Flow Control and Pressure Reducing Valve

with Hydraulic Control

IR-172-50-bD

The BERMAD Model IR-172-50-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 a pressure command.

Features and Benefits

- Line Pressure Driven, Hydraulically 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
- Line Fill-Up Control
- Multiple Independent Consumer Systems
- Pressure Reducing Stations
- Distribution Centers
- Filter Stations

[1] BERMAD Model IR-172-50-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 Relief Valve Model IR-13Q
[3] BERMAD Water Meter Model WPH
[4] BERMAD Air Valve Model ARA-A-P-P
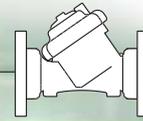
BERMAD Irrigation

100 Series hYflow

Flow Control

Technical Specifications

Dimensions and Weights

Pattern		Angle	Y (Oblique)				Y "Boxer"
Size	DN Inch	80-T[1] 3-T[1]	80-T[1] 3-T[1]	80-FC[2] 3-FC[2]	80L-FC[2] 3L-FC[2]	100-FC[2] 4-FC[2]	150-FF[3] 6-FF[3]
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
	ib.	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

Flow Chart

ΔP psi / ΔP bar 2-Way Circuit "Added Head Loss", (for "V" below 2 m/s; 6.5 f/s): 0.3 bar; 4.5 psi

2" ; DN50 - Y
3" ; DN80 - Y
3" ; DN80 - A
3"L ; DN80L
4" ; DN100
6" ; DN150
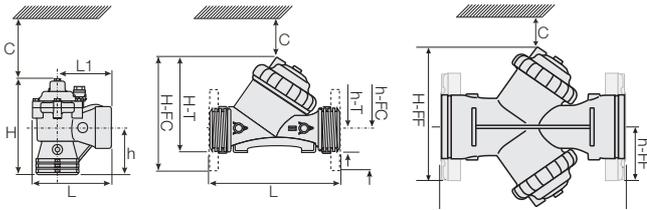
Technical Data

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
Tubing and Fittings: Plastic
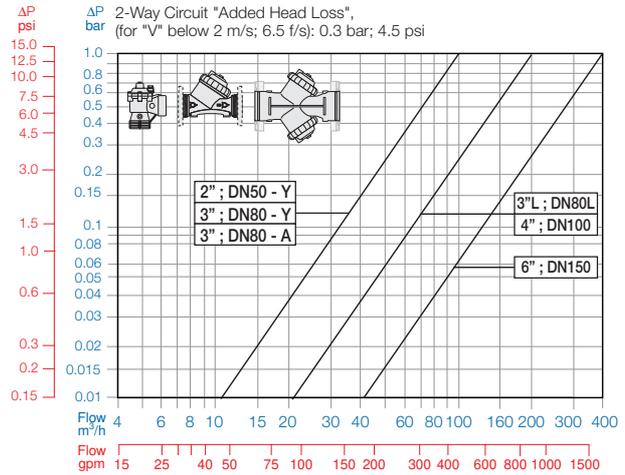
Operation
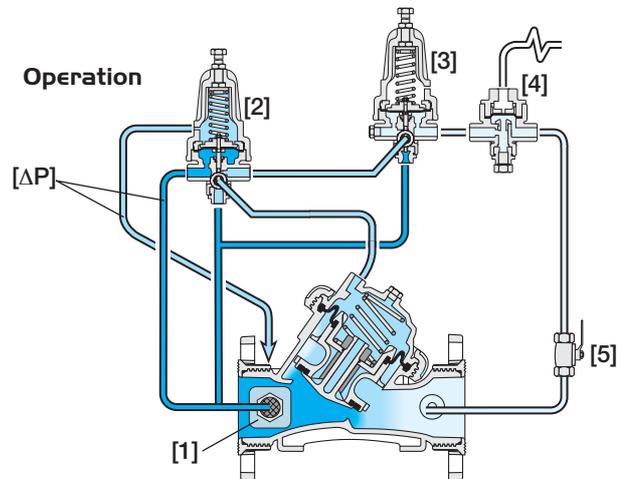
Pressure Differential [ΔP] across the Differential Pressure Duct [1] is in direct proportion to demand. The Flow Pilot [2] continuously senses [ΔP] and commands the Valve to throttle closed should demand rise above pilot setting. The Pressure Reducing Pilot [3] controls the Valve to prevent Downstream Pressure [P2] from rising above pilot setting. The Hydraulic Relay Valve [4] closes upon pressure rise command, shutting the main Valve. The downstream Cock Valve [5] enables manual closing.

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	Additonal Attributes
IR	3-6"	172	50	Y	P	FF	2W/3W	-	bD

Size: Other sizes available on request.

Pattern:
Oblique — Y
Angle (3"; DN80 Only) — A

End Connections:
Threaded BSP (Female) — BP
Threaded NPT (Female) — NP
Plastic Flanges* — FF
Metal Flanges* ("Corona") — CC
Grooved (6"; DN150 Only) — VI

* Comply to: ISO PN10, ANSI #125/150, Jis K-10, BS-D

Additonal Attributes:
Servo — b
Differential Pressure Duct — D
Manual Selector — Z
Low Preset Pressure (below 2 bar) — 2
Plastic Pressure Test Point — 5

Other attributes available on request

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