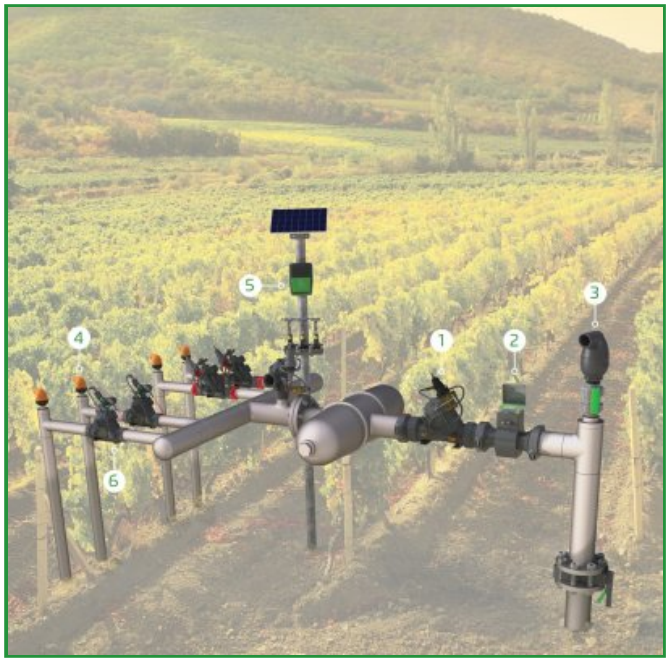
# PRESSURE REDUCING VALVE

## For High Pressure, With Hydraulic Remote Control

## Model IR-120-50-HP-3W-XZ

The BERMAD Pressure Reducing Valve with hydraulic remote control is a hydraulically operated, diaphragm actuated control valve, designed for high pressure, 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.




**[1]** BERMAD Model IR-120-50-HP-3W-XZ opens upon pressure drop command, and establishes reduced pressure zone protecting laterals and distribution lines.
**[2]** Electromagnetic Flow Meter Model M-10 (composite)
**[3]** Combination Air Valve Model IR-C30
**[4]** Kinetic Air Valve Model IR-K10
**[5]** Smart Irrigation Controller-OMEGA
**[6]** Pressure Reducing Valve (Top Pilot) Model IR-12T-55-3W-X

### Features & Benefits

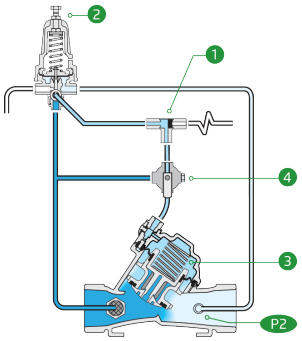
- Line Pressure Driven, Hydraulically Controlled
  - Protects downstream systems
  - Opens fully upon line pressure drop
- Engineered Composite Valve with Industrial Grade Design
  - Highly durable, chemical and cavitation resistant
  - Adaptable on-site to a wide range of end connection
- hYflow 'Y' Valve Body with "Look Through" Design
  - Ultra-high flow capacity at low pressure loss
- Unitized Flexible Diaphragm and Guided Plug
  - Accurate and stable regulation with smooth closing
  - Requires low actuation pressure
  - Prevents diaphragm erosion and distortion
  - Simple in-line inspection and service

### Typical Applications

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

### 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.

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## Technical Data

**Pressure Rating:**
16 bar

**Operating Pressure Range:**
0.5-16 bar

### Materials

**Body & Cover:**
Reinforced Polyamide

**Diaphragm:**
EPDM

**Spring:**
Stainless Steel

### Control Loop Accessories

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

**Pilot Spring Range:**

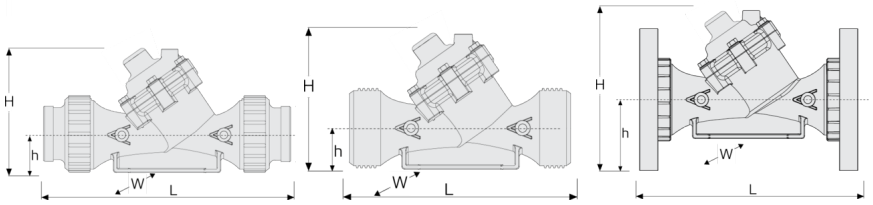
| Spring | Spring Color | Setting range |
|---|---|---|
| K | Gray | 0.5-3.0 bar |
| **N** | **Natural** | **0.8-6.5 bar** |
| V | Blue & White | 1.0-10.0 bar |
| P | White | 1.0-16.0 bar |

*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.



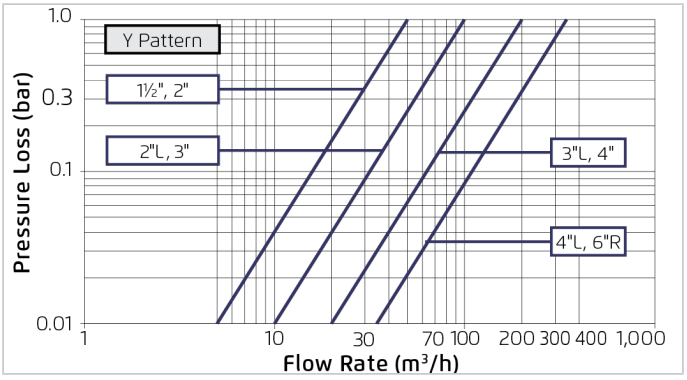

| Size | Pattern | End Connection | Weight (Kg) | L (mm) | H (mm) | h (mm) | W | CCDV (Lit) | KV |
|---|---|---|---|---|---|---|---|---|---|
| 1½" ; DN40 | Oblique | Threaded | 1.2 | 200 | 172 | 40 | 97 | 0.12 | 50 |
| 2" ; DN50 | Oblique | Threaded | 1.3 | 230 | 172 | 40 | 97 | 0.12 | 50 |
| 2" ; DN50 | Oblique | Grooved | 1.4 | 284 | 172 | 40 | 97 | 0.12 | 50 |
| 2"L ; DN50L | Oblique | Threaded | 1.6 | 230 | 172 | 43 | 135 | 0.15 | 100 |
| 2"L ; DN50L | Oblique | Grooved | 1.7 | 284 | 172 | 43 | 135 | 0.15 | 100 |
| 3" ; DN80 | Oblique | Threaded | 1.8 | 298 | 181 | 55 | 135 | 0.15 | 100 |
| 3" ; DN80 | Oblique | Grooved | 1.9 | 384 | 188 | 62 | 135 | 0.15 | 100 |
| 3" ; DN80 | Oblique | Metal Flanges | 4.6 | 308 | 226 | 100 | 200 | 0.15 | 100 |
| 3"L ; DN80L | Oblique | Threaded | 3.3 | 298 | 243 | 60 | 168 | 0.62 | 200 |
| 3"L ; DN80L | Oblique | Grooved | 3.4 | 384 | 245 | 62 | 168 | 0.62 | 200 |
| 3"L ; DN80L | Oblique | Metal Flanges | 6.1 | 310 | 282 | 100 | 200 | 0.62 | 200 |
| 4" ; DN100 | Oblique | Grooved | 4.1 | 384 | 245 | 62 | 168 | 0.62 | 200 |
| 4" ; DN100 | Oblique | Metal Flanges | 7.8 | 350 | 294 | 112 | 224 | 0.62 | 200 |
| 4"L ; DN100L | Oblique | Grooved | 7.3 | 400 | 313 | 84 | 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 | 18.2 | 470 | 377 | 149 | 287 | 1.15 | 340 |

CCDV = Control Chamber Displacement Volume • Threaded = BSP & NPT are available.

### Additional Features

| Code | Description | Size Range |
|---|---|---|
| 6 | Pressure Gauge up to 16 bar ¼" male connector | 1½"-6"R / DN40-150R |

### Flow Chart




### Differential Pressure & Flow Calculation

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

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