**RVCV56-20  Relief, Direct Acting, Anti-Cavitation**

**DESCRIPTION**
A screw-in, cartridge-style, direct-acting, poppet-type hydraulic relief valve with a built-in reverse-flow anti-cavitation check valve. It is intended for use as a pressure limiting and regulating device in demanding, high-pressure hydraulic circuits which require fast response, low hysteresis, low leakage, low pressure override, and reverse free-flow features.

**OPERATION**
The RVCV56-20 blocks flow from 1 to 2 until sufficient pressure is present at 1 to displace the poppet off its seat. Relief flow discharges to port 2. Reverse flow occurs from 2 to 1 when differential pressure between 2 and 1 exceeds the check spring value.

**FEATURES**
- Maximum pressure 420.6 bar (6100 psi) at port 1.
- Adjustments cannot be backed out of the valve.
- Adjustments prohibit springs from going solid.
- Hardened spool and cage for long life.
- Fast, smooth response to pressure surges.

**RATINGS**
- **Pressure Rating:** 420 bar (6100 psi) at port 1; 68.9 bar (1000 psi) at port 2
- **Proof Pressure:** 482 bar (7000 psi)
- **Burst Pressure:** 965 bar (14,000 psi)
- **Flow Rating:** Port 1 to 2: 113.6 lpm (30 gpm); Port 2 to 1: 174.1 lpm (46 gpm)
- **Overshoot:** Less than 20% of setting
- **Adjustable Pressure Range, Port 1 to 2:** 137.9 bar (2000 psi) minimum; 420.6 bar (6100 psi) maximum

**Adjustment per turn (approximate):**
-30 spring: 20 bar (297 psi)
-45 spring: 35 bar (504 psi)
-61 spring: 64 bar (932 psi)

**Crack Pressure Defined:** 0.95 lpm (0.25 gpm)

**Maximum Reseat Pressure, Port 1 to 2:** 85% of crack pressure

**Leakage at Port 2:** 10 drops/minute (0.53 ml/minute) at 103.4 bar (1500 psi) max.

**Temperature:**
- Buna N seals: -40°C to 100°C (-40°F to 212°F);
- Fluorocarbon seals: -26°C to 204°C (-15°F to 400°F);
- Polyurethane seals: -54°C to 107°C (-65°F to 225°F)

**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:** It is recommended to add a relief undercut at port 2 for optimum performance with the VC16-2 cavity. If the 61 size spring is adjusted to its lowest level, pressure can increase by 2700 psi to 8700 psi. See page 9.020.1

**Cavity:** VC16-2 or VC16-2 “Variation A” (recommended for higher flows); see page 9.116.1

**Cavity Tool:** CT16-2XX; See page 8.600.1

**Seal Kit:** SK16-2x-B; See page 8.650.1
**RVCV56-20**

### DIMENSIONS

![Diagram of RVCV56-20](image)

**MATERIALS**

**Cartridge:**
- **Weight:**
  - Option A: 1.27 lb (0.58 kg), 1.33 lb (0.60 kg), 1.36 lb (0.62 kg), 1.24 lb (0.56 kg)
- Steel with hardened work surfaces.
- Zinc-plated exposed surfaces.
- O-rings and polyester elastomer back-up standard.

**Ported Body:** Aluminum: 0.57 kg (1.25 lbs.), Anodized high-strength aluminum alloy, rated to 207 bar (3000 psi). Ductile iron body required for operation over 207 bar (3000 psi). See page 8.016.1

### TO ORDER

**RVCV56-20**

<table>
<thead>
<tr>
<th>Adjustment Option</th>
<th>A</th>
<th>B</th>
<th>C,L</th>
<th>F,H</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 in. Hex Allen Head</td>
<td>0</td>
<td>12T</td>
<td>12TD</td>
<td>16T</td>
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<tr>
<td>1-1/2 in. Dia. Alum. Knob</td>
<td>M210</td>
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<td>Option A w/ Cover Cap</td>
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<tr>
<td>Factory Preset Non-Adj.</td>
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<tr>
<td>Factory Preset Hidden Adj.</td>
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<tr>
<td>Option C w/ Lockwire Holes</td>
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**Porting**

- Cartridge Only
- SAE 12
- SAE 12 Ductile Iron
- SAE 16
- SAE 16 Ductile Iron
- 3/4 in. BSP* (19.1 mm)
- 3/4 in. BSP* Ductile Iron
- 1 in. BSP* (25.4 mm)
- 3/4 in. BSP* Ductile Iron

**Seals**

- N: Buna N
- V: Fluorocarbon
- P: Polyurethane

**Pressure Range**

- 30: 137.9 to 206.8 bar (2000 to 3000 psi)
- 45: 213.7 to 310.3 bar (3100 to 4500 psi)
- 61*: 317.2 to 420.6 bar (4600 to 6100 psi)

*Note: If the 61 spring is adjusted to its lowest level, the pressure setting could increase by 186 bar (2700 psi) to 600 bar (8700 psi).

**NOTE:** It is recommended to add a relief undercut at Port 2 for optimum performance with the VC16-2 cavity.