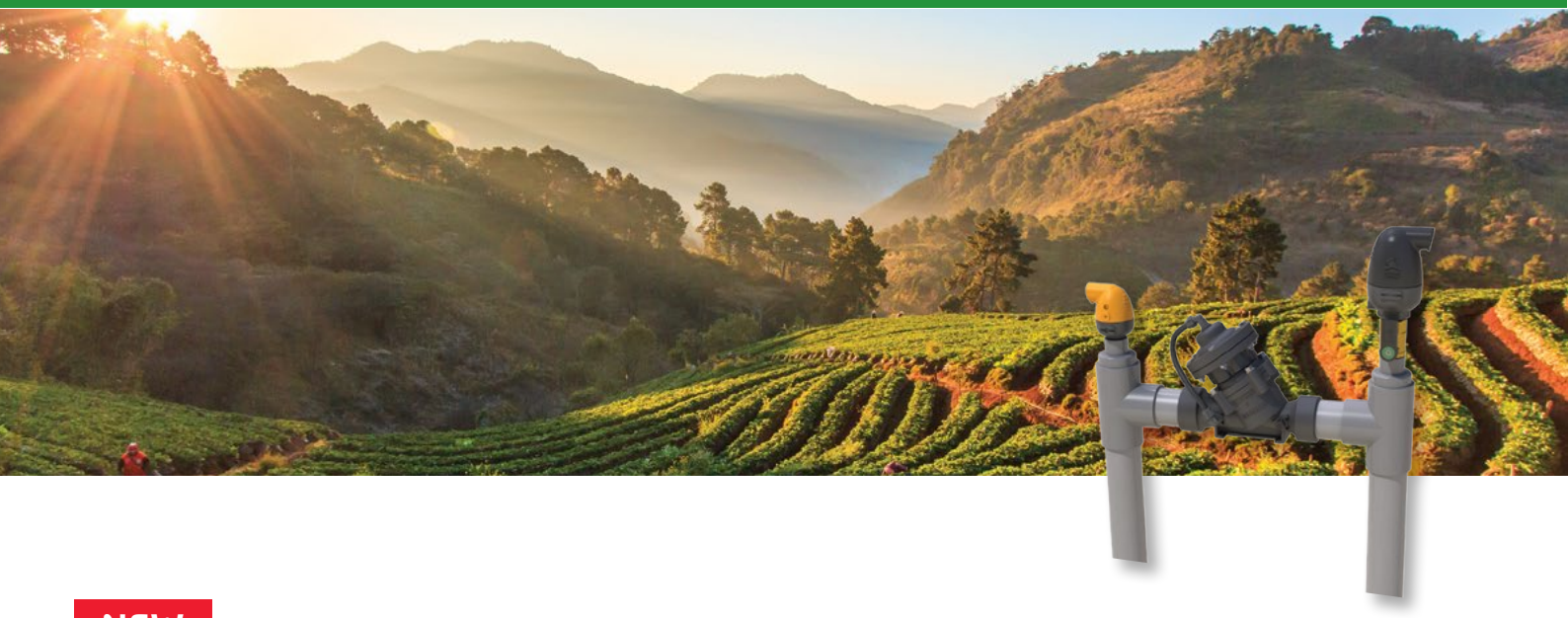


NEW

IR-100-DC Series

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

Double Chamber actuator assembly design consists of both upper and lower control chambers. Valves can easily be configured, on-site from single to double chamber control valve. The shaft sub assembly is center guided, providing an unobstructed seat area.

IR-100-DC Series are now upgrading the best irrigation valves in the world to also be double chamber, available in the range: Oblique (Y) - 1½", 2", 2"L, 2½", 3"; Angle - 2", 3"; "T" & Double (D) "T" patterns - 3"

Features and Benefits

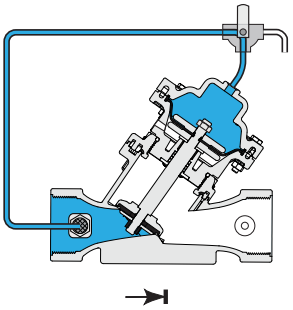
- Line Pressure Driven
- Double Chambered Design
  - Requires low actuation pressure
  - Quick and powerful closure with soft non slam seal
  - Immediate response
  - Protected diaphragm
  - Near Zero Headloss
- User-Friendly Design
  - Simple structure and maintenance
- Pilotless proportional pressure reducing
- Accurate, stable and immediate modulation

Typical Applications

- Drip Systems
- Sprinklers & Micro-Sprinklers
- Greenhouses
- Flooding Tables Drainage (with External Pressure)
- Irrigation machine and distribution line Flush-'N-Stop
- Downhill irrigation and Distribution lines
- Low flow and low pressure operations
- Serial pressure reducing

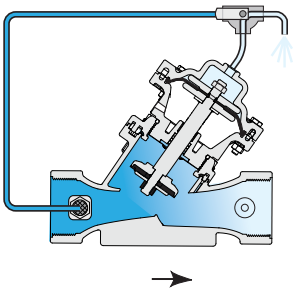
Principle of Operation (on/off)

3-Way Control



Closed Position

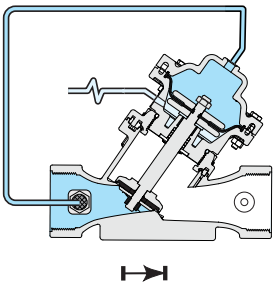
Line pressure applied to the control chamber of the valve creates a hydraulic force that moves the valve to the closed position and provides drip tight sealing.



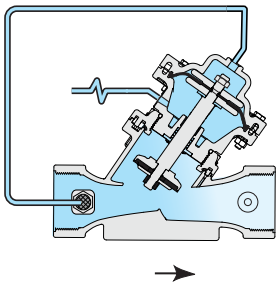
Open Position

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



Open 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.

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 Inch	40 1½"	50 2"	50 2"	50L 2"L	65 2½"	80 3"	80 3"	80 3"	80 3"	80 3"	80 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

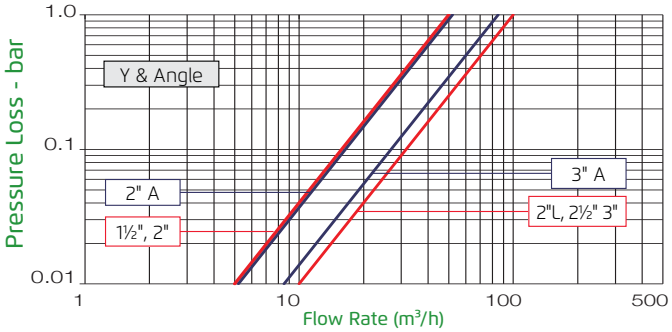
$$\Delta P = \left(\frac{Q}{Kv}\right)^2$$

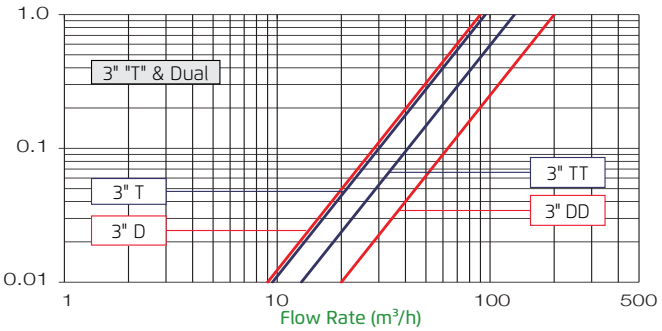
Kv = m³/h @ ΔP of 1 bar
Q = m³/h
ΔP = bar

Cv = 1.155 Kv

Flow Chart

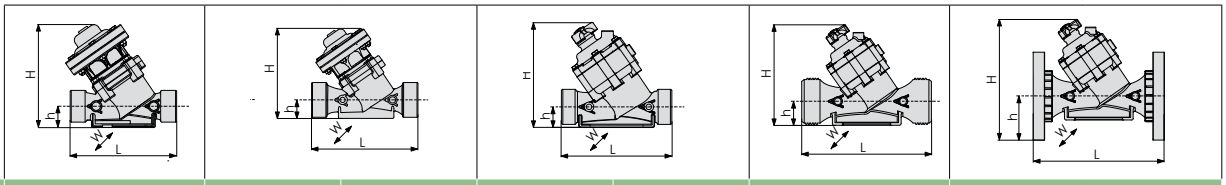
2-Way circuit "Added Head Loss" (for "V" below 2 m/s): 0.3 bar





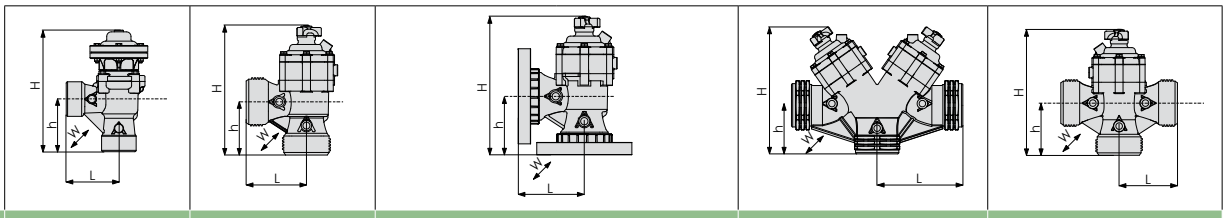
Dimensions & Weights

NEW



Size Inch; DN	1½"; 40	2"; 50	2"; 50	2"L; 50L	2½"; 50L	3"; 80	3"; 80	
Pattern	Y DC	Y DC	Y DC	Y DC	Y DC	Y DC	Y DC	
End Connections	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

NEW



Size Inch; DN	2"; 50	3"; 80	3"; 80		3"; 80	3"; 80
Pattern	A DC	A DC	A DC		Dual DC	T DC
End Connections	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

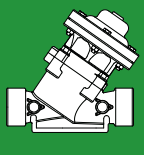


Table of Contents
100-DC Series

IR	3"	120-DC	55	Y	P	BP	4AC	PP	M

Size		End Connection	
1½"	DN40	Female Threaded	
2"	DN50	Female Threaded, Male Threaded	
2"L	DN50L	Female Threaded	NEW
2½"	DN65	Male Threaded	NEW
3"	**DN80**	**Female Threaded, Flanged, Grooved, Horn**	NEW
3"L	DN80L	Flanged, Grooved or glue in	NEW
4"	DN100	Flanged, Grooved or glue in	NEW

Primary Features	Code
Basic Valve	100-DC
Solenoid Controlled Valve (Only 3 Way Control)	110-DC
Pressure Reducing Valve (Only 3 Way Control)	**120-DC**
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-DC
Level Control Valve	150-DC
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
Solenoid Controlled	**55**
Modulating Horizontal Float	60
Green-App Control	4G
Bi-Level Electric Float	65
Normally Closed (Hydraulic)	NC
Proportional Pressure Reducing	PD

Reduction Ratios

Valve Size		Reduction Ratio
1½" & 2"	DN40 & DN50	3.3
2"L, 2½" ,3", 3"L & 4"	DN50L, DN65, DN80, DN80L & DN100	2.7

Pattern	Available Sizes	Code
Oblique	**All Sizes**	**Y**
Angle	2" & 3"	A
Tee	3"	T
Dual Actuated Tee	3"	D

Construction Materials	Code
Nylon Glass Filles (Standard)	**P**

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

End Connections - Valve Body with Adaptors***		Code
Flanged**	Plastic Flanges (3" & 4")	FF
Flanged**	Plastic Flanges - NPT Threaded Body (3" & 4"))	FN
Flanged**	Metal Flanges - "Corona" (3" & 4")	CC
Flanged**	Metal Flanges - NPT Threaded Body (3" & 4")	CN
PVC Cemented (glue-in)	PVC Inner Adaptors 75mmx3" BSP (3")	BJ
PVC Cemented (glue-in)	PVC Inner Adaptors 2.5"X3" NPT (3")	NJ
PVC Cemented (glue-in)	PVC Adaptors 90-110mm, BSP Threaded Body (3")	T1
PVC Cemented (glue-in)	PVC Adaptors 110-125mm, BSP Threaded Body (3")	T2
PVC Cemented (glue-in)	PVC Adaptors 3"-4", NPT Threaded Body (3", 3"L)	T3
PVC Cemented (glue-in)	PVC Adaptors 4", NPT Threaded Body (3", 3"L)	T4
PVC Cemented (glue-in)	PVC Adaptors 160mm (6"R)	T6
*Grooved Adaptors	BSP Threaded Body (2", 2"L & 3")	VB
*Grooved Adaptors	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 23
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
24VAC	**-**	**Normally Closed**	**4AC**
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

Tubing & Fittings	Code
Plastic Tubing & Fittings	**PP**

Additional Attributes Unlimited Selection	Code
3-Way Control Loop	**X**
Auxiliary Closing Spring	K
Differential Pressure Duct (2"L-4")	D
External Control Pressure	e
Lifting Opening Spring	L
Flow Stem	**M**
Flow Over-the-Seat	O
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.