Vickers®
Pressure Relief Valves

CG2V-10, CGSV-10
350 Bar
Subplate Mount
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General

Information

Features
- Subplate mounting
- Porting pattern to DIN 24 340, form E, ISO 6264, CETOP-RP 121H and NFPA/ANSI
- Three adjustment elements:
  - Rotary knob
  - Hex. head screw with protective cap
  - Lockable rotary knob with scale
- Solenoid operated unloading

General
CG2V and CG5V pressure valves are pilot operated pressure relief valves. They are used for the limitation (CG2V) or limitation and solenoid actuated unloading (CG5V) of the control pressure.

The pressure relief valves (CG2V) consist mainly of the main valve (1) with main spool assembly (3) and pilot operated valve (2) with pressure adjustment element.

Pressure relief valve type CG2V
The pressure present in port P acts on the main spool (3). At the same time pressure is applied via the control lines (6) and (7), which are fitted with orifices (4) and (5), on the spring loaded side of the main spool (3) and at the ball (8) in the pilot control valve (2). If the pressure in port P exceeds the valve set at the spring (9), the ball (8) opens against the spring (9).

The signal for this comes internally via the control lines (10) and (6) from port P. The pressure fluid on the spring loaded side of the main spool (3) now flows via the control line (7), orifice bore (11) and ball (8) into the spring chamber (12). In type CG2V it flows internally via the control line (13) to tank, or in type CG2V..Y externally via the control line (14). Due to the orifices (4) and (5) a pressure drop occurs at the main spool (3), the connection from port P to port T is open.

Now the pressure fluid flows from port P to port T whilst maintaining the set operating pressure.

The pressure relief valve may be unloaded or switched over to a different pressure (second pressure stage) via port X (15).

Pressure relief valve type CG5V
The function of this valve is basically same as the valve type CG2V.

The unloading at the main spool (3), however, is achieved by the built-in directional valve (16).
Functional Symbols

CG2V

CG2V... X

CG2V... Y

CG2V... XY

CG5V

CG5V

CG5V

CG5V

Normally closed

Normally open
Series CG2V
Model Code

(F3) CG2V  10 * * (*) (*) (*) 10

1. O-Ring Material
   - Blank – Nitrile
   - F3 – Fluorocarbon

2. Subplate Mounted Relief Valve

3. Size
   - ISO6264-10
   - NFPA/ANSI R10
   - 10 - Cetop 10

4. Pressure Range
   - B – 50 bar
   - C – 100 bar
   - F – 200 bar
   - G – 315 bar
   - H – 350 bar

5. Adjustment
   - W – Wrench and cover
   - H – Knob
   - K – Lockable knob

6. Pilot & Drain
   - Blank – Internal Pilot & Drain
   - X – Internal Drain, External Pilot
   - Y – Internal Pilot, External Drain
   - XY – External Pilot & Drain

7. Pressure Range
   - B – 50 bar
   - C – 100 bar
   - F – 200 bar
   - G – 315 bar
   - H – 350 bar

8. Port Thread
   - F – Metric
   - B – BSP

9. Cracking Pressure
   - Blank – Standard
   - U – Minimum (not available with 350 bar range)

10. Design Number

Series CG5V
Model Code

(F3) CG5V  10 * * (*) (U) (*) (*) 1  M U H7 10

1. O-Ring Material
   - Blank – Nitrile
   - F3 – Fluorocarbon

2. Subplate Mounted Relief Valve with unloading function

3. Size
   - ISO6264-10
   - NFPA/ANSI R10
   - 10 - Cetop 10

4. Pressure Range
   - B – 50 bar
   - C – 100 bar
   - F – 200 bar
   - G – 315 bar
   - H – 350 bar

5. Adjustment
   - W – Wrench and cover
   - H – Knob
   - K – Lockable knob

6. External Connection
   - F – Metric
   - B – BSP

7. Minimum Cracking Pressure
   - Blank – Standard
   - U – Minimum Cracking Pressure (not available with 350 bar range)

8. Pilot & Drain
   - Blank – Internal Pilot & Drain
   - X – Internal Drain, External Pilot
   - Y – Internal Pilot, External Drain
   - XY – External Pilot & Drain

9. Pilot Override
   - Blank – Manual Override
   - Z – No Manual Override
   - H – Weatherproof

10. Valve State
    - 1 – Normally Closed
    - 2 – Normally Open

11. Flag
    - M

12. Connector
    - U – No Connector
    - U1 – Connector included
    - U6 – Connector with lights
    - FTWL – Box with lights and 1/2” NPT conduit thread

13. Coil Voltage
    - H7 – 24 VDC
    - G7 – 12 VDC
    - B6 – 110V50Hz/120V60Hz
    - D6 – 220V50Hz/240V60Hz

14. Design Number
    - 10
Hydraulic Technical Data

<table>
<thead>
<tr>
<th></th>
<th>CG2V (Bar)</th>
<th>CG5V (Bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum operating pressure at ports P, T, X (Bar)</td>
<td>up to 350 (port P, X); 315 (port T)</td>
<td>up to 315</td>
</tr>
<tr>
<td>Maximum back pressure at port Y (Bar)</td>
<td>CG2V</td>
<td>CG5V</td>
</tr>
<tr>
<td>Pressure Range Minimum (Bar)</td>
<td>flow dependent (see flow curves)</td>
<td>50, 100, 200, 315, 350</td>
</tr>
<tr>
<td>Weight (Kg)</td>
<td>CG2V</td>
<td>4.4 Kg</td>
</tr>
<tr>
<td>CG5V</td>
<td>5.6 Kg</td>
<td></td>
</tr>
<tr>
<td>Maximum Flow (Lpm)</td>
<td>650</td>
<td></td>
</tr>
<tr>
<td>Fluid</td>
<td>Mineral oil (for Nitrile seal) or phosphate ester (for Fluorocarbon seal)</td>
<td></td>
</tr>
<tr>
<td>Fluid temperature range (°C)</td>
<td>-30 to +80 (Temperature limit for DG4V3 is 70°C)</td>
<td></td>
</tr>
<tr>
<td>Fluid Viscosity range (mm²/s)</td>
<td>10 to 800</td>
<td></td>
</tr>
<tr>
<td>Fluid Cleanliness Level</td>
<td>ISO 19/17/14</td>
<td></td>
</tr>
</tbody>
</table>

Flow Curves
(measured at $v = 41$ mm²/s and $t = 50°C$)

The characteristic curves were measured with pilot externally drained.

For internal pilot oil drain the inlet pressure increase by the outlet pressure present at port T.

* The characteristic curves are valid for outlet pressure $T = 0$ over the entire flow range!
CG2V/CG5V
Dimensions mm (inch)

<table>
<thead>
<tr>
<th>Type</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>L5</th>
<th>L6</th>
<th>L7</th>
<th>L8</th>
<th>L9</th>
<th>B1</th>
<th>B2</th>
<th>dD1</th>
<th>Ports P.T</th>
<th>Port X</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG2V/CG5V-10</td>
<td>14.75</td>
<td>88.9</td>
<td>44.5</td>
<td>41</td>
<td>12.7</td>
<td>76.2</td>
<td>31.8</td>
<td>20</td>
<td>21</td>
<td>115</td>
<td>82.6</td>
<td>20</td>
<td>34.52 x 3.53</td>
<td>6.25 x 1.78</td>
</tr>
</tbody>
</table>

* This dimension can vary depend on source of plug ("U" option); See DG4V-3 Catalog for "FTWL" option.

Required surface finish of mating face

0.01/100mm
Application Notes

1. The fluid must be filtered. The required fluid cleanliness level is ISO 19/17/14.
2. Surface finish of mating piece is required to 0.01/100mm.
3. Interface Seal Kit # for CG2V/5V-10
   02-412610, Nitrile
   02-412609, Fluorocarbon
4. Bolt kit for CG2V/5V-10
   (4) M18x50 (1.97 inch)
   (4) 3/4”-10x2” UNC,
   MA=430Nm (317 lb-ft)
5. Mounting bolts must be to DIN 912-10.9 class, or Class 12.9 (ISO 898)

Released Part Numbers

CG2V-10 Released Part Numbers

<table>
<thead>
<tr>
<th>Assembly Number</th>
<th>Model Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>02-412579</td>
<td>CG2V-10-B-W-B-U-10</td>
</tr>
<tr>
<td>02-412580</td>
<td>CG2V-10-F-W-B-10</td>
</tr>
<tr>
<td>02-412581</td>
<td>CG2V-10-G-W-B-U-10</td>
</tr>
<tr>
<td>02-412582</td>
<td>CG2V-10-G-W-B-10</td>
</tr>
<tr>
<td>02-412583</td>
<td>CG2V-10-H-W-B-10</td>
</tr>
<tr>
<td>02-412584</td>
<td>CG2V-10-F-W-B-Y-10</td>
</tr>
</tbody>
</table>

Bold items have better lead-time

CG5V-10 Released Part Numbers

<table>
<thead>
<tr>
<th>Assembly Number</th>
<th>Model Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>02-412649</td>
<td>CG5V-10-B-W-B-U-2-M-U-H7-10</td>
</tr>
<tr>
<td>02-412650</td>
<td>CG5V-10-G-W-B-1-M-U-H7-10</td>
</tr>
<tr>
<td>02-412651</td>
<td>CG5V-10-G-W-B-2-M-U-H7-10</td>
</tr>
<tr>
<td>02-412652</td>
<td>CG5V-10-H-W-B-2-M-U-H7-10</td>
</tr>
<tr>
<td>02-412653</td>
<td>CG5V-10-F-W-B-1-M-U-H7-10</td>
</tr>
<tr>
<td>02-412654</td>
<td>CG5V-10-F-W-B-2-M-U-H7-10</td>
</tr>
</tbody>
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