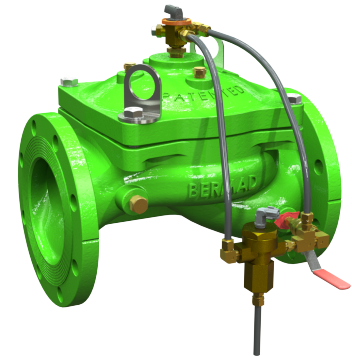




HYDRAULIC CONTROL VALVE

Model IR-405-54-3W-RXZ

The BERMAD Normally Closed Control Valve with hydraulic relay control is a hydraulically operated, diaphragm actuated control valve which opens in response to remote command pressure and shuts in the absence of that command.



[1] BERMAD Model IR-405-54-3W-RXZ opens upon command pressure rise.

Features & Benefits

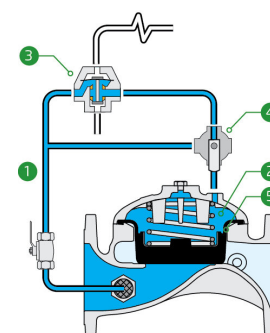
- Hydraulically Controlled, Normally Closed Valve
 - Line pressure driven
 - Closes upon command pressure failure
 - Amplifies and relays weak remote commands
 - Hydraulically controlled On/Off
- Advanced Hydro-Efficient Globe Design
 - Unobstructed flow path
 - Single moving part
 - High flow capacity
- 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
- Remote and/or Elevated Systems
- Distribution Centers
- Irrigation Machines
- Low Supplied Pressure Irrigation Systems

Operation:

Line Pressure [1] is applied to the Control Chamber [2] through the held open, 3-Way Hydraulic Relay Valve (3W-HRV) [3] and the Manual Selector [4]. This creates superior closing force that moves the Diaphragm Assembly [5] toward a closed position. When remote command pressure rises, the 3W-HRV releases pressure from the control chamber, thereby opening valve.





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

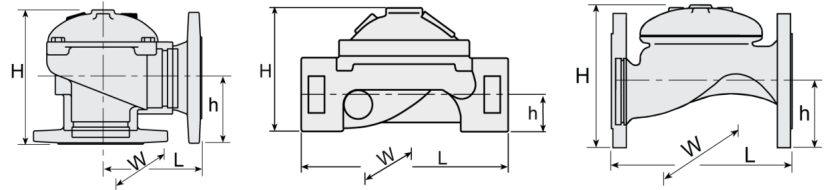
Tubing and Fittings:
Reinforced Nylon and Brass

***3W-HRV:**

- Standard spring - 0-33 ft'
- Optional 33-66 ft'

Technical Specifications

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



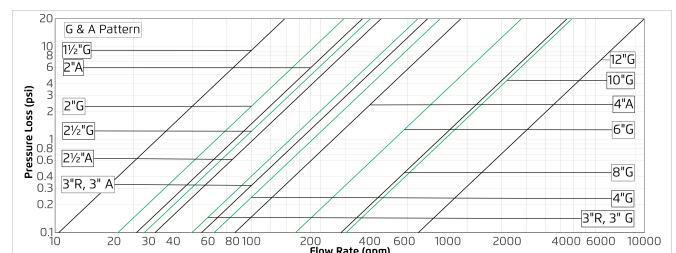
Size	Pattern	End Connection	Weight (Lb)	L (in)	H (in)	h (in)	W	CCDV (Gal)	CV
1" ; DN25	Globe	Threaded	2.4	4%	2 3/4	1 3/8	2 7/8	0.005	15
1 1/2" ; DN40	Globe	Threaded	4.4	6%	3 3/8	1 1/4	3 3/8	0.016	33
2" ; DN50	Globe	Threaded	8.8	7%	4 1/2	1 1/2	4 3/4	0.03	66
2" ; DN50	Globe	Flanged	19.8	8 1/8	6 1/8	3 1/8	6 1/8	0.03	66
2" ; DN50	Globe	Grooved	11	8 1/8	4 1/4	1 1/4	4 3/4	0.03	66
2" ; DN50	Angle	Threaded	9.7	3 1/2	5 3/8	2 1/2	4 3/4	0.03	82
2" ; DN50	Angle	Flanged	19.8	4 3/4	7 7/8	3 3/8	6 1/8	0.03	82
2 1/2" ; DN65	Globe	Threaded	12.6	8 3/8	5 1/4	1 3/8	5 1/8	0.05	90
2 1/2" ; DN65	Globe	Flanged	23.1	8 3/8	7	3 1/2	7	0.05	90
2 1/2" ; DN65	Angle	Threaded	12.8	4 3/8	7 1/8	3 3/4	5 1/4	0.05	102
3R" ; DN80R	Globe	Threaded	12.9	8 3/8	5 1/2	2 1/8	5 1/8	0.08	157
3R" ; DN80R	Globe	Flanged	28	8 3/8	7 7/8	4	7 1/8	0.08	157
3R" ; DN80R	Angle	Threaded	15.4	4 3/8	7	3 3/8	5 1/4	0.08	176
3" ; DN80	Globe	Threaded	28.7	10 1/8	6 1/2	2 1/4	6 3/4	0.08	157
3" ; DN80	Globe	Flanged	41.9	9 7/8	8 1/4	4	7 7/8	0.08	157
3" ; DN80	Globe	Grooved	23.4	9 7/8	6 1/8	1 3/8	6 3/4	0.08	157
3" ; DN80	Angle	Threaded	24.3	4 3/8	7 1/4	3 1/4	6 3/4	0.08	176
3" ; DN80	Angle	Flanged	37.5	6 1/8	8 1/8	4	7 7/8	0.08	176
3" ; DN80	Angle	Grooved	22.1	4 3/8	11	3 3/8	6 3/4	0.08	176
4" ; DN100	Globe	Flanged	61.7	12 3/8	9 3/8	4 1/2	8 3/8	0.18	236
4" ; DN100	Globe	Grooved	35.7	12 3/8	7 3/8	2 1/2	8	0.18	236
4" ; DN100	Angle	Flanged	57.3	6 3/8	8 3/4	4 1/2	8 3/8	0.18	260
4" ; DN100	Angle	Grooved	35.3	6 3/8	8 3/4	4 1/2	8 3/8	0.18	260
6" ; DN150	Globe	Flanged	149.9	16 3/8	13 3/8	5 1/2	12 3/8	0.52	529
6" ; DN150	Globe	Grooved	108	16 3/8	11 3/8	3 3/8	12 3/8	0.52	529
8" ; DN200	Globe	Flanged	275.6	19 3/8	17	6 3/4	14 3/8	1.02	902
10" ; DN250	Globe	Flanged	308.6	23 3/8	18 3/8	8	16	1.02	957
12" ; DN300	Globe	Flanged	639.3	28 3/8	25	9 3/8	22 3/8	3.63	2231

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

Additional Features

Code	Description	Size Range
F	Large Control Filter	1 1/2" - 12"
I	Position Indicator Assembly	1 1/2" - 12"
M	Flow Stem	1 1/2" - 12"
Z	Manual Selector	1 1/2" - 12"

Flow Chart



Differential Pressure & Flow Calculation

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

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