

# PRESSURE REDUCING VALVE - DOUBLE CHAMBER

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

The BERMAD Model IR-120-DC-55-3W-X Pressure Reducing Control Valve with solenoid control is a double chambered, hydraulically operated, diaphragm actuated control valve that reduces higher upstream pressure to lower constant downstream pressure and opens fully upon line pressure drop, regardless of fluctuating demand, and opens fully upon line pressure drop. The valve either opens or shuts in response to an electric signal. The Double Chamber Valve is a high performance valve, specially designed for quick response and challenging regulation requirements.



- [1] BERMAD Model IR-120-DC-55-3W-XZ opens in response to electric signal, and establishes reduced pressure zone protecting laterals and distribution line.
- [2] Combination Air Valve Model IR-C30
- [3] Combination Air Valve Model IR-C10
- [4] Hydrometer Model IR-900-M0-Magnetic Drive
- [5] Smart Irrigation Controller-OMEGA

### Features & Benefits

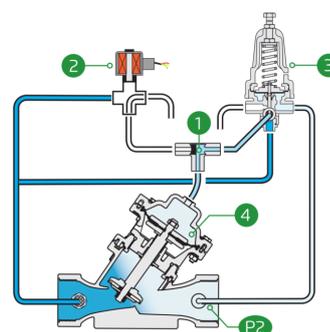
- Hydraulic Pressure Control with Solenoid Control
  - Line pressure driven
  - Protects downstream systems
  - Opens fully upon line pressure drop
  - Electrically controlled On/Off
- Double Chamber Design
  - Full powered opening and closing
  - Decreased pressure loss
  - Low throttling noise
  - Non-slam closing characteristic
  - Protected diaphragm
- Engineered Composite Valve with Industrial Grade Design
- hYflow 'Y' Valve Body with "Look Through" Design
  - Ultra-high flow capacity at low pressure loss
- User-Friendly Design
  - Simple in-line inspection and service

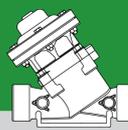
### Typical Applications

- 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 setting. 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.





### 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
<b>N</b>	<b>Natural</b>	<b>12-95 psi</b>
V	Blue & White	15-150 psi

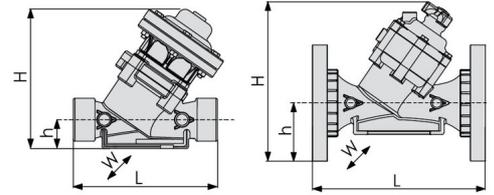
*Standard spring - marked in bold*

**Tubing and Fittings:**  
Polyethylene and Polypropylene

*\*For other solenoids and pilots please consult [BERMAD](#)*

### Technical Specifications

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



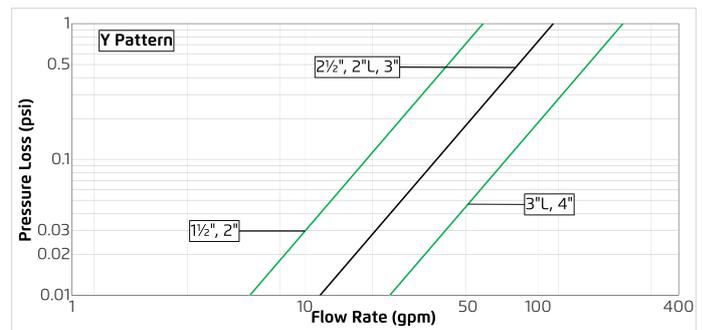
Size	Pattern	End Connection	Weight (Lb)	L (In)	H (In)	h (In)	W	CCDV (Gal)	CV
1½" ; DN40	"Y" (globe)	Threaded	4	7¾	7¾	1½	5	0.034	58
2" ; DN50	"Y" (globe)	Threaded	4	9¾	7¾	1½	5	0.034	58
2"L ; DN50L	"Y" (globe)	Threaded	4.9	9¾	8¾	1¾	5¾	0.045	116
2½" ; DN50L	"Y" (globe)	Threaded	4.9	9¾	8¾	1¾	5¾	0.045	116
3" ; DN80	"Y" (globe)	Threaded	5	11¾	9¾	2¼	5¾	0.045	116
3" ; DN80	"Y" (globe)	Metal Flanges	11	12¾	11	4	7¾	0.045	116
3" ; DN80	"Y" (globe)	Plastic Flanges	7.1	12¾	11	4	7¾	0.045	116
3"L ; DN80L	"Y" (globe)	Threaded	13.1	13¾	14	2¾	8¾	0.15	231
3"L ; DN80L	"Y" (globe)	Metal Flanges	16.3	13½	15½	4	8¾	0.15	231
3"L ; DN80L	"Y" (globe)	Plastic Flanges	14.3	13½	15½	4	8¾	0.15	231
4" ; DN100	"Y" (globe)	Metal Flanges	21	14¾	16	4½	8¾	0.15	231
4" ; DN100	"Y" (globe)	Plastic Flanges	16.8	14¾	16	4½	8¾	0.15	231

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
Z	Manual Selector	1½"-4"
K/L	Auxiliary Closing / Lifting Spring (for 100-DC models only)	1½"-4"
5	Plastic Test Point	1½"-4"
7	½" Anti Vacuum at Valve Downstream	1½"-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