PFHM lubrication pump for ATEX and mining applications

Hydraulically operated lubrication pump for use in areas exposed to explosion hazards

ATEX approval C3:
- gas: II 2G Ex h IIC T6...T5 Gb
- dust: II 2D Ex h IIIC T85°C...T100°C Db
- mining: I M2

ATEX approval C5-M:
- gas: II 2G Ex h IIB T6...T5 Gb
- dust: II 2D Ex h IIIC T85°C...T100°C Db
- mining: I M2 Ex h I Mb

Filter unit
Service cover with locking possibility
Grease filling connection
Hydraulic pressure line
Hydraulic drive return line
Maximum 6 pump elements and pressure relief valves (accessories)
Hydraulic operation requires no electricity

The SKF Lincoln hydraulically operated lubrication pump PFMH-ATEX was developed to support the requirements of explosion protection. In addition, the pump is available in corrosion class C5-M.

The one to six pump elements are available in five sizes from 0.04 to 0.25 cm³/stroke (0.0024 to 0.0152 in³/stroke) or camshaft revolution. The ratio between the hydraulic motor and camshaft is generally 1:1.

The PFMH sturdy steel housing and reservoir with air breather and overfill safety allows the use in dusty areas. ATEX applications require the selection of additional pressure relief valves. The reservoir with stirrer is suitable for both grease and oil and is designed with a locking device.

Lube points should be connected directly to the pump to avoid dust entering into the grease in a possibly polluted environment. In combination with downstream located progressive metering devices such as SSV, VPB, SSVD – also in ATEX version available – it can handle up to approximately 150 lube points.

The PFMH-ATEX is suitable for lubrication of underground mining equipment as well as screens and crushers in quarries.

Features and benefits:

- Sturdy design with standard, spring-return pump elements and ATEX classifications
- Designed for 24/7 operation in harsh environments
- Varying speed and stroke volumes enable economical lubricant settings, hydraulic drive without electrics
- Modular design available in corrosiveness class C3 as standard or C5-M according to DIN EN ISO 12944
- ATEX classification for gas, dust and mining application as standard

Applications:

- Mining, including underground
- Screens, excavators and crushers in quarries
- Hydraulically operated machinery

For use on multi-line lubrication systems
**Technical data**

- **Function principle**: hydraulically operated radial piston pump in an ATEX design
- **Metering quantity / stroke**
  - KFG1.U0–C5M: 0.250 cm³, 0.0152 in³
  - KFG1.U1–C5M: 0.125 cm³, 0.0076 in³
  - KFG1.U2–C5M: 0.090 cm³, 0.0054 in³
  - KFG1.U3–C5M: 0.065 cm³, 0.0039 in³
  - KFG1.U4–C5M: 0.040 cm³, 0.0024 in³
- **Metering quantity / outlet**: 0.8–5.0 cm³/min, 0.048–0.305 in³/min
- **Outlets**: 1 to 6
- **Lubricant oil and grease**: up to NLGI 2
- **Operating pressure max.**: 250 bar (625 psi)
- **Operating temperature**: –20 to +40 °C (–14 to +104 °F)
- **Reservoir 1)**: 6 kg (12 lb)
- **Internal ratio**: 1:1
- **Drive speed main shaft**: 4–30 r/min
- **Hydraulic drive oil requirements**: M 14 × 1.5, M 22 × 1.5
- **Outlet connection lubricant**:
  - M 14 × 1.5: 2540 psi
  - M 22 × 1.5: 2030 psi
- **Dimensions**: 580 × 230 × 230 mm (22.8 × 9.1 × 9.1 in)
- **Mounting position**: vertical
- **Options**: C5-M

1) valid for ρ=1 kg/dm³

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**How to order**

**PFHM-ATEX pumps**

<table>
<thead>
<tr>
<th>Order numbers</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PFHM-6-B6-C3-ATEX</strong></td>
<td>standard pump including hydraulic drive, without pumping element version C3 6 kg, 12.6 lbs reservoir; included ATEX approval: gas: II 2G Ex h IIC T6...T5 Gb dust: II 2D Ex h IIIC T85°C...T100°C Db mining: I M2 Ex h I Mb</td>
</tr>
<tr>
<td><strong>PFHM-6-B6-C5-ATEX</strong></td>
<td>same as above, with an improved corrosion standard C5-M included ATEX approval: gas: II 2G Ex h IIB T6...T5 Gb dust: II 2D Ex h IIIC T85°C...T100°C Db mining: I M2 Ex h I Mb</td>
</tr>
</tbody>
</table>

* Please order pump elements and pressure regulating valves separately (see below)

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**Accessories**

**Pump elements, spring return**

<table>
<thead>
<tr>
<th>Order number</th>
<th>C3-version</th>
<th>C5-M version</th>
<th>Metering quantity 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KFG1.U0</td>
<td>KFG1.U0-C5M</td>
<td>0.250 cm³</td>
<td>0.0152 in³</td>
</tr>
<tr>
<td>KFG1.U1</td>
<td>KFG1.U1-C5M</td>
<td>0.125 cm³</td>
<td>0.0076 in³</td>
</tr>
<tr>
<td>KFG1.U2</td>
<td>KFG1.U2-C5M</td>
<td>0.090 cm³</td>
<td>0.0054 in³</td>
</tr>
<tr>
<td>KFG1.U3</td>
<td>KFG1.U3-C5M</td>
<td>0.065 cm³</td>
<td>0.0039 in³</td>
</tr>
<tr>
<td>KFG1.U4</td>
<td>KFG1.U4-C5M</td>
<td>0.040 cm³</td>
<td>0.0024 in³</td>
</tr>
</tbody>
</table>

2) The values given are design values of the pump elements and are valid at 18 r/min⁻¹, a temperature of 20 °C, a back pressure of 50 bar and when using NLGI grade 2 greases.

**Pressure regulating valves**

<table>
<thead>
<tr>
<th>Order number</th>
<th>C3-version</th>
<th>C5-M version</th>
<th>Pipe ø</th>
<th>Opening pressure 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>161-210-075</td>
<td>161-210-079</td>
<td>6 mm</td>
<td>250</td>
<td>3626</td>
</tr>
<tr>
<td>161-210-076</td>
<td>161-210-080</td>
<td>8 mm</td>
<td>250</td>
<td>3626</td>
</tr>
<tr>
<td>161-210-077</td>
<td>161-210-081</td>
<td>10 mm</td>
<td>250</td>
<td>3626</td>
</tr>
</tbody>
</table>

3) These valves have opening tolerances of ±20%.