FILTER BACKWASH HYDRAULIC VALVE

Double Chamber

Model IR-2X2-350-P

The BERMAD Model IR-2x2-350-P is a compact 3-port valve, in a T configuration. It is double chambered, hydraulically operated, and diaphragm actuated. Designed for automatic backwashing of filtration systems, the BERMAD Model IR-2x2-350-P is available in Angle flow (A) and Straight flow (S) configurations.

[1] BERMAD Model IR-2X2-350-A-P allows flow into the filter, switches closed upon pressure rise command blocking inlet to filter and enables backwash flow from the filter.
[2] Automatic Air Valve Model IR-A10
[3] Pressure Relief Valve Model IR-43Q
[4] Hydrometer Model IR-910-M0-X
[5] Hydraulic Control Valve Model IR-105-54-3W-X

Features & Benefits

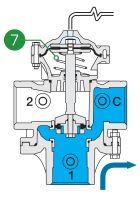
- Line Pressure Driven
- Double Chamber Design
  - Wide application range
  - Requires low actuation pressure
  - Protected diaphragm
- Dynamic Sealing
  - Seals at very low pressure
  - Prevents seal friction and erosion
- Engineered Composite Valve with Industrial Grade Design
  - Highly durable, chemical and cavitation resistant
- Short Valve Travel
  - Smooth changes of flow direction
  - Eliminates mixing of supply and waste water
- User-Friendly Design
  - Can be installed in various orientations
  - Simple in-line inspection and service

Typical Applications

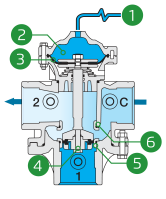
- Automatic Backwash of Filter Batteries
- Gravel Filters
- Sand Filters
- Disc Filters
- Screen Filters
- Single Filter Autonomic Backwash System
- Angled or Straight Installations

Operation:

Angle Flow: A Hydraulic Command [1] , which pressurizes the Upper Control Chamber [2] , forces the Diaphragm [3] actuated Plug Assembly [4] to move towards the Supply Port Seat [5] , eventually sealing it drip tight. This allows flow from the filter through the Drain Port Seat [6] . Venting the upper control chamber causes the line pressure, together with the Spring [7] force, to move the Valve back to filtration mode.

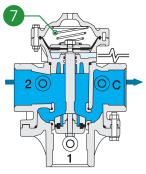


Filtration

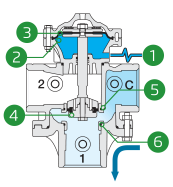


Backwash

Straight Flow: A Hydraulic Command [1] , which pressurizes the Lower Control Chamber [2] , forces the Diaphragm [3] actuated Plug Assembly [4] to move towards the Supply Port Seat [5] , eventually sealing it drip tight. This allows flow from the filter through the Drain Port Seat [6] . Venting the upper control chamber causes the line pressure, together with the Spring [7] force, to move the Valve back to filtration mode.



Filtration



Backwash

All images in this catalog are for illustration only

Technical Data

Pressure Rating:
150 psi

Operating Pressure Range:
10-150 psi

External Operating Pressure:
85%-100% of operating pressure

Maximum Temperature:
150°F

Materials

Body & Cover:
Polyamide (Nylon) 6 With 30% Glass Fiber

Angel Flow-Black Cover
Straight Flow-Gray Cover

**Other materials are available on request*

Seats, Diaphragm Washers:
NR, Nylon fabric reinforced & NBR

Plug, Plug Washer:
Acetal Copolymer Black

Stopper Disk:
PVC-U

Spring:
Stainless Steel

Diaphragm:
NR, Nylon fabric reinforced & NBR

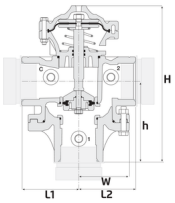
Shaft:
Stainless Steel

External Bolts, Studs, Nuts & Disks:
Stainless Steel

Seal, O-Rings:
NBR

Technical Specifications

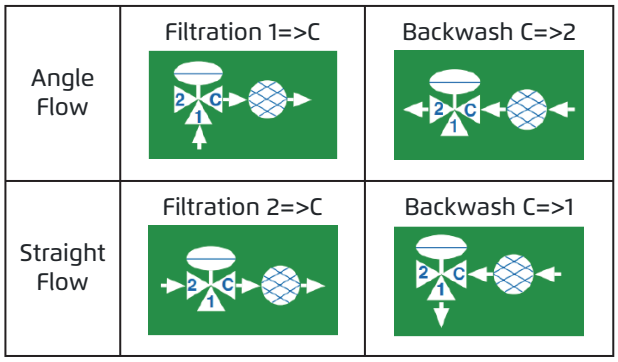
For other end connection types,
Please refer to BERMAD full engineering page.



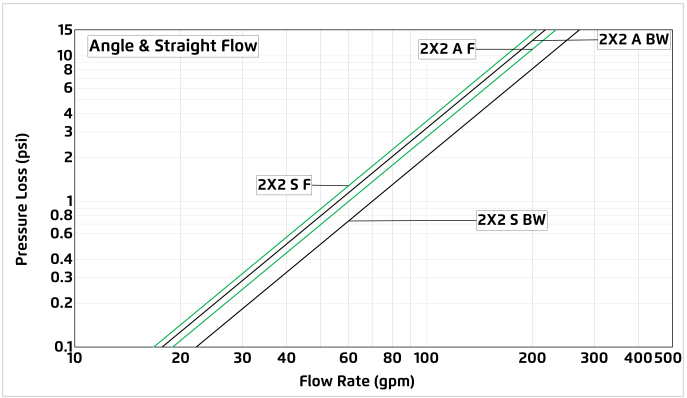
Size (DN)	Pattern	End Connection	Weight (Lb)	L1 (In)	L2 (In)	H (In)	h (In)	W	CCDV (Gal)	CV Filtration	CV BW
2" ; 50	Angle flow	Threaded	6.2	3½	3½	9¾	5	3⅛	0.04	60	56
2" ; 50	Straight flow	Threaded	6.2	3½	3½	9¾	5	3⅛	0.04	53	70
2" ; 50	Angle Flow	Grooved	7.3	4½	4½	10¾	6	3⅛	0.04	60	56
2" ; 50	Straight flow	Grooved	7.3	4½	4½	10¾	6	3⅛	0.04	53	70

CCDV = Control Chamber Displacement Volume
BW = Backwash

Flow Scheme



Flow Chart



A = Angle flow *BW = Backwash*
S = Straight flow *F = Filtration*

Additional Features

Code	Description	Size Range
VI	2" Groove - Thread connector	2"
350-54	Filter Backwash Valve with Hydraulic Accelerator	2"-4"
350-55	Filter Backwash Valve, Solenoid Controlled	2"-4"

Differential Pressure & Flow Calculation

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

Cv = gpm @ ΔP of 1 psi
Q = gpm
ΔP = psi