kesel® Machine Tools Clamping Systems

Precision and flexibility at high speed.

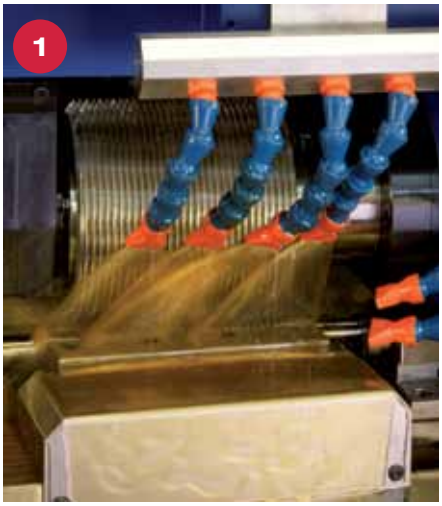
RMS Steering

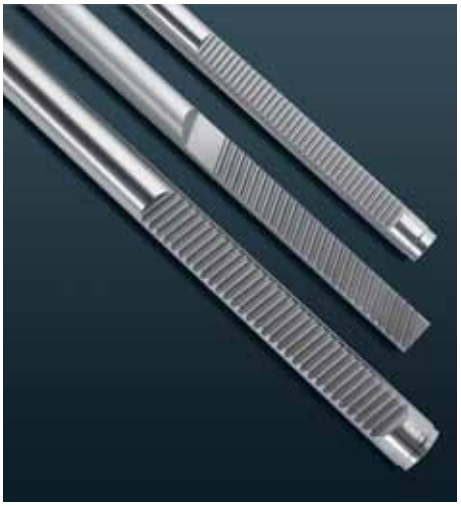
Steering rack milling machine

- Bandsaw blade production
- Steering rack production
- Rack production
- Gear processing
- Clamping tools

RMS Steering

The milling machine RMS-Steering is designed for milling the tooth profile in steering racks. Leading steering rack manufacturers worldwide are milling their tooth profiles on Kesel milling machines. The RMS-Steering processes two steering racks simultaneously. The workpieces are manually loaded and unloaded. Automatic loading and unloading systems can be integrated without difficulty. The machine is equipped with a tool changing device for easy cutting tool change. Optional features are available to meet the individual requirements of our customers.





Milling - Clamping

Zero backlash drive units based on ball-bearing spindles and a computer-calculated power transmission yield the highest results in running smoothness and tooth quality. The milling process of the Kesel milling machines can either run with or against the feeding direction.
The robust and low-maintenance milling head F 350 features a durable transmission with ideal reduction. The machine therefore operates at a very high torque and within a perfectly balanced rpm-range. Clamping of one or two steering racks depending on machine configuration.

Steering racks

Linear tooth profiles are milled into round steel shafts. The milling process is completed in one operation including the entire topping process. Fully automated milling operation from blank to finished part.

Coolant and swarf removal

Chips are removed via a magnetic drum and a magnetic conveyor. The powerful coolant system ensures operating ability in combination with short cycle times and continuous production.

Control

The Siemens SINUMERIK 840D sl control guarantees a fully-automated operation. This control unit is network-compatible and offers the possibility of safety integrated solutions. The machine can also be equipped with either the Siemens 840D or 802D sl control.

Dual pinion for electric power steering

The RMS-Steering dual pinion option A1-axis enables the milling of a second tooth profile into the steering rack. The second tooth profile is automatically positioned and milled in exact reference to the first one.

Specification RMS Steering

Travel range	
Y-axis (cutting depth)	400 mm
Z-axis (milling stroke)	540 mm
B1-axis (swivel axis)	+/- 28°

Milling head	
Type	F 350, modified transmission with increased power drive
Power	45 kW S6 40%
RPM	max. 450 rpm, infinitely variable
Milling arbor	SK 50
Min. diameter of milling cutter	165 mm + 2 x cutting depth + 5 mm safety + resharpening (acc. to manufacturer)
Max. diameter of milling cutter	310 mm
Max. tool width	240 mm For cutter design concepts contact Kesel

Control
Siemens SINUMERIK 802D sl Siemens SINUMERIK 840D Siemens SINUMERIK 840D sl

Clamping system
Special clamping system for one or two steering racks

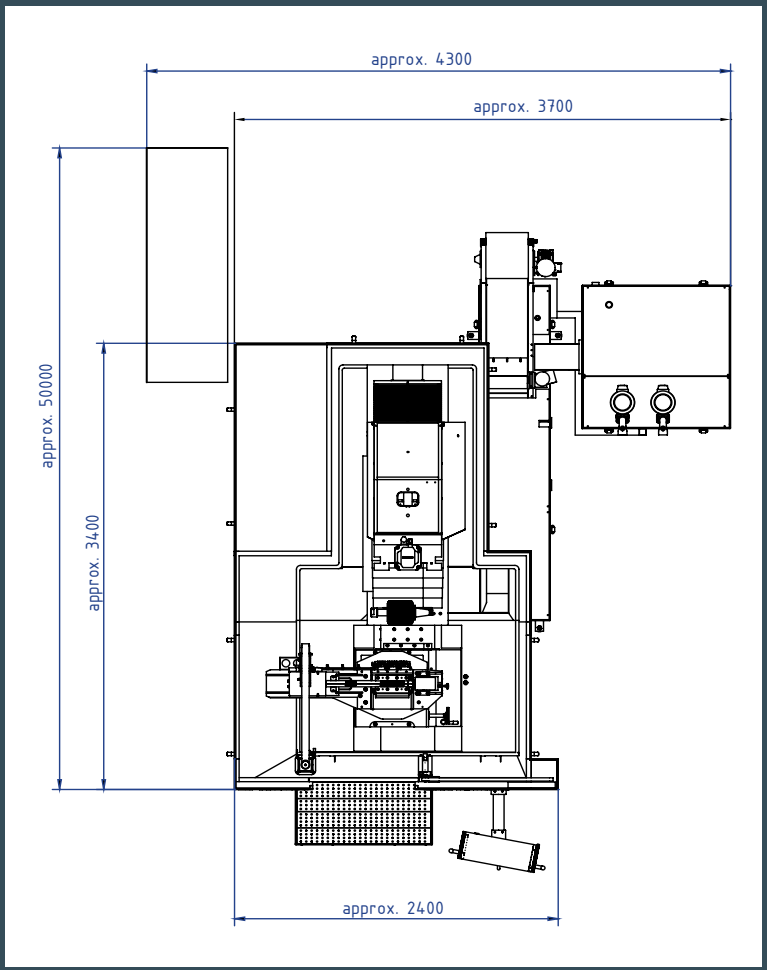
Coolant and swarf removal	
Cooling lubricant	Oil
Filling capacity	900 litres
Magnetic filter roller for fine filtration	

Electrical connection	
Voltage	3 x 400 V
Amperage	80 A

Dimensions and weight	
Installation dimensions	length 6,200 mm x depth 5,500 mm x height 2,900 mm
Machine weight	approx. 12,000 kg (incl. control cabinet)

Options
- CNC-controlled B1-axis for helical tooth profiles - CNC-controlled A1-axis for dual tooth profiles - Milling accessories for different types of steering racks - Refrigerating unit for cooling lubricants - Fine filter upgrade option for smaller particle size and higher pre-cipitator efficiency - Tool changing device - Automatic fire extinguishing unit - Automatic door opening for loading and unloading - Robot automatisation for loading and unloading

Additional accessories upon request



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