PRESSURE REDUCING & SUSTAINING VALVE

Model IR-123-50-3W-XZ

The BERMAD Model IR-123-50-3W-XZ Pressure Reducing & Sustaining Control Valve with hydraulic remote control 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 a remote pressure command.

[1] BERMAD Model IR-123-50-3W-XZ opens upon pressure drop command, sustains filters back flush pressure and establishes reduced pressure zone.
[2] Electromagnetic Flow Meter
[3] Combination Air Valve Model IR-C10
[4] Smart Irrigation Controller-OMEGA
[5] Hydraulic Control Valve Model IR-105-Z
[6] Kinetic Air Valve Model IR-K10

Features & Benefits

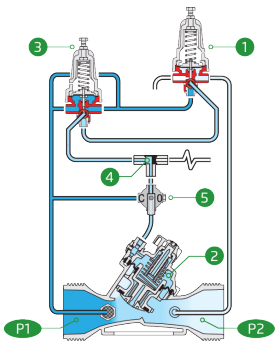
- Line Pressure Driven, Hydraulically Controlled On/Off
  - Protects downstream systems
  - Sustains upstream line pressure
  - Controls system fill-up
- Engineered Composite Valve with Industrial Grade Design
  - Adaptable on-site to a wide range of end connection
  - Articulated flange connections 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 opening and actuation pressure
  - Prevents diaphragm erosion and distortion
- Simple In-Line Inspection and Service

Typical Applications

- Automated Irrigation Systems
- Pressure Zone Prioritizing
- Line Fill-Up Control
- Pressure Reducing Stations
- Low Supplied Pressure Irrigation Systems
- Energy Saving 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] . 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] . The Shuttle Valve [4] closes upon pressure rise command, shutting the main valve. The Manual Selector [5] enables local manual closing.



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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

PS Pilot: PC-SHARP-X-P

Pilot Spring Range:

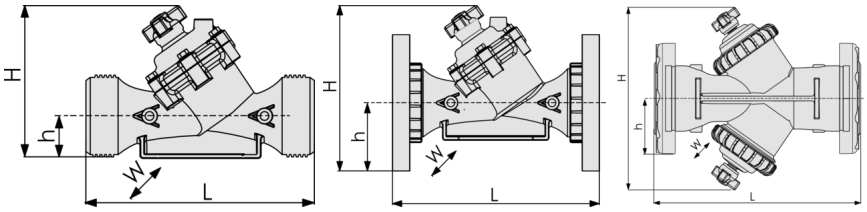
Spring	Spring Color	Setting range
J	Green	3-25 psi
K	Gray	7-43 psi
N	**Natural**	**12-95 psi**
V	Blue & White	15-150 psi

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.



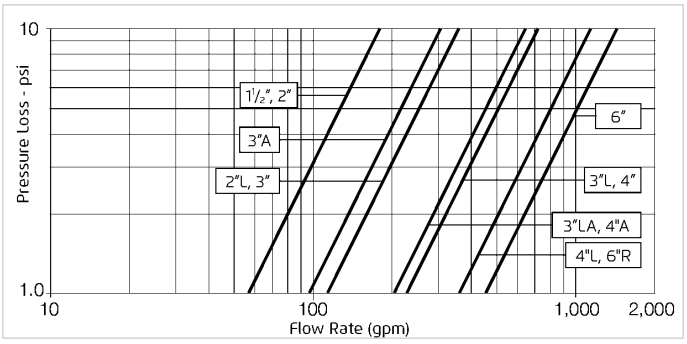
Size	Pattern	End Connection	Weight (Lb)	L (In)	H (In)	h (In)	W	CCDV (Gal)	CV
1½" ; DN40	Oblique	Threaded	2.4	7⅞	6⅞	1⅝	3⅜	0.026	58
2" ; DN50	Oblique	Threaded	2.7	9⅛	6⅞	1⅝	3⅜	0.026	58
2"L ; DN50L	Oblique	Threaded	3	9⅛	7⅜	1¾	5⅜	0.033	116
2½" ; DN65	Oblique	Threaded	3	9⅛	7⅜	1¾	5⅜	0.033	116
3" ; DN80	Oblique	Threaded	4	11¾	7⅞	2¼	5⅜	0.033	116
3" ; DN80	Oblique	Plastic Flanges	6	12⅛	9⅝	4	7⅞	0.033	116
3" ; DN80	Oblique	Metal Flanges	10	12⅛	9⅝	4	7⅞	0.033	116
3"L ; DN80L	Oblique	Threaded	7	11¾	9⅛	2⅜	6⅝	0.136	231
3"L ; DN80L	Oblique	Plastic Flanges	8.2	12⅛	12½	4	7⅞	0.136	231
3"L ; DN80L	Oblique	Metal Flanges	10.1	12⅛	12½	4	7⅞	0.136	231
4" ; DN100	Oblique	Plastic Flanges	10	13⅞	13	4½	8⅞	0.136	231
4" ; DN100	Oblique	Metal Flanges	16.3	13⅞	13	4½	8⅞	0.136	231
4"L ; DN100L	Oblique	Plastic Flanges	20.2	17½	13⅜	4½	9	0.253	393
4"L ; DN100L	Oblique	Metal Flanges	24.7	17½	13⅜	4½	9	0.253	393
6"R ; DN150R	Oblique	Metal Flanges	36	18½	14⅞	5⅞	11⅜	0.253	393
6" ; DN150	Boxer	Grooved	26	19	15¼	4	18¾	2x0.136	462
6" ; DN150	Boxer	Plastic Flanges	27.6	19⅞	15¼	5⅝	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"
Z	Manual Selector	1½"-4"L
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 = gpm @ ΔP of 1 psi
Q = gpm
ΔP = psi