



Model P3

Two Stage Cylinder Gas Pressure Reducing Regulator

The Model P3 is designed for gases with inlet pressures up to 3600 psig (248 Barg). Standard adjustable outlet ranges from 1-10 (.07-.69 Barg) thru 10-500 psig (.69-34.5 Barg). Flow coefficient of 0.02, 0.06, and 0.20 available. This versatile cylinder gas regulator can be ordered with a variety of options to meet your system demands. Standard construction includes 40 micron integral filter and diffusion resistant stainless steel diaphragm. Gauges and CGA fitting is optional.

GENERAL SPECIFICATIONS

Inlet / Outlet

Port Size: 1/4" (DN8)

Maximum Inlet

Pressure: 3,600 psig (248.2 Barg)

Outlet Pressure:

1-10 psig (.07-.69 Barg)
2-25 psig (.14-1.7 Barg)
2-50 psig (.14-3.4 Barg)
2-100 psig (.14-6.9 Barg)
3-250 psig (.21-17.2 Barg)
5-500 psig (.34-34.5 Barg)

Body End

Connections: FNPT
CGA End Connection

Body and Spring Chamber

Material: 316L SST/316L SST
Brass/6061 AL

Wetted

Trim Material: See Table 3

Max Temperature:

PCTFE -45 to 185°F (-42.7 to 85 °C)
Polyimide -45 to 575°F (-42.7 to 301 °C)
TFE -45 to 275°F (-42.7 to 135 °C)

Approx. Weight: 3.9 lbs (1.77 kg)

TYPICAL APPLICATIONS

- Cylinder Gas
- Carrier Gas
- Calibration Gas
- Laser Gas
- Medical Gas

FUNCTIONAL PERFORMANCE

Supply Pressure

Effect: 0.01/100 psig (0.0007/6.9 Barg)

Temperature

Coefficient: 0.2 psig/ °F (0.01Barg/ °C)

Design Proof

Pressure: 7,200 psig (496.4 Barg)

Design Burst

Pressure: 14,440 psig (995.6 Barg)

Internal Volume:

13.8 cc

Design Leakage

Outboard: 1x10⁻⁹ scc/sec He
Inboard 1x10⁻⁹ scc/sec He

Cv Capability:

0.02, 0.06 and 0.20

OPTION DEFINITION FOR TABLE 9

Captured Vent - (N, D, or E)

The captured vent feature can only be installed on regulators with 316L SST body and spring chamber material. The design is for maximum safety for the user when handling toxic or hazardous media. The user can easily pipe this vent to a safe location. It features a 1/8" FNPT port located on the spring housing. This feature can be incorporated into a self-relieving regulator that provides an additional port to permit the piping away of the expelled media.

Cleaned for Oxygen Service - (M)

This is a requirement for gaseous oxygen environments. All regulators requiring advanced cleaning shall be processed according to strict guidelines.

Diaphragm Valve - (F)

The diaphragm valve is a shutoff valve. The resolution is coarse. The extended leg allows easy access to the knob when it is attached to a regulator. The valve is 1/4" male x 1/4" female outlet. This type of valve is sold about 90% of the time.

Mounting Bracket - (5)

The mounting bracket is a base, or step type. The material is 303 stainless steel. The bracket mounts to the back of the single stage, and back pressure regulators, via 10/32 screws.

Packed Valve - (G)

The packed valve is a metering valve. The resolution is very fine. The packing around the stem is Teflon. The valve is 1/4" male x 1/4" male outlet.

Panel Mount - (A or B)

The panel mount feature requires a panel cut out of 1-3/8", complete with a threaded spring housing, and a panel mount ring to secure the regulator.

Relief Valve - (H, J, K, or L)

The relief valve main function is to relieve excess downstream pressure due to system malfunctions. This feature prevents over pressurization by automatically venting of gas or liquid. The valve is fully adjustable and is 1/4" male x 1/4" male.

Tamper Proof - (1)

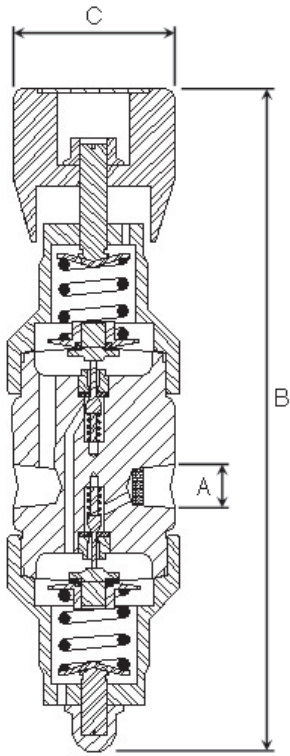
In this feature the control knob is removed and replaced with an acorn nut. The user can set the outlet pressure and securely tighten the nut, preventing any unwanted adjustments on the regulator.

Colored Knobs - (2, 3, 4, 5, 8, 9 and W)

In this feature the control knob is anodized aluminum either in black, gold, chrome, purple, blue, green or red, compared to the standard red composite knob. This allows for color coding of processes.

About Two Stage Regulators

Two stage regulators provide precise outlet pressure control of gases with variation in supply pressure. The P3 features low operating torque, accurate adjustment and is capable of high flows with minimal pressure drop.



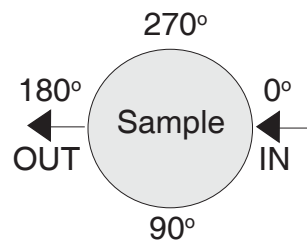
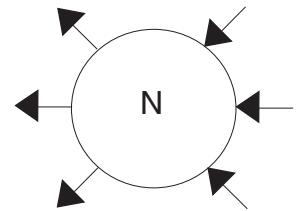
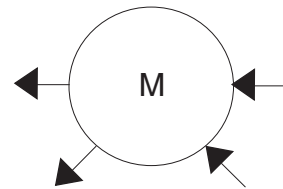
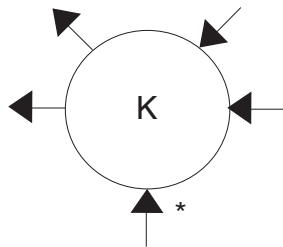
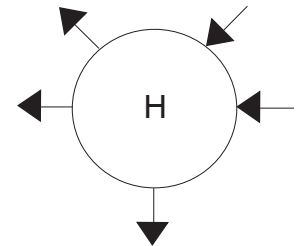
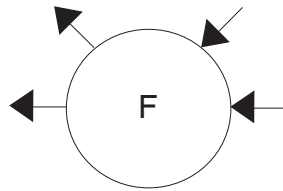
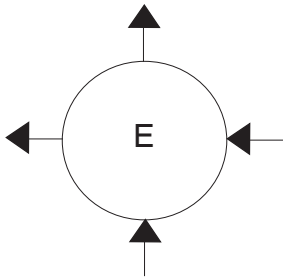
**Dimensions and Weights
English Units (Inches & lbs)**

Body Size (A)	B	C	Weight
1/4"	8.75"	1.99"	3.9 lbs

Metric Units (mm & kg)

Body Size (A)	B	C	Weight
DN8	209.6	50.5	1.77 kg

Porting Configuration Guide



* Used as a purge port.

MODEL P3 PRODUCT CODE 01/19/09
(COMPOSITE RED KNOB STANDARD)

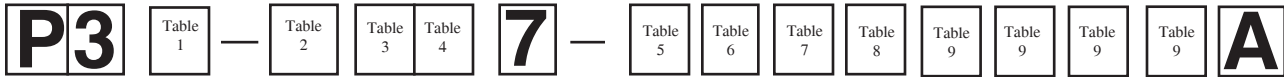


TABLE 1 - BODY SIZE/Cv		
Size	Cv	CODE
1/4" FNPT (DN8 FNPT)	0.20	3
	0.06	2
	0.02	1

TABLE 2 - BODY/SPRING CHAMBER	
Body/Spring Chamber Mat'l.	CODE
316L SST/316L SST	S
Brass/6061 AL	B

TABLE 3 - TRIM MATERIALS		
Diaphragm , Seat Retainer, Poppet & Poppet Spring	Seat Material	CODE
302 SST w/Tefzel ring, 316L SST, 316L SST, Inconel X-750	PCTFE	1
	Polyimide	2
	TFE	3
Inconel w/TFE liner, Monel R-405, Monel R-405 Inconel X-750	PCTFE	4
	Polyimide	5
	TFE	6
Hastelloy C-276 w/TFE liner, Hastelloy C-276, Hastelloy C-276, Hastelloy C-276	PCTFE	A
	Polyimide	B
	TFE	C

TABLE 4 - PORTING CONFIGURATION	
Description	CODE
See Porting Chart	E
	F
	H
	K
	M
	N

TABLE 5 - END CONNECTIONS	
End Connection(s)	CODE
FNPT	1
CGA End Connection #320	4
CGA End Connection #330	5
CGA End Connection #346	2
CGA End Connection #350	3
CGA End Connection #540	A
CGA End Connection #580	H
CGA End Connection #590	L
CGA End Connection #660	R

Consult factory for other CGA connections.

TABLE 6 - RANGE SPRING/OUTLET PRESSURE	
Psig (Barg)	CODE
1 - 10 (.07 - .69)	1
2 - 25 (.14 - 1.7)	2
2 - 50 (.14 - 3.4)	3
2 - 100 (.14 - 6.9)	4
3 - 250 (.21 - 17.2)	5
5 - 500 (.34 - 34.5)	6

When ordering a valve per one of Cashco's special drawings, the code "X" and the 5-digit number following override all other options. Otherwise, proceed with Tables 7 thru 9.

TABLE 7 - OUTLET GAUGE	
Psig (Barg)	CODE
0 - 15 (0 - 1.0)	A
0 - 30 (0 - 2.1)	B
0 - 60 (0 - 4.1)	C
0 - 100 (0 - 6.9)	D
0 - 160 (0 - 11.0)	E
0 - 300 (0 - 20.7)	F
0 - 600 (0 - 41.4)	G
No Outlet Gauge	0

TABLE 8 - INLET GAUGE	
Psig (Barg)	CODE
0 - 15 (0 - 1.0)	A
0 - 30 (0 - 2.1)	B
0 - 60 (0 - 4.1)	C
0 - 100 (0 - 6.9)	D
0 - 160 (0 - 11.0)	E
0 - 300 (0 - 20.7)	F
0 - 600 (0 - 41.4)	G
0 - 1000 (0 - 69.0)	H
0 - 2000 (0 - 137.9)	I
0 - 3000 (0 - 206.9)	J
0 - 5000 (0 - 344.9)	K
No Inlet Gauge	0

TABLE 9 - OPTIONS			
OPTIONS	CODE	OPTIONS	CODE
No Option	0	Relief Valve: 350-600 psig *	L
Panel Mount 1st Stage	A	Oxygen Cleaned Per Spec #S-1134	M
Panel Mount 2nd Stage	B	Tamper Proof	1
Captured Vent 1st Stage **	N	Black Knob	2
Captured Vent 2nd Stage **	D	Gold Knob	3
Captured Vent 1st & 2nd Stage **	E	Chrome Knob	4
Diaphragm Valve	F	Purple Knob	5
Packed Valve	G	Blue Knob	8
Relief Valve: 3-50 psig *	H	Green Knob	9
Relief Valve: 50-150 psig *	J	Red Knob	W
Relief Valve: 150-350 psig *	K		

* When selecting Relief Valve indicate SET POINT PRESSURE in Special Instructions on order.
 ** 316L SST body & spring chamber ONLY
 For Special Construction Other Than Above Contact Cashco for Special Product Code

1. NUMERIC digits assigned first in "ascending" order.
2. ALPHA designations are assigned second in "alphabetical" order.
3. Left justify.
4. Add "0" to all unused squares.
5. If insufficient quantity of squares, consult factory for proper code.

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