

APPLICATION:

Self-contained, pilot-operated regulator used on positive pressure control of systems flowing into downstream vacuum gathering line.

FEATURES:






- Tight shut-off - Class VI
- Single soft seat
- Removable valve seat
- Minimum maintenance
- All internal parts can be removed with valve in line
- Single-point adjustment of setpoint
- Utilizes upstream pressure as actuation pressure
- Efficient 3-way plug accurately maintains setpoint

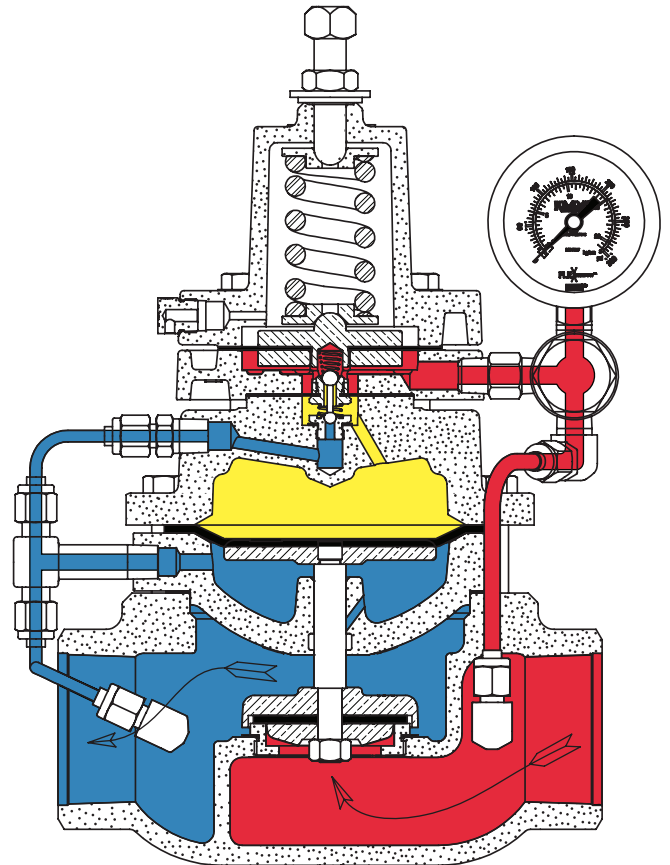
CERTIFICATIONS:

Canadian Registration Number (CRN):
0C16234.24567890NTY (Ductile)
Kimray is an ISO 9001- certified manufacturer.

CLASSIFICATIONS:

Non-Bleed / Intermittent Vent

-  Pilot Assembly
-  Motor Valve Stem Assembly
-  Upstream Pressure
-  Downstream Pressure
-  Diaphragm Pressure



	Standard Configuration Code †	Order Code	Line Size	Connection Type	Oper. Press. psig	Max. W.P. psig ††	Cv	Cf
Ductile	RBV1SADF1S	AMSD	1"	NPT	10-300	300	13.2	0.74
	RBV2SADF1S	ADUD	2"	NPT	10-300	300	47.0	0.84
	RBV2ARDF1S	ADWD		150RF	10-250	250		
	RBV3SADF1S	ADYD	3"	NPT	10-300	300	117	0.75
	RBV3ARDF1S	AEAD		150RF	10-250	250		
	RBV4SADF1S	AEBD	4"	NPT	10-300	300	210	0.75
	RBV4ARDF1S	AECD		150RF	10-250	250		
	RBV4ARDF1S	AEDD	6"	150RF	10-250	250	480	0.75

NOTES:

For standard & optional seals, metals, Cf Cv values, material specifications & dimensions see technical data on pages 06:1 - 06:1V

† For Corrosive service remove last "S" & replace with "C"

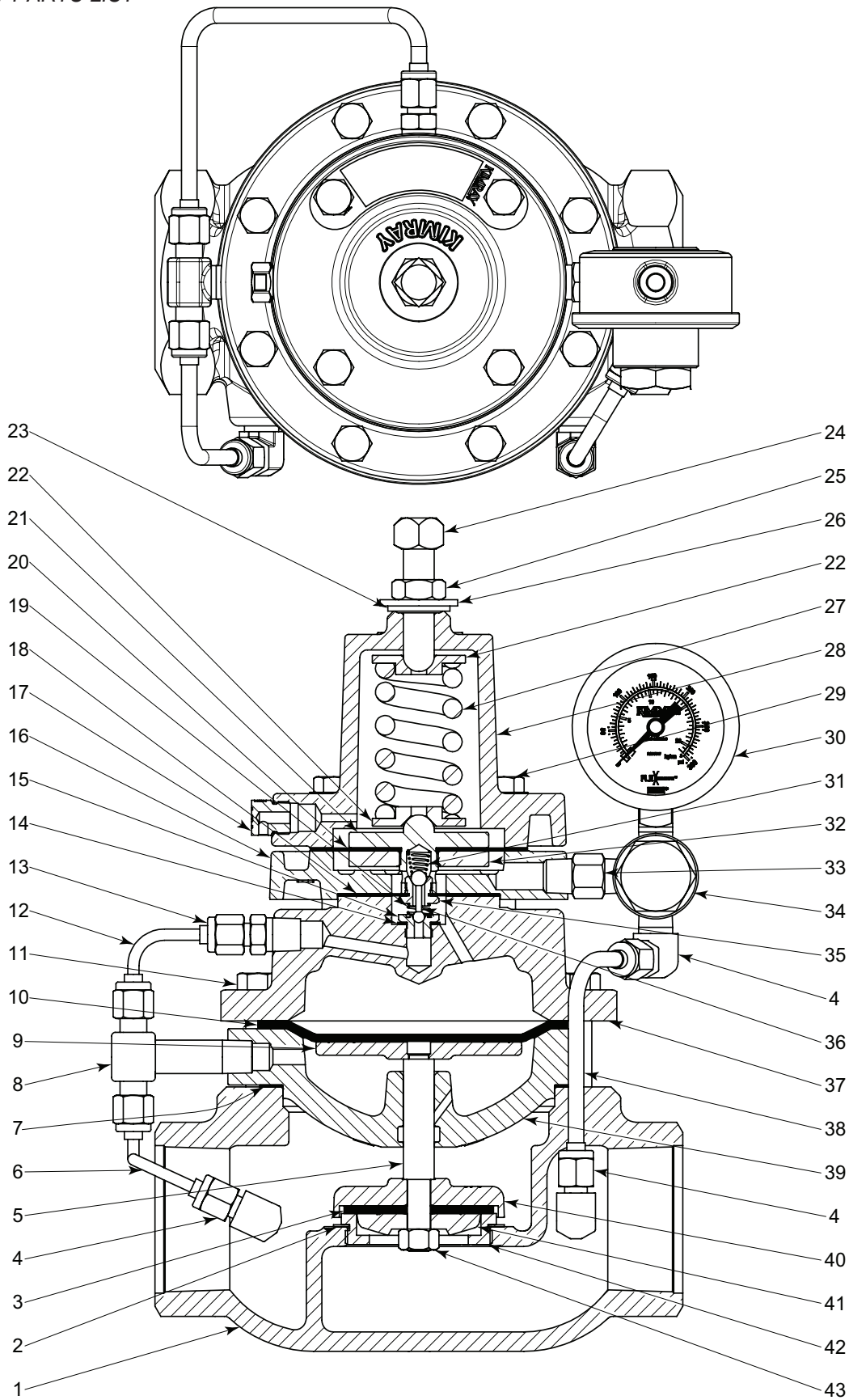
† For code builder see page 06:00.2

†† Max W.P. values based on -20°F to 100°F.

PRESSURE REGULATORS



GAS BACK PRESSURE TO VACUUM
MODEL BV PARTS LIST



All Pictures shown are for illustration purpose only. Actual product may vary due to product enhancement.

ITEM	QTY.	DESCRIPTION	PART NUMBER											
			STANDARD					CORROSIVE						
			1 INCH	2 INCH	3 INCH	4 INCH	6 INCH	1 INCH	2 INCH	3 INCH	4 INCH	6 INCH		
1	1	Body												
		NPT Thru	2033	1709	1634	2001	----	2033 ‡	1709 ‡	1634 ‡	2001 ‡	----		
		150RF Thru	----	1913	1914	2002	2466	----	1913 ‡	1914 ‡	2002 ‡	2466 ‡		
		Grooved Thru	----	2964	----	----	----	----	2964 ‡	----	----	----		
2	1	Gasket *	----	276	277	196	279	----	276	277	196	279		
3	1	Seat	Standard *	163HSN	164HSN	165HSN	166HSN	167HSN	163HSN	164HSN	165HSN	166HSN	167HSN	
			Reduced *	163HSN	164HSN	1230HSN	164HSN	165HSN	163HSN	164HSN	1230HSN	164HSN	165HSN	
4	3	Ell	875					875SS6						
5	1	Valve Stem	Standard	137	138	139	140	141	137SS6	138SS6	139SS6	140SS6	141SS6	
			Reduced	137	138	1222SS6	1223SS6	1224SS6	137SS6	138SS6	1222SS6	1223SS6	1224SS6	
6	1	Tubing	1378SS6	4050SS6	1383SS6		1385SS6	1378SS6	4050SS6	1383SS6		1385SS6		
7	1	Gasket *	195	196	197	198	199	195	196	197	198	199		
8	1	Tee	7713	5087			5087	7713	5087SS6			5087SS6		
							1481					1481SS6		
							648					648SS6		
9	1	Diaphragm Plate	132SS6	133	134	135	136	132SS6	133	134	135	136		
10	1	Diaphragm *	127	1706	1640	2015	2140	127	1706	1640	2015	2140		
11	(QTY)	Bolt	4318 (6)	965 (8)	907(10)	907 (12)	2142 (16)	4318 (6)	965 (8)	907(10)	907 (12)	2142 (16)		
12	1	Tubing	2505SS6	4050SS6	1378SS6	1379SS6	5061SS6	2505SS6	4050SS6	1378SS6	1379SS6	5061SS6		
13	1	Connector	1604	874			1604SS6	874SS6						
14	1	Gasket *	3018	118			3018	118						
15	1	Pilot Seat *	3016	113			3016SS6	113SS6						
16	1	Pilot Housing	3013	1701			3013SS6	1701 ‡						
17	1	Vent Plug	147			147SS6								
18	1	Diaphragm *	3014	110			3014	110						
19	1	Spring *	----	566			----	566HAC						
20	1	Diaphragm *	3011P	688			3011P	688						
21	1	Diaphragm Plate	3009	687SS6			3009SS6	687SS6						
22	2	Spring Guide	4484SS6	2612			4484SS6	2612SS6						
23	1	Thread Seal	4542	4488			4542	4488SS6						
24	1	Adjusting Screw	6976	5163			6976SS6	5163SS6						
25	1	Nut	1676	2377			1676SS6	2377SS6						
26	1	Washer	4543	4491			4543	4491						
27	1	Spring	4323	2611			4323	2611						
28	1	Bonnet	4525	2610			4525 ‡	2610 ‡						
29	4	Bolt	6972	907			6972	907SS6						
30	1	Pressure Gauge	7707			7707								
31	1	Spring *	3008	108			3008	108HAC						
32	1	Diaph. Nut	3010	107			3010SS6	107SS6						
33	1	Nipple	6890	648			6890SS6	648SS6						
34	1	1/4 F30 Filter	YAS			YASSS6								
35	1	Pilot Seat *	3015	565			3015SS6	565SS6						
36	1	Pilot Plug *	3017	112			3017	112						
37	1	Upper Housing	3019	1719	1636	2003	2177	3019SS6	1719 ‡	1636 ‡	2003 ‡	2177 ‡		
38	1	Tubing	4416SS6	123SS6	124SS6	125SS6	126SS6	4416SS6	123SS6	124SS6	125SS6	126SS6		
39	1	Lower Housing	142	1704	1632	145	146	142 ‡	1704 ‡	1632 ‡	145 ‡	146 ‡		
40	1	Seat Disc	Standard	158	159	160	161	162	158SS6	2493SS6	2494SS6	2495SS6	2961SS6	
			Reduced	158	159	1229	159	160	158SS6	2493SS6	2585SS6	2493SS6	2494SS6	
41	1	Ratio Plug	Standard	176SS6	177SS6	178	179	180	176SS6	177SS6	3076SS6	3078SS6	3079SS6	
			Reduced	4932	4933	1228SS6	177SS6	178	4932SS6	4933SS6	1228SS6	177SS6	3076SS6	
42	1	Rem. Seat	Standard	----	272K	273K	274K	275K	----	2496SS6K	2497SS6K	2498SS6K	3075SS6K	
			Reduced	----	4934K	1219DK	1220DK	1221K	----	4934SS6K	1219SS6K	1220SSK	1221SS6K	
43	1	Nut	Standard *	172	173	906		175	172SS6	173SS6	174SS6		175SS6	
			Reduced *	172	173			906	172SS6	173SS6			174SS6	
	2	Lifting Ring (not shown)	----	----	7559		----	----	----	7559		----		
			Repair Kits			RYD	RYG	RYK	RYO	RYR	RYDS6	RYGS6	RYKS6	RYOS6

* These parts are recommended spare parts and are stocked as repair kits.

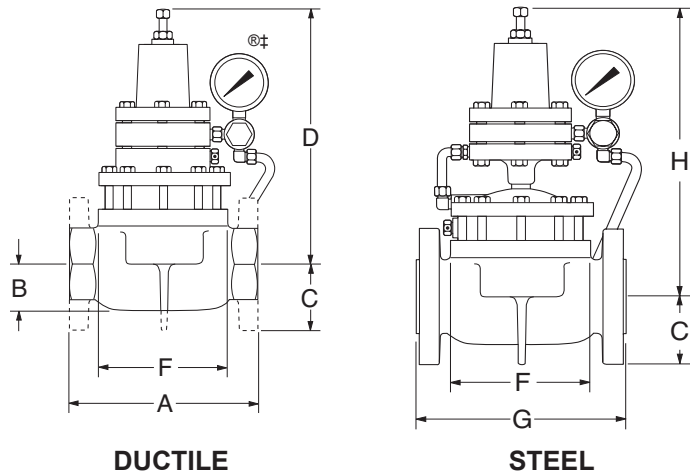
Table 1 - Flow Coefficient(Cv) at % stem travel for Pilot-operated Regulators											
1" Pressure Regulator											
Trim Size in.(mm)	Cf	Valve Opening Percentage									
		10	20	30	40	50	60	70	80	90	100
1/2 in (12mm) Reduced	0.75	0.4	0.7	0.9	1.3	1.8	2.5	3.2	3.9	4.5	5
1 in (25mm) Full Port	0.74	1.1	1.8	2.4	3.4	4.8	6.6	8.5	10.2	11.9	13.2
2" Pressure Regulator											
Trim Size in. (mm)	Cf	Valve Opening Percentage									
		10	20	30	40	50	60	70	80	90	100
1 1/4 in (31 mm) Reduced	0.75	1.8	2.8	3.9	5.4	7.7	10.5	13.6	16.2	19.0	21.0
2 in Removable Full Port *	0.84	4.0	6.2	8.6	12.1	17.2	23.5	30.4	36.3	42.5	47.0
2 in (50 mm) Full Port *	0.75	4.4	6.9	9.5	13.4	19.1	26.0	33.6	40.2	47.0	52.0
3" Pressure Regulator											
Trim Size in. (mm)	Cf	Valve Opening Percentage									
		10	20	30	40	50	60	70	80	90	100
1 5/8 in (66 mm) Reduced	0.82	2.9	4.5	6.2	8.8	12.5	17.0	22.0	26.3	30.7	34.0
3 in (76 mm) Full Port	0.75	9.9	15.6	21.5	30.2	42.9	58.6	75.7	90.4	105.7	117.0
4" Pressure Regulator											
Trim Size in. (mm)	Cf	Valve Opening Percentage									
		10	20	30	40	50	60	70	80	90	100
2 in (50 mm) Reduced	0.80	4.7	7.3	10.1	14.2	20.2	27.5	35.6	42.5	49.7	55.0
4 in (100 mm) Full Port	0.75	17.8	27.9	38.6	54.2	77.0	105.2	135.9	162.2	189.8	210.0
6" Pressure Regulator											
Trim Size in. (mm)	Cf	Valve Opening Percentage									
		10	20	30	40	50	60	70	80	90	100
3 in (76 mm) Reduced	0.80	10.2	16.0	22.0	30.9	44.0	60.1	77.7	92.7	108.4	120.0
6 in (152 mm) Full Port	0.75	40.6	63.8	88.1	123.8	176.0	240.4	310.6	370.7	433.7	480.0

Kimray flow equations conform to ANSI/ISA - 75.01.01-2002
 Kimray inherent flow characteristics conform to ANSI/ISA 75.11.01 -1985

PRESSURE REGULATORS

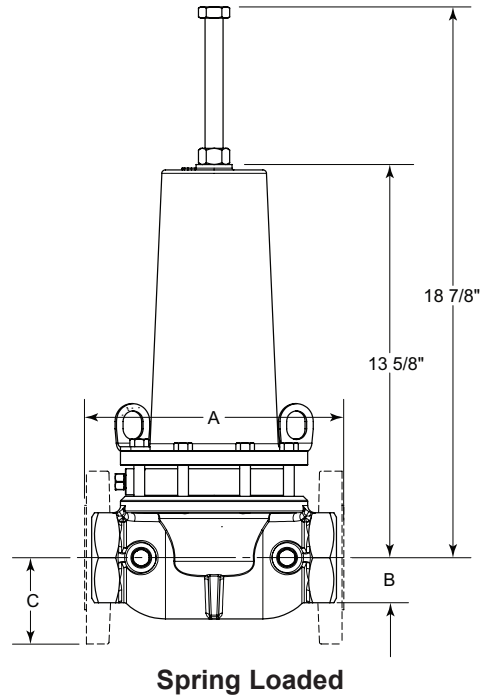
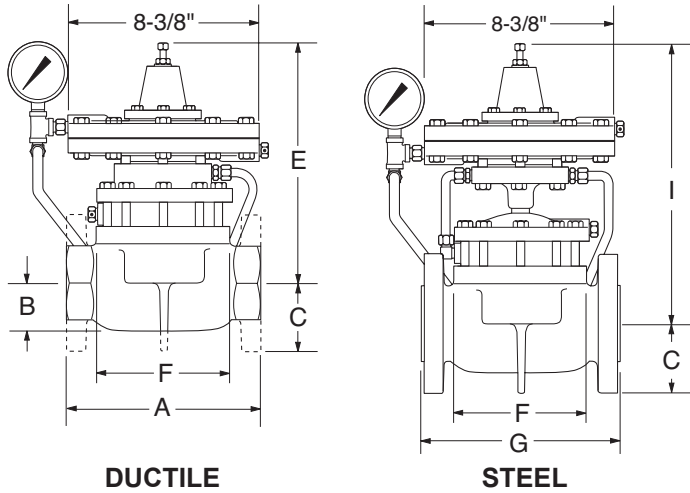


DIMENSIONS



- Back Pressure
- Back Pressure Vacuum
- Liquid Back Pressure
- Pressure Reducing
- Pressure Reducing Vacuum
- Pressure Reducing-Balanced
- Pressure Differential

- Low Pressure Back Pressure
- Ounces Back Pressure To Vacuum
- Ounces Pressure Reducing
- Ounces Pressure Reducing Vacuum
- Vacuum Back Pressure To Vacuum



LINE SIZE	BODY SIZE	A	B	C	D*	E	F	G	H*	I
1"	NPT	4 3/8"	1 1/8"		7 1/2"	11 5/8"	3 1/4"			
	FLANGED	7 1/4"	1 1/8"	2 1/8"	7 1/2"	11 5/8"	3 1/4"			
2"	NPT	8 1/2"	2 1/8"		11 1/2"	10 1/2"	6 1/2"			
	FLANGED	9"		3"	11 1/2"	10 1/2"	6 1/2"	9 1/8"	14 1/2"	14"
	GROOVED	8 3/4"	2 1/8"		11 1/2"	10 1/2"	6 1/2"			
250 S/FGT	NPT							10 1/2"		
	FLANGED							10 3/8"		
3"	NPT	12 1/16"	3 1/16"		13"	12"	8 1/2"			
	FLANGED	12 3/16"		3 3/4"	13"	12"	8 1/2"	12 3/8"	16 1/2"	15 1/2"
4"	NPT	15" 1/16"	4"		14 1/2"	13 3/16"	10 1/2"			
	FLANGED	15 1/16"		4 1/2"	14 1/2"	13 3/16"	10 1/2"	15 1/16"	18 1/2"	16 11/16"
6"	FLANGED	22"		5 1/2"	17"	17 7/8"	16"	21 15/16"	20 1/2"	18 3/8"

FLANGE DIMENSIONS ARE ANSI 125/150 STANDARD. *Add 7/8" to Pressure Reducing Balanced and Up Stream Differential Pressure Regulators for this dimension.

All Pictures shown are for illustration purpose only. Actual product may vary due to product enhancement.
 ‡ Configuration of Back Pressure Control Valve is a trademark of Kimray, Inc.

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Table 2 - Seal Options		
Part	Standard Material	Optional Material
Seat	HSN	FKM, AFLAS®
O-rings	Nitrile	HSN, FKM, AFLAS®
All Diaphragms	Nitrile	HSN, FKM, AFLAS®

Table 3 - Seal Specifications				
	NITRILE	HIGHLY SATURATED NITRILE	FKM	AFLAS®
Kimray Suffix	-	HSN	V	AF
Resistance	Abrasion	G	G-E	G
	Acid	F	G-E	E
	Chemical	F	F	E
	Cold	G	G	P
	Flame	P	P	E
	Heat	G	E	E
	Oil	G-E	E	E
	Ozone	P	G	G-E
	Set	G	G	G-E
	Tear	F	F	F
	Water/Steam	F	E	P
	Weather	F	G	E
	CO2	F-G	G	G
	H2S	P	F	P
	Methanol	F	E	P
Properties	Dynamic	G	G	G
	Electrical	F	F	G-E
	Impermeability	G	G	G
	Tensile Strength	G	G-E	G
Temp. Range	-20° to +250°F	-20° to +300°F	-15° to +400°F	+15° to +450°F
	-29° to +121°C	-29° to +149°C	-26° to +204°C	-9° to +232°C
RATINGS: P-POOR, F-FAIR, G-GOOD, E-EXCELLENT				

Table 4 - Material Options

Part Description	Valve Size	Standard Material	Corrosive Material
Ratio Plug	1" & 2"	316 Powdered Metal SS-316NI-25	
	1" & 2" Reduced Trim	Alloy Steel (ASTM A108)	316SS (ASTM A479)
	3"	Powdered Metal F-008	316SS (ASTM A479)
	4" & 6"	Ductile (ASTM A395)	316SS (ASTM A479)
Seat Disc	1"	Powdered Metal F-008	316SS (ASTM A479)
	2", 3" & 4"	Ductile (ASTM A395)	316SS (ASTM A351 CF8M)
	6"	Ductile (ASTM A395)	316SS (ASTM A 240)
Stem	1" thru 6"	303SS (ASTM A582)	316SS (ASTM A479)
Body	1" thru 6"	Ductile (ASTM A395)	Ductile (ASTM A395) + Kimcoat
	2" thru 6"	WCB (ASTM A216)	WCB (ASTM A216) + Kimcoat
Tubing	1" thru 6"	304SS (ASTM A249)	316SS (ASTM A213)
Removable Seat	2" thru 6" Ductile Body	Ductile (ASTM A395)	316SS (ASTM A351 CF8M)
	2" thru 6" Steel Body	316SS (ASTM A351 CF8M)	

PRESSURE REGULATORS



CODE BUILDER

STANDARD PRESSURE R SERIES

Series:

R = Pressure Regulator

Model:

Line Size:

- 1 = 1 NPS
- 2 = 2 NPS**
- 3 = 3 NPS
- 4 = 4 NPS
- 6 = 6 NPS

End Connection:

- SA = FNPT**
- AR = 150RF Flange
- GV = Grooved (2 NPS only)

Shell Material:

- D = Ductile Iron**
- E = Ductile Iron w/Coating**
- W = Steel (WCB)
- X = Steel (WCB) w/Coating

Inner Valve Size:

- F = Full Port**
- R = Reduced Port

Control Range:

- 1 = **10 - 300 psig Spring**

Service Type:

- S = Standard**
- C = Corrosive

- BP = Back Pressure**
- BN = Back Pressure Non - Vent
- BV = Back Pressure Vacuum
- FB = Back Pressure Outside Supply
- PR = Pressure Reducing
- RN = Pressure Reducing Non - Vent
- FR = Pressure Reducing Outside Supply
- RB = Pressure Reducing Balanced
- PN = Pressure Reducing Balanced Non - Vent
- DP = Differential Pressure
- PA = Pneumatically Adjusted

R BP 2 SA D F 1 S

Options: Additional cost and lead times will apply
If multiple options required input in sequential order
Leave blank if no options required

- 1 = NACE Certification (Corrosive Option Only)
- 2 = Hydrostatic Test Certification
- 3 = MTR (Shell Components)
- A = AFLAS Elastomers
- H = HSN Elastomers
- V = FKM Elastomers
- X = Export (Hydrostatic test, MTR & 3.1)

Not all selections available on all products listed.
See the following product pages for available options
06:10.1 - 06:10.7, 06:20.1 - 06:20.5,
06:30.1 - 06:30.3, 06:40.1 - 06:40.5,
06:50.1 - 06:50.7, 06:60.1 - 06:60.5,
06:70.1 - 06:70.5, 06:80.1 - 06:80.5,