

HYDRAULIC CONTROL VALVE

Model IR-405-RZ

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-405-RZ opens upon local manual command.

Features & Benefits

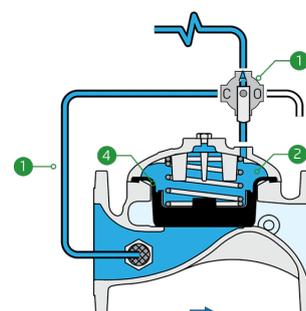
- Hydraulic Control Valve
 - Line pressure driven
 - Hydraulically controlled On/Off
- Advanced Hydro-Efficient Globe Design
 - Unobstructed flow path
 - Single moving part
 - High flow capacity
- Fully Supported & Balanced Diaphragm
 - Requires low opening and actuation pressure
 - Progressively restrains valve closing
 - Prevents diaphragm distortion
- User-Friendly Design
 - Simple in-line inception
 - Easy addition of control features

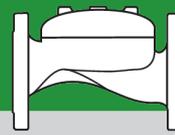
Typical Applications

- Automated Irrigation Systems
- Distribution Centers
- Irrigation Machines
- Low Supplied Pressure Irrigation Systems

Operation:

Line Pressure or Remote Command Pressure [1] is applied to the Control Chamber [2] through the Manual Selector [3]. This creates superior closing force that moves the Diaphragm Assembly [4] toward a closed position. Discharging pressure from the control chamber causes the line pressure acting on the diaphragm assembly to move the valve to an open position.





Technical Data

Pressure Rating:
250 psi

Operating Pressure Range:
7-250 psi

Materials

Body & Cover:
Cast iron (up to 8") Ductile iron (10" & 12")

Diaphragm:
NR, Nylon fabric reinforced

Spring:
Stainless Steel

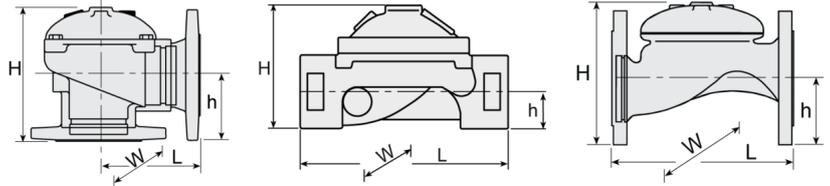
**Other materials are available on request*

Control Loop Accessories

Tubing and Fittings:
Reinforced Nylon and Brass

Technical Specifications

For other end connection types,
Please refer to [BERMAD](#) full engineering page.



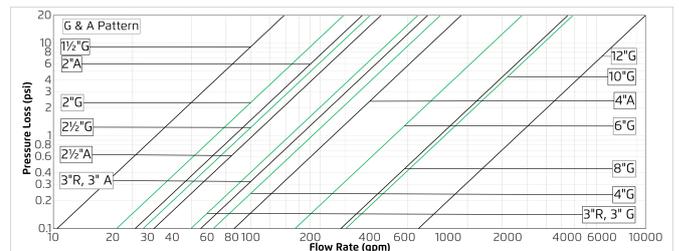
Size	Pattern	End Connection	Weight (Lb)	L (In)	H (In)	h (In)	w	CCDV (Gal)	CV
1" ; DN25	Globe	Threaded	2.4	4½	2¾	1¾	2¾	0.005	15
1½" ; DN40	Globe	Threaded	4.4	6	3¾	1¼	3	0.016	33
2" ; DN50	Globe	Threaded	8.8	7	4½	1½	4¾	0.03	66
2" ; DN50	Globe	Flanged	19.8	8	6	3	6	0.03	66
2" ; DN50	Globe	Grooved	11	8½	4¼	1¼	4¾	0.03	66
2" ; DN50	Angle	Threaded	9.7	3½	5¾	2½	4¾	0.03	82
2" ; DN50	Angle	Flanged	19.8	4¾	7	3¾	6	0.03	82
2½" ; DN65	Globe	Threaded	12.6	8	5¼	1¾	5	0.05	90
2½" ; DN65	Globe	Flanged	23.1	8½	7	3½	7	0.05	90
2½" ; DN65	Angle	Threaded	12.8	4¾	7½	3¾	5¼	0.05	102
3R" ; DN80R	Globe	Threaded	12.9	8	5½	2¾	5	0.08	157
3R" ; DN80R	Globe	Flanged	28	8	7	4	7	0.08	157
3R" ; DN80R	Angle	Threaded	15.4	4¾	7	3¾	5¼	0.08	176
3" ; DN80	Globe	Threaded	28.7	10	6½	2¼	6¾	0.08	157
3" ; DN80	Globe	Flanged	41.9	9	8¼	4	7	0.08	157
3" ; DN80	Globe	Grooved	23.4	9	6	1¾	6¾	0.08	157
3" ; DN80	Angle	Threaded	24.3	4¾	7¼	3¼	6¾	0.08	176
3" ; DN80	Angle	Flanged	37.5	6	8	4	7	0.08	176
3" ; DN80	Angle	Grooved	22.1	4¾	11	3	6¾	0.08	176
4" ; DN100	Globe	Flanged	61.7	12	9	4½	8	0.18	236
4" ; DN100	Globe	Grooved	35.7	12	7	2½	8	0.18	236
4" ; DN100	Angle	Flanged	57.3	6	8¾	4½	8	0.18	260
4" ; DN100	Angle	Grooved	35.3	6	8¾	4½	8	0.18	260
6" ; DN150	Globe	Flanged	149.9	16	13	5½	12	0.52	529
6" ; DN150	Globe	Grooved	108	16	11	3	12	0.52	529
8" ; DN200	Globe	Flanged	275.6	19	17	6¾	14	1.02	902
10" ; DN250	Globe	Flanged	308.6	23	18	8	16	1.02	957
12" ; DN300	Globe	Flanged	639.3	28	25	9	22	3.63	2231

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

Additional Features

Code	Description	Size Range
F	Large Control Filter	1½"-12"
I	Position Indicator Assembly	1½"-12"
M	Flow Stem	1½"-12"

Flow Chart



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

Differential Pressure & Flow Calculation

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

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

