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.

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

[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 Hydromptor Model IR-900-M0
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, 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

### 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.

### Hydraulic Data

<table>
<thead>
<tr>
<th>Flow Type</th>
<th>Filtration 1 → C</th>
<th>Backwash C → 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angle Flow</td>
<td>Kv=110</td>
<td>Q=127</td>
</tr>
<tr>
<td></td>
<td>Cv=127</td>
<td>ΔP=1 bar</td>
</tr>
<tr>
<td>Straight Flow</td>
<td>Kv=100</td>
<td>Q=115</td>
</tr>
<tr>
<td></td>
<td>Cv=115</td>
<td>ΔP= bar</td>
</tr>
</tbody>
</table>

### How to Order

Please specify the requested valve in the following sequence: (for more options, refer to Ordering Guide.)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Size</th>
<th>Primary Feature</th>
<th>Additional Feature</th>
<th>Pattern/Flow Option</th>
<th>Construction Materials</th>
<th>Drain Connections</th>
<th>End Connections</th>
<th>Additional Attributes</th>
<th>Coating &amp; Position</th>
<th>Voltage &amp; Position</th>
<th>Tubing &amp; Fittings</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR</td>
<td>3X3</td>
<td>350</td>
<td>00</td>
<td>S</td>
<td>P</td>
<td>V</td>
<td>VI</td>
<td>-</td>
<td>UC</td>
<td>00</td>
<td>PP</td>
</tr>
</tbody>
</table>

- **Angle Flow**
  - Grooved V
  - Grooved ANCI C006-81
  - Uncrusted UC
  - Plastic Tubing & Fittings PP
- **Straight Flow**
  - S
- **Straight & Reverse Flow**
  - S-O
- **Angle & Reverse Flow**
  - A-O