

# Capacity | High Pressure Gas Regulator

## CAPACITY INFORMATION

Table D provides the natural gas regulating capacities of the 7339 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
- $\Delta P_{++}$  = differential pressure, psi (The difference between the regulator inlet pressure and the maximum outlet pressure that can be tolerated by downstream components)

Table B. 7339 Regulator Control and Slam-Shut Spring Ranges

Control (Outlet) Spring		Slam Shut Spring (optional)	Approx. point at which internal relief starts to discharge
Pressure Range	Color	Trip Range	
7 to 20"w.c.	Unpainted	24"w.c. - 2.8 psig	10"w.c. above setpoint
16 - 40"w.c.	Purple	24"w.c. - 2.8 psig	20"w.c. above setpoint
1-3.5 psig	Lt. Blue	2.0-7.3 psig	2.75 psig above setpoint
2.75-6 psig	Orange	2.0-7.3 psig 3.2-11 psig	3.5 psig above setpoint
5-16 psig	Red	3.2-11 psig 5.8-21 psig	6 psig above setpoint
14-35 psig*	Zinc	—	—

\* This spring is not available in the "slam-shut" versions.

— Not available

Table C. 7339 Regulator Inlet Pressure Ratings and Flow Coefficients

Regulator Designation	Orifice Size	Max. Inlet Pressure psig	$C_g$	$C_v$	CI (when $\Delta P < 10$ psi)	CI (when $\Delta P > 10$ psi)	
7339-_-0	1/4" X 3/8"	175	53	2.0	26	26	
7339 w/slam-shut			53	2.0	26	26	
7339-_-0	3/8"		117	4.2	30	28	
7339 w/slam-shut			117	4.1	30	28	
7339-_-0	1/2"		203	7	30	28	
7339 w/slam-shut			184	5	38	36	
7339-_-0	3/4"	150	437	14.1	32	30	
7339 w/slam-shut			421	11.9	36	35	
7339-_-0	1"		100	725	20.7	36	34
7339-_-0			80	910	25.3	37	35