



HYDRAULIC CONTROL VALVE

With 3-Way Hydraulic Relay & Plastic Control Accessories

Model IR-405-54-3W-KX

The BERMAD Normally Closed Control Valve Model IR-405-54-3W-KX with hydraulic relay, is a hydraulically operated, diaphragm actuated control valve, which opens in response to a remote command pressure and shuts in absence of that command.



- [1] BERMAD Model IR-405-54-3W-KX opens upon pressure rise command.
- [2] Kinetic Air Valve Model IR-K10
- [3] Combination Air Valve Model IR-C10

Features & Benefits

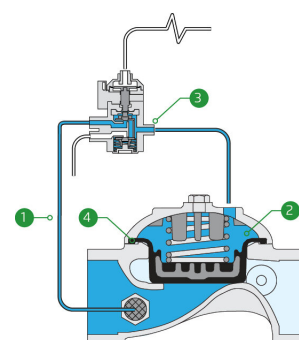
- Hydraulically Controlled, Normally Closed Valve
 - Line pressure driven
 - Closes upon command pressure failure
 - Amplifies and relays weak remote commands
 - Hydraulically controlled On/Off
- Advanced Hydro-Efficient Globe Design
 - Unobstructed flow path
 - Single moving part
 - High flow capacity
- Fully Supported & Balanced Diaphragm
 - Requires low opening and actuation pressure
 - Progressively restrains valve closing
 - Prevents diaphragm distortion
- User-Friendly Design
 - Simple in-line inspection and service
 - Easy addition of control features

Typical Applications

- Automated Irrigation Systems
- Remote/Elevated Systems
- Distribution Centers
- 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]. This creates superior closing force that moves the Diaphragm Assembly [4] to a closed position. Upon pressure rise command, the 3W-HRV switches, releasing pressure from the control chamber and thereby opening the main valve. The 3W-HRV also features local manual opening.





Technical Data

Pressure Rating:

150 psi

Operating Pressure Range:

7-150 psi

Materials

Body & Cover:

Cast Iron

Diaphragm:

NR, Nylon fabric reinforced

Spring:

Stainless Steel

**Other materials are available on request*

Control Loop Accessories

Tubing and Fittings:

Polyethylene and

Polypropylene

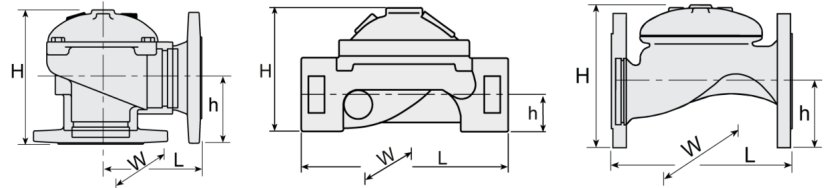
**3W-HRV:*

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

Technical Specifications

For other end connection types,

Please refer to [BERMAD](#) full engineering page.



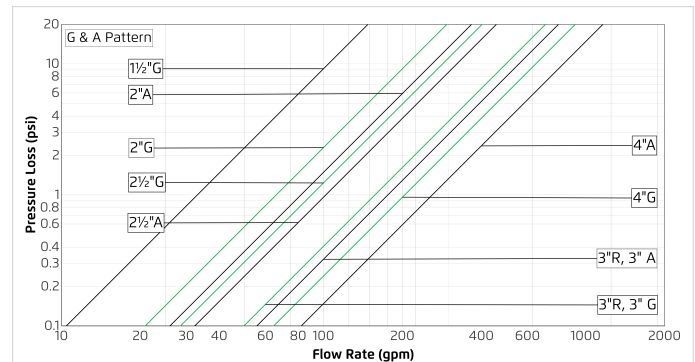
Size	Pattern	End Connection	Weight (Lb)	L (in)	H (in)	h (in)	W	CCDV (Gal)	CV
1" ; DN25	Globe	Threaded	2.4	4%	2¾	1¾	2¾	0.005	15
1½" ; DN40	Globe	Threaded	4.4	6%	3¾	1¾	3¾	0.016	33
2" ; DN50	Globe	Threaded	8.8	7¾	4½	1½	4¾	0.03	66
2" ; DN50	Globe	Flanged	19.8	8¾	6¾	3¾	6¾	0.03	66
2" ; DN50	Globe	Grooved	11	8¾	4¾	1¾	4¾	0.03	66
2" ; DN50	Angle	Threaded	9.7	3½	5¾	2½	4¾	0.03	82
2" ; DN50	Angle	Flanged	19.8	4¾	7¾	3¾	6¾	0.03	82
2½" ; DN65	Globe	Threaded	12.6	8¾	5¾	1¾	5¾	0.05	90
2½" ; DN65	Globe	Flanged	23.1	8¾	7	3½	7	0.05	90
2½" ; DN65	Angle	Threaded	12.8	4¾	7¾	3¾	5¾	0.05	102
3R" ; DN80R	Globe	Threaded	12.9	8¾	5½	2¾	5¾	0.08	157
3R" ; DN80R	Globe	Flanged	28	8¾	7¾	4	7¾	0.08	157
3R" ; DN80R	Angle	Threaded	15.4	4¾	7	3¾	5¾	0.08	176
3" ; DN80	Globe	Threaded	28.7	10¾	6½	2¼	6¾	0.08	157
3" ; DN80	Globe	Flanged	41.9	9¾	8¼	4	7¾	0.08	157
3" ; DN80	Globe	Grooved	23.4	9¾	6¾	1¾	6¾	0.08	157
3" ; DN80	Angle	Threaded	24.3	4¾	7¾	3¾	6¾	0.08	176
3" ; DN80	Angle	Flanged	37.5	6¾	8¾	4	7¾	0.08	176
3" ; DN80	Angle	Grooved	22.1	4¾	11	3¾	6¾	0.08	176
4" ; DN100	Globe	Flanged	61.7	12¾	9¾	4½	8¾	0.18	236
4" ; DN100	Globe	Grooved	35.7	12¾	7¾	2½	8	0.18	236
4" ; DN100	Angle	Flanged	57.3	6¾	8¾	4½	8¾	0.18	260
4" ; DN100	Angle	Grooved	35.3	6¾	8¾	4½	8¾	0.18	260

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

Additional Features

Code	Description	Size Range
I	Position Indicator Assembly	1½"-4"
M	Flow Stem	1½"-4"
5	Plastic Test Point	1½"-4"

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