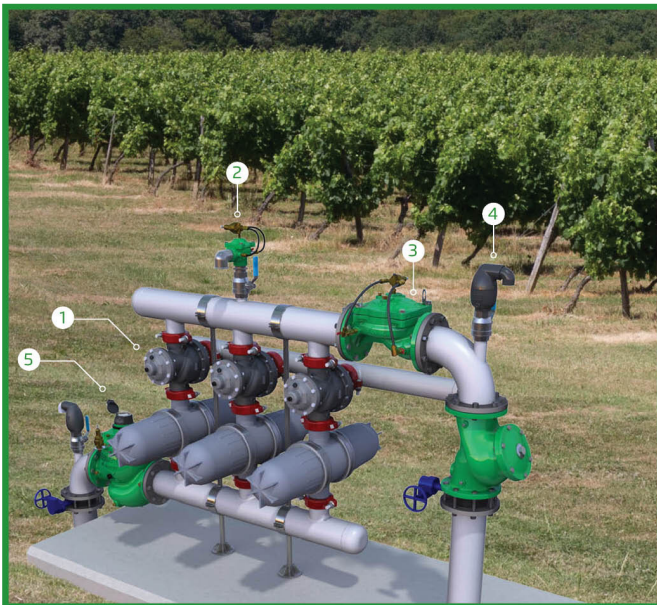


FILTER BACKWASH HYDRAULIC VALVE

Double Chamber

Model IR-4X4-350-P

The BERMAD Model IR-4x4-350-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-4x4-350-P is available in Angle flow (A) and Straight flow (S) configurations.



- [1] BERMAD Model IR-4X4-350-S-P allows flow into the filter, switches close upon pressure rise command blocking inlet to filter and enables backwash flow from the filter.
- [2] Pressure Relief Valve Model IR-43Q
- [3] Pressure Reducing Valve Model IR-420
- [4] Combination Air Valve Model C10
- [5] Pressure Sustaining Hydrometer Model IR-930-M0-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
- Long Valve Travel
 - Higher flow and lower head loss
 - 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

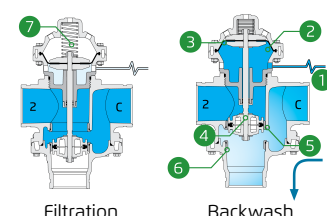
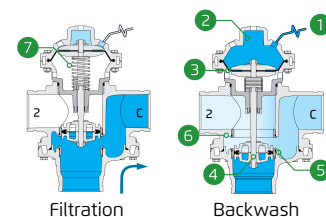
- Automatic Backwash of Filter Batteries
- Gravel Filters
- Sand Filters
- Disc Filters
- Screen Filters
- Single Filter Autonomic Backwash System
- Angled or Straight Installations

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.

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.

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

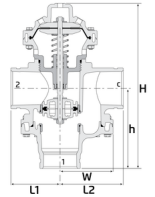
Seal, O-Rings:

NBR

Technical Specifications

For other end connection types,

Please refer to [BERMAD](#) full engineering page.

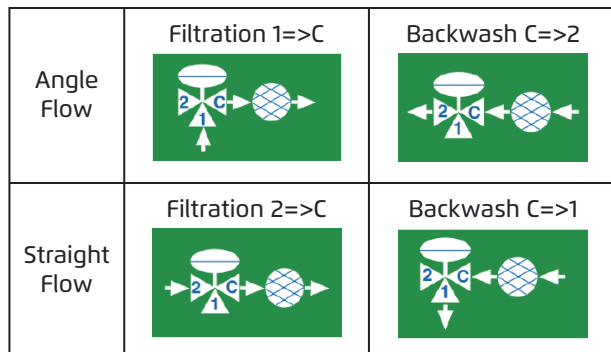


Size (DN)	Pattern	End Connection	Weight (Lb)	L1 (In)	L2 (In)	H (In)	h (In)	W	CCDV (Gal)	CV Filtration	CV BW
4" ; 100	Angle Flow	Grooved	21.8	5½	7	18¼	8¾	5½	0.15	220	290
4" ; 100	Straight flow	Grooved	21.8	5½	7	18¼	8¾	5½	0.15	260	237

CCDV = Control Chamber Displacement Volume

BW = Backwash

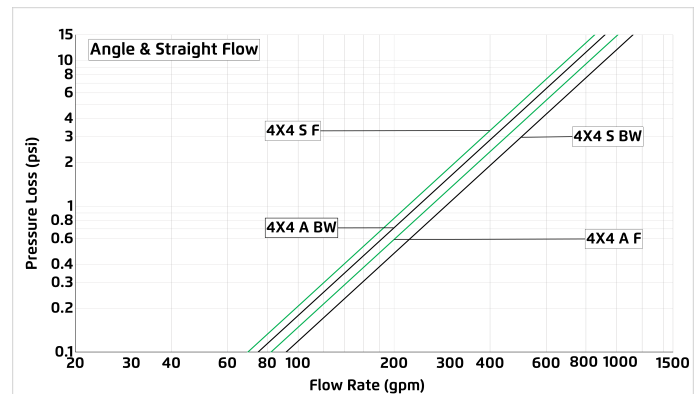
Flow Scheme



Additional Features

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

Flow Chart



A = Angle flow BW = Backwash

S = Straight flow F = Filtration

Differential Pressure & Flow Calculation

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

Cv = gpm @ ΔP of 1 psi

Q = gpm

ΔP = psi