

MODEL CA5 & SA5

ULTRA HIGH PURITY BACK PRESSURE REGULATOR

OVERVIEW

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.

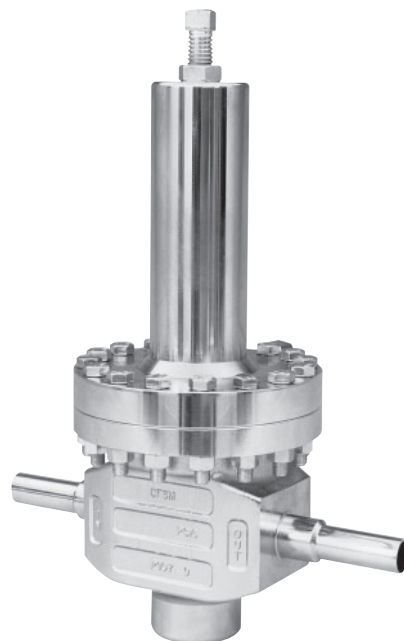
FEATURES

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

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 CA5
(Investment Casting)



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)	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 1×10^{-9} 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 - 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

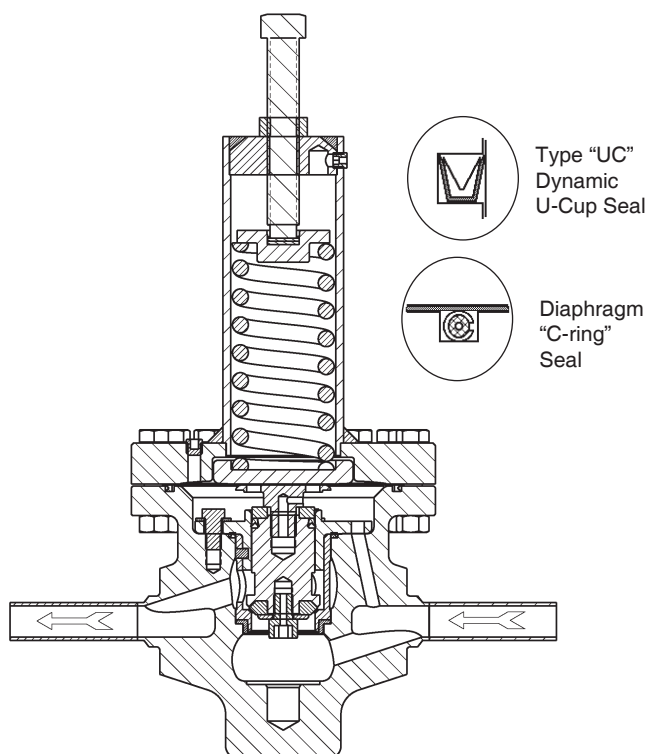
END CONNECTIONS

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.

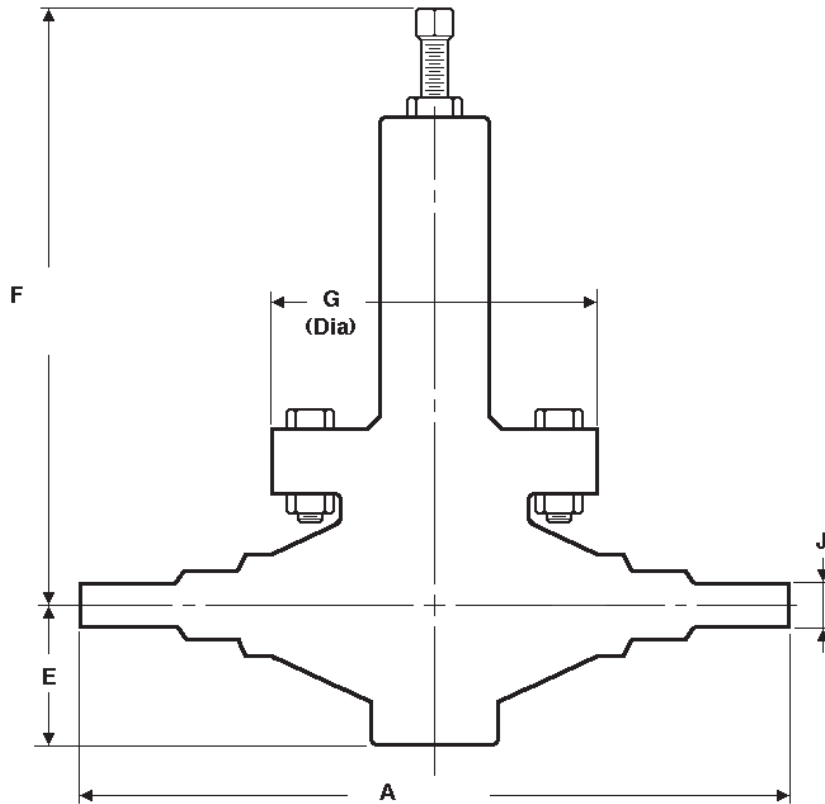
Surface Finish - μ -in.		
Investment Cast Body	Metal Trim Parts	10 R _a Avg
Barstock		10 R _a Avg



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	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

02/07/20

POS 1 & 2	POS 3	—	POS 5	L	POS 7	7	—	T	POS 11	0	0	POS 14	0	0	0	D
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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		
Body	Materials	CODE
Investment Casting	CF3M/316L SST 10 R _A (Select "C5" in Position 1 & 2)	C
Bar Stock	316L SST/316L SST 10 R _A (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	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.**

Cashco, Inc.
P.O. Box 6
Ellsworth, KS 67439-0006
PH (785) 472-4461
Fax. # (785) 472-3539
www.cashco.com
email: sales@cashco.com
Printed in U.S.A. CA5/SA5-TB

Cashco GmbH
Handwerkerstrasse 15
15366 Hoppegarten, Germany
PH +49 3342 30968 0
Fax. No. +49 3342 30968 29
www.cashco.com
email: germany@cashco.com

Cashco do Brasil, Ltda.
Al.Venus, 340
Indaiatuba - Sao Paulo, Brazil
PH +55 11 99677 7177
Fax. No.
www.cashco.com
email: brazil@cashco.com