

Double Chamber Hydraulic Control Valve

IR-100-DC

The BERMAD Model IR-100-DC is a double chambered, hydraulically operated, diaphragm actuated globe control valves in either the standard oblique (Y) or angle pattern design.

The valve comprises two major components: The body and the actuator assembly. The actuator assembly is unitized and is removable from the body as an integral unit. It consists of both an upper and a lower control chamber. Each basic valve can easily be configured, on-site, either as a single chamber (Model 105), or a double chamber (Model 100). The shaft sub assembly is center guided, providing an unobstructed seat area.

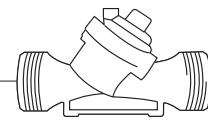
The Model 100 double chambered valve operation is independent of valve differential pressure. This develops maximum power, ensuring immediate valve response.



Features and Benefits

- Hydraulic Control Valve
 - Line pressure driven
 - Meets all irrigation applications range
- Double chamber
 - Full powered opening and closing
 - Decreased pressure loss
 - No throttling noise
 - 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
 - Simple in-line inspection and service



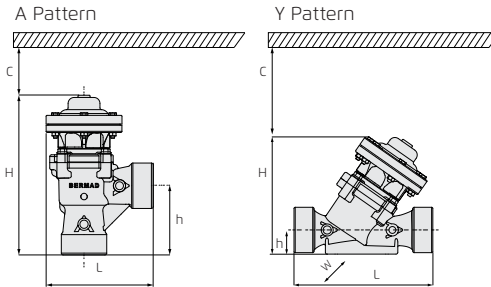


Technical Specifications

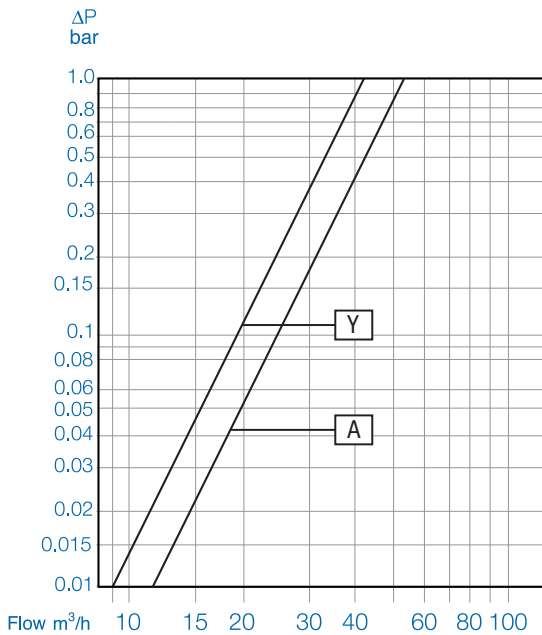
Dimensions and Weights

Size	DN	Double Chamber				Single Chamber			
		A		Y		A		Y	
L	mm	178	178	200	200	178	178	200	200
	inch	7.0	7.0	7.9	9.1	7.0	7.0	7.9	9.1
H	mm	267	267	196	196	216	216	156	156
	inch	10.5	10.5	7.7	7.7	8.5	8.5	6.1	6.1
W	mm	126	126	126	126	126	126	126	126
	inch	5	5	5	5	5	5	5	5
h	mm	112	112	40	40	112	112	40	40
	inch	4.4	4.4	1.6	1.6	4.4	4.4	1.6	1.6
Weight	Kg	1.7	1.7	1.7	1.7	1.2	1.2	1.2	1.2
	lib	3.8	3.8	3.8	3.8	2.7	2.7	2.7	2.7

Note: C = Half of H



Flow Chart



Size	DN	A		Y	
		40	50	40	50
Flow Coefficient	KV	52	52	42	42
	CV	60	60	49	49
CCDV	Liter	0.13	0.13	0.13	0.13
	Gallon	0.03	0.03	0.03	0.03

CCDV = Control Chamber Displacement Volume

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

Where:

Kv = Valve flow coefficient (flow in m³/h at Diff. Press. 1 bar)

Cv = Valve flow coefficient (flow in gpm at Diff. Press. 1 psi)

Q = Flow rate (m³/h; gpm)

ΔP = Differential pressure (bar; psi)

$$Cv = 1.155 Kv$$

Technical Data

Available Patterns & Sizes: "Y" & Angle DN40; 1 1/2" & DN50; 2"

End Connections: Threaded BSP or NPT

Pressure Rating: 10 bar; 145psi

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





SHARP 3-Way mini-pilot

PC-SHARP-X

SHARP is the most sensitive and accurate mini-pilot in the market. It is a multi-purpose 3-Way mini-pilot, diaphragm-operated, based on a balance between the hydraulic force acting on the diaphragm, and the mechanical force of the calibration spring. The SHARP replaces the PC-X mini-pilot through all applications range.

Features and Benefits

- **Universal Mini-Pilot:** Serves as a pressure reducing pilot, pressure sustaining pilot & hydraulic relay
- **Easy fit-in:** Connections are identical to PC-X & Servo (PC-S) mini-pilots, allowing easy & simple on-site upgrade
- **High Quality:** All calibration springs made of Stainless Steel
- **Accurate & Flexible:** Pressure setting range: 0.5-10bar; 8-145psi. Tolerance: < 2m; 3psi

Operation:

The SHARP Mini-pilot sensing chamber is connected to the relevant pressure source according to application. The SHARP directs control pressure to & from valve control chamber, by opening and closing water passages:

- When sensed pressure higher than setting: 0 ←→ 3
- When sensed pressure equal to setting: 2 | ←→ | 3 | ←→ | 0 "locked"
- When sensed pressure lower than setting: 2 ←→ 3

Typical applications

- Pressure Reducing
- Pressure Reducing & Sustaining
- Pressure Sustaining
- Hydraulic relay

Technical data

Pressures Rating: PN10

Temperature Resistance: water up to 50°C; 122°F

Flow Factor: KV (@1 bar DP); CV (@1 psi DP)

Ports "0" to "3": 0.22m³/h; 0.25gpm

Ports "3" to "2": 0.16m³/h; 0.18gpm

Construction Materials:

Plastic Cover: Polyamide (Nylon) 6 with 30% glass fiber

Metal Cover: Brass

Plastic Body: Polyamide (Nylon) 6 with 30% glass fiber

Metal Body: Brass

Elastomers: NBR

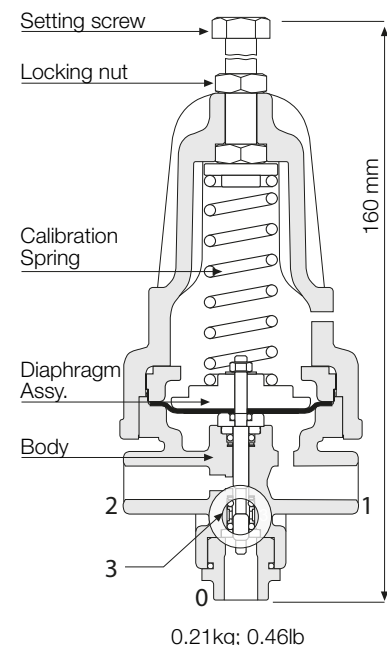
Internal Metal Parts: Stainless Steel

Spring: Stainless Steel

Ports: 1/8" NPT

Connections

- 0 – Upstream: Pressure Reducing; Vent: Pressure Sustaining
- 3 – Valve control chamber
- 2 – Vent: Pressure Reducing; Upstream: Pressure Sustaining
- 1 – Sensing



Calibration range of springs

Spring	Spring color	Setting Range
J	Green	0.2-1.7bar; 3-25psi
K	Grey	0.5-3.0bar; 8-44psi
N	Colorless	0.8-6.5bar; 11-94psi
V	Blue-white	1.0-10bar; 14-145psi
P	White	1.0-16.0bar; 14-230psi

Ordering guide

Description	Cat. no.
SHARP Plastic with green spring J (0.2-1.7bar; 3-24psi)	5008L1G500
SHARP Plastic with grey spring K (0.5-3.0bar; 8-44psi)	5008L1G200
SHARP Plastic with colorless spring N (0.8-6.5bar; 11-94psi)	5008L1G400
SHARP Metal with blue-white spring V (1.0-16bar; 14-230psi), Plastic Cover	5004L1G200
SHARP Metal with colorless spring N (0.8-6.5bar; 11-94psi), Plastic Cover	5004L1G400