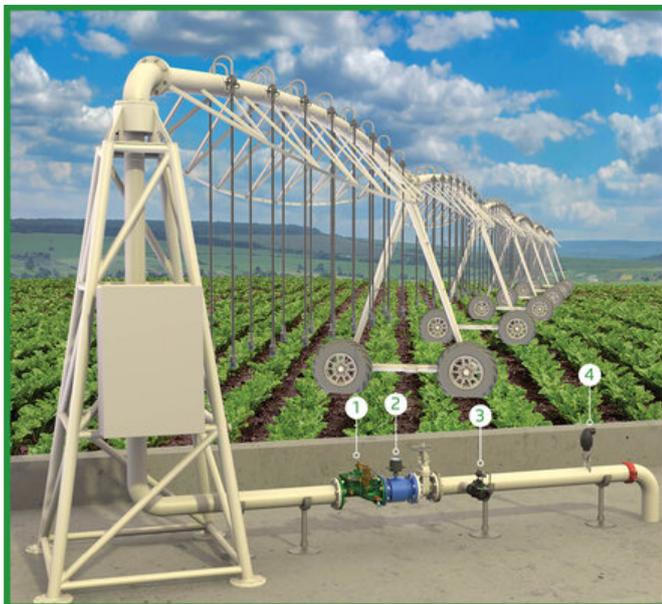


# PRESSURE REDUCING VALVE

## Model IR-420-50-3W-RXZ

The BERMAD Pressure Reducing Valve with hydraulic remote 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 either opens or shuts in response to a remote pressure command.



- [1]** BERMAD Model IR-420-50-3W-RXZ opens upon pressure drop command, and establishes reduced pressure zone protecting laterals and distribution line.
- [2]** Water Meter Model MUT2300
- [3]** Pressure Relief Valve Model IR-13Q-HP
- [4]** Combination Air Valve Model C30

### Features & Benefits

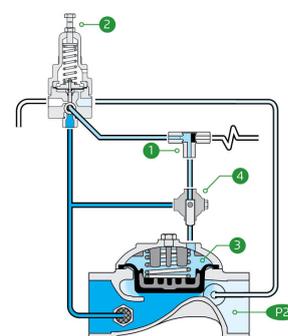
- Line Pressure Driven, Hydraulically Controlled On/Off
  - Protects downstream systems
  - Opens fully upon line pressure drop
- Metal Control Accessories
  - Damage resistant
  - High pressure rating
- Advanced Hydro-Efficient Globe Design
  - Unobstructed flow path
  - Single moving part
  - High flow capacity
- Fully Supported & Balanced Diaphragm
  - Requires low actuation pressure
  - Excellent low flow regulation performances
  - Progressively restrains valve closing
  - Prevents diaphragm distortion
- User-Friendly Design
  - Easy pressure setting
  - Simple in-line inspection and service

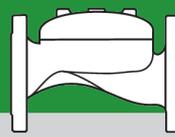
### Typical Applications

- Automated Irrigation Systems
- Pressure Reducing Systems
- Systems Subject to Varying Supply Pressure
- Distribution Centers

### Operation:

The Shuttle Valve **[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 pilot setting and to open fully when it drops below pilot setting. Upon pressure rise command, the shuttle valve automatically switches, allowing pressurization of the control chamber, which causes the main valve to shut. The Manual Selector **[4]** enables local manual closing.





### 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

**PR Pilot:** PC-SHARP-X-MP

**Pilot Spring Range:**

Spring	Spring Color	Setting range
K	Gray	7-43 psi
N	Natural	12-95 psi
V	Blue & White	15-150 psi
P	White	15-230 psi

*Standard spring - marked in bold*

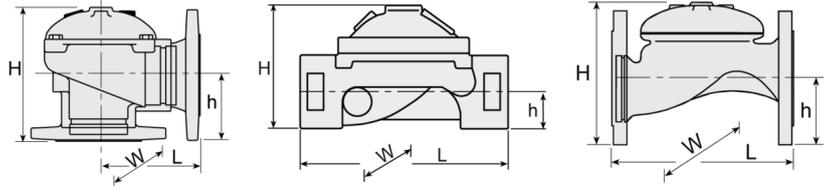
#### Tubing and Fittings:

Reinforced Nylon and Brass

*\*For other pilots please consult [BERMAD](http://BERMAD.com)*

### Technical Specifications

For other end connection types, Please refer to [BERMAD](http://BERMAD.com) full engineering page.



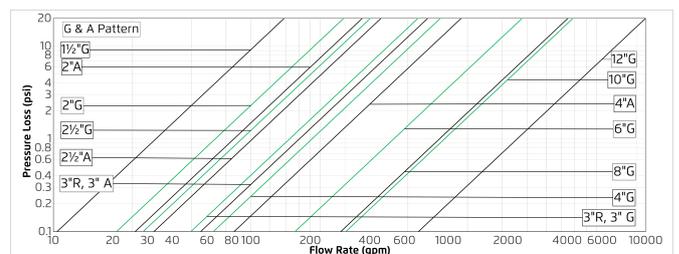
Size	Pattern	End Connection	Weight (Lb)	L (In)	H (In)	h (In)	w	CCDV (Gal)	CV
1" ; DN25	Globe	Threaded	2.4	4½	2¾	1¾	2¾	0.005	15
1½" ; DN40	Globe	Threaded	4.4	6½	3¾	1¼	3¾	0.016	33
2" ; DN50	Globe	Threaded	8.8	7½	4½	1½	4¾	0.03	66
2" ; DN50	Globe	Flanged	19.8	8½	6¾	3½	6½	0.03	66
2" ; DN50	Globe	Grooved	11	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	7¾	3¾	6½	0.03	82
2½" ; DN65	Globe	Threaded	12.6	8¾	5¼	1¾	5½	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	5¼	0.05	102
3R" ; DN80R	Globe	Threaded	12.9	8¾	5½	2¾	5½	0.08	157
3R" ; DN80R	Globe	Flanged	28	8¾	7¾	4	7¾	0.08	157
3R" ; DN80R	Angle	Threaded	15.4	4¾	7	3¾	5¼	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	6½	1¾	6¾	0.08	157
3" ; DN80	Angle	Threaded	24.3	4¾	7¼	3¼	6¾	0.08	176
3" ; DN80	Angle	Flanged	37.5	6½	8½	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
6" ; DN150	Globe	Flanged	149.9	16¾	13¾	5½	12¾	0.52	529
6" ; DN150	Globe	Grooved	108	16¾	11¾	3¾	12¾	0.52	529
8" ; DN200	Globe	Flanged	275.6	19¾	17	6¾	14¾	1.02	902
10" ; DN250	Globe	Flanged	308.6	23¾	18¾	8	16	1.02	957
12" ; DN300	Globe	Flanged	639.3	28¾	25	9¾	22¾	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



#### Differential Pressure & Flow Calculation

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

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

