

APPLICATION:

Self-contained, pilot-operated regulator used for regulation of inlet pressure to gas compressors and control of supply or distribution system pressures where the pressure to the regulator varies significantly and regulated pressure must remain constant.

FEATURES:

- Tight shut-off
- 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:

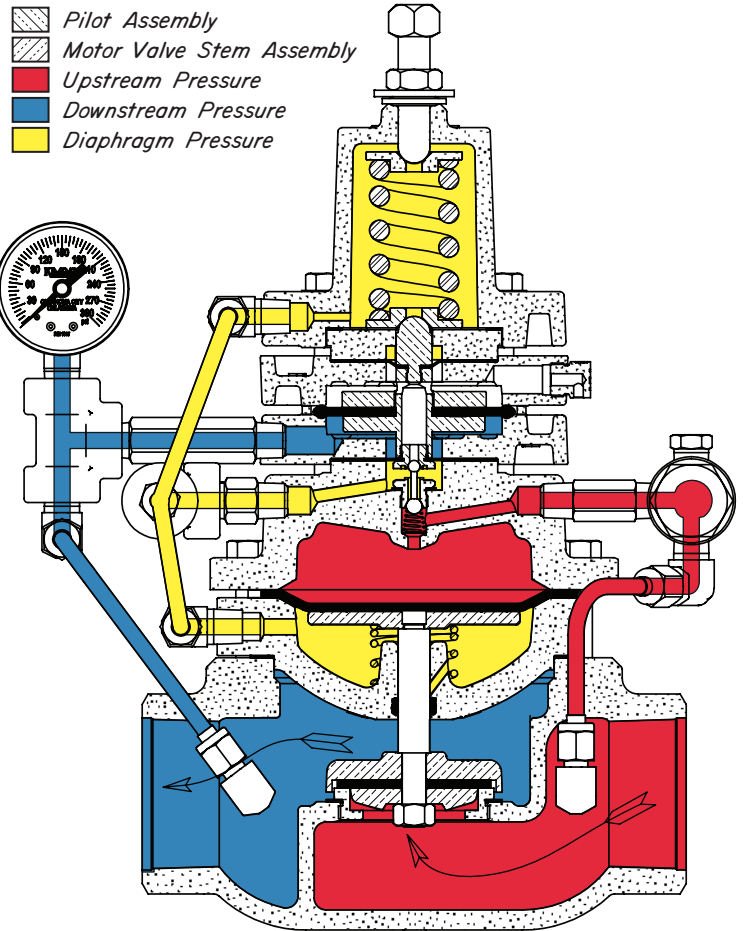
Canadian Registration Number (CRN):
 0C16234.24567890NTY (Ductile)
 0C15604.24567890NTY (Steel)
 Kimray is an ISO 9001- certified manufacturer.

CLASSIFICATIONS:

Non-Bleed / Intermittent Vent

SET POINT DRIFT RATIO:

100:1



	Standard Configuration Code †	Order Code	Line Size	Connection Type	Oper. Press. psig	Max. W.P. psig ††	Cv	Cf
Ductile	RRB1SADF1S	AKJ	1"	NPT	10-300	300	13.2	0.74
	RRB2SADF1S	AJI	2"	NPT	10-300	300	47.0	0.84
	RRB2ARDF1S	AJJ		150RF	10-250	250		
	RRB3SADF1S	AJK	3"	NPT	10-300	300	117	0.75
	RRB3ARDF1S	AJL		150RF	10-250	250		
	RRB4SADF1S	AJM	4"	NPT	10-300	300	210	0.75
	RRB4ARDF1S	AJN		150RF	10-250	250		
	RRB4ARDF1S	AJP	6"	150RF	10-250	250	480	0.75
Steel	RRB2ARWF1S	AJR	2"	150RF	10-285	285	47.0	0.84
	RRB3ARWF1S	AJS	3"	150RF	10-285	285	117	0.75
	RRB4ARWF1S	AJT	4"	150RF	10-285	285	210	0.75
	RRB6ARWF1S	AJU	6"	150RF	10-285	285	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"

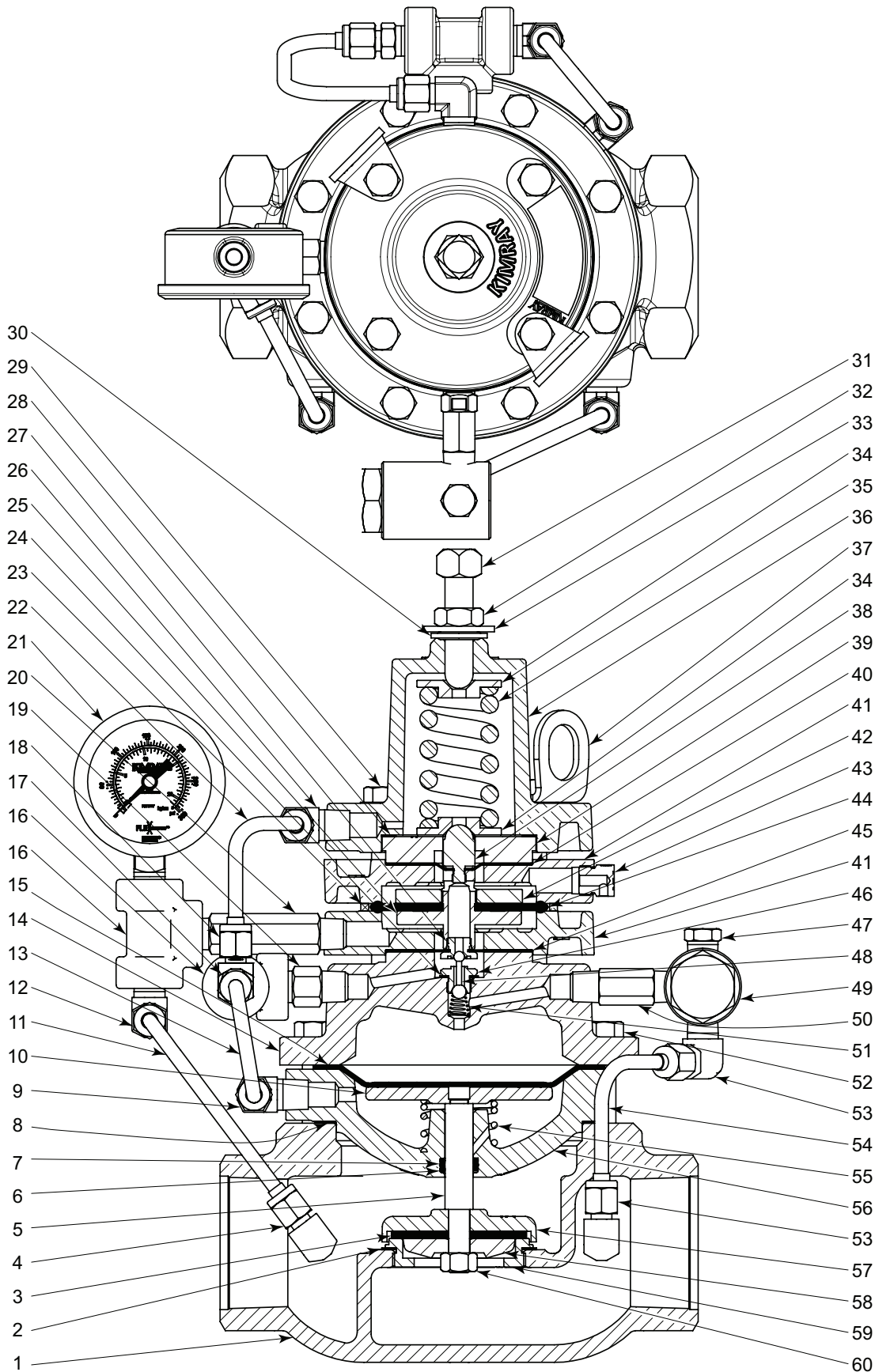
† For code builder see page 06:00.2

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

PRESSURE REGULATORS



GAS PRESSURE REDUCING BALANCED MODEL RB PARTS DRAWING



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



PRESSURE REGULATORS

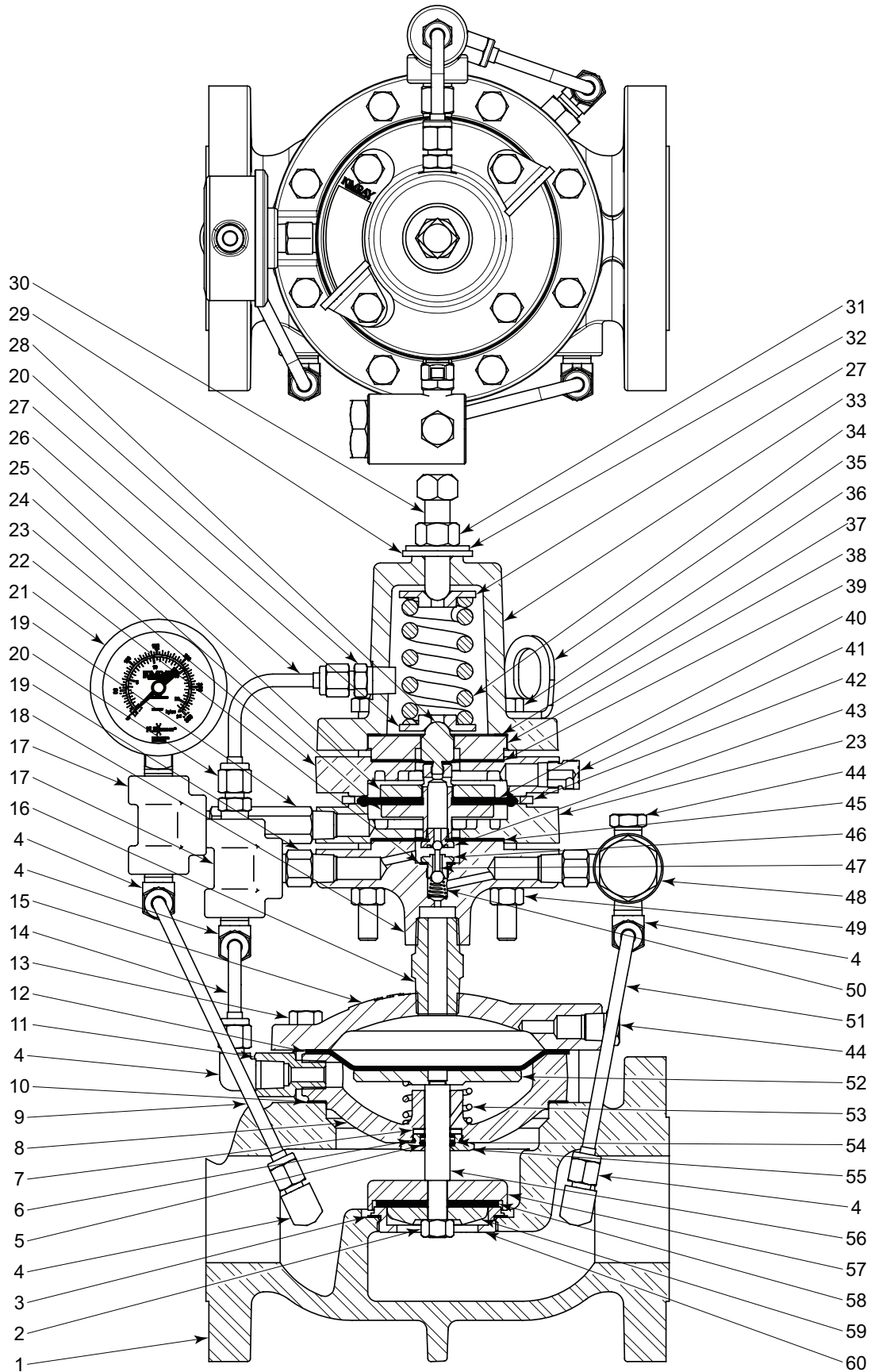
**GAS PRESSURE REDUCING BALANCED
MODEL RB PARTS LIST**

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	4554	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	1	Elbow / Connector	874						874SS6														
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	2	Back Up *	148T	149T	150T	151T	152T	148T	149T	150T	151T	152T											
7	1	O-Ring *	153	154	155	156	157	153	154	155	156	157											
8	1	Gasket *	195	196	197	198	199	195	196	197	198	199											
9	1	Elbow	1605		875		1481	1605SS6		875SS6		1481SS6											
		Connector			----		874			----		874SS6											
		Nipple			----		262			----		262SS6											
10	1	Diaphragm Plate	132SS6	133	134	135	136	132SS6	133	134	135	136											
11	1	Tubing	123SS6	216SS6	217SS6	4251S6	218SS6	123SS6	216SS6	217SS6	4251S6	218SS6											
12	1	Elbow		875		874		875		875SS6		874SS6		875SS6									
13	1	Tubing	4416SS6	2511SS6		4011SS6		2247SS6	4416SS6	2511SS6		4011SS6		2247SS6									
14	1	Upper Housing	4015	1703	1639	2004	2178	4015SS6	1703 ‡	1639 ‡	2004 ‡	2178 ‡											
15	1	Diaphragm *	127	1706	1640	2015	2140	127	1706	1640	2015	2140											
16	2	Tee	219			2000		219SS6			2000SS6												
17	1	Elbow / Connector	875		874		875	874	875SS6		874SS6		875SS6	874SS6									
18	1	Elbow / Connector	874		875			874	874SS6		875SS6			874SS6									
19	1	Nipple	6890	648		2600	648	6890SS6	648SS6		2600SS6	648SS6											
20	1	Nipple	6890			648		6890SS6			648SS6												
21	1	Pressure Gauge			7707					7707													
22	1	Tubing	4416SS6	2511SS6		4011SS6		4262SS6	4416SS6	2511SS6		4011SS6		4262SS6									
23	1	Spacer Ring *	----			7437		----			7437												
24	1	Gasket *	3018			118		3018			118												
25	1	Diaphragm Plate	4495			6525		4495SS6			6525SS6												
26	1	Elbow / Connector		875			874	875		875SS6		874SS6	875SS6										
27	1	Pilot Seat *	3016			113		3016SS6			113SS6												
28	1	Gasket *	4554			276		4554			276												
29	4	Bolt	4553			7671		4553			7671												
30	1	Thread Seal *	4542			4488		4542			4488												
31	1	Adjusting Screw	6976			5163		6976SS6			5163SS6												
32	1	Nut	1676			2377		1676SS6			2377SS6												
33	1	Washer	4543			4491		4543			4491												
34	2	Spring Guide	4484SS6			2612		4484SS6			2612SS6												
35	1	Spring	4323			2611		4323			2611												
36	1	Bonnet	4525			2610		4525			2610 ‡												
37	2	Lifting Ring	----		7559		----	----		7559		----											
38	1	Pivot Screw	4493			6524		4493			6524SS6												
39	1	Spacer	4494S6			2021		4494S6			2021												
40	1	Diaphragm *	3014			6520		3014			6520												
41	2	Pilot Housing	3013			1701		3013SS6			1701 ‡												
42	1	Diaph. Nut	3010			107		3010SS6			107SS6												
43	1	Vent Plug	1357			147		1357SS6			147SS6												
44	1	Diaphragm *	3011P			5259P		3011P			5259P												
45	1	Diaphragm *	3014			110		3014			110												
46	1	Pilot Seat	3015			565		3015SS6			565SS6												
47	1	Plug				699					699SS6												
48	1	Pilot Plug *	3017			112		3017			112												
49	1	1/4 F30 Filter				YAS					YASS6												
50	1	Nipple	6890	262		2600	648	6890S6	262SS6		2600SS6	648SS6											
51	1	Spring *	3008			108		3008			108HAC												
52	(QTY)	Bolt	4318 (6)	965 (8)	907(10)	907 (12)	2142 (16)	4318 (6)	965 (8)	907(10)	907 (12)	2142 (16)											
53	2	Elbow				875					875SS6												
54	1	Tubing	123SS6	1638SS6	1826SS6	1383SS6	2247SS6	123SS6	1638SS6	1826SS6	1383SS6	2247SS6											
55	1	Spring	1358	1388	7132	1529	1575	1358	1388	7132	1529	1575											
56	1	Lower Housing	142	1704	1632	145	146	142 ‡	1704 ‡	1632 ‡	145 ‡	146 ‡											
57	1	Seat	Standard	158	159	160	161	162	158SS6	2493SS6	2494SS6	2495SS6	2961SS6										
		Reduced	158	159	1229	159	160	158SS6	2493SS6	2585SS6	2493SS6	2494SS6											
58	1	Ratio Plug	Standard	176SS6	177SS6	178	179	180	176SS6	177SS6	3076SS6	3078SS6	3079SS6										
		Reduced	4932	4933	1228SS6	177SS6	178	4932SS6	4933SS6	1228SS6	177SS6	178											
59	1	Rem. Seat	Standard	----	272K	273K	274K	275K	----	2496SS6K	2497SS6K	2498SS6K	3075SS6K										
		Reduced	----	4934K	1219DK	1220SSK	1221K	----	4934SS6K	1219SS6K	1220SSK	1221SS6K											
60	1	Nut	Standard *	172	173		906	175	172SS6	173SS6		174SS6	175SS6										
		Reduced *	172			173		906	172SS6			173SS6	174SS6										
Repair Kits			RYD	RYG	RYK	RYO	RYR	RYDS6	RYGS6	RYKS6	RYOS6	RYRS6											
			* These parts are recommended spare parts and are stocked as repair kits.																				

PRESSURE REGULATORS



STEEL GAS PRESSURE REDUCING BALANCED MODEL RB PARTS DRAWING



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



PRESSURE REGULATORS

**STEEL GAS PRESSURE REDUCING BALANCED
MODEL RB PARTS LIST**

ITEM	QTY.	DESCRIPTION	PART NUMBER								
			STANDARD				CORROSIVE				
			2 INCH	3 INCH	4 INCH	6 INCH	2 INCH	3 INCH	4 INCH	6 INCH	
1	1	Body	2468	2469	2470	2959	2468 ‡	2469 ‡	2470 ‡	2959 ‡	
2	1	Nut	173	906		175	173SS6	174SS6		175SS6	
3	1	Gasket	276	277	196	279	173SS6		174SS6		
4	6	Eil	875 (see note below)				875SS6 (see note below)				
5	2	Back Up	149T	150T	151T	152T	149T	150T	151T	152T	
6	1	O-Ring	5225	5226	5227	4086	5225	5226	5227	4086	
7	1	Spacer	4557DS6	4561DS6	4566DS6	4571DS6	4557DS6	4561DS6	4566DS6	4571DS6	
8	1	Lower Housing	2481	2482	2483	2957	2481 ‡	2482 ‡	2483 ‡	2957 ‡	
9	1	Tubing	2529SS6	2552SS6	2507SS6	4306SS6	2529SS6	2552SS6	2507SS6	4306SS6	
10	1	Gasket	196	197	198	199	196	197	198	199	
11	1	Adapter	7244			----	7244S6			----	
12	1	Diaphragm	1706	1640	2015	2140	1706	1640	2015	2140	
13	(QTY)	Bolt	965 (8)	907(10)	907 (12)	2142 (16)	965 (8)	907(10)	907 (12)	2142 (16)	
14	1	Tubing	4416S6	263S6	4418S6	4251S6	4416S6	263S6	4418S6	4251S6	
15	1	Bonnet	2487	2488	2489	2956	2487 ‡	2488 ‡	2489 ‡	2956 ‡	
16	1	Nipple	2516				2516SS6				
17	2	Tee	2000				2000SS6				
18	1	Base	2515				2515 ‡				
19	3	Nipple	648				648SS6				
20	2	Connector	874				874SS6				
21	1	Pressure Gauge	7707				7707				
22	1	Gasket	*	118				118			
23	2	Pilot Housing	2514				2514 ‡				
24	1	Diaphragm Plate	6525				6525SS6				
25	1	Diaphragm Nut	107				107SS6				
26	1	Tubing	4414S6	4050SS6	4666S6	4305S6	4414S6	4050SS6	4666S6	4305S6	
27	2	Spring Guide	2612				2612SS6				
28	1	Pivot Screw	6524				6524SS6				
29	1	Packing Seal	*	4488				4488			
30	1	Adjusting Screw	5163				5163SS6				
31	1	Nut	2377				2377SS6				
32	1	Washer	*	4491				4491			
33	1	Bonnet	2672				2672 ‡				
34	1	Spring	2611				2611				
35	2	Lifting Ring	7559		----		7559		----		
36	4	Bolt	4298				4298				
37	1	Gasket	276				276				
38	1	Spacer	2021				2021				
39	1	Diaphragm	*	6520				6520			
40	1	Diaphragm	*	5259P				5259P			
41	1	Breather Plug	147				147SS6				
42	1	Spacer Ring	7437				7437				
43	1	Pilot Seat	*	113				113SS6			
44	2	Plug	699				699SS6				
45	1	Diaphragm	*	110				110			
46	1	Pilot Seat	*	565				565SS6			
47	1	Pilot Plug	*	112				112			
48	1	1/4 F30 Filter	YAS				YASS6				
49	4	Nut	241				241				
50	1	Spring	*	108				108HAC			
51	1	Tubing	2505SS6	4011SS6	2510SS6	5061SS6	2505SS6	4011SS6	2510SS6	5061SS6	
52	1	Diaphragm Plate	2490	2491	2492	2958	2490SS6	2491SS6	2492SS6	2958SS6	
53	1	Spring	1388	7132	1529	1575	1388	7132	1529	1575	
54	1	O-Ring	*	154	807	156	157	154	807	156	157
55	1	Retainer	4557ES6	4561ES6	4566ES6	4571ES6	4557ES6	4561ES6	4566ES6	4571ES6	
56	1	Valve Stem	Standard Reduced	138 1222SS6	139 1223SS6	140 1224SS6	141 1225SS6	138SS6	139SS6	140SS6	141SS6
57	1	Seat Disc	Standard Reduced	2493SS6 2493SS6	2494SS6 2585SS6	2495SS6 2493SS6	2961SS6 2494SS6	2493SS6	2494SS6	2495SS6	2961SS6
58	1	Seat	Standard Reduced	164HSN 164HSN	165HSN 1230HSN	166HSN 164HSN	167HSN 165HSN	164HSN	165HSN	166HSN	167HSN
59	1	Ratio Plug	Standard Reduced	177SS6 4933	178 1228SS6	179 177SS6	3079SS6 178	177SS6	3076SS6	3078SS6	3079SS6
60	1	Removable Seat	Standard Reduced	2496SS6K 4934SS6K	2497SS6K 1219SS6K	2498SS6K 1220SSK	3075SS6K 1221SS6K	2496SS6K	2497SS6K	2498SS6K	3075SS6K
‡ Coated Parts available with "E" shell material											
Repair Kits			RYG	RYK	RYO	RYR	RYGS6	RYKS6	RYOS6	RYRS6	
* These parts are recommended spare parts and are stocked as repair kits.											
NOTE: 6 inch Lower Housing uses (1) 874, (1) 1481, & (1) 648 instead of 875											

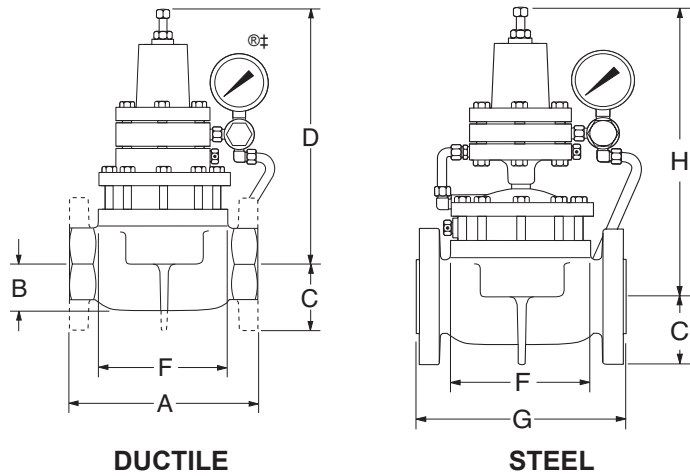
Table 1 - Flow Coefficient(Cv) at % stem travel for Pilot-operated Regulators											
1" Pressure Regulator											
Trim Size in.(mm)	Cf	Valve Opening Percentage									
		10	20	30	40	50	60	70	80	90	100
1/2 in (12mm) Reduced	0.75	0.4	0.7	0.9	1.3	1.8	2.5	3.2	3.9	4.5	5
1 in (25mm) Full Port	0.74	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

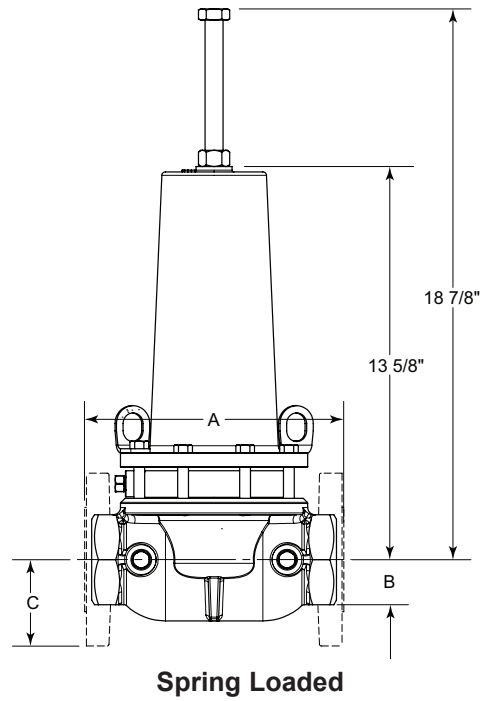
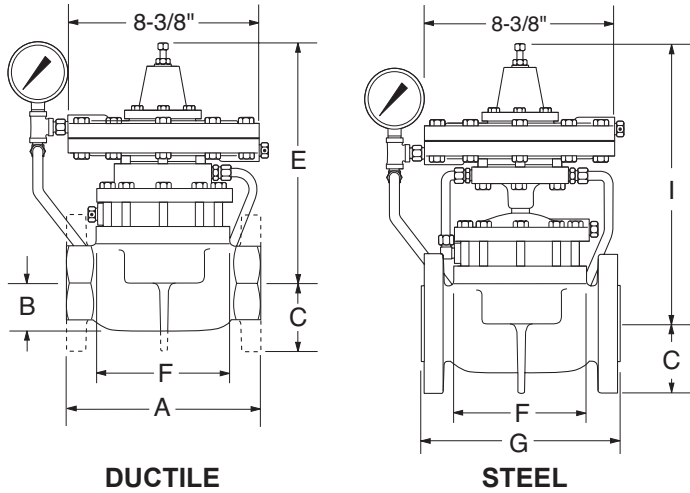


DIMENSIONS



- 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,