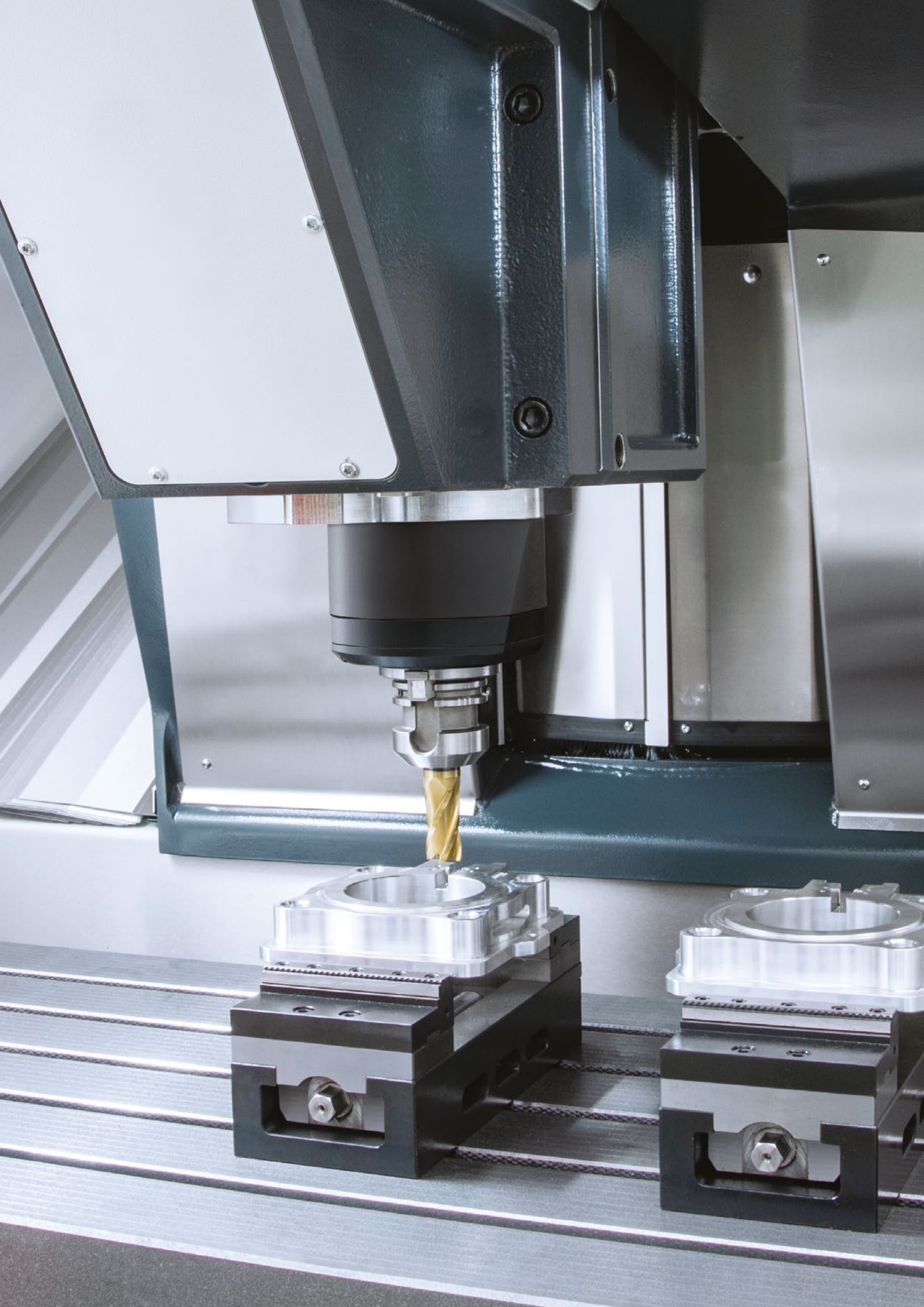
KESSLER

Milling spindles / V *line*

Allround talent for machining technology

SPINDLE TECHNOLOGY I SYSTEM TECHNOLOGY I DRIVE TECHNOLOGY I SERVICE SOLUTIONS

www.kessler-group.biz



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. We use the very latest technology and analytical processes to test our components under realistic conditions, so that our products help your business to stay flexible and maintain its competitive edge.

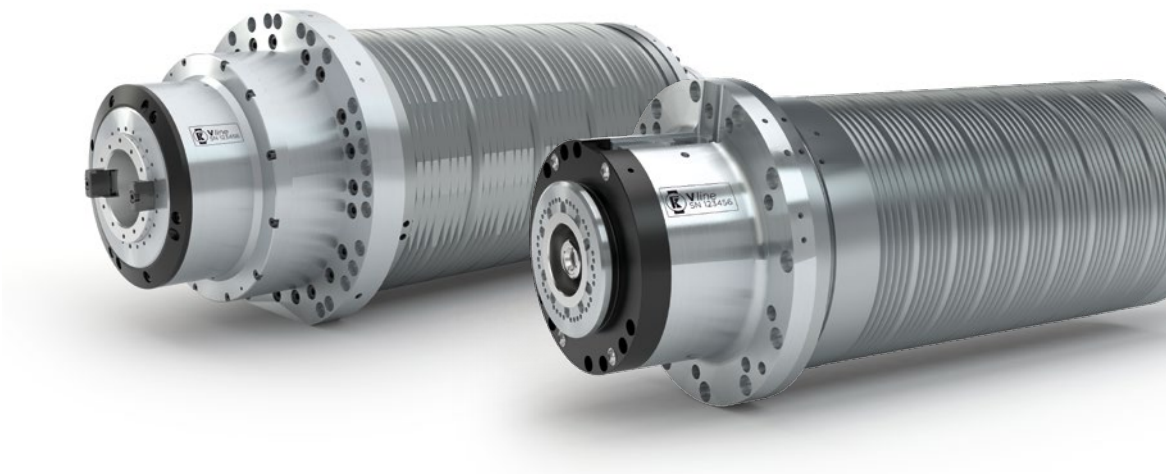
Our in-house development division is supported by extensive calculation and analysis skills and covers everything from direct drive technology to the construction of all-in-one systems. Furthermore, optimized production and assembly lines provide the framework for stable processes and the superior quality 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 proudly counts many major companies from the mechanical engineering sector amongst its long-standing customers.

With the expertise of more than 90 years, KESSLER is continuously further developing and optimizing its products. The KESSLER product portfolio serves a wide range of sectors, procedures and applications. Close cooperation with our customers remains our key focus. The extensive product portfolio, ranging from hightech spindles, 2-axis heads, rotary and rotary tilt tables to motors and direct drive systems, enables KESSLER to realize customized solutions with speed and flexibility.

Service is a matter of trust. Rely on us as your trusted service partner: 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* ○ Heavy cutting ○ Aerospace titanium machining ○ Machining of large-scale parts									HC500	HC600
PC *line* ○ High speed ○ High power ○ High accuracy			PC80		PC100			PC400		
H *line* ○ Horizontal installation ○ Very short acceleration and braking times		H80		H100		H200				
MT *line* ○ Very brief design ○ Used in 2-axis heads, turning and milling operations	MT60				MT100			MT400		
V *line* ○ Vertical installation ○ Tilting ○ Allrounder	V60		V80		V100		V200	V400		
Spindle fitting Ø (mm)										
○ Open cooling circuit	140		170		200		230	270	325	395
○ Closed with steel jacket	150		180		210		240			
○ Closed with rear housing		170		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)**
- Equipped with **shaft clamping for turning operation**
- Option to **measure the axial shaft displacement**

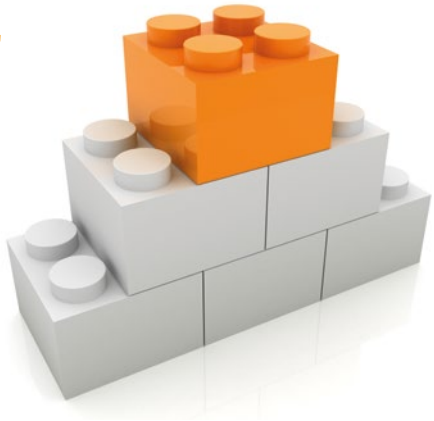
Our V *line* variants

Model	V80	V100	V200	V400
Maximum speed (rpm)	26,000	25,000	18,000	15,000
Spindle fitting Ø (mm)	170	202	230	270
Tool interface	HSK 63 BBT 40 / SK 40 Capto C6	HSK 63 BBT 40 / SK 40 Capto C6	A 100 SK 50 / BBT 50 Capto C8	A 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 operational safety with LEDs**
  due to optimal illumination of the tool intervention

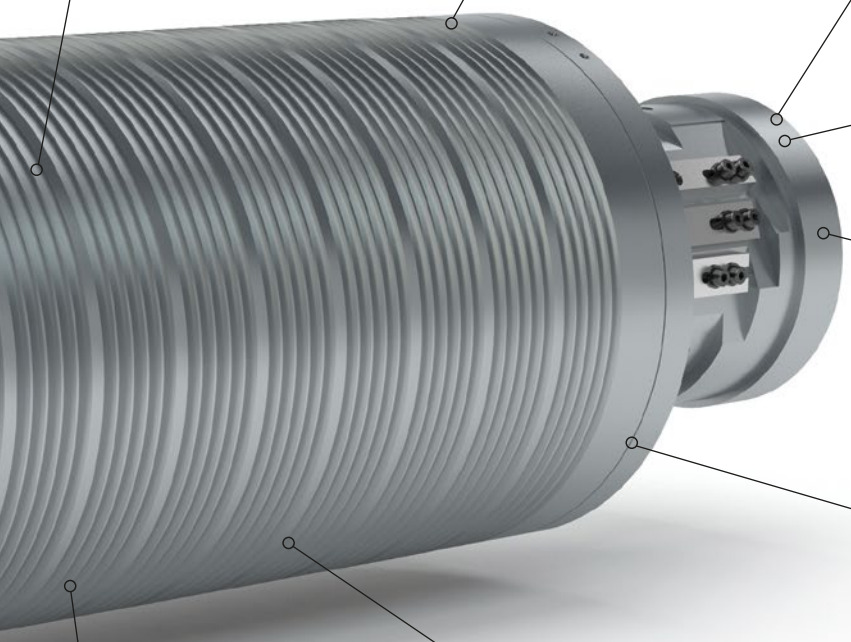
- **High flexibility**
  Various tool interfaces available

- **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)

COOL*MOTION*®

- **The best matching COOL*MOTION*® 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 the medias: lubrication, dry operation, compressed air, minimum cooling lubrication capability



- **Process reliability** due to extensive sensory system
- **Analog or digital tool clamping status monitoring available** on request
- **Hydraulic clamping for turning operations available**
- **High power density,** due to very compact, space-saving design and light weight

HIGH QUALITY

MADE IN GERMANY

Milling spindle / V80

- **Spindle fitting:** Ø 170 mm
- **KESSLER COOL*MOTION*® motor**
- **Rotary union:** Internal coolant supply with high volume flow
- **Cooling:** Closed cooling circuit
- **Bearing lubrication:** Grease / re-greasing / oil-air

COOL*MOTION*®

A few of the many KESSLER motors

Select the right COOL***MOTION***® motor for your needs from our extensive range

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)	
V80-A26	26,000	65	28	90	39	110	47	135	58	High speed
V80-A20	20,000	65	19	95	28	120	35	150	44	High torque
V80-A24	24,000	50	19	70	27	85	33	110	43	Entry-level model

Other synchronous and asynchronous motors available on request

Milling spindle / V100

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

COOL*MOTION*®

A few of the many KESSLER motors

Select the right COOL*MOTION*® motor for your needs from our extensive range

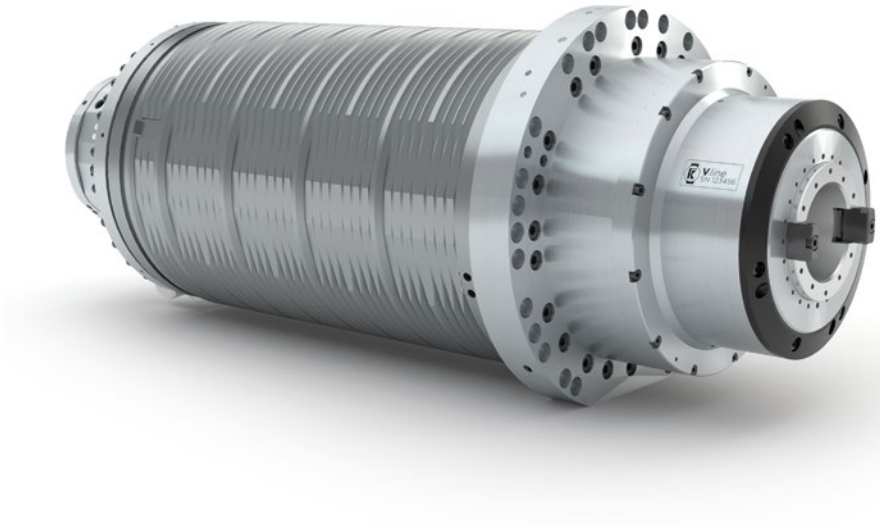
Model		S1		S6 / 40%		S6 / 25%		S6 max.		
	Max. speed (rpm)	Torque (Nm)	Power (kW)	Torque (Nm)	Power (kW)	Torque (Nm)	Power (kW)	Torque (Nm)	Power (kW)	
V100-A25	25,000	70	22	110	35	130	41	190	60	High speed
V100-A15	15,000	130	30	201*	46	217	50	217	67	High torque
V100-A20	20,000	87	25	135*	40	150	44	203	60	Bestseller
V100-A14	14,000	80	15	112	21	129	24.5	141	27	Entry-level model

Other synchronous and asynchronous motors available on request

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

Milling spindle / V200

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



COOL*MOTION*®

A few of the many KESSLER motors

Select the right COOL***MOTION***® motor for your needs from our extensive range

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-S18	18,000	185	57	205	57	235	57	260	57	High speed
V200-S12	12,000	235	54	265	54	305	54	335	54	High torque
V200-S15	15,000	185	57	205	57	235	57	260	57	Entry-level model

Other synchronous and asynchronous motors available on request

Milling spindle / V400

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

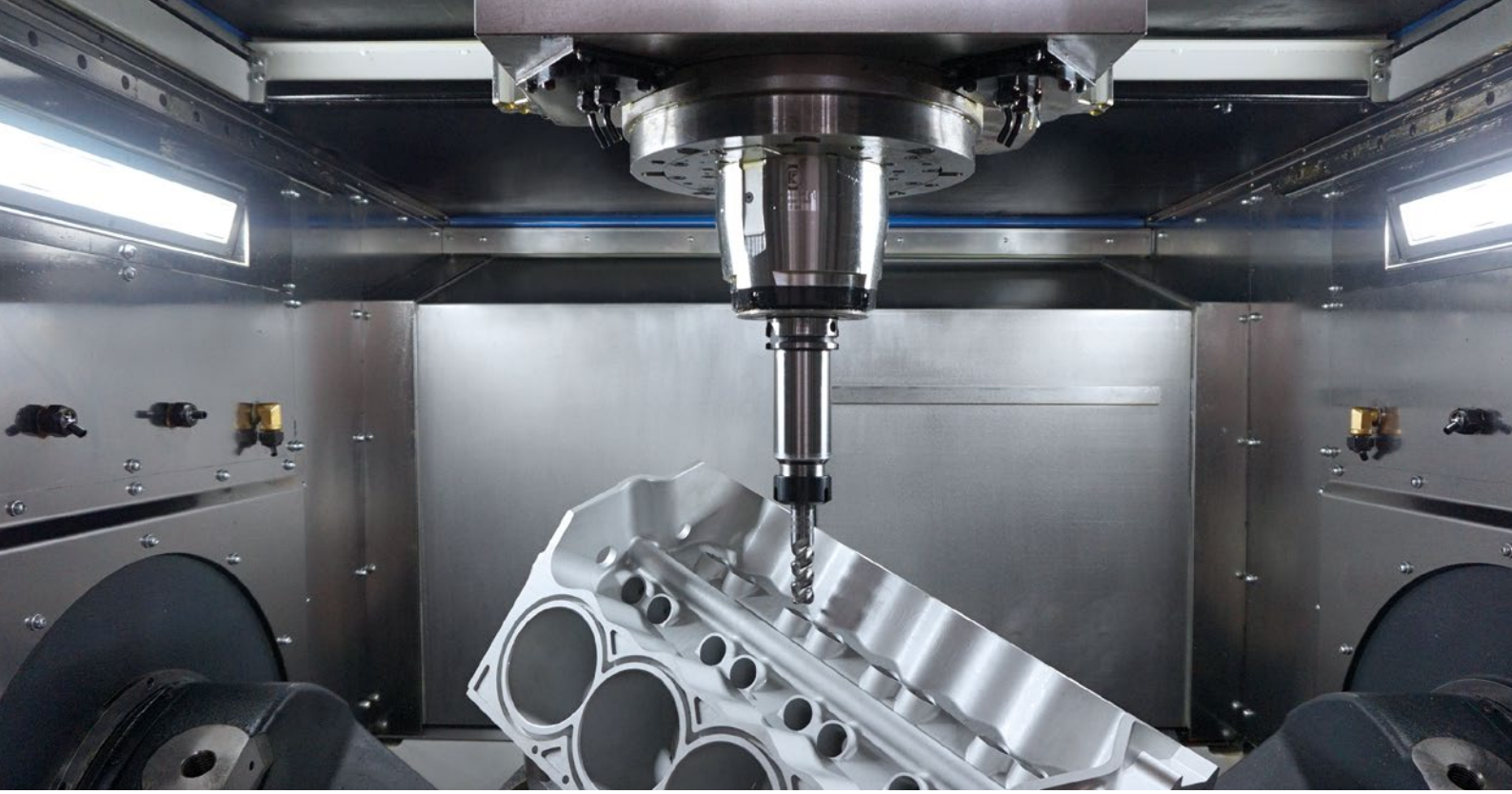
COOL*MOTION*®

A few of the many KESSLER motors

Select the right COOL***MOTION***® motor for your needs from our extensive range

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	365	46	510	64	630	80	750	95	High torque
V400-A15	15,000	220	35	305	48	350	56	405	65	Entry-level model

Other synchronous and asynchronous motors available on request

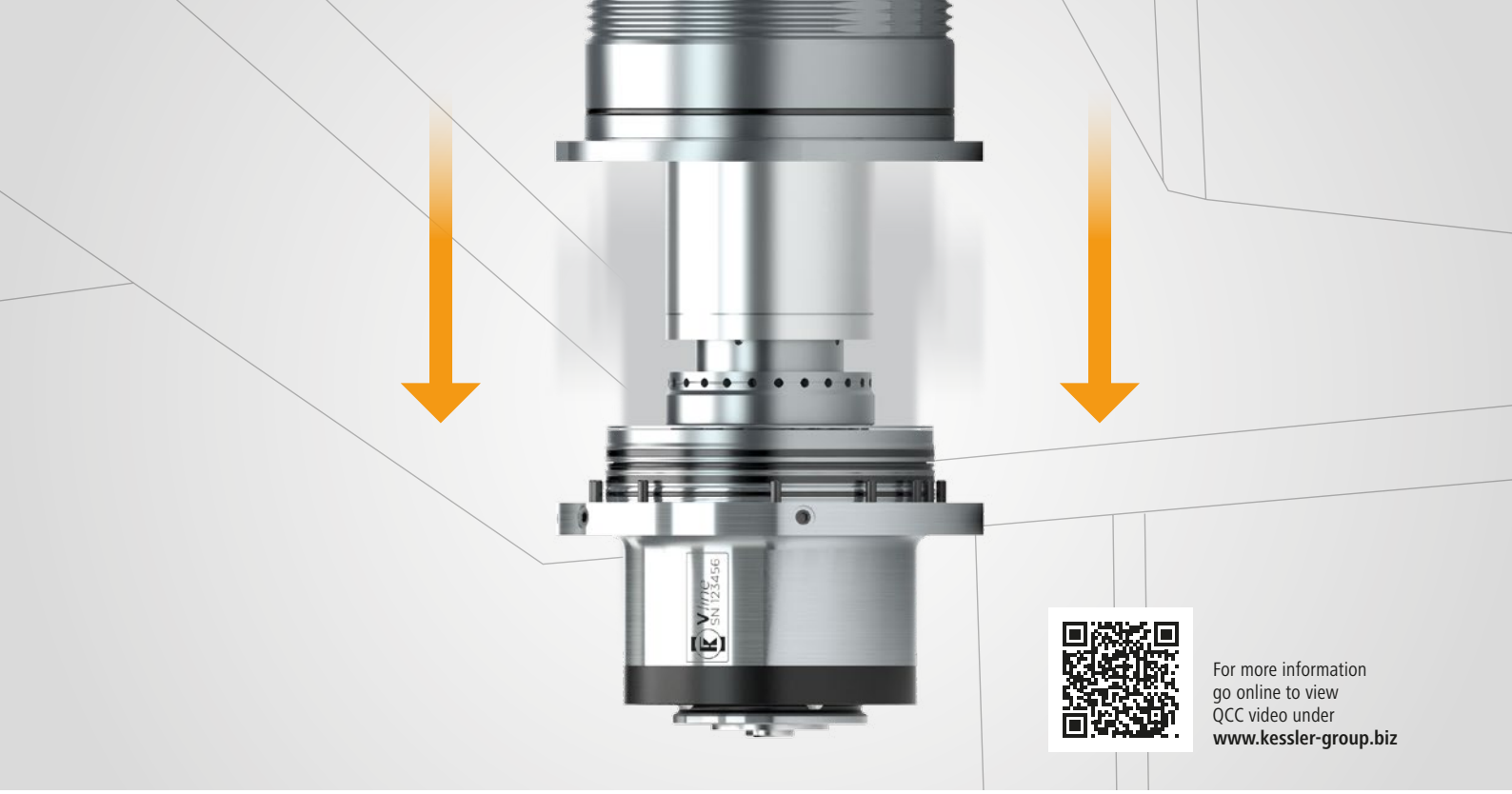


Modular extensions available

+ **Choose the best matching KESSLER COOL*MOTION*® motor for your needs**
+ **KESSLER rotary union**
  - Cooling lubricant
  - Dry operation
  - Compressed air
  - Minimum cooling lubrication capability
+ **Sensor monitoring system**
  - Face end contact monitoring
  - Vibration sensor
  - Analog sensor
  - Eddy current sensor
  - 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**
+ **Standard cable outlet, connector optional**
+ **Holding-function for collet chuck**
  variable
+ **2-channel rotary union**

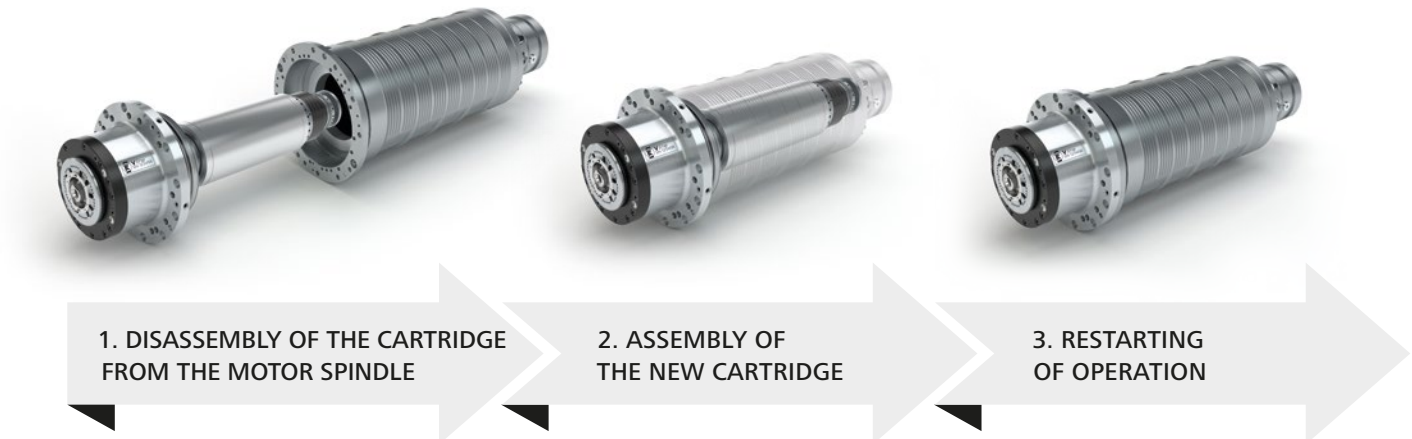
Accessories

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



The vertically installed spindle housing rests during the change in the headstock of the machine

KESSLER QCC – Quick Connect Cartridge

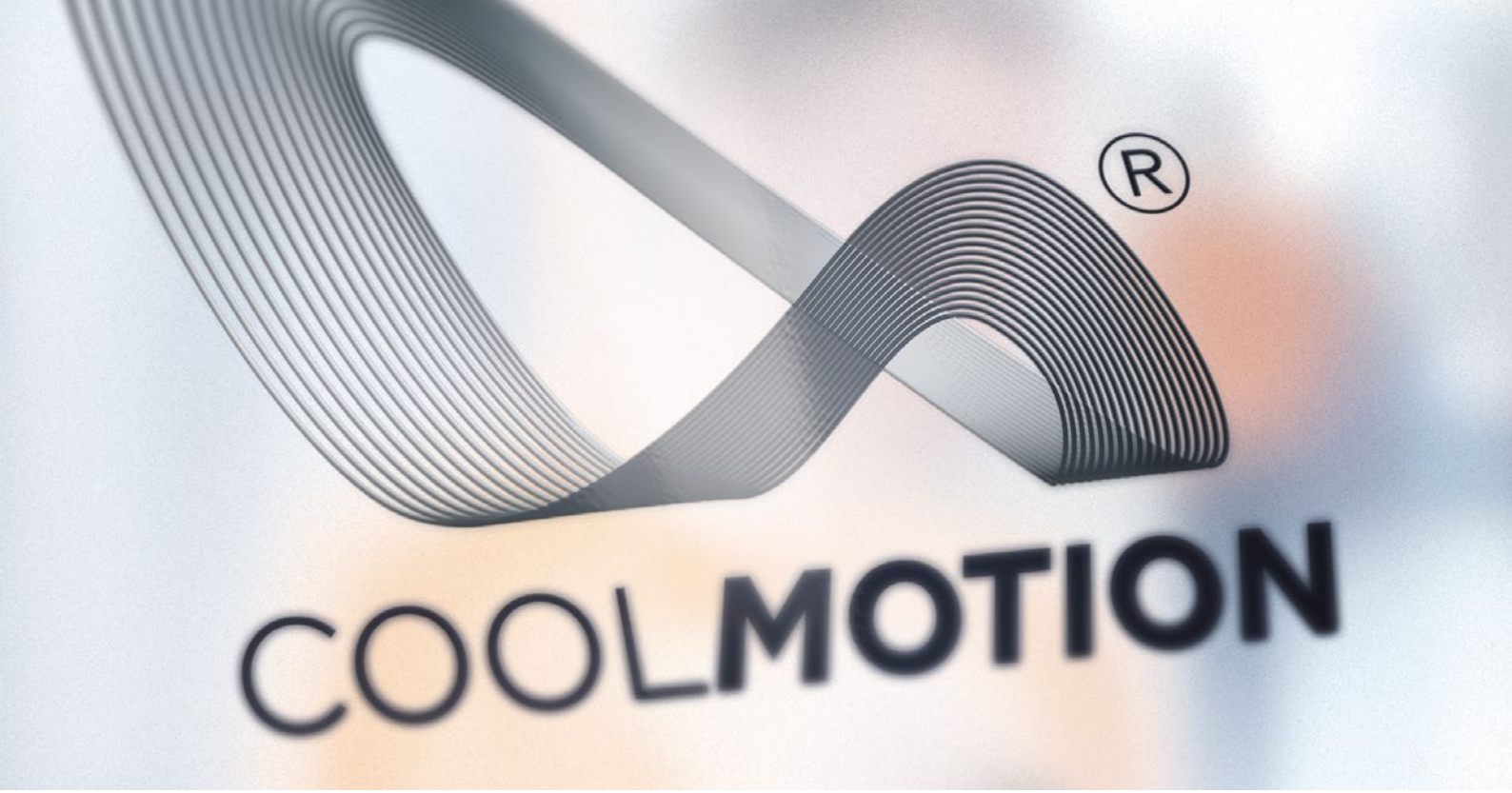


Fast replacement of rotor shaft, front / rear bearing and power drawbar on-site

Reduces TCO (Total Costs of Ownership)

Reduces machine downtime

No electrician needed



KESSLER COOL*MOTION*®

COOL*MOTION*® for the V *line*

- achieves a **very high torque density**
- achieves **very short acceleration times**
- **performance-enhanced motors enable a compact design**

KESSLER is the innovation engine behind state-of-the-art direct drive technology and is renowned for powerful and energy-efficient motors with high torque density and top reliability even in high-demand applications. Practically-based simulations and individual customer calculations are a prerequisite for the development excellence of KESSLER motors.

The inverter-optimized COOL***MOTION***® motors are recognized for their low-loss design and enhanced heat dissipation. Innovative modifications of the motor components have enabled us to reduce the rotor and stator losses by 25%. Special construction measures have resulted in significantly enhanced heat dissipation.

The COOL***MOTION***® technology optimizes efficiency to a maximum.

COOL***MOTION***®

All information was carefully compiled and checked. The printed illustrations are of an explanatory nature and may differ from the actual design. Contents could change without prior notice due to the continuous development of products. Availabilities and delivery times are subject to variability and have to be inquired in each individual case. However, we cannot accept liability for any possible errors, printing errors and technical changes.
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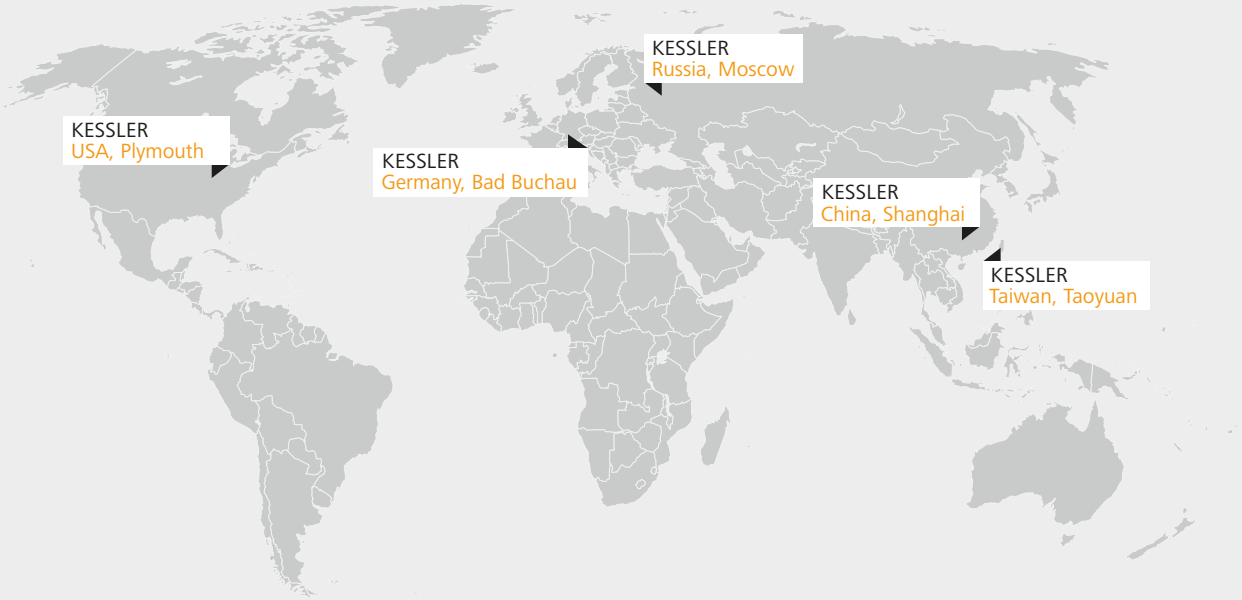
Operating Worldwide for our Customers



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