

Filter Backwash Hydraulic Valve

3X3 Metal Body

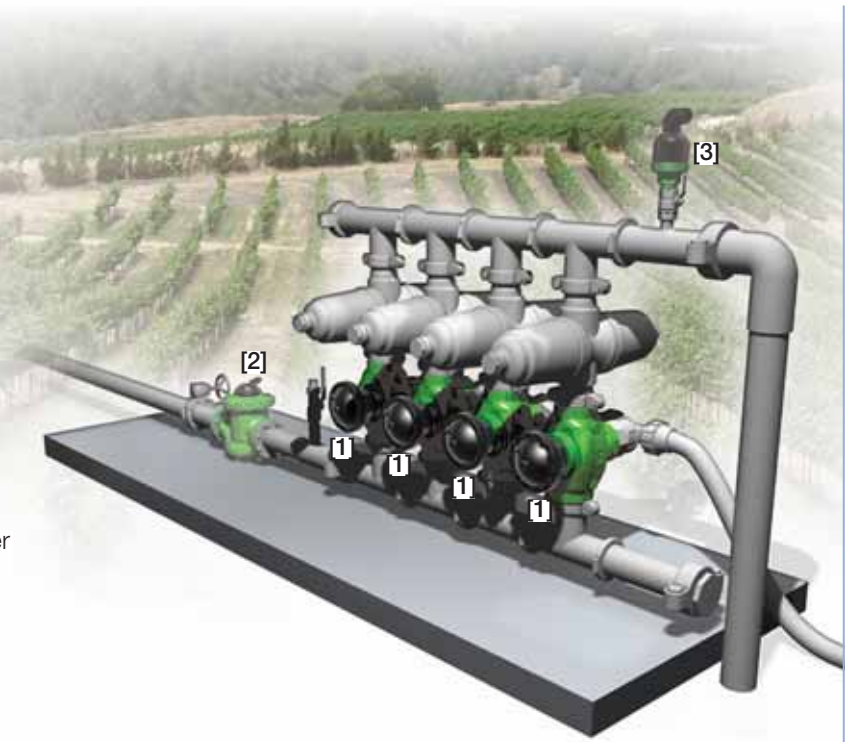
IR-3x3-350-I

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



Features and Benefits

- Line Pressure Driven
- Double Chambered Design
 - Wide application range
 - Requires low actuation pressure
 - Protected diaphragm
- Dynamic Sealing
 - Seals at very low pressure
 - Prevents seal friction and erosion
- Cast Iron Body
 - Rigid construction, high stress resistance
- Short Valve Travel
 - Smooth changes of flow direction
 - Eliminates mixing of supply and waste water
- User-Friendly
 - Can be installed in various orientations
 - Simple in-line inspection and service



Typical Applications

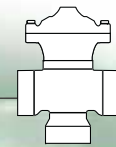
- Automatic Backwash of Filter Batteries
 - Gravel Filters
 - Sand Filters
 - Disk Filters
 - Screen Filters
- Single Filter Autonomic Backwash System
- Angled or Straight Installations

[1] BERMAD Model IR-3x3-350-S-I allows flow into the filter, and switches closed upon pressure rise command, thereby blocking inlet to filter and enabling backwash flow from the filter.

[2] BERMAD Hydrometer Model IR-900-M0

[3] BERMAD Air Valve Model ARC-A-I-P

BERMAD Irrigation



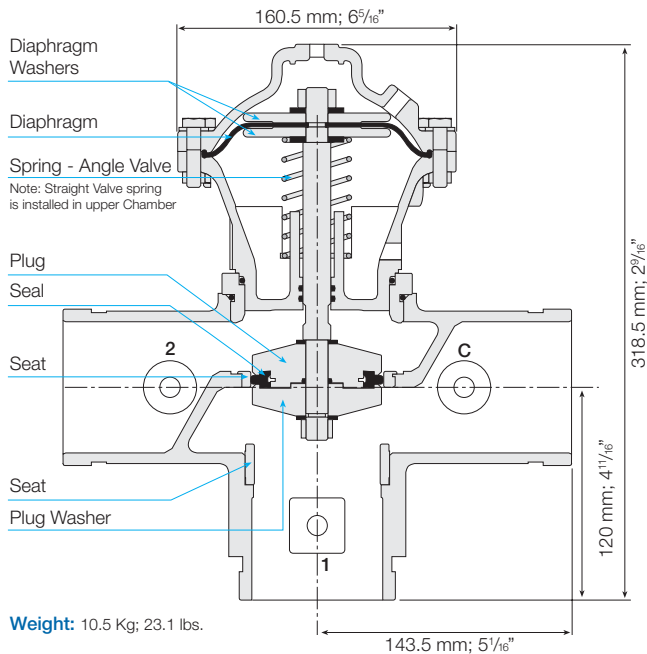
IR-3x3-350-I

For full technical details, refer to Engineering Section.

350 Series

Filter Stations

Technical Specifications



Technical Data

- Control Chamber Displacement Volume:** 0.34 liter; 0.09 gallon
- Operating Pressure:** 0.7-10 bar; 10-145 psi
- External Operating Pressure:** 85%-100% of operating pressure
- Maximum Temperature:** 65°C; 150°F
- End Connections:** Grooved
- Flow Patterns:** Angled Flow, Reverse Angled Flow, Straight Flow, Reverse Straight Flow

Materials

- Valve Body:** Cast Iron
- Separating Partition:** Polyamide 6 – 30GF Black
- Cover:** Polyamide 6 – 30GF
Angle Flow – Black
Straight Flow – Gray
- Diaphragm:** NR-AL52 Nylon Fabric Reinforced
- Seats, Diaphragm Washers:** Brass
- Plug, Plug Washer:** Acetal Copolymer Black
- Stopper Disk:** PVC-U
- Seal, O-Rings:** NBR
- Spring:** Stainless Steel AISI 302
- Shaft:** Stainless Steel AISI 303
- External Bolts, Studs, Nuts & Disks:** Stainless Steel

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/ Flow Option | Construction Materials | Drain Connections | End Connections | Additional Attributes | Coating | Voltage & Position | Tubing & Fittings |
|-------------------------|------|-----------------|--------------------|----------------------|------------------------|-------------------|--------------------------|-----------------------|---------------------------------|--------------------|-------------------|
| IR | 3X3 | 350 | 00 | S | I | V | VI | - | PG | 00 | PP |
| Angle Flow | | A | Grooved | V | Grooved ANSI C 606-81 | VI | Polyester Green RAL 6017 | PG | Plastic Tubing & Fittings | | PP |
| Straight Flow | | S | | | | | Polyester Blue RAL 5010 | PB | Plastic Tubing & Brass Fittings | | PB |
| Straight & Reverse Flow | | S-O | | | | | Polyester Red RAL 3000 | PR | | | |
| Angle & Reverse Flow | | A-O | | | | | | | | | |

Hydraulic Data

| | Filtration 1⇒C | Backwash C⇒2 |
|---------------|----------------|--------------|
| Angle Flow | | |
| | Kv=108 Cv=125 | Kv=79 Cv=91 |
| Straight Flow | | |
| | Kv=71 Cv=82 | Kv=70 Cv=81 |

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

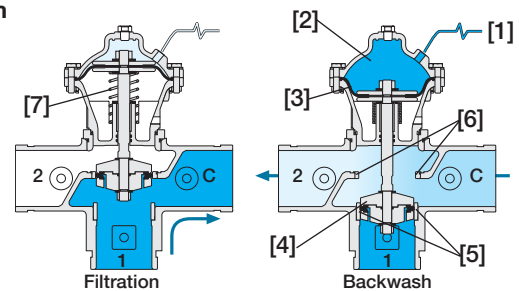
Kv = m³/h @ ΔP of 1 bar
Q = m³/h
ΔP = bar

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

Cv = gpm @ ΔP of 1 psi
Q = gpm
ΔP = psi
Cv = 1.155 KV

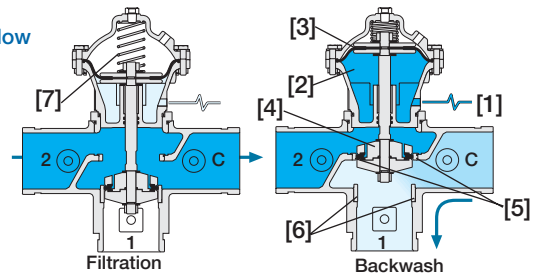
Operation

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 lower control chamber causes the line pressure, together with the Spring [7] force, to move the Valve back to filtration mode.



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