Filter Backwash Hydraulic Valve

4X4 Metal

IR-4x4-350-A-I

The BERMAD Model IR-4x4-350-A-I is a compact 3-port valve, in a T configuration. It is single chambered, hydraulically operated and diaphragm actuated with angled flow.
The valve is designed for automatic backwashing of filtration systems where the filter supply port is vertical to the supply manifold.

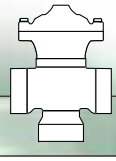
Features and Benefits

- Line Pressure Driven
- Hydro-Efficient Design
  - Single moving part
  - Unobstructed flow path
  - High flow capacity
- Fully Supported & Guided Diaphragm
  - Prevents diaphragm distortion
- 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
- Angled Installations

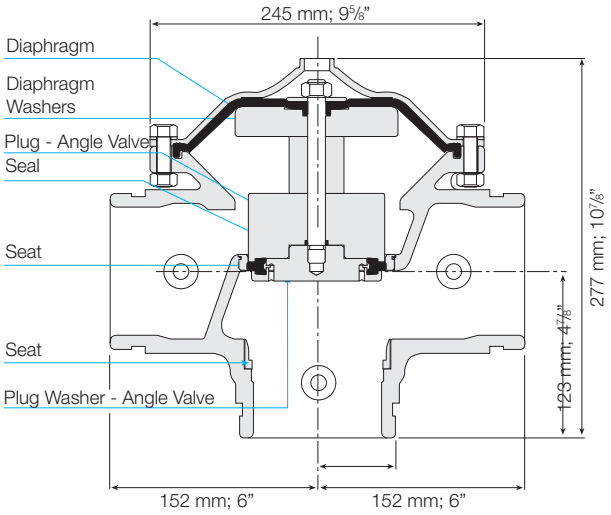
[1] BERMAD Model IR-4x4-350-A-I allows flow into the filter, and switches closed upon pressure rise command, thereby blocking inlet to filter and enabling backwash flow from the filter.
[2] BERMAD Water Meter Model WPH
[3] BERMAD Air Valve Model ARC-A-I-I



IR-4x4-350-A-I

For full technical details, refer to Engineering Section.

Technical Specifications



Weight: Grooved 22.0 Kg; 48.5 lbs.

Technical Data

Control Chamber Displacement Volume: 1.055 liter; 0.29 gallon
Operating Pressure: 0.7-16 bar; 10-232 psi
External Operating Pressure: 100% of operating pressure
Maximum Temperature: 65°C;150°F
End Connections: Inlet & Outlet: Flanged, Grooved Drain: Threaded
Flow Pattern: Angled Flow

Materials

Valve Body: Polyester or Epoxy coated Cast Iron
Cover: Epoxy coated Carbon Steel
Diaphragm: NR-AL52 Nylon Fabric Reinforced
Seats, Diaphragm Washers: Brass
Plug, Plug Washer: Acetal Copolymer Black
Seal, O-Rings: NBR
Shaft: Stainless Steel AISI 303
External Bolts, Studs, Nuts & Disks: Stainless Steel

Hydraulic Data

Angle Flow	Filtartion 1⇒C		Backwash C⇒2	
	Kv=212	Cv=245	Kv=141	Cv=163

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

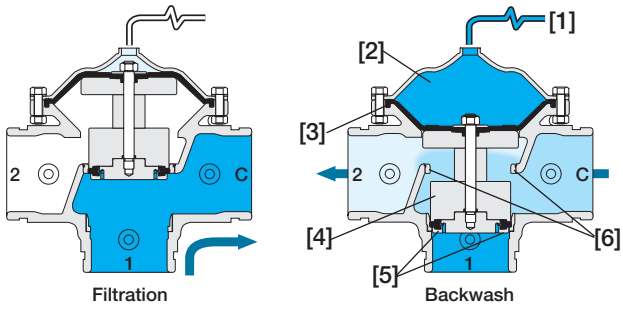
Kv = m^3/h @ ΔP of 1 bar
Q= m^3/h
ΔP = bar

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

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

Cv = 1.155 KV

Operation



A Hydraulic Command **[1]**, which pressurizes the 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]**. During Valve closing, the Plug **[7]** blocks the drain port seat, preventing mixing of supply water with waste water. Venting the control chamber causes the line pressure to move the valve back to filtration mode.

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	Additonal Attributes	Coating	Voltage & Position	Tubing & Fittings
IR	4X4	350	00	A	I	V	VI	-	PG	00	PB

Angle Flow	A	Grooved	V	Grooved ANSI C 606-81	VI	Polyester Green RAL 6017	PG	Plastic Tubing & Fittings	PP
				ISO-14 (ISO-10/4 Holes)	14	Polyester Blue RAL 5010	PB	Plastic Tubing & Brass Fittings	PB
				ANSI-125	A1	Polyester Red RAL 3000	PR		
				BST-D	BD				

Other Flange Standards available.