**DESCRIPTION**

A poppet-type, screw-in, cartridge-style, hydraulic directional element, with multi-function potential when used with other directional, pressure, or flow control devices.

**OPERATION**

The EP20-S38 is a spring-biased poppet valve which will block ➀ to ➁ or ➁ to ➀ until pressure at ➀ or ➁ exceeds the cumulative pressure at ➂ and bias spring. With no pressure at ➂, flow will be allowed from ➀ to ➁ or ➁ to ➀ once the bias spring force is overcome with pressure at ➀ or ➁. When the element is in the closed state, the ratio of areas ➀ and ➁ is 1:1, and the ratio of areas ➀ or ➁ to ➂ is 1:2.

**FEATURES**

• Multiple function/application potential.
• Low pressure drop.
• Industry common cavity.

**RATINGS**

**Maximum Operating Pressure:** Cartridge Only: Ports ➀ & ➁, 241 bar (3500 psi)
Flow: See Performance Chart
**Internal Leakage:** 0.6 cc/minute (12 drops/minute) max. at 241 bar (3500 psi)
**Bias Spring Pressure Options:** 2.8 bar (40 psi); 11.0 bar (160 psi)
**Temperature:** -40 to 120°C with standard Buna seals
**Filtration:** See page 9.010.1
**Fluids:** Mineral-based or synthetics with lubricating properties at viscosities of 7.4 to 420 cSt (50 to 2000 sus); See Temperature and Oil Viscosity, page 9.060.1
**Installation:** No restrictions; See page 9.020.1
**Cavity:** VC20-S3; See page 9.120.1
**Cavity Tool:** CT20-S3xx; See page 8.600.1
**Seal Kit:** SK20-S3x-MM; See page 8.650.1

**PERFORMANCE** (Cartridge Only)

![Pressure Drop Chart]

- ➀ to ➁ or ➁ to ➀ (fully open) and with port ➂ vented
- 32 cSt/150 ssu oil at 40°C

![Flow Chart]

- Flow (lpm/gpm)
- Pressure Drop (bar/psi)

**SYMBOLS**

**USASI:**

![USASI Symbol]

**ISO:**

![ISO Symbol]
**DIMENSIONS**

**ORIFICE DISCS SHOULD NOT BE USED WITH THIS PRODUCT**

**MATERIALS TO ORDER**

**Cartridge:** Weight: 0.82 kg. (1.8 lbs.)
Steel with hardened work surfaces.
Zinc-plated exposed surfaces.
Buna N O-rings and polyester elastomer back-ups standard.

**Standard Ported Body:** Weight: 1.65 kg. (3.65 lbs.)
Anodized high-strength 6061 T6 aluminum alloy, rated to 207 bar (3000 psi). Ductile iron bodies can be made available; dimensions may differ. See page 8.020.1.

**TO ORDER**

**EP20-S38**

<table>
<thead>
<tr>
<th>Bias Spring</th>
<th>Seals</th>
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</thead>
<tbody>
<tr>
<td>40 2.8 bar (40 psi)</td>
<td>N Buna N (Std.)</td>
</tr>
<tr>
<td>80 5.5 bar (80 psi)</td>
<td>V Fluorocarbon</td>
</tr>
<tr>
<td>160 11.0 bar (160 psi)</td>
<td></td>
</tr>
</tbody>
</table>

**Porting**

- Cartridge Only 0
- SAE 16 w/SAE 6 Pilot Port 16T