Pressure Reducing and Sustaining Valve

IR-423

The BERMAD Model IR-423 Pressure Reducing and Sustaining Valve is a hydraulically operated, diaphragm actuated control valve with two independent functions. It sustains minimum preset upstream pressure regardless of fluctuating flow or varying downstream pressure, and it prevents downstream pressure from rising above maximum preset regardless of fluctuating flow or excessive upstream pressure.

Features and Benefits

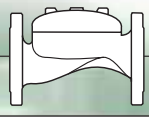
- Line Pressure Driven PRV and PSV
  - Prioritizes higher pressure zones
  - Protects lower pressure zones
  - Controls system fill-up
  - Prevents pipeline emptying
  - Protects pump from overload and cavitation
  - Compensates during groundwater drawdown
- Advanced Globe Hydro-Efficient Design
  - Unobstructed flow path
  - Single moving part
  - High flow capacity
- Fully Supported & Balanced Diaphragm
  - Requires low actuation pressure
  - Excellent low flow regulation performance
  - Progressively restrains valve closing
  - Prevents diaphragm distortion
- User Friendly Design
  - Easy pressure setting
  - Simple in-line inspection and service

Typical Applications

- Downhill Supply Lines
  - Emptying Prevention
  - Higher Pressure Zone Prioritizing
  - Lower Pressure Zone Protection
- Line Fill-Up Control
- Pump Overload and Cavitation Protection
- Deep Well Pump Drawdown Compensation

[1] BERMAD Model IR-423 prioritizes higher pressure zone, protects lower pressure zone, controls system fill-up, and prevents line emptying.
[2] BERMAD Relief Valve Model 73Q
[3] BERMAD Strainer Model 70F

BERMAD Irrigation



IR-423

400 Series

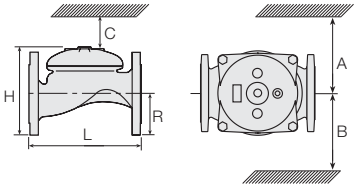
Pressure Reducing

For full technical details, refer to Engineering Section.

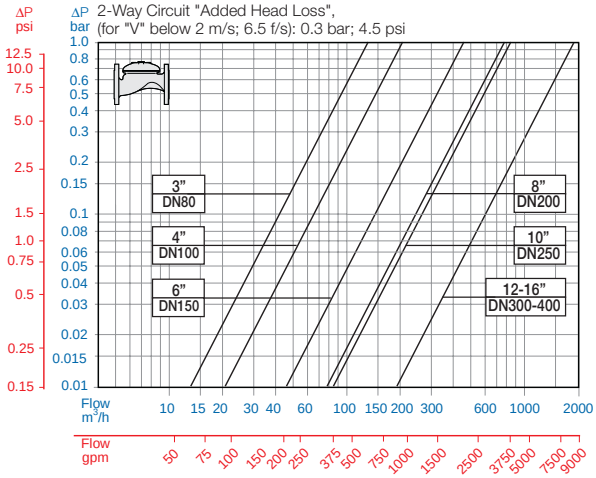
Technical Specifications

Dimensions and Weights

Size	DN Inch	80 3	100 4	150 6	200 8	250 10	300 12	350 14	400 16
L	mm	250	320	415	500	605	725	742	742
	inch	9.8	12.6	16.3	19.8	23.8	28.5	29.2	29.2
H	mm	210	242	345	430	460	635	655	965
	inch	8.3	9.5	13.6	16.9	18.1	25	25.8	38
C	mm	125	145	207	258	276	381	393	579
	inch	5	5.7	8.2	10.2	10.9	15	15.5	22.8
R	mm	100	112	140	170	202	242	260	300
	inch	3.9	4.4	5.5	6.7	8	9.5	10.2	11.8
A; B	mm	300	312	353	383	403	490	494	500
	inch	11.8	12.3	13.9	15.1	15.9	19.3	19.4	19.7
Weight	Kg	19	28	68	125	140	290	358	377
	lb.	41.9	61.7	149.9	275.6	308.6	639.3	789.2	831.1



Flow Chart



Technical Data

Patterns and Sizes: Globe: 3-16"; DN80-400 Angle: 3-4"; DN80-100
End Connections:

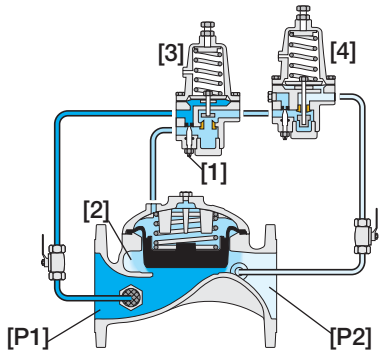
Size		3" DN80	4" DN100	6" DN150	8-16" DN200-400
Threaded	Globe	■			
	Angle	■			
Flanged	Globe	■	■	■	■
	Angle	■	■		
Grooved	Globe	■	■	■	
	Angle	■	■		

PressurePressure Ratings: 16 bar; 232 psi
Operating Pressure Range: 0.5-16 bar; 7-232 psi
For lower pressure requirements, consult factory
Setting Range: 1.5-16 bar; 22-232 psi
Setting ranges vary according to specific pilot spring. Please consult factory.

Materials:

Body and Cover:
Polyester Coated Cast or (10"; DN250 and larger) Ductile Iron
Spring: Stainless Steel
Diaphragm: Nylon fabric Reinforced NR with rugged insert
Bolts, Studs and Nuts: Zinc-Cobalt plated Steel
Control Accessories: Brass
Tubing and Fittings: Reinforced Plastic and Brass

Operation



The Needle Valve **[1]** continuously allows line pressure into the Control Chamber **[2]**. The Pressure Sustaining Pilot (PSP) **[3]** and the Pressure Reducing Pilot (PRP) **[4]** together control outflow from the control chamber. The PSP throttles when Upstream Pressure **[P1]** drops below setting. Pressure then accumulates in the control chamber causing the Valve to throttle closed maintaining **[P1]** at pilot setting. The pilot releases the accumulated pressure through the held open PRP when **[P1]** rise above setting, thereby causing the Valve to modulate open. The PRP throttles if Downstream Pressure **[P2]** rises above setting, stopping valve from opening, and preventing **[P2]** from rising above PRP setting.

How to Order

Please specify the requested valve in the following sequence: (for more options, refer to Ordering Guide.)

Sector	Size	Primary Feature	Additional Feature	Additional Feature	Pattern	Construction Materials	End Connections	Coating	Voltage -Main Valve Position	Tubing & Fittings	Additonal Attributes
IR	3-16"	423	00	-	G	I	16	PG	-	PB	-

Other sizes available on request.

Globe	G
Angle (up to 4"; DN100)	A

Cast Iron (up to 8"; DN200)	I
Ductile Iron (10"; DN250 & above)	C

ISO-16	16
ISO-10	10
IS 14 (ISO 10/4 Holes)	14
ANSI-125	A1
ANSI-150	A5
JIS-10	J1
BST-D	BD
Grooved (3-6"; DN80-150 only)	VI

Other end connections available on request

Plastic Tubing & Brass Fittings	PB
Copper Tubing & Brass Fittings	CB

Metal Control Accessories	R
Large Control Filter	F
Valve Position Indicator(1)	I
Flow Stem(1)	M

(1) Standard Irrigation Cover & Diaphragm are unfitted to Attributes I, M.
Other attributes available on request.

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