Standard filter system KF 400/1700

Version 02-2020
Areas of application

The compact filter KF is a band filter for cleaning cooling lubricants in metal machining. As a cleaning and supply unit for chip-producing machine tools, it is usually combined with chip conveyors.

System configuration

- **Machine manufacturer:** freely selectable
- **Number of machines:** 1
- **Processing:** turning, drilling, milling (others after consultation)
- **Customer specification:** no, KNOLL standard model
- **Energy supply:** 400 V, 50 Hz
- **Compressed air connection:** min. 5 bar, provided by the customer
- **Volumetric flow:**
  - 400 l/min for emulsion and steel or aluminum < 8% Si
  - 200 l/min for emulsion and cast (GG, GGG) or aluminum > 8% Si
  - 160 l/min for oil up to max. 10 mm²/s at operating temperature and steel
- **Filter fineness:** nominally 40 µm with filter fleece PW70/70
- **Chip pre-separation:** via chip conveyor provided by the customer (with edge filter or strainer basket)
- **Colors:** system RAL 7035*, control cabinet RAL 7035*, components RAL 9005, cooler RAL 7005*
- **Documentation:** on CD, languages: German / English / French / Italian / Spanish / Czech / Dutch / Swedish
- **Equipment labeling:** local languages named + English
- **User guidance:** local languages named / English / German

*Other colors available at extra charge (see price list) after consultation with KNOLL. All systems and components except electrical users are powder-coated (textured paint Emil Frei GmbH & Co., gloss level 60% at an angle of 60°, tolerance of gloss level +/- 10%).

Equipment

**Options**

- Option 3
  - Screw pump
- Option 1
  - Centrifugal pump I
- Option 2
  - Centrifugal pump II
- Option 4
  - Duplex switch filter
- Option 5
  - Continuous-flow cooler
- Option 6
  - Hose package
- Option 7
  - Electricity for customer lifting pump and level sensors

**Basic equipment**

- Compact filter KF 400
- Electric control cabinet
- 2 level sensors
- Coolant container FKA 1700
- Connection for continuous-flow cooler
### Basic equipment

**Compact filter KF 400**, fleece installation on top | **Coolant container FKA 1700**, content 1,700 l, holders for max. 2 low-pressure pumps, holder for max. 1 high-pressure pump, connection for continuous-flow cooler | **2 level sensors** with visual display (overflow alarm, cooling lubricant min. alarm) | **Electric control cabinet** (see back)

### Option 1 – Centrifugal pump I (for external cooling lubricant supply)

<table>
<thead>
<tr>
<th>0</th>
<th>without pump, holder sealed with sheet metal piece</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TG 40-42/22533, 150 l/min @ 2.5 bar (75 l/min @ 2.7 bar</td>
</tr>
<tr>
<td>2</td>
<td>MTR 5-18/18, 40 l/min @ 11.5 bar (100 l/min @ 9 bar), 3.0 kW Han-Drive, DBD and pressure gauge</td>
</tr>
<tr>
<td>3</td>
<td>MTR 5-18/8, 40 l/min @ 5 bar (80 l/min @ 4 bar), 1.1 kW Han-Drive, pressure gauge</td>
</tr>
</tbody>
</table>

### Option 2 – Centrifugal pump II (for flushing)

<table>
<thead>
<tr>
<th>0</th>
<th>without pump, holder sealed with sheet metal piece</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TG 40-55/30533, 200 l/min @ 3.2 bar (250 l/min @ 3.1 bar</td>
</tr>
<tr>
<td>2</td>
<td>TG 40-42/22533, 150 l/min @ 2.5 bar (75 l/min @ 2.7 bar</td>
</tr>
</tbody>
</table>

### Option 3 – Screw pump (for internal cooling lubricant supply)

<table>
<thead>
<tr>
<th>0</th>
<th>without pump, holder sealed with sheet metal piece</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>KTS 25-60-T, 37 l/min @ 70 bar, 7.5 kW Han-Drive, Vario valve SPB-H-15 with pressure gauge</td>
</tr>
<tr>
<td>2</td>
<td>KTS 25-38-T with FI (PO-Tronic), 5.5 kW with FI Kostal (piggyback), Vario valve SPB-H-15, with pressure gauge</td>
</tr>
<tr>
<td>3</td>
<td>KTS 25-38-T, 26.8 l/min @ 40 bar, 3.0 kW Han-Drive, DBD with pressure gauge</td>
</tr>
</tbody>
</table>

### Option 4 – Duplex switch filter (as police filter)

| 0 | without duplex switch filter |
| 1 | duplex switch filter PI3730 DRG100 |

### Option 5 – Continuous-flow cooler

<table>
<thead>
<tr>
<th>0</th>
<th>without continuous-flow cooler</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>continuous-flow cooler alpha 9 for emulsion, cooling capacity 8.3 kW, air-cooled, at ambient temperature 42 °C, medium 20 °C, temperature completely controlled, own control, own power supply, length 715 mm, width 715 mm, height 1,545 mm</td>
</tr>
<tr>
<td>2</td>
<td>continuous-flow cooler alpha 9 for oil, cooling capacity 8.3 kW, air-cooled, at ambient temperature 42 °C, medium 25 °C, temperature completely controlled, own control and power supply, length 715 mm, width 715 mm, height 1,545 mm</td>
</tr>
</tbody>
</table>

### Option 6 – Hose package (cooler to coolant container)

<table>
<thead>
<tr>
<th>0</th>
<th>without hose package</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>hose package 5 m (2 oil flex hoses à 5 m, each with mech. ball valve, ready for connection)</td>
</tr>
<tr>
<td>2</td>
<td>hose package 10 m (2 oil flex hoses à 10 m, each with mech. ball valve, ready for connection)</td>
</tr>
</tbody>
</table>

### Option 7 – Electricity for customer lifting pump and level sensors

<table>
<thead>
<tr>
<th>0</th>
<th>without</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>for lifting pump with motor 1.8 – 2.5 A</td>
</tr>
<tr>
<td>2</td>
<td>for lifting pump with motor 2.2 – 3.2 A</td>
</tr>
<tr>
<td>3</td>
<td>for lifting pump with motor 2.8 – 4.0 A</td>
</tr>
<tr>
<td>4</td>
<td>for lifting pump with motor 3.5 – 5.0 A</td>
</tr>
<tr>
<td>5</td>
<td>for lifting pump with motor 4.5 – 6.3 A</td>
</tr>
<tr>
<td>6</td>
<td>for lifting pump with motor 5.5 – 8.0 A</td>
</tr>
</tbody>
</table>

### Order key

The performance data of the pumps named above refer to operation with emulsion. In case of operation with oil, the performance data of the low-pressure pumps is reduced by 10-20% depending on viscosity.
Electric control cabinet

E-Plan 30-38557.00.x.x.x.x | Electricity for compact filters
Control cabinet AE1058 (600x800x250)
PLC control VIPA SLL0 | text display KTP400

Power sections
1 x KF drive (Han-Drive)
1 x low-pressure pump 1* (Han-Drive)
1 x low-pressure pump 2* (Han-Drive)
1 x high-pressure pump 1* (Han-Drive)

Please note
400 V interface for the cooler is not included | If a cooler unit is required, it must be supplied directly via the hall energy supply | The cooler is released via a potential-free contact from the cooling lubricant system | Signal is located on the terminal strip (without connector)

Sensor system
2 level sensors KF filter | 1 light sensor fleece end | 1 button fleece transport manual operation | 1 level sensor (overflow alarm) | 1 level sensor (cooling lubricant min. alarm) | 1 bypass valve high-pressure pump*

Interface to machine tool
- 400 V supply via 35 A Harting connector with mating plug (supplied loose)
- Signal exchange via 24-pin Harting connector with mating plug (supplied loose)
- Requirement low-pressure pump 1* | Requirement low-pressure pump 2* | Requirement high-pressure pump 1* | Requirement pressure stage high-pressure 1/2/3* | Release signal charge KF filter possible

Equipment-Version
Wire marking printed wires | Range selector switch black (Eaton) | Power switch Sirius (Siemens) | Contact Sirius (Siemens) | PLC control (VIPA) | Visualization (Siemens) | Power supply (Murr) | Terminals (Phoenix) | Connector (Harting) | Frequency inverter (Kostal) | Installation PUR line (Lapp)

Connection voltage 3 x 400 V | Frequency 50 Hz
* Only included if the associated option was selected

Dimensions

Option: Continuous-flow cooler