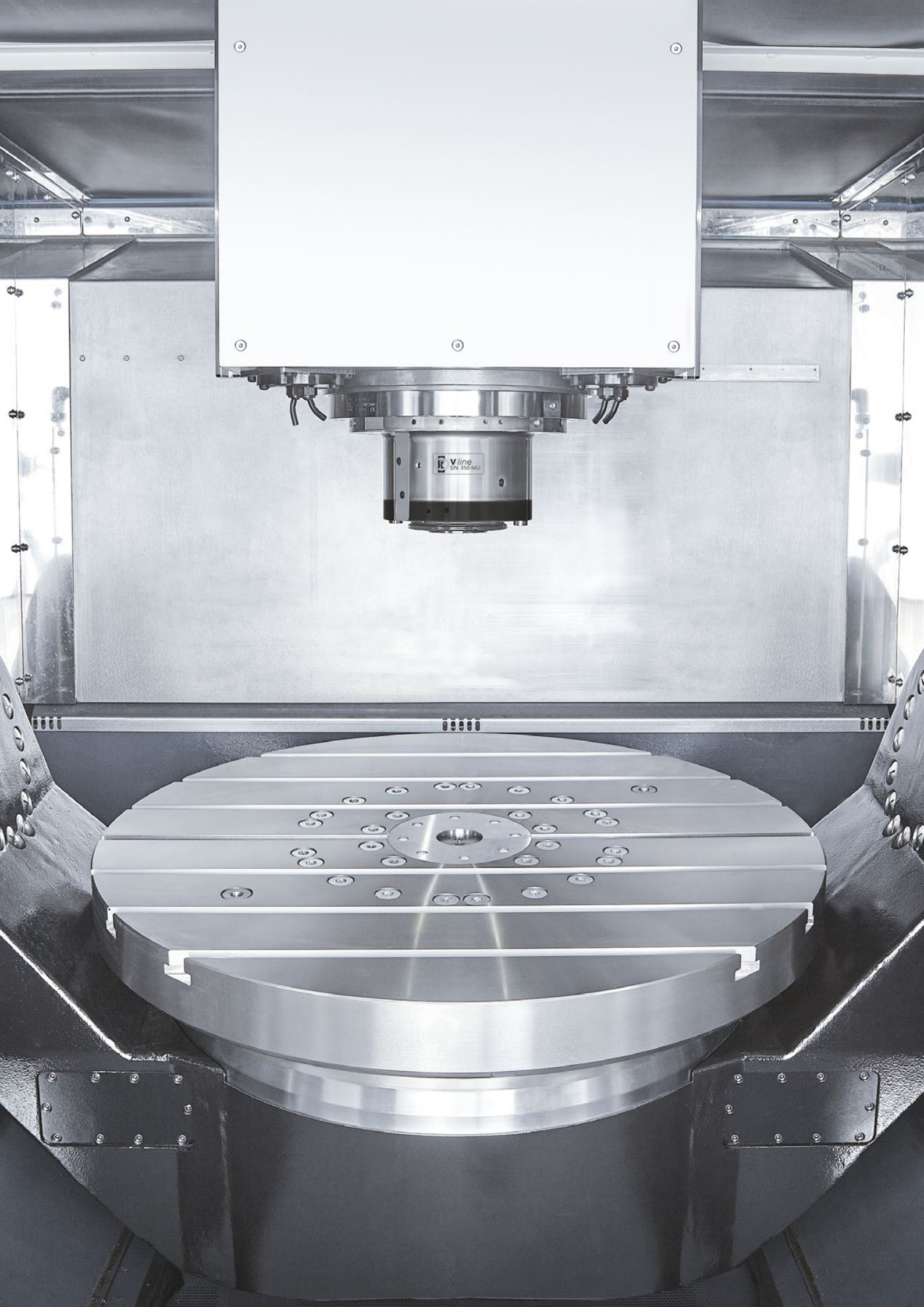


Milling spindles / V line

Allround talent for machining technology





KESSLER spindle *lines*

Spindle technology with passion and expertise

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.

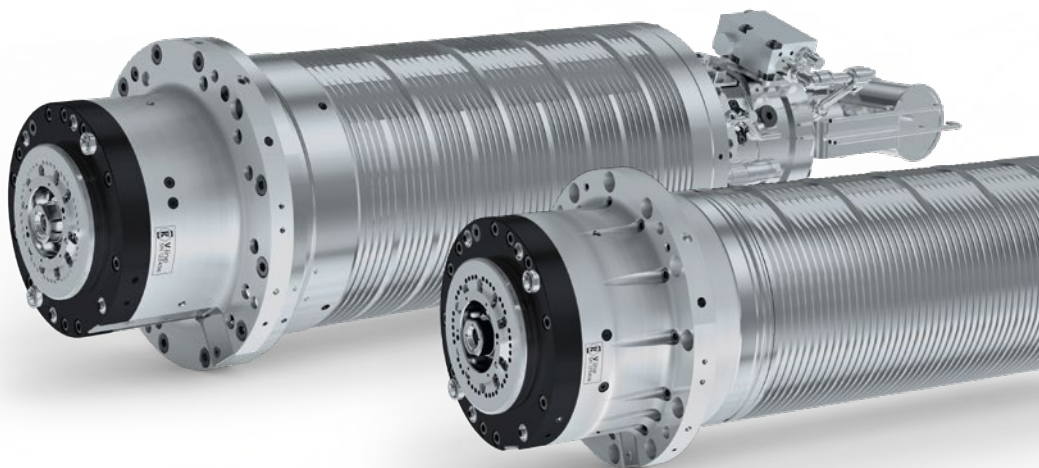
Our in-house development division is supported by extensive calculation and analysis skills and covers everything from direct drive technology to the construction of all-in-one systems. Furthermore, optimized production and assembly lines provide the framework for stable processes and the superior quality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



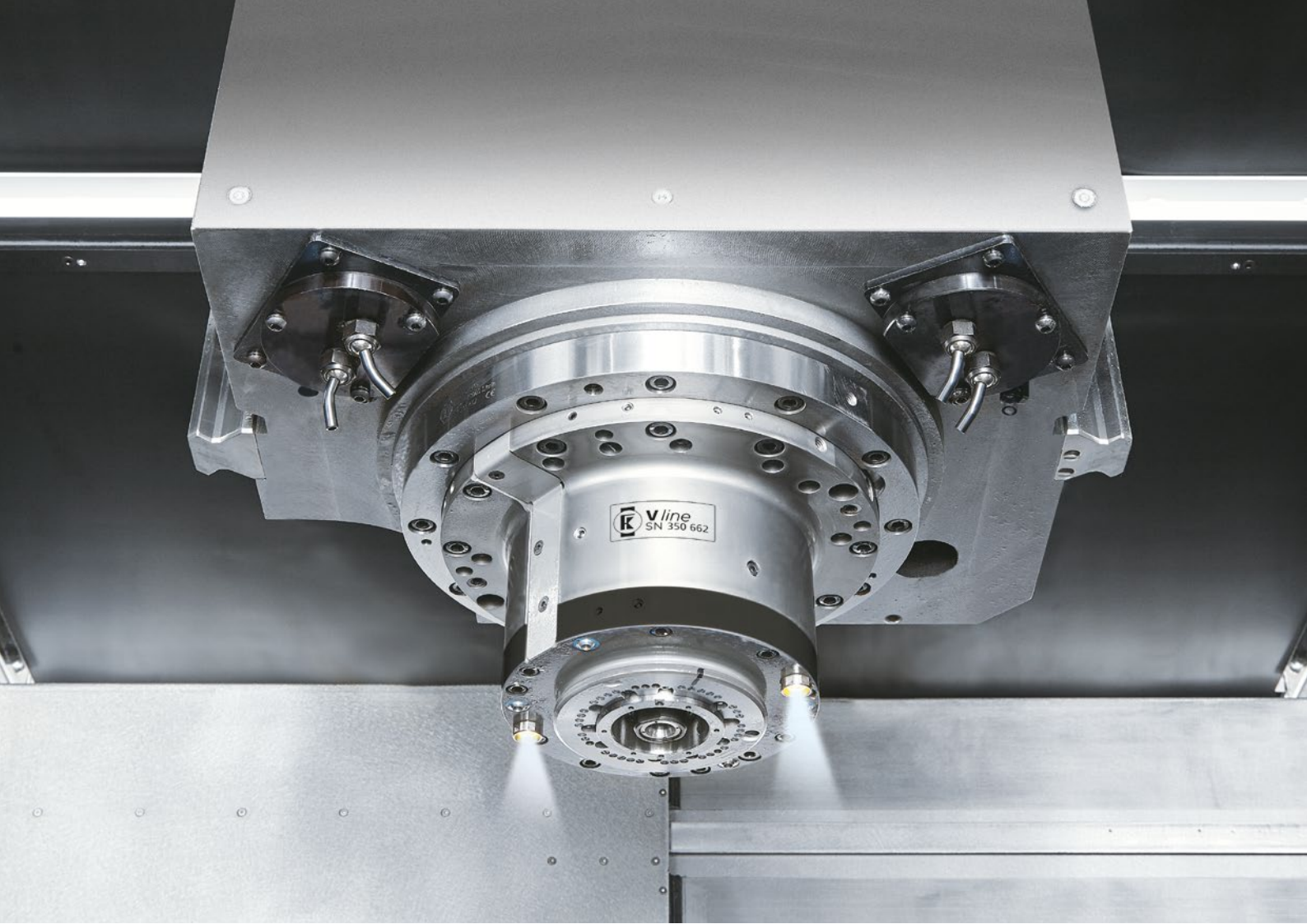
Masterpieces

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

| | | | | | | | | | | |
|--|--|--|------|------|-------|--|-------|-------|---|-----|
| HC line <ul style="list-style-type: none">○ Heavy cutting○ Aerospace titanium machining○ Machining of large-scale parts | |  | | | | | | HC500 | HC600 | |
| PC line <ul style="list-style-type: none">○ High speed○ High power○ High accuracy | | | PC80 | | PC100 | | | PC400 |  | |
| H line <ul style="list-style-type: none">○ Horizontal installation○ Very short acceleration and braking times | | H80 | | H100 | | H200 | | |  | |
| MT line <ul style="list-style-type: none">○ Very short construction○ Used in tilting heads, turning and milling operations | | MT80 | | | MT100 |  | MT400 | MT500 | MT600 | |
| V line <ul style="list-style-type: none">○ Vertical installation○ Tilting○ Allrounder | | | | | V100 | | V200 | V400 |  | |
| Spindle fitting Ø (mm) | | | | | | | | | | |
| ○ Open cooling housing | | 170 | 170 | | 200 | | 230 | 270 | 325 | 395 |
| ○ Closed with steel sleeve | | | 180 | | 210 | | 240 | | | |
| ○ Closed with solid housing | | | | 200 | 230 | 240 | | 310 | | |
| Availability on request | | | | | | | | | | |

The **V line** is all about:

- Vertical machining
- Suitable for **tilting operation**
- 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**



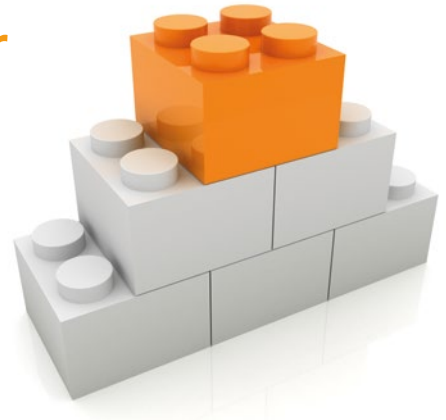
Our *V line* variants

| Model | V100 | V200 | V400 |
|------------------------|--------------------------------------|---------------------------------------|---------------------------------------|
| Maximum speed (rpm) | 24,000 | 16,000 | 15,000 |
| Spindle fitting Ø (mm) | 202 | 230 | 270 |
| Tool interface | HSK 63 BBT 40 / SK 40 Capto C6 | HSK 100 SK 50 / BBT 50 Capto C8 | HSK 100 SK 50 / BBT 50 Capto C8 |

Impress with:

- high flexibility
- optional shaft clamping
- tilting operation optional

All advantages of the modular system at a glance



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

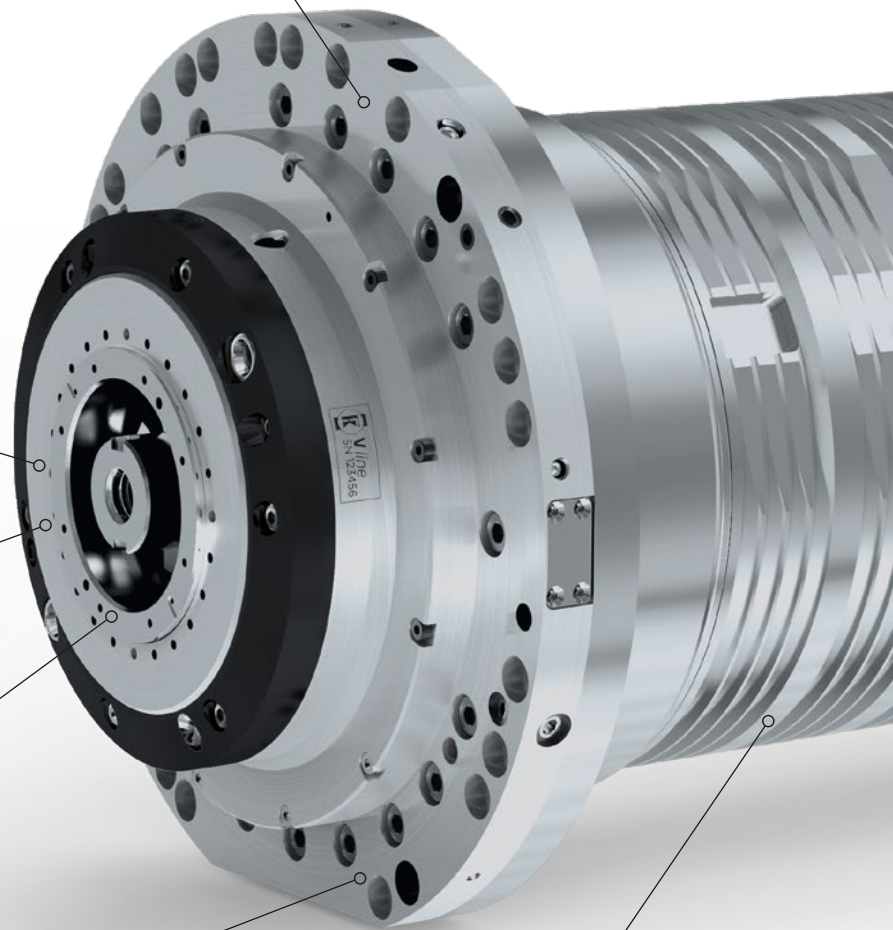
- **Bearing preload**
dynamically adaptable to the machining process

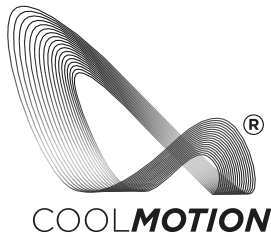
- **High degree of operational safety thanks to LEDs**
due to optimal illumination of the tool intervention

- **High flexibility**
Various tool interfaces available

- **High availability**
with the KESSLER tool clamping system

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





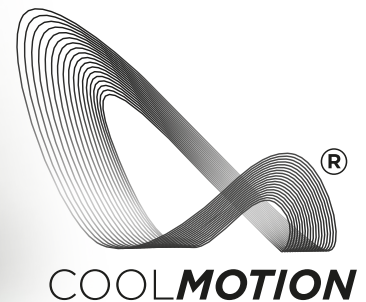
- **The most suitable COOLMOTION® motor** for your individual needs: with very high torque, very high speed or high-compact design
- **Various bearing lubrication systems** available
- **Hydraulic, pneumatic or electrical release unit** available
- **High flexibility:** KESSLER rotary union for media: lubrication, dry operation, compressed air, MQL capability
- **Process reliability** due to extensive sensory system
- **Analogue or digital tool clamping status monitoring** available on request
- **Hydraulic clamping for turning operations** available
- **High power density**, due to very compact design and light weight

HIGH QUALITY

MADE IN GERMANY

Milling spindle/V100

- **Spindle fitting:** Ø 202 mm
- **KESSLER COOLMOTION® motor**
- **Rotary union:** Internal coolant supply with high volume flow
- **Cooling:** Open cooling housing
- **Bearing lubrication:** Grease / re-greasing / oil-air



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

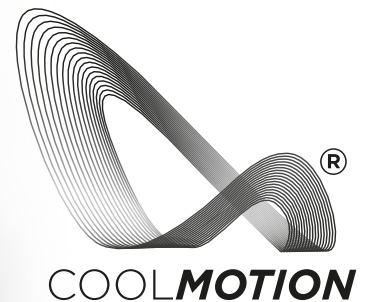
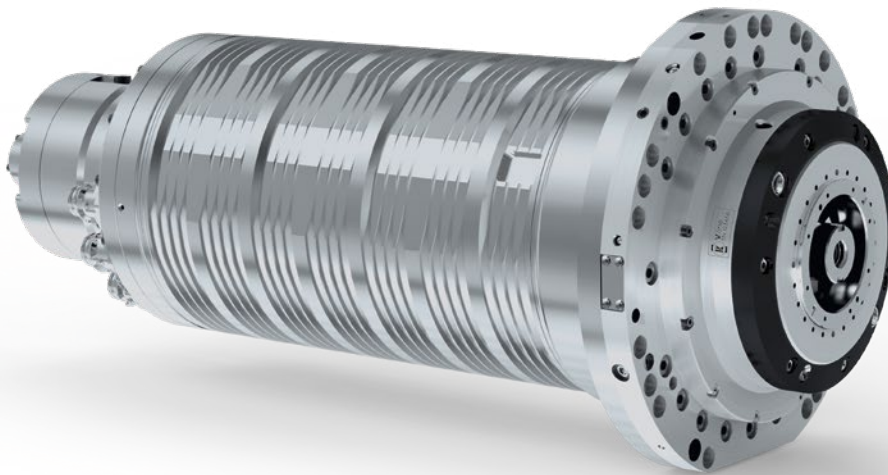
| Model | | S1 | | S6 / 40 % | | S6 / 25 % | | S6 max. | | |
|----------|---------------------|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|-------------|
| | Max. speed (rpm) | Torque (Nm) | Power (kW) | Torque (Nm) | Power (kW) | Torque (Nm) | Power (kW) | Torque (Nm) | Power (kW) | |
| V100-S24 | 24,000 | 90 | 50 | 110 | 50 | 130 | 50 | 160 | 50 | High speed* |
| V100-A15 | 15,000 | 130 | 30 | 201** | 46 | 217 | 50 | 217 | 50 | High torque |
| V100-A20 | 20,000 | 87 | 25 | 135** | 40 | 150 | 44 | 203 | 60 | Bestseller |
| V100-A14 | 14,000 | 80 | 15 | 112 | 21 | 129 | 24.5 | 141 | 27 | Entry level |

*Availability on request

**S6 40 % / 25 % DC: 2 min.

Milling spindle/V200

- **Spindle fitting:** Ø 230 mm
- **KESSLER COOLMOTION® motor**
- **Rotary union:** Internal coolant supply with high volume flow
- **Cooling:** Open cooling housing
- **Bearing lubrication:** Grease / re-greasing / oil-air



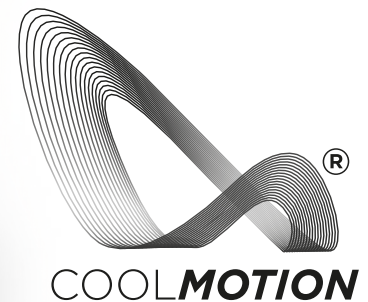
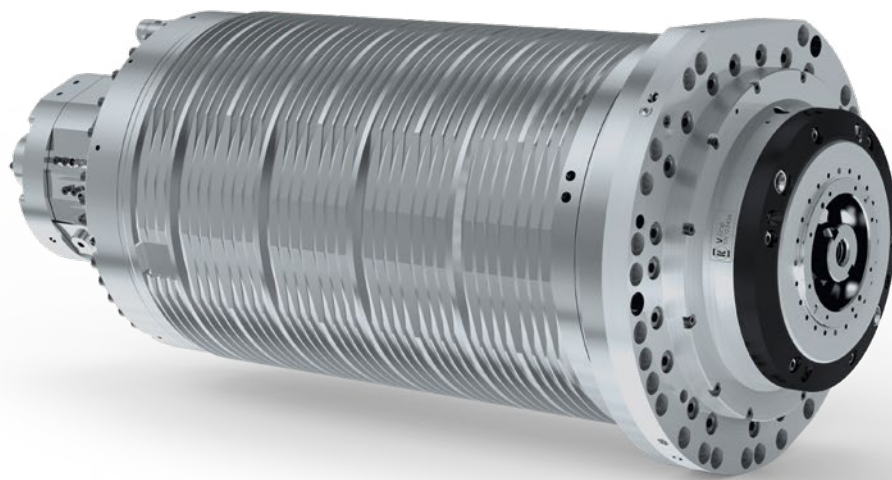
Choose the most suitable COOLMOTION® motor from the list of preferred motors

| Model | | S1 | | S6 / 40 % | | S6 / 25 % | | S6 max. | | |
|----------|---------------------|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|--------------|
| | Max. speed (rpm) | Torque (Nm) | Power (kW) | Torque (Nm) | Power (kW) | Torque (Nm) | Power (kW) | Torque (Nm) | Power (kW) | |
| V200-S16 | 16,000 | 185 | 52 | 205 | 52 | 235 | 52 | 260 | 52 | High speed* |
| V200-S12 | 12,000 | 235 | 54 | 265 | 54 | 305 | 54 | 335 | 54 | High torque* |
| V200-A14 | 14,000 | 180 | 30 | 260 | 43 | 300 | 50 | 300 | 50 | Entry level* |

*Availability on request

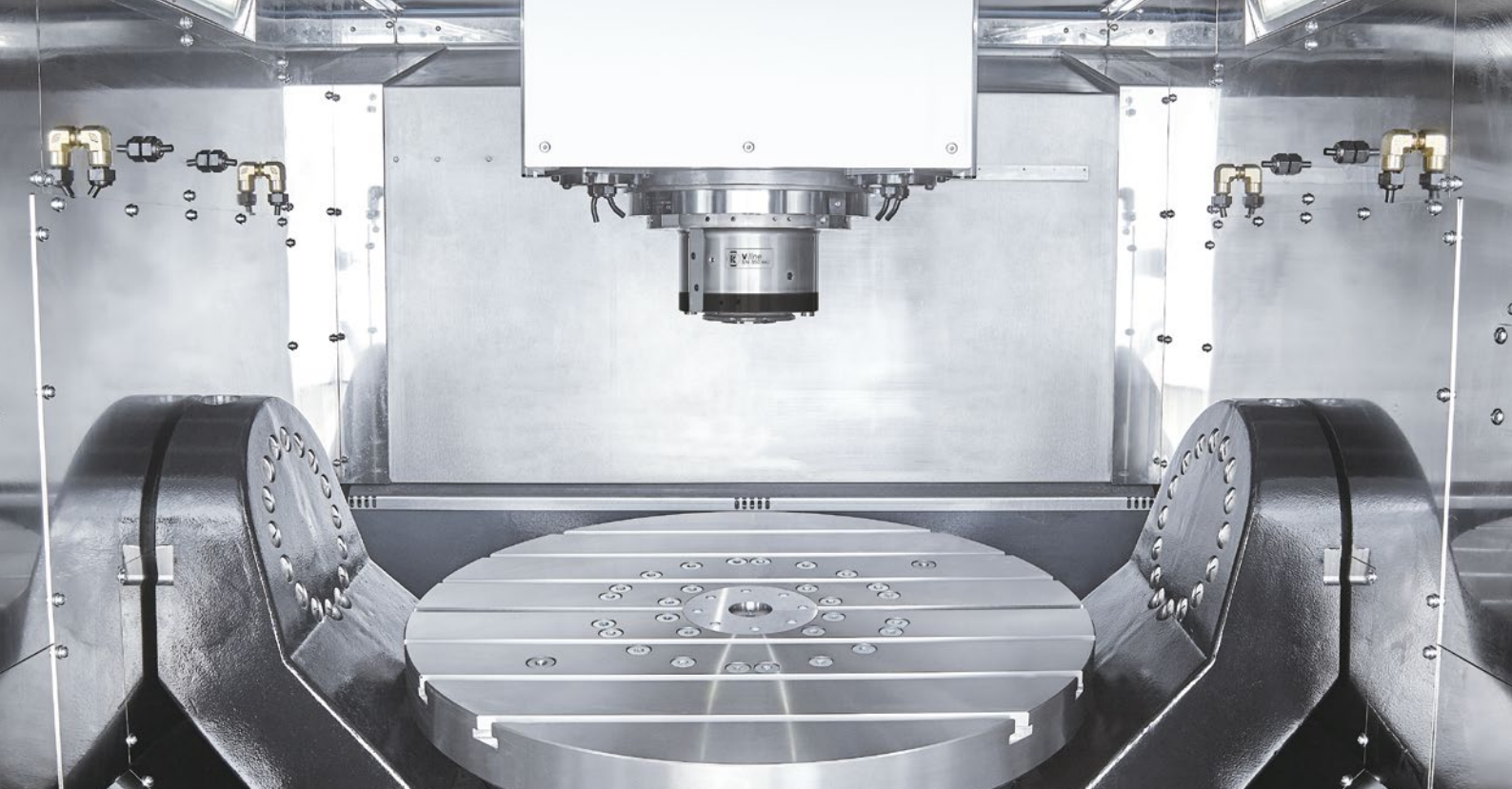
Milling spindle/V400

- **Spindle fitting:** Ø 270 mm
- **KESSLER COOLMOTION® motor**
- **Rotary union:** Internal coolant supply with high volume flow
- **Cooling:** Open cooling housing
- **Bearing lubrication:** Grease / re-greasing / oil-air



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

| Model | | S1 | | S6 / 40 % | | S6 / 25 % | | S6 max. | | |
|----------|---------------------|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|-------------|
| | Max. speed (rpm) | Torque (Nm) | Power (kW) | Torque (Nm) | Power (kW) | Torque (Nm) | Power (kW) | Torque (Nm) | Power (kW) | |
| V400-A15 | 15,000 | 300 | 48 | 445 | 70 | 535 | 84 | 640 | 100 | High speed |
| V400-A10 | 10,000 | 400 | 50 | 560 | 70 | 690 | 86 | 800 | 100 | High torque |
| V400-A15 | 15,000 | 220 | 35 | 305 | 48 | 350 | 56 | 405 | 65 | Entry level |



Modular extensions available

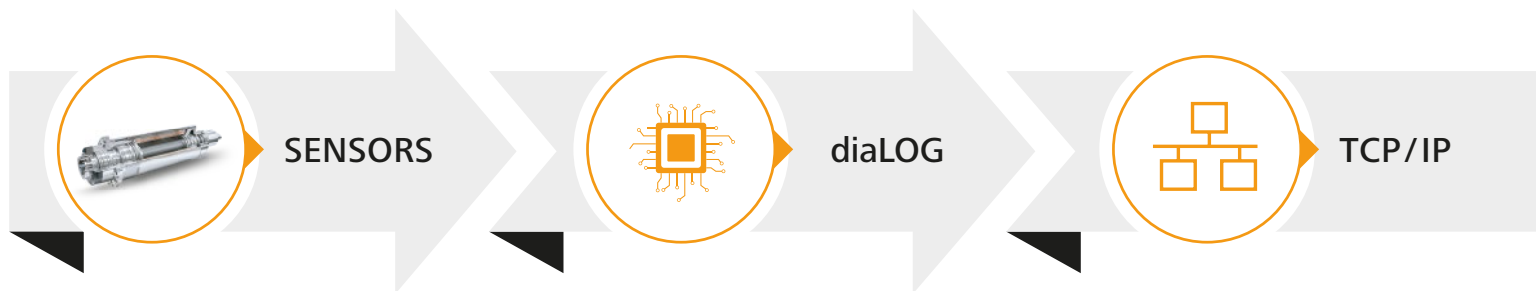
- + Choose the most suitable **KESSLER COOLMOTION®** motor for your needs
- + **KESSLER rotary union**
 - Coolant
 - Dry operation
 - Compressed air
 - MQL capability
- + **Sensor monitoring system**
 - Interface control (IFC)
 - Vibration sensor
 - Analogue sensor
 - Eddy current sensor detects axial shaft displacement
 - Clamping status monitoring
 - Clamping monitoring
 - Leakage monitoring
 - Temperature sensor PT100
- + Hydraulic clamping
- + Bearing preload variable
- + Bearing lubrication Grease / re-greasing / oil-air
- + Closed cooling jacket
- + Clamping spring package is designed for 5 million tool changes
- + Holding-function for collet chuck variable
- + 2-channel rotary union

Accessories

- + Oil-air lubrication unit
- + Re-greasing unit
- + Direct lubrication on demand

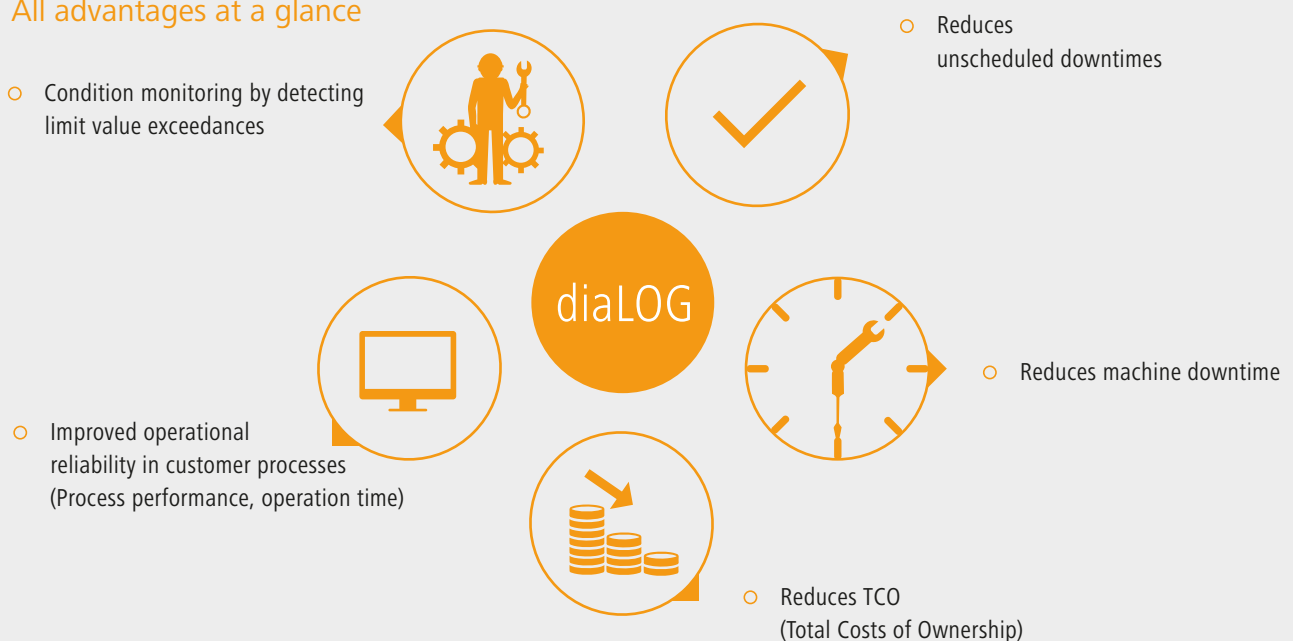
Keeping up with the beat of the spindle

The KESSLER diaLOG intelligent system for data processing and condition monitoring is our solution for a connected industry



- Integrated electrical current, temperature and vibration sensors determine the current, frequency, temperature conditions and vibration acceleration.
- An intelligent digital network system (KESSLER diaLOG) analyses and evaluates process data.
- Detects and stores limit value exceedances
- Interface with the network infrastructure
- The system is equipped with a TCP/IP interface for data transfer. This system transmits diaLOG data either continuously or on request to the diaLOG App or client application.

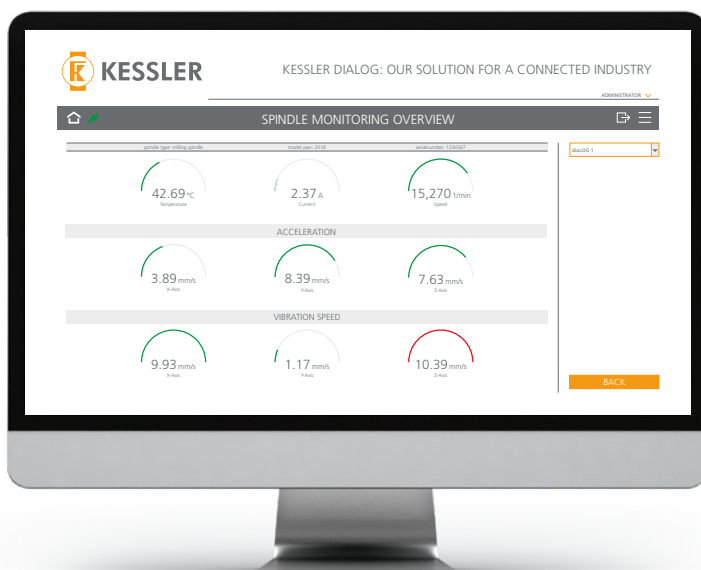
KESSLER diaLOG All advantages at a glance



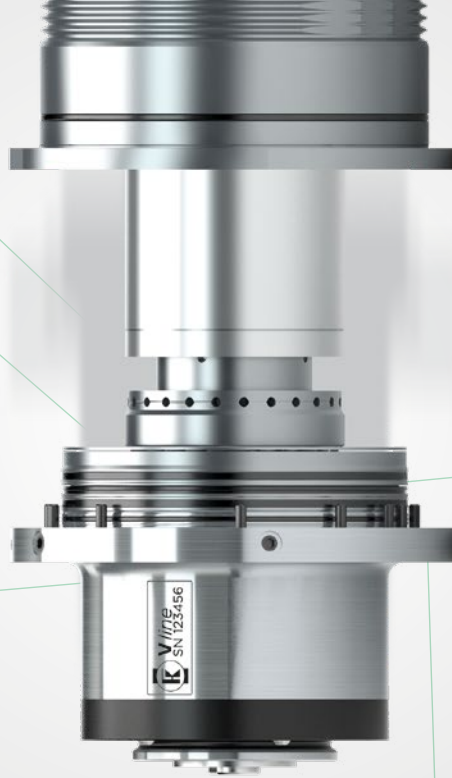


- Predefined limit values are continuously monitored and logged by the system. The diaLOG App has been developed for evaluating the diaLOG data.
- Its functions are planned to include preventive maintenance and continuous data collection.
- Correction factors from the motor spindle will be communicated to the user and warning messages will be automatically transmitted to the process control system.
- KESSLER diaLOG incorporated in the product contributes to full process visualisation.
- Can be used throughout the product range with additional options for other areas.

- SPINDLE MONITORING
 - Live view of all diaLOG sensor data
 - Analysis of functions by means of individual values
- FINGERPRINT
 - KESSLER fingerprint
 - Detection of the as-found fingerprint (test bench)
 - Comparison in the case of spindle repairs
 - Commissioning fingerprint in the machine tool
 - Cyclical comparison with the new fingerprint
 - Data export
- CONDITION MONITORING
 - Display of captured limit value exceedances
 - Transport monitoring
 - Crash detection
 - Overload detection
 - Display of continuously captured data
 - Load spectra
 - Loading conditions
 - Histogram data
- PRODUCT DATA
 - Display of data on the spindle type plate
 - Display of converter parameters
 - Data export



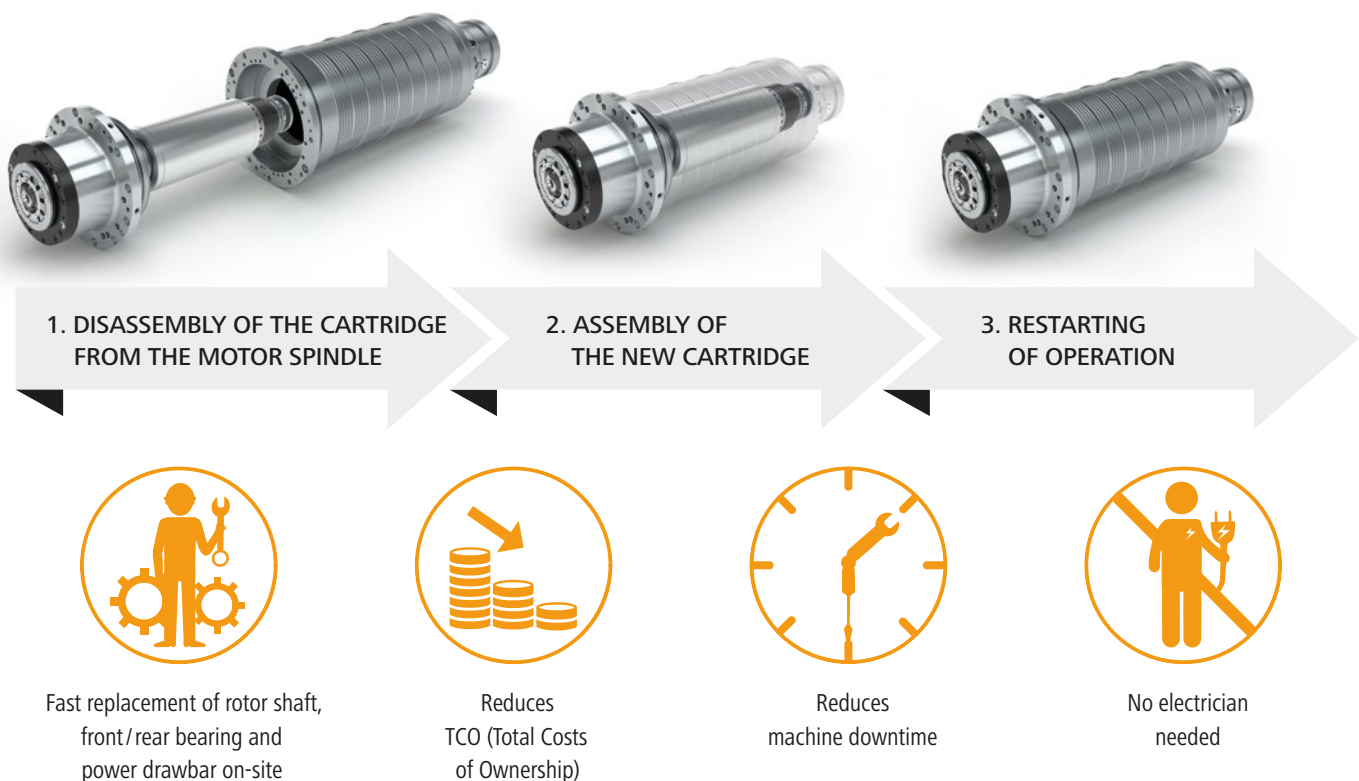
Available on request



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

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

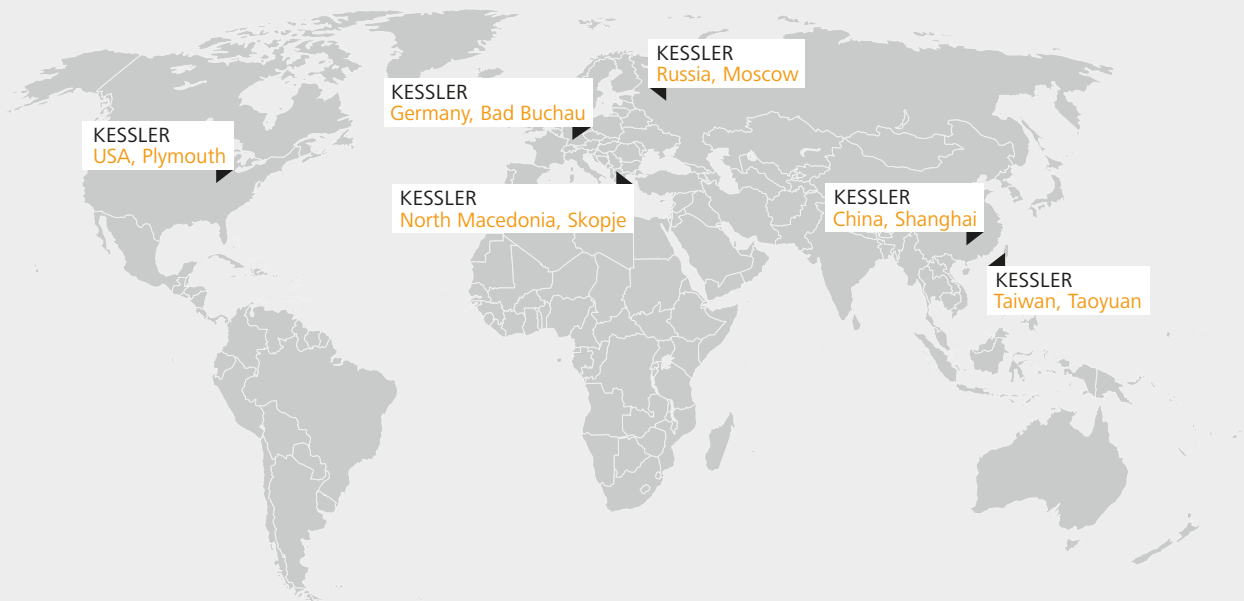
Quick Connect Cartridge (QCC)



All information has been carefully compiled and checked. The printed illustrations are of an explanatory nature and may differ from the actual design. Contents may change without prior notice due to the continuous development of our products. Availabilities and delivery times are subject to variability and have to be confirmed in each individual case. Subject to modification. E&OE.
Photos: Buffalo Machinery Co., Ltd.; © Franz Kessler GmbH, August 2019. Reprinting, even in part, is only permitted with our approval. FK Edition 2019 PK1006-EN-V4.1



Operating Worldwide for our Customers



Germany

Franz Kessler GmbH
 Franz-Kessler-Straße 2
 88422 Bad Buchau, Germany
 Tel.: +49 7582 809 - 0
 Fax: +49 7582 809 - 170
 E-Mail: info@kessler-group.biz

KESSLER energy GmbH
 Franz-Kessler-Straße 2
 88422 Bad Buchau, Germany
 Tel.: +49 7582 809 - 0
 Fax: +49 7582 809 - 170
 E-Mail: info.energy@kessler-group.biz

North Macedonia

KESSLER Macedonia DOOEL Ilinden
 Str. 32, N.21, 1041 Ilinden, Skopje,
 Republic of North Macedonia
 Tel.: +389 71 381 863
Biljana.Andova@kessler-group.biz

USA

KESSLER USA Inc.
 44099 Plymouth Oaks Blvd.
 Plymouth, MI 48170, USA
 Tel.: +1 734 404 0152
 Fax: +1 734 404 0153
 E-Mail: info.usa@kessler-group.biz

Taiwan

KESSLER Taiwan Ltd.
 No.347, Sec. 1
 Nanshan Rd
 Luzhu District
 Taoyuan City 33861
 Taiwan (R.O.C.)
 Tel.: +886 3 326 2256
 Fax: +886 3 355 5014
 E-Mail: info.tw@kessler-group.biz

China

**KESSLER (Shanghai)
 Spindle Service Co., Ltd.**
 Building #12
 No.318 Yuanshan Rd
 Minhang District
 201108 Shanghai, China
 Tel.: +86 21 6489 7034
 Fax: +86 21 6489 7134
 E-Mail: info.cn@kessler-group.biz

Russia

KESSLER East Ltd.
 Dorogobuzhskaja str., 14, bld. 6
 121354, Moscow, Russia
 Tel.: +7 495 204 2450
 E-Mail: info.ru@kessler-group.biz