FLOW CONTROL & PRESSURE REDUCING VALVE

Model IR-172-50-3W-XZt

The BERMAD Flow Control and Pressure Reducing Valve is a hydraulically operated, diaphragm actuated control valve that limits system demand to the designed maximum allowed value; reduces downstream pressure to constant preset maximum and shut in respond to hydraulic pressurized command.

[1] BERMAD Model IR-172-50-3W-XZt limits over-demand, controls laterals and distribution line fill-up while reducing pressure.
[2] Combination Air Valve Model IR-C10
[3] Water Meter Model Turbo-IR
[4] RTU-Remote Terminal Unit

Features & Benefits

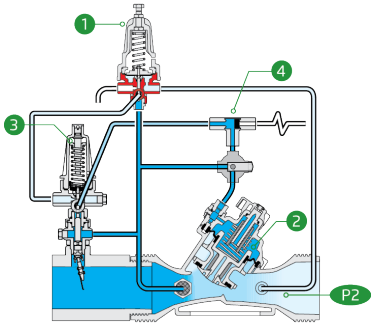
- Line Pressure Driven Hydraulic Flow Control
  - Limits fill-up rate and consumer excessive demand
  - Protects downstream systems
  - Adjustable paddle-type hydro-mechanic flow pilot with no added head loss
  - Easy flow and pressure setting with a wide setting range
- Engineered Composite Valve with Industrial Grade Design
  - Adaptable on-site to a wide range of end connection
  - 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

- Line Fill-Up Control
- Pressure Reducing Systems
- Multiple Independent Consumer Systems
- Systems Subject to Varying Supply Pressure
- Mechanized Irrigation Systems
- Filter Stations

Operation:

The Pressure Reducing Pilot (PRP) [1] is hydraulically connected to the control chamber [2] through the Flow Control Pilot (FCP) [3] . The PRP commands the valve to throttle closed should downstream pressure rise above setting and to fully open when downstream [P2] pressure drops below setting. The FCP commands the valve to throttle closed should demand rise above setting and to open fully when demand drops below setting. The Shuttle Valve [4] allows valve remote closing by introducing pressurized command to the control chamber, shutting the valve.



All images in this catalog are for illustration only

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

FC Pilot: PC-70-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

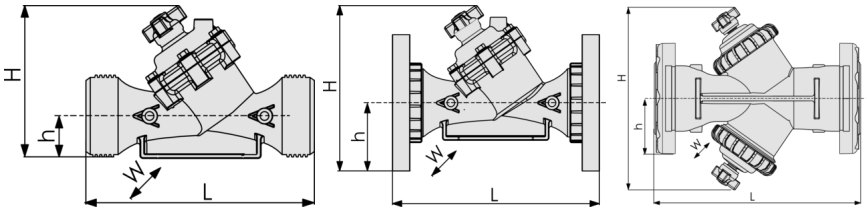
Standard spring - marked in bold

Tubing and Fittings:
Polyethylene and Polypropylene

Flow Pilot spring range:
Spring: *E-Purple*
Flow Velocity (ft/sec): *5-11.5*
**For other pilots and flow velocities range, please consult BERMAD*

Technical Specifications

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



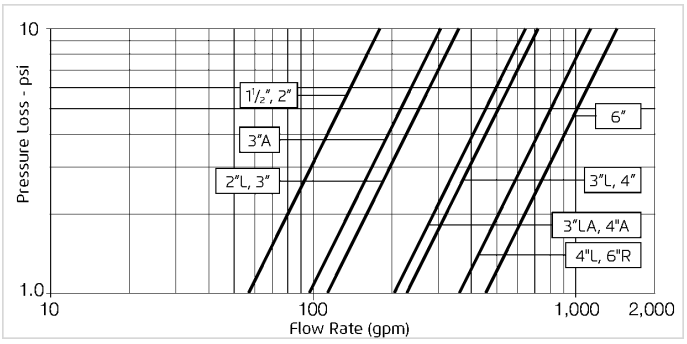
Size	Pattern	End Connection	Weight (Lb)	L (In)	H (In)	h (In)	W	CCDV (Gal)	CV
1½" ; DN40	Oblique	Threaded	2.4	7⅞	6⅞	1⅝	3⅜	0.026	58
2" ; DN50	Oblique	Threaded	2.7	9⅛	6⅞	1⅝	3⅜	0.026	58
2"L ; DN50L	Oblique	Threaded	3	9⅛	7⅜	1¾	5⅜	0.033	116
2½" ; DN65	Oblique	Threaded	3	9⅛	7⅜	1¾	5⅜	0.033	116
3" ; DN80	Oblique	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	13⅜	13	4½	8⅞	0.136	231
4" ; DN100	Oblique	Metal Flanges	16.3	13⅜	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"
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 = gpm @ ΔP of 1 psi
Q = gpm
ΔP = psi