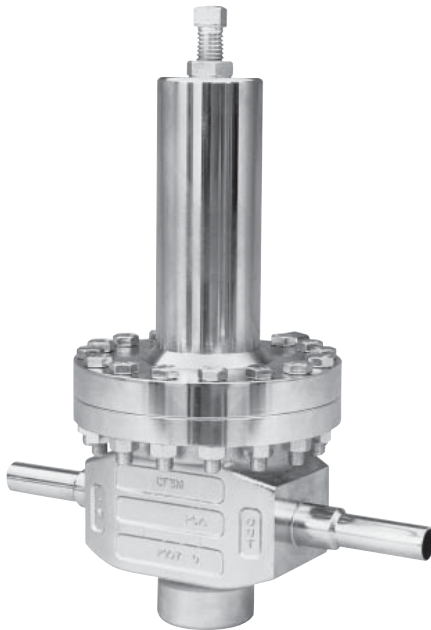


## MODELS CA5 and SA5

### ULTRA HIGH PURITY BACK PRESSURE REGULATORS Spring-Operated: 3/4" - 1" (DN20 – DN25)

Models CA5 and SA5 are high performance spring-operated, flow-to-open back pressure regulators with an internal pressure balancing piston-cylinder that provides medium flow capacity and high pressure drop capability.



**Model CA5**  
(Investment Casting)

#### 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.

#### FEATURES

- All SST wetted trim materials.
- Electro-polished finish.
- Tube end connections.
- High pressure capability.
- Body Finish -15  $\mu$ -in. Ra average surface finish is standard. (Opt.-77 10  $\mu$ -in. Ra average surface finish available for Barstock body only).
- In-line maintenance.

#### 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)	IC, 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 X 10<sup>-9</sup> std cc/sec, actual test.

## MATERIAL SPECIFICATIONS

### BODY FORM

IC - Investment Casting; 3/4" & 1" (DN20 & 25).  
BS - Barstock; All sizes.

### BODY MATERIALS - SST

IC - ASTM A351, Gr. CF3M.  
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 - TFE/SST U-cup  
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

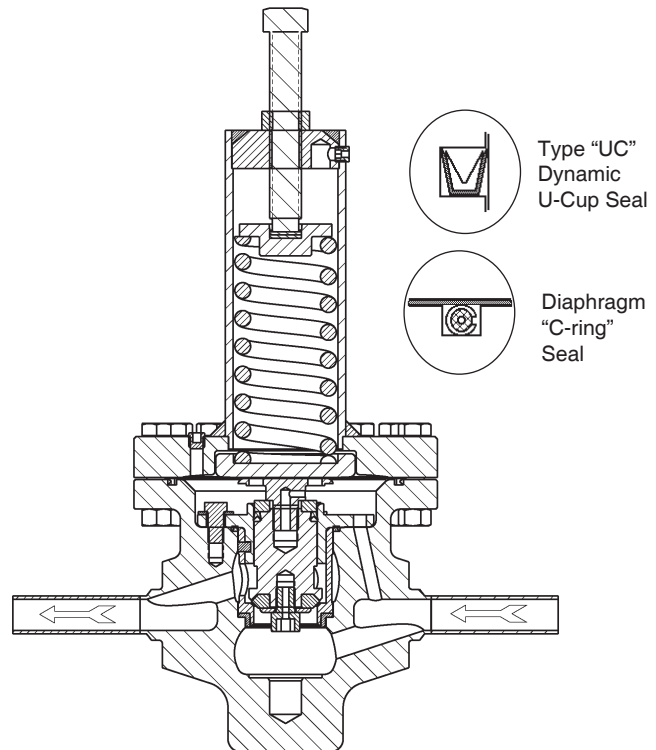
Tube-ends for buttwelding using orbital welder. Wall thickness = 0.065 in. (1.65 mm); Nominal Body Size = Tube OD.

### SURFACE FINISH

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

Surface Finish - $\mu$ -in.	
Metal Trim Parts	15 Ra Avg

Alternate: See Opt-77.

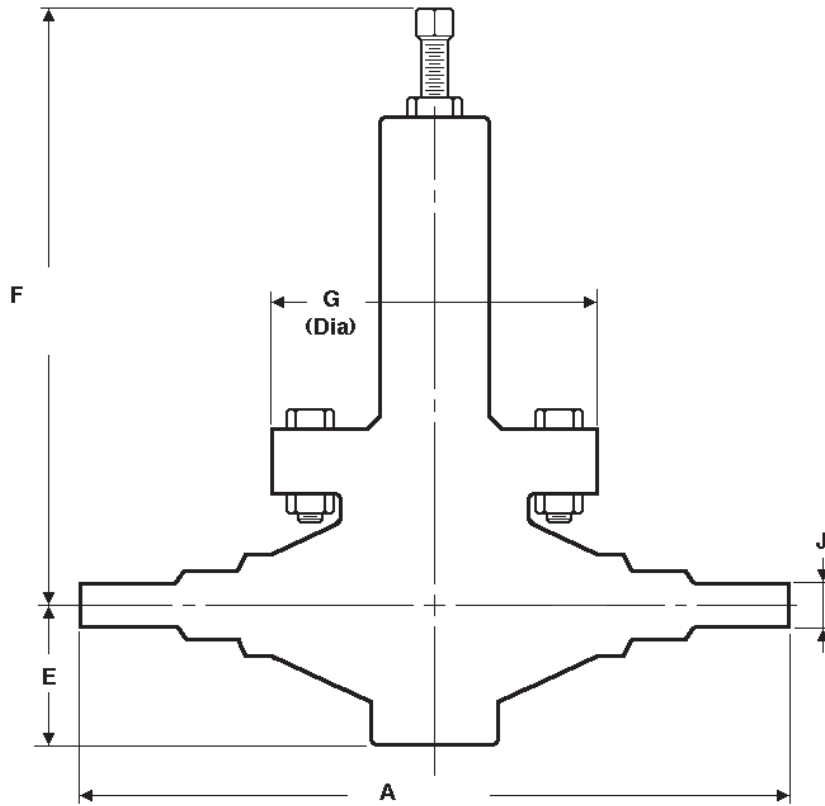


## OPTION SPECIFICATIONS

**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.

**OPT-77: 10  $\mu$ -in Ra AVG. SURFACE FINISH.** For Barstock body only. Body and trim electro-polished to 10  $\mu$ -in Ra average surface finish.

## DIMENSIONS & WEIGHTS



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

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

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# MODELS CA5 & SA5 PRODUCT CODER

03/11/16



POSITION 1 & 2 - MODEL	
Body	CODE
SA5 - Barstock	B5
CA5 - Investment Casting	C5
See Position 3 & 5	

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

POSITION 5 - BODY / SPRING CHAMBER MATERIALS	
Materials	CODE
CF3M/316L SST Inv. Casting (Select "C5" in Position 1 & 2)	C
316L SST/316L SST (Select "B5" in Position 1 & 2)	S

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	U-Cup; TFE/SST	Type "UC" TFE/SST	U
-150 to +400°F (-101 to +205°C)	* ALL	17-7 PH SST	V-TFE	U-Cup; TFE/SST	Type "UC" TFE/SST	W
-150 to +350°F (-101 to +177°C)	* ALL	17-7 PH SST	CTFE	U-Cup; TFE/SST	Type "UC" TFE/SST	H
-325 to +350°F (-163 to +177°C)	* ALL	17-7 PH SST	CTFE	U-Cup; TFE/SST	Type "UC" TFE/SST	K

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

POSITION 8 - Product Classification Under European "Pressure Equipment Directive"		
PRODUCT DESTINATION	HAZARD CATEGORY	CODE
Anywhere except Europe	N/A	7
European Countries *	Sound Engineering Practice (SEP)	S

\* For products to be placed in service in Europe - Ref to Directive 97/23/EC. Contact Cashco for Assistance.

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

POSITION 16 - SURFACE FINISH OPTIONS			
Body	Option	Description	CODE
Barstock & Investment Casting	Standard	High Purity Electro Polish to 15 μ-in Ra Average Finish Cleaned to Spec #S-1662; Helium Leak Test per Spec #S-1661.	0
Barstock ONLY	-77	High Purity Electro Polish to 10 μ-in Ra Average Finish. Cleaned to Spec #S-1662; Helium Leak Test per Spec #S-1661.	4

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