Needle Valves

Pipe Valves

P Series

Pressures to 15,000 psi (1034 bar)

Since 1945 Parker Autoclave Engineers has designed and built premium quality valves, fittings and tubing. This commitment to engineering and manufacturing excellence has earned Parker Autoclave Engineers a reputation for reliable efficient product performance. Parker Autoclave Engineers has long been established as the world leader in high pressure fluid handling components for the chemical/petrochemical, research, and oil and gas industries.

Pipe Valve Features:

- P Series valve design provides in-line pipe connections for 1/4” to 1” pipe sizes. 1/8 connections offset.
- Rising stem/barstock body design.
- Non-rotating stem prevents stem/seat galling (1/8” NPT rotating stem design).
- Metal-to-metal seating achieves bubble-tight shut-off, longer stem/seat life in abrasive flow, greater durability for repeated on/off cycles and excellent corrosion resistance.
- PTFE encapsulated packing provides dependable stem and body sealing.
- Stem sleeve and packing gland materials have been selected to achieve extended thread cycle life and reduced handle torque.
- Choice of Vee or Regulating stem tips.
- Operating temperature range from -423°F (-252°C) to 400°F (204°C).

Parker Autoclave Engineers valves are complemented by a complete line of fittings, tubing, check valves and line filters.
All general terms and conditions of sale, including limitations of our liability, apply to all products and services sold.

Valve Series - P Series

Pressures to 15,000 psi (1034 bar)

<table>
<thead>
<tr>
<th>Tube Outside Diameter</th>
<th>Connection Type</th>
<th>Orifice Size</th>
<th>Rated C_v</th>
<th>Pressure Rating psi (bar) @ Room Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8 Pipe</td>
<td>Pipe</td>
<td>0.078 (1.98)</td>
<td>0.11</td>
<td>15,000 (1034)</td>
</tr>
<tr>
<td>1/4 Pipe</td>
<td>Pipe</td>
<td>0.203 (5.16)</td>
<td>0.63</td>
<td>15,000 (1034)</td>
</tr>
<tr>
<td>3/8 Pipe</td>
<td>Pipe</td>
<td>0.219 (5.56)</td>
<td>0.75</td>
<td>15,000 (1034)</td>
</tr>
<tr>
<td>1/2 Pipe</td>
<td>Pipe</td>
<td>0.312 (7.92)</td>
<td>1.30</td>
<td>15,000 (1034)</td>
</tr>
<tr>
<td>3/4 Pipe</td>
<td>Pipe</td>
<td>0.438 (11.13)</td>
<td>2.50</td>
<td>10,000 (690)</td>
</tr>
<tr>
<td>1 Pipe</td>
<td>Pipe</td>
<td>0.562 (14.27)</td>
<td>4.40</td>
<td>10,000 (690)</td>
</tr>
</tbody>
</table>

Notes:
* C_v values shown are for 2-way straight valve pattern. For 2-way angle patterns, increase C_v value 50%. (Based on water)
** For complete temperature ratings see pressure/temperature rating guide in Technical Information section.

Ordering Procedure

For complete information on available stem types, optional connections and additional valve options, see Needle Valve Options section or contact your Sales Representative.

Typical catalog number: 15P4071

15P Valve Series
10P-10,000 psi (690 bar)
15P-15,000 psi (1034 bar)

Nominal Pipe Size
2-1/8" 4-1/4" 6-3/8" 8-1/2" 12-3/4" 16-1"

Stem/Seat Type
00 - rotating Vee stem (on-off service)
01 - rotating regulating stem (tapered tip for regulating and shut off)
07 - non-rotating Vee stem (on-off service)
08 - non-rotating regulating stem (tapered tip for regulating and shutoff)

Body Pattern
1 - two-way straight
2 - two-way angle
3 - three-way, two on pressure
4 - three-way, one on pressure
5 - three-way, two stem manifold valve

Note: 3/4" and 1" 10,000 psi (690 bar) max.

For extreme temperature and other options, see Valve Options.
Valve Maintenance

Repair Kits:  add “R” to the front of valve catalog number for proper repair kit.
(Example: R15P4071 or R10P12071)

Valve Bodies: Valve bodies are available. Order using the eight (8) digit part number found on the valve drawing or contact your Sales Representative for information.

Consult your Parker Autoclave Engineers representative for pricing on repair kits and valve bodies. Refer to the Tools, Installation, Operation and Maintenance section for proper maintenance procedures.

Extreme Temperatures

Standard Parker Autoclave Engineers valves with PTFE packing may be operated to 450°F (232°C). High temperature packing and/or extended stuffing box is available for service from 0°F (-17.8°C) to 650°F (343°C) by adding the following suffixes to catalog order number. *TG standard valve with PTFE glass packing to 600°F (316°C). GY standard valve with graphite braided yarn packing to 650°F (343°C). B standard valve with cryogenic trim material and PTFE packing to -100°F (-73°C).

LT extended stuffing box valve with Teflon packing and cryogenic trim materials to -423°F (-252°C).

Valve Options

For prompt service, Parker Autoclave stocks select products. Consult factory. All dimensions for reference only and subject to change.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Stem Type</th>
<th>Pipe Size</th>
<th>Orifice Diameter</th>
<th>Dimensions - inches (mm)</th>
<th>Block Thickness</th>
<th>Valve Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>15P2001 REG</td>
<td>VEE</td>
<td>1/8</td>
<td>0.078</td>
<td>1.50 0.75</td>
<td>0.56 0.82 1.25 1.75 0.56 0.16 2.53 0.45 0.20 0.63</td>
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<tr>
<td>15P2012 REG</td>
<td>VEE</td>
<td>1/4</td>
<td>0.203</td>
<td>2.00 1.00</td>
<td>1.41 2.00 3.00 0.75 0.22 4.63 0.62 0.38 0.75</td>
<td></td>
</tr>
<tr>
<td>15P4071 REG</td>
<td>VEE</td>
<td>3/8</td>
<td>0.219</td>
<td>2.50 1.25</td>
<td>1.41 2.00 3.00 0.75 0.22 4.63 0.62 0.38 1.00</td>
<td></td>
</tr>
<tr>
<td>15P4081 REG</td>
<td>VEE</td>
<td>5/8</td>
<td>0.250</td>
<td>3.00 1.50</td>
<td>2.06 2.88 4.00 1.00 0.34 5.93 0.90 0.50 1.38</td>
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<tr>
<td>15P6081 REG</td>
<td>VEE</td>
<td>1/2</td>
<td>0.312</td>
<td>3.50 1.75</td>
<td>2.63 3.75 10.25 1.12 0.44 7.00 0.88 0.63 1.75</td>
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<tr>
<td>15P6082 REG</td>
<td>VEE</td>
<td>3/4</td>
<td>0.437</td>
<td>4.25 1.75</td>
<td>2.86 4.25 10.25 1.12 0.44 7.50 0.88 0.63 1.75</td>
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<tr>
<td>15P6002 REG</td>
<td>VEE</td>
<td>1/2</td>
<td>0.312</td>
<td>3.50 1.75</td>
<td>2.63 3.75 10.25 1.12 0.44 7.00 0.88 0.63 1.75</td>
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<tr>
<td>15P6082 REG</td>
<td>VEE</td>
<td>3/4</td>
<td>0.437</td>
<td>4.25 1.75</td>
<td>2.86 4.25 10.25 1.12 0.44 7.50 0.88 0.63 1.75</td>
<td></td>
</tr>
<tr>
<td>15P6083 REG</td>
<td>VEE</td>
<td>1/2</td>
<td>0.312</td>
<td>3.50 1.75</td>
<td>2.63 3.75 10.25 1.12 0.44 7.00 0.88 0.63 1.75</td>
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<td>15P6083 REG</td>
<td>VEE</td>
<td>3/4</td>
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<td>15P6083 REG</td>
<td>VEE</td>
<td>1/2</td>
<td>0.312</td>
<td>3.50 1.75</td>
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<tr>
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<td>0.437</td>
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<td>2.86 4.25 10.25 1.12 0.44 7.50 0.88 0.63 1.75</td>
<td></td>
</tr>
</tbody>
</table>

- Packing gland mounting hole drill size
- G dimension is with stem in closed position.
- For prompt service, Parker Autoclave stocks select products. Consult factory. All dimensions for reference only and subject to change.

Figure 1

2-Way Straight

Figure 2

2-Way Angle

Figure 3

3-Way / 2 on Pressure

3/8 0.340 2.50 1.25  1.41  2.62 3.00 0.75 0.22 5.00 0.62 0.38 0.75
<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Stem Type</th>
<th>Outside Diameter Tube</th>
<th>Orifice Diameter</th>
<th>Dimensions - inches (mm)</th>
<th>Block Thickness</th>
<th>Valve Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SP4074</td>
<td>VEE</td>
<td>1/4</td>
<td>0.203</td>
<td>2.00 1.00 1.41 2.44 3.00 0.75 0.22 4.81 0.62 0.38 0.75</td>
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<tr>
<td>1SP4084</td>
<td>REG</td>
<td>(6.35) (5.16)</td>
<td>(50.80) (25.40)</td>
<td>(35.71) (61.98) (76.20) (19.05) (5.59) (122.17) (15.75) (9.65) (19.05)</td>
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</tr>
<tr>
<td>1SP6074</td>
<td>VEE</td>
<td>3/8</td>
<td>0.219</td>
<td>2.50 1.25 1.41 2.44 3.00 0.75 0.22 4.81 0.62 0.38 1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1SP6084</td>
<td>REG</td>
<td>(9.53) (5.56)</td>
<td>(63.50) (31.75)</td>
<td>(35.71) (61.98) (76.20) (19.05) (5.59) (122.17) (15.75) (9.65) (25.40)</td>
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<td></td>
</tr>
<tr>
<td>1SP8074</td>
<td>VEE</td>
<td>1/2</td>
<td>0.312</td>
<td>3.00 1.50 2.06 3.38 4.00 1.00 0.34 6.31 0.69 0.50 1.38</td>
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</tr>
<tr>
<td>1SP8084</td>
<td>REG</td>
<td>(12.70) (7.92)</td>
<td>(76.20) (38.10)</td>
<td>(52.40) (85.85) (101.60) (25.40) (8.64) (160.27) (17.53) (12.70) (35.05)</td>
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<tr>
<td>1QP12074</td>
<td>VEE</td>
<td>3/4</td>
<td>0.437</td>
<td>3.50 1.75 2.65 4.25 10.25 1.12 0.44 7.50 0.88 0.63 1.75</td>
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<td></td>
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<tr>
<td>1QP12084</td>
<td>REG</td>
<td>(19.05) (11.10)</td>
<td>(88.90) (44.45)</td>
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<tr>
<td>1QP16074</td>
<td>VEE</td>
<td>1</td>
<td>0.652</td>
<td>4.12 2.06 3.31 5.12 10.25 1.62 0.56 9.09 1.25 1.13 1.75</td>
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<td></td>
</tr>
<tr>
<td>1QP16084</td>
<td>REG</td>
<td>(25.40) (14.27)</td>
<td>(104.65) (52.32)</td>
<td>(84.07) (130.65) (260.55) (41.15) (14.22) (230.89) (31.75) (28.70) (44.45)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**3-Way/1 on Pressure**

**3-Way/2-Stem Manifold**

**NOTE: NPT (Pipe) Connections:**
- NPT threads must be sealed using a high quality PTFE tape and/or paste product. Refer to thread sealant manufacturer’s instructions on how to apply thread sealant.
- Sealing performance may vary based on many factors such as pressure, temperature, media, thread quality, thread material, proper thread engagement and proper use of thread sealant.
- Customer should limit the number of times an NPT fitting is assembled and disassembled because thread deformation during assembly will result in deteriorating seal quality over time. When using only PTFE tape, consider using thread lubrication to prevent galling of mating parts.

**WARNING**

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