



FILTER BACKWASH HYDRAULIC VALVE

3X3 PLASTIC

Model IR-3x3-350-P

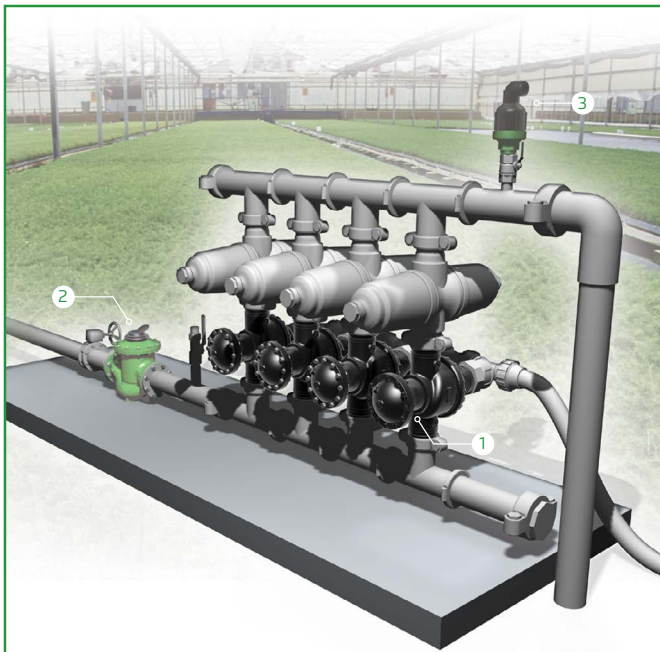
The BERMAD Model IR-3x3-350-P is a compact 3-port valve, in a T configuration. It is double chambered, hydraulically operated, and diaphragm actuated. Designed for automatic backwashing of filtration systems, the BERMAD Model IR-3x3-350-P is available in Angle flow (A) and Straight flow (S) configurations.



Angle Flow



Straight Flow



- [1] BERMAD Model IR-3x3-350-S-P allows flow into the filter, switches closed upon pressure rise command blocking inlet to filter and enables backwash flow from the filter.
- [2] BERMAD Hydrompter Model IR-900-MO
- [3] BERMAD Air Valve Model ARA-A-I-P

Features and Benefits

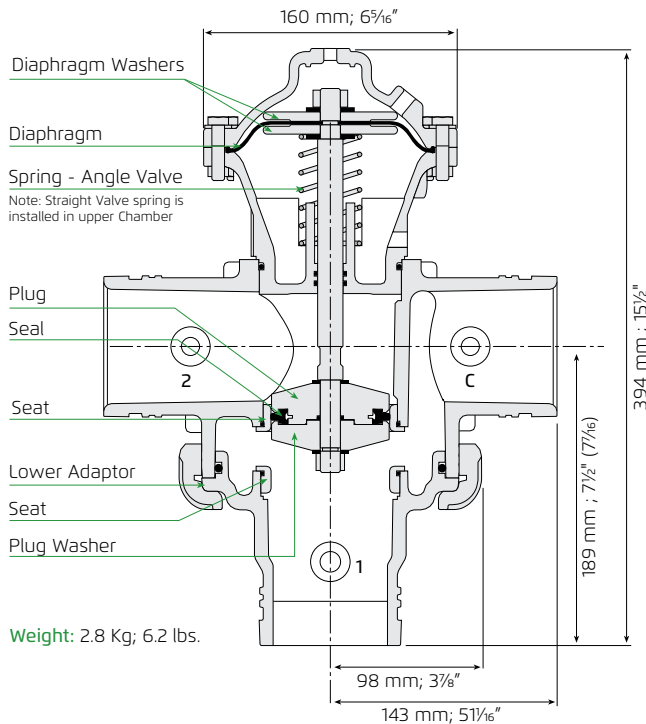
- Line Pressure Driven
- Double Chambered Design
 - Wide application range
 - Requires low actuation pressure
 - Protected diaphragm
- Dynamic Sealing
 - Seals at very low pressure
 - Prevents seal friction and erosion
- Engineered Plastic Valve Design
 - Highly durable, chemical and cavitation resistant
- 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



For full technical details, refer to Engineering Section.



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, 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: 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	P	V	VI	-	UC	00	PP
		Angle Flow Straight Flow Straight & Reverse Flow Angle & Reverse Flow	Grooved	V	Grooved ANCI C606-81	V1	Uncoated	UC	Plastic Tubing & Fillings	PP	

Hydraulic Data

Angle Flow	Filtration 1→C		Backwash C→2	
	Kv=110	Cv=127	Kv=100	Cv=115
Straight Flow	Filtration 2→C		Backwash C→1	
	Kv=93	Cv=107	Kv=122	Cv=141

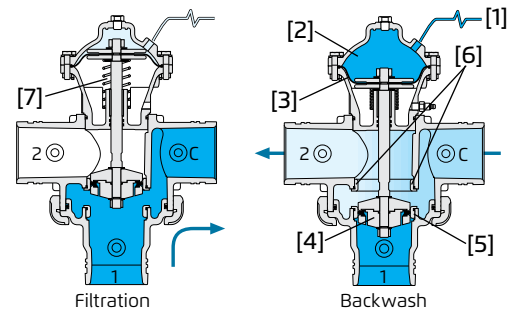
$$\Delta P = \left(\frac{Q}{Kv} \right)^2$$

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

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

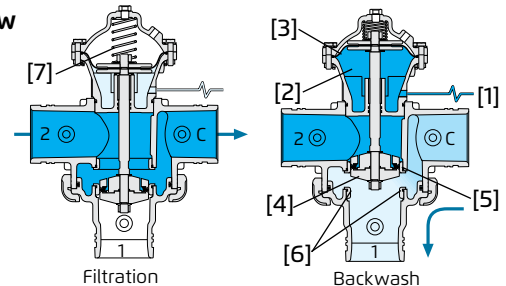
Cv = gpm @ ΔP of 1 psi
 Q = gpm
 ΔP = psi
 Cv = 1.155 Kv

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

