Vane Pumps
Series PVS
Variable Displacement
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## Technical data

- **Displacement** [cm³/rev]: from 8 to 50
- **Outlet pressure**: 140 bar
- **Inlet min. pressure**: 1.0 bar
- **Drain port pressure**: max. 0.5 bar
- **Speed ranges**: 1000...1800 [min⁻¹]
- **Press. fluid temperature**: -10...+70 °C
- **Viscosity range**: 22 - 100 [mm²/s]
- **Rotation**: clockwise

## Selection table

<table>
<thead>
<tr>
<th>Model</th>
<th>Displacement in cm³/rev</th>
<th>Output flow at 1500 rpm in l/min</th>
<th>Input power at nominal pressure in kW</th>
<th>Weight in kg single pump</th>
<th>Weight in kg main pump</th>
<th>Weight in kg intermediate pump</th>
<th>Weight in kg second pump</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVS08</td>
<td>8.3</td>
<td>12</td>
<td>3.65</td>
<td>8.9</td>
<td>8.9</td>
<td>8.8</td>
<td>8.8</td>
</tr>
<tr>
<td>PVS12</td>
<td>12.8</td>
<td>19</td>
<td>5.0</td>
<td>8.9</td>
<td>8.9</td>
<td>8.8</td>
<td>8.8</td>
</tr>
<tr>
<td>PVS16</td>
<td>16</td>
<td>23</td>
<td>8.7</td>
<td>18.1</td>
<td>16.9</td>
<td>18.0</td>
<td>16.8</td>
</tr>
<tr>
<td>PVS25</td>
<td>24</td>
<td>35</td>
<td>9.9</td>
<td>18.1</td>
<td>16.9</td>
<td>18.0</td>
<td>16.8</td>
</tr>
<tr>
<td>PVS32</td>
<td>31</td>
<td>45</td>
<td>12.7</td>
<td>33.2</td>
<td>30.8</td>
<td>33.0</td>
<td>30.6</td>
</tr>
<tr>
<td>PVS40</td>
<td>40</td>
<td>60</td>
<td>15.9</td>
<td>33.2</td>
<td>30.8</td>
<td>33.0</td>
<td>30.6</td>
</tr>
<tr>
<td>PVS50</td>
<td>51.5</td>
<td>75</td>
<td>19.7</td>
<td>33.2</td>
<td>30.8</td>
<td>33.0</td>
<td>30.6</td>
</tr>
</tbody>
</table>

## Ordering code

- **PV**: Vane pump adjustable
- **C140**: Nominal pressure up to 140 bar
- **2**: Series
- **Z**: Standard

<table>
<thead>
<tr>
<th>Code</th>
<th>Control options</th>
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<tr>
<td>S</td>
<td>Servo pressure compensator</td>
</tr>
<tr>
<td>D</td>
<td>Two pressure compensator</td>
</tr>
<tr>
<td></td>
<td>Low pressure – high pressure</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Displacement</th>
<th>Combination</th>
</tr>
</thead>
<tbody>
<tr>
<td>08</td>
<td>8.3 cm³/U</td>
<td>BG I</td>
</tr>
<tr>
<td>12</td>
<td>12.8 cm³/U</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>16.0 cm³/U</td>
<td>BG II</td>
</tr>
<tr>
<td>25</td>
<td>24.0 cm³/U</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>31.0 cm³/U</td>
<td>BG III</td>
</tr>
<tr>
<td>40</td>
<td>40.0 cm³/U</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>51.5 cm³/U</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Combinations</th>
</tr>
</thead>
<tbody>
<tr>
<td>EH</td>
<td>Single pump / main pump</td>
</tr>
<tr>
<td>AZ¹</td>
<td>Second pump / intern. pump</td>
</tr>
<tr>
<td>BY²</td>
<td>Second pump / intern. pump to frame size BG I</td>
</tr>
</tbody>
</table>

¹ only for BG II and BG III  
² only for BG I
Compensator type S (PVS: Standard pressure compensator)
The pressure is mechanically adjustable via the preload of the pilot control cartridge spring.

Schematic diagram and performance curves

Task and function
When reaching the set pressure on the compensator, the pressure flow of the servo-controlled pump is automatically adjusted to the actual pressure flow requirement of the consumer. Thus an undesired flow is avoided and only the required medium amount is delivered. As long as the system pressure is lower than the set pressure on the compensator, the stroke ring is kept in the position of maximum eccentricity, so that the pump continues its full delivery. If the system pressure exceeds the set compensator pressure, the control valve opens, and the pressure on the control piston is relieved. The stroke ring is moved by the auxiliary piston up to the central position to the point where the pressure flow corresponds to the system requirements at the set pressure. The pump is regulated.

Dimensions
Compensator type D, low pressure – high pressure (PVD: Two-stage pressure compensator)
High pressure and low pressure mechanically adjustable via spring pre-loading, electric switching.

Schematic diagram and performance curves

Task and function
The double pressure compensator offers the user the possibility to electrically select between two different pressures. Hydraulic systems, where a higher pressure is only needed in peaks, can be created to be very energy-saving, based on such a design. The double pressure compensator can also be labelled as a double servo pressure compensator, divided into low and high pressure stages. Both compensator pistons are connected together via an integrated directional valve.

Initially both compensator pistons are pressurised with system pressure at the unloaded directional valve. The compensator piston with the lower spring pre-loading is responsible for the system pressure. If the directional valve piston is changed over from LP to HP via electrical signal, the connection to the low pressure compensator piston is interrupted. Then, only the high pressure compensator piston is connected to the pilot oil space. The actual control process for the pump corresponds to one from a servo pressure compensator.

Dimensions
PVS pumps with thru drive

Mounting kits for pump combinations
MK-PVSBG1-PGP503
MK-PVSBG1-PVSBG1
MK-PVSBG2-PGP503
MK-PVSBG2/3-PVSBG1
MK-PVSBG2/3-PVSBG2/3
MK-PVSBG3-PGP503
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