The gerotor, gear and cam pumps in this brochure are lubricant pumps that can be used for a large number of tasks.

The drives of gear and gerotor pumps must not be subjected to radial or axial loads.

The indicated delivery rates apply to an operating viscosity of 140 mm$^2$/s and a back pressure of 5 bars. If the operating viscosities or back pressures deviate from these values, the delivery rate and power requirements will change.

Permissible operating viscosity: 20 to 1000 mm$^2$/s.

Filtering

The pumps require filtration of the lubricant for a maximum particle size of 100 µm. If the metering elements, valves, flow monitors, etc. as well as the friction points to be supplied require finer filtration, that must be provided for in the delivery line (recommended value 25 µm).
**Gerotor, Gear and Cam Pumps**

**Gerotor pumps**

for clockwise or counterclockwise rotation, but with constant direction of rotation and delivery

Gerotor pumps are distinguished by quiet running and little pulsation. They have an internally geared delivery element (trochoid gearing).

![Diagram of 143-011-131 gerotor pump](image1.png)  
**Figure 1**

![Diagram of 143-011-151 gerotor pump](image2.png)  
**Figure 2**

The shaft drive has to be without any radial or axial load. See also the important product usage information on the back cover.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Delivery rate at 1400 rpm [l/min]</th>
<th>Max. back pressure [bar]</th>
<th>Required drive power at back pressure [kW]</th>
<th>Suction and pressure port S/P</th>
<th>Max. suction head [mm]</th>
<th>Direction of rotation</th>
<th>L1 [mm]</th>
<th>L2 [mm]</th>
<th>L3 [mm]</th>
<th>Fig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>143-011-131</td>
<td>0.85</td>
<td>30</td>
<td>0.18</td>
<td>1000</td>
<td>3/4</td>
<td>right</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>143-011-131</td>
<td>1.7 (at 2800 min⁻¹)</td>
<td>30</td>
<td>0.37</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>143-011-151</td>
<td>2.5</td>
<td>50</td>
<td>0.18/0.37</td>
<td>G 3/8</td>
<td>1000</td>
<td>left</td>
<td>18.5</td>
<td>56.3</td>
<td>69</td>
<td>2</td>
</tr>
<tr>
<td>143-011-161</td>
<td>5.25</td>
<td>50</td>
<td>0.37/0.75</td>
<td>G 3/8</td>
<td>1000</td>
<td>right</td>
<td>20</td>
<td>64.3</td>
<td>77</td>
<td>3</td>
</tr>
<tr>
<td>143-011-171</td>
<td>9</td>
<td>50</td>
<td>0.55/1.1</td>
<td>G 3/2</td>
<td>1000</td>
<td>right</td>
<td>22</td>
<td>76.3</td>
<td>89</td>
<td>3</td>
</tr>
<tr>
<td>143-011-181-2</td>
<td>12.5</td>
<td>50</td>
<td>0.75/1.5</td>
<td>G 3/4</td>
<td>1000</td>
<td>right</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>143-011-500</td>
<td>19</td>
<td>20</td>
<td>1.5</td>
<td>G 1</td>
<td>1000</td>
<td>right</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

1) related to an operating viscosity of 140 mm²/s at a back pressure of 5 bars
2) with open delivery line at 1400 rpm

Direction of rotation (viewing on the drive shaft) consider.

Order adapters with ports tapped for solderless tube connection separately.
Gerotor pumps
for clockwise or counterclockwise rotation, but with constant direction of rotation and delivery

Figure 3

143-011-161, 143-011-171, 143-011-181-2

Figure 4

143-011-500
Gerotor, Gear and Cam Pumps

Gerotor pump for clockwise and counterclockwise rotation, but for constant direction of delivery with changing direction of drive shaft rotation to DIN 69001, Part 17 A

This pump is especially suitable for direct gear drive.

When the pump is used in systems that do not have an open delivery line, e.g. which have a check valve, safety valve or closed bearings, it is necessary to provide for a venting aid.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Delivery rate per revolution 1) [cm³]</th>
<th>Speed range [rpm]</th>
<th>Max. back pressure [bar]</th>
<th>Suction head 2) [mm]</th>
<th>Direction of rotation</th>
<th>Figure</th>
</tr>
</thead>
<tbody>
<tr>
<td>143-011-560</td>
<td>4</td>
<td>200-2000</td>
<td>20</td>
<td>1000</td>
<td>any</td>
<td>5</td>
</tr>
</tbody>
</table>

1) Corresponds to 5.4 l/min at 1400 rpm as related to an operating viscosity of 140 mm²/s at a back pressure of 1 bar.
2) Corresponds to 5.4 l/min at 1400 rpm as related to an operating viscosity of 140 mm²/s at a back pressure of 1 bar.

The shaft drive has to be without any radial or axial load.

Figure 5

143-011-560

S = suction port
P = pressure port
Gerotor, Gear and Cam Pumps

Gear pumps
for clockwise or counterclockwise rotation, with constant direction of rotation and delivery

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Delivery rate at 1400 rpm [l/min]</th>
<th>Max. back pressure [bar]</th>
<th>Required drive power [KW]</th>
<th>Suction head 1) [mm]</th>
<th>Direction of rotation</th>
<th>Figure</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZP12-2</td>
<td>1.2</td>
<td>25</td>
<td>0.18</td>
<td>500</td>
<td>right</td>
<td>6</td>
</tr>
<tr>
<td>ZP1</td>
<td>2.5</td>
<td>20</td>
<td>0.18</td>
<td>1000</td>
<td>right</td>
<td>7</td>
</tr>
<tr>
<td>ZP1-S1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>left</td>
<td></td>
</tr>
</tbody>
</table>

1) with open delivery line at 1400 rpm

Direction of rotation (viewing on the drive shaft) consider.
Order adapters with ports tapped for solderless tube connection separately.

---

**Figure 6**

**ZP12-2**

---

**Figure 7**

**ZP1, ZP1-S1**

1) ZP1: Direction of rotation right (viewing on the drive shaft)
2) ZP1-S1: Direction of rotation left (viewing on the drive shaft)

S = suction port
P = pressure port
Cam pumps for clockwise or counterclockwise rotation, but for constant direction of delivery with changing direction of rotation

With these valveless piston pumps the piston is driven directly via a cam so that only three constantly moving elements are involved. The fluids to be pumped must have enough lubricity for the pump to lubricate itself.

This configuration results in dependable operation and a long service life.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Delivery rate 1) at 1500 rpm [l/min]</th>
<th>Max. back pressure [bar]</th>
<th>Permissible speed range [rpm]</th>
<th>Suction head 1) [mm]</th>
<th>Ext. suction and delivery tube diam. [mm]</th>
<th>Direction of rotation</th>
<th>Model</th>
<th>Figure</th>
</tr>
</thead>
<tbody>
<tr>
<td>206-100-5</td>
<td>2.6</td>
<td>3</td>
<td>50-1500</td>
<td>1000</td>
<td>8</td>
<td>any</td>
<td>with shaft butt</td>
<td>8</td>
</tr>
<tr>
<td>206-100-10</td>
<td>1.3</td>
<td>5</td>
<td>50-1500</td>
<td>1000</td>
<td>8</td>
<td>any</td>
<td>with slotted coupling</td>
<td>10</td>
</tr>
</tbody>
</table>

1) The delivery rate depends on the speed, viscosity, suction and delivery head (cf. diagram).
2) With open delivery line; the suction head depends on the speed and viscosity.

Order adapters with ports tapped for solderless tube connection separately.

The diagram shows the delivery rate for a suction head of 0.5 m at 3 bars back pressure for a mineral oil with a viscosity of 140 mm²/s.
Cam pumps for clockwise or counterclockwise rotation, but for constant direction of delivery with changing direction of rotation

S = suction port
P = pressure port
Order No. 1-1200-EN
Subject to change without notice! (07/2009)

Important product usage information
All products from SKF may be used only for their intended purpose as described in this brochure and in any instructions. If operating instructions are supplied with the products, they must be read and followed. Not all lubricants are suitable for use in centralized lubrication systems. SKF does offer an inspection service to test customer supplied lubricant to determine if it can be used in a centralized system. SKF lubrication systems or their components are not approved for use with gases, liquefied gases, pressurized gases in solution and fluids with a vapor pressure exceeding normal atmospheric pressure (1013 mbars) by more than 0.5 bar at their maximum permissible temperature.

Hazardous materials of any kind, especially the materials classified as hazardous by European Community Directive EC 67/548/EEC, Article 2, Par. 2, may only be used to fill SKF centralized lubrication systems and components and delivered and/or distributed with the same after consulting with and receiving written approval from SKF.

Further brochures
1-9201-EN  Transport of Lubricants in Centralized Lubrication Systems