

Installation | High Pressure Gas Regulator

INSTALLATION

The North American 7337A-3 Regulator may be installed in any orientation as long as flow through it matches the direction arrow cast on the body. Also, the spring case vent should be pointed downward.

If gas escaping through the internal relief could constitute a hazard the spring case vent must be piped to a location where escaping gas will not be hazardous. If the vented gas will be piped to another location use obstruction-free tubing or piping at least equal in size to the vent. The end of the vent pipe must be protected from anything that might clog it.

OVERPRESSURE PROTECTION

Like most pressure-reducing regulators, the 7337A-3 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 regulators ending in "-SS" provide overpressure protection by shutting off the flow of gas to the downstream system. This slam-shut device functions by internal registration.

The internal relief in this regulator does provide limited downstream overpressure protection, but it should not be considered complete overpressure protection. Refer to the capacity information section to determine the required relief valve capacity.

CAPACITY INFORMATION

Table D provides the natural gas regulating capacities of the 7337A-3 regulators at specific inlet pressures and outlet pressure settings. Flows are in SCFH (60°F and 14.7 psia) of 0.6 specific gravity gas. For specific gravity conversion factors to other gases, refer to the "Selection Section".

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

For critical flow: (P outlet absolute \leq 1/2 P inlet absolute)

$$Q = P C_g * 1.29$$

For subcritical flow: (P outlet absolute $>$ 1/2 P inlet absolute)

$$Q = \sqrt{\frac{520}{GT}} C_g P \sin \left(\frac{3417}{C_1} \sqrt{\frac{\Delta P}{P}} \right)$$

C_g = See Table C

C_1 = See Table C

G = gas specific gravity (air = 1.0)

P = inlet pressure, psia

Q = flow rate, SCFH

T = absolute temperature of gas at inlet in °Rankine

ΔP = differential pressure, psi (*The difference between the regulator inlet pressure and the maximum outlet pressure that can be tolerated by downstream components*)

Table B. 7337A-3 Regulator Springs

Regulator Designation	End Connections	Outlet Pressure Range	Compression Spring		Droop *	Approx. point above pressure setting @ which internal relief starts to discharge	
			Color	Number		7337A-3_	7337A-3_-SS
7337A-3-GYS, 7337A-3-GYS-SS	1½" NPT	8-12"w.c.	Purple	R690-5305	2"w.c.	11-18"w.c.	16-14"w.c.
7337A-3-GNS, 7337A-3-GNS-SS		14-30"w.c.	Dk. Green	R690-5304	3"w.c.	7-28"w.c.	8-16"w.c.
7337A-3-BS, 7337A-3-BS-SS ‡		1.0-2.5 psig	Blue	R690-5303	5"w.c.	7-56"w.c.	7-28"w.c.
7337A-3-2538, 7337A-3-2538-SS ‡		2.5-5.5 psig	Yellow	R690-5322	5"w.c.	7-69"w.c.	1-2 psig
7337A-3-LGY, 7337A-3-LGY-SS	1½" NPT	8-12"w.c.	Purple	R690-5305	2"w.c.	11-18"w.c.	6-14"w.c.
7337A-3-LGN, 7337A-3-LGN-SS		14-30"w.c.	Dk. Green	R690-5304	3"w.c.	7-28"w.c.	8-16"w.c.
7337A-3-LB, 7337A-3-LB-SS ‡		1.0-2.5 psig	Blue	R690-5303	5"w.c.	7-56"w.c.	7-28"w.c.
7337A-3-2534, 7337A-3-2534-SS ‡		2.5-5.5 psig	Yellow	R690-5322	5"w.c.	7-69"w.c.	1-2 psig
7337A-3-LGY1, 7337A-3-LGY1-SS	1½" NPT	8-12"w.c.	Purple	R690-5305	2"w.c.	11-18"w.c.	6-14"w.c.
7337A-3-LGN1, 7337A-3-LGN1-SS		14-30"w.c.	Dk. Green	R690-5304	3"w.c.	7-28"w.c.	8-16"w.c.
7337A-3-LB1, 7337A-3-LB1-SS ‡		1.0-2.5 psig	Blue	R690-5303	5"w.c.	7-56"w.c.	7-28"w.c.
7337A-3-2510, 7337A-3-2510-SS ‡		2.5-5.5 psig	Yellow	R690-5322	5"w.c.	7-69"w.c.	1-2 psig

‡ Within a grouping, by changing compression springs, the "B" regulator may be made into either of two regulators above it; and those two above may be changed into each other, but they cannot be changed into "B" regulators because they lack the high pressure diaphragm head assembly.

* Droop is the difference between outlet pressure selected and that realized when operating at maximum capacities listed in this table.