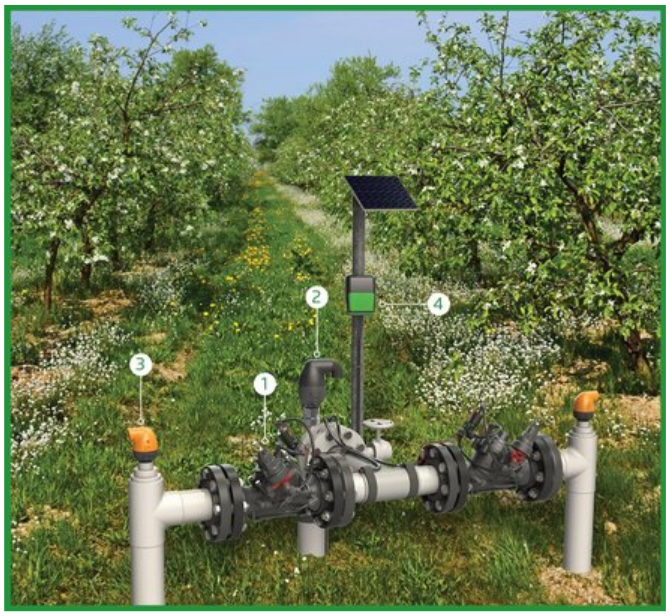
# PRESSURE REDUCING VALVE

## Model IR-120-55-3W-X

The BERMAD Pressure Reducing Control Valve with solenoid 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.
The BERMAD Model IR-120-55-3W-X either opens or shuts in response to an electric signal.




**[1]** BERMAD Model IR-120-55-3W-X opens in response to electric signal, and establishes reduced pressure zone protecting laterals and distribution line.
**[2]** Combination Air Valve Model IR-C10
**[3]** Kinetic Air Valve Model IR-K10
**[4]** Smart Irrigation Controller-OMEGA

### Features & Benefits

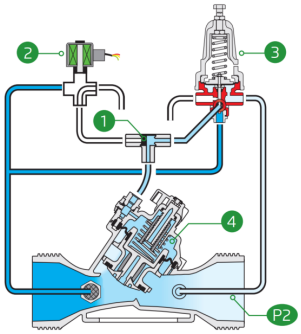
- Hydraulic Pressure Control with Solenoid Control
  - Line pressure driven
  - Protects downstream systems
  - Opens fully upon line pressure drop
  - Electrically controlled On/Off
- Engineered Composite Valve with Industrial Grade Design
  - Highly durable, chemical and cavitation resistant
  - No 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
- Simple In-Line Inspection and Service

### Typical Applications

- Automated Irrigation Systems
- Pressure Reducing Systems
- Systems Subject to Varying Supply Pressure
- Remote and/or Elevated Plots
- Distribution Centers
- Energy Saving Irrigation Systems

### Operation:

The Shuttle Valve [1] hydraulically connects the Solenoid [2] or the Pressure Reducing Pilot (PRP) [3] to the Valve Control Chamber [4] . When the solenoid is closed, the PRP commands the valve to throttle closed should Downstream Pressure [P2] rise above setting and to open fully when [P2] is below seting. In response to an electric signal, the solenoid switches, directing line pressure through the shuttle valve into the control chamber, shutting the valve. The solenoid also features local manual closing.

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## Technical Data

**Pressure Rating:**
150 psi

**Operating Pressure Range:**
7-150 psi

### Materials

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

**Diaphragm:**
NR, Nylon fabric reinforced

**Spring:**
Stainless Steel

### Control Loop Accessories

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

**Pilot Spring Range:**

| Spring | Spring Color | Setting range |
|---|---|---|
| J | Green | 3-25 psi |
| K | Gray | 7-43 psi |
| **N** | **Natural** | **12-95 psi** |
| V | Blue & White | 15-150 psi |

*Standard spring - marked in bold*

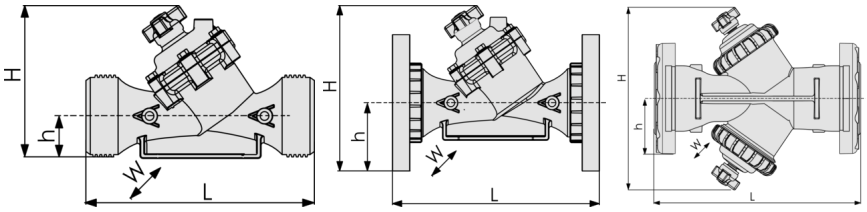
**Tubing and Fittings:**
Polyethylene and Polypropylene

**DC latch solenoid:**
S-982-3W P.B.

**For other solenoids please consult BERMAD*

### Technical Specifications

For other patterns and end connection types, Please refer to BERMAD full engineering page.



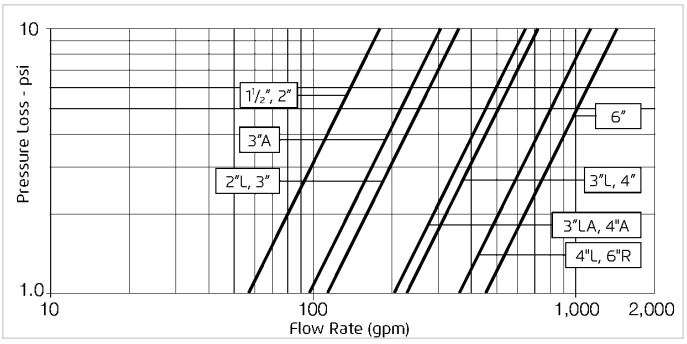

| Size | Pattern | End Connection | Weight (Lb) | L (In) | H (In) | h (In) | W | CCDV (Gal) | CV |
|---|---|---|---|---|---|---|---|---|---|
| 1½" ; DN40 | Oblique | Threaded | 2.4 | 7⅞ | 6⅞ | 1⅝ | 3⅜ | 0.026 | 58 |
| 2" ; DN50 | Oblique | Threaded | 2.7 | 9⅛ | 6⅞ | 1⅝ | 3⅜ | 0.026 | 58 |
| 2"L ; DN50L | Oblique | Threaded | 3 | 9⅛ | 7⅜ | 1¾ | 5⅜ | 0.033 | 116 |
| 2½" ; DN65 | Oblique | Threaded | 3 | 9⅛ | 7⅜ | 1¾ | 5⅜ | 0.033 | 116 |
| 3" ; DN80 | Oblique | Threaded | 4 | 11¾ | 7⅞ | 2¼ | 5⅜ | 0.033 | 116 |
| 3" ; DN80 | Oblique | Plastic Flanges | 6 | 12⅛ | 9⅝ | 4 | 7⅞ | 0.033 | 116 |
| 3" ; DN80 | Oblique | Metal Flanges | 10 | 12⅛ | 9⅝ | 4 | 7⅞ | 0.033 | 116 |
| 3"L ; DN80L | Oblique | Threaded | 7 | 11¾ | 9⅛ | 2⅜ | 6⅝ | 0.136 | 231 |
| 3"L ; DN80L | Oblique | Plastic Flanges | 8.2 | 12⅛ | 12½ | 4 | 7⅞ | 0.136 | 231 |
| 3"L ; DN80L | Oblique | Metal Flanges | 10.1 | 12⅛ | 12½ | 4 | 7⅞ | 0.136 | 231 |
| 4" ; DN100 | Oblique | Plastic Flanges | 10 | 13⅞ | 13 | 4½ | 8⅞ | 0.136 | 231 |
| 4" ; DN100 | Oblique | Metal Flanges | 16.3 | 13⅞ | 13 | 4½ | 8⅞ | 0.136 | 231 |
| 4"L ; DN100L | Oblique | Plastic Flanges | 20.2 | 17½ | 13⅜ | 4½ | 9 | 0.253 | 393 |
| 4"L ; DN100L | Oblique | Metal Flanges | 24.7 | 17½ | 13⅜ | 4½ | 9 | 0.253 | 393 |
| 6"R ; DN150R | Oblique | Metal Flanges | 36 | 18½ | 14⅞ | 5⅞ | 11⅜ | 0.253 | 393 |
| 6" ; DN150 | Boxer | Grooved | 26 | 19 | 15¼ | 4 | 18¾ | 2x0.136 | 462 |
| 6" ; DN150 | Boxer | Plastic Flanges | 27.6 | 19⅞ | 15¼ | 5⅝ | 18¾ | 2x0.136 | 462 |

**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" |
| 5 | Plastic Test Point | 1½"-4" |
| Z | Manual Selector | 1½"-4" |
| V3 | Victaulic PVC Adaptors 3" | 3" |
| V4 | Victaulic PVC Adaptors 4" | 4" |

### Flow Chart




### Differential Pressure & Flow Calculation

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

Cv = gpm @ ΔP of 1 psi
Q = gpm
ΔP = psi