



PRESSURE REDUCING VALVE

Model IR-120-50-3W-XZ

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



- [1]** BERMAD Model IR-120-50-3W-XZ opens upon pressure drop command, and establishes reduced 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

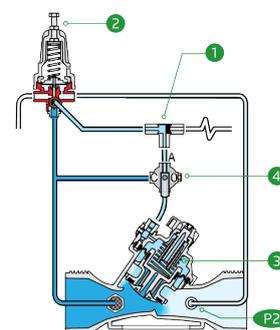
- Line Pressure Driven, Hydraulically Controlled
 - Protects downstream systems
 - Opens fully upon line pressure drop
- Engineered Composite Valve with Industrial Grade Design
 - Adaptable on-site to a wide range of end connection
 - Articulated flange connections that eliminate line bending and hydraulic stresses
 - Highly durable, chemical and cavitation resistant
- hYflow 'Y' Valve Body with "Look Through" Design
 - Ultra-high flow capacity at low pressure loss
- Unitized "Flexible Super Travel" (FST) Diaphragm and Guided Plug
 - Accurate and stable regulation with smooth closing
 - Requires low actuation pressure
 - Prevents diaphragm erosion and distortion
 - Simple in-line inspection and service

Typical Applications

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

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 setting and to open fully when it drops below setting. Upon pressure rise command, the shuttle valve automatically switches, allowing pressurization of the control chamber, which causes the main valve to shut. The Manual Selector **[4]** enables manual closing.





Technical Data

Pressure Rating:
150 psi

Operating Pressure Range:
7-150 psi

Materials

Body & Cover:
Polyamide 6 & 30% GF

Diaphragm:
NR, Nylon fabric reinforced

Spring:
Stainless Steel

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

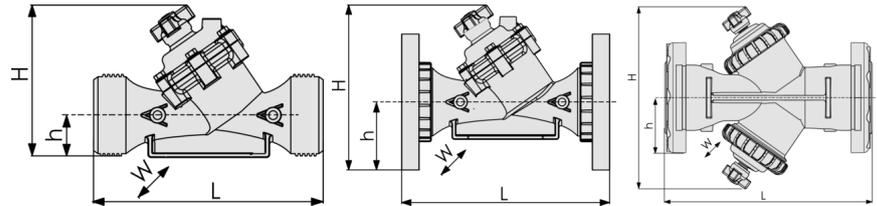
Standard spring - marked in bold

Tubing and Fittings:

Polyethylene and Polypropylene

Technical Specifications

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



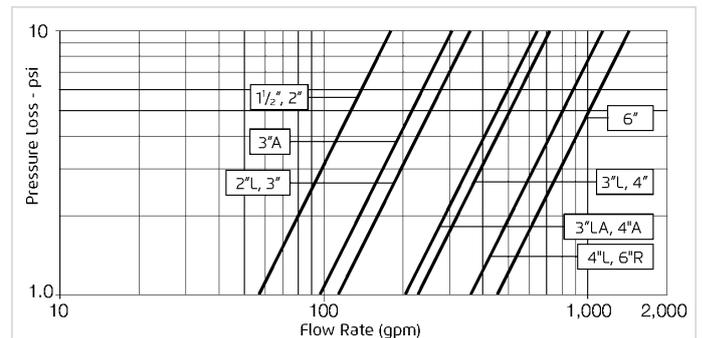
Size	Pattern	End Connection	Weight (Lb)	L (In)	H (In)	h (In)	w	CCDV (Gal)	CV
1½" ; DN40	Oblique	Threaded	2.4	7¾	6¾	1¾	3¾	0.026	58
2" ; DN50	Oblique	Threaded	2.7	9¾	6¾	1¾	3¾	0.026	58
2"L ; DN50L	Oblique	Threaded	3	9¾	7¾	1¾	5¾	0.033	116
2½" ; DN65	Oblique	Threaded	3	9¾	7¾	1¾	5¾	0.033	116
3" ; DN80	Oblique	Threaded	4	11¾	7¾	2¼	5¾	0.033	116
3" ; DN80	Oblique	Plastic Flanges	6	12¾	9¾	4	7¾	0.033	116
3" ; DN80	Oblique	Metal Flanges	10	12¾	9¾	4	7¾	0.033	116
3"L ; DN80L	Oblique	Threaded	7	11¾	9¾	2¾	6¾	0.136	231
3"L ; DN80L	Oblique	Plastic Flanges	8.2	12¾	12½	4	7¾	0.136	231
3"L ; DN80L	Oblique	Metal Flanges	10.1	12¾	12½	4	7¾	0.136	231
4" ; DN100	Oblique	Plastic Flanges	10	13¾	13	4½	8¾	0.136	231
4" ; DN100	Oblique	Metal Flanges	16.3	13¾	13	4½	8¾	0.136	231
4"L ; DN100L	Oblique	Plastic Flanges	20.2	17¾	13¾	4½	9	0.253	393
4"L ; DN100L	Oblique	Metal Flanges	24.7	17¾	13¾	4½	9	0.253	393
6"R ; DN150R	Oblique	Metal Flanges	36	18½	14¾	5¾	11¾	0.253	393
6" ; DN150	Boxer	Grooved	26	19	15¾	4	18¾	2x0.136	462
6" ; DN150	Boxer	Plastic Flanges	27.6	19¾	15¾	5¾	18¾	2x0.136	462

CCDV = Control Chamber Displacement Volume • **Threaded** = BSP & NPT are available. External thread is available for 2" and 2½" only. • Other End Connections are available on request. For dimensions and weights of adapters or valves with adapters please consult with customer service.

Additional Features

Code	Description	Size Range
M	Flow Stem (*Exclude sizes 4"L, 6"R)	1½"-6"
5	Plastic Test Point	1½"-4"
V3	Victaulic PVC Adaptors 3"	3"
V4	Victaulic PVC Adaptors 4"	4"

Flow Chart



Differential Pressure & Flow Calculation

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

$Cv = \text{gpm @ } \Delta P \text{ of 1 psi}$
 $Q = \text{gpm}$
 $\Delta P = \text{psi}$