High pressure unit LubiCool®-M

Dimensions and technical data

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connected load high-pressure pump</td>
<td>5.5 kW</td>
</tr>
<tr>
<td>Connected load transfer pump</td>
<td>0.63 kW</td>
</tr>
<tr>
<td>Pressure range</td>
<td>Up to 150 bar</td>
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<tr>
<td>Volumetric flow</td>
<td>Up to 27 l/min</td>
</tr>
<tr>
<td>Filter fineness</td>
<td>Up to 20 µm</td>
</tr>
<tr>
<td>Cooling lubricant</td>
<td>Emulsion, Oil</td>
</tr>
<tr>
<td>Power supply</td>
<td>400 V / 50 Hz</td>
</tr>
<tr>
<td>Tank capacity</td>
<td>150 l</td>
</tr>
<tr>
<td>Dimensions (L x W x H)</td>
<td>1496 x 600 x 1198 mm</td>
</tr>
</tbody>
</table>
### Properties

<table>
<thead>
<tr>
<th>Compact and mobile</th>
<th>Space-saving and flexible installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug-and-Play</td>
<td>- Fast installation</td>
</tr>
<tr>
<td></td>
<td>- Easy retrofitting</td>
</tr>
<tr>
<td>High pressure up to 150 bar</td>
<td>- Short-breaking chips</td>
</tr>
<tr>
<td></td>
<td>- Reduced processing times due to higher cutting speeds</td>
</tr>
<tr>
<td></td>
<td>- Extended tool life</td>
</tr>
<tr>
<td>Effective filtration via belt filter</td>
<td>- Reduced concentration of ultra-fine particles</td>
</tr>
<tr>
<td></td>
<td>- Long service life of components and the cooling lubricant (CL)</td>
</tr>
<tr>
<td>Wear-resistant screw spindle pump</td>
<td>- Long service life and process reliability</td>
</tr>
<tr>
<td>Demand-driven pump control</td>
<td>- Lower energy costs</td>
</tr>
<tr>
<td></td>
<td>- Lower heat development</td>
</tr>
<tr>
<td></td>
<td>- Longer durability</td>
</tr>
<tr>
<td>Attractive price-performance ratio</td>
<td>- Short amortization time</td>
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</table>

### Application

The KNOLL high pressure unit LubiCool®-M is a mobile high pressure unit for machine tools, particularly fixed- and sliding headstock automatic lathes. The system cleans the CL and provides the machine with high pressure.

It is suitable for
- demanding machining processes
- deep hole drilling in one move
- processing with difficult materials (e.g. high-alloyed steel, titanium, copper, bronze)
- original equipment and retrofitting

### Description

1. The transfer pump pumps the dirty CL from the machine tool into the compact filter.
2. The compact filter separates chips and the soiling from the CL, which flows in the clean media tank.
3. The dirty fleece is collected in the sludge container.
4. The high pressure pump provides the machine tool with cleaned CL through switchable outputs.
5. The integrated touchpad allows the control and visualization of the most important system parameters.

### Equipment

- Paneling
- KNOLL compact filter KF (with filter fleece)
- KNOLL screw pump KTS
- Transfer pump
- KNOLL SmartConnect control incl. touchpad and LED-status light
- Interface cables (individual)
- Clean tank
- Sludge container
- 4 switchable outputs
- 4 additional switchable outputs
- Frequency inverter
- Cooling (continuous flow cooler, plate heat exchanger or piggyback plate heat exchanger)
- WHG-sensor
- Hose set
- Pressure reduction for spindle flushing
- Temperature sensor

### Scheme

- Compact filter
- Sludge container
- Filter fleece roll
- Transfer pump
- To machine tool
- High pressure pump
- Valve block
- From machine tool
- Level measurement
- Clean tank
- Filter fleece roll
- Compact filter
- Sludge container
- Filter fleece roll
- Transfer pump
- To machine tool
- High pressure pump
- Valve block
- From machine tool
- Level measurement
- Clean tank

### Pump characteristic curve

With the optional frequency control, every point within the diagram in the light blue area is possible.

1. **Layout example media: oil**
   - Q (l/min) vs. p (bar)
   - Viscosity: 20 mm²/s, pressure: 70 bar, delivery rate: 16.6 l/min
   - Frequency inverter: 3,200 min⁻¹

2. **Layout example media: emulsion**
   - Q (l/min) vs. p (bar)
   - Viscosity: 1 mm²/s, pressure: 70 bar, delivery rate: 10.5 l/min
   - Frequency inverter: 3,200 min⁻¹