



# PRESSURE REDUCING & SUSTAINING VALVE

## Model IR-123-3W-XZ

The BERMAD Model IR-123-3W-XZ is a hydraulically operated, diaphragm actuated control valve that sustains minimum preset upstream (back) pressure and reduces downstream pressure to a constant preset maximum.



- [1]** BERMAD Model IR-123-3W-XZ sustains supply system pressure, and establishes reduced higher pressure zone.
- [2]** Electromagnetic Flow Meter
- [3]** Combination Air Valve Model IR-C10
- [4]** Filter Backwash Hydraulic Valve Model IR-350
- [5]** Hydraulic Control Valve Model IR-105-Z
- [6]** Kinetic Air Valve Model IR-K10

### Features & Benefits

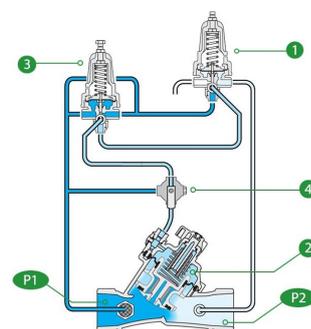
- Line Pressure Drive, Hydraulically Controlled
  - Protects downstream systems
  - Prioritizes pressure zones
  - Controls system fill-up
- Engineered Composite Valve with Industrial Grade Design
  - Highly durable, chemical and cavitation resistant
  - No internal bolts and nuts
- hYflow 'Y' Valve Body with "Look Through" Design
  - Ultra-high flow capacity at low pressure loss
- Unitized "Flexible Super Travel" (FST) Diaphragm and Guided Plug
  - Accurate and stable regulation with smooth closing
  - Requires low opening and actuation pressure
  - Prevents diaphragm erosion and distortion
- User-Friendly Design
  - Easy pressure setting
  - Simple in-line inspection and service

### Typical Applications

- Line Fill-Up Control Solutions
- Line Emptying Prevention
- Pressure Reducing Systems
- Infield Filters Backwash Pressure Sustaining
- Energy Saving Irrigation Systems

### Operation:

The Pressure Reducing Pilot (PRP) [1] is hydraulically connected to the Valve Control Chamber [2] through the Pressure Sustaining Pilot (PSP) [3]. The PSP commands the Valve to throttle closed should Upstream Pressure [P1] drop below setting. When [P1] rises above setting, the PSP switches and allows the PRP to control the Valve, commanding it to reduce Downstream Pressure [P2]. The Manual Selector [4] enables local manual closing.





## Technical Data

**Pressure Rating:**  
10 bar

**Operating Pressure Range:**  
0.5-10 bar

### Materials

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

**Diaphragm:**  
NR, Nylon fabric reinforced

**Spring:**  
Stainless Steel

### Control Loop Accessories

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

**PS 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

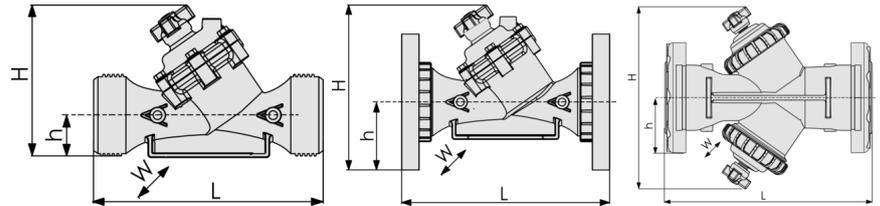
*Standard spring - marked in bold*

### Tubing and Fittings:

Polyethylene and Polypropylene

## Technical Specifications

For other patterns and end connection types, Please refer to [BERMAD](#) full engineering page.



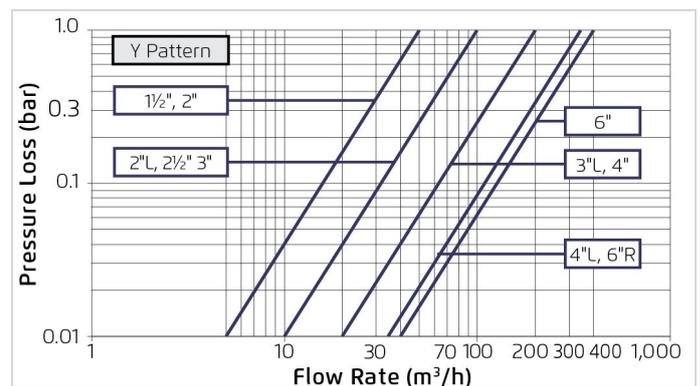
Size	Pattern	End Connection	Weight (Kg)	L (mm)	H (mm)	h (mm)	w	CCDV (Lit)	KV
1½" ; DN40	Oblique	Threaded	1.1	200	173	40	97	0.12	50
2" ; DN50	Oblique	Threaded	1.2	230	173	40	97	0.12	50
2"L ; DN50L	Oblique	Threaded	1.5	230	187	43	135	0.15	100
2½" ; DN65	Oblique	Threaded	1.5	230	187	43	135	0.15	100
3" ; DN80	Oblique	Threaded	1.6	298	199	55	135	0.15	100
3" ; DN80	Oblique	Plastic Flanges	2.5	308	244	100	200	0.15	100
3" ; DN80	Oblique	Metal Flanges	4.4	308	244	100	200	0.15	100
3"L ; DN80L	Oblique	Threaded	3	298	278	60	168	0.62	200
3"L ; DN80L	Oblique	Plastic Flanges	3.7	308	317	100	200	0.62	200
3"L ; DN80L	Oblique	Metal Flanges	4.6	308	317	100	200	0.62	200
4" ; DN100	Oblique	Plastic Flanges	4.6	350	329	112	224	0.62	200
4" ; DN100	Oblique	Metal Flanges	7.4	350	329	112	224	0.62	200
4"L ; DN100L	Oblique	Plastic Flanges	9.2	442	340	112	226	1.15	340
4"L ; DN100L	Oblique	Metal Flanges	11.2	442	340	112	226	1.15	340
6"R ; DN150R	Oblique	Metal Flanges	16.5	470	377	149	287	1.15	340
6" ; DN150	Boxer	Grooved	11	480	387	100	475	2x0.62	400
6" ; DN150	Boxer	Plastic Flanges	12.5	504	387	143	475	2x0.62	400

CCDV = Control Chamber Displacement Volume • **Threaded** = BSP & NPT are available. External thread is available for 2" and 2½" only. • Other End Connections are available on request. For dimensions and weights of adapters or valves with adapters please consult with customer service.

### Additional Features

Code	Description	Size Range
M	Flow Stem (*Exclude sizes 4"L, 6"R)	1½"-6" / DN40-150
Z	Manual Selector	1½"-4"L / DN40-100L
V3	Victaulic PVC Adaptors 3"	3" / DN80
V4	Victaulic PVC Adaptors 4"	4" / DN100

### Flow Chart



### Differential Pressure & Flow Calculation

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

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