OPERATION

The outlet pressure of each 7345 Regulator is factory set at the mid-range of the control spring. If it is necessary to change outlet pressure, remove the closing cap and turn the adjusting screw counterclockwise to decrease outlet pressure or clockwise to increase outlet pressure. Adjustments must be made with gas flowing. A pressure gauge is needed to determine outlet setting. Always replace the closing cap after adjustment.

OVERPRESSURE PROTECTION

Like most pressure-reducing regulators, the 7345 Regulators have outlet pressure ratings that are lower than the inlet pressure ratings. Therefore, a pressure relieving or pressure limiting device is needed if the inlet pressure can exceed the outlet pressure rating, see "Specifications". The internal relief in these regulators provides limited downstream overpressure protection, but it should not be considered complete overpressure protection. Refer to the wide-open flow capacity calculations below to determine the required relief valve capacity.

To determine wide-open flow capacity of a regulator for relief sizing, use the following formulas.

For 7345-02 and 7345-02-H:

$$Q = 4 * P_1 \sqrt{\frac{520}{GT}}$$

For 7345A-01-B and 7345A-01-M1:

If $(P_0 \leq \frac{1}{2} P_1)$

$$Q = 16.125 * P_1$$

If $(P_0 > \frac{1}{2} P_1)$

$$Q = \sqrt{\frac{520}{GT}} * 12.5 P_1 \sin\left(97.63 * \sqrt{\frac{P_1 - P_0}{P_1}}\right)$$

For 7345A-01-H2:

If $\left(\frac{P_1}{P_0} < 1.894\right)$:

$$Q = 74\sqrt{P_0 (P_1 - P_0)}$$

If $\left(\frac{P_1}{P_0} \geq 1.894\right)$:

$$Q = \frac{74 P_1}{2}$$

INSTALLATION

Before installing the regulator, check for damage which might have occurred during shipment. Also, check for and remove any dirt or foreign matter which may have accumulated in the regulator body or pipeline. Apply pipe compound to the male threads of the pipe and use approved piping procedures when installing the regulator.

All 7345 Regulators may be installed in any position, however, make sure gas flow through the regulator is in the same direction as the arrow on the body. "Inlet" and "Outlet" connections are clearly marked.

The spring case vent should be pointed down on outside installations. For indoor installations or if gas escaping through the internal relief valve could constitute a hazard, the tapped vent should be piped to outdoors where escaping gas will not be hazardous. If the vent will be piped to another location, obstruction-free tubing should be used and a screened vent should be installed on the end of the vent pipe. Use pipe or tubing equal in size to the regulator's vent for the vent line. On all installations, the vent or end of the vent pipe must be protected from corrosive chemicals, debris, weather, condensation, insects, or anything else that might clog or enter the spring case.

NOTE: Refer to the *National Fuel Gas Code* for complete installation requirements.

P_0 = outlet pressure, psia*
P_1 = inlet pressure, psia
Q = flow rate, SCFH
G = gas specific gravity (air = 1.0)
T = absolute temp, °R

* = P_0 is the regulator maximum allowable outlet pressure determined by the regulator's outlet pressure rating and the pressure ratings of downstream system components.

WARNING: Situations dangerous to personnel and property may exist with the operation and maintenance of any combustion equipment. The presence of fuels, oxidants, hot and cold combustion products, hot surfaces, electrical power in control and ignition circuits, etc., are inherent with any combustion application. Components in combustion systems may exceed 160°F (71°C) surface temperatures and present hot surface contact hazard. Fives North American Combustion, Inc. suggests the use of combustion systems that are in compliance with all Safety Codes, Standards, Regulations and Directives; and care in operation.

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