

MODEL SA5

ULTRA HIGH PURITY BACK PRESSURE REGULATOR

OVERVIEW

Model SA5 is a high performance spring-operated, flow-to-open back pressure regulator with an internal pressure balancing piston-cylinder that provides medium flow capacity and high pressure drop capability.

FEATURES

- All SST wetted trim materials.
- Electro-polished.
- Tube-end connections.
- High pressure capability.
- Body Finish - Internal Surface Only
Barstock Body - 10 μ -in R_a average surface finish.
- In-line maintenance.

APPLICATIONS

For “electronic grade” and other ultra high purity fluids. For either gaseous or liquid service. Most common fluids are high purity oxygen, nitrogen, hydrogen, helium and argon.



MODEL SA5



LINE SIZES AVAILABLE

3/4" (DN20), 1" (DN25)



END CONNECTIONS

TUBE-ENDS



COMMON APPLICATIONS

GASEOUS OR LIQUID SERVICE,
HIGH PURITY OXYGEN, NITROGEN,
HYDROGEN, HELIUM, ARGON



DESIGN PRESSURE

OPERATING: UP TO 300 psig (20.7 Barg)
OUTLET: 5-300 psig (0.34-20.7 Barg)

TECHNICAL SPECIFICATIONS

BODY SIZES

3/4" & 1" (DN20 & 25)

MAXIMUM PRESSURES

Design Pressure up to 600 psig
Operating Pressure up to 300 psig
Allowable Delta Pressure 300 psid

Function of body size and elastomeric internal materials. See Table 4 on Product Coder for Temperature Ratings. (Internals can withstand a full vacuum.)

OUTLET PRESSURE RANGE

5 – 300 psig (.34 – 20.7 Barg)

In multiple spring ranges. See Table 6 of "Product Coder" for available range springs.

TEMPERATURE RANGE

-20 to +400° F (-29° to +204° C)

Function of elastomeric internal materials. See Position 7 on Product Coder.

FLOW CAPACITY

FUNCTION OF BODY FORM			
BODY SIZE		BODY FORM	WIDE OPEN Cv
in	(DN)		
3/4", 1"	(20, 25)	BS	3

AGGREGATE INTERNAL LEAKAGE

Combination of dynamic seal and seat leakage rates:
0.001% of rated Cv.

HELIUM LEAK TEST

Inboard leakage less than 1×10^{-9} std cc/sec, actual test.

MATERIAL SPECIFICATIONS

BODY FORM

BS - Barstock; All sizes.

BODY MATERIALS - SST

BS - ASTM A479, Tp. 316L.

Spring Chamber fabricated from materials of 316L SST.

INTERNAL TRIM & MISC MATERIALS

Trim -	316L SST
Diaphragm -	17-7PH SST
Static Seals -	FFKM - Perfluoro Elastomer O-ring;
Dynamic Seal -	Type "UC": TFE/SST or CTFE/SST
Seat Disc -	PolyAll (GN2, He, Ar, H2) V-TFE (GOX) CTFE (All above fluids)
Cap Screws -	Ag-plated SST
Flange Bolting -	SST
Adjusting Screw -	Ag-plated SST
Diaphragm Seal -	Ag-jacketed C-ring

END CONNECTIONS

Tube-ends for buttwelding using orbital welder. Wall thickness = 0.065 in. (1.65 mm); Nominal Body Size = Tube OD.

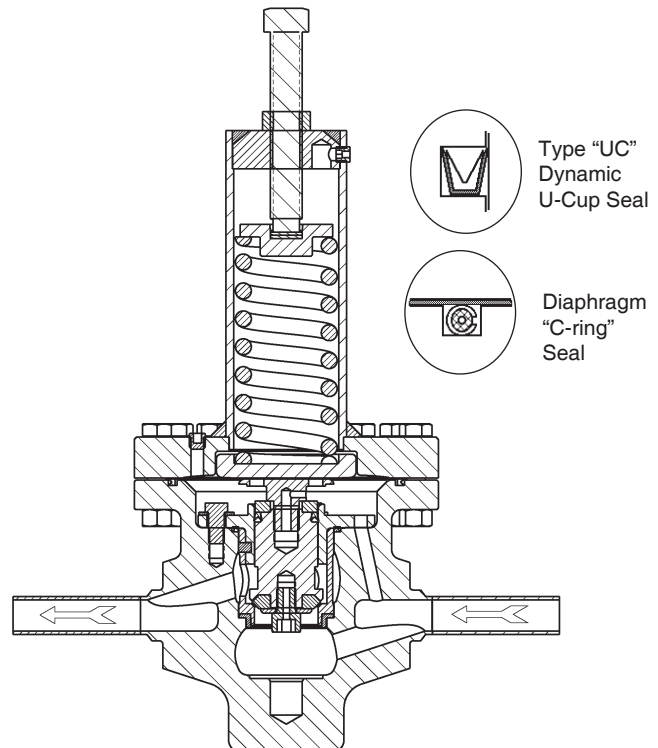
SURFACE FINISH

Metallic parts are electro-polished, passivated, and ultra-sonically cleaned to Cashco cleaning spec. #S-1662.

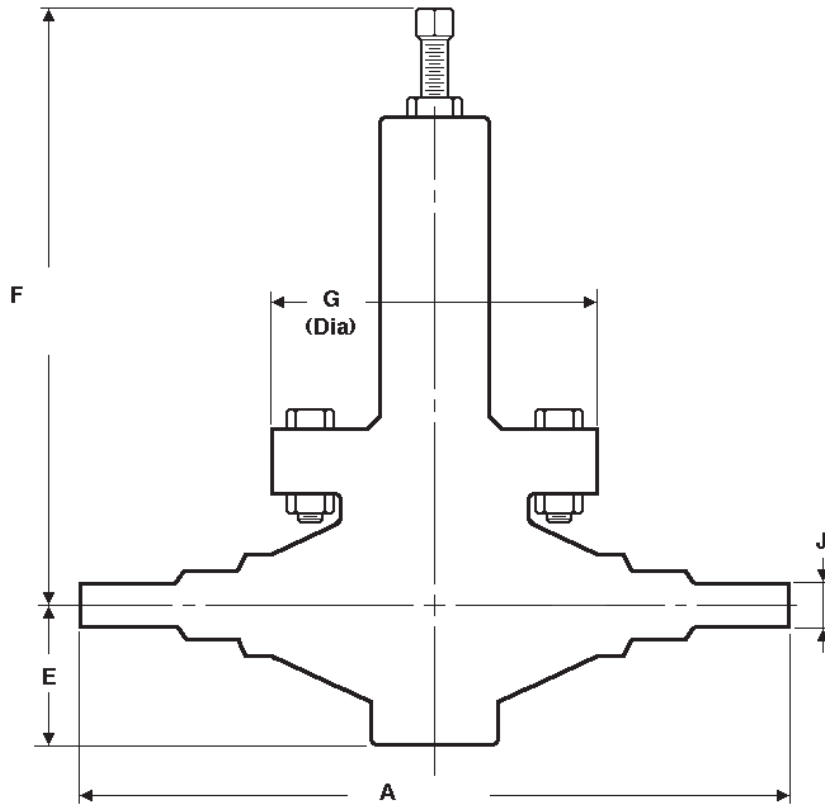
Surface Finish - μ -in.		
Barstock	Metal Trim Parts	10 R _a Avg

OPTION SPECIFICATIONS

OPT-1: CLOSING CAP. Modification to top of spring chamber to include a 316L SST closing cap to cover adjusting screw and discourage frequent adjusting of the set point.



DIMENSIONS & WEIGHTS



ENGLISH UNITS							
Size in	Dimension (inches)						Weight (lbs.)
	A	E	F	F-Opt-1	G	J	
3/4"	10.75	2.75	11.75	12.92	6.00	.75	30
1"	11.75	2.75	11.75	12.92	6.00	1.00	

METRIC UNITS							
Size (DN)	Dimension (mm)						Weight (kg)
	A	E	F	F-Opt-1	G	J	
(20)	273	70	298	328	152	19.1	14
(25)	298	70	298	328	152	25.4	

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MODEL SA5 PRODUCT CODER 03/28/24

B5 POS 3 — **S L** POS 7 **7** — **T** POS 11 **0 0** POS 14 **0 0 0 D**

POSITION 3 - SIZE & STYLE		
Size		CODE
in.	(Dn)	
3/4"	(20)	B
1"	(25)	C

POSITION 7 - TRIM MATERIALS						
Temperature Range	Service	Diaphragm	Seat	Seals		CODE
				Static	Dynamic	
-40 to +225°F (-40 to +108°C)	GN2, Ar, H2, He	17-7 PH SST	PolyAll	FFKM	Type "UC" TFE/SST	E
-150 to +400°F (-101 to +205°C)	* ALL	17-7 PH SST	V-TFE	FFKM	Type "UC" TFE/SST	N
-150 to +350°F (-101 to +177°C)	* ALL	17-7 PH SST	CTFE	FFKM	Type "UC" TFE/SST	R
-325 to +350°F (-163 to +177°C)	* ALL	17-7 PH SST	CTFE	FFKM	Type "UC" CTFE/SST	Z

* ALL = GOX, GN2, Ar, H2 and He.

POSITION 11 - RANGE SPRING		
Pressure Range		CODE
psig	(Barg)	
5 - 20	(.34 - 1.4)	A
10 - 35	(.69 - 2.4)	B
20 - 80	(1.4 - 5.5)	C
30 - 150	(2.1 - 10.3)	D
70 - 200	(4.8 - 13.8)	E
100 - 300	(6.9 - 20.7)	F

POSITION 14 - SPRING CHAMBER OPTION		
Description	Option	CODE
None	-	0
Closing Cap	-1	Y

*** For information on ATEX see pages 11 & 12 on the IOM.**

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