General Description

Series R direct relief valves limit system pressure by opening to tank when system pressure reaches the valve setting.

Specifications

<table>
<thead>
<tr>
<th>Pressure Adjustment Range*</th>
<th>Code M: 10.2 - 68 Bar (150 - 1000 PSI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code F: 10.2 - 136 Bar (150 - 2000 PSI)</td>
<td></td>
</tr>
<tr>
<td>Code H: 10.2 - 205 Bar (150 - 3000 PSI)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maximum Operating Pressure</th>
<th>205 Bar (3000 PSI)</th>
</tr>
</thead>
</table>

Flow Rate: 3.78 LPM (1 GPM) minimum

Minimum Pressure Setting:
- 10.2 Bar (150 PSI) minimum
- with rated flow, 150 SSU oil and fluid temperature of 38°C (100°F)

Note: Change in flow, temperature or fluid (SSU) rating will affect valve minimum pressure.

* See Ordering Information

Flow Data

<table>
<thead>
<tr>
<th>Valve Model</th>
<th>Maximum Flow</th>
<th>Mounting Style</th>
<th>Port Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2P</td>
<td>1 GPM (.27 L/M)</td>
<td>Inline</td>
<td>1/4 NPTF</td>
</tr>
<tr>
<td>R2M</td>
<td>1 GPM (3.78 L/M)</td>
<td>Manifold</td>
<td>1/4 NPTF</td>
</tr>
<tr>
<td>R6P</td>
<td>40 GPM (151 L/M)</td>
<td>Inline</td>
<td>3/4 NPTF</td>
</tr>
<tr>
<td>R6S</td>
<td>40 GPM (151 L/M)</td>
<td>Inline</td>
<td>1-1/16 - 12 Str. Thd.</td>
</tr>
<tr>
<td>R6V</td>
<td>40 GPM (151 L/M)</td>
<td>Ind. St’d. Subplate</td>
<td>3/4 NPTF*</td>
</tr>
<tr>
<td>R10P</td>
<td>90 GPM (340 L/M)</td>
<td>Inline</td>
<td>1-1/4 NPTF</td>
</tr>
<tr>
<td>R10S</td>
<td>90 GPM (340 L/M)</td>
<td>Inline</td>
<td>1-5/8 - 12 Str. Thd.</td>
</tr>
<tr>
<td>R10M</td>
<td>90 GPM (340 L/M)</td>
<td>Ind. Std. Subplate</td>
<td>1-1/4 NPTF</td>
</tr>
</tbody>
</table>

* Refers to subplate port size.
Pressure Control Valves
Series R

<table>
<thead>
<tr>
<th>RELIEF VALVE</th>
<th>SIZE</th>
<th>RANGE</th>
<th>VENT STYLE</th>
<th>SEALS</th>
<th>DESIGN SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>R6P 3/4” NPTF Inline</td>
<td></td>
<td></td>
<td></td>
<td>Omit</td>
<td>Nitrile</td>
</tr>
<tr>
<td>R6V 3/4” Subplate (Ind. St’d.)</td>
<td></td>
<td></td>
<td></td>
<td>Omit</td>
<td>V Fluorocarbon</td>
</tr>
<tr>
<td>R6S 1-1/16 - 12 Str. Thd.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10P 1-1/4” NPTF Inline</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10M 1-1/4” Subplate (Ind. St’d.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10S 1-5/8 - 12 Str. Thd.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Weight:
- R6P 4.0 kg (9.0 lbs.)
- R6V 6.8 kg (15.0 lbs.)
- R6S 4.0 kg (9.0 lbs.)
- R10P 7.7 kg (17.0 lbs.)
- R10M 9.5 kg (21.0 lbs.)
- R10S 7.7 kg (17.0 lbs.)

Venting Options:
- H 150 to 3000 PSI
- F 150 to 2000 PSI
- M 150 to 1000 PSI
## Pressure Control Valves
### Series R

### Relief Valve with Tri-Pressure Feature

**Relief Valve**
- 2P: 1/4" NPTF ports
- 2M: 1/4" Subplate mounted
- 6P: 3/4" NPTF In-line
- 6V: 3/4" Subplate (Ind. Std.)
- 6S: 1 1/16-12 Std. thread
- 10P: 1 1/4" NPTF In-line
- 10M: 1 1/4" Subplate (Ind. Std.)
- 10S: 1 5/8-12 Straight thread

**Control Style**
- C: Conduit Box
- P: DIN with Plug
- W: DIN without Plug

**Solenoid**
- Omit No Solenoids
- J: 24 VDC
- K: 12 VDC
- T: 240/60–220/50 VAC
- Y: 120/60–110/50 VAC

**Solenoid Connection**
- 8 Watt Coil
  - DC Coils only
  - High vent

**Vent Styles**
- H: 150 to 3000 PSI
- F: 150 to 2000 PSI
- M: 150 to 1000 PSI

**Seals**
- Omit Nitrile
- V: Fluorocarbon

**Design Series**
- Not required when ordering.

**Range**
- 8* (not available on R2M or R2P)

**Vent**
- D: Vent

**NOTE:**
- See Series D1VW Solenoid Electrical Characteristic Chart for additional information

### Ordering Information

**Valve Style**

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td></td>
<td>Control at Head #2</td>
<td>Control at Head #1</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Control at Head #2</td>
<td>Control at Head #3</td>
<td>Control at Head #1</td>
</tr>
</tbody>
</table>

**Weight:**
- R2P (Bi-Press.) 2.2 kg (5.0 lbs.)
- R2M (Bi-Press.) 1.8 kg (4.0 lbs.)
- R2P (Tri-Press.) 2.5 kg (5.5 lbs.)
- R2M (Tri-Press.) 2.0 kg (4.5 lbs.)
- R6P (Bi-Press.) 5.4 kg (12.0 lbs.)
- R6V (Bi-Press.) 8.1 kg (18.0 lbs.)
- R6P (Tri-Press.) 6.3 kg (14.0 lbs.)
- R6V (Tri-Press.) 9.0 kg (20.0 lbs.)
- R10P (Bi-Press.) 9.0 kg (20.0 lbs.)
- R10M (Bi-Press.) 10.8 kg (24.0 lbs.)
- R10P (Tri-Press.) 9.9 kg (22.0 lbs.)
- R10M (Tri-Press.) 11.8 kg (26.0 lbs.)
Pressure Control Valves
Series R

Relief Valve with Dual Pressure Feature

<table>
<thead>
<tr>
<th>R</th>
<th>Relief Valve</th>
<th>Size</th>
<th>Control Style</th>
<th>Solenoid</th>
<th>Solenoid Connection</th>
<th>Solenoid Modifications</th>
<th>Variations</th>
<th>Range</th>
<th>Vent Styles</th>
<th>Seals</th>
<th>Design Series</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NOTE: Not required when ordering.</td>
</tr>
<tr>
<td>6P</td>
<td>3/4&quot; NPTF in-line</td>
<td>6V</td>
<td>3/4&quot; Subplate (Ind. Std.)</td>
<td>6S</td>
<td>1 1/16-12 Std. thread</td>
<td>10P</td>
<td>1 1/4&quot; NPTF in-line</td>
<td>10M</td>
<td>1 1/4&quot; Subplate (Ind. Std.)</td>
<td>10S</td>
<td>1 5/8-12 Straight thread</td>
</tr>
</tbody>
</table>

- C Conduit Box
- P DIN with Plug
- W DIN without Plug

Omit No Solenoids

<table>
<thead>
<tr>
<th>J</th>
<th>24 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>12 VDC</td>
</tr>
<tr>
<td>T</td>
<td>240/60–220/50 VAC</td>
</tr>
<tr>
<td>Y</td>
<td>120/60–110/50 VAC</td>
</tr>
</tbody>
</table>

Omit Standard Valve

- 5 Signal lights
- 6 Manplug single solenoid 3; double solenoid 5
- 630 Manaplug single solenoid 5 pin

See D1VW Ordering Code for more variations.

<table>
<thead>
<tr>
<th>L</th>
<th>8 Watt Coil</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Low Amp Coil</td>
</tr>
</tbody>
</table>

* See Series D1VW Solenoid Electrical Characteristic Chart for additional information

Weight:
- R6P (Single) 6.5 kg (14.5 lbs.)
- R6S (Single) 6.5 kg (14.5 lbs.)
- R6V (Single) 6.5 kg (14.5 lbs.)
- R6P (Double) 6.8 kg (15.0 lbs.)
- R6V (Double) 6.8 kg (15.0 lbs.)
- R10M (Single) 10.8 kg (24.0 lbs.)
- R10P (Single) 9.0 kg (20.0 lbs.)
- R10S (Single) 9.0 kg (20.0 lbs.)
- R10M (Double) 11.1 kg (24.5 lbs.)
- R10S (Double) 9.3 kg (20.5 lbs.)
OVERRIDE
All relief valves are subject to override. Given a valve setting and flow, any change in flow will be accompanied by a change in relief pressure. See table of curves (relief pressure vs. flow).

VENTING
Connecting the vent port to tank allows the relief valve to divert flow at minimum pressure.
An optional high vent spring provides sufficient circuit pilot pressure if required. Vent pressures corresponding to various flows can be read from vent pressure curve.

OVERRIDE CHARACTERISTICS
REMOTE CONTROL
A remote relief valve connected to the vent port of an R Series relief valve can be used to control the pressure. See Installation page this section.
NOTE: Set main valve pressure 15 percent higher than remote pilot.

VENT CHARACTERISTICS
See Order Information sheet this section for specifying vent style when ordering valves.
Low vent is standard (OMIT) when specifying. To order high vent place the digit 8 in vent style block.

TANK LINE PRESSURE
Under no condition should tank pressure exceed system pressure or malfunction can result.
Absolute tank pressure shall not exceed 1000 PSI.

69 Bar (1000 PSI).

Curves were generated using 100 SSU hydraulic oil. For any other viscosity, pressure drop will change as per chart.

<table>
<thead>
<tr>
<th>VISCOSITY CORRECTION FACTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity (SSU)</td>
</tr>
<tr>
<td>Percentage of</td>
</tr>
<tr>
<td>Δ P (Approx.)</td>
</tr>
</tbody>
</table>

Parker Hannifin Corporation
Hydraulic Valve Division
Elyria, Ohio, USA
Pressure Control Valves

Dimensions

Series R2M

Millimeter equivalents for inch dimensions are shown in (**)

Manifold mounted, 1/4" Bi-pressure Relief Valve (pressure 7)
Millimeter equivalents for inch dimensions are shown in (**)

Manifold mounted, 1/4" Tri-pressure Relief Valve (pressure 8)
Millimeter equivalents for inch dimensions are shown in (**)

In-line mounted, 1/4" Bi-pressure Relief Valve (pressure 7)
Millimeter equivalents for inch dimensions are shown in (**)

In-line mounted, 1/4" Tri-pressure Relief Valve (pressure 8)
Pressure Control Valves
Series R6P, R6S

Dimensions

Millimeter equivalents for inch dimensions are shown in ("")

In-line mounted, 3/4" solenoid operated
Relief Valve

NOTE: WHERE TWO DIMENSIONS ARE SHOWN, ONE OVER THE DIMENSION LINE AND ONE BELOW IT, THE UPPER DIM. DENOTES AC SOLENOID, LOWER DIM. DENOTES DC SOLENOID.
Pressure Control Valves
Series R6P, R6S

Dimensions

Millimeter equivalents for inch dimensions are shown in (**)

In-line mounted, 3/4" solenoid operated
Relief Valve (pressure 7)
Millimeter equivalents for inch dimensions are shown in (**) 

In-line mounted, 3/4" solenoid operated 
Tri-pressure Relief Valve (pressure 8)
Pressure Control Valves
Series R6P, R6S

Millimeter equivalents for inch dimensions are shown in (**) 

In-line mounted, 3/4" pilot operated 
Pressure Relief Valve

Dimensions

1/4 NPTF VENT PORT LOCATION

1/4 NPTF GAGE PORT

3/4 NPTF AND 1-1/16-12 PRESSURE INLET PORT (OPTIONAL CONNECTIONS EITHER SIDE)

3/4 NPTF TANK PORT OR 1-1/16-12 STR. THD. PORT

JAM NUT—LOCKS PRESSURE SETTING

FULLY EXTENDED

.13 (3.3)

2.75 (70) SQ.

3.35 (85.1)

5.15 (130.8)

57 (145.1)

1.91 (48.6)

1.90 (48.3)

3.80 (96.5)

1.40 (35.6)

2.80 (71.1)
Pressure Control Valves
Series R6V

Dimensions

Millimeter equivalents for inch dimensions are shown in (**)

Industry standard, 3/4" solenoid operated

Relief Valve

NOTE:
WHERE TWO DIMENSIONS ARE SHOWN, ONE OVER THE DIMENSION LINE AND ONE BELOW IT, THE UPPER DIM. DENOTES AC SOLENOID, LOWER DIM. DENOTES DC SOLENOID.

CLEARANCE FOR COIL REMOVAL
6.08 (154) AC
7.16 (182) DC

CLEARANCE FOR SOLENOID REMOVAL
4.71 (120) AC
5.32 (135) DC

VIEW “A-A”
SUBPLATE MOUNTING

1/2 NPTF ELECTRICAL CONDUIT CONNECTOR BOTH SIDES
MANUAL OVERRIDE

“A” PORT OPPOSITE SIDE

“A” PORT

NOTE:
WHERE TWO DIMENSIONS ARE SHOWN, ONE OVER THE DIMENSION LINE AND ONE BELOW IT, THE UPPER DIM. DENOTES AC SOLENOID, LOWER DIM. DENOTES DC SOLENOID.
Millimeter equivalents for inch dimensions are shown in (**)

Industry Standard, 3/4" solenoid operated

Tri-pressure Relief Valve (pressure 8)
Millimeter equivalents for inch dimensions are shown in (**)

Industry standard, 3/4" solenoid operated

Bi-pressure Relief Valve (pressure 7)
Pressure Control Valves

Series R6V

Millimeter equivalents for inch dimensions are shown in (**)

Manifold mounted, 3/4" pilot operated (industry standard)

Pressure Relief Valve
Millimeter equivalents for inch dimensions are shown in ("")

Manifold mounted, 1 1/4" solenoid operated

Relief Valve
Pressure Control Valves

Series R10M

Dimensions

Millimeter equivalents for inch dimensions are shown in (**)

Manifold mounted, 1 1/4" solenoid operated

Bi-pressure Relief Valve (pressure 7)
Millimeter equivalents for inch dimensions are shown in (**)

Manifold mounted, 1 1/4" solenoid operated

Tri-pressure Relief Valve (pressure 8)
Millimeter equivalents for inch dimensions are shown in (**)

Manifold mounted, 1 1/4" pilot operated
Pressure Relief Valve
Pressure Control Valves
Series R10P, R10S

Millimeter equivalents for inch dimensions are shown in (**)

In-line mounted, 1 1/4" solenoid operated Relief Valve

NOTE:
WHERE TWO DIMENSIONS ARE SHOWN,
ONE OVER THE DIMENSION LINE AND
ONE BELOW IT, THE UPPER DIM,
DENOTES AC SOLENOID, LOWER DIM.
DENOTES DC SOLENOID.
Millimeter equivalents for inch dimensions are shown in (**)

In-line mounted, 1 1/4" solenoid operated
Bi-pressure Relief Valve (pressure 7)
Pressure Control Valves
Series R10P, R10S

Millimeter equivalents for inch dimensions are shown in (**)

In-line mounted, 1 1/4" solenoid operated
Tri-pressure Relief Valve (pressure 8)
Pressure Control Valves
Series R10P, R10S

Millimeter equivalents for inch dimensions are shown in (**)
In-line mounted, 1 1/4" pilot operated
Pressure Relief Valve

Dimensions

1/4 NPTF VENT PORT
3.56 (90.4)
2.83 (71.9)

3.35 (85.1) FULLY EXTENDED

1-1/4 NPTF OR/1-5/8 - 12 STR. THD. PRESSURE INLET PORT (OPTIONAL CONNECTIONS OTHER SIDE)
1.75 (44)
1.94 (49)

2.44 (62)

3.22 (82) SQ.

1/4 NPTF GAGE PORT

2.21 (56)

2.44 (62)

4.88 (124)

Parker Hannifin Corporation
Hydraulic Valve Division
Elyria, Ohio, USA
Millimeter equivalents for inch dimensions are shown in (**)

Valve with Terminal Strip (Variation 5)  540 no longer available
and/or valve with top side plug-on with lights (Variation 570)  Top Side Plug no longer available

See D1VW Accessory section for Ordering Replacement Kits

Valve with Manaplug Plug-in (Variation 6)

NOTE: MANAPLUG PLUG-IN POSITION . . .
SINGLE SOLENOID MODELS—PLUG-IN IS ALWAYS OPPOSITE SOLENOID
DOUBLE SOLENOID MODELS—PLUG-IN IS ALWAYS ON "B" SOLENOID END.
SEE D1VW ACCESSORY SECTION FOR ORDERING REPLACEMENT KITS