HYDRAULIC CONTROL VALVE

For High Pressure, With Manual Selector

Model IR-105-HP-Z

The BERMAD Hydraulic Control Valve is a hydraulically operated, diaphragm-actuated control valve that opens and shuts in response to a local or remote pressure command.
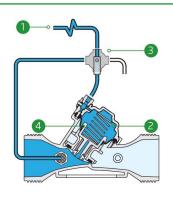
Features & Benefits

- Hydraulic Control Valve
  - Line pressure driven
  - Hydraulically controlled On/Off
- 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

- Automated Irrigation Systems
- Distribution Centers
- Low Supplied Pressure Irrigation Systems
- Energy Saving Irrigation Systems

[1] BERMAD Model IR-105-HP-Z opens upon local manual command.
[2] Kinetic Air Valve Model IR-K10
[3] Combination Air Valve Model IR-C10
[4] Electromagnetic Flow Meter
[5] Pressure Sustaining Valve Model IR-130-55-3W-X

Operation:

Hydraulic Command [1] is applied to the Control Chamber [2] through the Manual Selector [3] . This creates superior closing force that moves the Diaphragm Assembly [4] to a closed position. Discharging of pressure from the control chamber, by turning the manual selector, causes the line pressure acting on the lower side of the diaphragm assembly to move the valve to an open position.

All images in this catalog are for illustration only

Technical Data

Pressure Rating:
16 bar

Operating Pressure Range:
0.5-16 bar

Materials

Body & Cover:
Reinforced Polyamide

Diaphragm:
EPDM

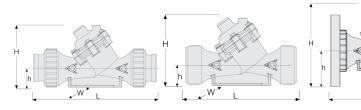**Spring:**
Stainless Steel

Control Loop Accessories

Tubing and Fittings:
Reinforced Nylon and Brass

Technical Specifications

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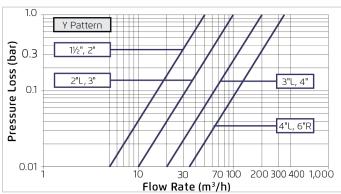Please refer to BERMAD full engineering page.

Size	Pattern	End Connection	Weight (Kg)	L (mm)	H (mm)	h (mm)	W	CCDV (Lit)	KV
1½" ; DN40	Oblique	Threaded	1.2	200	172	40	97	0.12	50
2" ; DN50	Oblique	Threaded	1.3	230	172	40	97	0.12	50
2" ; DN50	Oblique	Grooved	1.4	284	172	40	97	0.12	50
2"L ; DN50L	Oblique	Threaded	1.6	230	172	43	135	0.15	100
2"L ; DN50L	Oblique	Grooved	1.7	284	172	43	135	0.15	100
3" ; DN80	Oblique	Threaded	1.8	298	181	55	135	0.15	100
3" ; DN80	Oblique	Grooved	1.9	384	188	62	135	0.15	100
3" ; DN80	Oblique	Metal Flanges	4.6	308	226	100	200	0.15	100
3"L ; DN80L	Oblique	Threaded	3.3	298	243	60	168	0.62	200
3"L ; DN80L	Oblique	Grooved	3.4	384	245	62	168	0.62	200
3"L ; DN80L	Oblique	Metal Flanges	6.1	310	282	100	200	0.62	200
4" ; DN100	Oblique	Grooved	4.1	384	245	62	168	0.62	200
4" ; DN100	Oblique	Metal Flanges	7.8	350	294	112	224	0.62	200
4"L ; DN100L	Oblique	Grooved	7.3	400	313	84	226	1.15	340
4"L ; DN100L	Oblique	Metal Flanges	11.2	442	340	112	226	1.15	340
6"R ; DN150R	Oblique	Metal Flanges	18.2	470	377	149	287	1.15	340

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

Additional Features

Code	Description	Size Range
6	Pressure Gauge up to 16 bar ¼" male connector	1½"-6"R / DN40-150R

Flow Chart

Y Pattern
1½", 2"
2"L, 3"
3"L, 4"
4"L, 6"R
Pressure Loss (bar)
Flow Rate (m³/h)

2-Way circuit "Added Head Loss" (for "V" below 2 m/s): 0.3 bar

Differential Pressure & Flow Calculation

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

Kv = m³/h @ ΔP of 1 bar
Q = m³/h
ΔP = bar