



# PRESSURE REDUCING VALVE

With Hydraulic control

## Model IR-220-50-XZ

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



### Features & Benefits

- Line Pressure Driven, Hydraulically Controlled
  - Protects downstream systems
  - Opens fully upon line pressure drop
- Smooth valve opening and closing
  - Accurate and stable regulation
  - Low operating pressure requirements
- Plastic Globe Hydro-Efficient 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 performance
  - Prevents diaphragm erosion and distortion
- Fully Supported & Balanced Diaphragm
  - Requires low actuation pressure
- User-Friendly Design
  - Simple in-line inspection and service

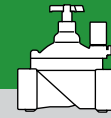
### Typical Applications

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



**[1]** BERMAD Model IR-220-50-XZ Opens upon pressure drop, and establishes reduced pressure zone protecting laterals and distribution line.

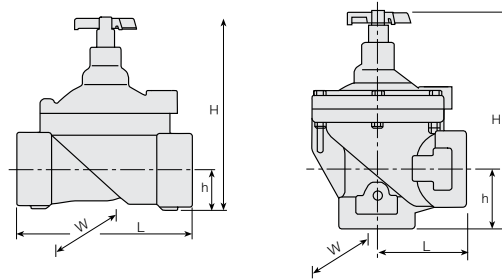
**[2]** BERMAD Combination Air Valve Model IR-C10



### Technical Specifications

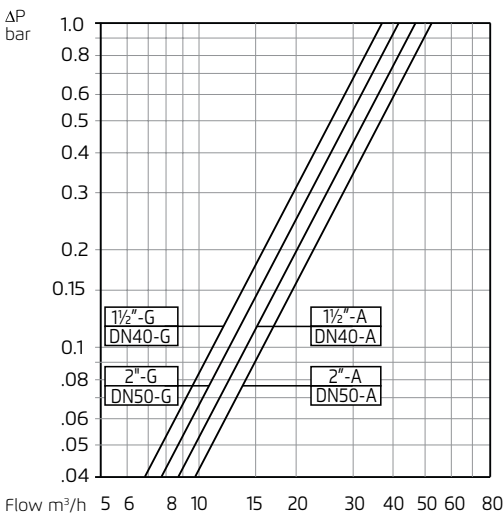
#### Dimensions and Weights

Size	Pattern	Globe		Angle	
	DN Inch	40 1½	50 2	40 1½	50 2
L	mm	160	170	80	85
H	mm	180	190	190	210
W	mm	125	125	125	125
h	mm	35	38	40	60
Weight	Kg	1	1.1	0.95	0.91



C = Half of H

### Flow Chart



Size	DN Inch	G	A	G	A
		40 1½"	40 1½"	50 2"	50 2"
Flow Coefficient	KV	37	47	41	52

Valve flow coefficient, Kv or Cv  $\Delta P = \left(\frac{Q}{Kv; Cv}\right)^2$

Where:

Kv = Valve flow coefficient

Cv = Valve flow coefficient (flow in gpm at Diff. Press. 1 psi)

Q = Flow rate (m³/h; gpm)

P = Differential pressure (bar; psi)

**Cv = 1.155 Kv**

### Technical Data

**Sizes:** 1½-2"; DN40-50

**Patterns: Globe:** 1½ & 2"; DN40 & 50

**Angle:** 1½ & 2"; DN40 & 50

**End Connections:** Female Threads BSP; NPT

**Pressure Rating:** 10 bar; 145 psi

**Operating Pressure Range:** 0.5-10 bar; 7-145 psi

**Setting Range:** 0.5-1.7 bar; 7-25 psi

### Standard Materials:

**Body, Cover and Plug:** Reinforced Nylon

**Diaphragm:** NR

**Seals:** NBR [Buna-N] and NR

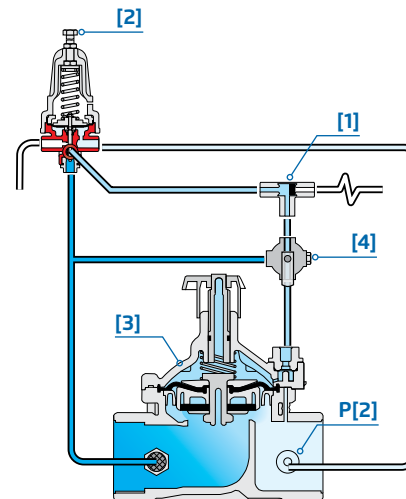
**Spring:** Stainless Steel

**Cover Bolts:** Stainless Steel

**Control Accessories:** Plastic

**Tubing and Fittings:** Plastic

### 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 setting and to open fully when it drops below 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 manual closing.

