

FILTER BACKWASH HYDRAULIC VALVE

Double Chamber

Model IR-3X3-350-P

The BERMAD Model IR-3x3-350-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-3x3-350-P is available in Angle flow (A) and Straight flow (S) configurations.



- [1] BERMAD Model IR-3X3-350-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] Combination Air Valve Model IR-C10
- [4] Active Pump Control Check Valve Model IR-740-EN
- [5] Electromagnetic Flow Meter Model MUT2300

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

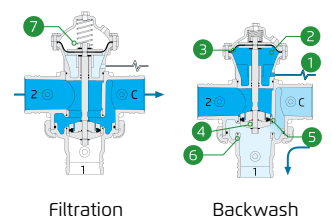
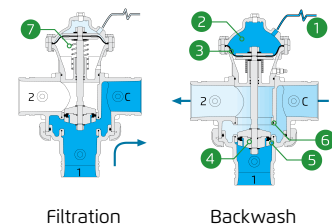
- Automatic Backwash of Filter Batteries
- Gravel Filters
- Sand Filters
- Disc Filters
- Screen Filters
- Single Filter Autonomic Backwash System
- Angled or Straight Installations

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.

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:

10 bar

Operating Pressure Range:

0.7-10 bar

External Operating Pressure:

85%-100% of operating pressure

Maximum Temperature:

65°C

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:

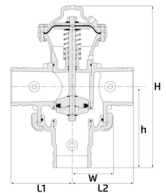
Stainless Steel

External Bolts, Studs, Nuts & Disks:

Stainless Steel

Seal, O-Rings:

NBR



Technical Specifications

For other end connection types,

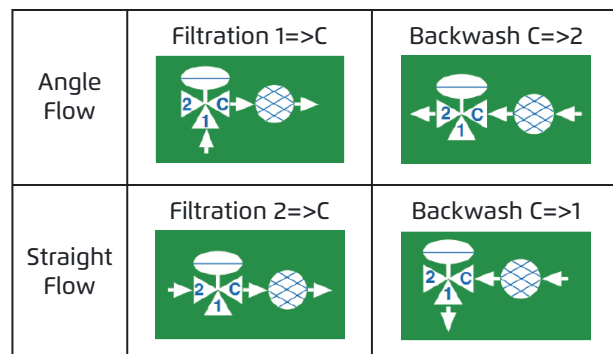
Please refer to [BERMAD](#) full engineering page.

Size (DN)	Pattern	End Connection	Weight (Kg)	L1 (mm)	L2 (mm)	H (mm)	h (mm)	W	CCDV (Lit)	KV Filtration	KV BW
3" ; 80	Angle Flow	Grooved	4.8	143	143	394	189	98	0.34	110	100
3" ; 80	Straight flow	Grooved	4.8	143	143	394	189	98	0.34	93	122

CCDV = Control Chamber Displacement Volume

BW = Backwash

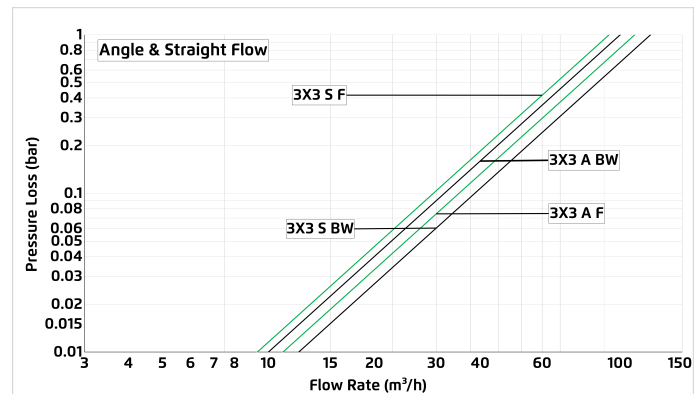
Flow Scheme



Additional Features

Code	Description	Size Range
350-54	Filter Backwash Valve with Hydraulic Accelerator	2"-4" / DN50-100
350-55	Filter Backwash Valve, Solenoid Controlled	2"-4" / DN50-100

Flow Chart



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

Differential Pressure & Flow Calculation

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

$K_v = \text{m}^3/\text{h} @ \Delta P \text{ of } 1 \text{ bar}$
 $Q = \text{m}^3/\text{h}$
 $\Delta P = \text{bar}$