PRESSURE REDUCING VALVE

Model IR-420-50-3W-KXZ

The BERMAD Pressure Reducing Valve with hydraulic remote control is hydraulically operated, diaphragm actuated control valve that reduces higher upstream pressure to lower constant downstream pressure regardless of fluctuating demand, and opens fully upon line pressure drop. It either opens or shuts in response to a remote pressure command.

[1] BERMAD Model IR-420-50-3W-KXZ opens upon pressure drop command, and establishes pressure zone protecting laterals and distribution line.
[2] Hydrometer Model IR-900-M0-Magnetic Drive
[3] Combination Air Valve Model IR-C10
[4] Combination Air Valve Model IR-C30
[5] Smart Irrigation Controller-OMEGA

Features & Benefits

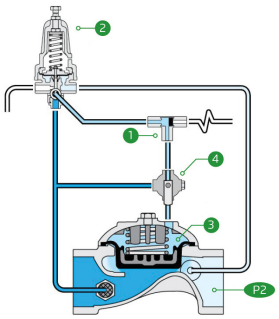
- Hydraulic Pressure Control
  - Line pressure driven
  - Protects downstream systems
  - Opens fully upon line pressure drop
  - Hydraulically controlled On/Off
- Advanced Hydro-Efficient Globe Design
  - Unobstructed flow path
  - Single moving part
  - High flow capacity
- Fully Supported & Balanced 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

Typical Applications

- Automated Irrigation Systems
- Pressure Reducing Systems
- Systems Subject to Varying Supply Pressure
- Distribution Centers

Operation:

The Shuttle Valve [1] hydraulically connects the Pressure Reducing Pilot (PRP) [2] to the Valve Control Chamber [3] . The PRP commands the valve to throttle closed should Downstream Pressure [P2] rise above pilot setting and to open fully when it drops below pilot setting. Upon command pressure rise, the shuttle valve automatically switches, allowing pressurization of the control chamber, which causes the main valve to shut. The Manual Selector [4] enables local manual closing.



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Technical Data

Pressure Rating:
150 psi

Operating Pressure Range:
7-150 psi

Materials

Body & Cover:
Cast Iron

Diaphragm:
NR, Nylon fabric reinforced

Spring:
Stainless Steel

**Other materials are available on request*

Control Loop Accessories

PR Pilot: PC-SHARP-X-P

Pilot Spring Range:

Spring	Spring Color	Setting range
J	Green	3-25 psi
K	Gray	7-43 psi
N	**Natural**	**12-95 psi**
V	Blue & White	15-150 psi

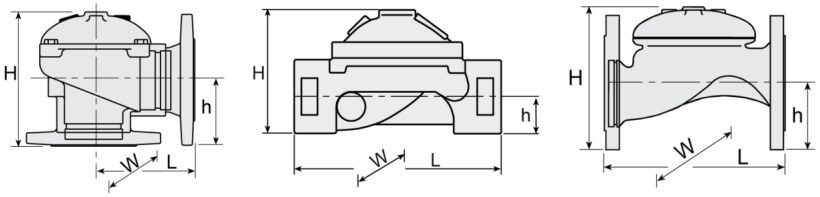
Standard spring - marked in bold

Tubing and Fittings:
Polyethylene and Polypropylene

**For other pilots please consult BERMAD*

Technical Specifications

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



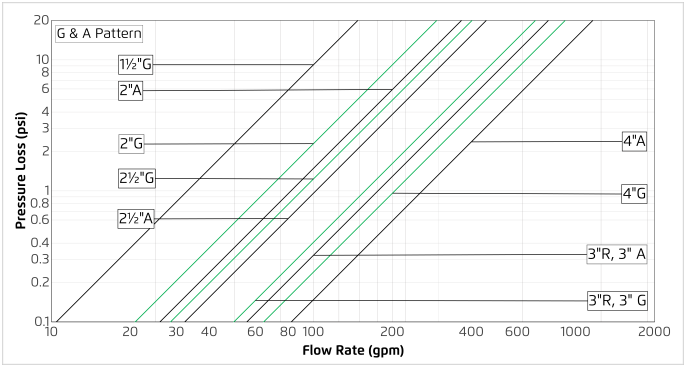
Size	Pattern	End Connection	Weight (Lb)	L (In)	H (In)	h (In)	W	CCDV (Gal)	CV
1" ; DN25	Globe	Threaded	2.4	4⅜	2¾	1⅜	2⅞	0.005	15
1½" ; DN40	Globe	Threaded	4.4	6⅛	3⅜	1¼	3⅞	0.016	33
2" ; DN50	Globe	Threaded	8.8	7⅛	4½	1½	4¾	0.03	66
2" ; DN50	Globe	Flanged	19.8	8⅛	6⅛	3⅛	6⅛	0.03	66
2" ; DN50	Globe	Grooved	11	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

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

Additional Features

Code	Description	Size Range
I	Position Indicator Assembly	1½"-4"
M	Flow Stem	1½"-4"
5	Plastic Test Point	1½"-4"

Flow Chart



Differential Pressure & Flow Calculation

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

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