Mark 6127 Series

Pressure Reducing Valves

The primary function of the Mark 6127 is to reduce a greater upstream pressure to a lesser, more manageable downstream pressure, operating without regard to either upstream supply or downstream demand.

Operation

Pressure Reducing

The normally open, spring loaded pilot, sensing downstream pressure, responds to changes in pressure and causes the main valve to do the same. The net result is a constant modulating action of the pilot and main valve to hold the downstream pressure constant. The pilot system is equipped with an opening speed control that fine tunes the valve response to the system variables.

Valve Features

- Operates automatically off line pressure.
- Outlet pressure is accurate over wide range of flow.
- Pilot-operated main valve is not subject to pressure fall off characteristic of direct acting PRV's.
- Outlet pressure is adjustable over complete range of control spring (see pilot features).
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- Heavy-duty, nylon-reinforced diaphragm.
- Rectangular-shaped, soft seat seal provides drip tight Class VI closure.
- Diaphragm assembly Guided top and bottom.
- Throttling seat retainer for flow and pressure stability.
- Easily maintained without removal from the line.
- Replaceable seat ring.
- Alignment pins assure proper reassembly after maintenance.
- Valves are factory tested.
- Valves are serial numbered and registered to facilitate replacement parts and factory support.

JORDANVALVE

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SPECIFICATIONS

Sizes:

Globe Flanged: 1.25"- 24" (32 mm - 600 mm)
Angle Flanged: 1.25" - 16" (32 mm - 400 mm)
Glove/ Angle Threaded: 1.25" - 3" (32 mm - 80 mm)
Globe Angle Grooved: 1.5" - 4" (32 mm - 100 mm)

End Connections:

- Flanged
- Threaded
- Grooved

Temperature Range:

(Valve Elastomers)
Buna-N: -20°F to 180°F (-29°C to 82°C)
Viton: 20°F to 230°F (7°C to 110°C)
Fluorisilicon: -40°F to 150°F (-40°C to 66°C)
EPDM: 0°F to 230°F (-18°C to 110°C)

Spring Ranges: (outlet setting)

5-30 psi (0,34 - 2,07 bar)
20-80 psi (1,38 - 5,52 bar)
65-180 psi (4,48 - 12,41 bar)
100-300 psi (6,89 - 20,68 bar)

Materials:

Body/Bonnet: Ductile Iron (epoxy coated), Carbon steel (epoxy coated), Stainless Steel, B61 bronze, Ni-Al-Bronze, Duplex Stainless Steel, Monel

Seat Ring: Bronze B61, Stainless Steel, Optional: Ni-Al-Bronze, Duplex Stainless Steel, Monel

Stem: Stainless Steel, Monel, Optional: Duplex Stainless Steel

Spring: Stainless Steel. Optional: Inconel
Diaphragm: Buna-N Nylon Reinforced, Viton, EPDM

Seat Disc: Buna-N, Viton, EPDM

Pilot: Bronze, Stainless Steel (Other pilot system components: Bronze/Brass, All Stainless Steel) Optional: Ni-Al-Bronze, Duplex Stainless Steel, Monel

Tubing & Fittings: Copper/brass, Stainless Steel, Optional: Monel

Valve Size	Globe Valves Cv Range	Angle Valves Cv Range	Flow for 25ft/ sec GPM
1-1/4" — 1-1/2"	2.3 - 21	3.7 - 33	115
2"	4.7 - 42	6.0 - 54	260
2-1/2"	6.8 - 61	7.8 - 70	370
3”	9.6 - 86	14 - 126	570
4”	20 - 180	27 - 243	1,000
6”	45 - 405	65- 585	2,250
8”	76 - 684	100 - 900	3, 900
10”	110 - 990	150 - 1350	6,150
12”	170 - 1530	250 - 2250	8,700
14”	215 - 1940	------	10,500
16”	285 - 2570	300 - 2700	13,800
24”	690 - 6210	------	31,300

DIMENSIONS

U.S. DIMENSIONS- INCHES

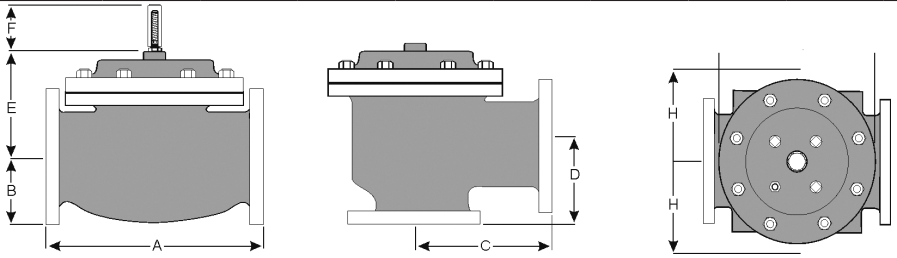
Dim.	End Conn.	1 1/4 – 1 1/2	2	2 1/2	3	4	6	8	10	12	14	16	24
A	Threaded	8 3/4	9 7/8	10 1/2	13	–	–	–	–	–	–	–	–
	Grooved	8 3/4	9 7/8	10 1/2	13	15 1/4	20	–	–	–	–	–	–
	150# Flg	8 1/2	9 3/8	10 1/2	12	15	17 3/4	25 3/8	29 3/4	34	39	40 3/8	62
	300# Flg	8 3/4	9 7/8	11 1/8	12 3/4	15 5/8	18 5/8	26 3/8	31 1/8	35 1/2	40 1/2	42	63 3/4
B	Threaded	1 7/16	1 11/16	1 7/8	2 1/4	–	–	–	–	–	–	–	–
	Grooved	1*	1 3/16	1 7/16	1 3/4	2 1/4	3 5/16	–	–	–	–	–	–
	150# Flg	2 5/16- 2 1/2	3	3 1/2	3 3/4	4 1/2	5 1/2	6 3/4	8	9 1/2	10 5/8	11 3/4	16
	300# Flg	2 5/8- 3 1/16	3 1/4	3 3/4	4 1/8	5	6 1/4	7 1/2	8 3/4	10 1/4	11 1/2	12 3/4	18
C Angle	Threaded	4 3/8	4 3/4	6	6 1/2	–	–	–	–	–	–	–	–
	Grooved	4 3/8*	4 3/4	6	6 1/2	7 5/8	–	–	–	–	–	–	–
	150# Flg	4 1/4	4 3/4	6	6	7 1/2	10	12 11/16	14 7/8	17	–	20 13/16	–
	300# Flg	4 3/8	5	6 3/8	6 3/8	7 13/16	10 1/2	13 3/16	15 9/16	17 3/4	–	21 5/8	–
D Angle	Threaded	3 1/8	3 7/8	4	4 1/2	–	–	–	–	–	–	–	–
	Grooved	3 1/8*	3 7/8	4	4 1/2	5 5/8	–	–	–	–	–	–	–
	150# Flg	3	3 7/8	4	4	5 1/2	6	8	11 3/8	11	–	15 11/16	–
	300# Flg	3 1/6	4 1/8	4 3/8	4 3/8	5 13/16	6 1/2	8 1/2	12 1/16	11 3/4	–	16 1/2	–
E	ALL	6	7	7	6 1/2	8	10	11 7/8	15 3/8	17	18	19	27
F	ALL	3 7/8	3 7/8	3 7/8	3 7/8	3 7/8	3 7/8	6 3/8	6 3/8	6 3/8	6 3/8	6 3/8	8
G	ALL	6	7 11/16	8 3/4	8 3/4	11 3/4	14	21	24 1/2	28	31 1/4	34 1/2	52
H	ALL	10	11	11	11	12	13	14	17	18	20	20	28 1/2

***Grooved end not available in 1 1/4"**

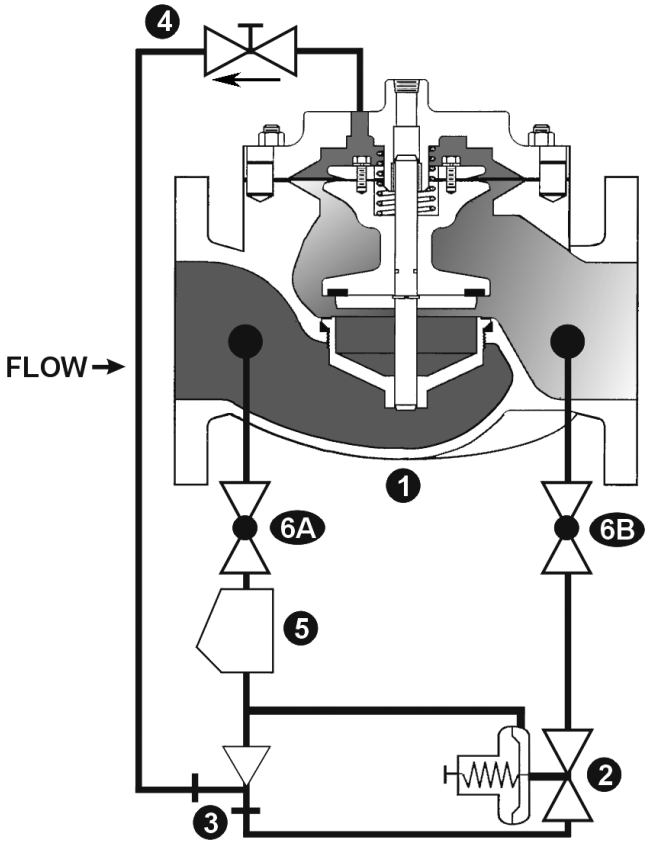
METRIC DIMENSIONS- M.M

Dim.	End Conn.	DN32-DN40	DN50	DN65	DN80	DN100	DN150	DN200	DN250	DN300	DN350	DN400	DN600
A	Threaded	222	251	267	330	–	–	–	–	–	–	–	–
	Grooved	222	251	267	330	387	508	–	–	–	–	–	–
	150# Flg	216	238	267	305	381	451	645	756	864	991	1026	1575
	300# Flg	222	251	283	324	397	473	670	791	902	1029	1067	1619
B	Threaded	37	43	48	57	–	–	–	–	–	–	–	–
	Grooved	25*	30	37	44	57	84	–	–	–	–	–	–
	150# Flg	59 - 64	76	89	95	114	140	171	203	241	270	298	406
	300# Flg	67 - 78	83	95	105	127	159	191	222	260	292	324	457
C Angle	Threaded	111	121	152	165	–	–	–	–	–	–	–	–
	Grooved	111*	121	152	165	194	–	–	–	–	–	–	–
	150# Flg	108	121	152	152	191	254	322	378	432	–	529	–
	300# Flg	67 -78	83	95	105	127	159	191	222	260	292	324	457
D Angle	Threaded	79	98	102	114	–	–	–	–	–	–	–	–
	Grooved	79*	98	102	114	143	–	–	–	–	–	–	–
	150# Flg	76	98	102	102	140	152	203	289	279	–	398	–
	300# Flg	79	105	111	111	148	165	216	306	298	–	419	–
E	ALL	152	152	178	165	203	254	302	391	432	457	483	686
F	ALL	98	98	98	98	98	98	162	162	162	162	162	203
G	ALL	152	171	195	222	298	356	533	622	711	794	876	1321
H	ALL	254	279	279	279	305	330	356	432	457	508	508	724

***Grooved end not available DN32**



SCHEMATICS



The Mark 6127 consists of the following components, arranged as shown on the schematic diagram:

1. **Main Valve:** A hydraulically-operated, diaphragm-actuated, globe or angle valve which closes with an elastomer-on-metal-seal.

2. **Pressure Reducing Pilot:** A two-way, normally open pilot valve which senses downstream pressure under its diaphragm and balances it against an adjustable spring load. An increase in downstream pressure tends to make the pilot close.

3. **Ejector:** A simple "tee" fitting with a fixed orifice in its upstream port. It provides the proper pressure to the diaphragm chamber of the main valve depending on the position of the pressure reducing pilot.

4. **Flow Control Valve:** A needle-type valve which provides adjustable, restricted flow in one direction and free flow in the opposite direction. On the Mark 6127, the flow control valve is connected as an opening speed control.

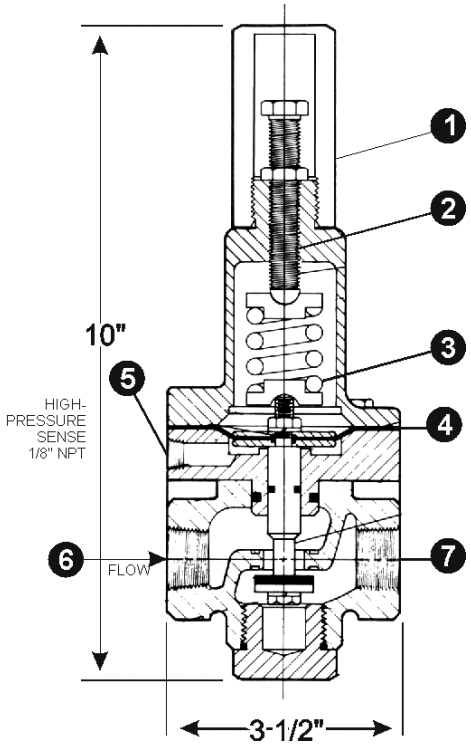
5. **Y-Strainer** (standard on water service valves): The strainer protects the pilot system from solid contaminants in the line fluid.

6A/B. **Two Ball Valves** (standard on water service valves, optional on fuel service valves): Useful for isolating the pilot system for maintenance or trouble shooting.

PILOT

- Accurate sensing of outlet pressure
- Simple, single adjustment
  All parts replaceable while mounted on valve
- Rubber-to-metal seat for positive shut-off
- Large area diaphragm for quick, precise throttling
- Visual indication of diaphragm condition
- Bronze and stainless steel construction

1340



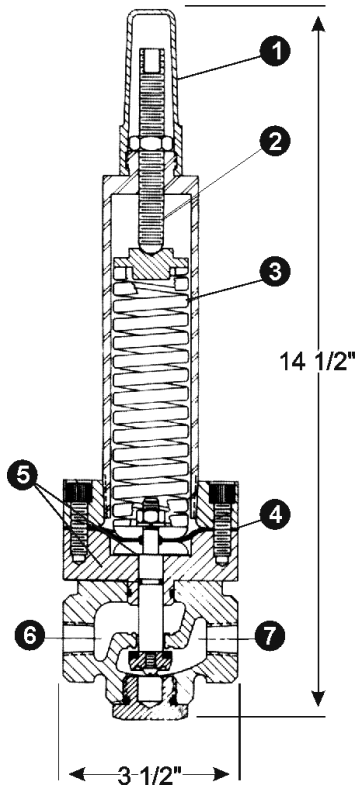
Pilot Materials
Bronze B-62
Stainless Steel ASTM A743/CF8M

Spring Ranges
5-30, 20-80, 65-180, 100-300 psi

Model 1340/ 2420
Pressure Reducing Pilot

1. Adjusting Screw Cover
2. Adjusting Screw
3. Spring
4. Diaphragm
5. Pressure Sense
6. Pilot Outlet
7. Pilot Inlet

2420



Pilot Materials
Stainless Steel ASTM A743/CF8M

Spring Ranges
200-750 psi

The Model 1340 & 2420 Pressure Reducing Pilot controls the amount of pressure in the upper chamber of the main valve (hence, the degree of opening or closing of the main valve). The downstream system pressure is sensed under the pilot to close, increasing the amount of pressure in the upper chamber of the main valve causing it to close a proportionate amount to maintain a constant discharge pressure. As the downstream pressure decreases, the pilot begins to open, allowing the pressure in the upper chamber of the main valve to decrease, causing the main valve to open. This is a constant modulating action compensating for any change in downstream system pressure.

SIZING CONSIDERATIONS

Procedure

The following procedure takes both factors (flow rate/pressure drop) into account through the use of the flow efficent, or Cv. The theory is simple: for best results, a PRV should be sized to operate between 10% and 90% of its capacity, or in other words, between 10% and 90% of its wide open Cv. It is a four-step procedure:

Step 1: Calculate Cv Minimum

Q Minimum= Minimum anticpated flow, GPM
S= specific gravity of fluid (water=1.0)
P1= Inlet pressure at Q minimum, psi
Ps= Desire outlet pressure, psi

$$C_{Vmin} = Q_{min}\sqrt{\frac{s}{p_1 - p_S}}$$

Step 2: Calculate Cv Maximum

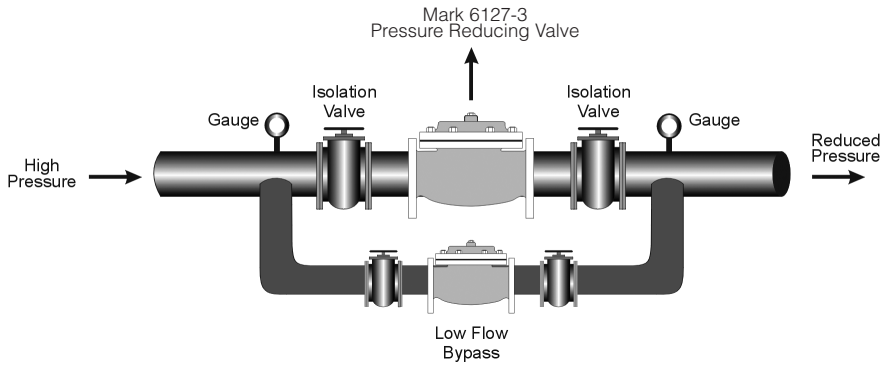
Q Max.= Maximum anticipated flow, GPM
P2= Inlet Pressure at Q maximum, psi
PS= Desired outlet pressure, psi

$$C_{Vmax} = Q_{max}\sqrt{\frac{s}{p_2 - p_S}}$$

Step 3: From the Cv chart on Page 2 , find the size that includes both the Cv min. and Cv max. you have calculated in either the globe or angle valve column.

Occasionally, the flow range is so wide that both the Cv min. and Cv max. will not fit in the proper range for any one size value. In such cases, a parallel valve installation, with a smaller value by passing around a larger one, should be given strong consideration.

Step 4: From the chart on Page 2, check that the velocity (GPM) at the calculated Q max. does not exceed 25 ft/sec/



How to Order Your Valve

When ordering, please provide:

- Series Number
- Valve Size
- Globe/Angle
- Pressure Class
- Threaded/ Flanged/ Grooved
- Trim Material
- Adjustment Range
- Pilot Options
- Special Needs/ Installation Requirements

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