Pressures to 75,000 psi (5171 bar)

**RVP Metal Seat Relief Valves**

**Series RVP** relief valves provide reliable venting of gases or liquids for set pressures from 3,000 psi (206.8 bar) minimum to 75,000 psi (5171 bar). The standard temperature range for all models is -423° to 400° (-252° to 204°C). A high temperature option to 750°F (399°C) is also available.

These precision valves are designed for pressure gas systems, cryogenic systems, petrochemical applications and other special systems. Capable of handling air, gases, steam, vapor and liquids, they are however, **not recommended for steam boiler applications nor are they ASME code stampable.**

**RVS Soft Seat Relief Valves**

**Series RVS** relief valves utilize a soft seat design for reliable venting of gases at set pressures from 1,500 psi (103 bar) to 20,000 psi (1378 bar). The operating temperature range is -50°F (-46°C) to 400°F (204°C).

The soft seat design provides bubble tight sealing, repeatable pop-off, and reseat. Additionally, soft seat valves provide a higher cycle life than metal seat relief valves.

These precision valves are designed for pressure gas systems, where zero leakage is critical. They are not recommended for liquid nitrogen or liquid carbon dioxide, which produce gas at cryogenic temperatures upon relief.

Relief valves are designed to open proportionally to increasing pressure. Therefore, they are not recommended for applications requiring immediate full valve flow at set pressure (such as decompositions, polymerizations, etc.). Full flow of relief valve is defined at 10% over set pressure.
**Materials:** Standard models of Relief Valves are constructed of 316 stainless steel with selected components made of anti-galling stainless steel material for optimum economy and ruggedness.

**Connections:** All models except 30, 60, & 75 RVP series are designed with 9/16” Parker Autoclave Engineers Medium Pressure inlet connections. The 30 & 60 RVP have 3/8” high pressure connection, while the 75 RVP has a 5/16” high pressure connections. The outlet connection on all models is a female 3/4” NPT. While adapters to other sizes and connection types are available, they must be sized for specific flow requirements. See Adapter section.

**Orifice Sizes:** Orifice diameters range from .062 (1.57mm) to .312” (7.92mm).

**Full Lift for Full Flow:** These relief valves are designed to open as a function of increasing system pressure. Proper spring selection assures repeatability of opening, full lift and flow, and reseat pressures.

**Reliability and Long Service Life:** Materials engineering and stringent quality control procedures combine to assure the highest quality, reliability and service life. Each valve is preset and factory sealed to ensure proper valve operation.

**Setpoint Accuracy:** Setpoint Accuracy is ±3%.

**High Set Pressure Capability:** Unique seat construction plus over-the-nozzle guiding and proper selection of materials permits standard set pressures to 75,000 psi. (5171 bar)

**Dependable Shut-off:** Series RVP relief valves are designed to provide shut-off of liquids and gases under pressure to commercial tightness standards. Series RVS relief valves are designed to provide bubble tight shut off of gases.

**Fewer Parts, Ease of Maintenance:** Engineered to perform with fewer basic components, both RVP and RVS valves facilitate minimum stocking of spare parts and ease of maintenance. The combined angle seat in the RVP series eliminates the need for lapping in rework.

**Special Requirements:** Most models available with CE Mark. SOG option available upon request.

**Options:** Parker Autoclave Engineers can supply various options on special order. A high temperature option is also available for temperatures to 750°F (399°C) for RVP models. Low temperature options are available for the soft seat valves. To specify high temperature option: Add suffix “HT” for 750°F (399°C) high temperature option (RVP series only)

**Note:** Pressure rating for elevated temperature based on derating curves.

**Caution:**
1. AE relief valves are preset and factory sealed. Warranty is voided if seal is broken by customer.
2. Maximum system operating pressure should not exceed 90% of relief valve set pressure. **Operating pressures in excess of this may cause weepage resulting in damage to the plug and seat.**

**Ordering Instructions:** To permit prompt and correct responses to your order, we will require the following information: quantity, valve catalog number, service requirements (liquid, gas & vapor), set pressure (PSIG - bar), and service temperature range.
Relief Valves - RVP & RVS Series Seat Relief Valves

All models are designed primarily for thermal expansion or low volume relief applications at high pressures where flow is not critical.

Note: Curves on this page are based on capacities of valves only and do not take tubing into account.

Caution should be exercised in proper selection of medium pressure tubing based on actual operating conditions. Two series available: 15,000 (1034.20 bar) and 20,000 (1380 bar).

Note: See back cover for ordering information.

Figure 1 - RVP Series (Metal Seat)

Figure 2 - RVS Series (Soft Seat)
### RVP Series - See Figure 1

<table>
<thead>
<tr>
<th>Catalog* Number</th>
<th>Connection Size and Type</th>
<th>Orifice Diameter inches (mm)</th>
<th>Pressure Rating psi (bar) @100°F (38°C)*</th>
<th>Dimension Inches (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inlet NPT</td>
<td>Outlet NPT</td>
<td>Minimum Setting</td>
<td>Maximum Setting</td>
</tr>
<tr>
<td>5RVP9072</td>
<td>SF562CX 3/4</td>
<td></td>
<td>0.312 (7.92)</td>
<td>3,000 (206.84)</td>
</tr>
<tr>
<td>10RVP9072</td>
<td>SF562CX 3/4</td>
<td></td>
<td>0.250 (6.35)</td>
<td>5,000 (344.73)</td>
</tr>
<tr>
<td>15RVP9072</td>
<td>SF562CX 3/4</td>
<td></td>
<td>0.188 (4.78)</td>
<td>10,000 (689.46)</td>
</tr>
<tr>
<td>20RVP9072</td>
<td>SF562CX 3/4</td>
<td></td>
<td>0.156 (3.96)</td>
<td>15,000 (1034.20)</td>
</tr>
<tr>
<td>30RVP9072</td>
<td>F375C 3/4</td>
<td></td>
<td>0.125 (3.18)</td>
<td>20,000 (1378.93)</td>
</tr>
<tr>
<td>45RVP9072</td>
<td>F562C 3/4</td>
<td></td>
<td>0.093 (2.36)</td>
<td>25,000 (1723.66)</td>
</tr>
<tr>
<td>60RVP9072</td>
<td>F375C 3/4</td>
<td></td>
<td>0.078 (1.98)</td>
<td>30,000 (2068.39)</td>
</tr>
<tr>
<td>75RVP9072</td>
<td>F312C150 3/4</td>
<td></td>
<td>0.062 (1.57)</td>
<td>37,000 (2551.02)</td>
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</tbody>
</table>

### RVS Series - See Figure 2

<table>
<thead>
<tr>
<th>Catalog* Number</th>
<th>Connection Size and Type</th>
<th>Orifice Diameter inches (mm)</th>
<th>Pressure Rating psi (bar) @100°F (38°C)*</th>
<th>Dimension Inches (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inlet NPT</td>
<td>Outlet NPT</td>
<td>Minimum Setting</td>
<td>Maximum Setting</td>
</tr>
<tr>
<td>5RVS9072</td>
<td>SF562CX 3/4</td>
<td></td>
<td>0.312 (7.92)</td>
<td>1,500 (103.42)</td>
</tr>
<tr>
<td>10RVS9072</td>
<td>SF562CX 3/4</td>
<td></td>
<td>0.250 (6.35)</td>
<td>5,000 (344.73)</td>
</tr>
<tr>
<td>15RVS9072</td>
<td>SF562CX 3/4</td>
<td></td>
<td>0.188 (4.78)</td>
<td>10,000 (689.46)</td>
</tr>
<tr>
<td>20RVS9072</td>
<td>SF562CX 3/4</td>
<td></td>
<td>0.156 (3.96)</td>
<td>15,000 (1034.20)</td>
</tr>
<tr>
<td>30RVS9072</td>
<td>F325C 3/4</td>
<td></td>
<td>0.125 (3.18)</td>
<td>20,000 (1378.93)</td>
</tr>
</tbody>
</table>

*Maximum pressure rating is based on the lowest rating of any component. Actual working pressure may be determined by tubing pressure rating, if lower. Note: For pressure rating see selection chart.

For prompt service, Parker Autoclave Engineers stocks select products. Consult factory.

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Caution! Do not mix or interchange parts or tubing with those of other manufacturers. Doing so is unsafe and will void warranty.

Caution! Parker Autoclave Engineers Valves, Fittings and Tools are not designed to work with common commercial instrument tubing and will only work with tubing built to Parker Autoclave Engineers AES Specifications. Failure to do so will void warranty.

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