

FLOW CONTROL VALVE

With Differential Pressure Duct & Manual Selector

Model IR-170-DZbe

The BERMAD Flow Control Valve with Hydraulic Control is a hydraulically operated, diaphragm-actuated control valve that limits system demand to a preset maximum flow rate.



- [1] BERMAD Model IR-170-DZbe protects supply system from excessive flow, and limits fill-up rate and consumer over-demand.
- [2] Kinetic Air Valve Model IR-K10
- [3] Combination Air Valve Model IR-C10
- [4] RTU-Remote Terminal Unit
- [5] Pressure Sustaining Valve Model IR-130-59-3W-X

Features & Benefits

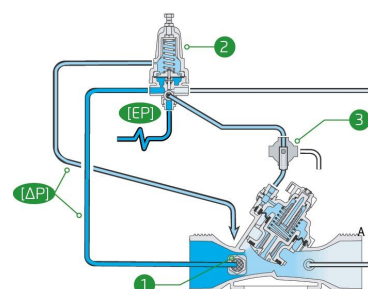
- Line Pressure Driven Hydraulic Flow Control
 - Limits fill-up rate and consumer excessive demand
- Adjustable Servo Flow Pilot Controlled
 - Dynamic integrated needle valve
 - Easy flow setting
- Engineered Composite Valve with Industrial Grade Design
 - Highly durable, chemical and cavitation resistant
 - No internal bolts and nuts
- 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
- Internal "Differential Pressure Duct" Flow Sensor
 - No moving parts
 - Saves space and simplifies installation

Typical Applications

- Line Fill-Up Control
- Multiple Independent Consumer Systems
- Systems Subject to Varying Supply Pressure
- Distribution Centers

Operation:

Pressure Differential (ΔP) across the Differential Pressure Duct [1] is in direct proportion to demand. The Flow Pilot [2] continuously senses ΔP commanding the Valve to throttle closed should demand rise above pilot setting, and to modulate open when demand is below pilot setting. The Manual Selector [3] enables local manual closing. External Control Pressure (ECP) delivered from the filtration system downstream manifold, ensures valve functioning.





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

FC Pilot: PC-SD-A-P

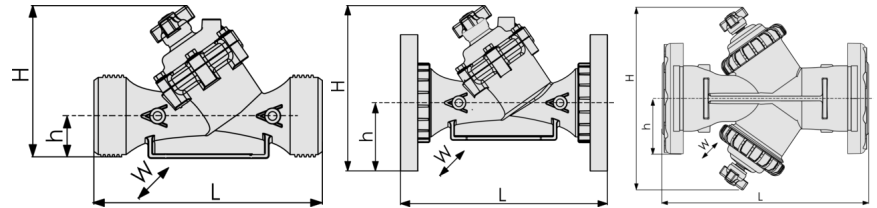
Pilot Spring Range:

Spring	Spring Color	Setting range
J	Green	3-25 psi

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	1⅞	3⅞	0.026	58
2" ; DN50	Oblique	Threaded	2.7	9⅞	6⅞	1⅞	3⅞	0.026	58
2"L ; DN50L	Oblique	Threaded	3	9⅞	7⅞	1⅞	5⅞	0.033	116
2½" ; DN65	Oblique	Threaded	3	9⅞	7⅞	1⅞	5⅞	0.033	116
3" ; DN80	Oblique	Threaded	4	11⅞	7⅞	2⅞	5⅞	0.033	116
3" ; DN80	Oblique	Plastic Flanges	6	12⅞	9⅞	4	7⅞	0.033	116
3" ; DN80	Oblique	Metal Flanges	10	12⅞	9⅞	4	7⅞	0.033	116
3"L ; DN80L	Oblique	Threaded	7	11⅞	9⅞	2⅞	6⅞	0.136	231
3"L ; DN80L	Oblique	Plastic Flanges	8.2	12⅞	12½	4	7⅞	0.136	231
3"L ; DN80L	Oblique	Metal Flanges	10.1	12⅞	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	13⅞	4½	9	0.253	393
4"L ; DN100L	Oblique	Metal Flanges	24.7	17½	13⅞	4½	9	0.253	393
6"R ; DN150R	Oblique	Metal Flanges	36	18½	14⅞	5⅞	11⅞	0.253	393
6" ; DN150	Boxer	Grooved	26	19	15⅞	4	18⅞	2x0.136	462
6" ; DN150	Boxer	Plastic Flanges	27.6	19⅞	15⅞	5⅞	18⅞	2x0.136	462

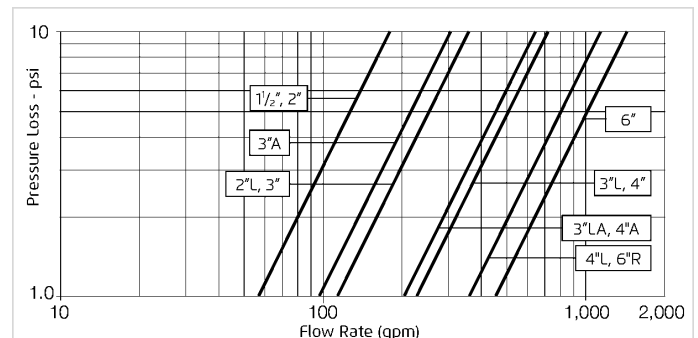
CCDV = Control Chamber Displacement Volume • **Threaded** = BSP & NPT are available. External thread is available for 2" and 2½" only. • Other End Connections are available on request. For dimensions and weights of adapters or valves with adapters please consult with customer service.

*For flow limit in sizes 4"L-6" required velocity above 6.5 f/s.

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



2-Way circuit "Added Head Loss" (for "V" below 6.5 f/s): 4.5 psi

Differential Pressure & Flow Calculation

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

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