valve to a regulator that reduces pressure. Low-pressure gas is then distributed to components through a pipe manifold system.

Component ignition problems are commonly caused by air in the manifold system or incorrect gas pressure. **DO NOT** attempt to adjust the regulator. Adjustments must be made by a dealer or an authorized service personnel with the proper equipment. In higher elevations or extreme cold weather (10° F/-12° C or lower) a shortage of LP-Gas may be experienced. If LP-Gas is going to be used in higher elevations or cold climates for a long period of time, have authorized service personnel adjust the LP-Gas regulator for these conditions.

Have the LP-Gas system tested by an authorized dealer or service center at least once a year and before every extended trip. The test will include having the system checked for leaks and the regulator pressure checked and tested for functionality. Although the manufacturer and the dealer test the system carefully for leakage, travel vibrations can loosen fittings.

WARNING

When storing portable LP-Gas tanks that are not connected to an LP-Gas system, install an approved plug in the tank outlet hole to prevent leaks. **DO NOT** store or transport empty LP-Gas tanks, portable tanks, gasoline or other flammable liquids in the interior area of the motorhome. Keep open flame and spark producing materials away from the LP-Gas area. Shut off all appliances and the primary LP-Gas tank valve when the motorhome is in storage. If this warning is ignored, a fire or explosion could result.

Leaks (identified by the odor of rotten eggs or sulfur) can be easily found by applying a leak detector solution on all connections. Never light a match, have an open flame or use any spark producing equipment or appliance to test for leaks. Leaks can usually be repaired by tightening the fittings. If not, shut off the primary gas valve at the tank. Hand-tighten the primary valve only. **DO NOT** use a wrench or pliers as over tightening may damage valve seats and cause leaks. If a leak is suspected, immediately see an authorized dealer or service center for repairs.

WARNING

LP-Gas is highly volatile and extremely explosive. **DO NOT** use matches or a flame to test for leaks. Only approved LP-Gas leak testing solution for leak detection should be used. Unapproved solutions can damage copper tubing and brass fittings. A liquid dish soap solution of 10 parts water may be used. Shake the solution until bubbles form and then apply the mixed solution to fittings and

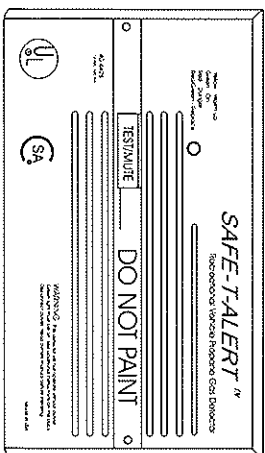
accessory control valves. All fittings tested should be thoroughly rinsed and dried after testing. Never attempt to adjust LP-Gas regulators. Only qualified service personnel should perform maintenance or repairs to the LP-Gas system.

NOTE

It may be illegal to travel in some states and Canadian provinces with the primary LP-Gas valve open. Failure to comply with these State and Canadian province requirements may result in fines and/or pose a safety hazard.

LP-GAS DETECTOR

The LP-Gas detector is required safety equipment in RVs. American National Standards Institute (ANSI) A119-2 - Fire & Life Safety 3-4.8 LP Gas Detectors states "A LP-Gas detector must be installed in any RV that contains an LP-Gas appliance and an electrical system. The LP-Gas detector must be listed as suitable for use in recreational vehicles under the requirement of UL 1484 Residential Gas Detectors, and installed according to the terms of its listing."



LP-Gas is heavier than air and will settle to the lowest point in the motorhome. The LP-Gas detector is also sensitive to other fumes such as hair spray, of which most contain butane as the propellant. Butane, like propane, is heavier than air and will settle to the floor level. Sulfated batteries (rotten egg odor) will also sound the alarm. When this occurs, reset the detector to stop the alert sound.

About the LP-Gas Detector:

Be aware of the difference between a leak versus LP-Gas escaping from an unit, open burner. Pure LP-Gas vapors from a leaking pipe or fitting are heavier than air and will build up heaviest concentration at the leak and float down to mix with air. LP-Gas from open burners is intentionally mixed with air to induce burning and dissipate into the air. When mixed with air, LP-Gas becomes only marginally heavier and expands outward. If a burner is left on, the area around the burner, range and adjoining counter space is combustible and can cause injury and damage when ignited. This condition will exist for an extended time period. Eventually, the LP-Gas will reach the detector's location and cause the alarm to sound.

NOTE

The LP-Gas detector indicates the presence of LP-Gas only at its sensor. Combustible levels of LP-Gas may be present in other areas. The detector is intended for detection of LP-Gas only.

The LP-Gas detector is not designed to detect other types of gas. However, some products may cause the detector to alarm, such as alcohol, liquor, kerosene, gasoline, deodorants, colognes,

propellant used in spray cans and cleaning solvents. In some cases, vapors from glue and adhesive used in the manufacturing of the motorhome may also cause the detector to alarm for several months after the date of manufacture. If it is determined that the detector has false alarmed because of the above mentioned nuisance gases, reset the detector and ventilate the motorhome with fresh outside air. Take precautions to ensure one of these cases has not masked an actual LP-Gas alarm condition.

The LP-Gas detector draws less current than one instrument panel lamp and will detect gas until the battery is drained down to 7.0 Volts. A voltage higher than 7.0 Volts is needed for the detector to operate properly. If the power source is disconnected, or if the power is otherwise interrupted, the detector will not operate.

The LP-Gas detector has a self-check circuit running at all times while the detector is powered. In the event that the circuitry fails, a failure alarm will sound and the operating indicator will cease to light.

LP-Gas Detector Operation:

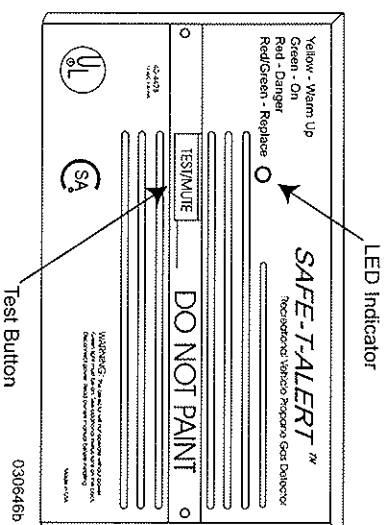
Upon first application of power the LED will flash yellow for three minutes while the detector is stabilizing. At the end of the start cycle the LED will turn Green indicating full operation. If the detector senses unsafe levels of LP-Gas it will immediately sound an alarm. The LP-Gas detector operates on 12 Volt DC, with a current draw of less than 1/10th of one amp.

CAUTION

The detector will not alarm during the three minute warm up cycle.

Testing

Press the TEST switch any time during the warm up cycle or while in normal operation. The LED will turn red and an alarm will sound. Release the switch. This is the only way to test full operation of the detector.



WARNING

Test the operation of this detector after the motorhome has been in storage, before each trip and at least once per week during use.

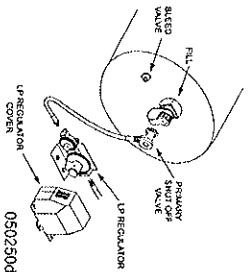
Alarm

The red LED will flash and the alarm will sound whenever dangerous levels of LP-Gas or natural gas are detected. The detector will continue to alarm until the gas clears or the Test/Mute switch is pressed.

Alarm Procedures:

1. Turn off all LP-Gas appliances (stove, water heater, furnace, refrigerator), extinguish all flames and smoking material. Evacuate immediately. Leave doors and windows open.

- Turn off primary valve on the LP-Gas tank.
- Determine and repair the source of the leak. If necessary, contact a qualified professional for service.



POTENTIAL SOURCES OF LP-GAS LEAKS WHEN OPERATING THE MOTORHOME

- | | |
|-------------------|---|
| ◆ Cooktop burners | ◆ Defective LP-Gas Connection |
| ◆ Oven | ◆ Defective Regulator |
| ◆ Refrigerator | ◆ Portable Propane Powered Appliances/Accessories |
| ◆ Water Heater | ◆ Furnace |

WARNING

DO NOT operate any electric switch. This can produce a spark and ignite the gas.

CAUTION

DO NOT re-enter until the problem is corrected.

Alarm Mute:

Press the **Test/Mute switch** when the detector is in alarm.

- The red LED will continue to flash and the alarm will beep every 30 seconds until the gas level has dropped to a safe level.
- The LED will flash green until the end of the Mute cycle.
- If dangerous gas levels return before the end of the Mute cycle, the alarm will beep four times and return to phase 1.

- After two minutes the detector will return to normal operation (solid green) or resound the alarm if dangerous levels of gas remain in the area.

Fault Alarm:

Should the microprocessor sense a fault in the gas detector, a fault alarm will sound twice every 15 seconds. The LED will alternately flash red to green and the **MUTE** switch will not respond to any command. The gas detector must be repaired or replaced.

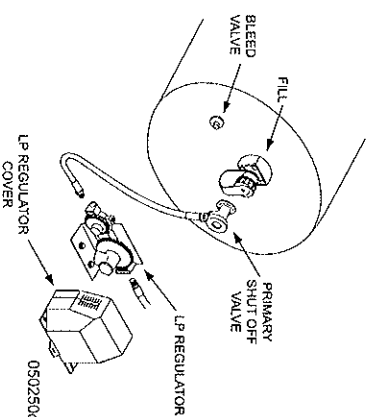
Maintenance

- Vacuum the dust off the detector cover weekly (more frequently in dusty locations) using the soft brush attachment of a vacuum.
- DO NOT** spray cleaning agents or waxes directly onto the front panel. This action may damage the sensor, cause an alarm or cause a detector malfunction.

LP-GAS EMERGENCY PROCEDURES CHECKLIST

If you smell gas (a rotten egg or sulfur smell) at any time, perform the following steps immediately:

- ◆ Shut off LP-Gas appliances.
- ◆ Manually turn off the primary shut-off valve at the LP-Gas tank.



- ◆ **DO NOT** operate any electric switch. This can produce a spark and ignite the gas.
- ◆ Open windows and doors.
- ◆ Evacuate the motorhome. Stay clear of the surrounding area.
- ◆ Keep all ignition sources out of the area.
- ◆ Contact a qualified service technician to find the source and repair the gas leak.

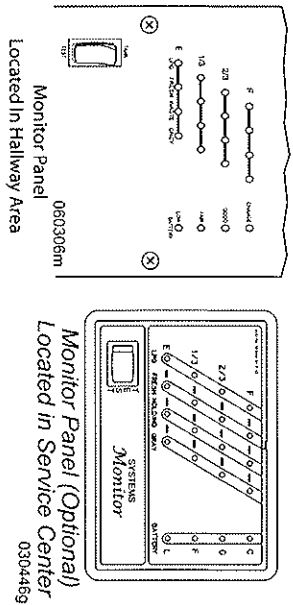
WARNING

A fire or explosion from ignited gas or gas fumes can cause serious injury or death.

LP-GAS TANK

Measurement

The motorhome is equipped with a monitor panel to aid in managing the LP-Gas tank. The monitor panel will be located in a Main Status Monitor Panel in the hallway area. A second optional monitor panel can be found in the roadside water service center. The switch marked **TEST** is a momentary switch which requires being held down along with a corresponding scale reading.



Tank Capacity

NOTE
LP-Gas Tank Capacity

*39 Gallons

*Actual filled LP-Gas capacity is 80% of listing due to safety shut-off required on tank.

This chart reflects product specifications available at the time of printing.

NOTE

LP-Gas tank capacity is estimated based upon calculations provided by the tank manufacturer and represents approximate capacity. The actual “usable capacity” may be greater or less than the estimated capacity. Actual full liquid capacity is 80% of full tank capacity.

Tank Filling

Woodall’s Campground and Trailer Guide, and other similar publications, list refueling stations. Many travel parks sell LP-Gas. Before filling the

LP-Gas tank, shut off pilot lights, appliances and igniters to prevent a fire or explosion. Have a trained service person fill the LP-Gas tank.

WARNING

Before entering a refueling station, turn off all pilot lights and LP-Gas operated appliances. Most LP-Gas appliances used in recreational vehicles are vented to the outside. Fuel vapors can enter an appliance vent on a motorhome that is parked close to a gasoline pump, resulting in an explosion or fire.

WARNING

Extinguish all sources of heat, sparks, flames and smoking materials within a 50’ radius during the fueling process.

The LP-Gas tank fill is located in a roadside compartment. The tank must be filled to the proper level to allow for expansion. A tank overfilled may cause the safety valve to release pressure emitting a strong rotten egg odor near the tank and/or a hissing noise may be detected.

WARNING

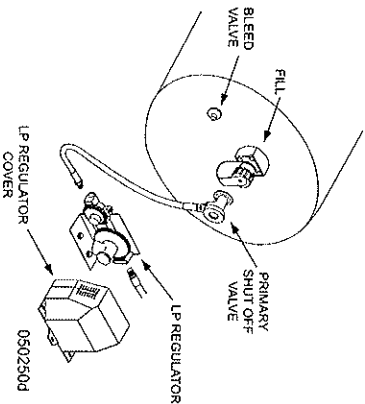
It is common for small amounts of LP-Gas to escape and evaporate during the fueling process. Protect bare skin. Instant freezing will occur if exposed to LP-Gas.

LP-Gas exists in both liquid and vapor form within the tank. A full tank is approximately 80% liquid. The pressure inside the tank varies with the temperature of the liquid. All tanks are required to have a safety pressure relief device to release excess pressure. When the tank is full, the gauge on the tank will only read ¾. The monitor panel is adjusted to indicate “Full” at this point.

NOTE
If the tank is new and being filled for the first time, inform the service technician to purge any air from the tank prior to filling.

Tank Operation

- ◆ Manually open the primary shut-off valve located on the LP-Gas tank.
- ◆ Turn off the primary valve on the LP-Gas tank when the tank is being filled, when driving, in between trips and when in storage.
- ◆ Hand-tighten the primary valve only. **DO NOT** use a wrench or pliers. This will over-tighten the valve. The primary valve is designed to be closed by hand. Over-tightening may permanently damage the valve seat.



NOTE
In some States and Canadian provinces, it may be illegal to drive the motorhome while primary valve on the LP-Gas tank is open.

Accessory Hookup

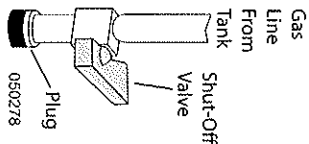
Exterior Gas Line Hookup Prep:

An auxiliary remote LP-Gas hookup is for external LP-Gas accessories and is to be used for external components only. For safety, only approved LP-Gas quick disconnect fittings and flexible hose should be used to connect external accessories to the remote hookup. A LP-Gas Quick Disconnect fitting should be installed by a qualified agency as defined in the National Fire Protection Association NFPA (Fire) 54-02 code.

Depending on floor plan, the exterior gas line hookup prep can be found in various locations.

A “rule of thumb” is if the water heater is in the bedroom the exterior gas line prep is found in a curbside compartment. If the water heater is located in a curbside compartment then the exterior gas line prep is found behind the water heater. An access door needs to be opened to locate it.

NOTE
Check for leaks on all connections each time the remote hook-up is used. If a leak is detected, turn off the primary valve at the main LP-Gas tank. Contact a qualified service center for the necessary repairs.

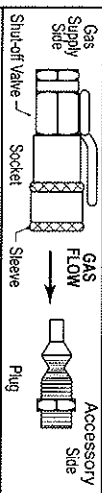


Located in the curbside compartment.

WARNING

Hazardous vapors, explosive and flammable gas. Can cause suffocation severe injury or death.

QUICK DISCONNECT FITTING



NOTE:
COUPLING TO BE INSTALLED BY A QUALIFIED AGENCY AS DEFINED IN THE NATIONAL FUEL GAS CODE (NFPA 54)

INSTALLATION INSTRUCTIONS

- 1) INSTALL SOCKET WITH SHUT-OFF VALVE ON THE GAS SUPPLY SIDE
- 2) INSTALL PLUG ON THE ACCESSORY SIDE
- 3) LEAK TEST USING SOAPY WATER SOLUTION

OPERATING INSTRUCTIONS

- TO CONNECT:**
- 1) CLOSE SHUT-OFF VALVE
 - 2) PULL SOCKET SLEEVE BACK
 - 3) INSERT PLUG; RELEASE SLEEVE
 - 4) PUSH PLUG INTO SOCKET UNTIL SLEEVE SNAPS FORWARD
 - 5) OPEN SHUT-OFF
 - 6) LEAK TEST USING SOAPY WATER SOLUTION

TO DISCONNECT:

- 1) CLOSE SHUT-OFF VALVE
- 2) TO RELEASE PLUG, PULL SLEEVE BACK AWAY FROM PLUG; PULL OUT PLUG
- 3) INSERT PLUG; RELEASE SLEEVE
- 4) LEAK TEST USING SOAPY WATER SOLUTION

LP-GAS FUNDAMENTALS

# Capacity	Gallon Capacity	BTU Capacity
5	1.18	107,909
10	2.36	215,807
11	2.59	237,387
20	4.72	431,613
30	7.08	647,420
40	9.43	863,226

The above capacities allow for 20% vapor space on each cylinder.

Data taken from the National Fire Prevention Association (NFPA), Pamphlet #58-1998.

CONVERSIONS

(1 Gallon = 3.785 Liters)

Gallons to Liters
 Fahrenheit to Celsius
 $(F^{\circ} - 32 \div 1.8 = C^{\circ})$

11 in. Water Column = 6 1/4 ozs. per sq. in. pressure.
 27.7 in. Water Column = 1 lb. per sq. in. pressure.

LP-Gas Statistics:	
Pounds Per Gallon	4.24
Specific Gravity of Gas	1.50
Specific Gravity of Liquid	.504
Cubic Feet Gas Per Gallon of Liquid	36.38
Cubic Feet Gas Per Pound	8.66
BTUs Per Gallon	91,502
BTUs Per Pound	21,548
Dew Point in Degrees Fahrenheit	-44°F
Vapor Pressure at 0° F	31
Vapor Pressure at 70° F	127
Vapor Pressure at 100° F	196
Vapor Pressure at 110° F	230
Flash Point	842° F

- Basic Facts About LP-Gas:**
- LP-Gas detectors are a federal requirement on all LP-Gas equipped recreation vehicles.
 - LP-Gas is a by-product produced by refining oil.
 - Odor is added to LP-Gas after the refining process.
 - Each liquid gallon of LP-Gas produces 91,502 BTUs (British Thermal Units).
 - Temperature affects pressure of LP-Gas.
 - Internal tank pressure can exceed 200 psi.
 - Tanks or valves contain pressure relief valves. The relief valve opens at 125% above tank rating.
 - LP-Gas stops vaporizing at -44° F.
 - Standard LP-Gas operating pressure is 11" of Water Column or approximately 6 1/4 ounces per square inch.
 - An inch of Water Column is a measurement of applied pressure to one side of a U-Tube 1/2 filled with water at sea level. The amount of pressure required to raise the water level 11", represents 11" of Water Column.

NOTE
 The above information is not a complete guide for the use of LP-Gas tanks or appliances. In cold climates keep LP-Gas level above 50% to keep vaporization of LP-Gas at the highest level.

LP-GAS REGULATOR

LP-Gas is compressed into liquid form in the tank. Only the vapor is used during combustion by an appliance. As vapor is removed from the tank, the remaining liquid will vaporize to maintain pressure that is removed during consumption. This process will continue until there is no liquid remaining in the tank.

Temperature affects the vaporizing action of the liquid. If temperature of the liquid is - 44° F, the liquid remains stable with tank pressure, about 0 psi. If liquid temperature is 100° F, the liquid quickly vaporizes with tank pressure, about 200 psi. Vapor pressure must remain relatively consistent, regardless of temperature, for the appliance heat output to remain stable. Vapor pressure regulation is performed by the regulator.

The two-stage regulator reduces vapor pressure so that it is safe for use. The first stage of the regulator reduces tank pressure to a range of 10 to 13 psig (pounds per square inch gauge). The second stage further reduces pressure to a working pressure of 0.4 psig (11 Inches of Water Column or about 6¼ ounces psi.). A vent is installed to allow the internal diaphragm to move with atmospheric pressure change. It is important to keep the vent clean and clear of obstruction or corrosion. If the vent becomes clogged, pressure from LP tank may cause erratic pressure regulation. If there is any corrosion, contact a qualified LP-Gas service technician. The regulator is mounted so that the vent faces downward. If the vent becomes clogged, clean it with a toothbrush.

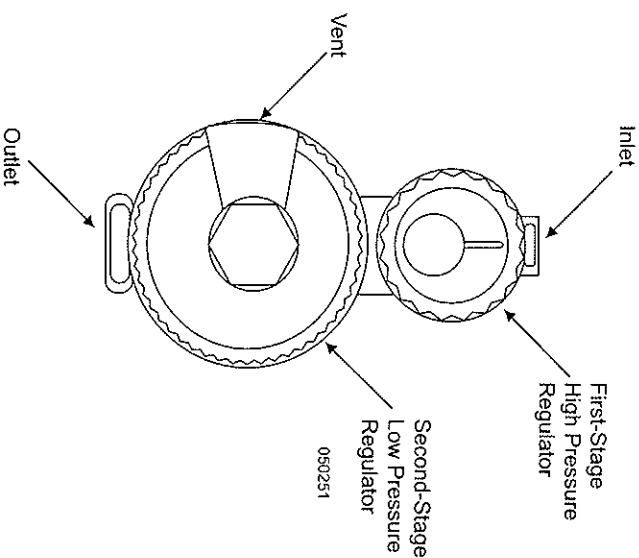
Under normal atmospheric conditions an LP-Gas regulator will not freeze, nor will the LP-Gas. Vapor passing through the regulator will expand and cool, condensing moisture in the gas. The moisture will freeze, build up and block the vent. The possibility of freeze up is greatly reduced with the two-stage regulator.

To Prevent Freeze Up:

- ◆ Ensure the LP-Gas tank is totally free of moisture prior to filling.
- ◆ Ensure the tank is not overfilled.
- ◆ Keep the valve closed when the tank is empty.

If A Freeze Up Occurs:

- ◆ Have an LP-Gas distributor purge the tank.
- ◆ Have the LP-Gas distributor inject methyl alcohol in the tank.



Damage to the regulator can occur when the tank is overfilled. The regulator is designed to work with vapor only. This is why the tank is filled to only 80% of its liquid capacity.

The other 20% allows for vaporization of the liquid. The primary vapor valve is located in the vapor section of the tank. In an overfilled tank, liquefied petroleum can fill the regulator. Vaporizing liquid can freeze the diaphragm. High tank pressure on a frozen diaphragm can cause a rupture and result in erratic pressure regulation. This is why it is important to have the LP-Gas pressure checked for proper pressure and accurate regulation during appliance operation. Erratic pressure regulation dramatically affects refrigerator operation on LP-Gas.

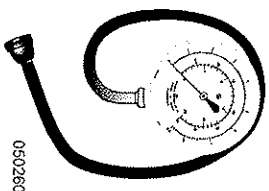
WARNING

DO NOT attempt to adjust the regulator. Adjustments require special equipment. Failure to follow these instructions may result in a fire or explosion, and can cause severe personal injury or death. DO NOT operate LP-Gas appliances until the LP-Gas pressure is checked and a leak down test is performed!

Manometers:

The manometer is the best way to accurately determine LP-Gas pressure. There are two different styles of manometers: Gauge and U-tube. Gas pressure is measured in Inches of Water Column. This is the amount of pressure applied to one side of a U-shaped tube half filled with water. The amount of pressure needed to raise the column of water 11" represents 11 Inches of Water Column.

TIP
Attach the manometer gauge to the accessory hookup line to avoid loosening any interior LP-Gas line connections.



Manometer Gauge
0502869

LP-GAS HOSE INSPECTION

It is suggested by the hose manufacturer that a flexible LP-Gas supply hose undergo regular inspection. As a guideline, it is recommended that all flexible LP-Gas lines connecting the slide-out, appliances and tanks be inspected in the spring and fall of each year by a qualified RV technician.

Inspection tips:

Hose strength is controlled by the plies of reinforcement. Damage in this area cannot be tolerated. It is important that if a damaged LP-Gas hose is found, the source of the damage be determined and corrected prior to the replacement. Small cuts, nicks, or gouges that do not go completely through the cover are not cause for replacement of the hose. Inspection should be performed when the hose is not under pressure.

NOTE

Pricking of the cover in the manufacture of this type of hose is common and necessary for satisfactory hose performance. Consequently, the uniformly pricked cover should not be viewed with alarm.

Cause for hose replacement:

- ◆ Damage to the textile reinforcement or wire braid; wire braid reinforced hose, which has been kinked or flattened so as to permanently deform the wire braid in the un-pressurized state.
- ◆ Blistering or loose outer cover.

- ◆ Slippage; evidenced by the misalignment of the hose and coupling and/or the scored or exposed area where slippage has occurred.

NOTE

Only a qualified RV service technician should complete replacement of LP-Gas components.

Additional suggested maintenance:

After performing extensive testing the manufacturer of the flexible LP-Gas supply hoses has determined that the hoses be replaced every ten (10) years as the failure rate may increase after this period of time. The motorhome manufacturer recommends following this guideline to assure continued safety and dependable use.

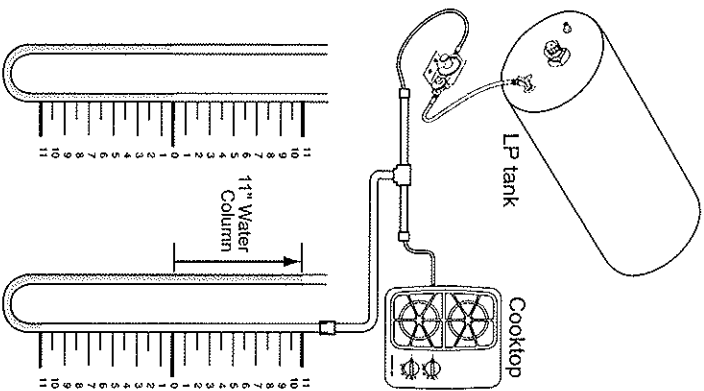
LP-GAS DISTRIBUTION LINES

A primary manifold black steel pipe running throughout the motorhome distributes LP-Gas to secondary lines. All secondary lines leading to gas appliances are made of copper tubing with flared fittings. It is recommended that gas distribution work be performed by an authorized dealer or an authorized service technician.

INSPECTION

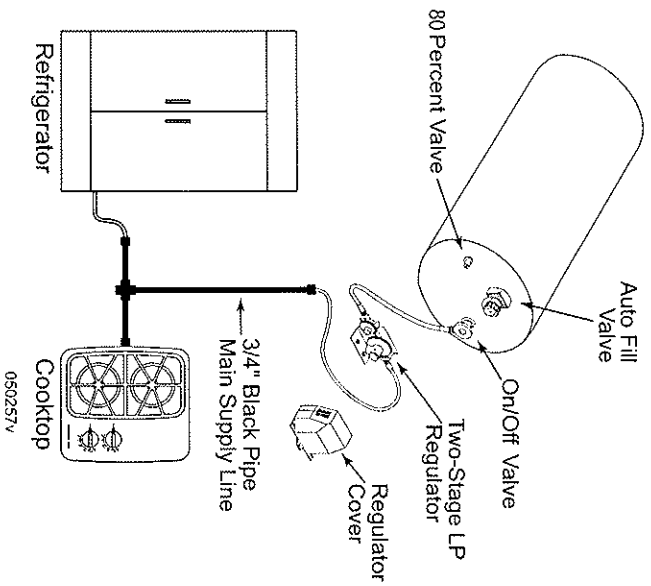
Inspect the rubber flexible lines twice a year for abrasions, tears, kinks or other signs of damage.

If a gas leak is suspected, have the system inspected and repaired by a qualified service technician as soon as possible.



U-Tube Testing Layout

050289m



- ◆ LP-Gas appliances are rated in Input BTU (British Thermal Units). The rating is usually stamped or printed on a tag affixed to the appliance. For example: the Input rating of the appliance is 10,000 BTUs.
- ◆ One gallon of LP-Gas produces 91,502 BTUs.
- ◆ Divide the amount of BTUs of one gallon of LP-Gas (91,502) by the rating on the appliance in this example 10,000. Net continuous operation time for one gallon of LP-Gas for this appliance would be approximately 9.2 hours.

The above formula can be useful when trying to determine the approximate length of time a tank of LP-Gas will last. Generally, LP-Gas appliances do not continuously operate. An example would be the typical cycling of the refrigerator.

Determining how long a tank of LP-Gas will last:

- ◆ Combine the BTU input totals of all appliances, and the approximate length of time these appliances operate per day.
- ◆ Multiply the number of liquid gallons in the LP-Gas tank by 91,502.

Typical Appliance BTU Ratings
Cooktop Large - 9,500 BTU Small - 6,500 BTU
Refrigerator (Norcold) 4-door - 2,200 BTU

LP-GAS CONSUMPTION

Each gallon of LP-Gas produces 91,502 BTUs of heat. One 27 gallon tank produces two million BTU's. Total consumption depends on the rate of usage by each appliance and the operating time. The stove typically uses the most LP-Gas.

Determine Fuel Consumption:

To determine approximately how many hours an LP-Gas appliance will operate on one gallon of LP-Gas, use the following formula:

- ◆ Divide the total of BTUs of the LP-Gas tank by the total number of BTUs the appliances consume, equals the approximate number of hours of operation before refueling.

WARNING

LP-Gas is highly volatile and extremely explosive. Never use matches or open flame to test for leaks. Use only approved LP-Gas leak testing solution to test for leaks. Unapproved solutions can damage copper tubing and brass fittings. Never attempt to adjust the LP-Gas regulator without the use of proper equipment. Improper LP-Gas regulator adjustment will affect the performance of LP-Gas operated appliances. Incorrect flame or explosion can occur. Only qualified personnel should perform any maintenance or repair to the LP-Gas system.

LP-GAS SAFETY TIPS

LP-Gas is one of the safest and most reliable fuels available on the market when handled properly. LP-Gas, however, does have a great explosive "potential" if handled improperly. Danger is minimized by becoming familiar with and following a few safety precautions, and by learning how to properly operate LP-Gas appliances. Use of LP-Gas requires the responsibility to enforce extra safety measures.

The motorhome is equipped with many LP-Gas operated appliances because it is a convenient and efficient source of fuel. LP-Gas appliances must be operated and maintained in accordance with the product manufacturer's instructions.

The National Propane Gas Association (NPGA) has a special service program offered called GAS® (Gas Appliance System) Check. The GAS® Check program is aimed at educating users about the convenience of propane with safety and peace of mind.

For information on the **NPGA Gas® Check program**, call **(202) 466-7200** or visit www.npga.org.

Maintenance and Safety Tips for the

LP-Gas Refrigerator:

- ◆ Have the refrigerator venting inspected annually by an authorized server center.
- ◆ Before firing up the refrigerator for the first time each season, have the venting system checked for blockage. Insects may have built nests that will obstruct flow.
- ◆ At the first indication of incomplete combustion (yellow flame instead of a blue flame or soot is present) contact a service technician immediately. Improper combustion can cause carbon monoxide buildup, which is potentially fatal!

Maintenance and Safety Tips for the LP-

Gas Range:

- ◆ Burner flame should be a blue color, indicating complete combustion. If not, have the unit serviced by a qualified technician.

- ◆ **DO NOT** cover the oven bottom with foil. Air circulation will be restricted.
- ◆ Never use LP-Gas ranges or ovens for heating purposes.
- ◆ Always have pot handles turned inward.
- ◆ Ensure children understand never to turn or play with the knobs on the front of the LP-Gas range.