

February 2009 Safety Meeting

Propane Regulators

The propane gas regulator is one of the most important parts of a propane gas system. The purpose of the regulator is to control the flow of gas and lower the pressure from the tank to the appliance(s) in the gas system. The regulator not only acts as a control regarding the flow and distribution of propane but also as a safety barrier between the high pressure of the tank and the end use appliance(s). Most will rightfully argue that the LP Gas regulator is the heart of any propane gas system.

Regulator Purpose

Propane tank pressure can range from under 10 psig to over 200 psig. Residential applications will generally require 11 inches water column (amount of pressure required to push a column of water up 11 inches in a manometer, or about 6.3 ounces per square inch) and the regulator compensates for these pressure differences in the tank to supply a steady flow of required pressure to the household appliances. Not all applications are similar to that of residential use and will therefore utilize regulators for higher and lower pressures as required by the appliance(s). In summary, the purpose of a propane regulator is to "bottleneck" the propane down to a safe and usable pressure. *An important point to note is that under normal operation, a propane regulator will make a "humming" noise. This is normal and should not be construed as a problem or regulator malfunction.*

Types of Propane Regulators

Although the purpose of propane regulators is the same, different applications require different types of regulators. Regulator selection is determined solely by the propane application requirements. The demand downstream of the regulator is what determines what type of regulator is to be installed and where it's to be placed within the system. Some propane systems incorporate multiple regulators for efficiency while others such as a grill need only a low BTU grill regulator. Types of regulators include:

- High Pressure Regulators
- First Stage Regulators
- Second Stage Regulators
- Integral Two-Stage Regulators
- Adjustable High Pressure Regulators
- Automatic Changeover Regulators

"A regulator is a regulator" is a misleading statement that many consumers believe to be true. The fact is that installing the wrong kind of regulator will generally render a propane gas system inoperable. People don't realize that buying an LP Gas regulator from a friend or an internet site will more than likely result in wasted money. Regulators aren't all the same regardless of what one may think and an improper regulator or faulty LP Gas regulator installation means the entire installation is illegal and unable to be serviced until fixed. Keep in mind that replacing the regulator means interrupting the flow of gas and a leak check is required before the gas can be turned back on.

Regulator Protection and Replacement

Like any part of a propane system, the regulator needs to be protected. Protecting a regulator, for the most part means keeping it covered. Regulators are generally found under the tank dome or if installed outside the dome, they will have the vent pointed down. The vent is pointed down to prevent rain, ice and debris from entering the regulator. The vent should have a screen that keeps insects out of the regulator as some insects, such as the Mud Dauber (a.k.a. Dirt Dauber) will make a nest in a regulator that's missing its protective vent screen.

Regulators have internal moving parts that are subject to wear and tear and after some time, the regulator needs to be replaced. Propane companies can tell consumers when the regulator needs to be replaced due to age or malfunction and the consumer needs to take this advice seriously. The industry norm is 15 years before a regulator needs replacement while some regulator manufacturers recommend replacement every 25 years. If any regulator has ever been under water, such as on an underground propane tank, it needs to be replaced immediately. One very important fact to point out is that although propane regulators may be adjusted by licensed propane professionals, they are not repaired or subject to repair. They are replaced.

February 2009 Test

Propane Regulators

Name: _____

Date: _____

Instructions: Read and answer each of the following questions. When complete, grade the test and review incorrect answers so each employee is “armed” with the correct answers before they leave the training.

1. The propane gas regulator is one of the most important parts of the propane gas system.
 - a. True
 - b. False

2. The regulator not only acts as the _____ regarding the flow and distribution of propane but also as a safety barrier between the _____ pressure of the tank and the end use appliance(s).
 - a. control, down
 - b. control, low
 - c. control, high
 - d. none of the above

3. Residential applications will generally require ____ inches water column.
 - a. 9
 - b. 10
 - c. 11
 - d. 14

4. It is not normal for the regulator to make a noise.
 - a. True
 - b. False

5. Regulator selection is determined solely by the _____.
 - a. OSHA.
 - b. propane application requirements.
 - c. UL standards.
 - d. agency having jurisdiction.

6. All of the following are a type of regulator except:
 - a. One Stage
 - b. Two Stage
 - c. Three Stage
 - d. Integral Two Stage

7. It is not necessary to replace a regulator after it is under water...only needs to be cleaned.
 - a. True
 - b. False

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Answer Sheet

1. a.
2. c.
3. c.
4. b.
5. b.
6. c.
7. b.