Pressure Control Valves

Vickers®

Cartridge Valves

Screw-in Cartridge Valves

Pressures to 415 bar (6000 psi) – Flows to 303 l/min (80 USgpm)
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For over seventy years, Vickers has provided its customers with quality products and innovative solutions for all their power and motion control needs. The products featured in this catalog represent the very best in screw-in cartridge pressure control technology.

Products in this catalog have been fatigue tested for one million cycles at 132% or 10 million cycles at 115% of rated pressure.

Two pressure ratings are shown for all products featured in this catalog – typical application pressure and fatigue pressure. The typical application pressure rating is the maximum recommended operating pressure for the valve in a given system. The fatigue pressure rating is the pressure for the valve to be free for infinite life from metal fatigue.

We are committed to maintaining this position by offering the most comprehensive range of cartridge valves for industrial and mobile equipment.

This catalog gives basic specifications for Vickers pressure control screw-in cartridge valve. Its purpose to to provide a quick, convenient reference tool when choosing Vickers cartridge valves or designing a system using these components.

Vickers offers a full range of direct and pilot operated relief, reducing, sequence and unloading valves. In general, the direct operated products are fastest in response while pilot operated types have a flatter pressure/flow characteristic.

### Relief Valves

When selecting a relief valve for a specific application, consideration should be given to the following:

- **Direct operated poppet types – RV1 and RV10**
  Suitable for continuous duty with reliable fast response, the RV10 being a low pressure, low cost option. These valves are also suitable for piloting the DPS2 logic elements.

- **Pilot operated poppet type with reverse free-flow check – RV2**
  Use as a service line relief where anticavitation make-up is required. It may also be applied as an internally piloted counterbalance valve in a service line.

- **Direct operated poppet type, differential area models – RV3 and RV8**
  Sometimes termed a “differential area relief valve”. A fast acting valve, highly tolerant of contaminant and providing an alternative flow path, frequently beneficial in manifold layout. Utilized in CRV3 cross-line relief packages.

- **Pilot operated spool type – RV5**
  Well suited for repetitive, continuous duty with a low pressure-override characteristic.

- **Direct operated ball type – RV6**
  A fast-acting valve for intermittent duty. This low flow, low cost valve may be used as a pilot section for a larger main-stage valve, or piloting logic elements.

### Reducing Valves

Two types are available:

- **Direct operated with relieving feature – PRV1**
- **Pilot operated with relieving feature – PRV2**

### Sequence Valves

A complete range of sequence functions is available, including:

- **Normally-closed and normally-open models**
- **Internal and external pilot options**
- **Internal and external drain options**
- **Two and three position models**

Externally drained models may be used as relief valves in circuits with alternating pressure and tank line functions.

### Accumulator Unloading Valves

Valves that allow accumulators to be charged to a pre-selected maximum pressure at which the pump is unloaded. The pump does not cut-in until the accumulator pressure has decayed to a pre-selected percentage of maximum pressure. The low-flow PUV3 model can be used as a stand alone model for low flow applications, or as a pilot stage in two-stage arrangements for higher flows.

### Accumulator Discharge Valve

This valve is designed to ensure that an accumulator will discharge when pilot pressure is lost, e.g. on pump shutdown.

### Application Data

#### Fluid Cleanliness

Proper fluid condition is essential for long and satisfactory life of hydraulic components and systems. Hydraulic fluid must have the correct balance of cleanliness, materials, and additives for protection against wear of components, elevated viscosity, and inclusion of air.

Essential information on the correct methods for treating hydraulic fluid is included in Vickers publication 561 “Vickers Guide to Systemic Contamination Control” available from your local Vickers distributor or by contacting Vickers, Incorporated. Recommendations on filtration and the selection of products to control fluid condition are included in 561.

Recommended cleanliness levels, using petroleum oil under common conditions, are based on the highest fluid pressure levels in the system and are coded in the chart below. Fluids other than petroleum, severe service cycles, or temperature extremes are cause for adjustment of these cleanliness codes. See Vickers publication 561 for exact details.
ADV1–16
Accumulator discharge valve

**Functional Symbol**

![Functional Symbol Image]

**Description**
The ADV1-16 is a poppet type, normally open, externally piloted, screw-in cartridge type accumulator discharge valve.

**Operation**
In its unpiloted position, this valve remains open between port 1 and port 2 until sufficient pilot pressure is applied to port 3. Flow is then blocked from port 1 to port 2.

**Ratings and specifications**
*Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)*

- Typical application pressure (all ports) ............... 210 bar (3000 psi)
- Cartridge fatigue pressure (infinite life) .................. 210 bar (3000 psi)
- Rated flow .............................................. 30 l/min (8 USgpm)
- Minimum pilot pressure @ ports .......................... 4 bar (60 psi)
- Cavity .................................................. C-16–3S (See page 73)
- Standard housing materials ................................ Aluminum
- Temperature range ......................................... -40°C to 120°C (-40°F to 248°F)
- Fluids .................................................... All general purpose hydraulic fluids such as: MIL–H–5606, SAE 10, SAE 20, etc.
- Filtration .................................................. Cleanliness code 18/16/13
- Pilot ratio ............................................... 100:1
- Weight cartridge only ..................................... 0.28 kg. (0.62 lbs.)
- Seal kits .................................................. 565812 Buna–N 889611 Viton®

*Viton is a registered trademark of E.I. DuPont*

**Pressure Drop Curve**

Cartridge only
Port 3 pilot pressure = 0

![Pressure Drop Curve Graph]
## Model Code

**ADV1–16**

### Dimensions

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<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
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<td>6B</td>
<td>3/4&quot; BSPP</td>
<td>02–175471</td>
</tr>
<tr>
<td>12T</td>
<td>SAE 12</td>
<td>566414</td>
</tr>
<tr>
<td>4G</td>
<td>1/2&quot; BSPP</td>
<td>02–160676</td>
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<td>6G</td>
<td>3/4&quot; BSPP</td>
<td>876726</td>
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<tr>
<td>10H</td>
<td>SAE 10</td>
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<tr>
<td>12H</td>
<td>SAE 12</td>
<td>876727</td>
</tr>
</tbody>
</table>

**Aluminum Light duty**

**Aluminum Fatigue rated**

See page 76 for housings

### Pilot area ratio

Port 3: Port 1 – 100:1

(Minimum pilot pressure at port 3 – 4 bar (60 psi))

### Torque cartridge in housing

108–122 Nm (80–90 lbf ft)
PUV3–10
Pilot unloading valve

**Functional Symbol**

[Diagram of Functional Symbol]

**Description**

The PUV3 is a two-way, normally closed, externally or internally pilot operated screw-in cartridge type pilot unloading valve.

**Operation**

This valve blocks flow from port 2 to port 3, until either the predetermined spring setting has been reached, or an external pilot has been applied to port 1. At this time flow is then allowed from port 2 to port 3. The valve will reseat at a percentage of the unloading setting as called out in the model code. This valve is used as the pilot stage of a two-stage unloader valve. The main stage of the unloader is typically a DPS2 logic element.

**Ratings and specifications**

*Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)*

- Typical application pressure (all ports) .................. 210 bar (3000 psi)
- Cartridge fatigue pressure (infinite life) ................ 210 bar (3000 psi)
- Rated flow .................................................. 4 l/min (1 USgpm)
- Unloading pressure adjustment range .................. 20–210 bar (300–3000 psi)
- Cavity ......................................................... C-10–3 (See page 73)
- Standard housing materials ................................. Aluminum
- Temperature range ........................................... -40°C to 120°C (-40°F to 248°F)
- Fluids ......................................................... All general purpose hydraulic fluids such as: MIL–H–5606, SAE 10, SAE 20, etc.
- Filtration ....................................................... Cleanliness code 18/16/13
- Weight cartridge only ....................................... 0.15 kg. (0.33 lbs.)
- Seal kits ....................................................... 565804 Buna–N 889599 Viton®

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**Pressure Drop Curves**

Cartridge only
Piloted full open

![Pressure Drop Curves Diagram]

A – 75%
B – 80%
C – 85%
D – 90%
Model Code

PUV3–10

**Function**  
PUV3 – Pilot unloading valve

**Size**  
10 – 10 Size

**Seals**  
Blank – Buna-N  
V – Viton

**Adjustment**  
C – Cap  
S – Screw

**Port size**  
O – Cartridge only

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
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<td></td>
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<td>Alumina Light duty</td>
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<tr>
<td>6T</td>
<td>SAE6</td>
<td>566162</td>
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<td>3B</td>
<td>3/8” BSPP</td>
<td>02–173358</td>
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<td>6H</td>
<td>SAE 6</td>
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<td>8H</td>
<td>SAE8</td>
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<td>2G</td>
<td>1/4” BSPP</td>
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</tr>
<tr>
<td>3G</td>
<td>3/8” BSPP</td>
<td></td>
</tr>
</tbody>
</table>

See page 76 for housings

**Pressure range**  
15 – 20–100 bar (300–1500 psi)  
30 – 100–210 bar (1500–3000 psi)

**Loading (closing) pressure, as percentage of unloading pressure**  
75 – 75%  
80 – 80%  
85 – 85%  
90 – 90%

**Lower pressure rating**  
15–20 – 4–100 bar (60 – 1500 psi)

**Dimensions**  
mm (inch)

“C” Adjustment

“S” Adjustment

Maximum Torque to 1,3 Nm (10 lbf ft)

Torque cartridge in housing  
47–54 Nm (35–40 lbf ft)

46,0 (1.81)  
0.875”-14 Thd.

25,4 (1.0) hex  
15,82 (0.623)  
17,42 (0.686)

39,0 (1.53)
RV1-8
Relief valve

Description
The RV1-8 is a direct acting, poppet type screw-in cartridge relief valve.

Operation
The RV1-8 remains closed until the predetermined setting is reached at port 1. The poppet then lifts off the seat and allows flow from port 1 to port 2.

Ratings and specifications
Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)
Typical application pressure (all ports) 350 bar (5000 psi)
Cartridge fatigue pressure (infinite life) 280 bar (4000 psi)
Rated flow For 3 & 36 cracking pressure 22.7 l/min (6 USgpm)
For 50 cracking pressure 15.1 l/min (4 USgpm)
Cracking pressure ranges 3 – 3.4 – 20 bar (50 – 300 psi) @ 22.7 l/min (6 USgpm)
36 – 20 – 250 bar (300 – 3600 psi) @ 22.7 l/min (6 USgpm)
50 – 100 – 350 bar (1500 – 5000 psi) @ 15.1 l/min (4 USgpm)
Reseat pressure More than 90% of cracking pressure
Internal leakage Port 1 to 2; 5 drops / min. at 80% of cracking pressure
Temperature range -40°C to 120°C (-40°F to 248°F)
Cavity C – 8 – 2 (See page 72)
Fluids All general purpose hydraulic fluids such as:
MIL-H-5606, SAE 10, SAE 20, etc.
Filtration Cleanliness code 18/16/13
Standard housing materials Aluminum or steel
Weight cartridge only 0.20 kg (0.43 lbs)
Seal kits 02 – 165875 Buna–N 02 – 165877 Viton®

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Pressure Override Curves
Cartridge only

Flow in l/min (21.8 cSt oil @ 49°C)
Flow in USgpm (105 SUS oil @ 120°F)

Inlet Pressure psi

A – 50 spring
B – 36 spring
C – 3 spring
RV1-8 (V) - * - (*) ** - ** / **

1. Function
RV1 – Relief valve

2. Size
8 – 8 Size

3. Seals
Blank – Buna-N
V – Viton

4. Adjustment
C – Cap
K – Knob
S – Screw

5. Valve housing material
Omit for cartridge only
S – Steel
A – Aluminum

6. Port size
O – Cartridge only

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
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<td>Aluminum Fatigue rated</td>
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<td>4T</td>
<td>SAE 4</td>
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<td>SAE 8</td>
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<tr>
<td>3G</td>
<td>3/8” BSPP</td>
<td>02–160728</td>
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</table>

See pages 75 and 78 for housings

7. Cracking pressure ranges
3 – 3.4–20 bar (50–300 psi)
36 – 20–250 bar (300–3600 psi)
50 – 100–350 bar (1500–5000 psi)

Aluminum housings can be used for pressures up to 210 bar (3000 psi)
Steel housings must be used for operating pressures above 210 bar (3000 psi)

8. Pressure setting
Optional – Specify in 100 psi increments.
If not specified, set at:
3 – 10 bar (150 psi)
36 – 125 bar (1800 psi)
50 – 175 bar (2500 psi)

Dimensions
mm (inch)

“C” Adjustment
Torque to 3–6 Nm
(4–8 lbf ft)

12.7 (0.50) hex
Torque to 3–6 Nm
(4–8 lbf ft)

22.2 (0.87) hex

0.750”–16 Thd.

4.0 (0.15) hex
S Adj.

54.1 (2.13)

67.7 (2.67)

71.5 (2.81) Full

76.7 (3.02) Full

79.5 (3.12) Full

K option knob
∅ 31.8 (1.25)
nominal

Torque cartridge in housing
34–41 Nm (25–30 lbf ft)

Fatigue rated
See pages 75 and 78 for housings

Steel housings must be used for operating pressures above 210 bar (3000 psi)
The RV1-10 is a direct acting, poppet type, screw-in cartridge relief valve.

**Operation**

This valve remains closed from port 1 to port 2 until the predetermined setting has been reached at port 1. The poppet is unseated and allows flow out of port 2.

**Ratings and specifications**

*Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)*

- Typical application pressure (all ports) ........................................ 210 bar (3000 psi)
- Cartridge fatigue pressure (infinite life) ........................................ 210 bar (3000 psi)
- Rated flow ......................................................................................... 30 l/min (8 USgpm)
- Cavity ................................................................................................. C-10–2 (See page 72)
- Standard housing materials ................................................................. Aluminum or steel
- Temperature range ............................................................................. -40 to 120°C (-40°F to 248°F)
- Fluids .................................................................................................. All general purpose hydraulic fluids such as: MIL–H–5606, SAE 10, SAE 20, etc.
- Filtration ............................................................................................... Cleanliness code 18/16/13
- Weight cartridge only ......................................................................... 0.22 kg. (0.48 lbs.)
- Seal kits ............................................................................................... 565803 Buna–N
  566086 Viton®

_Viton is a registered trademark of E.I. DuPont_
# Model Code

## RV1-10

---

### Function

RV1 – Relief valve

### Size

10 – 10 Size

### Seals

Blank – Buna-N  
V – Viton

### Adjustment

C – Cap  
F – Factory set  
I – Internal  
K – Knob  
S – Screw

### Valve housing material

Blank – Aluminum  
S – Steel

### Port size

O – Cartridge only

### Housing number

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Aluminum Light duty</th>
<th>Aluminum Fatigue rated</th>
<th>Steel Fatigue rated</th>
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<tbody>
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<td>3/8” BSPP</td>
<td>02–175462</td>
<td></td>
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</tr>
<tr>
<td>2G</td>
<td>1/4” BSPP</td>
<td>876702</td>
<td>02–175102</td>
<td></td>
</tr>
<tr>
<td>3G</td>
<td>3/8” BSPP</td>
<td>876703</td>
<td>02–175103</td>
<td></td>
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<tr>
<td>6H</td>
<td>SAE 6</td>
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<td></td>
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<tr>
<td>8H</td>
<td>SAE 8</td>
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<td></td>
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<tr>
<td>6T</td>
<td>SAE 6</td>
<td>566151</td>
<td></td>
<td>02–175100</td>
</tr>
<tr>
<td>8T</td>
<td>SAE 8</td>
<td></td>
<td></td>
<td>02–175101</td>
</tr>
</tbody>
</table>

### Cracking pressure range

- **3** – 3.5 - 20 bar (50 - 300 psi)
- **9** – 7 - 62 bar (100 - 900 psi)
- **18** – 17 - 124 bar (250 - 1800 psi)
- **36** – 34 - 250 bar (500 - 3600 psi)

### Factory set reduced pressure

Within ranges in 

Blank – Normal factory setting at approximate mid-range.  
User requested settings in 3.45 bar (50 psi) steps, coded as in the following examples:  
**10** – 70 bar (1000 psi)  
**10.5** – 72.4 bar (1050 psi)

- Aluminum housings can be used for pressures up to 210 bar (3000 psi)
- Steel housings must be used for operating pressures above 210 bar (3000 psi)

### Dimensions

*mm (inch)*

- **C** Adjustment 19.1 (0.75) hex
- **S** Adjustment 80.0 (3.13)
- **F** Adjustment 25.4 (1.00) hex
- **K** Adjustment Ø 38.1 (1.50)

---

**Torque cartridge in housing**

- A – 47–54 Nm (35–40 lbf ft)
- S – 68–75 Nm (50–55 lbf ft)

---

**“I” Adjustment**

53.0 (2.08)

**“S” Adjustment**

31.8 (1.25)

**“F” Adjustment**

0.875”-14 Thd.

**“K” Adjustment**

Ø 15.82 (0.623)
RV6-10
Relief valve

Functional Symbol

Description
The RV6-10 is a direct acting, ball type screw-in cartridge relief valve.

Operation
This valve remains closed from port 1 to port 2 until the predetermined setting has been reached at port 1. The poppet then unseats, allowing flow out port 2.

Ratings and specifications
Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)
Typical application pressure (all ports) 350 bar (5000 psi)
Cartridge fatigue pressure (infinite life) 210 bar (3000 psi)
Rated flow 15 l/min (4 USgpm)
Cavity C-10–2 (See page 72)
Standard housing materials Aluminum or steel
Temperature range -40° to 120°C (-40° to 248°F)
Fluids All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration Cleanliness code 18/16/13
Weight cartridge only 0.22 kg. (0.48 lbs.)
Seal kits 565803 Buna–N 566086 Viton®

Pressure Override Curves
Cartridge only
Tank pressure = 0

Viton is a registered trademark of E.I. DuPont
Model Code

RV6 - 10 (V) - * - (S) ** - ** / **

1   2   3   4   5   6   7

Function
RV6 – Relief Valve

Size
10 – 10 Size

Seals
Blank – Buna-N
V – Viton

Adjustment
C – Cap
K – Knob
S – Screw
T – Tamper-proof

Housing material
Blank – Aluminum
S – Steel

Cracking pressure range
25 – 3,4–175 bar (50–2500 psi)
50 – 140–350 bar (2000–5000 psi)

Factory set reduced pressure
Within ranges in

Blank – Normal factory setting at approximate mid–range.
User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
10.5 – 72,4 bar (1050 psi)

Housing number

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Aluminum Light duty</th>
<th>Aluminum Fatigue rated</th>
<th>Steel Fatigue rated</th>
</tr>
</thead>
<tbody>
<tr>
<td>3B</td>
<td>3/8&quot; BSPP</td>
<td>02–175462</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2G</td>
<td>1/4&quot; BSPP</td>
<td></td>
<td>876702</td>
<td>02–175102</td>
</tr>
<tr>
<td>3G</td>
<td>3/8&quot; BSPP</td>
<td></td>
<td>876703</td>
<td>02–175103</td>
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<td>6T</td>
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</tr>
<tr>
<td>8T</td>
<td>SAE 8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See pages 75 and 78 for housings

Dimensions

mm (inch)

Torque cartridge in housing
A – 47–54 Nm (35–40 lbf ft)
S – 68–75 Nm (50–55 lbf ft)
RV10-10
Relief valve

Functional Symbol

Description
The RV10-10 is a direct acting, poppet type, screw-in cartridge relief valve.

Operation
This valve remains closed from port 1 to port 2 until the predetermined setting has been reached at port 1. The poppet is unseated and allows flow out of port 2.

Ratings and specifications

<table>
<thead>
<tr>
<th>Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical application pressure (all ports)</td>
</tr>
<tr>
<td>Cartridge fatigue pressure (infinite life)</td>
</tr>
<tr>
<td>Rated flow</td>
</tr>
<tr>
<td>Cavity</td>
</tr>
<tr>
<td>Standard housing materials</td>
</tr>
<tr>
<td>Temperature range</td>
</tr>
<tr>
<td>Fluids</td>
</tr>
<tr>
<td>Filtration</td>
</tr>
<tr>
<td>Weight cartridge only</td>
</tr>
<tr>
<td>Seal kits</td>
</tr>
</tbody>
</table>

Viton is a registered trademark of E.I. DuPont

Pressure Override Curves

Flow in l/min (21.8 cSt oil @ 49°C)

Flow in USgpm (105 SUS oil @ 120°F)

A – 10 spring
B – 5 spring
Model Code

RV10-10

1 Function
RV10 – Relief valve

2 Size
10 – 10 Size

3 Seals
Blank – Buna–N
V – Viton

4 Adjustment
C – Cap
K – Knob
S – Screw
T – Tamper-proof

5 Port size
O – Cartridge only

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
<th>Aluminum Light duty</th>
<th>Aluminum Fatigue rated</th>
</tr>
</thead>
<tbody>
<tr>
<td>3B</td>
<td>3/8&quot; BSPP</td>
<td>02-175462</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6T</td>
<td>SAE 6</td>
<td>566151</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2G</td>
<td>1/4&quot; BSPP</td>
<td></td>
<td></td>
<td>876702</td>
</tr>
<tr>
<td>3G</td>
<td>3/8&quot; BSPP</td>
<td></td>
<td></td>
<td>876703</td>
</tr>
<tr>
<td>6H</td>
<td>SAE 6</td>
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<td>876700</td>
</tr>
<tr>
<td>8H</td>
<td>SAE 8</td>
<td></td>
<td></td>
<td>876701</td>
</tr>
</tbody>
</table>

See pages 75 for housings

6 Cracking pressure range

<table>
<thead>
<tr>
<th>Code</th>
<th>Cracking pressure range</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1.73 - 17 bar (25 - 250 psi)</td>
</tr>
<tr>
<td>5</td>
<td>3.5 - 35 bar (50 - 500 psi)</td>
</tr>
<tr>
<td>10</td>
<td>17 - 70 bar (250 - 1000 psi)</td>
</tr>
</tbody>
</table>

7 Factory set reduced pressure

Within ranges in 6
Blank – Normal factory setting at approximate mid-range.
User requested settings in 3.45 bar (50 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
9.5 – 65 bar (950 psi)

Dimensions

mm (inch)

“C” Adjustment
19.1 (0.75) hex

“T” Adjustment
37.0 (1.45)

“S” Adjustment

“K” Adjustment
25.4 (1.00) hex

Torque cartridge in housing
47–54 Nm (35–40 lbf ft)
RV8-8
Relief valve

Functional Symbol

Sectional View

Description
The RV8-8 is a direct acting differential area, poppet type, screw-in cartridge relief valve.

Operation
The RV8-8 remains closed until the predetermined setting is reached at port 2. The force created by the pressure acting on the differential poppet area lifts the poppet off the seat and allows flow from port 2 to port 1.

Ratings and specifications
Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (150°F)

Typical application pressure (all ports) ....................... 350 bar (5000 psi)
Cartridge fatigue pressure (infinite life) ...................... 280 bar (4000 psi)
Rated flow .............................................. 30 l/min (8 USgpm)
Cracking pressure ranges .................................. 15 – 3.4 – 100 bar (50 – 1500 psi)
.............................................. 30 – 70 – 210 bar (1000 – 3000 psi)
.............................................. 50 – 70 – 350 bar (1000 – 5000 psi)
Internal leakage .................. Less than 5 drops / min. @ 80% of cracking pressure
Temperature range ..................... -40 to 120°C (-40° to 248°F)
Cavity ................................................. C–8–2 (See page 72)
Fluids ............................... All general purpose hydraulic fluids such as:
MIL–H–5606, SAE 10, SAE 20, etc.
Filtration ................................. Cleanliness code 18/16/13
Standard housing materials ......................... Aluminum or steel
Weight cartridge only ....................... 0.20 kg (0.43 lbs)
Seal kits ............................................. 02–165785 Buna–N
.............................................. 02–16577 Viton®

Viton is a registered trademark of E.I.DuPont

Pressure Override Curves
Cartridge only

A – 50 spring
B – 30 spring
C – 15 spring

Flow in l/min (21.8 cSt oil @ 49°C)

Flow in USgpm (105 SUS oil @ 120°F)

Inlet Pressure psi

Inlet Pressure bar
Model Code

**RV8-8**

1. **Function**
   - RV8 – Relief valve

2. **Size**
   - 8 – 8 Size

3. **Seals**
   - Blank – Buna–N
   - V – Viton

4. **Adjustment**
   - C – Cap
   - K – Knob
   - S – Screw

5. **Valve housing material**
   - (Omit for cartridge only)
   - S – Steel
   - A – Aluminum

6. **Port size**
   - O – Cartridge only

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Aluminum</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fatigue rated</td>
</tr>
<tr>
<td>4T</td>
<td>SAE 4</td>
<td>02–160730</td>
</tr>
<tr>
<td>6T</td>
<td>SAE 6</td>
<td>02–160731</td>
</tr>
<tr>
<td>8T</td>
<td>SAE 8</td>
<td>02–160732</td>
</tr>
<tr>
<td>2G</td>
<td>1/4” BSPP</td>
<td>02–160727</td>
</tr>
<tr>
<td>3G</td>
<td>3/8” BSPP</td>
<td>02–160728</td>
</tr>
</tbody>
</table>

See pages 75 and 78 for housings

7. **Cracking pressure ranges**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>3.4–100 bar</td>
<td>(50-1500 psi)</td>
</tr>
<tr>
<td>30</td>
<td>70–210 bar</td>
<td>(1000–3000 psi)</td>
</tr>
<tr>
<td>50</td>
<td>70–350 bar</td>
<td>(1000–5000 psi)</td>
</tr>
</tbody>
</table>

Steel housings must be used for operating pressures above 210 bar (3000 psi)

8. **Pressure setting**

   Optional – Specify in 100 psi increments

   If not specified, set at:

   - 15 – 52 bar (750 psi)
   - 30 – 100 bar (1500 psi)
   - 50 – 175 bar (2500 psi)

   Aluminum housings can be used for pressures up to 210 bar (3000 psi)

**Dimensions**

<table>
<thead>
<tr>
<th>mm (inch)</th>
</tr>
</thead>
</table>

- "C" Adjustment
  - Torque to 3–6 Nm (4–8 lbf ft)

- "S" Adjustment
  - 4.0 hex (0.15)

- 12.7 (0.50) hex
  - Torque to 3–6 Nm (4–8 lbf ft)

- 22.2 (0.87) hex

- 0.750”–16 Thd.

- 27.8 (1.09)

- 12.62 (0.497)

- 81.5 (3.20) Full out

- 76.5 (3.02) Full out

- 72.6 (2.85) Full out

- 67.8 (2.67)

- 53.8 (2.13)

- K option knob
  - Ø 31.8 (1.25) nominal

Torque cartridge in housing

34–41 Nm (25–30 lbf ft)
RV3-10
Relief valve

Functional Symbol

Description
The RV3-10 is a direct acting, differential area, poppet type, screw-in cartridge relief valve.

Operation
This valve remains closed from port 2 to port 1 until the predetermined setting has been reached at port 2. The poppet is unseated and allows flow out of port 1.

Ratings and specifications
Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)
Typical application pressure (all ports) 250 bar (3600 psi)
Rated flow 76 l/min (20 USgpm)
Cavity C-10–2 (See page 72)
Standard housing materials Aluminum or steel
Temperature range -40 to 120°C (-40°F to 248°F)
Fluids All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration Cleanliness code 18/16/13
Weight cartridge only 0.22 kg. (0.48 lbs.)
Seal kits – RV3 565803 Buna–N 566086 Viton®
– RV3A 565806 Buna–N 889627 Viton®

Viton is a registered trademark of E.I.DuPont

Pressure Override Curves
Cartridge only
Tank pressure = 0

A – 36 spring
B – 18 spring
C – 6 spring
### Model Code RV3-10

#### Function

- **RV3**: Relief valve

#### Cage seals

- **Blank**: Single backup ring
- **A**: 1/2 thickness backup ring on each side of O-ring

#### Size

- **10**: 10 Size

#### Seals

- **Blank**: Buna–N
- **V**: Viton

#### Adjustment

- **C**: Cap
- **F**: Factory set
- **I**: Internal
- **K**: Knob
- **S**: Screw

#### Valve housing material

- **Blank**: Aluminum
- **S**: Steel

### Port size

- **O**: Cartridge only

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Aluminum Light duty</td>
</tr>
<tr>
<td>3B</td>
<td>3/8&quot; BSPP</td>
<td>02–175462</td>
</tr>
<tr>
<td>2G</td>
<td>1/4&quot; BSPP</td>
<td>876702</td>
</tr>
<tr>
<td>3G</td>
<td>3/8&quot; BSPP</td>
<td>876703</td>
</tr>
<tr>
<td>6H</td>
<td>SAE 6</td>
<td>876700</td>
</tr>
<tr>
<td>8H</td>
<td>SAE 8</td>
<td>876701</td>
</tr>
<tr>
<td>6T</td>
<td>SAE 6</td>
<td>566151</td>
</tr>
<tr>
<td>8T</td>
<td>SAE 8</td>
<td></td>
</tr>
</tbody>
</table>

See pages 75 and 78 for housings

#### Cracking pressure range

- **3**: 3.5 - 20 bar (50 - 300 psi)
- **6**: 7 - 41 bar (100 - 600 psi)
- **9**: 14 - 62 bar (200 - 900 psi)
- **18**: 20 - 124 bar (300 - 1800 psi)
- **36**: 41 - 250 bar (600 - 3600 psi)

#### Factory set reduced pressure

Within ranges in **3**

- **Blank**: Normal factory setting at approximate mid-range. User requested settings in 3.45 bar (50 psi) steps, coded as in the examples:
  - **10**: 70 bar (1000 psi)
  - **10.5**: 72.4 bar (1050 psi)

#### Valve housing material

- **Aluminum**: Light duty, Fatigue rated
- **Steel**: Fatigue rated

### Dimensions

**mm (inch)**

<table>
<thead>
<tr>
<th>Part</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>“C” Adjustment</td>
<td>19.1 (0.75) hex</td>
</tr>
<tr>
<td>“I” Adjustment</td>
<td>53.0 (2.08)</td>
</tr>
<tr>
<td>“S” Adjustment</td>
<td>31.8 (1.25)</td>
</tr>
<tr>
<td>“F” Adjustment</td>
<td>80.0 (3.13)</td>
</tr>
<tr>
<td>0.875”-14 Thd.</td>
<td></td>
</tr>
<tr>
<td>Ø 15.82 (0.623)</td>
<td></td>
</tr>
<tr>
<td>K” Adjustment</td>
<td>Ø 38.1 (1.50)</td>
</tr>
<tr>
<td>25.4 (1.0) hex</td>
<td></td>
</tr>
</tbody>
</table>

**Torque cartridge in housing**

- **A**: 47–54 Nm (35–40 lbf ft)
- **S**: 68–75 Nm (50–55 lbf ft)
# RV8-10

## Relief valve

### Functional Symbol

The RV8-10 is a direct acting, poppet type screw-in cartridge relief valve.

### Description

This valve remains closed from port 2 to port 1 until the predetermined setting has been reached at port 2. The poppet then unseats, allowing flow out port 1.

### Operation

This valve remains closed from port 2 to port 1 until the predetermined setting has been reached at port 2. The poppet then unseats, allowing flow out port 1.

### Ratings and specifications

**Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)**

- Typical application pressure (all ports) ................. 350 bar (5000 psi)
- Cartridge fatigue pressure (infinite life) .................. 350 bar (5000 psi)
- Rated flow .................................................. 76 l/min (20 USgpm)
- Cavity ....................................................... C-10–2 (See page 72)
- Standard housing materials ................................. Aluminum or steel
- Temperature range .......................... -40 to 120°C (-40°F to 248°F)
- Fluids ......................................................... All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
- Filtration ..................................................... Cleanliness code 18/16/13
- Weight cartridge only ............................... 0,22 kg. (0.48 lbs.)
- Seal kits – RV8 ........................................ 565803 Buna–N
  – RV8A ..................................................... 565806 Buna–N
  – 889627 Viton®

### Pressure Override Curves

**Cartridge only**

Tank pressure = 0

- A – 50 spring
- B – 25 spring
- C – 12 spring

Viton is a registered trademark of E.I.DuPont
Model Code RV8-10

\[ RV8 \ (A) - 10 \ (V) - * - (S) ** - ** / ** \]

1 Function
RV8 – Relief Valve

2 Cage seals
Blank – Single backup ring as shown
A – 1/2 thickness backup ring on each side of o-ring

3 Size
10 – Size 10

4 Seals
Blank – Buna-N
V – Viton

5 Adjustment
C – Cap
F – Factory set
I – Internal
K – Knob
S – Screw

6 Valve housing material
Blank – Aluminum
S – Steel

7 Port size
O – Cartridge only

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aluminum</td>
<td>Aluminum Fatigue rated</td>
</tr>
<tr>
<td>3B</td>
<td>3/8&quot; BSPP</td>
<td>02–175462</td>
</tr>
<tr>
<td>2G</td>
<td>1/4&quot; BSPP</td>
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<tr>
<td>3G</td>
<td>3/8&quot; BSPP</td>
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<td>6H</td>
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<td>8H</td>
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<tr>
<td>6T</td>
<td>SAE 6</td>
<td>566151</td>
</tr>
<tr>
<td>8T</td>
<td>SAE 8</td>
<td>02–175100</td>
</tr>
</tbody>
</table>

* See pages 75 and 78 for housings

8 Cracking pressure range

| 4 – 3.45–30 bar (50–450 psi) |
| 12 – 7–86 bar (100–1250 psi) |
| 25 – 17–175 bar (250–2500 psi) |
| 50 – 38–350 bar (550–5000 psi) |

Aluminum housings can be used for pressures up to 210 bar (3000 psi)
Steel housings must be used for operating pressures above 210 bar (3000 psi)

9 Factory set reduced pressure

Within ranges in [8]
Blank – Normal factory setting at approximate mid-range.
User requested settings in 3.45 bar (50 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
10.5 – 72.4 bar (1050 psi)

Dimensions

\[ \text{mm (inch)} \]

- "C" Adjustment 19,1 (0.75) hex
- "S" Adjustment 80,0 (3.13)
- "F" Adjustment 0.875"-14 Thd.
- Torque cartridge in housing
  A – 47–54 Nm (35–40 lbf ft)
  S – 68–75 Nm (50–55 lbf ft)
- "K" Adjustment 38,1 (1.50)
- 25,4 (1.0) hex
- 15,82 (0.623)
RV3-16
Relief valve

**Functional Symbol**

The RV3-16 is a direct acting, differential area, poppet type, screw-in cartridge relief valve.

**Operation**

This valve remains closed from port 2 to port 1 until the predetermined setting has been reached at port 2. The poppet is unseated and allows flow out of port 1.

**Ratings and specifications**

*Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)*

- Typical application pressure (all ports) 350 bar (5000 psi)
- Cartridge fatigue pressure (infinite life) 350 bar (5000 psi)
- Rated flow 30 - 303 l/min (8 - 80 USgpm)
- Cavity C-16–2 (See page 72)
- Standard housing materials Aluminum or steel
- Temperature range -40°C to 120°C (-40°F to 248°F)
- Fluids All general purpose hydraulic fluids such as: MIL–H–5606, SAE 10, SAE 20, etc.
- Filtration Cleanliness code 18/16/13
- Weight cartridge only 0.71 kg. (1.57 lbs.)
- Seal kits 565810 Buna–N 889609 Viton®

Viton is a registered trademark of E.I. DuPont

**Pressure Override Curves**

Cartridge only

<table>
<thead>
<tr>
<th>Inlet pressure psi</th>
<th>Flow in l/min (21.8 cSt oil @ 49°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>100</td>
<td>50</td>
</tr>
<tr>
<td>200</td>
<td>100</td>
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<tr>
<td>300</td>
<td>150</td>
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<tr>
<td>400</td>
<td>200</td>
</tr>
<tr>
<td>500</td>
<td>250</td>
</tr>
<tr>
<td>600</td>
<td>300</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inlet pressure bar</th>
<th>Flow in USgpm (105 SUS oil @ 120°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
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<tr>
<td>70</td>
<td>20</td>
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<tr>
<td>140</td>
<td>30</td>
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<tr>
<td>210</td>
<td>40</td>
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<tr>
<td>280</td>
<td>50</td>
</tr>
<tr>
<td>350</td>
<td>60</td>
</tr>
<tr>
<td>415</td>
<td>80</td>
</tr>
</tbody>
</table>

A – 50 spring
B – 35 spring
Model Code

**RV3 - 16 (V) - * -(S) *** - * */ **

1. **Function**
   RV3 – Relief valve

2. **Size**
   16 – 16 Size

3. **Seals**
   Blank – Buna–N
   V – Viton

4. **Adjustment**
   K – Knob
   S – Screw

5. **Valve housing material**
   Blank – Aluminum
   S – Steel

6. **Port size**
   O – Cartridge only

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Aluminum Light duty</td>
</tr>
<tr>
<td>6B</td>
<td>3/4&quot; BSPP</td>
<td>02–175463</td>
</tr>
<tr>
<td>4G</td>
<td>1/2&quot; BSPP</td>
<td></td>
</tr>
<tr>
<td>6G</td>
<td>3/4&quot; BSPP</td>
<td></td>
</tr>
<tr>
<td>10H</td>
<td>SAE 10</td>
<td></td>
</tr>
<tr>
<td>12H</td>
<td>SAE 12</td>
<td></td>
</tr>
<tr>
<td>10T</td>
<td>SAE 10</td>
<td></td>
</tr>
<tr>
<td>12T</td>
<td>SAE 12</td>
<td>566149</td>
</tr>
</tbody>
</table>

See pages 75 and 78 for housings

7. **Cracking pressure range**
   13 – 3.5 - 90 bar (50 - 1300 psi)
   35 – 14 - 240 bar (200 - 3500 psi)
   50 – 20 - 350 bar (300 - 5000 psi)

   Aluminum housings can be used for pressures up to 210 bar (3000 psi)
   Steel housings must be used for operating pressures above 210 bar (3000 psi)

8. **Factory set reduced pressure**
   Within ranges in 7
   Blank – Normal factory setting at approximate mid-range.
   User requested settings in 3.45 bar (50 psi) steps, coded as in the following examples:
   10 – 70 bar (1000 psi)
   10.5 – 72.4 bar (1050 psi)

---

Dimensions

mm (inch)

- **“S” Adjustment**
  9.5 (0.37) hex
  19.1 (0.75) hex

- **“K” Adjustment**
  38.1 (1.5) hex

- **1.312”-12 Thd.**

- **∅ 28.55 (1.124)**

Torque cartridge in housing

A – 108–122 Nm (80–90 lbf ft)
S – 136–149 Nm (100–110 lbf ft)
RV2-10
Relief valve

**Functional Symbol**

The RV2-10 is a pilot operated, poppet type, screw-in cartridge relief valve.

**Operation**

This valve remains closed from port 1 to port 2 until the predetermined setting has been reached at port 1. The poppet is unseated and allows flow out of port 2.

**Ratings and specifications**

*Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)*

- Typical application pressure (all ports) ......................... 350 bar (5000 psi)
- Cartridge fatigue pressure (infinite life) ......................... 350 bar (5000 psi)
- Rated flow range .................................................. 12–114 l/min (3–30 USgpm)
- Reverse free flow check ........................................... 3 bar (45 psi)
- Cavity ................................................................. C-10–2 (See page 72)
- Standard housing materials ......................................... Aluminum or steel
- Temperature range ................................................... -40 to 120°C (-40°F to 248°F)
- Fluids ................................................................. All general purpose hydraulic fluids such as: MIL–H–5606, SAE 10, SAE 20, etc.
- Filtration .............................................................. Cleanliness code 18/16/13
- Weight cartridge only ............................................... 0.22 kg (0.48 lbs.)
- Seal kits ............................................................... 565803 Buna–N
  566086 Viton®

Viton is a registered trademark of E.I. DuPont

**Pressure Override Curves**

- Cartridge only
- Tank pressure = 0

A – 50 spring
B – 20 spring

---

Flow in l/min (21.8 cSt oil @ 49°C)

Flow in USgpm (105 SUS oil @ 120°F)
**Model Code**

**RV2-10**

- **Function**
  - RV2 – Relief valve

- **Size**
  - 10 – 10 Size

- **Seals**
  - Blank – Buna–N
  - V – Viton

- **Adjustment**
  - C – Cap
  - F – Factory set
  - I – Internal
  - K – Knob
  - S – Screw

- **Valve housing material**
  - Blank – Aluminum
  - S – Steel

### Dimensions

<table>
<thead>
<tr>
<th>Code</th>
<th>Port Size</th>
<th>Housing Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Aluminum Light duty</td>
</tr>
<tr>
<td>3B</td>
<td>3/8&quot; BSPP</td>
<td>02–175462</td>
</tr>
<tr>
<td>2G</td>
<td>1/4&quot; BSPP</td>
<td>876702</td>
</tr>
<tr>
<td>3G</td>
<td>3/8&quot; BSPP</td>
<td>876703</td>
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<tr>
<td>6H</td>
<td>SAE 6</td>
<td>876700</td>
</tr>
<tr>
<td>8H</td>
<td>SAE 8</td>
<td>876701</td>
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<tr>
<td>6T</td>
<td>SAE 6</td>
<td>566151</td>
</tr>
<tr>
<td>8T</td>
<td>SAE 8</td>
<td></td>
</tr>
</tbody>
</table>

See pages 75 and 78 for housings

### Cracking pressure range

- 3 – 3.5 - 20 bar (50 - 300 psi)
- 20 – 7 - 140 bar (100 - 2000 psi)
- 35 – 17 - 240 bar (250 - 3500 psi)
- 50 – 35 - 350 bar (500 - 5000 psi)
- Aluminum housings can be used for pressures up to 210 bar (3000 psi)
- Steel housings must be used for operating pressures above 210 bar (3000 psi)

### Factory set reduced pressure

Within ranges in [7]

- Blank – Normal factory setting at approximate mid-range.
- User requested settings in 3.45 bar (50 psi) steps, coded as in the following examples:
  - 10 – 70 bar (1000 psi)
  - 10.5 – 72.4 bar (1050 psi)

**Torque cartridge in housing**

- **A** – 47–54 Nm (35–40 lbf ft)
- **S** – 68–75 Nm (50–55 lbf ft)

**Diagram**

- C Adjustment: 19.1 (0.75) hex
- S Adjustment: 80.0 (3.13)
- K Adjustment: ∅ 38.1 (1.50)
- F Adjustment: 25.4 (1.0) hex
- I Adjustment: ∅ 15.82 (0.623)
RV5-10
Relief valve

**Functional Symbol**

The RV5–10 is a pilot operated, spool type, screw-in cartridge relief valve.

**Operation**

This valve remains closed from port 1 to port 2 until the predetermined setting has been reached at port 1. The spool then shifts, allowing flow out port 2.

**Ratings and specifications**

*Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)*

- Typical application pressure (all ports) ............... 350 bar (5000 psi)
- Cartridge fatigue pressure (infinite life) ............... 350 bar (5000 psi)
- Rated flow ........................................ 114 l/min (30 USgpm)
- Cavity ............................................... C-10–2 (See page 72)
- Standard housing materials ............................... Aluminum or steel
- Temperature range ................................... -40 to 120°C (-40°F to 248°F)
- Fluids ............................................... All general purpose hydraulic fluids such as: MIL–H–5606, SAE 10, SAE 20, etc.
- Filtration ............................................ Cleanliness code 18/16/13
- Weight cartridge only .................................. 0.22 kg. (0.48 lbs.)
- Seal kits
  - RV5 .............................................. 565803 Buna–N
  - RV5A ............................................. 565806 Buna–N
  - 889627 Viton®

*Viton is a registered trademark of E.I. DuPont*

**Pressure Override Curves**

Cartridge only

Tank pressure = 0

A – 50 spring
B – 20 spring
Model Code

RV5-10

Function
RV5 – Relief Valve

Cage seals
Blank – Single backup ring as shown
A – 1/2 thickness backup ring on each side of o-ring

Size
10 – 10 Size

Seals
Blank – Buna-N
V – Viton

Adjustment
S – Screw
C – Cap
K – Knob
I – Internal
F – Fixed

Valve housing material
Blank – Aluminum
S – Steel

Port size
O – Cartridge only

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Aluminum Light duty</td>
</tr>
<tr>
<td>3B</td>
<td>3/8” BSPP</td>
<td>02–175462</td>
</tr>
<tr>
<td>2G</td>
<td>1/4” BSPP</td>
<td></td>
</tr>
<tr>
<td>3G</td>
<td>3/8” BSPP</td>
<td></td>
</tr>
<tr>
<td>6H</td>
<td>SAE 6</td>
<td></td>
</tr>
<tr>
<td>8H</td>
<td>SAE 8</td>
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<td>SAE 6</td>
<td>566151</td>
</tr>
<tr>
<td>8T</td>
<td>SAE 8</td>
<td></td>
</tr>
</tbody>
</table>

See pages 75 and 78 for housings

Factory set cracking pressure
Within ranges in [3]
Blank – Normal factory setting at approximate mid-range.
User requested settings in 3.45 bar (50 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
10.5 – 72.4 bar (1050 psi)

Cracking pressure range
3 – 3.4–20 bar (50–300 psi)
20 – 7–140 bar (100–2000 psi)
35 – 17–240 bar (250–3500 psi)
50 – 35–350 bar (500–5000 psi)

Aluminum housings can be used for pressures up to 210 bar (3000 psi)
Steel housings must be used for operating pressures above 210 bar (3000 psi)

Valve housing material
Blank – Aluminum
S – Steel

factory set cracking pressure
Within ranges in [3]
Blank – Normal factory setting at approximate mid-range.
User requested settings in 3.45 bar (50 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
10.5 – 72.4 bar (1050 psi)

Cracking pressure range
3 – 3.4–20 bar (50–300 psi)
20 – 7–140 bar (100–2000 psi)
35 – 17–240 bar (250–3500 psi)
50 – 35–350 bar (500–5000 psi)

Aluminum housings can be used for pressures up to 210 bar (3000 psi)
Steel housings must be used for operating pressures above 210 bar (3000 psi)

Dimensions
mm (inch)

“C” Adjustment 19.1 (0.75) hex

“S” Adjustment

“F” Adjustment

“K” Adjustment, Ø 38.1 (1.50)

Torque cartridge in housing
A – 47–54 Nm (35–40 lbf ft)
S – 68–75 Nm (50–55 lbf ft)

Aluminum housings can be used for pressures up to 210 bar (3000 psi)
Steel housings must be used for operating pressures above 210 bar (3000 psi)

Factory set cracking pressure
Within ranges in [3]
Blank – Normal factory setting at approximate mid-range.
User requested settings in 3.45 bar (50 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
10.5 – 72.4 bar (1050 psi)

Cracking pressure range
3 – 3.4–20 bar (50–300 psi)
20 – 7–140 bar (100–2000 psi)
35 – 17–240 bar (250–3500 psi)
50 – 35–350 bar (500–5000 psi)

Aluminum housings can be used for pressures up to 210 bar (3000 psi)
Steel housings must be used for operating pressures above 210 bar (3000 psi)

Dimensions
mm (inch)

“C” Adjustment 19.1 (0.75) hex

“S” Adjustment

“F” Adjustment

“K” Adjustment, Ø 38.1 (1.50)

Torque cartridge in housing
A – 47–54 Nm (35–40 lbf ft)
S – 68–75 Nm (50–55 lbf ft)

Aluminum housings can be used for pressures up to 210 bar (3000 psi)
Steel housings must be used for operating pressures above 210 bar (3000 psi)

Factory set cracking pressure
Within ranges in [3]
Blank – Normal factory setting at approximate mid-range.
User requested settings in 3.45 bar (50 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
10.5 – 72.4 bar (1050 psi)
RV11-12
Relief valve

**Functional Symbol**

The RV11-12 is a screw-in cartridge type, pilot operated, sliding spool, adjustable relief valve designed for use as a pressure limiting device in hydraulic circuits. The sliding spool design smoothly regulates pressure in any hydraulic system with a low hysteresis.

**Operation**

This valve is normally closed until the predetermined setting is reached, which causes the pilot section to open. This allows the main relief section to open, relieving from port 1 to port 2.

**Ratings and specifications**

*Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)*

- Typical application pressure: 350 bar (5000 psi)
- Cartridge fatigue pressure (infinite life): 350 bar (5000 psi)
- Rated flow: 114 l/min (30 USgpm)
- Reseat pressure: More than 90% of crack pressure
- Hysteresis: Less than 3 bar (45 psi)
- Overshoot: Less than 20% of max. press. range with flow step of 30 USgpm at pressure rise rate of 100,000 psi/sec.
- Repeatability: +/- 1% maximum pressure range
- Cavity: C-12–2 or C-12–2U (See page 72)
- Standard housing materials: Aluminum or steel
- Temperature range: -40 to 120°C (-40°F to 248°F)
- Fluids: All general purpose hydraulic fluids such as: MIL–H–5606, SAE 10, SAE 20, etc.
- Filtration: Cleanliness code 18/16/13
- Weight cartridge only: 0,3 kg. (0.68 lbs.)
- Seal kits: 02–165889 Buna–N
  02–165888 Viton®

Viton is a registered trademark of E.I. DuPont

**Pressure Override Curves**

Cartridge only

![Pressure Override Curves](image)
Model Code RV11-12

RV 11 - 12 (V) - * - ( ) *** - ** / **

Function
RV11 – Relief Valve

Port size
O – Cartridge only

Size
12 – 12 Size

Seals
Blank – Buna-N
V – Viton

Adjustment
S – Screw
C – Cap
K – Knob

Valve housing material
S – Steel
A – Aluminum

Code Port size Housing number

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>C-12-2-U Aluminum Fatigue rated</th>
<th>C-12-2- Steel Fatigue rated</th>
<th>C-12-2-U Steel Fatigue rated</th>
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</thead>
<tbody>
<tr>
<td>10T</td>
<td>SAE 10</td>
<td>02–160641</td>
<td>02–160640</td>
<td>02–169817</td>
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<tr>
<td>12T</td>
<td>SAE 12</td>
<td>02–160645</td>
<td>02–160644</td>
<td>02–169790</td>
</tr>
<tr>
<td>4G</td>
<td>1/2&quot; BSPP</td>
<td>02–161116</td>
<td>02–161118</td>
<td>02–172512</td>
</tr>
<tr>
<td>6G</td>
<td>3/4&quot; BSPP</td>
<td>02–161115</td>
<td>02–161117</td>
<td>02–162922</td>
</tr>
</tbody>
</table>

Pressure range
15 – 10–100 bar (150–1500 psi)
30 – 17–210 bar (250–3000 psi)
50* – 24–350 bar (350–5000 psi)
* Must be ordered as a cartridge only or with a steel housing

Factory set reduced pressure
Within ranges in [7]
Blank – Normal factory setting at approximate mid-range.
User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
10.5 – 72,4 bar (1050 psi)

Steel housings must be used for operating pressures above 210 bar (3000 psi)

Dimensions

Torque cartridge in housing
A – 81–95 Nm (60–70 lbf ft)
S – 102–115 Nm (75–85 lbf ft)
RV5-16
Relief valve

Functional Symbol

Description
The RV5-16 is a pilot operated, spool type, screw-in cartridge relief valve.

Operation
This valve remains closed from port 1 to port 2 until the predetermined setting has been reached at port 1. The spool then shifts, allowing flow out port 2.

Ratings and specifications
Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)
Typical application pressure (all ports) 415 bar (6000 psi)
Cartridge fatigue pressure (infinite life) 350 bar (5000 psi)
Rated flow 303 l/min (80 USgpm)
Cavity C-16–2 (See page 72)
Standard housing materials Aluminum or steel
Temperature range -40°C to 120°C (-40°F to 248°F)
Fluids All general purpose hydraulic fluids such as MIL–H–5606, SAE 10, SAE 20, etc.
Filtration Cleanliness code 18/16/13
Weight cartridge only 0.71 kg. (1.57 lbs.)
Seal kits 889631 Buna–N 889635 Viton®

Viton is a registered trademark of E.I.DuPont

Pressure Override Curves
Cartridge only

Flow in l/min (21.8 cSt oil @ 49°C)
Inlet pressure psi

Flow in USgpm (105 SUS oil @ 120°F)
Inlet pressure bar

A – 60 spring
B – 30 spring
Model Code RV5-16

Function
RV5 – Relief Valve

Size
16 – 16 Size

Seals
Blank – Buna-N
V – Viton

Adjustment
S – Screw
C – Cap
K – Knob

Valve housing material
Blank – Aluminum
S – Steel

Dimensions
mm (inch)

Port size
O – Cartridge only

Pressure range
Within ranges in 7
Blank – Normal factory setting at approximate mid-range.
User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
10.5 – 72.4 bar (1050 psi)

Factory set reduced pressure
Within ranges in 7
Blank – Normal factory setting at approximate mid-range.
User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
10.5 – 72.4 bar (1050 psi)

Housing number
Code | Port size | Aluminum Light duty | Aluminum Fatigue rated | Steel Fatigue rated
--- | --- | --- | --- | ---
6B | 3/4” BSPP | 02–175463 | | |
4G | 1/2” BSPP | | 876716 | 02–175106
6G | 3/4” BSPP | | 876718 | 02–175107
10H | SAE 10 | | 876717 | |
12H | SAE 12 | | 566113 | |
10T | SAE 10 | | | |
12T | SAE 12 | | | | 566149

See pages 75 and 78 for housings

Aluminum housings can be used for pressures up to 210 bar (3000 psi)
Steel housings must be used for operating pressures above 210 bar (3000 psi)

Torque cartridge in housing
A – 108–122 Nm (80–90 lbf ft)
S – 136–149 Nm (100–110 lbf ft)
RV4-10
Check valve with thermal relief

Functional Symbol

Description
The RV4-10-F is a direct acting, poppet type, screw-in cartridge type check valve with thermal relief.

Operation
This valve has a dual function. In the first function the valve acts as a check valve and remains closed until the spring bias is overcome at port 1. The poppet is unseated and allows flow from port 1 to port 2. The second function acts as a thermal relief. The valve remains closed until the predetermined setting is reached. The valve allows expansion flow from port 2 to port 1.

Ratings and specifications
Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)

- Typical application pressure (all ports) .......................... 350 bar (5000 psi)
- Rated flow – check valve ............................................. 45 l/min (12 USgpm)
  – relief valve ......................................................... 1 l/min (0.25 USgpm)
- Relief cracking pressure ranges ................................. 28 - 350 bar (400 - 5000 psi)
- Check valve cracking pressure ................................... 1.24 bar (18 psi)
- Reseat pressure ......................................................... More than 90% of cracking pressure
- Internal leakage ....................................................... Port 1 to 2; 5 drops/min at cracking pressure
- Cavity ................................................................. C-10–2 (See page 72)
- Standard housing materials ........................................ Aluminum or steel
- Temperature range .................................................. -40 to 120°C (-40°F to 248°F)
- Fluids ................................................................. All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
- Filtration .............................................................. Cleanliness code 18/16/13
- Weight cartridge only ............................................. 0.11 kg. (0.25 lbs.)
- Seal kits ............................................................... 565803 Buna–N
  566086 Viton®

Viton is a registered trademark of E.I.DuPont

Pressure Override & Free Flow Curves
Cartridge only

Thermal Relief

Flow in l/min (21.8 cSt oil @ 49°C)

Free Flow

Flow in l/min (21.8 cSt oil @ 49°C)

Flow in USgpm (105 SUS oil @ 120°F)

Pressure Drop psi

Pressure Drop bar

Flow in USgpm (105 SUS oil @ 120°F)
Model Code

RV4-10

1 Function
RV4 – Check valve w/thermal relief

2 Size
10 – 10 Size

3 Seals
Blank – Buna-N
V – Viton

4 Adjustment
F – Factory set

5 Port size
O – Cartridge only

6 Housing number

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Aluminum Light duty</td>
</tr>
<tr>
<td>3B</td>
<td>3/8” BSPP</td>
<td>02–175462</td>
</tr>
<tr>
<td>2G</td>
<td>1/4” BSPP</td>
<td>————</td>
</tr>
<tr>
<td>3G</td>
<td>3/8” BSPP</td>
<td>————</td>
</tr>
<tr>
<td>6H</td>
<td>SAE 6</td>
<td>876700</td>
</tr>
<tr>
<td>8H</td>
<td>SAE 8</td>
<td>876701</td>
</tr>
<tr>
<td>6T</td>
<td>SAE 6</td>
<td>566151</td>
</tr>
<tr>
<td>8T</td>
<td>SAE 8</td>
<td>————</td>
</tr>
</tbody>
</table>

See pages 75 and 78 for housings

7 Cracking pressure range
50 – 28 - 350 bar (400 - 5000 psi)

8 Factory set reduced pressure
Within ranges in 7
User must specify settings in 7 bar (100 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
25 – 175 bar (2500 psi)

Dimensions

mm (inch)

Torque cartridge in housing
A – 47–54 Nm (35–40 lbf ft)
S – 68–75 Nm (50–55 lbf ft)
VRV11-12
Ventable relief valve

**Description**

The VRV11-12 is a pilot operated, sliding spool, adjustable, cartridge type vented relief valve. The valve is designed for use as a pressure limiting device in hydraulic circuits which can be operated remotely. The sliding spool design smoothly regulates pressure in any hydraulic system and provides low hysteresis.

**Operation**

In its normally closed state, the valve allows flow from port 1 to port 2 when port 3 is vented, or the main spring setting is achieved.

**Ratings and specifications**

*Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)*

- Typical application pressure: 210 bar (3000 psi)
- Cartridge fatigue pressure (infinite life): 210 bar (3000 psi)
- Rated flow: 114 l/min (30 USgpm)
- Reseat pressure: More than 90% of crack pressure
- Hysteresis: Less than 3 bar (45 psi)
- Internal leakage: 82 ml/min (5 in³/min) @80% cracking pressure
- Overshoot: Less than 20% of max. press. range with flow step of 30 USgpm at pressure rise rate of 100,000 psi/sec.
- Repeatability: +/- 1% maximum pressure range
- Cavity: C-12–3S (See page 73)
- Standard housing materials: Aluminum or steel
- Temperature range: -40°C to 120°C (-40°F to 248°F)
- Fluids: All general purpose hydraulic fluids such as: MIL–H–5606, SAE 10, SAE 20, etc.
- Filtration: Cleanliness code 18/16/13
- Weight cartridge only: 0.4 kg. (0.89 lbs.)
- Seal kits: 02–180095 Buna–N 02–165887 Viton®

Viton is a registered trademark of E.I.DuPont

**Pressure Override Curves**

Cartridge only

![Pressure Override Curves Diagram](image)
Model Code

VRV11-12

Function

VRV11 – Vetable relief valve

Size

12 – 12 Size

Seals

Blank – Buna-N
V – Viton

Adjustment

S – Screw
C – Cap
K – Knob

Valve housing material

Omit for cartridge only
S – Steel
A – Aluminum

Dimensions

mm (inch)

Pressure range

15 – 5–100 bar (75–1500 psi)
30 – 10–210 bar (150–3000 psi)

Factory set reduced pressure

Within ranges in Pressure range
Blank – Normal factory setting at approximate mid-range.
User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
10.5 – 72.4 bar (1050 psi)

Fatigue rated

See pages 76 and 79 for housings

Torque cartridge in housing

A – 81–95 Nm (60–70 lbf ft)
S – 102–115 Nm (75–85 lbf ft)
PRV1-10
Pressure reducing/relieving valve

Functional Symbol

Description
The PRV1-10 is a direct acting, spool type screw-in cartridge pressure reducing/relieving valve.

Operation
This valve is normally open, allowing flow from port 2 to port 1. Port 3 must be vented. Once the pressure setting is reached at port 1, the spool shifts to restrict the inlet flow at port 2. This regulates the pressure at port 1. If pressure at port 1 exceeds the predetermined setting of the valve, the spool will shift further and relieve excess pressure through port 3.

Ratings and specifications
Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)
Typical application pressure (all ports) ....................... 165 bar (2400 psi)
Cartridge fatigue pressure (infinite life) ...................... 210 bar (3000 psi)
Rated flow .................................................. 15 l/min (4 USgpm)
Cavity .......................................................... C-10–3 (See page 73)
Standard housing materials .................................... Aluminum
Temperature range ........................................... -40 to 120°C (-40°F to 248°F)
Fluids ......................................................... All general purpose hydraulic fluids such as:
MIL–H–5606, SAE 10, SAE 20, etc.
Filtration ...................................................... Cleanliness code 18/16/13
Weight cartridge only ........................................ 0.24 kg. (0.54 lbs.)
Seal kits ...................................................... 565804 Buna–N
889599 Viton®

Viton is a registered trademark of E.I. DuPont

Reduced Pressure Curves
Cartridge only

Flow in lpm (21.8 cSt oil @ 49°C)

Flow in USgpm (105 SUS oil @ 120°F)

A 24 – spring
B 12 – spring
C 6 – spring
Model Code

PRV1-10

Function
PRV1 – Pressure reducing/relieving valve

Size
10 – 10 Size

Seals
Blank – Buna–N
V – Viton

Adjustment
C – Cap
F – Factory set
I – Internal
K – Knob
S – Screw

Dimensions
mm (inch)

Port size
O – Cartridge only

Cracking pressure range
2 – 3.5 – 14 bar (50 – 200 psi)
6 – 7 – 40 bar (100 – 600 psi)
12 – 14 – 85 bar (200 – 1200 psi)
24 – 30 – 165 bar (400 – 2400 psi)

Factory set reduced pressure
Within ranges in [5]
Blank – Normal factory setting at approximate mid-range.
User requested settings in 3.45 bar (50 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
10.5 – 72.4 bar (1050 psi)

Torque cartridge in housing
47–54 Nm (35–40 lbf ft)

Aluminum
Light duty
Aluminum
Fatigue rated

Code | Port size | Housing number
--- | --- | ---
3b | 3/8” BSPP | 02–173358
6T | SAE 6 | 566162
2G | 1/4” BSPP | 876705
3G | 3/8” BSPP | 876714
6H | SAE 6 | 876704
8H | SAE 8 | 876711

See page 76 for housings

“K” Adjustment
∅ 38.1 (1.50)

“S” Adjustment
19.1 (0.75) hex

“C” Adjustment
19.1 (0.75) hex

∅ 17.40 (0.685)

∅ 15.80 (0.622)

0.875”-14 Thd.

25.4 (1.0) hex

53.0 (2.08)

46.0 (1.81)

80.0 (3.15)
PRV2-10
Pressure reducing/relieving valve

Functional Symbol

![Functional Symbol]

Description
The PRV2-10 is a pilot operated, spool type screw-in cartridge pressure reducing/relieving valve.

Operation
This valve is normally open, allowing flow from port 2 to port 1. Port 3 must be vented. Once the pressure setting is reached at port 1, the spool shifts to restrict the inlet flow at port 2. This regulates the pressure at port 1. If pressure at port 1 exceeds the predetermined setting of the valve, the spool will shift further and relieve excess pressure through port 3.

Ratings and specifications
Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports) ................. 240 bar (3500 psi)
Cartridge fatigue pressure (infinite life) ................. 210 bar (3000 psi)
Rated flow .............................................. 38 l/min (10 USgpm)
Cavity .................................................... C-10–3 (See page 73)
Standard housing materials ................................. Aluminum or steel
Temperature range ...................................... -40 to 120°C (-40°F to 248°F)
Fluids ..................................................... All general purpose hydraulic fluids such as: MIL–H–5606, SAE 10, SAE 20, etc.
Filtration .................................................. Cleanliness code 18/16/13
Weight cartridge only ..................................... 0.24 kg. (0.54 lbs.)
Seal kits .................................................... 565804 Buna–N 889599 Viton®

Viton is a registered trademark of E.I. DuPont

Reduced Pressure Curves

Cartridge only

![Reduced Pressure Curves]

A  35 – spring
B  20 – spring
C  3 – spring

Flow in lpm (21.8 cSt oil @ 49°C)
Flow in USgpm (105 SUS oil @ 120°F)
# Model Code

**PRV2-10**

## 1 Function
PRV2- Pressure reducing/relieving valve

## 2 Size
10 - 10 Size

## 3 Seals
Blank - Buna-N
V - Viton

## 4 Adjustment
C - Cap
F - Factory set
I - Internal
K - Knob
S - Screw

## 5 Valve housing material
Blank - Aluminum
S - Steel

## 6 Port size
O - Cartridge only

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3B</td>
<td>3/8&quot; BSPP</td>
<td>02–173358</td>
</tr>
<tr>
<td>2G</td>
<td>1/4&quot; BSPP</td>
<td>876705</td>
</tr>
<tr>
<td>3G</td>
<td>3/8&quot; BSPP</td>
<td>876714</td>
</tr>
<tr>
<td>6H</td>
<td>SAE 6</td>
<td>876704</td>
</tr>
<tr>
<td>8H</td>
<td>SAE 8</td>
<td>876711</td>
</tr>
<tr>
<td>6T</td>
<td>SAE 6</td>
<td>566162</td>
</tr>
<tr>
<td>8T</td>
<td>SAE 8</td>
<td>02–175124</td>
</tr>
</tbody>
</table>

See pages 76 and 79 for housings

## 7 Cracking pressure range
3 - 3.5 - 20 bar (50–300 psi)
20 - 7 - 140 bar (100–2000 psi)
35 - 17 - 240 bar (250–3500 psi)

Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings must be used for operating pressures above 210 bar (3000 psi)

## 8 Factory set reduced pressure
Within ranges in 7
Blank - Normal factory setting at approximate mid-range.
User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72.4 bar (1050 psi)

Torque cartridge in housing
A - 47–54 Nm (35–40 lbf ft)
S - 68–75 Nm (102–115 lbf ft)

---

**Dimensions**

<table>
<thead>
<tr>
<th>mm (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>53.0 (2.08)</td>
</tr>
<tr>
<td>46.0 (1.81)</td>
</tr>
<tr>
<td>25.4 (1.0) hex</td>
</tr>
<tr>
<td>0.875”-14 Thd.</td>
</tr>
<tr>
<td>15.80 (0.622)</td>
</tr>
<tr>
<td>17.40 (0.685)</td>
</tr>
</tbody>
</table>

---

![Diagram of PRV2-10 valve](image)
PRV11-12
Pressure reducing valve

**Functional Symbol**

![Functional Symbol]

**Description**
The PRV11-12 is a screw-in cartridge type, pilot operated, sliding spool, adjustable pressure reducing valve.

**Operation**
The PRV11-12 is normally open, allowing flow from port 2 to port 1 (port 3 must be vented). Once the pressure setting is reached at port 1, the spool shifts to restrict the inlet flow at port 2, which regulates the pressure at port 1.

**Ratings and specifications**
*Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)*

- Typical application pressure:
  - 350 bar (5000 psi) Port 2 to 1 @ 57 l/min (15 USgpm)
  - 210 bar (3000 psi) Port 2 to 1 @ 114 l/min (30 USgpm)
- Cartridge fatigue pressure (infinite life): 350 bar (5000 psi)
- Rated flow: 114 l/min (30 USgpm)
- Internal leakage: 189 ml/min (11.6 in³)
- Cavity: C-12-3 (See page 73)
- Standard housing materials: Aluminum or steel
- Temperature range: -40°C to 120°C (-40°F to 248°F)
- Fluids: All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
- Filtration: Cleanliness code 18/16/13
- Weight cartridge only: 0.4 kg. (0.89 lbs.)
- Seal kits: 02-180095 Buna–N

Viton® is a registered trademark of E.I. DuPont

**Reduced Pressure Characteristics**
Cartridge only

![Reduced Pressure Characteristics Graph]
Model Code

PRV11-12

**Function**

PRV11 – Pressure reducing valve

**Port size**

O – Cartridge only

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>10T</td>
<td>SAE 10</td>
</tr>
<tr>
<td>12T</td>
<td>SAE 12</td>
</tr>
<tr>
<td>4G</td>
<td>1/2” BSPP</td>
</tr>
<tr>
<td>6G</td>
<td>3/8” BSPP</td>
</tr>
</tbody>
</table>

**Seals**

Blank – Buna-N

V – Viton

**Adjustment**

S – Screw

C – Cap

K – Knob

**Valve housing material**

Omit for cartridge only

S – Steel

A – Aluminum

**Pressure range**

15 – 10–100 bar (150–1500 psi)

30 – 17–210 bar (250–3000 psi)

50 – 20– 350 bar (350–5000 psi)

**Factory set reduced pressure**

Within ranges in [7]

Blank – Normal factory setting at approximate mid-range.

User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:

10 – 70 bar (1000 psi)

10.5 – 72.4 bar (1050 psi)

Steel housings must be used for operating pressures above 210 bar (3000 psi)

**Dimensions**

mm (inch)

<table>
<thead>
<tr>
<th>“C” Adjustment</th>
<th>“K” Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>19,1 (0.75) hex</td>
<td>73,0 (2.88) Nominal</td>
</tr>
<tr>
<td>31.7 (1.25) hex</td>
<td>“S” Adjustment 4,8 (0.18) hex</td>
</tr>
<tr>
<td>1.063”–12 Thd.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>“C” Adjustment</th>
<th>Torque cartridge in housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>19,1 (0.75) hex</td>
<td>A – 81–95 Nm (60–70 lbf ft)</td>
</tr>
<tr>
<td>31.7 (1.25) hex</td>
<td>S – 102–115 Nm (75–85 lbf ft)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Fatigue rated</td>
</tr>
<tr>
<td>Steel Fatigue rated</td>
</tr>
<tr>
<td>10T SAE 10</td>
</tr>
<tr>
<td>12T SAE 12</td>
</tr>
<tr>
<td>4G 1/2” BSPP</td>
</tr>
<tr>
<td>6G 3/8” BSPP</td>
</tr>
</tbody>
</table>

See pages 76 and 79 for housings
PRV12-12
Pressure reducing/relieving valve

**Functional Symbol**

![Functional Symbol](image)

**Description**

The PRV12-12 is a pilot operated, sliding spool, adjustable cartridge type pressure reducing relieving valve. This valve maintains a constant secondary (lower) pressure in hydraulic subsystems regardless of pressure variations in the primary system. In addition to the reducing function, this valve also provides a flow path from the reduced pressure port to the tank port. If pressure in the secondary circuit exceeds the desired pressure, the valve opens this flow path to relieve excess pressure to tank.

**Operation**

The PRV12-12 is normally open, allowing flow from port 2 to port 1 (port 3 must be vented). Once the pressure setting is reached at port 1, the spool shifts to restrict the inlet flow at port 2, which regulates the pressure at port 1. If pressure at port 1 exceeds the predetermined setting of the valve, the spool will shift further and relieve excess pressure through port 3.

**Ratings and specifications**

*Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)*

- Typical application pressure: 350 bar (5000 psi) Port 2 to 1 and 2 to 3 @ 57 l/min (15 USgpm)
- 210 bar (3000 psi) Port 2 to 1 @ 114 l/min (30 USgpm)
- Cartridge fatigue pressure (infinite life): 350 bar (5000 psi)
- Rated flow: 114 l/min (30 USgpm)
- Internal leakage: 1,0 l/min (0.25 USgpm)
- Cavity: C-12–3 (See page 73)
- Standard housing materials: Aluminum or steel
- Temperature range: -40°C to 120°C (-40°F to 248°F)
- Fluids: All general purpose hydraulic fluids such as: MIL–H–5606, SAE 10, SAE 20, etc.
- Filtration: Cleanliness code 18/16/13
- Weight cartridge only: 0.4 kg. (0.89 lbs.)
- Seal kits: 02–165872 Buna–N 02–165886 Viton®

**Reduced Pressure Characteristics**

Cartridge only

![Flow vs Pressure Graph](image)

*Viton is a registered trademark of E.I. DuPont*
Model Code

PRV12 - 12(V) - * - (*) *** - **/**

1 Function
PRV12 - Pressure reducing/relieving valve

2 Size
12 - 12 Size

3 Port size
O - Cartridge only

Code | Port size | Housing number
--- | --- | ---
| | Aluminum Fatigue rated | Steel Fatigue rated |
10T | SAE 10 | 02–160642 |
12T | SAE 12 | 02–160646 |
4G | 1/2” BSPP | 02–161817 |
6G | 3/8” BSPP | 02–161814 |

4 Seals
Blank – Buna–N
V – Viton

5 Adjustment
S – Screw
C – Cap
K – Knob

5 Valve housing material
Omit for cartridge only
S – Steel
A – Aluminum

6 Dimensions
mm (inch)

Pressure range
15 – 10–100 bar (150–1500 psi)
30 – 17–210 bar (250–3000 psi)
50 – 24–350 bar (350–5000 psi)

Within ranges in
Blank – Normal factory setting at approximate mid–range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:

10 – 70 bar (1000 psi)
10.5 – 72.4 bar (1050 psi)

Aluminum housings can be used for pressures up to 210 bar (3000 psi)

Steel housings must be used for operating pressures above 210 bar (3000 psi)

Fatigue rated

7 Factory set reduced pressure

Torque cartridge in housing
A – 81–95 Nm (60–70 lbf ft)
S – 102–115 Nm (75–85 lbf ft)

“C” Adjustment
19.1 (0.75) hex
31.7 (1.25) hex
1.063 ”–12 Thd.

“S” Adjustment
∅ 22.17 (0.873)
∅ 23.75 (0.935)

“K” Adjustment
73.0 (2.88) Nominal
67.3 (2.65)

See pages 76 and 79 for housings
The PRV2-16 is a pilot operated, spool type screw-in cartridge pressure reducing/relieving valve.

This valve is normally open, allowing flow from port 2 to port 1. Port 3 must be vented. Once the pressure setting is reached at port 1, the spool shifts to restrict the inlet flow at port 2. This regulates the pressure at port 1. If pressure at port 1 exceeds the predetermined setting of the valve, the spool will shift further and relieve excess pressure through port 3.

Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports) .................. 415 bar (6000 psi)
Cartridge fatigue pressure (infinite life) .................. 350 bar (5000 psi)
Rated flow ............................................. 151 l/min (40 USgpm)
Cavity .................................................. C-16-3 (See page 73)
Standard housing materials ............................. Aluminum or steel
Temperature range .................................. -40°C to 120°C (-40°F to 248°F)
Fluids ........................................... All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration ........................................... Cleanliness code 18/16/13
Weight cartridge only .................................. 0.40 kg. (0.89 lbs.)
Seal kits ............................................ 565811 Buna–N 889810 Viton®

Viton is a registered trademark of E.I. DuPont
Model Code PRV2-16

PRV2 - 16 (V) - * - (S) *** - **

1 2 3 4 5 6 7 8

1 Function
PRV2 – Pressure reducing/relieving valve

2 Size
16 – 16 Size

3 Seals
Blank – Buna–N
V – Viton

4 Adjustment
C – Cap
K – Knob
S – Screw

5 Valve housing material
Blank – Aluminum
S – Steel

6 Port size
O – Cartridge only

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Aluminum Light duty</td>
</tr>
<tr>
<td>6B</td>
<td>3/4” BSPP</td>
<td>02–175465</td>
</tr>
<tr>
<td>4G</td>
<td>1/2” BSPP</td>
<td>876720</td>
</tr>
<tr>
<td>6G</td>
<td>3/4” BSPP</td>
<td>876722</td>
</tr>
<tr>
<td>10H</td>
<td>SAE 10</td>
<td>876721</td>
</tr>
<tr>
<td>12H</td>
<td>SAE 12</td>
<td>876723</td>
</tr>
<tr>
<td>10T</td>
<td>SAE 10</td>
<td></td>
</tr>
<tr>
<td>12T</td>
<td>SAE 12</td>
<td>566152</td>
</tr>
</tbody>
</table>

See pages 76 and 79 for housings

7 Cracking pressure range
30 – 34 - 210 bar (500–3000 psi)
60 – 70 - 415 bar (1000–6000 psi)

Aluminum housings can be used for pressures up to 210 bar (3000 psi)

Steel housings must be used for operating pressures above 210 bar (3000 psi)

8 Factory set reduced pressure
Within ranges in 7
Blank – Normal factory setting at approximate mid–range.
User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
10.5 – 72.4 bar (1050 psi)

Dimensions

<table>
<thead>
<tr>
<th>mm (inch)</th>
<th>Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>71.5 (2.81)</td>
<td>“S” Adjustment 4.7 (0.18) hex</td>
</tr>
<tr>
<td>57.1 (2.25)</td>
<td>“C” Adjustment</td>
</tr>
<tr>
<td>60.3 (2.37)</td>
<td></td>
</tr>
<tr>
<td>38.1 (1.50) hex</td>
<td></td>
</tr>
<tr>
<td>1.312”-12 Thd.</td>
<td></td>
</tr>
<tr>
<td>Ø 26.95 (1.061)</td>
<td></td>
</tr>
<tr>
<td>Ø 28.55 (1.124)</td>
<td></td>
</tr>
</tbody>
</table>

Torque cartridge in housing
A – 108–122 Nm (80–90 lbf ft)
S – 136–149 Nm (100–110 lbf ft)
**PRV12-10**

*Pressure reducing/relieving valve*

### Functional Symbol

![Functional Symbol](image)

### Description

The PRV12-10 is a pilot operated, spool type, screw-in cartridge pressure reducing/relieving valve.

### Operation

This valve is normally open, allowing flow from port 2 to port 1 (port 3 must be vented). Once the pressure setting is reached at port 1, the spool shifts to restrict the inlet flow at port 2, which regulates the pressure at port 1. If pressure at port 1 exceeds the predetermined setting of the valve, the spool will shift further and relieve excess pressure through port 3.

### Ratings and specifications

*Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical application pressure (all ports)</td>
<td>350 bar (5000 psi)</td>
</tr>
<tr>
<td>Cartridge fatigue pressure (infinite life)</td>
<td>350 bar (5000 psi)</td>
</tr>
<tr>
<td>Rated flow</td>
<td>45 l/min (12 USgpm)</td>
</tr>
<tr>
<td>Cracking pressure</td>
<td>15 – 8,5 to 100 bar (125 – 1500 psi)</td>
</tr>
<tr>
<td></td>
<td>30 – 17,0 to 210 bar (250 – 3000 psi)</td>
</tr>
<tr>
<td></td>
<td>50 – 38 to 350 bar (550 – 5000 psi)</td>
</tr>
<tr>
<td>Cavity</td>
<td>C-10-3 (See page 73)</td>
</tr>
<tr>
<td>Standard housing materials</td>
<td>Aluminum or steel</td>
</tr>
<tr>
<td>Temperature range</td>
<td>-40 to 120°C (-40°F to 248°F)</td>
</tr>
<tr>
<td>Fluids</td>
<td>All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.</td>
</tr>
<tr>
<td>Filtration</td>
<td>Cleanliness code 18/16/13</td>
</tr>
<tr>
<td>Weight cartridge only</td>
<td>0.24 kg. (0.54 lbs.)</td>
</tr>
<tr>
<td>Seal kits</td>
<td>565804 Buna-N 889599 Viton®</td>
</tr>
</tbody>
</table>

*Viton is a registered trademark of E.I.DuPont*

### Reduced Pressure Characteristics

*Cartridge only (Max. setting)*

<table>
<thead>
<tr>
<th>Flow in l/min (21.8 cSt oil @ 49°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>C</td>
</tr>
</tbody>
</table>

![Reduced Pressure Characteristics](image)

**Flow in USgpm (105 SUS oil @ 120°F)**

<table>
<thead>
<tr>
<th>Flow in USgpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port 1 to 3</td>
</tr>
<tr>
<td>Port 2 to 1</td>
</tr>
<tr>
<td>40</td>
</tr>
<tr>
<td>5000</td>
</tr>
<tr>
<td>Regulated Pressure psi</td>
</tr>
<tr>
<td>12</td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>C</td>
</tr>
</tbody>
</table>

*Flow in USgpm (105 SUS oil @ 120°F)*

**Regulated Pressure bar**

<table>
<thead>
<tr>
<th>Regulated Pressure bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
</tr>
</tbody>
</table>

**Port 1 to 3**

**Port 2 to 1**
**Model Code**

**PRV12-10**

![Model Code Diagram](attachment:image.png)

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3B</td>
<td>3/8” BSPP</td>
<td>02–173358</td>
</tr>
<tr>
<td>2G</td>
<td>1/4” BSPP</td>
<td>876705</td>
</tr>
<tr>
<td>3G</td>
<td>3/8” BSPP</td>
<td>876714</td>
</tr>
<tr>
<td>6H</td>
<td>SAE 6</td>
<td>876704</td>
</tr>
<tr>
<td>8H</td>
<td>SAE 8</td>
<td>876711</td>
</tr>
<tr>
<td>6T</td>
<td>SAE 6</td>
<td>566182</td>
</tr>
<tr>
<td>8T</td>
<td>SAE 6</td>
<td>02–175124</td>
</tr>
</tbody>
</table>

See pages 76 and 79 for housings.

- **Function**: PRV12 – Pressure reducing/relieving valve
- **Seals**: Blank – Buna–N, V – Viton
- **Adjustment**: C – Cap, F – Factory set, I – Internal, K – Knob, S – Screw
- **Valve housing material**: Blank – Aluminum, S – Steel

**Dimensions (mm (inch))**

- **“I” Adjustment**: 19.1 (0.75) hex
- **“F” Adjustment**: 80.0 (3.13)
- **“S” Adjustment**: 25.4 (1.00) hex
- **“C” Adjustment**: Ø 38.1 (1.50)

- **Cracking pressure range**
  - 15 – 8.5–100 bar (125–1500 psi)
  - 30 – 17.0–210 bar (250–3000 psi)
  - 50 – 38–350 bar (550–5000 psi)

- **Factory set reduced pressure**
  - Within ranges in **Blank** – Normal factory setting at approximate mid-range.
  - User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
    - 10 – 70 bar (1000 psi)
    - 10.5 – 72.4 bar (1050 psi)

- **Torque cartridge in housing**
  - A – 47–54 Nm (35–40 lbf ft)
  - S – 68–75 Nm (50–55 lbf ft)

- **Aluminum housings** can be used for pressures up to 210 bar (3000 psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).
PSV2-8
Pressure sequence valve

**Description**
The PSV2-8 is an externally piloted, direct acting, sliding spool, adjustable, pressure sequence valve.

**Operation**
The PSV2-8 remains closed until the predetermined pressure is reached at port 1, which then allows flow from port 3 to port 2.

**Ratings and specifications**
*Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)*

- Typical application pressure (all ports) 210 bar (3000 psi)
- Cartridge fatigue pressure (infinite life) 210 bar (3000 psi)
- Cracking pressure ranges
  - 13 – 3.4 – 90 bar (50 – 1300 psi)
  - 30 – 35 – 210 bar (500 – 3000 psi)
- Rated flow 23 l/min (6 USgpm)
- Reseat pressure More than 90% of cracking pressure
- Internal leakage 82 cm³/min. (5 in³/min) @ 210 bar (3000 psi)
- Hysteresis less than 3 bar (45 psi)
- Temperature range -40 to 120°C (-40 to 248°F)
- Cavity C-8 – 3 (See page 73)
- Fluids All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
- Filtration Cleanliness code 18/16/13
- Standard housing materials Aluminum
- Weight cartridge only 0.21 kg (0.47 lbs.)
- Seal kits 02-160755 Buna N 02-160756 Viton®

Viton is a registered trademark of E.I.DuPont
Model Code PSV2-8

**PSV2 - 8 (V) - * - (A) ** - ** / **

<table>
<thead>
<tr>
<th>1</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSV2 — Pressure sequence valve</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 – 8 Size</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3</th>
<th>Seals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank – Buna– N</td>
<td></td>
</tr>
<tr>
<td>V – Viton</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4</th>
<th>Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>C – Cap</td>
<td></td>
</tr>
<tr>
<td>K – Knob</td>
<td></td>
</tr>
<tr>
<td>S – Screw</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5</th>
<th>Valve housing material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omit for cartridge only</td>
<td></td>
</tr>
<tr>
<td>A – Aluminum</td>
<td></td>
</tr>
</tbody>
</table>

**Maximum operating pressure 210 bar (3000 psi)**

<table>
<thead>
<tr>
<th>6</th>
<th>Port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>O – Cartridge only</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td>4T</td>
<td>SAE 4</td>
<td>02–160741</td>
</tr>
<tr>
<td>6T</td>
<td>SAE 6</td>
<td>02–160742</td>
</tr>
<tr>
<td>2G</td>
<td>1/4” BSPP</td>
<td>02–160739</td>
</tr>
<tr>
<td>3G</td>
<td>3/8” BSPP</td>
<td>02–160740</td>
</tr>
</tbody>
</table>

See page 76 for housings

<table>
<thead>
<tr>
<th>7</th>
<th>Cracking pressure range</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 – 3.4– 90 bar (50-1300 psi)</td>
<td></td>
</tr>
<tr>
<td>30 – 35– 210 bar (500-3000 psi)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8</th>
<th>Pressure setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optional – Specify in 100 psi increments</td>
<td></td>
</tr>
<tr>
<td>If not specified, set at:</td>
<td></td>
</tr>
<tr>
<td>13 – 44 bar (650 psi)</td>
<td></td>
</tr>
<tr>
<td>30 – 100 bar (1500 psi)</td>
<td></td>
</tr>
</tbody>
</table>

**Dimensions**

**mm (inch)**

**“C” Adjustment**

12,7 (0.50) hex

**“S” Adjustment**

4,0 (0.15) hex

0.750”–16 Thd.

**Torque cartridge in housing**

34–41 Nm (25–30 lbf ft)

K option knob

Ø 31,8 (1.25) nominal

22,2 (0.87) hex
PSV4-8
Pressure sequence valve

**Description**
The PSV4-8 is an external pilot, direct acting, sliding spool, adjustable, pressure sequence valve.

**Operation**
The PSV4-8 remains closed until a predetermined pressure is applied at pilot port 1, which then allows flow from port 3 to port 2.

**Ratings and specifications**
*Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)***

- Typical application pressure (all ports) 350 bar (5000 psi)
- Cartridge fatigue pressure (infinite life) 280 bar (4000 psi)
- Rated flow 15 l/min (4 USgpm)
- Cracking pressure ranges
  - 15 – 28 – 100 bar (400 – 1500 psi)
  - 30 – 3,4 – 210 bar (50 – 3000 psi)
  - 50 – 124 – 350 bar (1800 – 5000 psi)
- Reseat pressure More than 90% of cracking pressure
- Internal leakage 5 in³/min @ 210 bar (3000 psi)
- Hysteresis less than 3 bar (45 psi)
- Temperature range -40°C to 120°C (-40°F to 248°F)
- Cavity C–8–3 (See page 73)
- Fluids All general purpose hydraulic fluids such as: MIL–H–5606, SAE 10, SAE 20, etc.
- Filtration Cleanliness code 18/16/13
- Standard housing materials Aluminum or steel
- Weight cartridge only 0.21 kg (0.47 lbs.)
- Seal kits 02–160755 Buna N
  02–160756 Viton®

*Viton is a registered trademark of E.I.DuPont*

**Pressure Drop Curve**
*Port 3 to 2, valve fully open*  
*Cartridge only*

---

Flow in L/min 21.8 cSt oil @ 49°C

Flow in USgpm 105 SUS oil @ 120°F
Function
PSV4 – Pressure sequence valve

Size
8 – 8 Size

Seals
Blank – Buna–N
V – Viton

Adjustment
C – Cap
K – Knob
S – Screw

Valve housing material
Omit for cartridge only
S – Steel
A – Aluminum

Port size
O – Cartridge only

Code Port size Housing number

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td>4T</td>
<td>SAE 4</td>
<td>02–160741</td>
</tr>
<tr>
<td>6T</td>
<td>SAE 6</td>
<td>02–160742</td>
</tr>
<tr>
<td>2G</td>
<td>1/4” BSPP</td>
<td>02–160739</td>
</tr>
<tr>
<td>3G</td>
<td>3/8” BSPP</td>
<td>02–160740</td>
</tr>
</tbody>
</table>

See pages 76 and 79 for housings

Cracking pressure ranges
15 – 28–100 bar (400-1500 psi)
30 – 3.4–210 bar (50-3000 psi)
50 – 124–350 bar (1800-5000 psi)

Pressure setting
Optional – Specify in 100 psi increments
If not specified, set at:
15 – 52 bar (750 psi)
30 – 100 bar (1500 psi)
50 – 175 bar (2500 psi)

Dimensions
mm (in)

C “Adjustment
12.7 (0.50) hex

S” Adjustment
4.0 hex (0.15)

68.3 (2.68)
71.3 (2.81)
76.5 (3.02)
79.2 (3.12)

Full out

22.2 (0.87) hex

K option knob
∅ 31.8 (1.25) nominal

Torque cartridge in housing
34–41 Nm (25–30 lbf ft)
PSV2-10
Pressure sequence valve

Functional Symbol

Description
The PSV2-10 is a direct acting, spool type, externally piloted, internally drained screw-in cartridge pressure sequence valve.

Operation
This valve is normally closed until a predetermined pressure is applied at port 1. The spool then shifts and allows flow from port 3 to port 2.

Ratings and specifications
Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)
Typical application pressure (all ports) .............. 165 bar (2400 psi)
Cartridge fatigue pressure (infinite life) .............. 165 bar (2400 psi)
Rated flow ........................................... 23 l/min (6 USgpm)
Cavity .................................................. C-10–3 (See page 73)
Standard housing materials ............................. Aluminum
Temperature range ................................. -40 to 120°C (-40° to 248°F)
Fluids .................................................. All general purpose hydraulic fluids such as: MIL–H–5606, SAE 10, SAE 20, etc.
Filtration ............................................... Cleanliness code 18/16/13
Weight cartridge only .............................. 0,24 kg. (0.53 lbs.)
Seal kits ............................................... 565804 Buna–N 889599 Viton®

Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve
Cartridge only

Flow in l/min 21,8 cSt oil @ 49°C

Flow in USgpm 105 SUS oil @ 120°F
### Model Code
PSV2-10

#### PSV2 - 10 (V) - * - ** - *** / **

1 2 3 4 5 6 7

#### Function
PSV2 – Pressure sequence valve

#### Size

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3B</td>
<td>3/8” BSPP</td>
<td>02–173358</td>
</tr>
<tr>
<td>6G</td>
<td>SAE 6</td>
<td>566162</td>
</tr>
<tr>
<td>2G</td>
<td>1/4” BSPP</td>
<td>876705</td>
</tr>
<tr>
<td>3G</td>
<td>3/8” BSPP</td>
<td>876714</td>
</tr>
<tr>
<td>6H</td>
<td>SAE 6</td>
<td>876704</td>
</tr>
<tr>
<td>8H</td>
<td>SAE 8</td>
<td>876711</td>
</tr>
</tbody>
</table>

#### Seals
Blank – Buna–N
V – Viton

#### Adjustment

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Cap</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Factory</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>Internal</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>Knob</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>Screw</td>
<td></td>
</tr>
</tbody>
</table>

#### Cracking pressure range

- 2 – 3,5–14 bar (50–200 psi)
- 6 – 7–40 bar (100–600 psi)
- 12 – 14–80 bar (200–1200 psi)
- 24 – 30–165 bar (400–2400 psi)

#### Factory set reduced pressure
Within ranges in [6]
Blank – Normal factory setting at approximate mid-range.
User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
- 10 – 70 bar (1000 psi)
- 10.5 – 72,4 bar (1050 psi)

#### Dimensions

<table>
<thead>
<tr>
<th>mm (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I” Adjustment</td>
</tr>
<tr>
<td>“F” Adjustment</td>
</tr>
<tr>
<td>“C” Adjustment</td>
</tr>
<tr>
<td>“S” Adjustment</td>
</tr>
<tr>
<td>“K” Adjustment</td>
</tr>
<tr>
<td>15,82 (0.623)</td>
</tr>
<tr>
<td>17,42 (0.686)</td>
</tr>
</tbody>
</table>

Torque cartridge in housing 47–54 Nm (35–40 lbf ft)
PSV3-10
Pressure sequence valve

Functional Symbol

Description
The PSV3-10 is a direct acting, spool type, internally piloted, externally drained screw-in cartridge pressure sequence valve.

Operation
This valve is normally closed until a predetermined pressure is applied at port 1. The spool then shifts and allows flow from port 1 to port 2.

Ratings and specifications
Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)
Typical application pressure (all ports) ................. 165 bar (2400 psi)
Cartridge fatigue pressure (infinite life) ................. 165 bar (2400 psi)
Rated flow ......................................... 23 l/min (6 USgpm)
Cavity ............................................. C-10–3 (See page 73)
Standard housing materials ................................ Aluminum
Temperature range .................................. -40 to 120°C (-40° to 248°F)
Fluids ............................................. All general purpose hydraulic fluids such as:
MIL-H-5606, SAE 10, SAE 20, etc.
Filtration ........................................... Cleanliness code 18/16/13
Weight cartridge only ................................ 0.24 kg (0.53 lbs.)
Seal kits .......................................... 565804 Buna–N 889599 Viton®

Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve
Cartridge only
**Model Code**

**PSV3-10**

**PSV 3 - 10 (V) - * - ** - *** / **

1  2  3  4  5  6  7

---

### Function
- **PSV3** – Pressure sequence valve

### Size
- **10** – 10 Size

### Seals
- **Blank** – Buna-N
- **V** – Viton

### Adjustment
- **C** – Cap
- **F** – Factory
- **I** – Internal
- **K** – Knob
- **S** – Screw

### Port size
- **O** – Cartridge only

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3B</td>
<td>3/8&quot; BSPP</td>
<td>02–173358</td>
</tr>
<tr>
<td>6T</td>
<td>SAE 6</td>
<td>566162</td>
</tr>
<tr>
<td>2G</td>
<td>1/4&quot; BSPP</td>
<td>876705</td>
</tr>
<tr>
<td>3G</td>
<td>3/8&quot; BSPP</td>
<td>876714</td>
</tr>
<tr>
<td>6H</td>
<td>SAE 6</td>
<td>876704</td>
</tr>
<tr>
<td>8H</td>
<td>SAE 8</td>
<td>876711</td>
</tr>
</tbody>
</table>

See page 76 for housings

### Factory set reduced pressure
- **Blank** – Normal factory setting at approximate mid-range.
- **User requested settings** in 3,45 bar (50 psi) steps, coded as in the following examples:
  - **10** – 70 bar (1000 psi)
  - **10.5** – 72.4 bar (1050 psi)

### Cracking pressure range
- **2** – 3.5–14 bar (50–200 psi)
- **4** – 5–28 bar (75–400 psi)
- **6** – 7–40 bar (100–600 psi)
- **12** – 14–80 bar (200–1200 psi)
- **24** – 30–165 bar (400–2400 psi)

### Dimensions
- **mm (inch)**

![Dimensions Diagram]

**Torque cartridge in housing**

47–54 Nm (35–40 lbf ft)
### PSV4-10
Pressure sequence valves

#### Functional Symbol

![Functional Symbol Image]

#### Description

The PSV4-10 is a direct acting, spool type, externally piloted, internally drained screw-in cartridge pressure sequence valve.

#### Operation

This valve is normally closed until a predetermined pressure is applied at port 1. The spool then shifts and allows flow from port 3 to port 2.

#### Ratings and specifications

*Performance data is typical with fluid at *21.8 cSt (105 SUS) and *49°C (120°F)*

- Typical application pressure (all ports) .................... 380 bar (5500 psi)
- Cartridge fatigue pressure (infinite life) .................... 165 bar (2400 psi)
- Rated flow .............................................. 15 l/min (4 USgpm)
- Cavity ..................................................... C-10–3 (See page 73)
- Standard housing materials .................................. Aluminum or steel
- Temperature range ....................................... -40 to 120°C (-40°F to 248°F)
- Fluids ..................................................... All general purpose hydraulic fluids such as: MIL–H–5606, SAE 10, SAE 20, etc.
- Filtration .................................................. Cleanliness code 18/16/13
- Weight cartridge only ..................................... 0.24 kg. (0.53 lbs.)
- Seal kits .................................................... 565804 Buna–N 889599 Viton®

*Viton is a registered trademark of E.I.DuPont*

#### Pressure Drop Curve

*Cartridge only*

![Pressure Drop Curve Image]
Model Code

PSV4-10

**PSV4 - 10 (V) - * - (S) ** - ** / **

1 2 3 4 5 6 7

1 Function
PSV4 – Pressure sequence valve

2 Size
10 – 10 Size

3 Seals
Blank – Buna-N
V – Viton

4 Adjustment
C – Cap
F – Factory
I – Internal
K – Knob
S – Screw

5 Valve housing material
Blank – Aluminum
S – Steel

⚠️ Aluminum housings can be used for pressures up to 210 bar (3000 psi) Steel housings must be used for operating pressures above 210 bar (3000 psi)

6 Port size
O – Cartridge only

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Aluminum Light duty</td>
</tr>
<tr>
<td>3B</td>
<td>3/8&quot; BSPP</td>
<td>02–173358</td>
</tr>
<tr>
<td>2G</td>
<td>1/4&quot; BSPP</td>
<td></td>
</tr>
<tr>
<td>3G</td>
<td>3/8&quot; BSPP</td>
<td></td>
</tr>
<tr>
<td>6H</td>
<td>SAE 6</td>
<td></td>
</tr>
<tr>
<td>8H</td>
<td>SAE 8</td>
<td></td>
</tr>
<tr>
<td>6T</td>
<td>SAE 6</td>
<td>566162</td>
</tr>
<tr>
<td>8T</td>
<td>SAE 8</td>
<td></td>
</tr>
</tbody>
</table>

See pages 76 and 79 for housings

7 Cracking pressure range

<table>
<thead>
<tr>
<th>Code</th>
<th>Cracking pressure range</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>3.5–30 bar (50–450 psi)</td>
</tr>
<tr>
<td>9</td>
<td>7–62 bar (100–900 psi)</td>
</tr>
<tr>
<td>14</td>
<td>14–95 bar (200–1400 psi)</td>
</tr>
<tr>
<td>28</td>
<td>20–190 bar (3000–2800 psi)</td>
</tr>
<tr>
<td>56</td>
<td>35–380 bar (500–5600 psi)</td>
</tr>
</tbody>
</table>

Blank – Normal factory setting at approximate mid-range.
User requested settings in 3.45 bar (50 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
10.5 – 72.4 bar (1050 psi)

8 Factory set reduced pressure

<table>
<thead>
<tr>
<th>Code</th>
<th>Factory set reduced pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Within ranges in 7</td>
</tr>
</tbody>
</table>

Torque cartridge in housing
A – 47–54 Nm (35–40 lbf ft)
S – 68–75 Nm (50–55 lbf ft)

Dimensions

**mm (inch)**

- “I” Adjustment
- “F” Adjustment
- “C” Adjustment
- “K” Adjustment
- “S” Adjustment

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>58.0</td>
<td>(2.28)</td>
</tr>
<tr>
<td>25.4</td>
<td>(1.0) hex</td>
</tr>
<tr>
<td>0.875&quot;-14 Thd.</td>
<td></td>
</tr>
<tr>
<td>15.82</td>
<td>(0.623)</td>
</tr>
<tr>
<td>17.42</td>
<td>(0.686)</td>
</tr>
</tbody>
</table>
PSV8-10
Pressure sequence valve

Functional Symbol

Description
The PSV8-10 is a direct acting, normally open, spool type, externally piloted, externally drained screw-in cartridge pressure sequence valve.

Operation
This valve is normally open from port 3 to port 2 until a predetermined pressure is applied at port 1. The spool then shifts and blocks flow between port 3 and port 2. Port 4 must be vented.

Ratings and specifications
Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)
Typical application pressure (all ports) .................. 165 bar (2400 psi)
Cartridge fatigue pressure (infinite life) .................. 165 bar (2400 psi)
Rated flow ................................................. 23 l/min (6 USgpm)
Cavity ...................................................... C-10–4 (See page 74)
Standard housing materials ................................. Aluminum
Temperature range ........................................ -40 to 120°C (-40° to 248°F)
Fluids ....................................................... All general purpose hydraulic fluids such as:
MIL-H-5606, SAE 10, SAE 20, etc.
Filtration ..................................................... Cleanliness code 18/16/13
Weight cartridge only ....................................... 0.27 kg. (0.60 lbs.)
Seal kits ..................................................... 889625 Buna–N
566080 Viton®

CAUTION: When sudden pressure or velocity is applied at port 1, an orifice disc may be required. Consult factory.

Viton is a registered trademark of E.I.DuPont

Pressure Drop Curve
Port 3 to 2, valve fully open
Cartridge only

Flow in l/min 21.8 cSt oil @ 49°C
Flow in USgpm 105 SUS oil @ 120°F
Model Code

PSV8-10

PSV 8 - 10 (V) - * - ** - *** / **

1 2 3 4 5 6 7

1 Function
PSV8 – Pressure sequence valve

2 Size
10 – 10 Size

3 Seals
Blank – Buna-N
V – Viton

4 Adjustment
C – Cap
F – Factory
I – Internal
K – Knob
S – Screw

5 Port size
O – Cartridge only

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Aluminum Light duty</td>
</tr>
<tr>
<td>3B</td>
<td>3/8&quot; BSPP</td>
<td>02-179705</td>
</tr>
<tr>
<td>6T</td>
<td>SAE 6</td>
<td>566161</td>
</tr>
<tr>
<td>2G</td>
<td>1/4&quot; BSPP</td>
<td></td>
</tr>
<tr>
<td>3G</td>
<td>3/8&quot; BSPP</td>
<td></td>
</tr>
<tr>
<td>6H</td>
<td>SAE 6</td>
<td></td>
</tr>
<tr>
<td>8H</td>
<td>SAE 8</td>
<td></td>
</tr>
</tbody>
</table>

See page 77 for housings

6 Cracking pressure range
Within ranges in 3
Blank – Normal factory setting at approximate mid-range.
User requested settings in 3.45 bar (50 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
10.5 – 72.4 bar (1050 psi)

7 Factory set reduced pressure

Torque cartridge in housing
47–54 Nm (35–40 lbf ft)

Dimensions

mm (inch)

- "S" Adjustment 4.8 (0.18) hex
- "C" Adjustment
- "K" Adjustment Ø 38.1 (1.50)
- "I" Adjustment 7.9 (0.31) hex
- "F" Adjustment

58,0 (2.28)

85,0 (3.34)

25.4 (1.0) hex

0.875”-14 Thd.

Ø 15.80 (0.622)
Ø 17.40 (0.685)
Ø 19.00 (0.748)
PSV10-10
Pressure sequence valve

Functional Symbol

Description
The PSV10-10 is a direct acting, normally closed, spool type, externally piloted, externally drained screw-in cartridge pressure sequence valve.

Operation
This valve is normally closed from port 3 to port 2 until a predetermined pressure is applied at port 1. The spool then shifts and allows flow between port 3 and port 2. Port 4 must be vented.

Ratings and specifications
Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)

- Typical application pressure (all ports) .............. 165 bar (2400 psi)
- Cartridge fatigue pressure (infinite life) ............. 165 bar (2400 psi)
- Rated flow ........................................ 23 l/min (6 USgpm)
- Cavity .............................................. C-10-4 (See page 74)
- Standard housing materials ............................. Aluminum
- Temperature range ................................. -40 to 120°C (-40°F to 248°F)
- Fluids .............................................. All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
- Filtration ............................................. Cleanliness code 18/16/13
- Weight cartridge only ........................................ 0.27 kg (0.60 lbs.)
- Seal kits ............................................. 889625 Buna–N
  566080 Viton®

CAUTION: When sudden pressure or velocity is applied at port 1, an orifice disc may be required. Consult factory.

Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve
Port 3 to 2, valve fully open, spring omitted
Cartridge only

Flow in l/min 21.8 cSt oil @ 49°C

Flow in USgpm 105 SUS oil @ 120°F
Model Code PSV10-10

**Function**
PSV10 – Pressure sequence valve

**Size**
10 – 10 Size

**Seals**
Blank – Buna–N
V – Viton

**Adjustment**
C – Cap
F – Factory
I – Internal
K – Knob
S – Screw

**Port size**
O – Cartridge only

<table>
<thead>
<tr>
<th>Code</th>
<th>Port Size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3B</td>
<td>3/8” BSPP</td>
<td>02–179705</td>
</tr>
<tr>
<td>3T</td>
<td>SAE 6</td>
<td>566161</td>
</tr>
<tr>
<td>2G</td>
<td>1/4” BSPP</td>
<td>876709</td>
</tr>
<tr>
<td>3G</td>
<td>3/8” BSPP</td>
<td>876715</td>
</tr>
<tr>
<td>6H</td>
<td>SAE 6</td>
<td>876708</td>
</tr>
<tr>
<td>8H</td>
<td>SAE 8</td>
<td>876713</td>
</tr>
</tbody>
</table>

See page 77 for housings

**Cracking pressure range**

<table>
<thead>
<tr>
<th>Code</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3.5–14 bar (50–200 psi)</td>
</tr>
<tr>
<td>4</td>
<td>5–28 bar (75–400 psi)</td>
</tr>
<tr>
<td>6</td>
<td>7–40 bar (100–600 psi)</td>
</tr>
<tr>
<td>12</td>
<td>14–80 bar (200–1200 psi)</td>
</tr>
<tr>
<td>24</td>
<td>28–165 bar (400–2400 psi)</td>
</tr>
</tbody>
</table>

**Factory set reduced pressure**
Within ranges in Blank
Blank – Normal factory setting at approximate mid-range.
User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:

<table>
<thead>
<tr>
<th>Code</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>70 bar (1000 psi)</td>
</tr>
<tr>
<td>10.5</td>
<td>72.4 bar (1050 psi)</td>
</tr>
</tbody>
</table>

**Dimensions (mm (inch))**

- "C" Adjustment: 4,8 (0.18) hex
- "K" Adjustment: ø 38,1 (1.50)
- "S" Adjustment: 7,9 (0.31) hex
- "I" Adjustment: 25,4 (1.0) hex
- "F" Adjustment: 58,0 (2.28) hex

Torque cartridge in housing
47–54 Nm (35–40 lbf ft)
PSV1-10
Pressure sequence valve

**Functional Symbol**

**Description**
The PSV1-10 is a direct acting, spool type, internally piloted, externally drained screw-in cartridge pressure sequence valve.

**Operation**
This valve is normally closed until a predetermined pressure is reached at port 1. The spool then shifts and allows flow to port 2. Port 3 must be vented.

**Ratings and specifications**
*Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)*

- Typical application pressure (all ports) ................. 165 bar (2400 psi)
- Cartridge fatigue pressure (infinite life) ................. 165 bar (2400 psi)
- Rated flow ........................................ 23 l/min (6 USgpm)
- Cavity .............................................. C-10–3 (See page 73)
- Standard housing materials ................................. Aluminum
- Temperature range ...................................... -40 to 120°C (-40° to 248°F)
- Fluids .................................................. All general purpose hydraulic fluids such as: MIL–H–5606, SAE 10, SAE 20, etc.
- Filtration ................................................ Cleanliness code 18/16/13
- Weight cartridge only .................................. 0.24 kg (0.53 lbs.)
- Seal kits ............................................... 565804 Buna–N 889599 Viton®

Viton is a registered trademark of E.I.DuPont

**Pressure Drop Curve**

*Cartridge only*

![Pressure Drop Curve](chart.png)
Model Code PSV1-10

PSV1 - 10 (V) - * - ** - *** / **

1 2 3 4 5 6 7

Function
PSV1 – Pressure sequence valve

Size
10 – 10 Size

Seals
Blank – Buna–N
V – Viton

Adjustment
C – Cap
F – Factory
I – Internal
K – Knob
S – Screw

Port size
O – Cartridge only

Code | Port size        | Housing number
---|------------------|-----------------|
3B  | 3/8” BSPP       | 02–173358       |
6T  | SAE 6           | 566162          |
2G  | 1/4” BSPP       |                 |
3G  | 3/8” BSPP       | 876705          |
6H  | SAE 6           | 876714          |
8H  | SAE 8           | 876711          |

See page 76 for housings

Cracking pressure range
2 – 3.5–14 bar (50–200 psi)
6 – 7–40 bar (100–600 psi)
12 – 14–80 bar (200–1200 psi)
24 – 30–165 bar (400–2400 psi)

Factory set reduced pressure
Within ranges in
Blank – Normal factory setting at approximate mid-range.
User requested settings in 3.45 bar (50 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
10.5 – 72.4 bar (1050 psi)

Housing number
Aluminum Light duty
Aluminum Fatigue rated

Dimensions
mm (inch)

“K” Adjustment
Ø 38,1 (1.50)
“S” Adjustment
4.8 (0.18) hex
“C” Adjustment
19,1 (0.75) hex
19,1 (0.75) hex

Torque cartridge in housing
47–54 Nm (35–40 lbf ft)
PSV5-10
Pressure sequence valve

**Functional Symbol**

**Description**
The PSV5-10 is a direct acting, spool type, internally piloted, externally drained screw-in cartridge pressure sequence valve.

**Operation**
This valve is normally closed until a predetermined pressure is reached at port 1. The spool then shifts and allows flow to port 2. Port 3 must be vented.

**Ratings and specifications**
Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)

- Typical application pressure (all ports) .............. 380 bar (5500 psi)
- Cartridge fatigue pressure (infinite life) .............. 190 bar (2800 psi)
- Rated flow ........................................... 8 l/min (2 USgpm)
- Cavity ................................................. C-10–3 (See page 73)
- Standard housing materials .............................. Aluminum or steel
- Temperature range ................................... -40°C to 120°C (-40°F to 248°F)
- Fluids .................................................. All general purpose hydraulic fluids such as: MIL–H–5606, SAE 10, SAE 20, etc.
- Filtration ............................................ Cleanliness code 18/16/13
- Weight cartridge only ................................ 0.24 kg. (0.53 lbs.)
- Seal kits ............................................. 565804 Buna–N 889599 Viton®

Viton is a registered trademark of E.I. DuPont

**Pressure Drop Curve**
Cartridge only
Model Code

PSV5-10

<table>
<thead>
<tr>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSV5 – Pressure sequence valve</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>O – Cartridge only</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 – 10 Size</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank – Buna–N</td>
</tr>
<tr>
<td>V – Viton</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>C – Cap</td>
</tr>
<tr>
<td>F – Factory</td>
</tr>
<tr>
<td>I – Internal</td>
</tr>
<tr>
<td>K – Knob</td>
</tr>
<tr>
<td>S – Screw</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Valve housing material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank – Aluminum</td>
</tr>
<tr>
<td>S – Steel</td>
</tr>
</tbody>
</table>

Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings must be used for operating pressures above 210 bar (3000 psi).

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3B</td>
<td>3/8” BSPP</td>
<td>02–173358</td>
</tr>
<tr>
<td>2G</td>
<td>1/4” BSPP</td>
<td>876705 02–175127</td>
</tr>
<tr>
<td>3G</td>
<td>3/8” BSPP</td>
<td>876714 02–175128</td>
</tr>
<tr>
<td>6H</td>
<td>SAE 6</td>
<td>876704</td>
</tr>
<tr>
<td>8H</td>
<td>SAE 8</td>
<td>876711</td>
</tr>
<tr>
<td>6T</td>
<td>SAE 6</td>
<td>566162 02–175124</td>
</tr>
<tr>
<td>8T</td>
<td>SAE 8</td>
<td>02–175125</td>
</tr>
</tbody>
</table>

See pages 76 and 79 for housings.

<table>
<thead>
<tr>
<th>Cracking pressure range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within ranges in [7]</td>
</tr>
<tr>
<td>Blank – Normal factory setting at approximate mid-range.</td>
</tr>
</tbody>
</table>

User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:

- 10 – 70 bar (1000 psi)
- 10.5 – 72.4 bar (1050 psi)

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>mm (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I” Adjustment</td>
<td></td>
</tr>
<tr>
<td>“F” Adjustment</td>
<td></td>
</tr>
<tr>
<td>25.4 (1.0) hex</td>
<td></td>
</tr>
<tr>
<td>85.0 (3.34)</td>
<td></td>
</tr>
</tbody>
</table>

“C” Adjustment
“S” Adjustment
4,8 (0.18) hex

<table>
<thead>
<tr>
<th>Torque cartridge in housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>A – 47–54 Nm (35–40 lbf ft)</td>
</tr>
<tr>
<td>S – 68–75 Nm (50–55 lbf ft)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>“K” Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>∅ 38.1 (1.50)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>“K” Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>∅ 15.82 (0.623)</td>
</tr>
<tr>
<td>∅ 17.42 (0.686)</td>
</tr>
</tbody>
</table>

25.4 (1.0) hex
PSV7-10
Pressure sequence valve

Functional Symbol
The PSV7-10 is a direct acting, spool type, internally piloted, internally drained screw-in cartridge pressure sequence valve.

Operation
This valve is normally closed until a predetermined pressure is reached at port 1. The spool then shifts and allows flow from port 1 to port 2. Port 3 must be vented.

Ratings and specifications
Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)
Typical application pressure (all ports) 125 bar (1800 psi)
Cartridge fatigue pressure (infinite life) 125 bar (1800 psi)
Rated flow 23 l/min (6 USgpm)
Cavity C-10–3 (See page 73)
Standard housing materials Aluminum
Temperature range -40 to 120°C (-40°F to 248°F)
Fluids All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration Cleanliness code 18/16/13
Weight cartridge only 0.24 kg (0.53 lbs.)
Seal kits 565804 Buna–N 889599 Viton®

Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve
Cartridge only

Flow in l/min 21.8 cSt oil @ 49°C
Flow in USgpm 105 SUS oil @ 120°F
Model Code

PSV7-10

PSV 7 - 10 (V) - * – ** – *** / **

1 2 3 4 5 6 7

1 Function
PSV7 – Pressure sequence valve

2 Size
10 – 10 Size

3 Seals
Blank – Buna-N
V – Viton

4 Adjustment
C – Cap
F – Factory
I – Internal
K – Knob
S – Screw

5 Port size
O – Cartridge only

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3B</td>
<td>3/8 BSPP</td>
<td>02–173358</td>
</tr>
<tr>
<td>6T</td>
<td>SAE 6</td>
<td>566162</td>
</tr>
<tr>
<td>2G</td>
<td>1/4 BSPP</td>
<td>876705</td>
</tr>
<tr>
<td>3G</td>
<td>3/8 BSPP</td>
<td>876714</td>
</tr>
<tr>
<td>6H</td>
<td>SAE 6</td>
<td>876704</td>
</tr>
<tr>
<td>8H</td>
<td>SAE 8</td>
<td>876711</td>
</tr>
</tbody>
</table>

See page 76 for housings

6 Factory set reduced pressure
Within ranges in 5
Blank – Normal factory setting at approximate mid-range.
User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:

- 10 – 70 bar (1000 psi)
- 10.5 – 72.4 bar (1050 psi)

7 Cracking pressure range

- 2 – 3.5–10 bar (50–150 psi)
- 3 – 5–20 bar (75–300 psi)
- 5 – 7–30 bar (100–450 psi)
- 10 – 14–65 bar (200–950 psi)
- 18 – 20–125 bar (300–1800 psi)

Dimensions

mm (inch)

- "S" Adjustment
- "F" Adjustment
- "C" Adjustment
- "K" Adjustment
- “I” Adjustment
- 25.4 (1.0) hex
- 25.4 (1.0) hex
- 80.0 (3.15)
- 0.875”-14 Thd.
- ∅ 15,80 (0.622)
- ∅ 17,40 (0.685)
- ∅ 38,1 (1.50)
- 47–54  Nm (35–40 lbf ft)
PSV11-12
Pressure sequence valve

Description
The PSV11-12 is a pilot operated, sliding spool, adjustable, cartridge type pressure sequence valve. This valve, which is internally piloted, controls the sequence of operations of two or more actuators.

Operation
The PSV11-12 valve remains normally closed until a predetermined pressure is reached at port 1, which then allows flow to port 2 (port 3 must be vented).

Ratings and specifications

Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)

- Typical application pressure: 350 bar (5000 psi)
- Cartridge fatigue pressure (infinite life): 350 bar (5000 psi)
- Rated flow: 114 l/min (30 US gpm)
- Crack pressure set with: 1 l/min (0.25 US gpm) from port “1” to “2”
- Reseat pressure: More than 90% of crack pressure
- Hysteresis: Less than 3 bar (45 psi)
- Internal leakage: 189 ml/min (11.6 in³/min) @ 80% crack press.
- Overshoot: Less than 15% of max. press. range with flow step of 30 US gpm at pressure rise rate of 100,000 psi/sec.
- Repeatability: +/- 1% maximum pressure range
- Cavity: C-12-3S (See page 73)
- Standard housing materials: Aluminum or steel
- Temperature range: -40 to 120°C (-40°F to 248°F)
- Fluids: All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
- Filtration: Cleanliness code 18/16/13
- Weight cartridge only: 0.4 kg. (0.89 lbs.)
- Seal kits: 02-180005 Buna-N

Viton is a registered trademark of E.I.DuPont

Sequence Pressure Override Characteristics
Cartridge only

Flow in l/min 21.8 cSt oil @ 49°C

Flow in US gpm 105 SUS oil @ 120°F
Model Code  PSV11-12

**Function**
PSV11 – Pressure sequence valve

**Size**
12 – 12 Size

**Seals**
Blank – Buna–N
V – Viton

**Adjustment**
C – Cap
K – Knob
S – Screw

**Valve housing material**
Omit for cartridge only
S – Steel
A – Aluminum

**Port size**
O – Cartridge only

**Pressure range**
15 – 10–100 bar (150–1500 psi)
30 – 17–210 bar (250–3000 psi)
50 – 24–350 bar (350–5000 psi)

Steel housings must be used for operating pressures above 210 bar (3000 psi)

**Pressure range**

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Aluminum Fatigue rated</td>
</tr>
<tr>
<td>10T</td>
<td>SAE 10</td>
<td>02–178268</td>
</tr>
<tr>
<td>12T</td>
<td>SAE 12</td>
<td>02–178269</td>
</tr>
<tr>
<td>4G</td>
<td>1/2&quot; BSPP</td>
<td>02–178270</td>
</tr>
<tr>
<td>6G</td>
<td>3/4&quot; BSPP</td>
<td>02–178271</td>
</tr>
</tbody>
</table>

See pages 76 and 79 for housings

**Factory set reduced pressure**
Within ranges in "K"
Blank – Normal factory setting at approximate mid-range. User requested settings in 3.45 bar (50 psi) steps, coded as in the following examples:
10 – 70 bar (1000 psi)
10.5 – 72.4 bar (1050 psi)

**Dimensions**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>mm (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>“C” Adjustment</td>
<td>19.1 (0.75) hex</td>
</tr>
<tr>
<td>31.7 (1.25) hex</td>
<td></td>
</tr>
<tr>
<td>1.062”–12 Thd.</td>
<td></td>
</tr>
<tr>
<td>57.9 (2.28)</td>
<td></td>
</tr>
<tr>
<td>22.17 (0.873)</td>
<td></td>
</tr>
<tr>
<td>23.75 (0.935)</td>
<td></td>
</tr>
</tbody>
</table>

**Torque cartridge in housing**
A – 81–95 Nm (60–70 lbf ft)
S – 102–115 Nm (75–85 lbf ft)
PSV1-16
Pressure sequence valve

**Functional Symbol**

The PSV1-16 is a pilot operated, spool type, internally piloted, externally drained screw-in cartridge pressure sequence valve.

**Operation**

This valve is normally closed until a predetermined pressure is reached at port 1. The spool then shifts and allows flow to port 2. Port 3 must be vented.

**Ratings and specifications**

*Performance data is typical with fluid at 21.8 cSt (105 SUS) and 49°C (120°F)*

- Typical application pressure (all ports) ..................... 415 bar (6000 psi)
- Cartridge fatigue pressure (infinite life) .................... 350 bar (5000 psi)
- Rated flow ................................................. 95 l/min (25 USgpm)
- Cavity .................................................. C-16–3 (See page 73)
- Standard housing materials ................................. Aluminum or steel
- Temperature range ...................................... -40 to 120°C (-40°F to 248°F)
- Fluids ..................................................... All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
- Filtration .................................................. Cleanliness code 18/16/13
- Weight cartridge only .................................. 0.24 kg. (0.53 lbs.)
- Seal kits .................................................... 565811 Buna–N
  889610 Viton®

Viton is a registered trademark of E.I.DuPont

**Pressure Drop Curve**

Port 1 to 2, valve fully open, spring omitted

Cartridge only

![Pressure Drop Curve Graph](image-url)

*Pressure Drop psi vs Flow in l/min (21.8 cSt oil @ 49°C)*

*Pressure Drop bar vs Flow in USgpm (105 SUS oil @ 120°F)*
**Function**

PSV1—Pressure sequence valve

**Size**

16 — 16 Size

**Seals**

Blank—Buna-N

V — Viton

**Adjustment**

C — Cap

K — Knob

S — Screw

**Valve housing material**

Blank — Aluminum

S — Steel

**Port size**

O — Cartridge only

<table>
<thead>
<tr>
<th>Code</th>
<th>Port size</th>
<th>Housing number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Aluminum Light duty</td>
</tr>
<tr>
<td>6B</td>
<td>3/4” BSPP</td>
<td>02–175465</td>
</tr>
<tr>
<td>4G</td>
<td>1/2” BSPP</td>
<td>876720</td>
</tr>
<tr>
<td>6G</td>
<td>3/4” BSPP</td>
<td>876722</td>
</tr>
<tr>
<td>10H</td>
<td>SAE 10</td>
<td>876721</td>
</tr>
<tr>
<td>12H</td>
<td>SAE 12</td>
<td>876723</td>
</tr>
<tr>
<td>10T</td>
<td>SAE 10</td>
<td></td>
</tr>
<tr>
<td>12T</td>
<td>SAE 12</td>
<td>566152</td>
</tr>
</tbody>
</table>

See pages 76 and 79 for housings

**Cracking pressure range**

30 — 35–210 bar (500–3000 psi)

60 — 70–415 bar (1000–6000 psi)

Aluminum housings can be used for pressures up to 210 bar (3000 psi)

Steel housings must be used for operating pressures above 210 bar (3000 psi)

**Factory set reduced pressure**

Within ranges in O

Blank — Normal factory setting at approximate mid-range.

User requested settings in 3.45 bar (50 psi) steps, coded as in the following examples:

10 — 70 bar (1000 psi)

10.5 — 72.4 bar (1050 psi)

Dimensions

mm (inch)

“S” Adjustment 6.35 (0.25) hex

“C” Adjustment 19.1 (0.75) hex

“K” Adjustment 57.1 (2.25)

Torque cartridge in housing

A — 108–122 Nm (80–90 lbf ft)

S — 136–149 Nm (100–110 lbf ft)
C-**-2 Cavity Dimensions

Cavity bores can be machined accurately in aluminum or steel. The necessary UNF, or UN threads may be machined using standard small tools, possibly already in your machine shop or from a local tool supplier. For in depth advice on the machining of cavities, consult your Vickers sales specialist.

Either you, our customer, or Vickers can design and manufacture customized manifolds or housings dedicated to individual applications. We call the resulting valve packages Modular Circuit Designs (MCDs). Cartridges selected for your application can be accommodated in one or more MCDs, according to your requirements.

<table>
<thead>
<tr>
<th>Cavity</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>P</th>
<th>R</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-8-2</td>
<td>30.16 (1.188)</td>
<td>20.65 (0.813)</td>
<td>17.47 (0.688)</td>
<td>.750”-16</td>
<td>12.70 (0.500)</td>
<td>2.54/2.92 (0.100/0.115)</td>
<td>19.05 (0.750)</td>
<td>12.72 (0.501)</td>
<td>30.17 (1.188)</td>
<td>14.68 (0.578)</td>
<td>8.74 (0.344)</td>
<td>11.11 (0.438)</td>
</tr>
<tr>
<td>C-10-2</td>
<td>30.16 (1.188)</td>
<td>24.00 (0.945)</td>
<td>20.62 (0.812)</td>
<td>.875”-14</td>
<td>15.88 (0.625)</td>
<td>2.54/2.92 (0.100/0.115)</td>
<td>23.81 (0.937)</td>
<td>15.90 (0.626)</td>
<td>33.32 (1.312)</td>
<td>18.23 (0.718)</td>
<td>11.11 (0.437)</td>
<td>14.29 (0.562)</td>
</tr>
<tr>
<td>C-12-2 (U)</td>
<td>38.10 (1.500)</td>
<td>29.15 (1.148)</td>
<td>24.76 (0.975)</td>
<td>1.062”-12</td>
<td>22.22 (0.875)</td>
<td>3.30/3.68 (0.130/0.145)</td>
<td>34.92 (1.375)</td>
<td>23.82 (0.938)</td>
<td>46.35 (1.825)</td>
<td>27.94 (1.090)</td>
<td>12.70 (0.500)</td>
<td>22.22 (0.875)</td>
</tr>
<tr>
<td>C-16-2</td>
<td>44.45 (1.750)</td>
<td>35.58 (1.401)</td>
<td>31.34 (1.234)</td>
<td>1.312”-12</td>
<td>22.22 (0.875)</td>
<td>3.30/3.68 (0.130/0.145)</td>
<td>34.14 (1.344)</td>
<td>28.62 (1.127)</td>
<td>46.84 (1.844)</td>
<td>24.60 (0.968)</td>
<td>19.05 (0.750)</td>
<td>19.05 (0.750)</td>
</tr>
<tr>
<td>C-20-2</td>
<td>57.66 (2.270)</td>
<td>43.59 (1.716)</td>
<td>39.12 (1.540)</td>
<td>1.625”-12</td>
<td>20.64 (0.812)</td>
<td>3.35/3.73 (0.132/0.147)</td>
<td>44.45 (1.750)</td>
<td>36.55 (1.439)</td>
<td>58.72 (2.312)</td>
<td>30.96 (1.218)</td>
<td>25.40 (1.000)</td>
<td>30.16 (1.187)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cavity</th>
<th>W</th>
<th>Y</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-12-2U (only)</td>
<td>30.83 (1.214)</td>
<td>12.70 (0.500)</td>
<td>34.29 (1.350)</td>
</tr>
</tbody>
</table>
### C-**-3(S) Cavity Dimensions

#### Dimensions

<table>
<thead>
<tr>
<th>mm (inch)</th>
<th>A Spotface</th>
<th>B +0.051 ( ±0.004)</th>
<th>C +0.051 ( ±0.004)</th>
<th>D Thread</th>
<th>E Full Thread</th>
<th>F</th>
<th>G</th>
<th>H ±0.0254 ( ±0.001)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-8-3</td>
<td>30.16 (1.188)</td>
<td>20.65 (0.813)</td>
<td>17.47 (0.688)</td>
<td>0.750&quot;-16</td>
<td>12.70 (0.500)</td>
<td>2.54/2.92 (0.100/0.115)</td>
<td>18.24 (0.718)</td>
<td>15.90 (0.626)</td>
</tr>
<tr>
<td>C-10-3</td>
<td>30.16 (1.188)</td>
<td>24.00 (0.945)</td>
<td>20.62 (0.812)</td>
<td>0.875&quot;-14</td>
<td>15.88 (0.625)</td>
<td>2.54/2.92 (0.100/0.115)</td>
<td>21.59 (0.850)</td>
<td>17.50 (0.689)</td>
</tr>
<tr>
<td>C-10-3S</td>
<td>30.18 (1.188)</td>
<td>24.00 (0.945)</td>
<td>20.62 (0.812)</td>
<td>0.875&quot;-14</td>
<td>14.29 (0.562)</td>
<td>2.54/2.92 (0.100/0.115)</td>
<td>16.51 (0.650)</td>
<td>19.08 (0.751)</td>
</tr>
<tr>
<td>C-12-3</td>
<td>38.10 (1.500)</td>
<td>29.15 (1.148)</td>
<td>24.76 (0.975)</td>
<td>1.062&quot;-12</td>
<td>22.22 (0.875)</td>
<td>3.30/3.68 (0.130/0.145)</td>
<td>34.92 (1.375)</td>
<td>23.82 (0.938)</td>
</tr>
<tr>
<td>C-12-3S</td>
<td>38.10 (1.500)</td>
<td>29.15 (1.148)</td>
<td>24.76 (0.975)</td>
<td>1.062&quot;-12</td>
<td>22.22 (0.875)</td>
<td>3.30/3.68 (0.130/0.145)</td>
<td>25.40 (1.000)</td>
<td>23.82 (0.938)</td>
</tr>
<tr>
<td>C-16-3</td>
<td>44.45 (1.750)</td>
<td>35.58 (1.401)</td>
<td>31.34 (1.234)</td>
<td>1.312&quot;-12</td>
<td>22.22 (0.875)</td>
<td>3.30/3.68 (0.130/0.145)</td>
<td>34.14 (1.344)</td>
<td>28.62 (1.127)</td>
</tr>
<tr>
<td>C-16-3S</td>
<td>44.45 (1.750)</td>
<td>35.58 (1.401)</td>
<td>31.34 (1.234)</td>
<td>1.312&quot;-12</td>
<td>17.46 (0.687)</td>
<td>3.30/3.68 (0.130/0.145)</td>
<td>20.62 (0.812)</td>
<td>28.62 (1.127)</td>
</tr>
</tbody>
</table>

#### 3-way cavity

- These diameters 0.051 mm (.002 inch) B unless otherwise specified.
- These diameters 0.025 mm (.001 inch) A unless otherwise specified.

#### 3-way short cavity (S)

<table>
<thead>
<tr>
<th>mm (inch)</th>
<th>J</th>
<th>K ±0.0254 ( ±0.001)</th>
<th>L</th>
<th>P</th>
<th>R Max. Dia.</th>
<th>S</th>
<th>T Max. Dia.</th>
<th>X Max. Dia.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-8-3</td>
<td>33.26 (1.270)</td>
<td>14.30 (0.563)</td>
<td>43.26 (1.703)</td>
<td>14.68 (0.578)</td>
<td>5.94 (0.234)</td>
<td>28.98 (1.141)</td>
<td>5.94 (0.234)</td>
<td>12.70 (0.500)</td>
</tr>
<tr>
<td>C-10-3</td>
<td>38.10 (1.500)</td>
<td>15.90 (0.626)</td>
<td>47.62 (1.875)</td>
<td>18.26 (0.719)</td>
<td>6.35 (0.250)</td>
<td>34.13 (1.344)</td>
<td>6.35 (0.250)</td>
<td>14.29 (0.562)</td>
</tr>
<tr>
<td>C-10-3S</td>
<td>38.48 (1.515)</td>
<td>17.50 (0.689)</td>
<td>47.62 (1.875)</td>
<td>14.29 (0.562)</td>
<td>3.18 (0.125)</td>
<td>30.96 (1.218)</td>
<td>13.49 (0.531)</td>
<td>15.88 (0.625)</td>
</tr>
<tr>
<td>C-12-3</td>
<td>57.78 (2.275)</td>
<td>22.25 (0.887)</td>
<td>69.21 (2.725)</td>
<td>27.94 (1.100)</td>
<td>12.70 (0.500)</td>
<td>50.80 (2.000)</td>
<td>12.70 (0.500)</td>
<td>20.62 (0.812)</td>
</tr>
<tr>
<td>C-12-3S</td>
<td>48.26 (1.900)</td>
<td>22.25 (0.887)</td>
<td>59.69 (2.350)</td>
<td>22.22 (0.875)</td>
<td>4.82 (0.190)</td>
<td>41.27 (1.625)</td>
<td>12.70 (0.500)</td>
<td>20.62 (0.812)</td>
</tr>
<tr>
<td>C-16-3</td>
<td>62.71 (2.469)</td>
<td>27.02 (1.064)</td>
<td>75.39 (2.968)</td>
<td>24.60 (0.968)</td>
<td>15.88 (0.626)</td>
<td>53.18 (2.093)</td>
<td>15.88 (0.625)</td>
<td>19.05 (0.750)</td>
</tr>
<tr>
<td>C-16-3S</td>
<td>46.02 (1.812)</td>
<td>25.45 (1.002)</td>
<td>55.58 (2.188)</td>
<td>16.67 (0.656)</td>
<td>6.35 (0.250)</td>
<td>37.31 (1.468)</td>
<td>15.88 (0.625)</td>
<td>19.05 (0.750)</td>
</tr>
</tbody>
</table>
C-**-4 Cavity Dimensions

Dimensions
mm (inch)

These diameters ☻ 0.051 mm (.002 inch) B
unless otherwise specified.

These diameters ☐ 0.025 mm (.001 inch) A
unless otherwise specified.

4-Way Cavity

<table>
<thead>
<tr>
<th>Cavity mm (inch)</th>
<th>A Spotface</th>
<th>B +0.051 0 ( +0.002 0)</th>
<th>C +0.051 0 ( +0.002 0)</th>
<th>D Thread</th>
<th>E Full Thread</th>
<th>F</th>
<th>G ±0.0254 (± 0.001)</th>
<th>H</th>
<th>J ±0.0254 (± 0.001)</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-10-4</td>
<td>30.16 (1.188)</td>
<td>24.00 (0.945)</td>
<td>20.62 (0.812)</td>
<td>0.875°-14</td>
<td>15.88 (0.625)</td>
<td>2.54/2.92 (0.100/0.115)</td>
<td>22.22 (0.875)</td>
<td>19.08 (0.751)</td>
<td>38.10 (1.500)</td>
<td>17.50 (0.689)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cavity mm (inch)</th>
<th>L</th>
<th>M ± 0.0254 (± 0.001)</th>
<th>N</th>
<th>P</th>
<th>R Max. Dia.</th>
<th>S</th>
<th>T Max. Dia.</th>
<th>U</th>
<th>V</th>
<th>X Max. Dia.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-10-4</td>
<td>53.98 (2.125)</td>
<td>15.90 (0.626)</td>
<td>63.50 (2.500)</td>
<td>18.26 (0.718)</td>
<td>6.35 (0.250)</td>
<td>34.13 (1.343)</td>
<td>6.35 (0.250)</td>
<td>50.00 (1.968)</td>
<td>6.35 (0.250)</td>
<td>14.29 (0.562)</td>
</tr>
</tbody>
</table>
C-**-2(U) Aluminum Housings  (Light Duty & Fatigue Rated)

<table>
<thead>
<tr>
<th>Housing</th>
<th>Part Number</th>
<th>Cavity (inch)</th>
<th>Mass kg (lb.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-10-2</td>
<td>02-175462</td>
<td>19,0 (0.75)</td>
<td>0.1 (0.35)</td>
</tr>
<tr>
<td>Light Duty</td>
<td></td>
<td>19,0 (0.75)</td>
<td></td>
</tr>
<tr>
<td>C-16-2</td>
<td>02-175463</td>
<td>25,4 (1.00)</td>
<td>0.4 (1.00)</td>
</tr>
<tr>
<td>Light Duty</td>
<td></td>
<td>25,4 (1.00)</td>
<td></td>
</tr>
</tbody>
</table>

Note: BSPP porting is designated by either “B” or “G” in the model code.
SAE porting is designated by either “H” or “T” in the model code.

<table>
<thead>
<tr>
<th>C-8-2 Fatigue Rated</th>
<th>C-10-2 Fatigue Rated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>Part Number</td>
</tr>
<tr>
<td>02-160727</td>
<td>02-160728</td>
</tr>
<tr>
<td>SAE 8</td>
<td>02-160732</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>C-12-2 Fatigue Rated</th>
<th>C-16-2 Fatigue Rated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>Part Number</td>
</tr>
<tr>
<td>02-160641</td>
<td>02-160644</td>
</tr>
<tr>
<td>SAE 10</td>
<td>02-160644</td>
</tr>
<tr>
<td>SAE 12</td>
<td>02-160644</td>
</tr>
</tbody>
</table>
# C-**-3(S) Aluminum Housings (Light Duty & Fatigue Rated)

<table>
<thead>
<tr>
<th>Housing</th>
<th>Ports 1, 2 &amp; 3</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-10-3 Light Duty</td>
<td>SAE 6</td>
<td>566162</td>
</tr>
<tr>
<td>C-16-3 Light Duty</td>
<td>3/8&quot; BSPP</td>
<td>02–173358</td>
</tr>
<tr>
<td>C-16-3S Light Duty</td>
<td>3/4&quot; BSPP</td>
<td>02–175465</td>
</tr>
<tr>
<td>C-10-3 Light Duty</td>
<td>SAE 12</td>
<td>566152</td>
</tr>
<tr>
<td>C-16-3 Light Duty</td>
<td>SAE 12</td>
<td>566141</td>
</tr>
</tbody>
</table>

Note: BSPP porting is designated by either “B” or “G” in the model code. SAE porting is designated by either “H” or “T” in the model code.

<table>
<thead>
<tr>
<th>Housing</th>
<th>Ports 1, 2 &amp; 3</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-10-3 Fatigue Rated</td>
<td>1/4&quot; BSPP</td>
<td>02–160739</td>
</tr>
<tr>
<td>C-16-3 Fatigue Rated</td>
<td>3/8&quot; BSPP</td>
<td>02–160740</td>
</tr>
<tr>
<td>C-16-3S Fatigue Rated</td>
<td>SAE 6</td>
<td>02–160741</td>
</tr>
<tr>
<td>C-10-3 Fatigue Rated</td>
<td>SAE 6</td>
<td>02–160742</td>
</tr>
<tr>
<td>C-12-3 Fatigue Rated</td>
<td>1/4&quot; BSPP</td>
<td>876705</td>
</tr>
<tr>
<td>C-12-3 Fatigue Rated</td>
<td>3/8&quot; BSPP</td>
<td>876714</td>
</tr>
<tr>
<td>C-12-3S Fatigue Rated</td>
<td>SAE 8</td>
<td>876704</td>
</tr>
<tr>
<td>C-12-3S Fatigue Rated</td>
<td>SAE 8</td>
<td>876711</td>
</tr>
<tr>
<td>C-16-3 Fatigue Rated</td>
<td>1/2&quot; BSPP</td>
<td>876720</td>
</tr>
<tr>
<td>C-16-3S Fatigue Rated</td>
<td>3/4&quot; BSPP</td>
<td>876726</td>
</tr>
<tr>
<td>C-16-3 Fatigue Rated</td>
<td>SAE 10</td>
<td>876722</td>
</tr>
<tr>
<td>C-16-3S Fatigue Rated</td>
<td>SAE 10</td>
<td>876721</td>
</tr>
<tr>
<td>C-16-3 Fatigue Rated</td>
<td>SAE 12</td>
<td>876727</td>
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<tr>
<th>Cavity mm (inch)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>Mass kg (lb.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-8-3 Fatigue Rated</td>
<td>63.5 (2.50)</td>
<td>31.8 (1.25)</td>
<td>66.6 (2.62)</td>
<td>38.1 (1.50)</td>
<td>19.0 (0.75)</td>
<td>3.4 (0.13)</td>
<td>15.5 (0.61)</td>
<td>29.8 (1.17)</td>
<td>7.1 (0.28)</td>
<td>13.0 (0.51)</td>
<td>0.4 (0.83)</td>
</tr>
<tr>
<td>C-10-3 Fatigue Rated</td>
<td>76.2 (3.00)</td>
<td>38.1 (1.50)</td>
<td>76.2 (3.00)</td>
<td>50.8 (2.00)</td>
<td>25.4 (1.00)</td>
<td>9.5 (0.37)</td>
<td>20.8 (0.81)</td>
<td>36.6 (1.44)</td>
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<td>19.0 (0.75)</td>
<td>0.7 (1.65)</td>
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<tr>
<td>C-12-3 Fatigue Rated</td>
<td>88.9 (3.50)</td>
<td>44.5 (1.75)</td>
<td>107.9 (4.25)</td>
<td>50.8 (2.00)</td>
<td>25.4 (1.00)</td>
<td>12.7 (0.50)</td>
<td>28.7 (1.13)</td>
<td>51.6 (2.03)</td>
<td>10.3 (0.41)</td>
<td>12.7 (0.50)</td>
<td>0.8 (1.80)</td>
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<tr>
<td>C-12-3S Fatigue Rated</td>
<td>88.9 (3.50)</td>
<td>44.5 (1.75)</td>
<td>101.6 (4.00)</td>
<td>50.8 (2.00)</td>
<td>25.4 (1.00)</td>
<td>12.7 (0.50)</td>
<td>23.0 (0.91)</td>
<td>42.1 (1.66)</td>
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<td>0.8 (1.80)</td>
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<tr>
<td>C-16-3 Fatigue Rated</td>
<td>114.3 (4.50)</td>
<td>60.3 (2.37)</td>
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<td>C-16-3S Fatigue Rated</td>
<td>114.3 (4.50)</td>
<td>60.3 (2.37)</td>
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<td>31.7 (1.25)</td>
<td>10.3 (0.40)</td>
<td>20.4 (0.80)</td>
<td>41.1 (1.62)</td>
<td>8.7 (0.34)</td>
<td>25.4 (1.00)</td>
<td>2.0 (4.50)</td>
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<table>
<thead>
<tr>
<th>Cavity mm (inch)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>Mass kg (lb.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-10-3 Light Duty</td>
<td>63.5 (2.50)</td>
<td>31.7 (1.25)</td>
<td>66.6 (2.62)</td>
<td>31.7 (1.25)</td>
<td>15.8 (0.62)</td>
<td>3.1 (0.12)</td>
<td>19.0 (0.75)</td>
<td>34.9 (1.37)</td>
<td>7.1 (0.28)</td>
<td>12.7 (0.50)</td>
<td>0.3 (0.64)</td>
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<tr>
<td>C-16-3 Light Duty</td>
<td>101.6 (4.00)</td>
<td>50.8 (2.00)</td>
<td>107.9 (4.25)</td>
<td>50.8 (2.00)</td>
<td>25.4 (1.00)</td>
<td>4.0 (0.16)</td>
<td>25.4 (1.00)</td>
<td>53.9 (2.12)</td>
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<td>1.0 (2.3)</td>
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<td>C-16-3S Light Duty</td>
<td>88.9 (3.50)</td>
<td>47.6 (1.87)</td>
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<td>60.3 (2.37)</td>
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<td>17.4 (0.68)</td>
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<td>8.7 (0.34)</td>
<td>19.0 (0.75)</td>
<td>0.7 (1.66)</td>
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</table>
# C-**-4 Aluminum Housings (Light Duty & Fatigue Rated)

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<thead>
<tr>
<th>Housing</th>
<th>Ports 1, 2, 3 &amp; 4</th>
<th>Part Number</th>
</tr>
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<tbody>
<tr>
<td>C-10-4 Light Duty</td>
<td>( \frac{3}{8} ) BSPP 02-179705</td>
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<td>876709</td>
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<tr>
<td>C-10-4 Fatigue Rated</td>
<td>( \frac{1}{4} ) BSPP</td>
<td>876715</td>
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<td>SAE 6</td>
<td>876708</td>
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<td>876713</td>
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Note: BSPP porting is designated by either “B” or “G” in the model code
SAE porting is designated by either “H” or “T” in the model code

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<th>Cavity mm (inch)</th>
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<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>Mass kg (lb.)</th>
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<td>63.5</td>
<td>31.7</td>
<td>82.5</td>
<td>31.7</td>
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<td>34.9</td>
<td>19.0</td>
<td>7.1</td>
<td>9.5</td>
<td>50.8</td>
<td>0.3 (0.72)</td>
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<tr>
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<td>76.2</td>
<td>38.1</td>
<td>88.9</td>
<td>50.8</td>
<td>25.4</td>
<td>9.5</td>
<td>36.6</td>
<td>20.8</td>
<td>7.1</td>
<td>12.7</td>
<td>52.5</td>
<td>0.9 (2.00)</td>
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## C-**-2(U) Steel Housings

<table>
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<tr>
<th>Housing</th>
<th>Ports 1 &amp; 2</th>
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<tr>
<td>C-8-2</td>
<td>1/4&quot; BSPP</td>
<td>02-160733</td>
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<tr>
<td></td>
<td>3/8&quot; BSPP</td>
<td>02-160734</td>
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<td>SAE 4</td>
<td>02-160736</td>
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<td>SAE 6</td>
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<td>C-10-2</td>
<td>1/4&quot; BSPP</td>
<td>02-175102</td>
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<td>3/8&quot; BSPP</td>
<td>02-175103</td>
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<td>SAE 6</td>
<td>02-175100</td>
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<td>02-175101</td>
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<td>C-12-2U</td>
<td>1/2&quot; BSPP</td>
<td>02-172512</td>
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<td>3/4&quot; BSPP</td>
<td>02-162922</td>
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<td>SAE 10</td>
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<td>SAE 12</td>
<td>02-169790</td>
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<td>C-16-2</td>
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<td>02-175105</td>
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Note: BSPP porting is designated by "G" in the model code
SAE porting is designated by "T" in the model code

### Cavity Dimensions

<table>
<thead>
<tr>
<th>Cavity mm (inch)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>Mass kg (lb.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-8-2</td>
<td>50.8 (2.00)</td>
<td>19.0 (0.75)</td>
<td>50.8 (2.00)</td>
<td>38.1 (1.50)</td>
<td>19.0 (0.75)</td>
<td>15.5 (0.61)</td>
<td>38.1 (1.50)</td>
<td>3.3 (0.13)</td>
<td>43.9 (1.73)</td>
<td>7.1 (0.28)</td>
<td>0.5 (1.19)</td>
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<tr>
<td>C-10-2</td>
<td>63.5 (2.50)</td>
<td>25.4 (1.00)</td>
<td>63.5 (2.50)</td>
<td>44.4 (1.75)</td>
<td>22.2 (0.87)</td>
<td>19.0 (0.75)</td>
<td>50.8 (2.00)</td>
<td>9.5 (0.37)</td>
<td>44.4 (1.75)</td>
<td>7.1 (0.28)</td>
<td>0.3 (0.83)</td>
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<tr>
<td>C-12-2U</td>
<td>76.2 (3.00)</td>
<td>28.5 (1.12)</td>
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<td>25.4 (1.00)</td>
<td>28.7 (1.13)</td>
<td>63.5 (2.50)</td>
<td>12.7 (0.50)</td>
<td>50.8 (2.00)</td>
<td>10.3 (0.40)</td>
<td>1.9 (4.28)</td>
</tr>
<tr>
<td>C-12-2</td>
<td>88.9 (3.50)</td>
<td>28.5 (1.12)</td>
<td>88.9 (3.50)</td>
<td>50.8 (2.00)</td>
<td>25.4 (1.00)</td>
<td>28.7 (1.13)</td>
<td>76.2 (3.00)</td>
<td>12.7 (0.50)</td>
<td>63.5 (2.50)</td>
<td>10.3 (0.40)</td>
<td>1.9 (4.28)</td>
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<td>C-16-2</td>
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<td>38.1 (1.50)</td>
<td>76.2 (3.00)</td>
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<td>25.4 (1.00)</td>
<td>25.4 (1.00)</td>
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<td>12.7 (0.50)</td>
<td>63.5 (2.50)</td>
<td>10.3 (0.40)</td>
<td>2.2 (5.00)</td>
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**NOTE:**
8 series utilizes slot in place of mounting hole
### C-**-3(S) Steel Housings

<table>
<thead>
<tr>
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<th>Ports 1, 2 &amp; 3</th>
<th>Part Number</th>
</tr>
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<td>3/8&quot; BSPP</td>
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<td>SAE 4</td>
<td>02-160745</td>
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<td>C-10-3</td>
<td>1/4&quot; BSPP</td>
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<td>3/8&quot; BSPP</td>
<td>02-175128</td>
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<td>SAE 6</td>
<td>02-175124</td>
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Note: BSPP porting is designated by “G” in the model code. SAE porting is designated by “T” in the model code.

<table>
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<tr>
<th>Housing</th>
<th>Ports 1 &amp; 2</th>
<th>Port 3</th>
<th>Part Number</th>
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<td>C-12-3S</td>
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<td>3/4&quot; BSPP</td>
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<td>02-160995</td>
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<td></td>
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### Cavity Dimensions (mm (inch))

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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>Mass (kg (lb.))</th>
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</thead>
<tbody>
<tr>
<td>C-8-3</td>
<td>63.5 (2.50)</td>
<td>31.8 (1.25)</td>
<td>66.0 (2.60)</td>
<td>38.1 (1.50)</td>
<td>19.0 (0.75)</td>
<td>15.5 (0.61)</td>
<td>53.0 (2.12)</td>
<td>3.3 (0.13)</td>
<td>56.6 (2.23)</td>
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<td>38.1 (1.50)</td>
<td>76.2 (3.00)</td>
<td>44.4 (1.75)</td>
<td>22.2 (0.87)</td>
<td>19.0 (0.75)</td>
<td>63.5 (2.50)</td>
<td>9.5 (0.37)</td>
<td>57.1 (2.25)</td>
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<td>88.9 (3.50)</td>
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<td>51.5 (2.03)</td>
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<td>25.4 (1.00)</td>
<td>25.4 (1.00)</td>
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### Cavity Dimensions (mm (inch))

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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>Mass (kg (lb.))</th>
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<tbody>
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<td>101.6 (4.00)</td>
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<td>10.3 (0.40)</td>
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Spare Parts

Size 8 Series

<table>
<thead>
<tr>
<th>Pressure Control</th>
<th>Part Number</th>
</tr>
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<tbody>
<tr>
<td>K (Knob Kit)</td>
<td>02–170164</td>
</tr>
<tr>
<td>C (Cap)</td>
<td>02–162806</td>
</tr>
<tr>
<td>S (Nut)</td>
<td>02–170159</td>
</tr>
<tr>
<td>Retaining ring</td>
<td>02–166712</td>
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</table>

Retaining ring is required for C and S controls.

When converting from the “S” or “C” option to the “K” option, remove retaining ring and nut before installing the knob kit.

Size 10 & 12 Series

<table>
<thead>
<tr>
<th>Pressure Control</th>
<th>Part Number</th>
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<tbody>
<tr>
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<td>02–170616*</td>
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<td>S (Nut)</td>
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<tr>
<td>K (Knob Kit)</td>
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<td>Knob</td>
<td>02–165873</td>
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<tr>
<td>Jam nut</td>
<td>02–160635</td>
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<td>Set screw</td>
<td>001016</td>
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</table>

*These parts also used to service PUV3–10 models.

Size 16 Series

<table>
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<th>Pressure Control</th>
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<td>S (Nut)</td>
<td>565558</td>
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<tr>
<td>RV3 K (Knob Kit)</td>
<td>565586</td>
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<td>Knob</td>
<td>02–162137</td>
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<tr>
<td>Jam nut</td>
<td>02–170637</td>
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<tr>
<td>Set screw</td>
<td>000805</td>
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<tr>
<td>RV5 K (Knob Kit)</td>
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<tr>
<td>Knob</td>
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<td>Jam nut</td>
<td>02–160635</td>
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<tr>
<td>Set screw</td>
<td>001016</td>
</tr>
<tr>
<td>RV5 C (Cap)</td>
<td>02–170616</td>
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</tbody>
</table>

Size 10 & 12 Series

Panel Mount Adapter 02-161837

Used for mounting an adjustable pressure valve through a wall, bulkhead or panel surface.

“F” (.257) Drill thru
.312 x 90° C’T Sink both sides .312-18 UNC-2B Tap thru 2 places

1.010/1.105 Dia. thru
1.031 X 90° C’T sink both sides

#21 (.159”) Drill thru
.203 Drill x .906 Deep
.328 C’T Bore x .203 Deep
#10-32 UNF-2B Tap thru

Wall

Panel Mount Adapter

15.8 (.625) Thick cut

1.1 (.046) Thick cut

31.7 (1.250)

22.2 (.875)

.203 Drill x .906 Deep
.328 C’T Bore x .203 Deep
#10-32 UNF-2B Tap thru

Wall

Panel Mount Adapter

15.8 (.625) Thick cut

1.1 (.046) Thick cut

31.7 (1.250)

22.2 (.875)

.203 Drill x .906 Deep
.328 C’T Bore x .203 Deep
#10-32 UNF-2B Tap thru
Roughing Tools

Roughers are basically step drills which leave .030” per cutting diameter and .015” above all radii for the finishing reamer, with an additional .015” depth in the cavity bottom as clearance. The roughing tool is necessary to prepare the cavity for the finishing reamer, which has not been designed for the primary forming or bottom cutting. We offer two types of roughers, one for aluminum and one for steel. The aluminum rougher is manufactured with a 4 facet point and polished flutes. The steel rougher is supplied with a standard drill point. Both types will work in either material, however, longevity of an aluminum tool will be sacrificed when used continually in steel.

<table>
<thead>
<tr>
<th>Cavity</th>
<th>Material</th>
<th>Model Code</th>
<th>Assembly Number</th>
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<tr>
<td>2–Way</td>
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<td>C–8–2</td>
<td>Aluminum / Steel</td>
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<td>RT–10–2–A–8030</td>
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<td>RT–12–2–AS–8213</td>
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<td>Steel</td>
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<td>3–Way Short</td>
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<td>C–12–3S</td>
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<td>Steel</td>
<td>RT–10–4–S–8073</td>
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Supporting Products

Finishing Tools
These finishing tools have been designed as precision reamers for finishing operations only. They are not intended for primary forming or bottom cutting operations. Vickers recommends that a finishing tool only be used in a properly roughed hole. Failure to conform to this practice will produce unsatisfactory size and finishes and possibly break the tool.

<table>
<thead>
<tr>
<th>Cavity</th>
<th>Material</th>
<th>Model Code</th>
<th>Assembly Number</th>
</tr>
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<tbody>
<tr>
<td>2–Way</td>
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Finishing Form Tools Speed & Feed for Aluminum 6061–T6 (T651)
This information is recommended as a good starting point. Speeds and/or feeds may be increased or decreased depending on actual machining conditions.

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<th>RPM</th>
<th>IPM</th>
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NOTE: Finish form tools may require 1/2 to 1–1/2 second dwell to obtain necessary finish.
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<td>C-**-2(U)</td>
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<td>75</td>
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<tr>
<td>Spare Parts</td>
<td>SRV1, SRV2, CRV3, CRV5, Coil Options</td>
<td>80</td>
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<tr>
<td>Supporting Products</td>
<td>Roughing &amp; Finishing Tools</td>
<td>81</td>
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