

**NEW**



## IR-100DC Series

The BERMAD IR-100DC Series Valves are double chambered hydraulically operated valves which provide: Isolated and protected diaphragm, full-powered opening & closing, non-slam closing characteristic & decreased pressure loss (no spring).

The actuator assembly is removable from the body as an integral unit. It consists of both upper and lower control chambers. Valves can easily be configured, on-site, either as single or double chamber control valve. The shaft sub assembly is center guided, providing an unobstructed seat area.

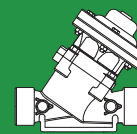
IR-300 Series are Globe valves in either the standard oblique or angle (2" only) pattern design, and range in diameter from 1½"-3".

### Features and Benefits

- Line Pressure Driven
- Double Chambered Design
  - Requires low actuation pressure
  - High closing force
  - Protected diaphragm
  - Spring isolated from water
- Metal Body
  - Rigid construction, high stress resistance
- User-Friendly Design
  - Simple structure and maintenance

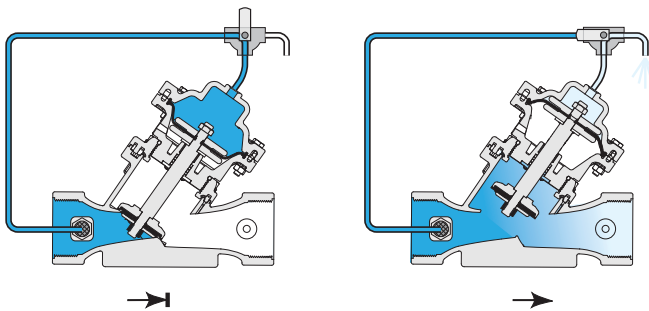
### Typical Applications

- Drip Systems
- Sprinklers & Micro-Sprinklers
- Greenhouses
- Distribution Line Flush-'n-Stop
- Flooding Tables Drainage (with External Pressure)
- Irrigation Machine Line Flush-'n-Stop



## Principle of Operation (on/off)

### 3-Way Control



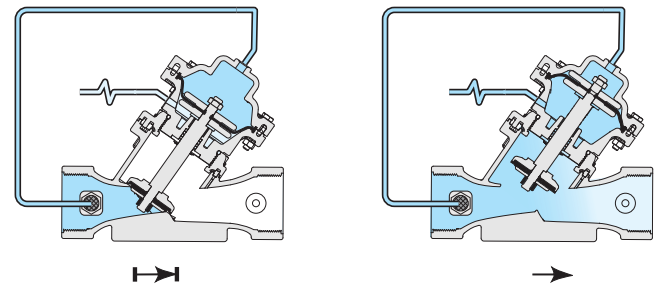
Closed Position

Line pressure applied to the control chamber of the valve creates a hydraulic force that moves the valve to the closed position and provides drip tight sealing.

Open Position

Discharging the pressure from the control chamber to atmosphere or some other lower pressure zone, causes the line pressure acting on the seal disc to move the valve to the open position.

### 3-Way Control Normally Closed Valve with Hydraulic Power Opening



Closed Position

Line pressure is applied constantly to the Upper Control Chamber (UCC). When the Lower Control Chamber (LCC) is vented, it allows the line pressure in the UCC to push the diaphragm assembly, thereby discharging the water from the LCC, closing the valve. Pressurizing the LCC creates, together with the hydraulic force that acts on the plug, a superior force that overcomes the force in the UCC and opens the valve.

Open Position

## Technical Specifications

### Available Patterns & Sizes:

Oblique (Y) - 1½"-3"; DN40-DN80  
 Angle (A) - 2", 3"; DN50, DN80  
 "T" (T) & Double (D) patterns - 3"; DN80

### Available End Connections:

#### Threaded:

Female BSP-T/NPT (1½"-3"; DN40-DN80)  
 Male BSP-F (2" & 2½"; DN50 & DN65)

#### Flanged: 3"

Universal Plastic or metal "Corona" ISO, ANSI, AS, JIS

PVC: 75mm, 90mm, 2.5", 3",

PVC "glue-in" adapters for cement welding

### Victaulic: 2", 3", 4"

Plastic grooved adapters

### Pressure Rating: 10bar; 150psi

Operating Pressure Range: 0.5-10bar; 7-150psi

Temperature Range: Water up to 60°C; 140°F

### Standard Materials:

- **Body, Cover and Plug:** Polyamide (Nylon) 6 – 30GF Black
- **Diaphragm:** NR
- **Seals:** NR
- **Spring:** Stainless Steel
- **Cover bolts:** Stainless Steel

## Flow Properties

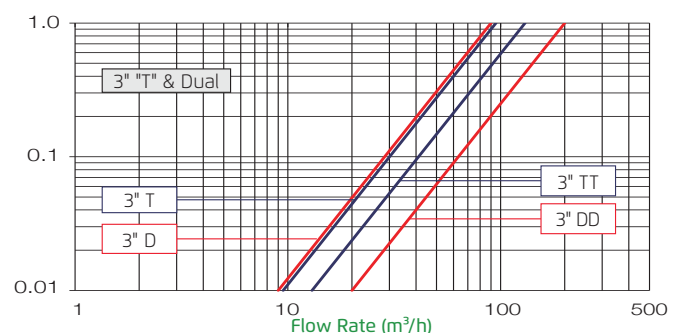
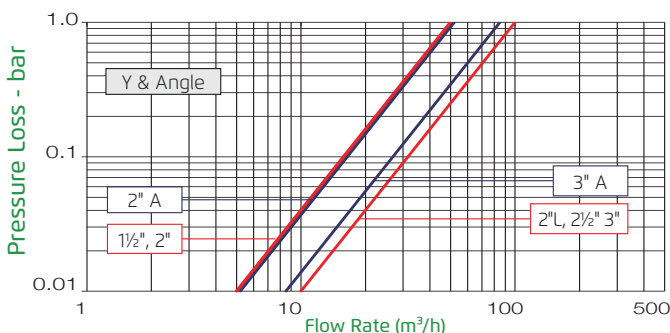
Size	mm	40	50	50	50L	65	80	80	80	80	80	80
mm	Inch	1½"	2"	2"	2"L	2½"	3"	3"	3"	3"	3"	3"
Pattern		Y	Y	A	Y	Y	Y	A	T	TT	D	DD
									One side	Two sides	One side	Two sides
KV		50	50	52	100	100	100	85	95	130	90	200

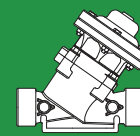
$$\Delta P = \left( \frac{Q}{Kv} \right)^2$$

$Kv = m^3/h \text{ @ } \Delta P \text{ of 1 bar}$        $Cv = 1.155 Kv$   
 $Q = m^3/h$   
 $\Delta P = \text{bar}$

## Flow Chart

2-Way circuit "Added Head Loss" (for "V" below 2 m/s): 0.3 bar





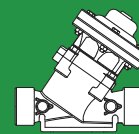
## Dimensions & Weights

<b>NEW</b>								
	<b>Size Inch; DN</b>	1½"; 40	2"; 50	2"; 50	2"; 50L	2½"; 50L	3"; 80	3"; 80
<b>Pattern</b>	Y DC	Y DC	Y DC	Y DC	Y DC	Y DC	Y DC	
<b>End Connections</b>	Rc 1½ (BSP.T)	G 2 (BSP.F)	Rc 2 (BSP.T)	Rc 2 (BSP.T)	G 2½ (BSP.F)	Rc 3 (BSP.T)	Universal Flanges	
	1½" NPT	---	2" NPT	2" NPT	---	3" NPT	Metal	Plastic
L (mm)	200	200	230	230	230	298	308	308
H (mm)	194	196	196	220	220	232	277	277
h (mm)	40	40	40	43	43	55	100	100
W (mm)	126	126	126	135	135	135	200	200
CCDV (lit)	0.13	0.13	0.13	0.17	0.17	0.17	0.17	0.17
Weight (Kg)	1.7	1.7	1.7	2.2	2.2	2.3	5.1	3.2

<b>NEW</b>						
	<b>Size Inch; DN</b>	2"; 50	3"; 80	3"; 80		3"; 80
<b>Pattern</b>	A DC	A DC	A DC		Dual DC	T DC
<b>End Connections</b>	Rc 2 (BSP.T)	Rc 3 (BSP.T)	Universal Flanges		Rc 3 (BSP.T)	Rc 3 (BSP.T)
	2" NPT	3" NPT	Metal	Plastic	3" NPT	3" NPT
L (mm)	115	133	138	138	200	133
H (mm)	266	286	291	291	302	287
h (mm)	126	118	123	123	116	119
W (mm)	115	135	200	200	135	135
CCDV (lit)	0.13	0.17	0.17	0.17	2x0.17	0.17
Weight (Kg)	1.7	2.3	5.1	3.2	4.6	2.8

CCDV = Control Chamber Displacement Volume      DC = Double Chamber      Other End Connections adapters are available on request.  
 For dimensions and weights of adapters or valve with adapters please consult with customer service





**IR**   **3"**   **120-DC**   **55**   **Y**

Size	End Connection		
1½"	DN40	Female Threaded	<b>NEW</b>
2"	DN50	Female Threaded, Male Threaded	<b>NEW</b>
2"L	DN50L	Female Threaded	<b>NEW</b>
2½"	DN65	Male Threaded	<b>NEW</b>
<b>3"</b>	<b>DN80</b>	<b>Female Threaded, Flanged, Grooved, Horn</b>	<b>NEW</b>

Primary Features	Code
Basic Valve	100-DC
Solenoid Controlled Valve (Only 3 Way Control)	110-DC
<b>Pressure Reducing Valve (Only 3 Way Control)</b>	<b>120-DC</b>
Proportional Pressure Reducing Valve	120-PD
Pressure Reducing & Sustaining Valve (Only 3 Way Control)	123-DC
Pressure Sustaining Valve (Only 3 Way Control)	130-DC
Quick Pressure Relief Valve (Only 3 Way Control)	13Q
Level Control Valve	150
Level Control & Pressure Sustaining Valve (Only 3 Way Control)	153-DC

Other primary features available on request.

Additional Features	Code
No Additional Features	00
Check Feature	20
Solenoid Control & Check Feature	25
N.O. Hydraulic Remote Control	50
N.C. With Adjustable Hydraulic Relay	54X
N.C. with Hydraulic Relay	54
<b>Solenoid Controlled</b>	<b>55</b>
Modulating Horizontal Float	60
Bi-Level Electric Float	65
Normally Closed (Hydraulic)	NC
Proportional Pressure Reducing	PD

Reduction Ratios		
Valve Size	Valve Size	Reduction Ratio
1½" & 2"	DN40 & DN50	3.3
2"L, 2½" & 3"	DN50L, DN65 & DN80	2.7

Pattern	Available Sizes	Code
<b>Oblique</b>	<b>All Sizes</b>	<b>Y</b>
Angle	2" & 3"	A
Tee	3"	T
Dual Actuated Tee	3"	D

Construction Materials	Code
<b>Nylon Glass Filled (Standard)</b>	<b>P</b>
Polypropylene (Special Applications - 3"L/4" only)	PP

**P**   **BP**   **4AC**   **PP**   **M**

End Connections - Valve Body only (w/out adaptors)		Code
Threaded	<b>BSP Female Threaded</b>	<b>BP</b>
	NPT Female Threaded	NP
	BSP-F, Male Threaded (2" & 2½" ONLY)	BS
Horn	Inlet BSP x Outlet(s) Horn (3" Angle / Tee / Dual)	KB
	Inlet NPT x Outlet(s) Horn (3" Angle / Tee / Dual)	KN

End Connections - Valve Body with Adaptors***		Code
Flanged**	Plastic Flanges (3")	FF
	Plastic Flanges - NPT Threaded Body (3")	FN
	Metal Flanges - "Corona" (3")	CC
	Metal Flanges - NPT Threaded Body (3")	CN
PVC Cemented (glue-in)	PVC Inner Adaptors 75mmx3" BSP (3")	BJ
	PVC Inner Adaptors 2.5"x3" NPT (3")	NJ
	PVC Adaptors 90-110mm, BSP Threaded Body (3")	T1
	PVC Adaptors 110-125mm, BSP Threaded Body (3")	T2
	PVC Adaptors 3"-4", NPT Threaded Body (3", 3"L)	T3
	PVC Adaptors 4", NPT Threaded Body (3", 3"L)	T4
*Grooved Adaptors	BSP Threaded Body (2", 2"L & 3")	VB
	NPT Threaded Body (2", 2"L & 3")	VN

\* Complies with: ANSI C 606-81  
 \*\* Complies with: ISO PN10, BST-D, ANSI 125/150, JIS K-10  
 \*\*\* For ordering the Adaptors separately see page 15  
 Inlet x Outlet end connection combinations available on request.  
 Please consult Customer Service for further information

Voltage-Main Valve Position (When Solenoid De-Energized)			Code
<b>24VAC</b>	-	<b>Normally Closed</b>	<b>4AC</b>
24VAC	-	Normally Open	4AO
24VDC	-	Normally Closed	4DC
24VDC	-	Normally Open	4DO
12VDC	-	Latch Solenoid S-985 (3 Leads)	1DS
12VDC	-	Latch Solenoid S-982 (2 Leads)	2DS
9VDC	-	Latch Solenoid	9DS

Tube & Fittings	Code
<b>Plastic Tubing &amp; Fittings</b>	<b>PP</b>

Additional Attributes Unlimited Selection		Code
<b>3-Way Control Loop</b>		<b>X</b>
Auxiliary Closing Spring		K
Differential Pressure Duct (2"L-4")		D
External Control Pressure		e
Lifting Opening Spring		L
<b>Flow Stem</b>		<b>M</b>
Flow Over-the-Seat		0
Manual Selector		Z
Low Preset Pressure (below 2 bar)		2
Plastic Pressure Test Point		5
½" Anti Vacuum at Valve Downstream		7

Other additional attributes are optional.  
 Please consult Customer Service for further information.

