Mill turn spindles / MT line
Smart heads
The KESSLER milling spindles have a modular design.

Configure your own milling spindle model by specifying the installation position, motor, speed, bearing, lubrication and sensor system – the perfect customized solution for your individual branch and application needs.

KESSLER offers more: As an internationally successful company with extensive and highly specialized expertise, we provide comprehensive advice about the design and manufacture of individual components and project management of complex system solutions. The very latest technology and analytical processes are used to test our components under realistic conditions, so that our products help your business to maintain flexibility and its competitive edge.

Our in-house development division is supported by extensive calculation and analysis skills and covers everything from direct drive technology to the construction of all-in-one systems. Furthermore, optimized production and assembly lines provide the framework for stable processes and the superior quality of our products.

End-to-end precision from the components to the on-site service

Founded in 1923 by Franz Kessler, the company has developed to become the leading supplier of motor spindles as well as directly driven 2-axis heads and rotary tilt tables for the machine tool industry. KESSLER is proud to list many major companies from the mechanical engineering sector amongst its long-standing customers.

With the expertise of more than 95 years, KESSLER is continuously developing and optimising its products. The KESSLER product range serves a wide range of sectors, processes and applications. Close cooperation with our customers remains our key focus. The extensive product range, from high-tech spindles, 2-axis heads, rotary and rotary tilt tables to motors and direct drive systems, enables KESSLER to implement customised solutions with speed and flexibility.

As your service partner, service is our matter of trust and reliability. KESSLER has an established global network of technology and service centres.

KESSLER spindle lines
Spindle technology with passion and expertise
Masterpieces

KESSLER provides tailor-made spindle technology to suit your needs: Individual, flexible, modular and suitable for all areas of application

HC line
- Heavy cutting
- Aerospace titanium machining
- Machining of large-scale parts

PC line
- High speed
- High power
- High accuracy

H line
- Horizontal installation
- Very short acceleration and braking times

MT line
- Very short construction
- Used in tilting heads, turning and milling operations

V line
- Vertical installation
- Tilting
- Allrounder

<table>
<thead>
<tr>
<th>Spindle fitting Ø (mm)</th>
<th>170</th>
<th>170</th>
<th>200</th>
<th>230</th>
<th>270</th>
<th>325</th>
<th>395</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open cooling housing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closed with steel sleeve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closed with solid housing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The MT line is all about:
- 5-axis machining
- Very short construction thanks to release unit and rotary union integrated in the shaft
- Can be used in tilting heads
- Processing of different materials
- Machining of workpieces with varying geometries
- Use in small and large-scale production
- Short duration until reaching the stable Tool Centre Point (TCP)
- Optional clamps for turning operations
- Optional measuring of the axial shaft displacement

Availability on request
Our MT line variants

<table>
<thead>
<tr>
<th>Model</th>
<th>MT80</th>
<th>MT100S</th>
<th>MT100L</th>
<th>MT100H</th>
<th>MT400</th>
<th>MT500</th>
<th>MT600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum speed (rpm) to</td>
<td>24,000</td>
<td>20,000</td>
<td>20,000</td>
<td>16,000</td>
<td>15,000</td>
<td>6,000</td>
<td>5,000</td>
</tr>
<tr>
<td>Torque S6 / 40% (Nm) to</td>
<td>95</td>
<td>120</td>
<td>210</td>
<td>235</td>
<td>635</td>
<td>900</td>
<td>1,350</td>
</tr>
<tr>
<td>Spindle fitting Ø (mm)</td>
<td>170</td>
<td>202</td>
<td>202</td>
<td>202</td>
<td>270</td>
<td>325</td>
<td>395</td>
</tr>
<tr>
<td>Length overall (mm)</td>
<td>475</td>
<td>385</td>
<td>475</td>
<td>530</td>
<td>628</td>
<td>TBD</td>
<td>TBD</td>
</tr>
<tr>
<td>Tool interface</td>
<td>HSK 63 Capto C6</td>
<td>HSK 100 Capto C8</td>
<td>HSK 125 Capto C10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Impress with:
- very short construction
- very short vector length
- high effective torque at the tool cutting edge
- Quick Connect Cartridge (QCC)* reduced machine downtimes for servicing
- optional shaft clamping

*Not with MT80 and MT600
All advantages of the modular system at a glance

- **Robust**
  Designed for high load forces in the machining process

- **High degree of operational safety thanks to LEDs**
  Due to optimal illumination of the tool intervention

- **HSK and Capto tool interfaces**

- **Reduction of TCO (Total Costs of Ownership)**
  Due to the rapid change of the rotor exchange group (KESSLER QCC)
Advantages

- **The most suitable COOLMOTION® motor** for your individual needs: with very high torque, very high speed or high-compact design

- **High power density**, due to very compact design and light weight

- **High flexibility**: KESSLER rotary union for media: lubrication, dry operation, compressed air, MQL capability

- **Process reliability** due to extensive sensory system

- **Analogue tool clamping status monitoring**

- **Hydraulic clamping for turning operations available**

- **Various bearing lubrication systems available**

- **Hydraulic release unit**

**HIGH QUALITY**

MADE IN GERMANY
Milling spindle / MT80

- **Spindle fitting:** Ø 170 mm
- **KESSLER COOLMOTION® motor**
- **Cooling:** Open cooling housing
- **Bearing lubrication:**
  - Oil-air / re-greasing

Choose the most suitable COOLMOTION® motor from the list of preferred motors

<table>
<thead>
<tr>
<th>Model</th>
<th>Max. speed (rpm)</th>
<th>S1 Torque (Nm)</th>
<th>S1 Power (kW)</th>
<th>S6 / 40 % Torque (Nm)</th>
<th>S6 / 40 % Power (kW)</th>
<th>S6 / 25 % Torque (Nm)</th>
<th>S6 / 25 % Power (kW)</th>
<th>S6 max. Torque (Nm)</th>
<th>S6 max. Power (kW)</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT80-S24</td>
<td>24,000</td>
<td>55</td>
<td>40</td>
<td>65</td>
<td>40</td>
<td>70</td>
<td>40</td>
<td>80</td>
<td>40</td>
<td>High speed*</td>
</tr>
<tr>
<td>MT80-S20</td>
<td>20,000</td>
<td>80</td>
<td>45</td>
<td>95</td>
<td>45</td>
<td>110</td>
<td>45</td>
<td>145</td>
<td>45</td>
<td>High torque</td>
</tr>
</tbody>
</table>

*Availability on request
Not available with Quick Connect Cartridge (QCC)
Choose the most suitable COOLMOTION® motor from the list of preferred motors

<table>
<thead>
<tr>
<th>Model</th>
<th>Max. speed (rpm)</th>
<th>Torque (Nm)</th>
<th>Power (kW)</th>
<th>Torque (Nm)</th>
<th>Power (kW)</th>
<th>Torque (Nm)</th>
<th>Power (kW)</th>
<th>Torque (Nm)</th>
<th>Power (kW)</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT100S-S20</td>
<td>20,000</td>
<td>85</td>
<td>20</td>
<td>100</td>
<td>20</td>
<td>115</td>
<td>20</td>
<td>170</td>
<td>20</td>
<td>High speed</td>
</tr>
<tr>
<td>MT100S-S12</td>
<td>12,500</td>
<td>100</td>
<td>36</td>
<td>120</td>
<td>40</td>
<td>130</td>
<td>43</td>
<td>180</td>
<td>48</td>
<td>High torque</td>
</tr>
<tr>
<td>MT100L-S20</td>
<td>20,000</td>
<td>130</td>
<td>45</td>
<td>160</td>
<td>45</td>
<td>180</td>
<td>45</td>
<td>200</td>
<td>45</td>
<td>High speed</td>
</tr>
<tr>
<td>MT100L-S12</td>
<td>12,500</td>
<td>175</td>
<td>54</td>
<td>210</td>
<td>54</td>
<td>235</td>
<td>54</td>
<td>280</td>
<td>54</td>
<td>High torque</td>
</tr>
<tr>
<td>MT100H-S16</td>
<td>16,000</td>
<td>150</td>
<td>40</td>
<td>180</td>
<td>40</td>
<td>200</td>
<td>40</td>
<td>250</td>
<td>40</td>
<td>High speed</td>
</tr>
<tr>
<td>MT100H-S12</td>
<td>12,500</td>
<td>200</td>
<td>54</td>
<td>235</td>
<td>54</td>
<td>265</td>
<td>54</td>
<td>315</td>
<td>54</td>
<td>High torque</td>
</tr>
</tbody>
</table>

- **Spindle fitting:** Ø 202 mm
- **KESSLER COOLMOTION® motor**
- **Cooling:** Open cooling housing
- **Bearing lubrication:**
  - Oil-air / re-greasing

Milling spindle/MT100 S/L/H

MT100 SPINDLE TECHNOLOGY
Milling spindle / MT400

- **Spindle fitting:** Ø 270 mm
- **KESSLER COOLMOTION® motor**
- **Cooling:** Open cooling housing
- **Bearing lubrication:**
  Oil-air / re-greasing

Choose the most suitable COOLMOTION® motor from the list of preferred motors

<table>
<thead>
<tr>
<th>Model</th>
<th>S1 Max. speed (rpm)</th>
<th>S1 Torque (Nm)</th>
<th>S1 Power (kW)</th>
<th>S6 / 40% Torque (Nm)</th>
<th>S6 / 40% Power (kW)</th>
<th>S6 / 25% Torque (Nm)</th>
<th>S6 / 25% Power (kW)</th>
<th>S6 max. Torque (Nm)</th>
<th>S6 max. Power (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT400-S15</td>
<td>15,000</td>
<td>315</td>
<td>87</td>
<td>365</td>
<td>87</td>
<td>375</td>
<td>87</td>
<td>390</td>
<td>87</td>
</tr>
<tr>
<td>MT400-S12</td>
<td>12,000</td>
<td>500</td>
<td>75</td>
<td>635</td>
<td>75</td>
<td>670</td>
<td>75</td>
<td>700</td>
<td>75</td>
</tr>
</tbody>
</table>

*Availability on request
Milling spindle / MT500

- Spindle fitting: Ø 325 mm
- KESSLER COOLMOTION® motor
- Cooling: Open cooling housing
- Bearing lubrication: Oil-air

Choose the most suitable COOLMOTION® motor from the list of preferred motors

<table>
<thead>
<tr>
<th>Model</th>
<th>Max. speed (rpm)</th>
<th>S1 Torque (Nm)</th>
<th>S1 Power (kW)</th>
<th>S6/40 % Torque (Nm)</th>
<th>S6/40 % Power (kW)</th>
<th>S6/25 % Torque (Nm)</th>
<th>S6/25 % Power (kW)</th>
<th>S6 max. Torque (Nm)</th>
<th>S6 max. Power (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT500-S6</td>
<td>6,000</td>
<td>800</td>
<td>67</td>
<td>930</td>
<td>67</td>
<td>1,000</td>
<td>67</td>
<td>1,100</td>
<td>67</td>
</tr>
</tbody>
</table>
Milling spindle / MT600

- **Spindle fitting:** Ø 395 mm
- **KESSLER COOLMOTION® motor**
- **Cooling:** Open cooling housing
- **Bearing lubrication:** Oil-air

<table>
<thead>
<tr>
<th>Model</th>
<th>Max. speed (rpm)</th>
<th>Torque S1 (Nm)</th>
<th>Power S1 (kW)</th>
<th>Torque S6 / 40 % (Nm)</th>
<th>Power S6 / 40 % (kW)</th>
<th>Torque S6 / 25 % (Nm)</th>
<th>Power S6 / 25 % (kW)</th>
<th>Torque S6 max. (Nm)</th>
<th>Power S6 max. (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT600-S5*</td>
<td>5,000</td>
<td>1,200</td>
<td>75</td>
<td>1,350</td>
<td>75</td>
<td>1,500</td>
<td>75</td>
<td>1,600</td>
<td>75</td>
</tr>
</tbody>
</table>

*Availability on request
Not available with Quick Connect Cartridge (QCC)
Modular extensions available

+ Choose the most suitable KESSLER COOLMOTION® motor
+ Sensor monitoring system
  - Vibration sensor
  - Eddy current sensor detects axial shaft displacement
  - Clamping status monitoring
  - Clamping monitoring
  - Temperature sensor PT100
+ Hydraulic clamping
+ Bearing preload variable
+ Closed cooling jacket
+ Clamping spring package is designed for 3 million tool changes

Accessories

- Oil-air lubrication unit
- Re-greasing unit on demand
- Direct lubrication on demand
Quick Connect Cartridge (QCC)

1. DISASSEMBLY OF THE CARTRIDGE FROM THE MOTOR SPINDLE

2. ASSEMBLY OF THE NEW CARTRIDGE

3. RESTARTING OF OPERATION

Fast replacement of rotor shaft, front/rear bearing and power drawbar on-site

Reduces TCO (Total Costs of Ownership)

Reduces machine downtime

No electrician needed

The built-in spindle housing remains in the headstock of the machine during the replacement procedure.

For more information go online to view QCC video under www.kessler-group.biz
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