MODELS CA-1 & CA-2
TECHNICAL BULLETIN

CA-TB
01-05

MODEL CA-1

⚠ CAUTION

This is not a safety device and must not be substituted for a code approved pressure safety relief valve or a rupture disc.

MODEL CA-1
BACK PRESSURE / RELIEF REGULATOR

The Model CA-1 is a compact, forged bronze body back pressure regulator used to control inlet pressure level between atmospheric and 375 psig (25.8 Barg) by relieving excess pressure.

FEATURES

Self-Aligning Plug/Seat: Seat ring floats within mechanically-contained zone.

Tight Shutoff: Lapped seat surfaces allow for leakage rates to approach levels of composition seats.

APPLICATIONS

Widely used in liquid recirculation around a pump. Used as a bypass flow regulator in fuel oil systems. For general air, oil, water, and gas services. Not recommended for steam service.

STANDARD/GENERAL SPECIFICATIONS

Body Size: 1/8" or 1/4" (DN6 or 8) with NPT female pipe threads. Inlet connection size is equal to outlet connection size.

Body Orientation: Three to choose from:
Globe: Side inlet, side outlet.
Angle: Side inlet, bottom outlet.
Flow-Thru: Two side inlets, bottom outlet.

Body Material: Forged Bronze - ASTM B283, Alloy 37700.

Spring Chamber Material: Bronze.

Diaphragm: Metal – 302 SST. Composition – Buna-N. See Table 2.

Seat: Metal – 303 SST. See Table 2.

Gaskets: PTFE

Temperature Range: SST Diaphragm: -325 to +300°F (-198 to +149°C).
Buna-N Diaphragm: -20 to +200°F (-29 to +94°C).

Maximum Design Pressure: 375 psig (25.8 Barg).

Range Springs:

Spring Ranges	
psig	**(Barg)**
2 - 15	(.14 - 1.0)
2 - 30	(.14 - 2.1)
10 - 50	(.69 - 3.5)
40 - 90	(2.8 - 6.2)
40-125	(2.8 - 8.6)
100-175	(6.9-12.0)
175-360	(12.0-24.8)

Cv's / Capacities: Up to 0.46 Cv (0.40 kv) (See Table 4.)

ISO 9001 Registered

OPTION SPECIFICATIONS

Option-2: HANDWHEEL. Plastic handwheel for frequent set point changes.

Option-5: CRYOGENIC CONSTRUCTION. Metal diaphragm with S2 Trim only. SST adusting screw. Cleaned for oxygen service per Cashco Spec. #S-1134. Applicable temperature range -325° to +100°F (-198° to +38°C). Mount in horizontal piping with adjusting screw oriented downwards.

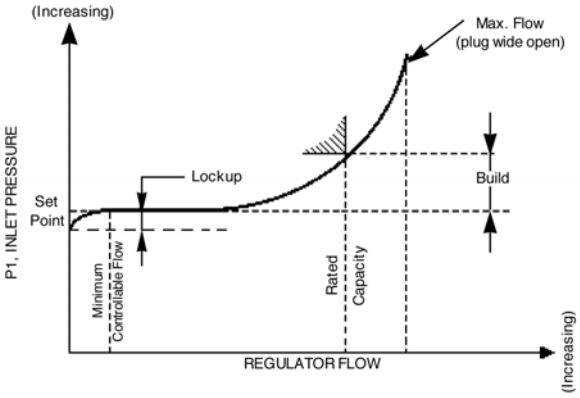
APPLICATION AND SELECTION

The following considerations will help determine a suitable selection for an application.

STEP 1. FIVE KNOWNS. The following minimal parameters / information must be available before a selection procedure can begin:

a. Service Fluid - What is it? Liquid or gas? SG (std. cond.).
b. Inlet Pressure - P_1 (upstream pressure). How much can P_1 vary as flow varies?
c. Outlet Pressure - P_2 (downstream pressure).
d. Desired capacity - Cv, GPM, SCFH; minimum & maximum.
e. Fluid temperature - T_1, SG (actual).

STEP 2. PRESSURE BUILD. Once setpoint is reached and valve opens, all self-contained back pressure/relief regulators "build" from a setpoint pressure level as the flow rate increases.



This deviation in setpoint is described as "% build". Build is expressed on increasing flow, starting from a minimum flow level. The "% build" must be known to enter the capacity tables. The acceptable level of setpoint deviation should be known for the min-to-max flow variation.

TECHNICAL SPECIFICATIONS

TABLE 1
BODY AND SPRING CHAMBER
MAXIMUM PRESSURE WITH TEMPERATURE RATINGS

Materials Body/Sp. Ch./TDN	Inlet Pressure*		Temperature	
	psig	(Barg)	°F	(°C)
BRZ/BRZ/S2	375	(25.8)	-325 to +225	(-198 to +107)
	365	(25.1)	-325 to +250	(-198 to +121)
	335	(23.1)	-325 to +300	(-198 to +149)
BRZ/BRZ/S2B	375	(25.8)	-20 to +200	(-29 to +94)

* Inlet and outlet at same P vs. T ratings.

TABLE 2
TRIM MATERIAL COMBINATIONS

Part	Trim Designation Number	
	S2 *	S2B
Diaphragm	302 SST	Buna-N
Plug	303 SST	303 SST
Seat Ring	303 SST	303 SST
* For cryogenic applications		

TABLE 3
MISCELLANEOUS MATERIALS

Part	Material
Pressure Plate Nut & Lock Washer	SST
Pressure Plate	Brass
Diaphragm Stop	Brass
Spring Button	Brass
Range Spring	SST
Adjusting Screw & Lock Nut	Std. – Plated CS

TABLE 4
CAPACITY - Cv (F_L = 0.90)
1/8" or 1/4" (DN6 or DN8) Sizes

Setpoint (P_1) Pressure psig (Barg)	Metal Diaphragm % Build				Composition Diaphragm % Build				Wide Open
	5%	10%	20%	30%	5%	10%	20%	30%	
10 (.69)	.03	.07	.17	.27	.04	.09	.22	.35	0.50
25 (1.72)	.03	.08	.20	.30	.05	.10	.24	.38	
50 (3.44)	.08	.19	.25	.36	.11	.24	.32	.46	
100 (6.9)	.07	.16	.24	.34	.09	.20	.30	.44	
150 (10.3)	.07	.16	.25	.36	.09	.20	.32	.46	
250 (17.2)	.08	.18	.22	.30	.08	.20	.24	.34	
300 (20.7)	.06	.16	.20	—	.07	.18	.22	—	
345 (23.8)	.07	—	—	—	.08	—	—	—	

METRIC CONVERSION FACTOR: Cv / 1.16 = kv

TABLE 5 — AIR CAPACITY – SCFH
S.G. = 1.0 T = 60°F F_L = 0.90
All Sizes – Composition Diaphragm Only

Outlet Pressure (psig)	Setpoint Pressure (psig)	1/8" (DN6) Body % Build				1/4" (DN8) Body % Build			
		5%	10%	20%	30%	5%	10%	20%	30%
ATM	10	40	80	210	340	40	80	210	340
	25	70	150	380	630	70	150	380	630
	50	260	590	850	1300	260	590	850	1300
	100	380	880	1430	SONIC	380	880	1430	2250
	150	550	1270	SONIC	SONIC	550	1270	2210	SONIC
	250	790	SONIC	SONIC	SONIC	790	2050	2680	SONIC
	300	820	SONIC	SONIC	HI BUILD	820	2200	SONIC	HI BUILD
	345	1070	HI BUILD	HI BUILD	HI BUILD	1070	HI BUILD	HI BUILD	HI BUILD
25	50	250	560	800	1220	250	560	800	1220
	100	380	880	1430	2250	380	880	1430	2250
	150	550	1270	2210	3420	550	1270	2210	3420
	250	790	2050	2680	4100	790	2050	2680	4100
	300	820	2200	2920	HI BUILD	820	2200	2920	HI BUILD
	345	1070	HI BUILD	HI BUILD	HI BUILD	1070	HI BUILD	HI BUILD	HI BUILD
50	100	360	830	1350	2120	360	830	1350	2120
	150	540	1260	2190	3380	540	1260	2190	3380
	250	790	2050	2680	4100	790	2050	2680	4100
	300	820	2200	2920	HI BUILD	820	2200	2920	HI BUILD
	345	1070	HI BUILD	HI BUILD	HI BUILD	1070	HI BUILD	HI BUILD	HI BUILD
100	150	460	1070	1850	2860	460	1070	1850	2860
	250	770	2010	2610	4000	770	2010	2610	4000
	300	810	2180	2900	HI BUILD	810	2180	2900	HI BUILD
	345	1070	HI BUILD	HI BUILD	HI BUILD	1070	HI BUILD	HI BUILD	HI BUILD
150	250	700	1820	2380	3630	700	1820	2380	3630
	300	770	2070	2750	HI BUILD	770	2070	2750	HI BUILD
	345	1030	HI BUILD	HI BUILD	HI BUILD	1030	HI BUILD	HI BUILD	HI BUILD

NOTE: Where "SONIC" is indicated within the above capacity tables, outlet velocity with Schedule 40 pipe has reached sonic velocity of 1118 fps. Additional flow cannot be obtained, and pipeline velocity is in excess of customary pipe velocity design limits. Max. flow will be approximatley the last indicated value in the column above "SONIC".

METRIC CONVERSION FACTORS: psig / 14.5 = Barg; SCFH / 35.31 = Sm^3/Hr; SCFH / 37.32 = Nm^3/Hr

TABLE 6 — WATER CAPACITY – GPM
S.G. = 1.0 T = 60°F F_L = 0.90
All Sizes – Composition Diaphragm Only

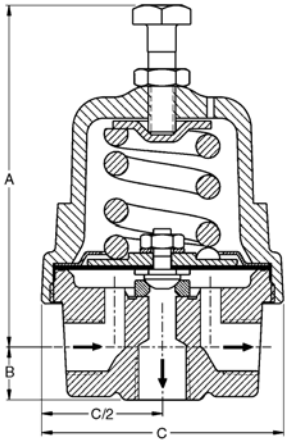
Outlet Pressure (psig)	Setpoint Pressure (psig)	1/8" (DN6) Body % Build				1/4" (DN8) Body % Build			
		5%	10%	20%	30%	5%	10%	20%	30%
0	10	0.1	0.3	0.8	1.3	0.1	0.3	0.8	1.3
	25	0.3	0.5	1.4	1.9	0.3	0.5	1.4	1.9
	50	0.7	1.6	2.2	3.3	0.7	1.6	2.2	3.3
	100	0.8	1.9	3.2	4.5	0.8	1.9	3.2	4.5
	150	1.0	2.3	3.9	5.8	1.0	2.3	3.9	5.8
	250	1.2	3.0	3.7	5.5	1.2	3.0	3.7	5.5
	300	1.1	2.9	3.8	HI BUILD	1.1	2.9	3.8	HI BUILD
	345	1.4	HI BUILD	HI BUILD	HI BUILD	1.4	HI BUILD	HI BUILD	HI BUILD
5	10	0.1	0.2	0.6	1.0	0.1	0.2	0.6	1.0
	25	0.2	0.5	1.3	2.0	0.2	0.5	1.3	2.0
	50	0.8	1.7	2.2	3.3	0.8	1.7	2.2	3.3
	100	0.8	1.9	3.2	4.5	0.8	1.9	3.2	4.5
	150	1.0	2.3	3.9	5.8	1.0	2.3	3.9	5.8
	250	1.2	3.0	3.7	5.5	1.2	3.0	3.7	5.5
	300	1.1	2.9	3.8	HI BUILD	1.1	2.9	3.8	HI BUILD
	345	1.4	HI BUILD	HI BUILD	HI BUILD	1.4	HI BUILD	HI BUILD	HI BUILD
10	25	0.2	0.4	1.1	1.8	0.2	0.4	1.1	1.8
	50	0.7	1.6	2.3	3.3	0.7	1.6	2.3	3.3
	100	0.8	1.9	3.2	4.5	0.8	1.9	3.2	4.5
	150	1.0	2.3	3.9	5.8	1.0	2.3	3.9	5.8
	250	1.2	3.0	3.7	5.5	1.2	3.0	3.7	5.5
	300	1.1	2.9	3.8	HI BUILD	1.1	2.9	3.8	HI BUILD
	345	1.4	HI BUILD	HI BUILD	HI BUILD	1.4	HI BUILD	HI BUILD	HI BUILD
15	25	0.2	0.4	1.0	1.6	0.2	0.4	1.0	1.6
	50	0.7	1.5	2.1	3.3	0.7	1.5	2.1	3.3
	100	0.9	1.9	3.2	4.5	0.9	1.9	3.2	4.5
	150	1.0	2.3	3.9	5.8	1.0	2.3	3.9	5.8
	250	1.2	3.0	3.7	5.5	1.2	3.0	3.7	5.5
	300	1.1	2.9	3.8	HI BUILD	1.1	2.9	3.8	HI BUILD
	345	1.4	HI BUILD	HI BUILD	HI BUILD	1.4	HI BUILD	HI BUILD	HI BUILD
25	50	0.6	1.3	1.9	2.9	0.6	1.3	1.9	2.9
	100	0.8	1.8	3.2	4.5	0.8	1.8	3.2	4.5
	150	1.0	2.3	3.9	5.8	1.0	2.3	3.9	5.8
	250	1.2	3.0	3.7	5.5	1.2	3.0	3.7	5.5
	300	1.1	2.9	3.8	HI BUILD	1.1	2.9	3.8	HI BUILD
	345	1.4	HI BUILD	HI BUILD	HI BUILD	1.4	HI BUILD	HI BUILD	HI BUILD

NOTE: Where ▭ is indicated, the flow has reached or exceeded the velocities indicated based on Sch. 40 pipe.
Where ▭ is indicated, the flow is into "full cavitation".

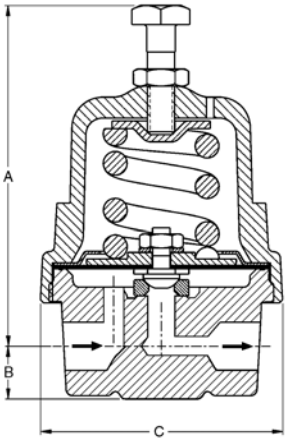
METRIC CONVERSION FACTORS: psig / 14.5 = Barg; GPM x 3.785 = LPM

Size	Max Vel. Exceeds
1/8"	5 fps
1/4"	8 fps

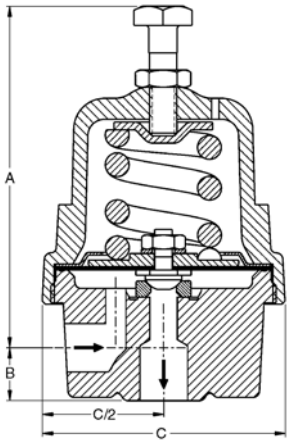
DIMENSIONS & WEIGHT



FLOW-THRU BODY DESIGN



GLOBE BODY DESIGN



ANGLE BODY DESIGN

ENGLISH UNITS – inches & lbs.

Option No.	DIMENSION - Inch			Weight - lbs.
	A	B	C	
Std.	3.38	0.50	2.25	1.1
-2	3.69			

METRIC UNITS – mm & kg

Option No.	DIMENSION - mm			Weight - kg.
	A	B	C	
Std.	89	13	57	0.5
-2	94			

PRODUCT CODE 12-14-04

TABLE 1 - SIZE		
Size	Connection Orientation	CODE
1/8" (DN6)	Globe — side inlet side outlet	1
1/4" (DN8)		2
1/8" (DN6)	Angle — side inlet, bottom outlet	B
1/4" (DN8)		C
1/8" (DN6)	Flow-Thru — two side inlets, bottom outlet	F
1/4" (DN8)		G

TABLE 2 - TRIM DESIGNATION NO.	
SST Trim	
Desig.	CODE
S2 *	S2
S2B	SB
* For Cryogenic Service	

TABLE 3 - RANGE SPRING		
psig	(Barg)	CODE
2 - 15	(.14 - 1.0)	A
2 - 30	(.14 - 2.1)	B
10 - 50	(.69 - 3.4)	C
40 - 90	(2.8 - 6.2)	D
40 -125	(2.8 - 8.6)	E
100 -175	(6.9-12.1)	F
175 -360	(12.1 -24.8)	G

Bronze Body & Spring Chamber

NPT End Connections

A	1		–	3			7	–	1			0	0	0	0	0	A

Model CA-1 Back Pressure Relief Regulator

TABLE 4 - OPTIONS		
Description	Option	CODE
Special Construction	—	X
Handwheel	-2	2
Cryogenic Construction S2 Trim Only. Includes special cleaning suitable for O2 service	-5	5

ASSIGNMENT OF "OPTION" CODES

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

MODEL CA-2

BACK PRESSURE / RELIEF REGULATOR

MODEL CA-2

⚠ CAUTION

This is not a safety device and must not be substituted for a code approved pressure safety relief valve or a rupture disc.

The Model CA-2 is a compact, forged bronze body back pressure regulator used to control inlet pressure level between atmospheric and 600 psig (41.3 Barg) by relieving excess pressure.

FEATURES

Self-Aligning Plug/Seat: Seat ring floats within mechanically-contained zone.

Tight Shutoff: Lapped seat surfaces allow for leakage rates to approach levels of composition seats.

APPLICATIONS

Widely used in liquid recirculation around a pump. Used as a bypass flow regulator in fuel oil systems. For general air, oil, water, and gas services. Not recommended for steam service.

STANDARD/GENERAL SPECIFICATIONS

Body Size: 3/8" or 1/2" (DN10 or 15) with NPT female pipe threads. Inlet connection size is equal to outlet connection size.

Body Orientation: Three to choose from:
Globe: Side inlet, side outlet.
Angle: Side inlet, bottom outlet.
Flow-Thru: Two side inlets, bottom outlet.

Body Material: Forged Bronze - ASTM B283, Alloy 37700.

Spring Chamber Material: Bronze.

Diaphragm: Metal – 302 SST. Composition – Buna-N. See Table 2.

Seat: Metal - 303 SST. See Table 2.

Gaskets: PTFE

Temperature Range: SST Diaphragm: -325 to +300°F (-198 to +149°C).
Buna-N Diaphragm: -20 to +200°F (-29 to +94°C).
Opt - UL with SST Diaphragm: -20 to +125°F (-29 to +52°C).

Maximum Design Pressure: 600 psig (41.3 Barg).
Opt - UL: 150 psig (10.3 Barg).

Range Springs:

Spring Ranges	
psig	(Barg)
3 - 30	(.21- 2.8)
30 - 50	(2.8 - 3.4)
50 - 80	(3.4 - 5.5)
80-150	(5.5-10.3)
150-250	*(10.3-17.2)
250-400	*(17.2-27.6)

* Not for use on UL Model - Code "A3"

Cv's / Capacities: Up to 0.97 Cv (0.84 kv) (See Table 4.)

OPTION SPECIFICATIONS

Option-1: CLOSING CAP. Removeable cap discourages tampering with range spring setting.

Option-2: HANDWHEEL. Plastic handwheel for frequent set point changes.

Option-5: CRYOGENIC CONSTRUCTION. Metal diaphragm S2 Trim only. SST adusting screw. Cleaned for oxygen service per Cashco Spec. #S-1134. Applicable temperature range -325° to +100°F (-198° to +38°C). Mount in horizontal piping with adjusting screw oriented downwards.

Option-22: PANEL MOUNTING. Includes a locknut and a handwheel.

Option-UL: MODEL - CODE "A3" UL LISTED. Available in 3/8" and 1/2" (DN10 or 15) sizes. Bronze body & spring chamber with brass closing cap. SST (S2) trim, for set pressures 3-150 psig (.21-10.3 Barg). Not recommended in oil service heavier than No. 6 oil.

APPLICATION AND SELECTION

Follow same procedures as given on page 2 of this technical bulletin.

TECHNICAL SPECIFICATIONS

TABLE 1
BODY AND SPRING CHAMBER
MAXIMUM PRESSURE WITH TEMPERATURE RATINGS

Materials	Inlet Pressure*		Temperature	
Body/Sp. Ch./TDN	psig	(Barg)	°F	(°C)
BRZ/BRZ/S2	600	(41.4)	-325 to +100	(-198 to +38)
	490	(33.8)	-325 to +150	(-198 to +66)
	470	(32.4)	-325 to +200	(-198 to +93)
	440	(30.3)	-325 to +250	(-198 to +121)
	410	(28.3)	-325 to +300	(-198 to +149)
BRZ/BRZ/S2B	600	(41.4)	-325 to +100	(-198 to +38)
	490	(33.8)	-325 to +150	(-198 to + 66)
	470	(32.4)	-325 to +200	(-198 to +93)

* Inlet and outlet at same P vs. T ratings.

TABLE 2
TRIM MATERIAL COMBINATIONS

Part	Trim Designation Number	
	S2 *	S2B **
Diaphragm	302 SST	Buna-N
Plug	303 SST	303 SST
Seat Ring	303 SST	303 SST

* For cryogenic applications
** Not for use on UL Model - Code "A3"

TABLE 3
MISCELLANEOUS MATERIALS

Part	Material
Pressure Plate Nut & Lock Washer	SST
Pressure Plate	Brass
Diaphragm Stop	Brass
Spring Button	Brass
Range Spring	SST
Adjusting Screw & Lock Nut	Std. – Plated CS

TABLE 4
CAPACITY - Cv (F_L = 0.90)
3/8" or 1/2" (DN10 or DN15) Sizes

Setpoint (P_1) Pressure psig	(Barg)	Metal Diaphragm % Build				Composition Diaphragm % Build				Wide Open
		5%	10%	20%	30%	5%	10%	20%	30%	
10	(.69)	.13	.29	.51	.69	.19	.40	.70	.95	1.0
25	(1.72)	.14	.32	.55	.71	.20	.54	.75	.97	
50	(3.44)	.11	.26	.45	.68	.17	.36	.62	.90	
100	(6.9)	.11	.26	.45	.68	.15	.32	.55	.72	
150	(10.3)	.12	.27	.45	.65	.16	.35	.58	.78	
250	(17.2)	.12	.24	.38	.56	.14	.29	.53	.68	
300	(20.7)	.14	.29	.46	.67	.17	.35	.64	.82	
350	(24.1)	.17	.34	.53	.78	.20	.41	.74	.95	
400	(27.6)	.19	.38	.61	.90	.22	.46	.85	1.00	

METRIC CONVERSION FACTOR: Cv / 1.16 = kv

TABLE 5 — AIR CAPACITY – SCFH
S.G. = 1.0 T = 60°F F_L = 0.90
All Sizes – Composition Diaphragm Only

Outlet Pressure (psig)	Setpoint Pressure (psig)	3/8" (DN10) Body % Build				1/2" (DN15) Body % Build			
		5%	10%	20%	30%	5%	10%	20%	30%
0	10	170	360	660	930	170	360	660	930
	25	290	810	1190	1620	290	810	1190	1620
	50	400	890	1640	2540	400	890	1640	2540
	100	640	1410	2620	3690	640	1410	2620	3690
	150	980	2230	4000	SONIC	980	2230	4000	5790
	250	1380	2980	SONIC	SONIC	1380	2980	5920	8190
	300	1990	4280	SONIC	SONIC	1990	4280	SONIC	SONIC
	350	2710	SONIC	SONIC	SONIC	2710	5820	SONIC	SONIC
	400	3400	SONIC	SONIC	SONIC	3400	7430	SONIC	SONIC
25	50	380	840	1540	2390	380	840	1540	2390
	100	630	1410	2620	3680	630	1410	2620	3680
	150	980	2230	4000	5790	980	2230	4000	5790
	250	1380	2980	5920	8190	1380	2980	5920	8190
	300	1990	4280	8510	11770	1990	4280	8510	11770
	350	2710	5820	11420	SONIC	2710	5820	11420	15840
	400	3400	7430	SONIC	SONIC	3400	7430	14930	18990
50	100	600	1330	2470	3470	600	1330	2470	3470
	150	970	2210	3960	5740	970	2210	3960	5740
	250	1380	2980	5920	8190	1380	2980	5920	8190
	300	1990	4280	8510	11770	1990	4280	8510	11770
	350	2710	5820	11420	15840	2710	5820	11420	15840
	400	3400	7430	14930	18990	3400	7430	14930	18990
100	150	820	1870	3350	4850	820	1870	3350	4850
	250	1340	2910	5770	8000	1340	2910	5770	8000
	300	1970	4240	8430	11660	1970	4240	8430	11660
	350	2700	5800	11380	15780	2700	5800	11380	15780
	400	3390	7420	14920	18970	3390	7420	14920	18970
150	250	1220	2640	5250	7270	1220	2640	5250	7270
	300	1870	4030	8010	11090	1870	4030	8010	11090
	350	2630	5630	11060	15340	2630	5630	11060	15340
	400	3340	7300	14670	18660	3340	7300	14670	18660

NOTE: Where "SONIC" is indicated within the above capacity tables, outlet velocity with Schedule 40 pipe has reached sonic velocity of 1118 fps. Additional flow cannot be obtained, and pipeline velocity is in excess of customary pipe velocity design limits. Max. flow will be approximately the last indicated value in the column above "SONIC".

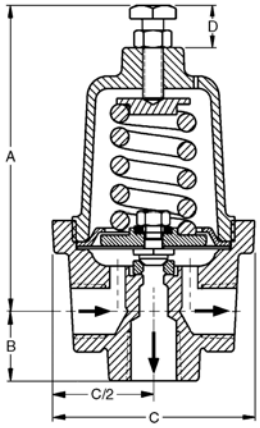
METRIC CONVERSION FACTORS: psig / 14.5 = Barg; SCFH / 35.31 = Sm^3/Hr; SCFH / 37.32 = Nm^3/Hr

TABLE 6 — WATER CAPACITY – GPM
S.G. = 1.0 T = 60°F F_L = 0.90
All Sizes – Composition Diaphragm Only

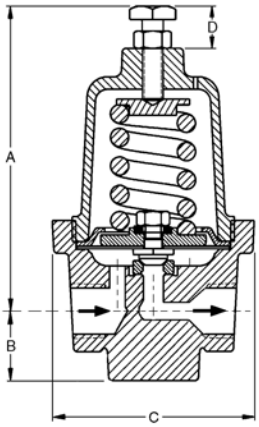
Outlet Pressure (psig)	Setpoint Pressure (psig)	3/8" (DN10) Body % Build				1/2" (DN15) Body % Build			
		5%	10%	20%	30%	5%	10%	20%	30%
0	10	0.6	1.3	2.4	3.4	0.6	1.3	2.4	3.4
	25	1.3	2.8	4.1	5.0	1.3	2.8	4.1	5.0
	50	1.1	2.4	4.3	6.5	1.1	2.4	4.3	6.5
	100	1.4	3.0	5.4	7.4	1.4	3.0	5.4	7.4
	150	1.8	4.0	7.0	9.8	1.8	4.0	7.0	9.8
	250	2.0	4.3	8.3	11.0	2.0	4.3	8.3	11.0
	300	2.7	5.7	10.9	14.6	2.7	5.7	10.9	14.6
	350	3.4	7.2	13.6	18.2	3.4	7.2	13.6	18.2
	400	4.1	8.7	16.8	20.5	4.1	8.7	16.8	20.5
5	10	0.4	1.0	1.9	2.7	0.4	1.0	1.9	2.7
	25	1.2	2.6	3.8	5.1	1.2	2.6	3.8	5.1
	50	1.2	2.5	4.3	6.5	1.2	2.5	4.3	6.5
	100	1.4	3.0	5.4	7.4	1.4	3.0	5.4	7.4
	150	1.8	4.0	7.0	9.8	1.8	4.0	7.0	9.8
	250	2.0	4.3	8.3	11.0	2.0	4.3	8.3	11.0
	300	2.7	5.7	10.9	14.6	2.7	5.7	10.9	14.6
	350	3.4	7.2	13.6	18.2	3.4	7.2	13.6	18.2
	400	4.1	8.7	16.8	20.5	4.1	8.7	16.8	20.5
10	25	1.0	2.3	3.4	4.6	1.0	2.3	3.4	4.6
	50	1.1	2.4	4.4	6.5	1.1	2.4	4.4	6.5
	100	1.4	3.0	5.4	7.4	1.4	3.0	5.4	7.4
	150	1.8	4.0	7.0	9.8	1.8	4.0	7.0	9.8
	250	2.0	4.3	8.3	11.0	2.0	4.3	8.3	11.0
	300	2.7	5.7	10.9	14.6	2.7	5.7	10.9	14.6
	350	3.4	7.2	13.6	18.2	3.4	7.2	13.6	18.2
	400	4.1	8.7	16.8	20.5	4.1	8.7	16.8	20.5
25	50	0.9	2.0	3.7	5.7	0.9	2.0	3.7	5.7
	100	1.3	3.0	5.4	7.4	1.3	3.0	5.4	7.4
	150	1.8	4.0	7.0	9.8	1.8	4.0	7.0	9.8
	250	2.0	4.3	8.3	11.0	2.0	4.3	8.3	11.0
	300	2.7	5.7	10.9	14.6	2.7	5.7	10.9	14.6
	350	3.4	7.2	13.6	18.2	3.4	7.2	13.6	18.2
	400	4.1	8.7	16.8	20.5	4.1	8.7	16.8	20.5

NOTE: Where ▭ is indicated, the flow is into "full cavitation".

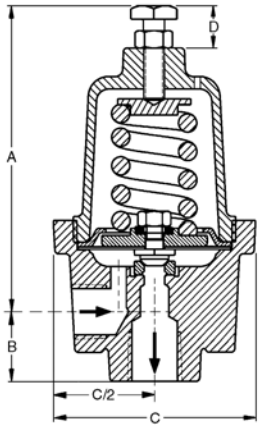
METRIC CONVERSION FACTORS: psig / 14.5 = Barg; GPM x 3.785 = LPM



FLOW-THRU BODY DESIGN



GLOBE BODY DESIGN



ANGLE BODY DESIGN

ENGLISH UNITS – inches & lbs.

Option No.	DIMENSION - Inch				Weight – lbs
	A	B	C	D	
Std.	5.38	1.06	3.12	–	3.6
-1	5.75	1.06	3.12	–	
-2	5.69	1.06	3.12	–	
-22	5.69	1.06	3.12	1.88	

METRIC UNITS – mm & kg

Option No.	DIMENSION - Inch				Weight – lbs
	A	B	C	D	
Std.	5.38	1.06	3.12	–	3.6
-1	5.75	1.06	3.12	–	
-2	5.69	1.06	3.12	–	
-22	5.69	1.06	3.12	1.88	

PRODUCT CODE 12-14-04

TABLE 2 - SIZE

Size	Connection Orientation	CODE
3/8" (DN10)	Globe — side inlet side outlet	3
1/2" (DN15)		4
3/8" (DN10)	Angle — side inlet, bottom outlet	D
1/2" (DN15)		E
3/8" (DN10)	Flow-Thru — two side inlets, bottom outlet	H
1/2" (DN15)		J

Bronze Body & Spring Chamber

TABLE 3 - TRIM DESIGNATION NO.

SST Trim	
Desig.	CODE
S2 *	S2
S2B	SB

* Not for use on UL Model - Code "A3"

TABLE 4 - RANGE SPRING

psig	(Barg)	CODE
3 - 30	(.21 - 2.1)	K
30 - 50	(2.1 - 3.4)	L
50 - 80	(3.4 - 5.5)	M
80-150	(5.5 -10.3)	N
150-250	(10.3-17.2)	P *
250-400	(17.2-27.6)	S *

* Not for use on UL Model Code "A3"

TABLE 1 - VALVE DESCRIPTION

Description	CODE
Standard Construction	2
"UL" Listed	3

NPT End Connections

A			–	3			7	–	1			0	0	0	0	0	A

Model CA-2 Back Pressure Relief Regulator

TABLE 5 - OPTIONS

Description	Option	CODE
Special Construction	—	X
Closing Cap (Included on UL Listed)	-1	1
Handwheel (Non-Cryogenic) *	-2	2
Cryogenic Construction * Includes special cleaning suitable for O2 service. Must select trim No. S2.	-5	5
Panel Mounting * Includes Opt.-2 Handwheel.	-22	C
Special Clean per Cashco Spec. #S-1542.	-56	N

* Not for use on UL Model - Code "A3"

ASSIGNMENT OF "OPTION" CODES

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