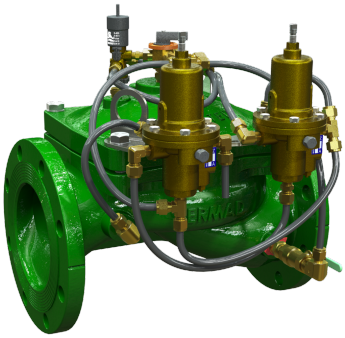
PRESSURE REDUCING & SUSTAINING VALVE

Model IR-423-55-3W-RX

The BERMAD Pressure Reducing and Sustaining Valve with solenoid control,Model IR-423-55-3W-RX, is a hydraulically operated, diaphragm actuated control valve that performs three independent functions. It sustains the preset minimum upstream pressure, reduces downstream pressure to a constant preset maximum, and it either opens or shuts in response to an electric signal.



[1] BERMAD Model IR-423-55-3W-RX sustains filters downstream pressure insuring 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 Solenoid Operated Valve Model IR-110-3W-X
[4] Kinetic Air Valve Model K10

Features & Benefits

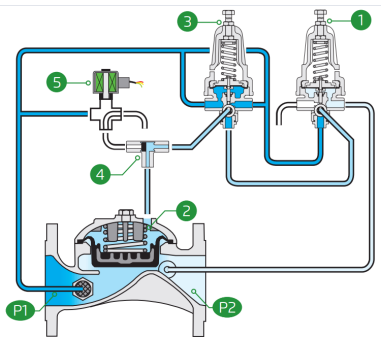
- Hydraulic Pressure Control with Solenoid Control
  - Line pressure driven
  - Sustains upstream line pressure
  - Controls system fill-up
  - Protects downstream systems
  - Electrically controlled On/Off
- Advanced Hydro-Efficient Globe Design
  - Unobstructed flow path
  - Single moving part
  - High flow capacity
- Fully Supported & Balanced Diaphragm
  - Requires low opening and actuation pressure
  - Excellent low flow regulation performances
  - Progressively restrains valve closing
  - Prevents diaphragm distortion
- User-Friendly Design
  - Simple in-line inspection and service

Typical Applications

- Automated Irrigation Systems
- Remote and/or Elevated Plots
- Pressure Zone Prioritizing
- Line Fill-Up Control
- Line Emptying Prevention
- Pressure Reducing Stations
- Irrigation Machines
- Low Supplied Pressure Irrigation Systems

Operation:

The Pressure Reducing Pilot (PRP) [1] is hydraulically connected to the Valve Control Chamber [2] through the Pressure Sustaining Pilot (PSP) [3] and the Shuttle Valve [4] . 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] . In response to an electric signal, the Solenoid [5] switches and pressurizes the shuttle valve, which then blocks the pilots and transmits line pressure into the control chamber, shutting the valve.



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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

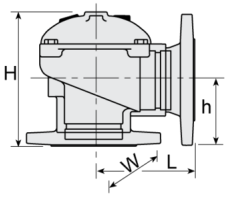
AC solenoid:
S-390-3W M.B.

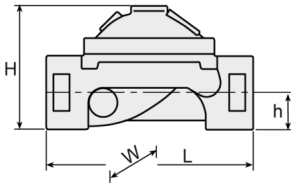
DC latch solenoid:
S-402-3W M.B.

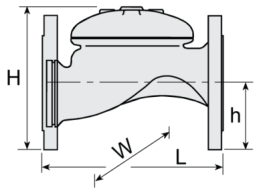
**Pilots PC-SHARP-X-MP for sizes up to 4"*
**Pilots X for sizes 6"-12"*

Technical Specifications

For other end connection types,
Please refer to BERMAD full engineering page.







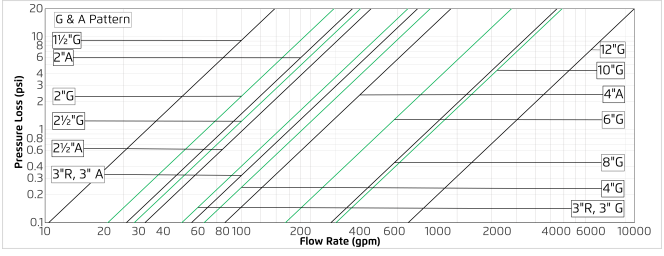
Size	Pattern	End Connection	Weight (Lb)	L (In)	H (In)	h (In)	W	CCDV (Gal)	CV
1" ; DN25	Globe	Threaded	2.4	4⅜	2¾	1⅜	2⅞	0.005	15
1½" ; DN40	Globe	Threaded	4.4	6⅛	3⅜	1¼	3⅞	0.016	33
2" ; DN50	Globe	Threaded	8.8	7⅛	4½	1½	4¾	0.03	66
2" ; DN50	Globe	Flanged	19.8	8⅛	6⅛	3⅛	6⅛	0.03	66
2" ; DN50	Globe	Grooved	11	8⅛	4¼	1¼	4¾	0.03	66
2" ; DN50	Angle	Threaded	9.7	3½	5⅜	2½	4¾	0.03	82
2" ; DN50	Angle	Flanged	19.8	4¾	7⅞	3⅜	6⅛	0.03	82
2½" ; DN65	Globe	Threaded	12.6	8⅜	5¼	1⅞	5⅛	0.05	90
2½" ; DN65	Globe	Flanged	23.1	8⅛	7	3½	7	0.05	90
2½" ; DN65	Angle	Threaded	12.8	4⅜	7⅛	3¾	5¼	0.05	102
3R"- ; DN80R	Globe	Threaded	12.9	8⅜	5½	2⅛	5⅛	0.08	157
3R"- ; DN80R	Globe	Flanged	28	8⅜	7⅞	4	7⅞	0.08	157
3R"- ; DN80R	Angle	Threaded	15.4	4⅜	7	3⅝	5¼	0.08	176
3" ; DN80	Globe	Threaded	28.7	10⅛	6½	2¼	6¾	0.08	157
3" ; DN80	Globe	Flanged	41.9	9⅞	8¼	4	7⅞	0.08	157
3" ; DN80	Globe	Grooved	23.4	9⅞	6⅛	1⅞	6¾	0.08	157
3" ; DN80	Angle	Threaded	24.3	4⅜	7¼	3¼	6¾	0.08	176
3" ; DN80	Angle	Flanged	37.5	6⅛	8⅛	4	7⅞	0.08	176
3" ; DN80	Angle	Grooved	22.1	4¾	11	3⅝	6¾	0.08	176
4" ; DN100	Globe	Flanged	61.7	12⅝	9⅝	4½	8⅞	0.18	236
4" ; DN100	Globe	Grooved	35.7	12⅝	7⅝	2½	8	0.18	236
4" ; DN100	Angle	Flanged	57.3	6⅜	8¾	4½	8⅞	0.18	260
4" ; DN100	Angle	Grooved	35.3	6⅜	8¾	4½	8⅞	0.18	260
6" ; DN150	Globe	Flanged	149.9	16⅜	13⅜	5½	12⅛	0.52	529
6" ; DN150	Globe	Grooved	108	16⅜	11⅞	3⅜	12⅛	0.52	529
8" ; DN200	Globe	Flanged	275.6	19¾	17	6¾	14⅜	1.02	902
10" ; DN250	Globe	Flanged	308.6	23⅞	18⅛	8	16	1.02	957
12" ; DN300	Globe	Flanged	639.3	28⅝	25	9⅝	22⅞	3.63	2231

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

Additional Features

Code	Description	Size Range
F	Large Control Filter	1½"-12"
I	Position Indicator Assembly	1½"-12"
M	Flow Stem	1½"-12"
Z	Manual Selector	1½"-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