

Filter Backwash Hydraulic Valve 4x4 Plastic

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.



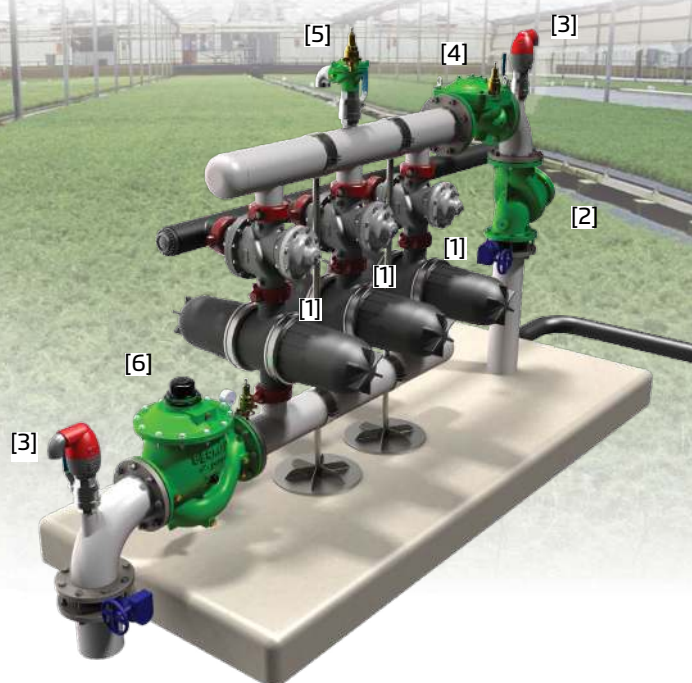
Angle Flow



Straight Flow

Features and Benefits

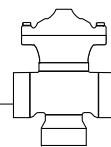
- Line Pressure Driven
- Double Chambered Design
 - ▢ Quick and smooth mode change
 - ▢ Wide application range
 - ▢ Requires low actuation pressure
 - ▢ Protected diaphragm
- Dynamic Sealing
 - ▢ Seals at very low pressure
 - ▢ Prevents seal friction and erosion
- Engineered Plastic Valve Design
 - ▢ 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
 - ▢ 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-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] BERMAD Strainer Model IR-70F.
- [3] BERMAD Combination Air Valve Model C10.
- [4] BERMAD Pressure Reducing Valve Model IR-420.
- [5] BERMAD Quick Pressure Relief Valve Model IR-43Q.
- [6] BERMAD Pressure Sustaining Hydrometer Model IR-930-M0-X.



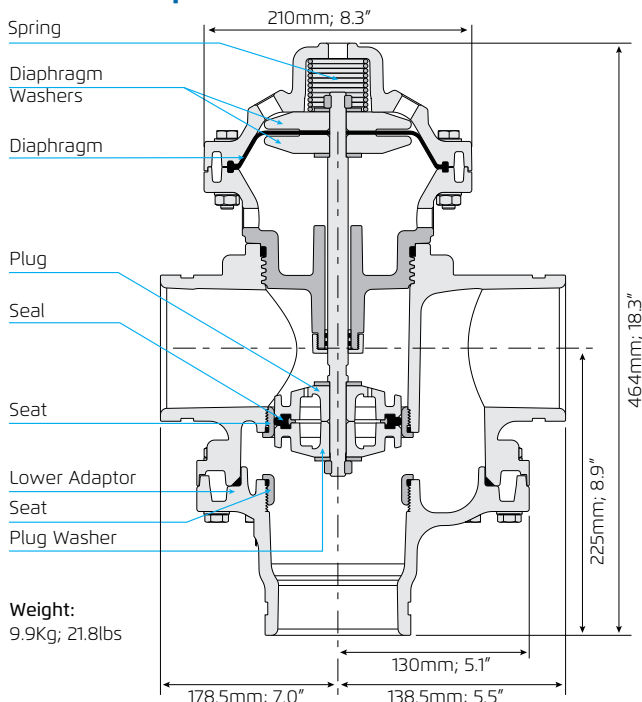
IR-4x4-350-P

For full technical details, refer to Engineering Section.

350 Series

Filter Stations

Technical Specifications



Technical Data

Control Chamber Displacement Volume: 0.55 liter; 0.15 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: Ports C & 2: Grooved 4"
 Port 1: Grooved 4";
 Union Connector (Havazelet) 75mm or
 Grooved 4" x Int.Thread 3"
Flow Patterns: Angled Flow, Reverse Angled Flow,
 Straight Flow, Reverse Straight Flow

Materials

Valve Body, Separating Partition & Lower Adaptor:
 Polyamide 6 – 30GF Black
Cover: Polyamide 6 – 30GF, Angle Flow – Black,
 Straight Flow – Gray
Diaphragm: NR-AL52 Nylon Fabric Reinforced
Seats, Diaphragm Washers: Stainless Steel 304
Stopper, 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.)

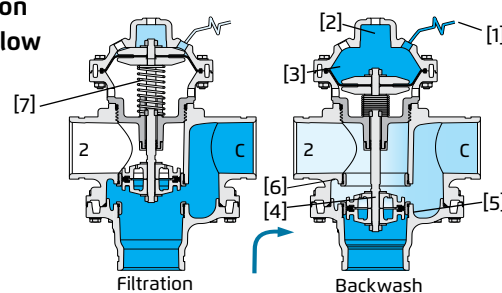
Sector	Size	Primary Feature	Additional Feature	Pattern/ Flow Option	Construction Materials	Drain Connections	End Connections	Additional Attributes	Coating	Voltage & Position	Tubing & Fittings
IR	4x4	350	00	S	P	V	VI	-	UC	00	PP
		Angle Flow	A	Grooved 4" Union Connector	V	Grooved ANCI C606-81	VI	Uncoated	UC	Plastic Tubing & Fillings	PP
		Straight Flow	S	(Havazelet) 75mm Grooved 4" x Int.	H						
		Straigh & Reverse Flow	S-O	Thread 3"	VT						
		Angle & Reverse Flow	A-O								

Hydraulic Data

Angle Flow	Filtration 1→C	Backwash C→2	$\Delta P = \left(\frac{Q}{K_v}\right)^2$ $K_v = m^3/h @ \Delta P \text{ of } 1 \text{ bar}$ $Q = m^3/h$ $\Delta P = \text{bar}$
	Kv=225 Cv=260	Kv=205 Cv=237	
Straight Flow	Filtration 2→C	Backwash C→1	$\Delta P = \left(\frac{Q}{C_v}\right)^2$ $C_v = gpm @ \Delta P \text{ of } 1 \text{ psi}$ $Q = gpm$ $\Delta P = \text{psi}$ $C_v = 1.155 K_v$
	Kv=190 Cv=220	Kv=250 Cv=290	

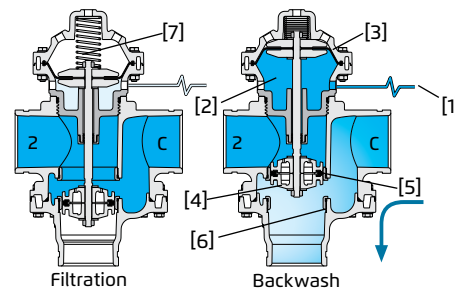
Operation

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.



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