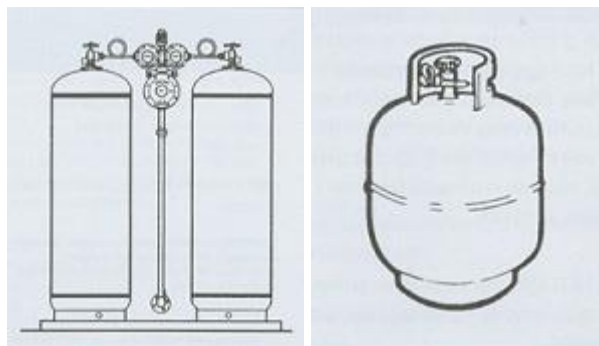


Portable Propane Cylinders

Improper use and handling of portable propane cylinders can be very dangerous. This section describes the precautions you should take when working with cylinders.

Shown below are illustrations of various types of portable propane cylinders:



WARNING: Do not smoke or have any ignition source, such as flames or spark-producing electrical tools, in the area while handling or transporting cylinders.

USING CYLINDERS

Check and make sure that cylinders:

- are not used or stored indoors or in an enclosed area.
- have the shut-off valve firmly closed when the appliance is not in use.
- are not next to a stove or a fireplace, in a hot vehicle, or near any other heat sources. The heat builds up pressure inside the cylinder, and may cause the pressure relief valve to release propane.
- are in a secure upright position when they are transported, stored, or used.
- are always used with a regulator.

NEW AND REINSTALLED CYLINDERS

When disconnecting cylinders, whether full or empty, first close the shut-off valve, then disconnect the cylinder and snugly seal the valve with a plug, a cap, or an approved quick-closing coupling. This important safety precaution prevents air and moisture from forming rust inside the cylinder.

Internal rust can develop in new and unused cylinders, which may lead to odor fade. A sniff test should be done to make sure odorant is in the cylinder when connected or reconnected.

REGULATOR

NEVER USE PROPANE FROM A CYLINDER WITHOUT A REGULATOR (Except for forklift cylinders). Protect the regulator connector from scratches and dents. Any damage to the connector may cause a leaking joint. Make sure the regulator vent is pointed downward and the regulator is protected. This prevents ice from blocking the vent. Ensure the regulator vent is clean. Check that nothing has blocked the vent, such as an insect, mud-dauber, wasp nests, spider cocoons, etc.

SHUT-OFF VALVE

Cylinders are equipped with a shut-off valve. When portable appliances are not being used, the valve should be shut off.

STORAGE

Store propane cylinders outside only. Never store cylinders in an enclosed area or a basement. Always use the cylinders in a secure manner to prevent rolling or falling.

LEAKS

Always be alert for the smell of propane when you are in an area where cylinders are used or stored.

HEAT

Never place a cylinder near a stove, fireplace, or other heat source. The heat builds up pressure inside the cylinder, which may cause the pressure relief valve to release propane.

WARNING: Flash fires or explosions can result from exposing cylinders to heat.

REFUELING CYLINDERS

WEIGHT LIMIT

Cylinders should not be filled past their rated capacity. The weight limit is usually specified on the cylinder. If it has been overfilled, the pressure relief valve may release propane as the cylinder warms. Overfilling can lead to flash fires and explosions.

RUSTED, DAMAGED, AND OUT-OF-DATE CYLINDERS

It is against the law to have visibly rusted, damaged, and out-of-date cylinders filled. The date should be on the cylinder. Check with North Star Energy for questions about cylinder condition.

OVERFILLING PREVENTION DEVICE (OPD)

Requirement: All new, vapor-service cylinders having a propane capacity of 4 pounds through 40 pounds and fabricated after 09/30/98, must be equipped with UL listed OPDs as a secondary means of protecting against overfilling (the primary means is to determine the fill limit by weight).

Effective 10/01/98, affected used cylinders must be retrofitted with UL listed OPDs when being requalified under DOT regulations.

Effective April 1, 2002, affected cylinders cannot be filled unless they are equipped with UL listed OPDs.

Cylinders equipped with UL listed OPDs will have a triple-notched valve handwheel with the letters "OPD" clearly and permanently marked on it.

Please refer to NFPA 58 (latest edition) for detailed information on Overfilling Prevention Devices.

GAS-OUTS

Never let a cylinder become empty or nearly empty. Always leave a small amount of gas pressure to prevent gas-outs.

DISPOSABLE CONTAINERS

Never refill small disposable propane containers, such as those used to fuel camp stoves or propane torches.

CONNECTING CYLINDERS

CAUTION: Before connecting cylinders, read all the appliance instructions and the warning label on the cylinder.

POSITIONING THE CYLINDER

Position the cylinder in an upright position. Do not kink or damage any hose or tubing between the cylinder valve and the regulator.

INSTALLING THE REGULATOR

Install the regulator with the vent pointing downward and under a protective covering.

Using a wrench, on cylinders over 40 pounds capacity, tighten the regulator inlet connection nut counter-clockwise into the cylinder valve. The nut has a left-hand (reverse) thread, which requires you to tighten it in the counter-clockwise direction. Do not over-tighten.

CHECKING FOR LEAKS

To check for leaks, perform a bubble test. Apply leak detector solution or thick soapy water to the connection(s) between the cylinder valve and the regulator outlet.

Slowly open the cylinder shut-off valve and watch for bubbles. If bubbles appear, close the cylinder valve and tighten the connection and call North Star Energy immediately.

DISCONNECTING CYLINDERS

CAUTION: Before disconnecting cylinders, read all the appliance instructions and the warning label on the cylinder.

Before disconnecting a cylinder, close the shutoff valve on the cylinder and turn off all pilot lights and burners to appliances. Then disconnect the cylinder and install the plug, cap, or approved quick disconnect coupling cap. This prevents moisture and air from forming rust in the cylinder.

TRANSPORTING CYLINDERS

Transportation and Storage

- Always transport and store cylinders in a secure and upright position so they will not fall or roll.
- Never transport in the passenger compartment of any vehicle.
- Never transport without closing and sealing the valve.

HEAT

Never keep a filled cylinder inside a hot car or van, or inside the closed trunk of a car. Heat may cause the pressure relief valve to release propane.

WARNING: Flash fires and explosions can result from exposing cylinders to heat.

PROPANE POWERED VEHICLES

PROPANE SYSTEM TEST

Read and follow the instructions that come with your vehicle on how to properly use and maintain the propane system.

Your gas system should be periodically checked by your dealer for loose connections.

DISPOSING OF SMALL PROPANE CONTAINERS

Never Burn or Crush Empty Containers. Many ordinary household products use un-odorized propane as the propellant. Although they may seem empty, the containers may have propane vapors left in them.

Propane can be released when exposed to heat or pressure, enabling flash fires or explosions to occur.