



# 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.



- [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

### Features & Benefits

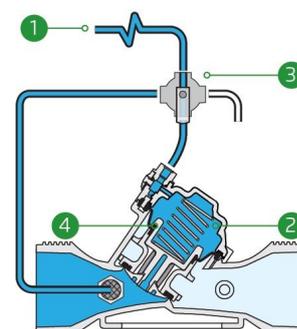
- Hydraulic Control Valve
  - Line pressure driven
  - Hydraulically controlled On/Off
- Engineered Composite Valve with Industrial Grade Design
  - Adaptable on-site to a wide range of end connection
  - Highly durable, chemical and cavitation resistant
- hYflow 'Y' Valve Body with "Look Through" Design
  - 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

### 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.





IR-105-HP-Z

Technical Data

**Pressure Rating:**  
250 psi

**Operating Pressure Range:**  
7-250 psi

**Materials**

**Body & Cover:**  
Reinforced Polyamide

**Diaphragm:**  
EPDM

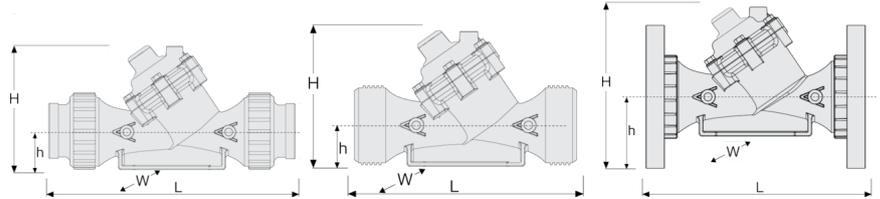
**Spring:**  
Stainless Steel

**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.



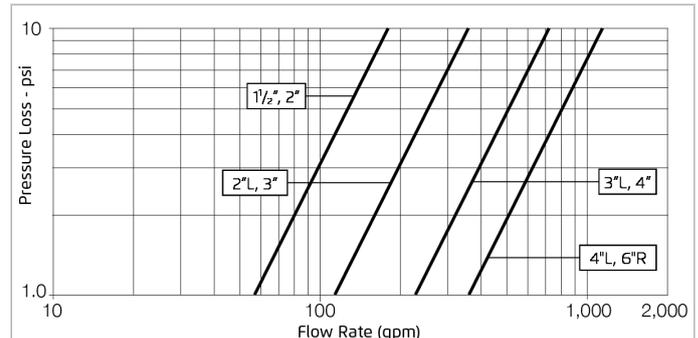
Size	Pattern	End Connection	Weight (Lb)	L (In)	H (In)	h (In)	w	CCDV (Gal)	CV
1½" ; DN40	Oblique	Threaded	2.6	7¾	6¾	1¾	3¾	0.026	58
2" ; DN50	Oblique	Threaded	2.9	9¾	6¾	1¾	3¾	0.026	58
2" ; DN50	Oblique	Grooved	3.1	11¼	6¾	1¾	3¾	0.026	58
2"L ; DN50L	Oblique	Threaded	3.6	9¾	6¾	1¾	5¾	0.033	116
2"L ; DN50L	Oblique	Grooved	3.8	11¼	6¾	1¾	5¾	0.033	116
3" ; DN80	Oblique	Threaded	4	11¾	7½	2¼	5¾	0.033	116
3" ; DN80	Oblique	Grooved	4.1	15¾	7½	2½	5¾	0.033	116
3" ; DN80	Oblique	Metal Flanges	10	12¾	8¾	4	7¾	0.033	116
3"L ; DN80L	Oblique	Threaded	7.3	11¼	9¾	2¾	6¾	0.136	231
3"L ; DN80L	Oblique	Grooved	7.5	15¾	9¾	2½	6¾	0.136	231
3"L ; DN80L	Oblique	Metal Flanges	13.5	12¾	11¾	4	7¾	0.136	231
4" ; DN100	Oblique	Grooved	9	15¾	9¾	2½	6¾	0.136	231
4" ; DN100	Oblique	Metal Flanges	17.2	13¾	11¾	4½	8¾	0.136	231
4"L ; DN100L	Oblique	Grooved	16.1	15¾	12¾	3¾	9	0.253	393
4"L ; DN100L	Oblique	Metal Flanges	24.7	17½	13¾	4½	9	0.253	393
6"R ; DN150R	Oblique	Metal Flanges	40.1	18½	14¾	5¾	11¾	0.253	393

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

Flow Chart



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

Differential Pressure & Flow Calculation

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

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