# HYDRAULIC VALVE, DOUBLE CHAMBER

## Model IR-100-DC-Z

The BERMAD Model IR-100-DC-Z Hydraulic Control Valve is a hydraulically operated, diaphragm actuated control valve that opens and shuts in response to a local or remote pressure command.

The valve comprises two major components: the body and the actuator assembly. The actuator assembly is removable from the body as an integralunit. It consists of both upper and lower control chambers, providing Isolated and protected diaphragm.

The double chambered valve operation is independent of valve differential pressure. This develops maximum power, ensuring immediate valve response combined with inherent soft closing

## Features & Benefits

- Hydraulic Control Valve with On/Off feature.
  - Line Pressure Driven
  - Suitable also for remote and/or elevated systems
- Double chamber design
  - Full powered opening and closing
  - Non-slam closing characteristic
  - Protected diaphragm
- Engineered Plastic Valve with Industrial Grade Design
  - hYflow 'Y' Valve Body with "Look Through" Design
  - Ultra-high flow capacity - Low pressure loss User-Friendly Design
- User Friendly Design
  - Simple in-line inspection and service, Easy maintenance
  - Simple in-line conversion from single to double chamber

## Typical Applications

- Computerized Irrigation Systems
- Drip Systems
- Sprinklers & Micro-Sprinklers
- Greenhouses Irrigation
- Low Pressure Systems
- End-line Flushing (Distribution Line, Irrigation Machine) - "Flush-'n-Stop"
- Proportional Pressure Reducing
- Non-slam Closing (or moderate closing)
- Active Double Chambered (B) - full Powered Opening & Closing


**[1]** BERMAD Model IR-100-DC-Z Open upon to local munal command
**[2]** BERMAD Kinetic Air Valve Model IR-K10
**[3]** BERMAD Combination Air Valve Model IR-C10
**[4]** BERMAD RF RTU Battery Operated with Solar Kit

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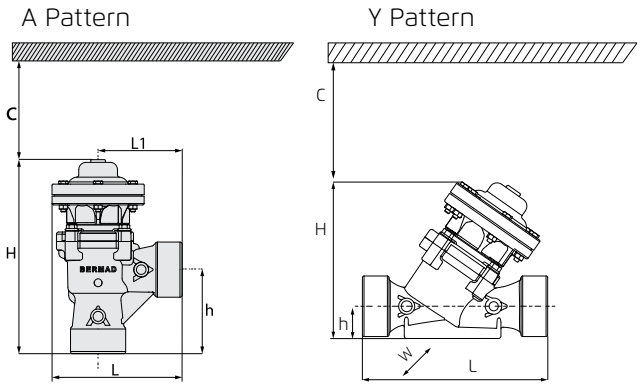
## Technical Specifications

**Dimensions and Weights**

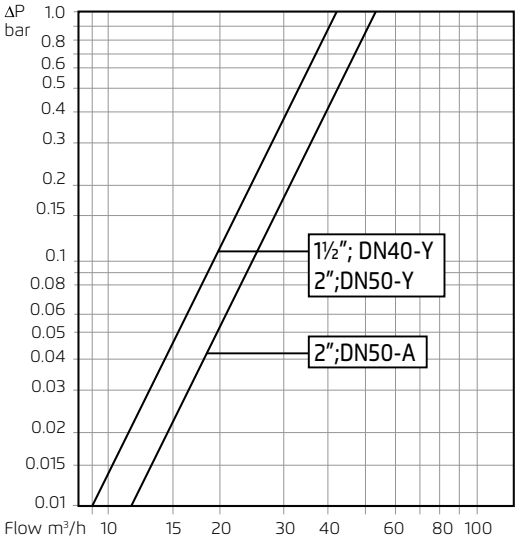
| Size | DN | 50-A | 40-Y | 50-Y |
|---|---|---|---|---|
| | Inch | 2-A | 1½-Y | 2-Y |
| L | mm | 178 | 200 | 200 |
| L1 | mm | 114 | - | - |
| H | mm | 267 | 196 | 196 |
| W | mm | 126 | 126 | 126 |
| h | mm | 112 | 40 | 40 |
| Weight | Kg | 1.7 | 1.7 | 1.7 |
| CCDV | Liter | 0.13 | 0.13 | 0.13 |

**Note:** CCDV = Control Chamber Displacement Volume




C = Half of H

## Flow Chart




| | | A | Y | |
|---|---|---|---|---|
| **Size** | DN | 50 | 40 | 50 |
| | Inch | 2 | 1½ | 2 |
| **Flow Coefficient** | KV | 52 | 42 | 42 |

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 ($m^3/h$; gpm)

P = Differential pressure (bar; psi)

**Cv = 1.155 Kv**

## Technical Data

**Patterns:** Oblique (Y): DN40-DN50; 1½"-2"
Angle (A): DN50; 2"

**End Connections:** BSP or NPT

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

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

**Temperature Range:** Water up to 50°C; 82°F

## Standard Materials:

**Body:** Glass-Filled Nylon

**Actuator:** Plastic & Stainless Steel

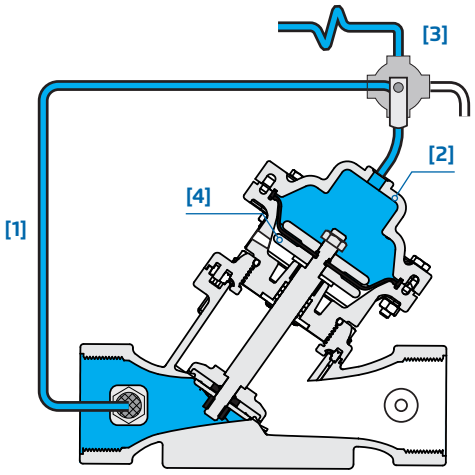
**Diaphragm:** Nylon Fabric Reinforced Natural Rubber

**Seals:** NBR

**Spring:** Stainless Steel

**Cover Bolts:** Stainless Steel

## Operation




Hydraulic Command **[1]** is applied to the Control Chamber **[2]** through the Manual Selector **[3]**. This creates superior closing force that moves the Diaphragm Assembly **[4]** to a closed position. Discharging the pressure in the upper control chamber to atmosphere, causes the line pressure acting on the seal disk to move the valve to the open position.