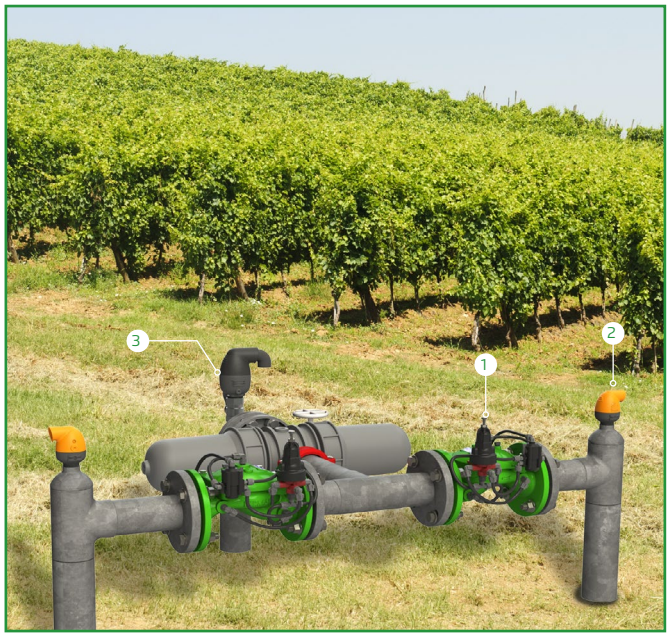
PRESSURE REDUCING VALVE

Normally Closed with Hydraulic Relay

Model IR-420-54-3W-KX

The BERMAD Normally Closed, Pressure Reducing Valve with Hydraulic Control, is a hydraulically operated, diaphragm actuated control valve that reduces higher upstream pressure to lower constant downstream pressure regardless of fluctuating demand, and opens fully upon line pressure drop.

It is a Normally Closed valve, which opens in response to a remote pressure rise command and shuts in the absence of that command.



[1] BERMAD Model IR-420-54-KX opens upon pressure rise command, and establishes reduced pressure zone protecting laterals and distribution line.
[2] BERMAD Kinetic Air Valve
[3] BERMAD Combination Air Valve

Features & Benefits

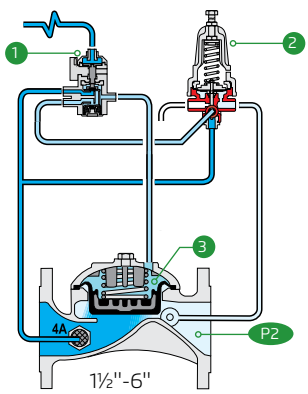
- Line Pressure Driven, Hydraulically Controlled
  - Hydraulic Pressure Control, Normally Closed
  - Closes upon control failure
  - Protects downstream systems
  - Amplifies and relays weak remote command
  - Opens fully upon line pressure drop
- Advanced Globe Hydro-Efficient Design
  - Unobstructed flow path
  - Single moving part
  - High flow capacity
- Fully Supported & Balanced Diaphragm
  - Requires low actuation pressure
  - Excellent low flow regulation performance
  - Progressively restrains valve closing
  - Prevents diaphragm distortion
- User-Friendly Design
  - Easy pressure setting
  - Simple in-line inspection and service
  - Easy addition of control features

Typical Applications

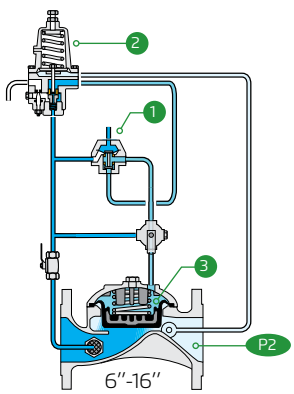
- Computerized Irrigation Systems
- Remote and/or Elevated Plots
- Drip Systems
- Pressure Reducing Stations
- Systems Subject to Varying Supply Pressure
- Energy Saving Irrigation Systems

Operation:

The 3-Way Hydraulic Relay Valve (3W-HRV) 1 hydraulically connects the Pressure Reducing Pilot (PRP) 2 to the Valve Control Chamber 3. The PRP commands the Valve to throttle closed should Downstream Pressure P2 rise above setting, and to open fully when it drops below setting. The 3W-HRV switches upon pressure drop command, directing line pressure into the control chamber,and thereby causing the main Valve to shut.The 3W-HRV also features local manual closing.



1½"-6"



6"-16"

Technical Data

Pressure Rating:
16 bar, 232 psi

Operating Pressure Range:
0.5-16 bar, 7-232 psi

Setting Range:
1.5-16 bar, 22-232 psi

Setting ranges vary according to specific pilot spring. Please consult factory

Materials:

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

Ductile iron (10" & above)

Diaphragm:
NR, Nylon fabric reinforced

Spring:
Stainless steel

Cover Bolts: Stainless Steel

Control Accessories:

Tubing and Fittings:
Reinforced plastic

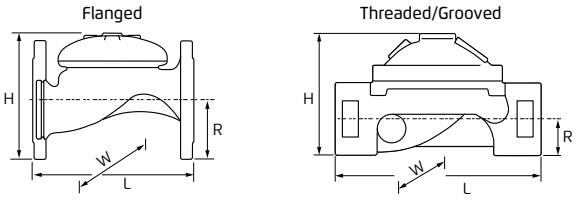
Pilot Spring Range:

Spring	Spring color	Setting Range	Pilot Type
J	Green	0.2-1.7 bar	Mini pilot
K	Gray	0.5-3.0 bar	Mini pilot
N	Colorless	0.8-6.5 bar	Mini pilot
16	Blue	1-16 bar	Pilot

Technical Specifications

Globe Pattern Valves Dimensions & Weights

For BERMAD angle pattern,
Please see our full engineering page.



Sizes Inch ; DN	1" ; 25*	1½" ; 40	2" ; 50			2½" ; 65		3R" ; 80R		3" ; 80		
Connection	Threaded	Threaded	Flanged	Threaded	Grooved	Flanged	Threaded	Flanged	Threaded	Flanged	Threaded	Grooved
L (mm)	115	153	205	180	205	205	210	210	210	250	255	250
H (mm)	68	87	155	114	108	178	132	200	140	210	165	155
W (mm)	71	98	155	119	119	178	129	200	129	200	170	170
R (mm)	34	29	78	39	31	89	45	100	53	100	55	46
Weight (kg)	1.1	2	9	4	5	10.5	5.7	12.1	5.8	19	13	10.6

Sizes Inch ; DN	4" ; 100		6" ; 150		8" ; 200	10 ; 250	12" ; 300	14" ; 350	16" ; 400
Connection	Flanged	Grooved	Flanged	Grooved	Flanged	Flanged	Flanged	Flanged	Flanged
L (mm)	320	320	415	415	500	605	725	742	741
H (mm)	242	191	345	302	430	460	635	655	694
W (mm)	223	204	306	306	365	405	580	587	587
R (mm)	112	61	140	85	170	202	242	260	300
Weight (kg)	28	16.2	68	49	125	140	290	358	377

*on/off valve only

Flow Properties

Sizes Inch DN	1" 25	1½" 40	2" 50		2½" 65		3" 80		4" 100		6" 150	8" 200	10" 250	12" 300	14" 350	16" 400
Pattern	G	G	G	A	G	A	G	A	G	A	G	G	G	G	G	G
KV	15	57	57	71	78	88	136	152	204	225	458	781	829	1,932	1,932	1,932

G = Globe pattern • **A** = Angle patteren

Valve flow coefficient

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

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

Flow Chart