Steering systems

Power steering pump FN4

PRODUCT BENEFITS
- Compact construction
- High efficiency with low weight
- High component flexibility through modular system concept
- Integrated volume flow control
- Optionally with integrated pressure limiting

1. Casing with integrated flange
2. Pressure connection
3. Suction connection
4. Shaft
**TASK**
The power steering pump FN4 provides the amount of oil needed for operation of hydraulic steering systems in commercial vehicles at all times. The pump is designed primarily for connection to the compressed-air compressor or the power take-off on an engine. The shaft connects by means of a cross-slotted disk or splines. The pump can be driven by either a gear or belt. For these cases, an anti-friction bearing is used for the driveshaft. The ball bearing needed for the above instances can be incorporated into the housing. In addition, an oil reservoir can be mounted directly to the pump. This eliminates the hose and assembly costs at the vehicle manufacturer.

**FUNCTION**
The power steering pump FN4 consists essentially of housing with integrated volume flow control, cover, faceplate, shaft and rotor set. The rotor set consists of the rotor, ten radial vanes installed in the rotor, and the cam ring. The cam ring has two symmetrically positioned suction and pressure zones. The design of the cam ring defines the fixed geometric delivery volume of the pump. The integrated volume flow control limits the volumetric flow delivered to a fixed value. The maximum system pressure must be limited by a pressure-limiting valve installed on the pump or in the system. If required by the steering system design, a pressure level of up to 200 bar is available as a special version.

**TECHNICAL CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Model</th>
<th>7683</th>
<th>7684</th>
<th>7685</th>
<th>7686</th>
<th>7687</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery volume (cm³/U)</td>
<td>14</td>
<td>17</td>
<td>21</td>
<td>25</td>
<td>28</td>
</tr>
<tr>
<td>Max. rotational speed (rpm)</td>
<td>4,500</td>
<td>4,500</td>
<td>4,000</td>
<td>4,000</td>
<td>3,500</td>
</tr>
<tr>
<td>Max. pressure (bar)</td>
<td>185</td>
<td>185</td>
<td>185</td>
<td>185</td>
<td>165</td>
</tr>
<tr>
<td>Controlled volumetric flow (l/min)</td>
<td>9 – 16</td>
<td>12 – 16</td>
<td>12 – 25</td>
<td>16 – 25</td>
<td>16 – 25</td>
</tr>
<tr>
<td>Suction connection Thread</td>
<td>1 1/16” – 12UN 2B</td>
<td>M26 × 1.5</td>
<td></td>
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<tr>
<td>Pressure connection Thread</td>
<td>3/4” – 16UNF 2B</td>
<td>M18 × 1.5</td>
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<td>Max. oil temperature (°C)</td>
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<td></td>
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<td></td>
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<tr>
<td>Weight (kg)</td>
<td>2.3 – 2.8</td>
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</tbody>
</table>

**rugged design**
The proven design ensures a reliable supply of oil to the steering system.

**high power density with low weight**

1. Casing with integrated flange
2. Shaft
3. Pressure connection
4. Suction connection