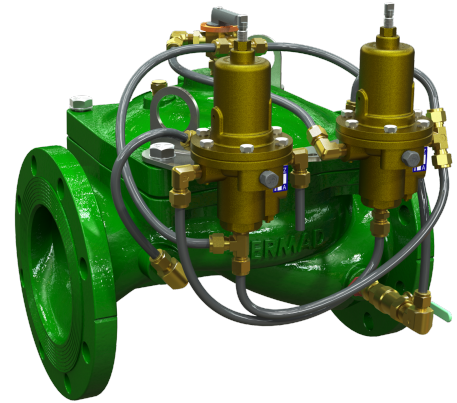




PRESSURE REDUCING & SUSTAINING VALVE

Model IR-423-3W-RXZ

The BERMAD Model IR-423-3W-RXZ 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.



- [1] BERMAD Model IR-423-3W-RXZ sustains filters downstream pressure ensuring sufficient backwash pressure, preventing line emptying, controls downstream system fill up & reduces its operation.
- [2] Filters Back Wash Valves Model IR-350
- [3] On/Off Valve Solenoid Operated Valve Model IR-110-X
- [4] Kinetic Air Valve Model K10

Features & Benefits

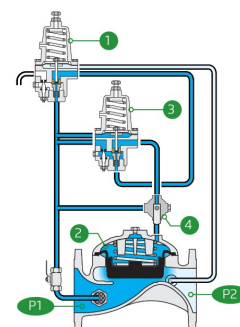
- Line Pressure Driven, Hydraulically Controlled
 - Prioritizes pressure zones
 - Protects lower pressure zones
 - Controls system fill-up
 - Prevents pipeline emptying
 - Protects pump from overload and cavitation
 - Compensates during groundwater drawdown
 - Protects downstream systems
- Advanced Hydro-Efficient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

Typical Applications

- Line Fill-Up Control Solutions
- Filter Backwash Pressure Sustaining
- Pump Circulation Systems (with Orifice)
- Pressure Reducing Systems
- Line Emptying Prevention

Operation:

The Pressure Reducing Pilot (PRP) [1] is hydraulically connected to the Valve Control Chamber [2] through the Pressure Sustaining Pilot (PSP) [3]. The PSP commands the valve to throttle closed should Upstream Pressure [P1] drop below setting. When [P1] rises above setting, the PSP switches and allows the PRP to control the valve, commanding it to reduce Downstream Pressure [P2]. Should line pressure remain above PSP setting but below PRP setting - the valve opens fully. The Manual Selector [4] enables local manual closing.





Technical Data

Pressure Rating:
250 psi

Operating Pressure Range:
7-250 psi

Materials

Body & Cover:
Cast iron (up to 8") Ductile iron (10" & 12")

Diaphragm:
NR, Nylon fabric reinforced

Spring:
Stainless Steel

**Other materials are available on request*

Control Loop Accessories

PR Pilot: PC-SHARP-X-MP

PS Pilot: PC-SHARP-X-MP

Pilot Spring Range:

Spring	Spring Color	Setting range
K	Gray	7-43 psi
N	Natural	12-95 psi
V	Blue & White	15-150 psi
P	White	15-230 psi

Standard spring - marked in bold

Tubing and Fittings:

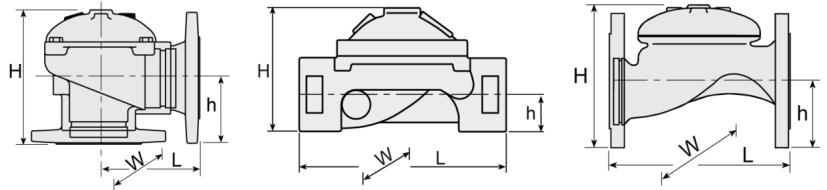
Reinforced Nylon and Brass

**Pilots PC-SHARP-X-MP for sizes up to 4"*

**Pilots X for sizes 6"-12"*

Technical Specifications

For other end connection types,
Please refer to [BERMAD](#) full engineering page.



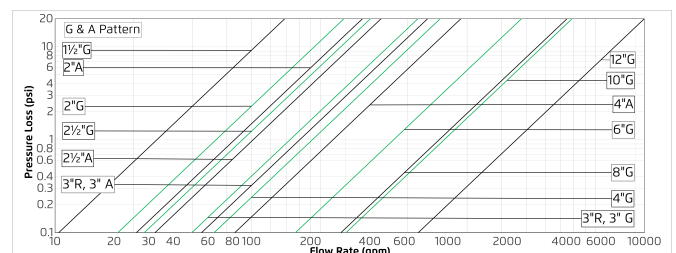
Size	Pattern	End Connection	Weight (Lb)	L (in)	H (in)	h (in)	W	CCDV (Gal)	CV
1" ; DN25	Globe	Threaded	2.4	4%	2 3/4	1 3/8	2 7/8	0.005	15
1 1/2" ; DN40	Globe	Threaded	4.4	6%	3%	1 1/4	3%	0.016	33
2" ; DN50	Globe	Threaded	8.8	7%	4 1/2	1 1/2	4%	0.03	66
2" ; DN50	Globe	Flanged	19.8	8%	6%	3 1/2	6%	0.03	66
2" ; DN50	Globe	Grooved	11	8%	4%	1 1/4	4%	0.03	66
2" ; DN50	Angle	Threaded	9.7	3 1/2	5%	2 1/2	4%	0.03	82
2" ; DN50	Angle	Flanged	19.8	4%	7%	3%	6%	0.03	82
2 1/2" ; DN65	Globe	Threaded	12.6	8%	5%	1%	5%	0.05	90
2 1/2" ; DN65	Globe	Flanged	23.1	8%	7	3 1/2	7	0.05	90
2 1/2" ; DN65	Angle	Threaded	12.8	4%	7%	3%	5%	0.05	102
3R" ; DN80R	Globe	Threaded	12.9	8%	5 1/2	2%	5%	0.08	157
3R" ; DN80R	Globe	Flanged	28	8%	7%	4	7%	0.08	157
3R" ; DN80R	Angle	Threaded	15.4	4%	7	3%	5%	0.08	176
3" ; DN80	Globe	Threaded	28.7	10%	6 1/2	2 1/4	6%	0.08	157
3" ; DN80	Globe	Flanged	41.9	9%	8%	4	7%	0.08	157
3" ; DN80	Globe	Grooved	23.4	9%	6%	1%	6%	0.08	157
3" ; DN80	Angle	Threaded	24.3	4%	7%	3%	6%	0.08	176
3" ; DN80	Angle	Flanged	37.5	6%	8%	4	7%	0.08	176
3" ; DN80	Angle	Grooved	22.1	4%	11	3%	6%	0.08	176
4" ; DN100	Globe	Flanged	61.7	12%	9%	4 1/2	8%	0.18	236
4" ; DN100	Globe	Grooved	35.7	12%	7%	2 1/2	8	0.18	236
4" ; DN100	Angle	Flanged	57.3	6%	8 3/4	4 1/2	8%	0.18	260
4" ; DN100	Angle	Grooved	35.3	6%	8 3/4	4 1/2	8%	0.18	260
6" ; DN150	Globe	Flanged	149.9	16%	13%	5 1/2	12%	0.52	529
6" ; DN150	Globe	Grooved	108	16%	11%	3%	12%	0.52	529
8" ; DN200	Globe	Flanged	275.6	19%	17	6%	14%	1.02	902
10" ; DN250	Globe	Flanged	308.6	23%	18%	8	16	1.02	957
12" ; DN300	Globe	Flanged	639.3	28%	25	9%	22%	3.63	2231

CCDV = Control Chamber Displacement Volume • Threaded = BSP & NPT are available.

Additional Features

Code	Description	Size Range
F	Large Control Filter	1 1/2"-12"
I	Position Indicator Assembly	1 1/2"-12"
M	Flow Stem	1 1/2"-12"

Flow Chart



Differential Pressure & Flow Calculation

$$\Delta P = \left(\frac{Q}{Cv} \right)^2$$

Cv = gpm @ ΔP of 1 psi
Q = gpm
ΔP = psi