

APPLICATION:

Self-contained, pilot-operated regulator used for maintaining a constant pressure drop across meter systems.

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):

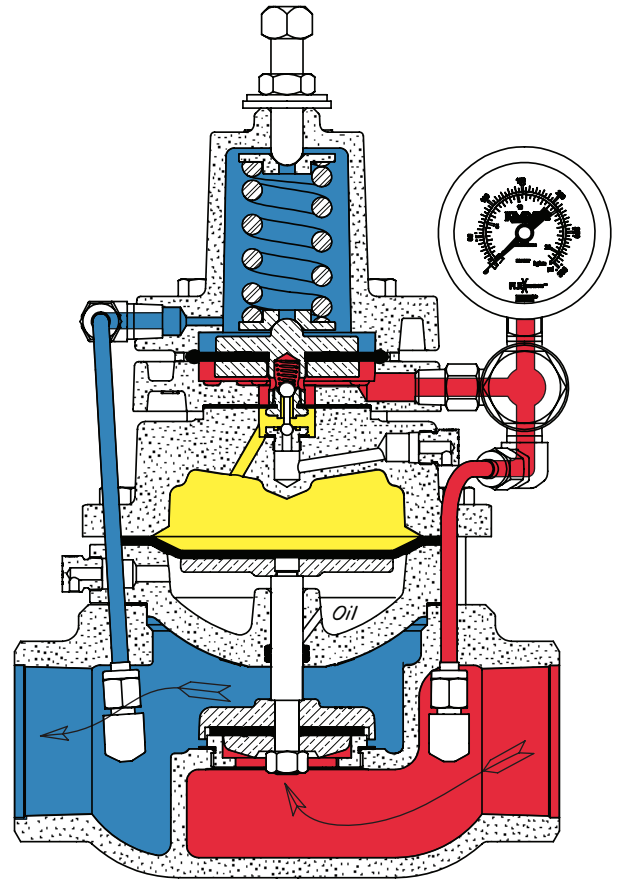
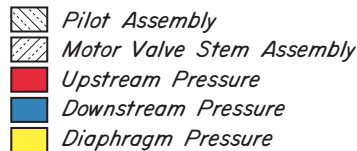
0C16234.24567890NTY (Ductile)

0C15604.24567890NTY (Steel)

Kimray is an ISO 9001- certified manufacturer.

CLASSIFICATIONS:

Non-Bleed / Intermittent Vent



	Standard Configuration Code †	Order Code	Line Size	Connection Type	Oper. Press. psig	Max. W.P. psig ††	Cv	Cf
Ductile	RDP1SADF1S	ADQ	1"	NPT	10-300	300	13.2	0.74
	RDP2SADF1S	ACU	2"	NPT	10-300	300	47.0	0.84
	RDP2ARDF1S	ACW		150RF	10-250	250		
	RDP3SADF1S	ACX	3"	NPT	10-300	300	117	0.75
	RDP3ARDF1S	ACY		150RF	10-250	250		
	RDP4SADF1S	ADA	4"	NPT	10-300	300	210	0.75
	RDP4ARDF1S	ADB		150RF	10-250	250		
Steel	RDP4ARDF1S	ADC	6"	150RF	10-250	250	480	0.75
	RDP2ARWF1S	AGL	2"	150RF	10-285	285	47.0	0.84
	RDP3ARWF1S	AGM	3"	150RF	10-285	285	117	0.75
	RDP4ARWF1S	AGN	4"	150RF	10-285	285	210	0.75
	RDP6ARWF1S	AGO	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"

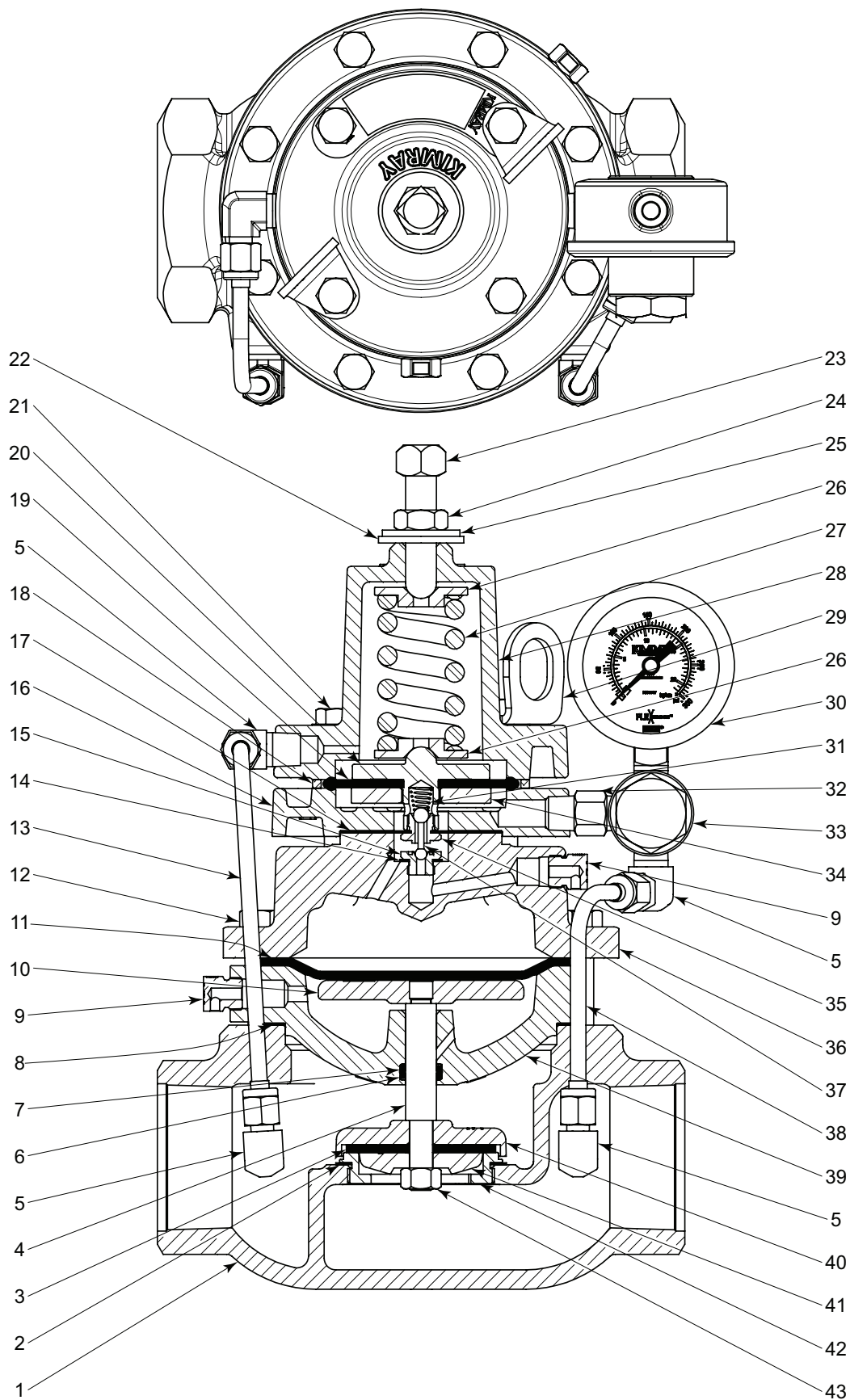
† For code builder see page 06:00.2

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

PRESSURE REGULATORS

GAS PRESSURE DIFFERENTIAL MODEL DP PARTS DRAWING

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

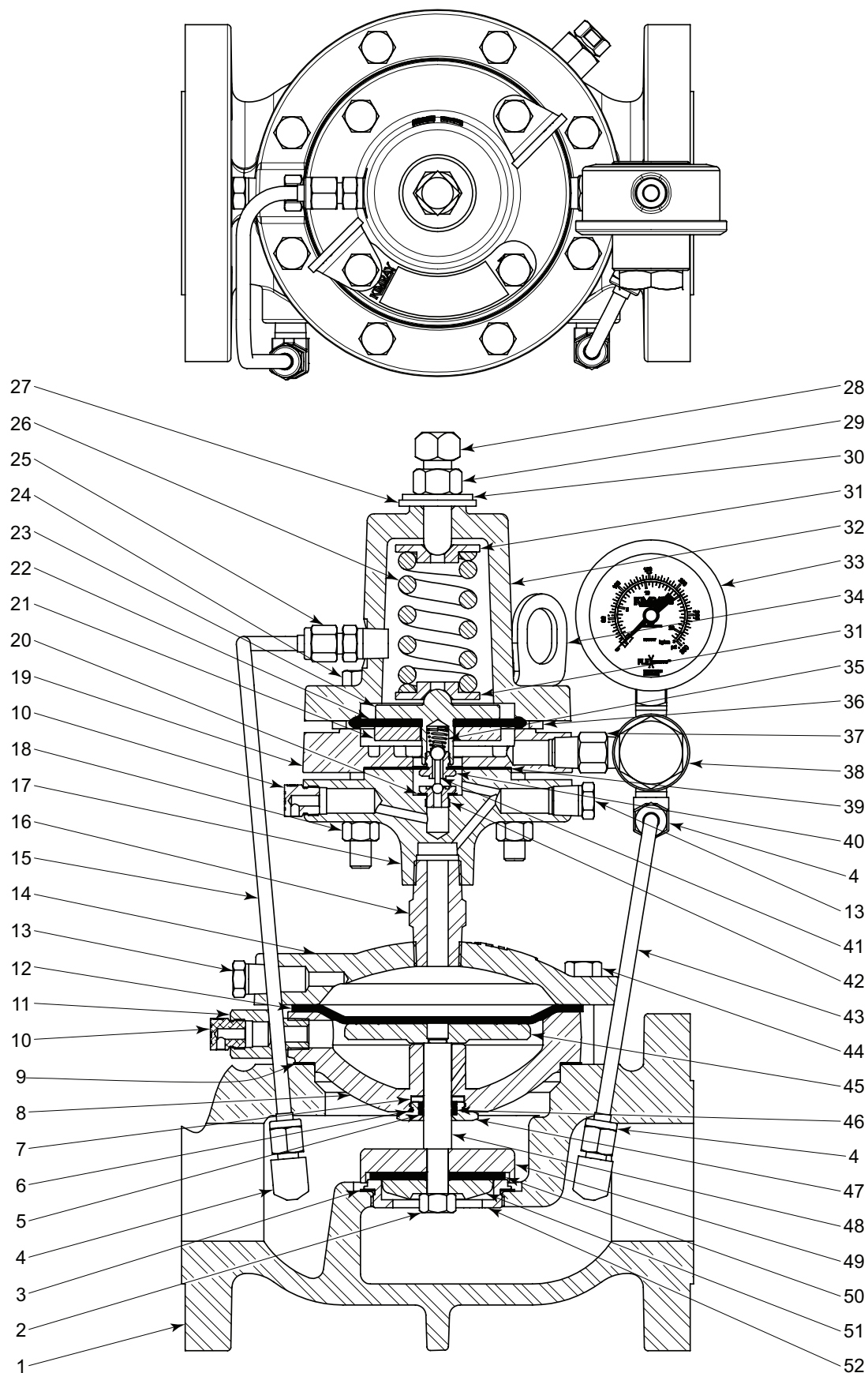
ITEM	QTY.	DESCRIPTION		PART NUMBER										
				STANDARD					CORROSIVE					
				1 INCH	2 INCH	3 INCH	4 INCH	6 INCH	1 INCH	2 INCH	3 INCH	4 INCH	6 INCH	
1	1	Body												
		NPT Thru		2033	1709	1634	2001	----	2033	1709 ‡	1634 ‡	2001 ‡	----	
		150RF Thru		----	1913	1914	2002	2466	----	1913 ‡	1914 ‡	2002 ‡	2466 ‡	
		Grooved Angle		----	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	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
5	4	Elbow		875	875						875SS6	875SS6		
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	2	Vent Plug		1357	147						1357SS6	147SS6		
10	1	Diaphragm Plate		132SS6	133	134	135	136		132SS6	133	134	135	136
11	1	Diaphragm *		127	1706	1640	2015	2140		127	1706	1640	2015	2140
12	(QTY)	Bolt		4318 (6)	965 (8)	907(10)	907 (12)	2142 (16)		4318 (6)	965 (8)	907(10)	907 (12)	2142 (16)
13	1	Tubing		123SS6	2603SS6	4251S6	4853SS6	4312SS6		123SS6	2603SS6	4251S6	4853SS6	4312SS6
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	Diaphragm *		3014	110						3014	110		
18	1	Spacer Ring		----	7437						----	7437		
19	1	Diaphragm *		3011P	5259P						3011P	5259P		
20	1	Diaphragm Plate		3009	105						3009SS6	105SS6		
21	4	Bolt		6972	907						6972	907		
22	1	Thread Seal *		4542	4488						4542	4488		
23	1	Adjusting Screw		6976	5163						6976S6	5163SS6		
24	1	Nut		1676	2377						1676	2377SS6		
25	1	Washer *		4543	4491						4543	4491		
26	2	Spring Guide		4484SS6	2612						4484SS6	2612SS6		
27	1	Spring		4323	2611						4323	2611		
28	1	Bonnet		4525	2610						4525	2610 ‡		
29	2	Lifting Ring		----	----	7559		----		----	----	7559		----
30	1	Pressure Gauge		7707	7707						7707	7707		
31	1	Spring *		3008	108						3008	108HAC		
32	1	Nipple		6890	648						6890S6	648SS6		
33	1	1/4 F30 Filter		YAS						YASS6				
34	1	Diaph. Nut		3010	107						3010SS6	107SS6		
35	1	Pilot Seat *		3015	565						3015SS6	565SS6		
36	1	Upper Housing		3019	1719	1636	2003	2177		3019	1719 ‡	1636 ‡	2003 ‡	2177 ‡
37	1	Pilot Plug		3017	112						3017	112		
38	1	Tubing		4416S6	123SS6	124SS6	125SS6	126SS6		4416S6	123SS6	124SS6	125SS6	126SS6
39	1	Lower Housing		142	1704	1632	145	146		142	1704 ‡	1632 ‡	145 ‡	146 ‡
40	1	Seat	Standard	158	159	160	161	162		158SS6	2493SS6	2494SS6	2495SS6	2961SS6
		Disc	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. Stem	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	
									‡ Coated Parts available with "E" shell material					
Repair Kits				RYD	RYG	RYK	RYO	RYR		RYDS6	RYGS6	RYKS6	RYOS6	RYRS6
				* These parts are recommended spare parts and are stocked as repair kits.										

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PRESSURE REGULATORS

STEEL GAS PRESSURE DIFFERENTIAL MODEL DP PARTS DRAWING

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STEEL GAS PRESSURE DIFFERENTIAL MODEL DP 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
		Standard *						173SS6		174SS6
		Reduced *		173		906		173SS6		174SS6
3	1	Gasket	276	277	196	279	276	277	196	279
4	3	Elbow		875				875SS6		
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	Gasket	196	197	198	199	196	197	198	199
10	2	Vent Plug		147				147SS6		
11	1	Adapter		7244				7244SS6		
12	1	Diaphragm	1706	1640	2015	2140	1706	1640	2015	2140
13	2	Plug		699				699SS6		
14	1	Bonnet	2487	2488	2489	2956	2487 ‡	2488 ‡	2489 ‡	2956 ‡
15	1	Tubing	2529SS6	4068SS6	5061SS6	4312SS6	2529SS6	4068SS6	5061SS6	4312SS6
16	1	Nipple		2516				2516SS6		
17	1	Base		4995				4995 ‡		
18	4	Nut		241				241		
19	1	Pilot Housing		2514				2514 ‡		
20	1	Gasket	*	118				118		
21	1	Diaphragm Nut		107				107SS6		
22	1	Diaphragm	*	5259P				5259P		
23	1	Diaphragm Plate		105				105SS6		
24	2	Spring Guide		2612				2612SS6		
25	1	Connector		874				874SS6		
26	1	Spring		2611				2611		
27	1	Packing Seal	*	4488				4488		
28	1	Adjusting Screw		5163				5163SS6		
29	1	Nut		2377				2377SS6		
30	1	Washer	*	4491				4491		
31	1	Bonnet		2672				2672 ‡		
32	1	Pressure Gauge		7707				7707		
33	4	Bolt		1232				1232		
34	2	Lifting Ring		7559		----		7559		----
35	1	Spring	*	108				108HAC		
36	1	Spacer Ring	*	7437				7437		
37	1	Nipple		648				648SS6		
38	1	1/4 F30 Filter		YAS				YASSS6		
39	1	Diaphragm	*	110				110		
40	1	Pilot Seat	*	565				565SS6		
41	1	Pilot Plug	*	112				112		
42	1	Pilot Seat	*	113				113SS6		
43	1	Tubing	2505SS6	2552SS6	2529SS6	5061SS6	2505SS6	2552SS6	2529SS6	5061SS6
44	(QTY)	Bolt	965 (8)	907(10)	907 (12)	2142 (16)	965 (8)	907(10)	907 (12)	2142 (12)
45	1	Diaphragm Plate	2490	2491	2492	2958	2490SS6	2491SS6	2492SS6	2958SS6
46	1	O-Ring	*	154	807	156	157	154	807	156
47	1	Retainer	4557ES6	4561ES6	4566ES6	4571ES6	4557ES6	4561ES6	4566ES6	4571ES6
48	1	Valve Stem	Standard	138	139	140	141	138SS6	139SS6	140SS6
		Reduced	138	1222SS6	1223SS6	1224SS6	138SS6	1222SS6	1223SS6	1224SS6
49	1	Seat Disc	Standard	2493SS6	2494SS6	2495SS6	2961SS6	2493SS6	2494SS6	2495SS6
		Reduced	2493SS6	2585SS6	2493SS6	2494SS6	2493SS6	2585SS6	2493SS6	2494SS6
50	1	Seat	Standard *	164HSN	165HSN	166HSN	167HSN	164HSN	165HSN	166HSN
		Reduced *	164HSN	1230HSN	164HSN	165HSN	164HSN	1230HSN	164HSN	165HSN
51	1	Ratio Plug	Standard	177SS6	178	179	3079SS6	177SS6	3076SS6	3078SS6
		Reduced	4933	1228SS6	177SS6	178	4933SS6	1228SS6	177SS6	3076SS6
52	1	Removable Seat	Standard	2496SS6K	2497SS6K	2498SS6K	3075SS6K	2496SS6K	2497SS6K	2498SS6K
		Reduced	4934SS6K	1219SS6K	1220SSK	1221SS6K	4934SS6K	1219SS6K	1220SSK	1221SS6K
			‡ 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.							

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

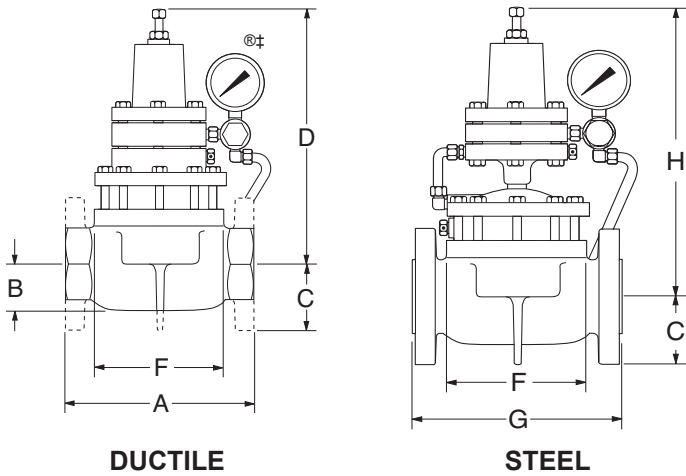
Kimray flow equations conform to ANSI/ISA - 75.01.01-2002

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

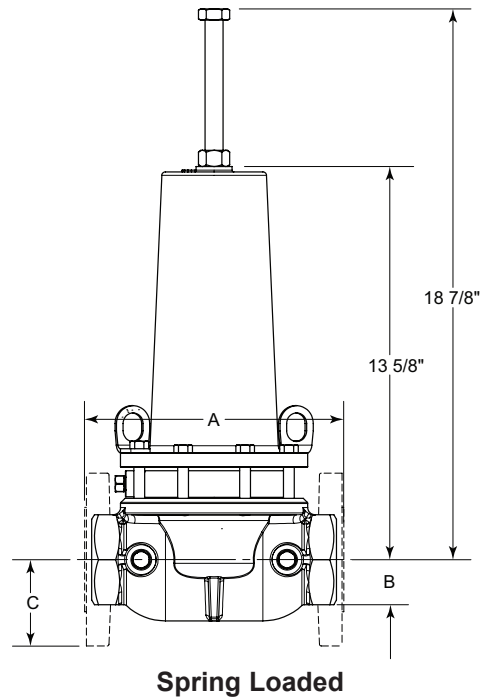
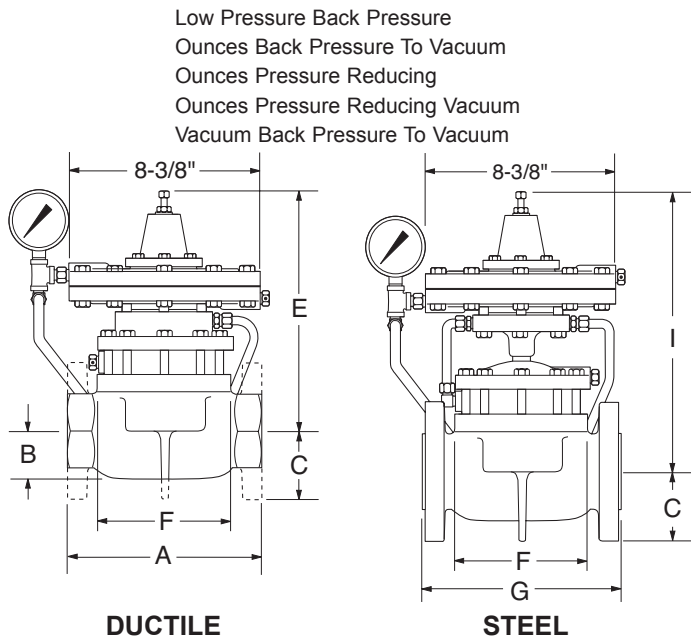
PRESSURE REGULATORS

DIMENSIONS

KIMRAY[®]



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



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

Table 3 - Seal Specifications						
		NITRILE	HIGHLY SATURATED NITRILE	FKM	AFLAS®	
Resistance	Kimray Suffix	-	HSN	V	AF	
	Abrasion	G	G-E	G	G	
	Acid	F	G-E	G-E	E	
	Chemical	F	F	E	E	
	Cold	G	G	P	P	
	Flame	P	P	E	E	
	Heat	G	E	E	E	
	Oil	G-E	E	E	E	
	Ozone	P	G	G-E	E	
	Set	G	G	G-E	P	
	Tear	F	F	F	P	
	Water/Steam	F	E	P	G	
	Weather	F	G	E	E	
	CO2	F-G	G	G	G	
	H2S	P	F	P	E	
	Methanol	F	E	P	P	
	Properties	Dynamic	G	G	G	G
		Electrical	F	F	F	G-E
Impermeability		G	G	G	G	
Tensile Strength		G	G-E	G	F	
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,