

P627 High Flow Gas Regulator



- Wide Range of Flow Capacities
- Durable Powder Coated Exterior
- Installation Versatility
- NACE Construction Available

The P627 is a spring loaded, direct-operated regulator for both low and high pressure applications in the oil and gas industries. These regulators provide durability, from the powder-coated epoxy exterior finish, as well as installation versatility, from the multi-position body and spring case configurations. These regulators are also available in an external pressure registration model (P627M), and NACE construction.

Applications

- Farm Tap Regulation
- Monitoring Regulators
- Gate Regulators
- Fuel Gas
- Gas Gathering
- Pressure Reduction



Materials of Construction

Body, Bonnet, Diaphragm Case	
Options	Steel Body, Bonnet & Diaphragm Case
	Cast Ductile Iron Body / Aluminum Bonnet & Diaphragm Case
	Steel Body / Aluminum Bonnet & Diaphragm Case (NACE only)
	Steel Casing / LCC Body
	Aluminum / LCC Body
Diaphragm	
Option	Nitrile (low pressure) or Neoprene (high pressure)
Seat	
Options	Nitrile
	Nylon
Orifice	
Options	Aluminum
	Stainless Steel (NACE only)

Specifications

Maximum Inlet Body Pressure		
Nylon Seat	2000 PSIG	Steel
	1000 PSIG	Ductile Iron
	1485 PSIG	Flanged Steel
Nitrile Seat	1000 PSIG	All Units
Outlet		
		5-500 PSIG
Body Sizes		
		3/4 NPT
		1 NPT
		2 NPT
Orifice Sizes		
		3/32"
		1/8"
		3/16"
		1/4"
		3/8"
		1/2"
Outlet Range		Flow Range*
5-20 PSIG		300-43,000
15-40 PSIG		1,000-71,000
35-80 PSIG		1,200-142,000
Output	10-95 PSIG	1,000-150,000
	70-150 PSIG	2,500-172,000
	140-250 PSIG	3,200-95,000
	240-500 PSIG	4,500-140,000
* (SCFH of 0.6 S.G. Natural Gas)		
Temperature Range	-20° to 180°F	(-18° to 82°C)
Weight Approximate		
1"	5.3 lbs	2.39 kg
2"	8.8 lbs	3.96 kg

Maximum Bonnet and Diaphragm Casing Pressure	Spring & Diaphragm Casing Style	P627		P627M		P627H & P627HM	
		PSIG	BAR	PSIG	BAR	PSIG	BAR
Maximum pressure to spring and diaphragm casing to prevent leak to atmosphere (internal parts damage may occur).	Die Cast Aluminum	250	17.2	N/A	N/A	N/A	N/A
	Steel	250	17.2	250	17.2	800	55.2
Maximum pressure to spring and diaphragm casings to prevent burst of casings during abnormal operation (leak to atmosphere and internal parts may occur).	Die Cast Aluminum	375	25.9	N/A	N/A	N/A	N/A
	Steel	1200	82.7	1200	82.7	1200	82.7
Maximum diaphragm casing overpressure to prevent damage to internal parts.	All	60	4.1	60	4.1	120	8.3

P627 Regulator Rebuild Kits

	Kit Includes	Part Number
P627 Low Pressure	Nitrile diaphragms (2), Nitrile valve disk, O'rings, back-up rings, and retaining pin	971-627-000
	Nitrile diaphragms (2), Nylon valve disk, O'rings, back-up rings, and retaining pin.	971-627-001
P627 High Pressure	Neoprene diaphragm, Nitrile valve disk, O'rings, back-up rings, and retaining pin	971-627-002
	Neoprene diaphragm, Nylon valve disk, O'rings, back-up rings, and retaining pin	971-627-003

	Kit Includes	Part Number
P627 Low Pressure NACE	Nitrile diaphragms (2), SS Nitrile valve disk, O'rings, back-up rings, and retaining pin	971-627-N00
	Nitrile diaphragms (2), SS Nylon valve disk, O'rings, back-up rings, and retaining pin	971-627-N01
P627 High Pressure NACE	Neoprene diaphragm, SS Nitrile valve disk, O'rings, back-up rings, and retaining pin	971-627-N02
	Neoprene diaphragm, SS Nylon valve disk, O'rings, back-up rings, and retaining pin	971-627-N03

P627 Part Matrix

P627							1	
								Port Size
	06							3/4"
	08							1"
	16							2"
								Spring Range
								PSIG BAR
	020							5 - 20 0.34 - 1.4
	040							15 - 40 1 - 2.8
	080							35 - 80 2.4 - 5.5
	095							10 - 95 5.7 - 6.6
	150							70 - 150 4.8 - 10.3
	250**							140 - 250* 9.7 - 17.2
	500**							240 - 500* 16.5 - 34.5
								* Steel Casing/Steel Body Only
								NOTE: Nitrile Seat is required for 5-20 psi, 15-40 and 10-95 psi ranges. Nylon Seat is recommended for psi above 140. Consult factory for questions
								** P627H or High Pressure Units.
								Special Construction
	0							None
	2							Monitor*
	A							150 #RF*
	B							300 #RF*
	C							600 #RF*
	D							Socket Weld*
								* Steel Casing/Steel Body Only
								Versions
	0							Standard
	N							NACE*
								* Available as Steel/Steel or Aluminum/Steel Only
								Orifice
	0							3/32"
	2							1/8"
	3							3/16"
	4							1/4"
	6							3/8"
	8							1/2"
								Seat Material
	0							Nitrile (Buna-N)
	1							Nylon
								NOTE: Nitrile Seat is required for 5-20 psi, 15-40 and 10-95 psi ranges. Nylon Seat is recommended for psi above 140. Consult factory for questions.
								Casing Material
	0							Aluminum Casing / Iron Body
	1							Steel Casing / Steel Body
	2							Aluminum Casing / Steel Body*
	6							Aluminum Casing / LCC Steel Body
	7							Steel Casing / LCC Body
	8							Steel Casing / Iron Body
								* Supplied only with NACE components, specify 'N' in part number.

Output Pressure	Maximum Inlet Pressures: (10-95 psi supply pressure limits)				
	1/8"	3/16"	1/4"	3/8"	1/2"
10 psi	500 psi	500 psi	500 psi	300 psi	100 psi
25 psi	1,000 psi	1,000 psi	500 psi	300 psi	100 psi
75 psi	1,000 psi	1,000 psi	500 psi	300 psi	100 psi
95 psi	1,000 psi	1,000 psi	500 psi	300 psi	100 psi

For 10-95 flow information, refer to 35-80 PSIG flow capacity tables.

P627 Flow Capacities of Natural Gas (0.6 S.G.) in SCFH¹



Outlet Pressure Range	Outlet Pressure Setting		Inlet Pressure		627H or HM – 2" Body Size					
					Port Diameter, inches					
	PSIG	BAR	PSIG	BAR	3/32	1/8	3/16	1/4	3/8	1/2
140 to 250 PSIG (9.7 to 17.2 BAR)	150	10.3	200	13.8	1760 ⁶	3200 ⁴	7290	13,700	24,100	31,000
			250	17.2	2260 ⁶	4100 ⁴	9200	16,100	28,600	40,000
			300	20.7	2700	4910	11,200	19,300	31,000	46,000
			400	27.6	3600	6500	14,800	25,000	40,000	50,000
			500	34.5	4400	8090	18,300	32,000		
			750	51.7	6600	12,000	27,200	48,000		
			1000	69.0	8700	16,000	36,100	65,000		
			1250	86.2	11,000	19,000	45,000			
			1500	103	13,000	22,000	54,000			
			1750	121	15,000	25,000	63,000			
			2000	138	17,000	28,000				
			250	17.2	2160 ⁶	3850 ⁴	8400	16,100	33,000	41,000
	300	20.7	2700 ⁶	4910 ⁴	11,200	20,100	36,000	52,000		
	400	27.6	3600	6500	14,800	26,500	52,000	68,000		
	500	34.5	4400	8090	18,300	33,000	61,000			
	750	51.7	6600	12,000	27,200	49,000				
	1000	69.0	8700	16,000	36,100	65,000				
	1250	86.2	11,000	19,000	45,000					
	1500	103	13,000	22,000	54,000					
	1750	121	15,000	25,000	63,000					
	2000	138	17,000	28,000						
	250	17.2	2500 ⁶	4500 ⁴	9900	18,500	37,000	75,000		
	400	27.6	3600 ⁶	6400 ⁴	14,300	26,000	55,000	81,000		
	500	34.5	4400	8090	18,300	33,000	64,000	95,000		
750	51.7	6600	12,000	27,200	49,000	102,000				
1000	69.0	8700	16,000	36,100	65,000					
1250	86.2	11,000	19,000	45,000	81,000					
1500	103	13,000	22,000	54,000						
1750	121	15,000	25,000	63,000						
2000	138	17,000	28,000	71,000						
240 to 500 PSIG (16.5 to 34.5 BAR)	250	17.2	300	20.7	2500 ⁶	4500 ⁴	9300	14,000	25,000	37,000
			400	27.6	3600 ⁶	6400 ⁴	14,300	21,400	36,000	49,000
			500	34.6	4400	8090	18,300	26,300	42,000	62,000
			750	51.7	6600	12,000	27,200	37,100	57,000	
			1000	69.0	8700	16,000	36,100	47,400		
			1250	86.2	11,000	19,000	45,000	57,000		
			1500	103	13,000	22,000	54,000			
			1750	121	15,000	25,000	63,000			
			2000	138	17,000	28,000	71,000			
			350	24.1	2900 ⁶	5150 ⁴	11,300	18,400	31,000	45,000
			400	27.6	3500 ⁶	6200 ⁴	13,700	23,400	40,000	52,000
			500	34.5	4400	8090	18,300	32,000	53,000	67,000
	750	51.7	6600	12,000	27,200	48,000	80,000			
	1000	69.0	8700	16,000	36,100	62,000				
	1250	86.2	11,000	19,000	45,000	79,000				
	1500	103	13,000	22,000	54,000					
	1750	121	15,000	25,000	63,000					
	2000	138	17,000	28,000	71,000					
	450	31.0	3600 ⁶	6400 ⁴	14,000	25,000	47,000	67,000		
	500	34.6	4400 ⁶	8090 ⁴	18,300	32,000	54,000	77,000		
	750	51.7	6600	12,000	27,200	49,000	91,000			
	1000	69.0	8700	16,000	36,100	65,000				
	1250	86.2	11,000	19,000	45,000	81,000				
	1500	103	13,000	22,000	54,000					
1750	121	15,000	25,000	63,000						
2000	138	17,000	28,000	71,000						
550	37.9	4300 ⁶	7700 ⁴	16,800	33,000	62,000	90,000			
600	47.4	4900 ⁶	8800 ⁴	19,400	37,000	70,000	104,000			
750	51.7	6600	12,000	27,200	49,000	88,000	140,000			
1000	69.0	8700	16,000	36,100	65,000	130,000				
1250	86.2	11,000	19,000	45,000	81,000					
1500	103	13,000	22,000	54,000	97,000					
1750	121	15,000	25,000	63,000						
2000	138	17,000	28,000	71,000						

1. Capacity is based on 20 percent droop unless otherwise noted below.
 4. Outlet pressure setting may shift ± 15 PSIG.
 6. Small orifices and low pressure drops may cause the set point to shift + 15 psig (1.3 BAR).

P627 Flow Coefficients

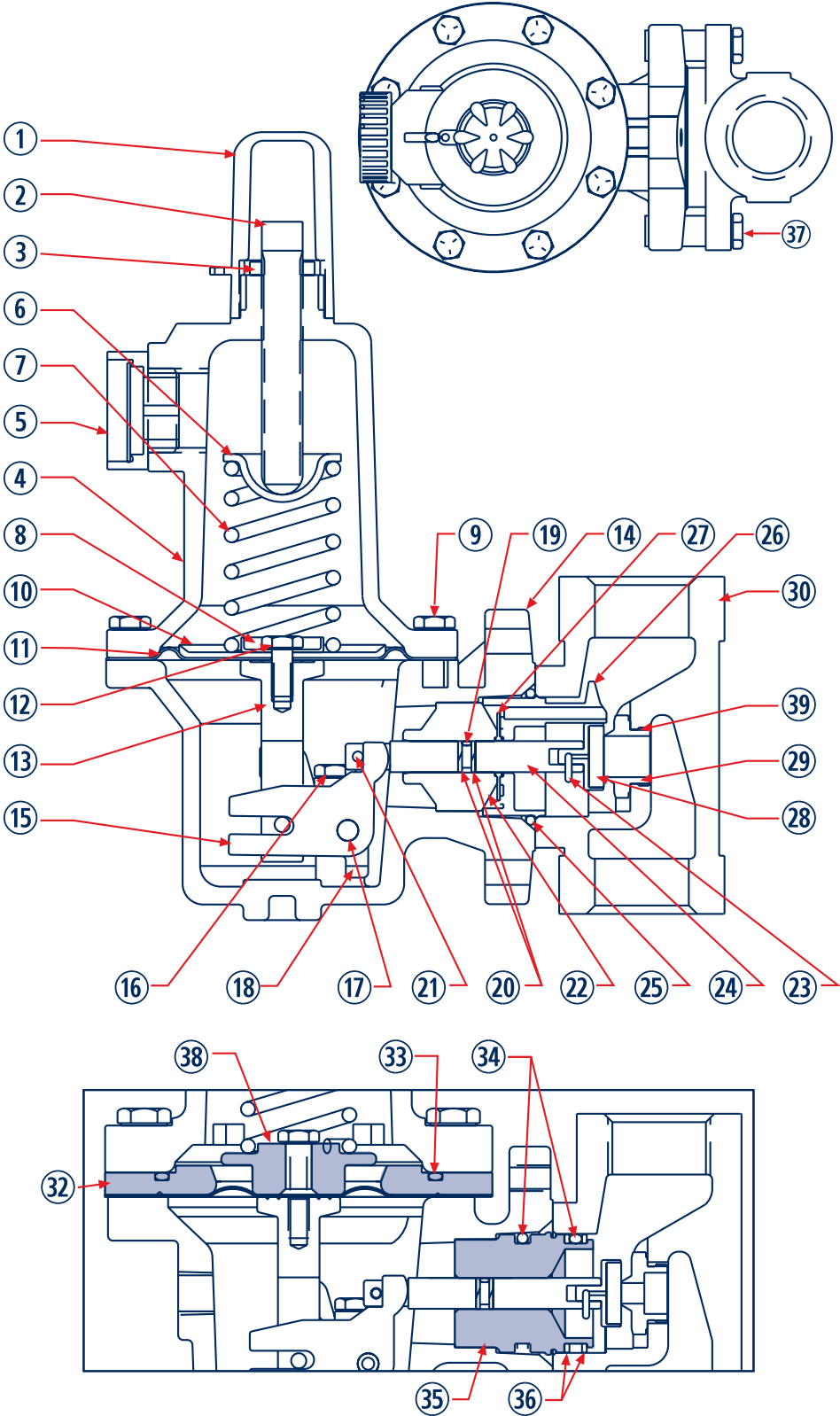
Orifice Size		3/4 Inch Body			1 Inch (DIN 25) Body			2 Inch (DIN 50) Body			K
Inches	mm	Wide-Open C _v for External Relief Sizing	Wide-Open C _v for External Relief Sizing	C ₁	Wide-Open C _v for External Relief Sizing	Wide-Open C _v for External Relief Sizing	C ₁	Wide-Open C _v for External Relief Sizing	Wide-Open C _v for External Relief Sizing	C ₁	
3/32	2.4	6.9	0.24	29.2	6.9	0.24	28.5	6.9	0.23	29.7	0.72
1/8	3.2	12.5	0.43	29.1	12.5	0.43	29.4	12.5	0.42	29.5	0.62
3/16	4.8	29	1.01	28.6	29	0.93	31.2	29	1.02	28.5	0.72
1/4	6.4	50	1.63	30.5	50	1.71	29.3	52	1.66	31.3	0.76
3/8	9.5	108	2.99	36.1	108	3.42	31.6	115	3.39	33.9	0.79
1/2	12.7	190	4.87	39.0	190	5.29	35.9	200	5.01	39.9	.074

P627 Parts

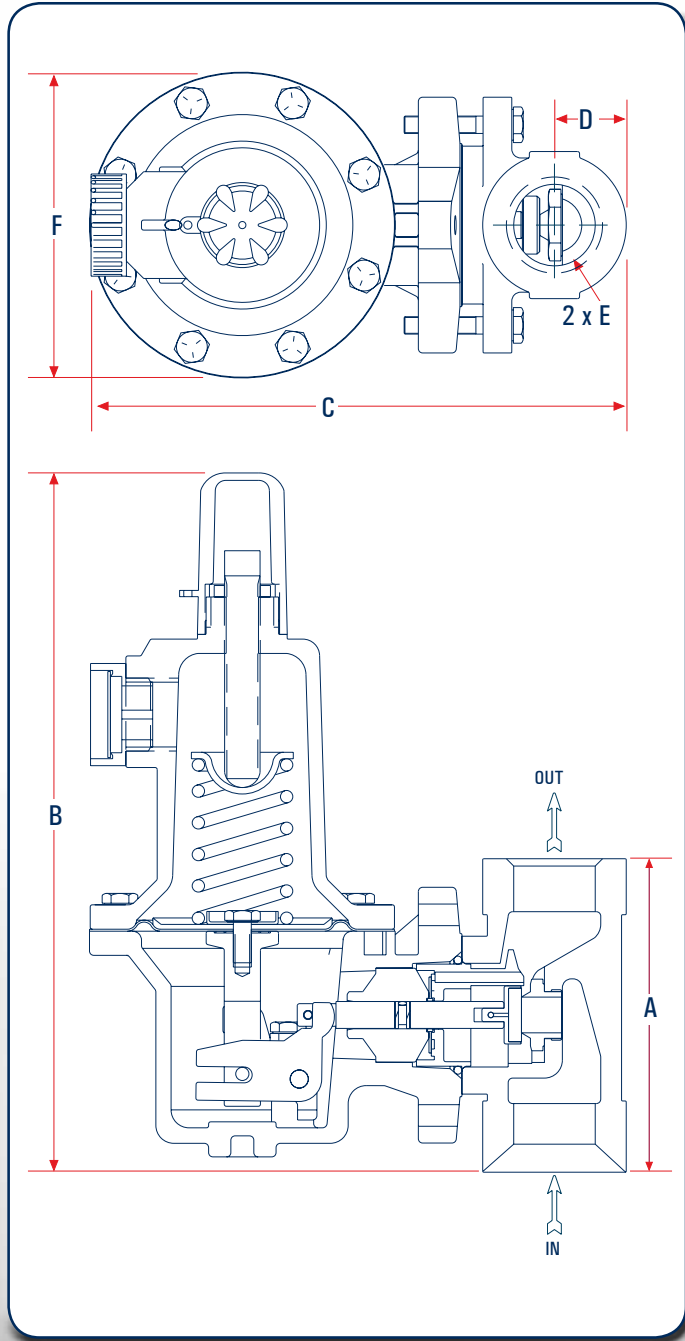
Item	Description	Part Number
1	Cover Adj. Screw, plastic	610-053-000
2	Adjustment Screw	648-465-000
3	Locknut	634-154-000
4	Bonnet, P627 - Aluminum	604-210-000
	Bonnet, P627M, P627H & P627HM - Steel	604-211-000
5	Vent Screw Assembly	836-005-000
6	Spring Guide, Upper	626-079-000
7	Range Spring	
	5-20 PSIG–Yellow	655-661-000
	15-40 PSIG–Green	655-661-001
	35-80 PSIG & 10-95–PSIG Blue	655-661-002
	70-150 PSIG–Red	655-661-003
	140-250 PSIG–Blue	655-661-002
8	240-500 PSIG–Red	655-661-003
	Spring Guide, Lower (P627 or P627M only)	643-191-000
9	Build Screw, Spring Case (8 required)	
	P627 - Aluminum	648-466-000
	P627 or P627M - Steel	648-467-003
	P627H or P627HM	648-467-002
10	Diaphragm Piston (P627 or P627M only)	637-306-000
11	Diaphragm P627 & P627M	
	Aluminum/Iron Case (Nitrile)	618-069-000
	Steel Case (Nitrile)	618-070-000
	Diaphragm P627H & P627HM	
	Steel Case (Neophene)	618-070-001
12	Screw, Diaphragm P627 & P627M	648-466-002
	Screw, Diaphragm P627H & P627HM	648-467-000
13	Post, Pusher P627 & P627M Assy	827-005-000
	Post, Pusher P627H & P627HM Assy	827-005-001
	Post, Pusher P627 & P627M, NACE	827-008-000
	Post, Pusher P627H & P627HM, NACE	827-008-001
14	Diaphragm Case P627 - Aluminum	629-202-000
	Diaphragm Case P627 & P627H - Steel	629-203-000
	Diaphragm Case P627M & P627HM- Steel	629-204-000
	Diaphragm Case, Aluminum/Steel	629-215-000
15	Lever	703-004-000
	Lever, NACE	703-005-000
16	Lever Screw (2 required)	648-466-002
	Lever Screw, NACE (2 required)	648-474-000
17	Pin, Lever	635-053-000
	Pin, Lever, NACE	635-057-000
18	Lever Retainer	643-192-000
	Lever Retainer, NACE	643-194-000
19	Stem O-ring, Nitrile	649-000-003
20	Stem Backup Ring, TFE (2 required)	644-047-000
21	Pin, Groove	635-054-000
	Pin, Groove NACE	635-058-000
22	Stem Guide	626-083-000
23	Pin Clip	635-055-000
	Pin Clip NACE	635-056-000
24	Stem, 316SS	689-005-000
25	Diaphragm Case O-ring, Nitrile (P627 & P627H)	649-280-000
26	Boost Body P627 or P627H	686-003-000
27	Stabilizer, Nitrile P627 or P627H	649-278-000

Item	Description	Part Number
28	Seat assembly - Aluminum holder/nitrile disk	822-019-000
	Seat assembly - Aluminum/nylon	822-019-001
	Seat assembly - 316SS Holder/Nitrile (NACE only)	822-020-000
	Seat assembly - 316SS/Nylon (NACE only)	822-020-001
29	Orifice - Aluminum	
	3/32"	688-013-005
	1/8"	688-013-004
	3/16"	688-013-003
	1/4"	688-013-002
	3/8"	688-013-001
	1/2"	688-013-000
	Orifice - 316SS (NACE units)	
	3/32"	688-014-005
	1/8"	688-014-004
	3/16"	688-014-003
	1/4"	688-014-002
30	3/8"	688-014-001
	1/2"	688-014-000
	Body - Ductile Iron	
	3/4 NPT	664-280-000
	1 NPT	664-280-001
	2 NPT	664-282-000
	Body - Steel	
	3/4 NPT	664-281-000
	1 NPT	664-281-001
	2 NPT	664-283-000
	3/4 NPT LCC	664-325-000
	1 NPT LCC	664-325-001
31	2 NPT LCC	664-326-000
	3/4 NPT Socket Weld	664-356-000
	1 NPT Socket Weld	664-358-000
	2 NPT Socket Weld	664-359-000
32	Nameplate (not shown)	632-474-000
33	Diaphragm Spacer (P627H or P627HM only)	654-167-000
34	O-ring, Spacer (P627H or P627HM only)	649-279-000
35	O-ring, Throat Block (2 required)	649-281-000
36	Throat Block (P627M or P627HM only)	626-081-000
37	Backup Ring, Throat Block (2 required)	644-048-000
	Build Screw, 3/4" & 1" Aluminum unit	648-466-001
	Build Screw, All Steel Bodies	648-467-001
	Build Screw 2" Aluminum Unit (2 required)*	648-466-003
*For 648-466-003 only, order 662-000-023 Lock Washer.		
38	Spring Guide, Lower (P627H & P627HM only)	637-307-000
39	Thread Locker	Consult factory
40	Name Plate Drive Screw (2 required) (not shown)	648-464-000
41	NACE Tag (not shown)	632-503-000

P627 Parts



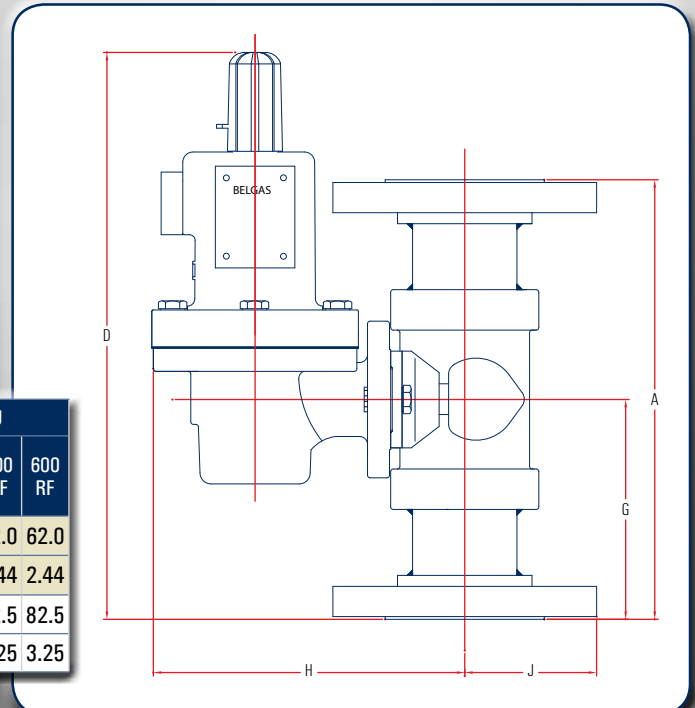
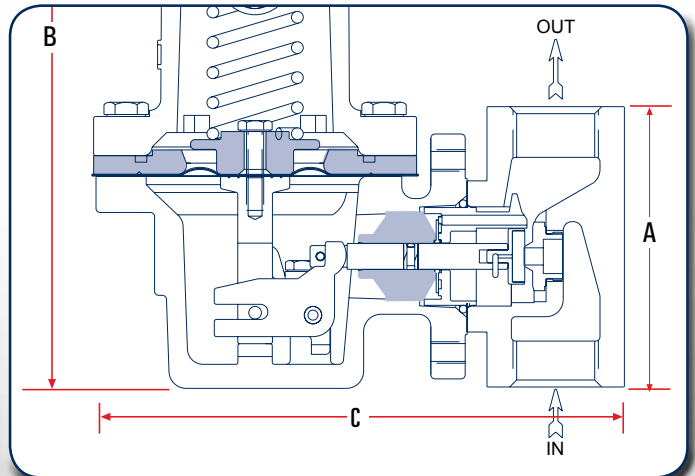
P627 / R627 Dimensions
Aluminum/Cast Ductile Iron Units



Type	Body Size		A	B	C	D	E	F*
627 & 627M	3/4"	mm	104	243	190	26	3/4"	108
		inches	4.08	9.54	7.46	1.0		4.25
	1"	mm	104	243	190	26	1"	108
		inches	4.08	9.54	7.46	1.0		4.25
	2"	mm	127	256	218	43	2"	108
		inches	5.0	10.06	8.56	1.69		4.25
627H & 627HM	3/4"	mm	104	250	194	26	3/4"	120
		inches	4.08	9.82	7.62	1.0		4.70
	1"	mm	104	250	194	26	1"	120
		inches	4.08	9.82	7.62	1.0		4.70
	2"	mm	127	265	224	43	2"	120
		inches	5.0	10.44	8.80	1.69		4.70

*F Dimensions for steel P627 and P627M - 120mm/4.7 inches

P627H



P627 / R627 Dimensions
Flange Units

Type	Body Size	A			D			G			Steel	J			
		150 RF	300 RF	600 RF	150 RF	300 RF	600 RF	150 RF	300 RF	600 RF		150 RF	300 RF	600 RF	
P627 & R627 Flanged Units	1"	mm	184	197	210	11.24	11.5	11.75	91.9	98.6	105	172	53.8	62.0	62.0
		in.	7.25	7.75	8.25	286	292	298	3.62	3.88	4.12	6.75	2.12	2.44	2.44
	2"	mm	254	267	286	12.63	12.88	13.25	127	133	143	181	76.2	82.5	82.5
		in.	10	10.5	11.25	321	327	337	5	5.25	5.62	7.12	3	3.25	3.25