

Performance is power.

The R-Series

Gear rack and profile milling machine



- Rack production
- > Bandsaw blade production
- > Steering rack production
- > Clamping tools

The R-Series

Gear rack and profile milling like never before.

The machines of the Kesel R-Series aren't just updated versions of our previous models, they are completely new rack milling platforms. With a brand new bed and slide construction, a world-first twin-table system, a completely new milling head and the possibility to fully automate loading and unloading of parts; the R-Series really is a true game changer.

Available in four size variations from the R2500M up to the R5500M and fitted with either our powerful F1-HSK or more compact F2-SK milling head, there is a configuration to fit every application. The R-Series machines are capable of milling up to module 32 on work pieces with a maximum length of 5,500 mm. Built with the latest SINUMERIK ONE operating system from Siemens the R-Series is equipped for the challenges of today and tomorrow.



Milling

The R-Series platforms can be fitted with either the F1-HSK or the F2-SK milling head. With both models built on zero backlash drive units with intelligently controlled power transmission, running smoothness and tooth quality are maximised at all times. The F1-HSK, our latest model, has the additional benefit of a HSK arbor-coupling which, when used alongside our new outboard bearing, can deliver up to 350% higher running trueness as well as superior rigidity.



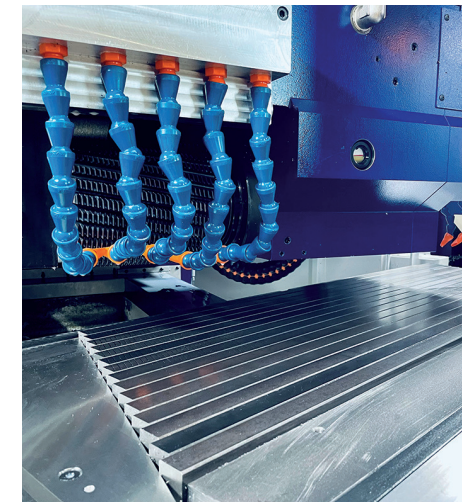
X2T Twin-Table System

As well as the conventional, single table setup, the R-Series is also available with the world-first X2T twin-table system. The X2T comprises of 2 tables, each of which is capable of holding racks half the length of the machine's maximum capability. This system allows one table to be machined whilst concurrently the second table is loaded / unloaded. The result is up to 2.7 times more productivity! And should the machine's maximum milling length be required, the tables can be coupled in under 3 minutes for ultimate manufacturing flexibility.



B-Axis

Helical tooth profiles of up to $\pm 25^\circ$ can be milled. This axis is available as either manual or driven.



Clamping Systems

The R-Series is available with a wide variety of clamping systems to suit all work pieces including magnets, vises and hybrid solutions.



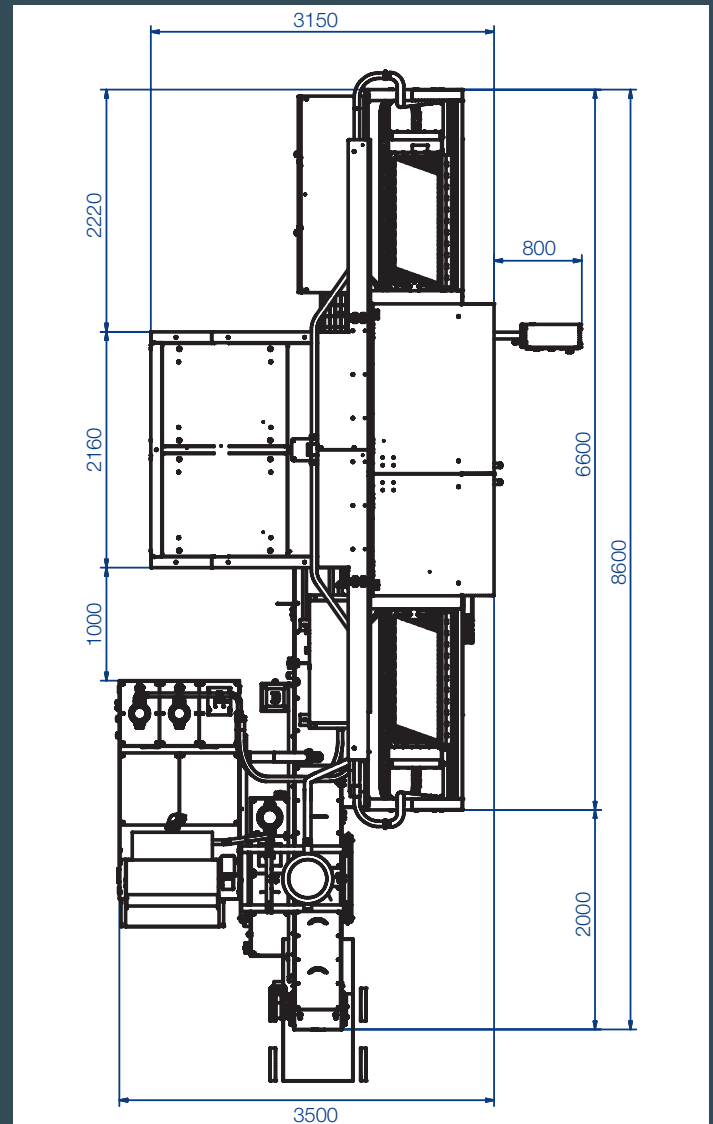
Automation

All models within the R-Series can be supplied with fully automated load / unload cells in order to allow frictionless machine operation with minimal operator influence. With an integrated cleaning system and magazine bays for easy and fast material access the R-Series automation is the perfect solution for maximising ROI.

Specification of the R-Series

Travel range	
X-axis (horizontal, table-axis)	
Single table setup	2,940 mm up to 5,940 mm
X2T twin-table system	± 800 mm up to ± 2,300 mm per table
Y-axis (vertical, cutting depth)	
	250 mm
Z-axis (horizontal, infeed)	
	620 mm
B-axis (swivel axis helical tooth profile)	
	+/- 25°
Clamping range	
Single table setup	2,500 up to 5,500 x 400 mm
X2T twin-table system	2 x 1,250 up to 2 x 2,750 x 400 mm
Milling head F2-SK or F1-HSK	
Type	F2-SK, transmission with high power drive
Power	43 kW S6 40%
RPM	max. 315 rpm, infinitely variable
Milling arbor	SK 50
Min. diameter of milling cutter	133 mm + 2 x cutting depth + resharpening (acc. to manufacturer)
Max. diameter of milling cutter	250 mm
Tool width	200 mm
Type	F1-HSK, transmission with high power drive
Power	45kW S6 40%
RMP	max. 450 rpm, infinitely variable
Milling arbor	HSK-125B
Min. diameter of milling cutter	170 mm + 2 x cutting depth + resharpening (acc. to manufacturer)
Max. diameter of milling cutter	310 mm
Tool width	250 mm
Control	
Siemens SINUMERIK ONE	
Clamping system	
Multiple options incl. magnetic or hydraulic clamping systems	
Quality class	
Tooth quality Q7 according to DIN 3962 Part 1	
Coolant and swarf removal	
Cooling lubricant	Emulsion
Volume	3,200 litres
Two-stage filtration via magnetic conveyor and magnetic filter roller	
Electrical connection	
Voltage	3 x 400 V
Amperage	60 A

Additional accessories available upon request
Subject to modifications arising from technical advances



approx. dimensions of the R2500M

Dimensions and weight

Installation dimensions

R2500M	length 8,600 x depth 4,300 x height 2,700 mm /≈ 26 t
R3500M	length 9,600 x depth 4,300 x height 2,700 mm /≈ 29 t
R4500M	length 11,200 x depth 4,300 x height 2,700 mm /≈ 32 t
R5500M	length 13,600 x depth 4,300 x height 2,700 mm /≈ 35 t

Options

- X2T twin-table system
- Controlled B-axis
- Milling cutter changing device, SW3K chip vacuum system
- Automated loading and unloading