



# PRESSURE REDUCING VALVE

## Model IR-220-3W-MXZ

The BERMAD Pressure Reducing Valve is a hydraulically operated, diaphragm actuated control valve that reduces higher upstream pressure to lower constant downstream pressure and opens fully upon line pressure drop.

\*This valve is designated for irrigation use only and not for other uses! Manufacturer warranty is limited to the permitted use only.



- [1] BERMAD Model IR-220-3W-MXZ establishes reduced pressure zone, protecting laterals and distribution line.
- [2] Kinetic Air Valve Model IR-K10
- [3] Combination Air Valve Model IR-C10

### Features & Benefits

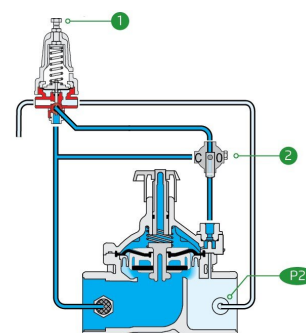
- Line Pressure Drive, Hydraulically Controlled
  - Protects downstream systems
  - Opens fully upon line pressure drop
- Smooth Valve Opening and Closing
  - Accurate and stable regulation
  - Low operating pressure requirements
- Composite Hydro-Efficient Globe Valve
  - Unobstructed flow path
  - Single moving part
  - High flow capacity
  - Highly durable, chemical and cavitation resistant
- Unitized Flexible Diaphragm and Guided Plug
  - Excellent low flow regulation performances
  - Prevents diaphragm erosion and distortion
- Fully Supported & Balanced Diaphragm
  - Requires low actuation pressure
- User-Friendly Design
  - Simple in-line inspection and service

### Typical Applications

- Drip Systems
- Pressure Reducing Systems
- Systems Subject to Varying Supply Pressure
- Landscape
- Energy Saving Irrigation Systems

### Operation:

The Pressure Reducing Pilot [1] commands the main valve to throttle closed should Downstream Pressure [P2] rise above pilot setting, and to open fully when it drops below pilot setting. The Manual Selector [2] enables local manual closing.





### Technical Data

**Pressure Rating:**  
10 bar

**Operating Pressure Range:**  
0.7-10 bar

#### Materials

**Body & Cover:**  
Polyamide 6 & 30% GF

**Diaphragm:**  
NBR

**Spring:**  
Stainless Steel

#### Control Loop Accessories

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

**Pilot Spring Range:**

Spring	Spring Color	Setting range
J	Green	0.2-1.7 bar
K	Gray	0.5-3.0 bar
<b>N</b>	<b>Natural</b>	<b>0.8-6.5 bar</b>
V	Blue & White	1.0-10.0 bar

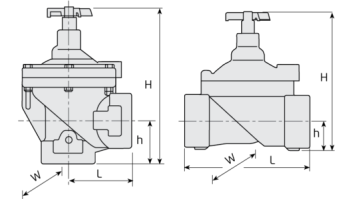
*Standard spring - marked in bold*

**Tubing and Fittings:**  
Polyethylene and Polypropylene

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

### Technical Specifications

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



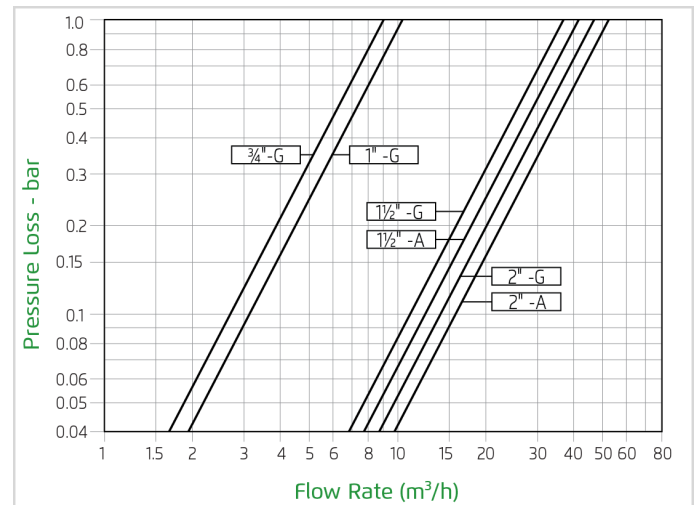
Size	Pattern	End Connection	Weight (Kg)	L (mm)	H (mm)	h (mm)	W	CCDV (Lit)	KV
1½" ; DN40	Globe	Threaded	1	160	180	35	125	0.072	37
1½" ; DN40	Angle	Threaded	0.95	80	190	40	125	0.072	41
2" ; DN50	Globe	Threaded	1.1	170	190	38	125	0.072	47
2" ; DN50	Angle	Threaded	0.91	85	210	60	125	0.072	52

CCDV = Control Chamber Displacement Volume

### Optional Features

Code	Description	Size Range
M	Flow Stem	1½"-2" / DN40-50
5	Plastic Test Point	1½"-2" / DN40-50
Z	Manual Selector	1½"-2" / DN40-50

### Flow Chart



### Differential Pressure & Flow Calculation

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

$Kv = m^3/h @ \Delta P \text{ of } 1 \text{ bar}$   
 $Q = m^3/h$   
 $\Delta P = \text{bar}$