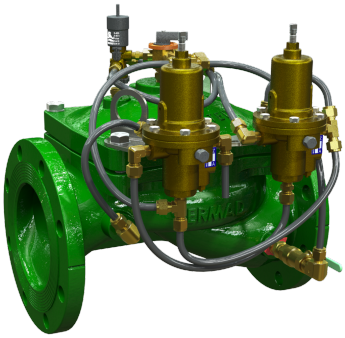
PRESSURE REDUCING & SUSTAINING VALVE

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

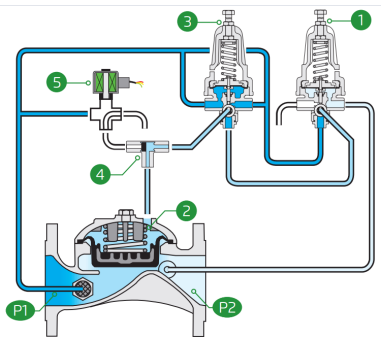
- Hydraulic Pressure Control with Solenoid Control
  - Line pressure driven
  - Sustains upstream line pressure
  - Controls system fill-up
  - Protects downstream systems
  - Electrically controlled On/Off
- Advanced Hydro-Efficient Globe Design
  - Unobstructed flow path
  - Single moving part
  - 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:
16 bar

Operating Pressure Range:
0.5-16 bar

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	0.5-3.0 bar
N	**Natural**	**0.8-6.5 bar**
V	Blue & White	1.0-10.0 bar
P	White	1.0-16.0 bar

Standard spring - marked in bold

Tubing and Fittings:
Reinforced Nylon and Brass

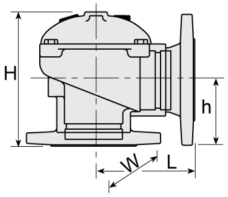
AC solenoid:
S-390-3W M.B.

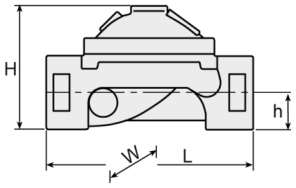
DC latch solenoid:
S-402-3W M.B.

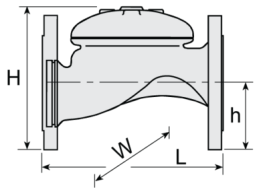
**Pilots PC-SHARP-X-MP for sizes up to 4"*
**Pilots X for sizes 6"-12"*

Technical Specifications

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







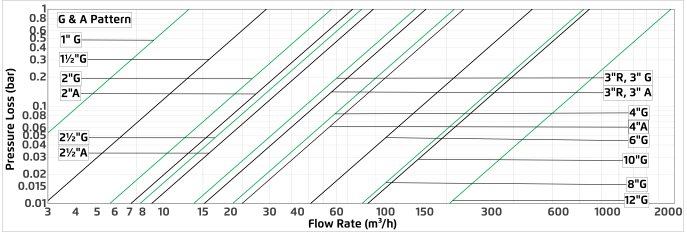
Size	Pattern	End Connection	Weight (Kg)	L (mm)	H (mm)	h (mm)	W	CCDV (Lit)	KV
1" ; DN25	Globe	Threaded	1.1	115	68	34	71	0.02	13
1½" ; DN40	Globe	Threaded	2	153	87	29	98	0.06	29
2" ; DN50	Globe	Threaded	4	180	114	39	119	0.113	57
2" ; DN50	Globe	Flanged	9	205	155	78	155	0.113	57
2" ; DN50	Globe	Grooved	5	205	108	31	119	0.113	57
2" ; DN50	Angle	Threaded	4.4	86	136	61	119	0.113	71
2" ; DN50	Angle	Flanged	9	120	160	83	155	0.113	71
2½" ; DN65	Globe	Threaded	5.7	210	132	45	129	0.179	78
2½" ; DN65	Globe	Flanged	10.5	205	178	89	178	0.179	78
2½" ; DN65	Angle	Threaded	5.8	110	180	93	131	0.179	88
3R"- ; DN80R	Globe	Threaded	5.8	210	140	53	129	0.291	136
3R"- ; DN80R	Globe	Flanged	12.1	210	200	100	200	0.291	136
3R"- ; DN80R	Angle	Threaded	7	110	178	91	131	0.291	152
3" ; DN80	Globe	Threaded	13	255	165	55	170	0.291	136
3" ; DN80	Globe	Flanged	19	250	210	100	200	0.291	136
3" ; DN80	Globe	Grooved	10.6	250	155	46	170	0.291	136
3" ; DN80	Angle	Threaded	11	110	184	80	170	0.291	152
3" ; DN80	Angle	Flanged	17	153	205	101	200	0.291	152
3" ; DN80	Angle	Grooved	10	120	194	90	170	0.291	152
4" ; DN100	Globe	Flanged	28	320	242	112	223	0.668	204
4" ; DN100	Globe	Grooved	16.2	320	191	61	204	0.668	204
4" ; DN100	Angle	Flanged	26	160	223	112	223	0.668	225
4" ; DN100	Angle	Grooved	16	160	223	112	204	0.668	225
6" ; DN150	Globe	Flanged	68	415	345	140	306	1.973	458
6" ; DN150	Globe	Grooved	49	415	302	85	306	1.973	458
8" ; DN200	Globe	Flanged	125	500	430	170	365	3.858	781
10" ; DN250	Globe	Flanged	140	605	460	202	405	3.858	829
12" ; DN300	Globe	Flanged	290	725	635	242	580	13.75	1932

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

Additional Features

Code	Description	Size Range
F	Large Control Filter	1½"-12" / DN40-300
I	Position Indicator Assembly	1½"-12" / DN40-300
M	Flow Stem	1½"-12" / DN40-300
Z	Manual Selector	1½"-12" / DN40-300

Flow Chart



Differential Pressure & Flow Calculation

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

Kv = m³/h @ ΔP of 1 bar
Q = m³/h
ΔP = bar