

## Flow Control and Pressure Reducing Valve

with Solenoid Control

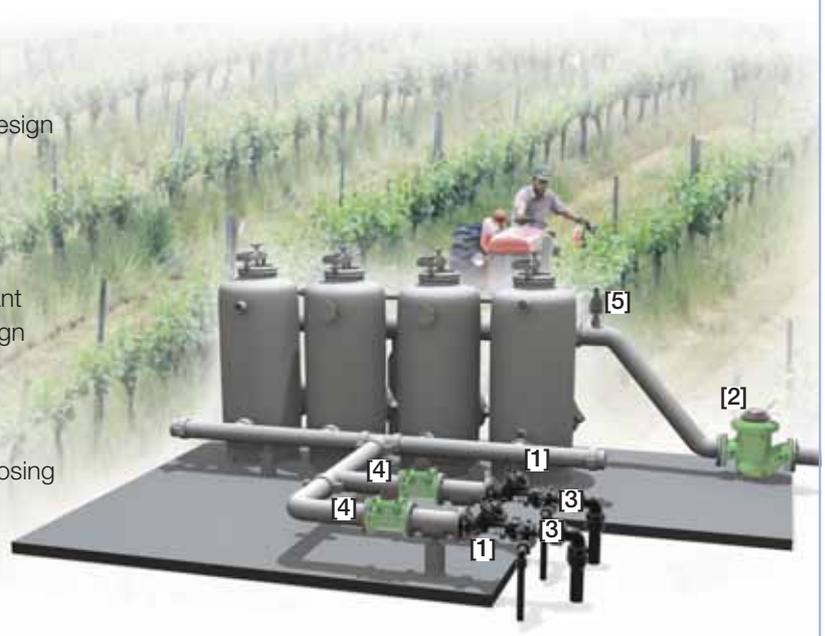
IR-172-55-bD

The BERMAD Model IR-172-55-bD is a hydraulically operated, diaphragm actuated control valve that performs three independent functions. It limits system demand to a preset maximum flow rate; it reduces downstream pressure to maintain a constant preset maximum, and it either opens or shuts in response to an electric signal.



### Features and Benefits

- Line Pressure Driven, Electrically Controlled On/Off
  - Limits fill-up rate and consumer over-demand
  - Protects downstream system
  - Easy flow and pressure setting
- Engineered Plastic Valve with Industrial Grade Design
  - Adaptable on-site to a wide range of end connection sizes and types
  - Articulated flange connections eliminate mechanical and hydraulic stresses
  - Highly durable, chemical and cavitation resistant
- hYflow 'Y' Valve Body with "Look Through" Design
  - Ultra-high flow capacity - Low pressure loss
- Unitized Flexible Super Travel (FST) Diaphragm and Guided Plug
  - Accurate and stable regulation with smooth closing
  - Requires low actuation pressure
  - Prevents diaphragm erosion and distortion
- Internal "Differential Pressure Duct" Flow Sensor
  - No moving parts
  - Saves space and simplifies installation



### Typical Applications

- Computerized Irrigation Systems
- Remote and/or Elevated Plots
- Line Fill-Up Control
- Multiple Independent Consumer Systems
- Pressure Reducing Stations
- Distribution Centers
- Filter Stations

[1] BERMAD Model IR-172-55-bD opens upon pressure drop command, limits fill-up rate and consumer over-demand, establishes reduced pressure zone, and maintains filter backwash pressure.

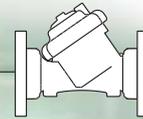
[2] BERMAD Hydrometer Model IR-900-M0

[3] BERMAD Relief Valve Model IR-13Q

[4] BERMAD Water Meter Model WPH

[5] BERMAD Air Valve Model ARA-A-P-P

# BERMAD Irrigation



## IR-172-55-bD

For full technical details, refer to Engineering Section.

## 100 Series hYflow

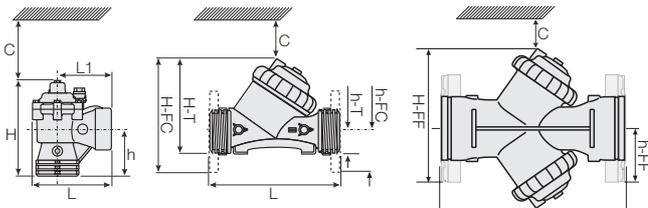
Flow Control

### Technical Specifications

#### Dimensions and Weights

Pattern Size	DN Inch	Angle		Y (Oblique)			Y "Boxer"
		80-T <sup>(1)</sup> 3-T <sup>(1)</sup>	80-T <sup>(1)</sup> 3-T <sup>(1)</sup>	80-FC <sup>(2)</sup> 3-FC <sup>(2)</sup>	80L-FC <sup>(2)</sup> 3L-FC <sup>(2)</sup>	100-FC <sup>(2)</sup> 4-FC <sup>(2)</sup>	150-FF <sup>(3)</sup> 6-FF <sup>(3)</sup>
L (L1)	mm	187 (130)	298	308	310	350	480
	inch	7.4 (5.1)	11.7	12.1	12.2	13.8	18.9
H (Hf)	mm	235 (245)	180 (195)	240 (255)	280	294	285
	inch	9.3 (9.6)	7.1 (7.7)	9.4 (10)	11	11.6	11.2
C	mm	53	53	600	600	600	600
	inch	2.1	2.1	4	4	23.6	23.6
h	mm	117	50	100	100	112	145
	inch	4.6	2	3.9	3.9	4.4	5.7
Weight	Kg	1.6	1.6	4.4	5.9	7.6	12.5
	lb.	3.5	3.5	9.7	13	16.7	27.6

(1) "T" = Threaded end connections  
 (2) "FC" = Flanged, Corona (Metal) end connections  
 (3) "FF" = Flanged, Universal Plastic end connections



### Technical Data

**Sizes:** 3, 3L, 4 & 6"; DN80, 80L, 100 & 150

**Patterns:**

Oblique: 3, 3L, 4 & 6"; DN80, 80L, 100 & 150

Angle: 3"; DN80

**End Connections:**

Threaded: 3 & 3"L; DN80 & 80L

Flanged: 3, 3L, 4 & 6"; DN80, 80L, 100 & 150

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

**Operating Pressure Range:** 0.35-10 bar; 5-145 psi

**Setting Range:** 1-7 bar; 15-100 psi

Setting ranges vary according to specific pilot spring. Please consult factory.

**Flow Setting Range:** ±20% from valve predetermined flow

The "Differential Pressure Duct" is pre-determined in accordance with the desired flow.

**Materials:**

**Body, Cover and Plug:** Glass-Filled Nylon

**Diaphragm:** NR, Nylon Fabric Reinforced

**Seals:** NR

**Spring:** Stainless Steel

**Control Accessories:** Plastic

**Solenoid Voltage Range:**

**S-390 & S-400:** 24 VAC, 24 VDC

**S-392 & S-402:** 9-20 VDC, Latch

**S-982 & S-985:** 12-50 VDC, Latch

Other voltages available.

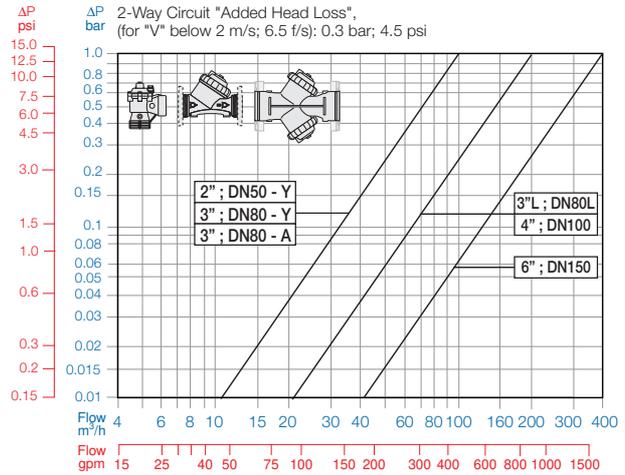
### How to Order

Please specify the requested valve in the following sequence: (for more options, refer to Ordering Guide.)

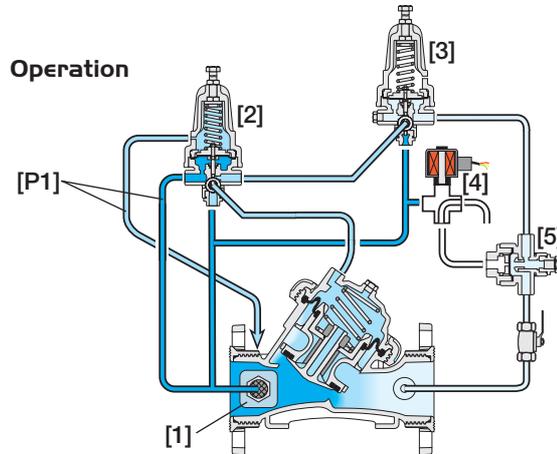
Sector	Size	Primary Feature	Additional Feature	Pattern	Construction Materials	End Connections	Control Type	Voltage - Main Valve Position	Additional Attributes
IR	3-6" <small>Other sizes available on request.</small>	172	55	Y	P	FF	2W/3W	4AC	bD
	Oblique Angle (3"; DN80 Only)	Y A	Threaded BSP (Female) Threaded NPT (Female) Plastic Flanges* Metal Flanges* ("Corona") Grooved (6"; DN150 Only)	BP NP FF CC VI	9VDC - 12VDC - 24VDC - 24VDC - 24VAC - 24VAC - 24VAC, Lightning Proof - 24VAC, Lightning Proof -	Latch Latch N.C. N.O. N.C. N.O. N.C. N.O.	9DS 1DS 4DC 4DC 4AC 4AO 4RC 4RO	Servo Differential Pressure Duct Low Preset Pressure (below 2 bar) Plastic Pressure Test Point  Other attributes available on request	b D 2 5

\* Comply to: ISO PN10, ANSI #125/150, Jis K-10, BS-D  
 Other electrical ratings available on request.

### Flow Chart



### Operation



Pressure Differential  $[\Delta P]$  across the Differential Pressure Duct [1] is in direct proportion to demand. The Flow Pilot [2] continuously senses  $[\Delta P]$  and commands the Valve to throttle closed should demand rise above pilot setting. The Pressure Reducing Pilot [3] controls the Valve to prevent Downstream Pressure [P2] from rising above pilot setting. The Solenoid [4] closes in response to an electric signal, pressurizing the Hydraulic Relay Valve (HRV) [5], closing it, and thereby shutting the main Valve.



info@bermad.com • www.bermad.com

The information herein is subject to change without notice. BERMAD shall not be held liable for any errors. All rights reserved. © Copyright by BERMAD. PC1AE72-55 05