

North American 7345 High Pressure Regulators



7345A-01-B and 7345A-01-M1

SPECIFICATIONS

7345A-01-B and 7345A-01-M1

Body Size and End Connections: ½" NPT
Maximum Operating and Emergency Inlet Pressure: 125 psig
Capacities: See Table 1
Maximum Outlet (Casing) Pressure: 20 psig
Maximum Operating Outlet Pressure to Avoid Internal Parts Damage - The Outlet Pressure Rating: 3 psi above outlet pressure settings
Temperature Capabilities: -20° to 160°F
Outlet Pressure Ranges: See Table 1
Pressure Registration: Internal
Approximate Weight: 2.35 pounds



7345-02 and 7345-02-H

7345A-01-H2

Body Sizes and End Connections: ½" NPT
Maximum Operating and Emergency Inlet Pressures: 125 psig
Capacities: See Table 1
Maximum Outlet (Casing) Pressure: 10 psig
Maximum Operating Outlet Pressure to Avoid Internal Parts Damage - The Outlet Pressure Rating: 3 psi above outlet pressure setting
Temperature Capabilities: -20° to 150°F
Pressure Registration: Internal
Approximate Weight: 4.5 pounds

The 7345 High Pressure Regulators are self operated, spring loaded regulators that reduce high gas supply pressures to practical use levels. The outlet pressure ranges are higher for the type "H" regulators. 7345 Regulators include an internal relief valve for limited over pressure protection (see "Overpressure Protection"). They can be used with various gases including natural gas, propane and air.



7345A-01-H2

7345-02 and 7345-02-H

Body Sizes and End Connections: ¼" NPT inlet x ¾" NPT outlet
Maximum Operating and Emergency Inlet Pressures: 250 psig
Capacities: See Table 1
Maximum Outlet (Casing) Pressure: 20 psig
Maximum Operating Outlet Pressure to Avoid Internal Parts Damage - The Outlet Pressure Rating: 3 psi above outlet pressure setting
Temperature Capabilities: -20° to 160°F
Pressure Registration: Internal
Approximate Weight: 1.3 pounds

Table 1. Outlet Pressures and Capacities for 7345 Regulators

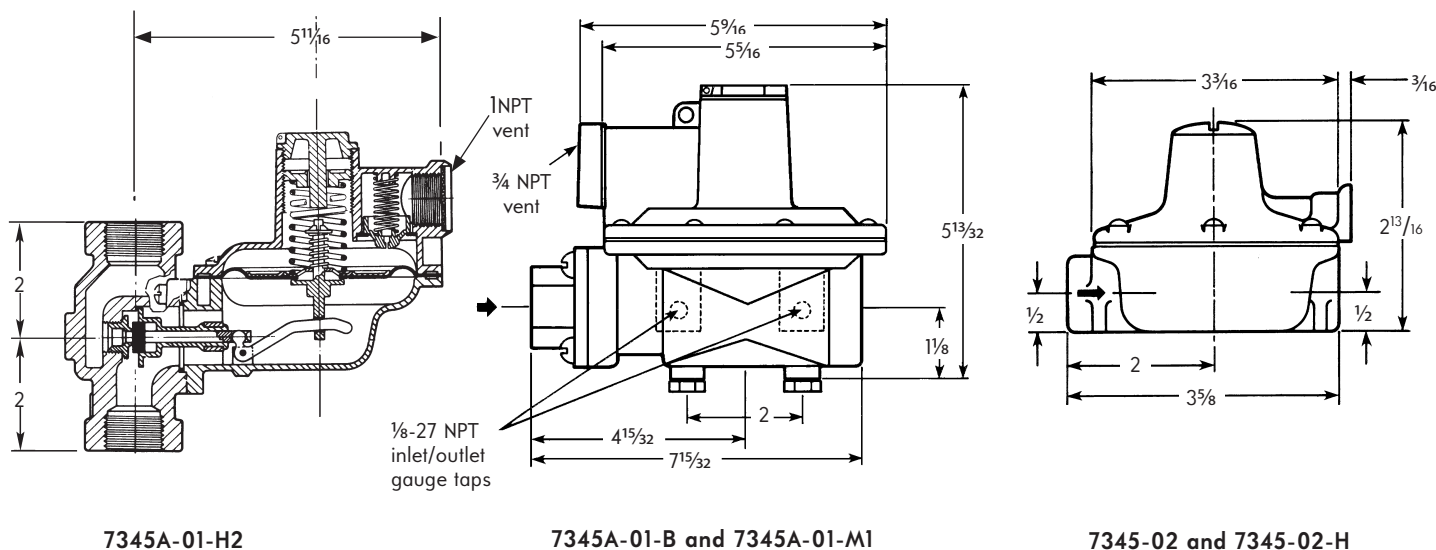
Regulator designation	Outlet pressure range	Outlet pressure setpoint	offset	Capacities in cfh of natural gas (0.6 sp gr) with inlet pressure in psi								
				5	10	25	50	75	100	150	200	250
7345-02	9.25-13" wc	11" wc	1" wc	-	61	100	144	163	180	210	234	259
7345-01-B	9-13" wc	11" wc	2" wc	274	401	623	708	676	721	-	-	-
7345A-02-H	0.5-2.7 psi	1 psi	10%	-	51	63	83	99	105	148	204	236
			20%	-	70	100	140	177	201	302	377	440
		2 psi	10%	-	62	91	120	155	178	249	304	358
			20%	-	85	146	220	300	348	480	576	683
7345A-01-H2	1-2 psi	2 psi	10%	-	290	420	550	750	900	1000	-	-
7345A-01-M1	16-35" wc	1 psi	10%	-	174	337	533	679	756	762	-	-

- = Not recommended for the given pressure range.

Table 2. Materials of Construction

Regulator	Body	Spring Case	Diaphragm	Trim Parts	Orifice
7345-02 and 7345-02-H	Zinc	Zinc	Nitrile/Nylon	Stainless Steel and plated steel	Zinc
7345-01-B and 7345-01-M1	Aluminum	Aluminum	Nitrile		Aluminum
7345A-01-H2	Cast Iron		Polyester fabric reinforced Buna-N		

DIMENSIONS inches



DIMENSIONS SHOWN ARE SUBJECT TO CHANGE. PLEASE OBTAIN CERTIFIED PRINTS FROM FIVES NORTH AMERICAN COMBUSTION, INC. IF SPACE LIMITATIONS OR OTHER CONSIDERATIONS MAKE EXACT DIMENSION(S) CRITICAL.

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 $(P_0 \leq 1/2 P_1)$

$$Q = 16.125 * P_1$$

If $(P_0 > 1/2 P_1)$

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

For 7345A-01-H2:

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

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

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

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

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. Parts of this product may exceed 160F in operation and present a contact hazard. Fives North American Combustion, Inc. urges compliance with National Safety Standards and Insurance Underwriters' recommendations, and care in operation.



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