

FILTER BACKWASH HYDRAULIC VALVE

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

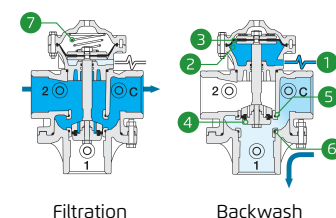
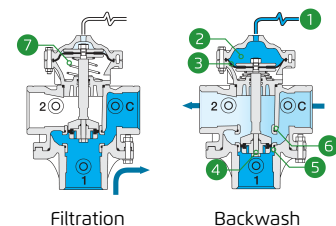
- Automatic Backwash of Filter Batteries
- Gravel Filters
- Sand Filters
- Disc Filters
- Screen Filters
- Single Filter Autonomic Backwash System
- Angled or Straight Installations

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.

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

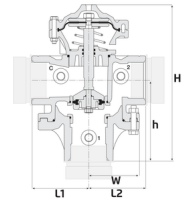
Shaft:
Stainless Steel

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.

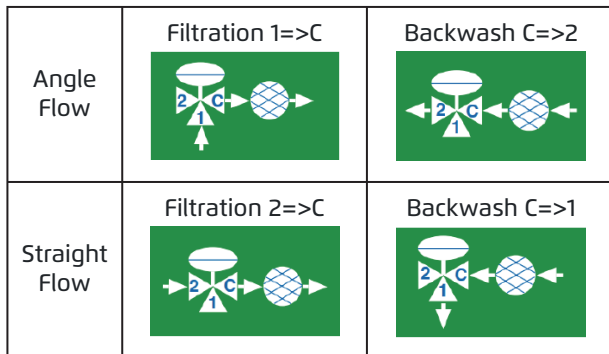


| Size (DN) | Pattern | End Connection | Weight (Kg) | L1 (mm) | L2 (mm) | H (mm) | h (mm) | W | CCDV (Lit) | KV Filtration | KV BW |
|-----------|---------------|----------------|-------------|---------|---------|--------|--------|----|------------|---------------|-------|
| 2" ; 50 | Angle flow | Threaded | 2.8 | 90 | 90 | 274 | 127 | 80 | 0.13 | 52 | 48 |
| 2" ; 50 | Straight flow | Threaded | 2.8 | 90 | 90 | 274 | 127 | 80 | 0.13 | 46 | 60 |
| 2" ; 50 | Angle Flow | Grooved | 3.3 | 116 | 116 | 300 | 153 | 80 | 0.13 | 52 | 48 |
| 2" ; 50 | Straight flow | Grooved | 3.3 | 116 | 116 | 300 | 153 | 80 | 0.13 | 46 | 60 |

CCDV = Control Chamber Displacement Volume

BW = Backwash

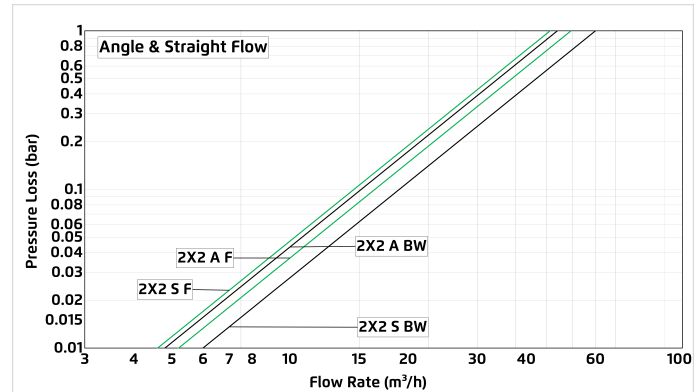
Flow Scheme



Additional Features

| Code | Description | Size Range |
|--------|--|------------------|
| VI | 2" Groove - Thread connector | 2" / DN50 |
| 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

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

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