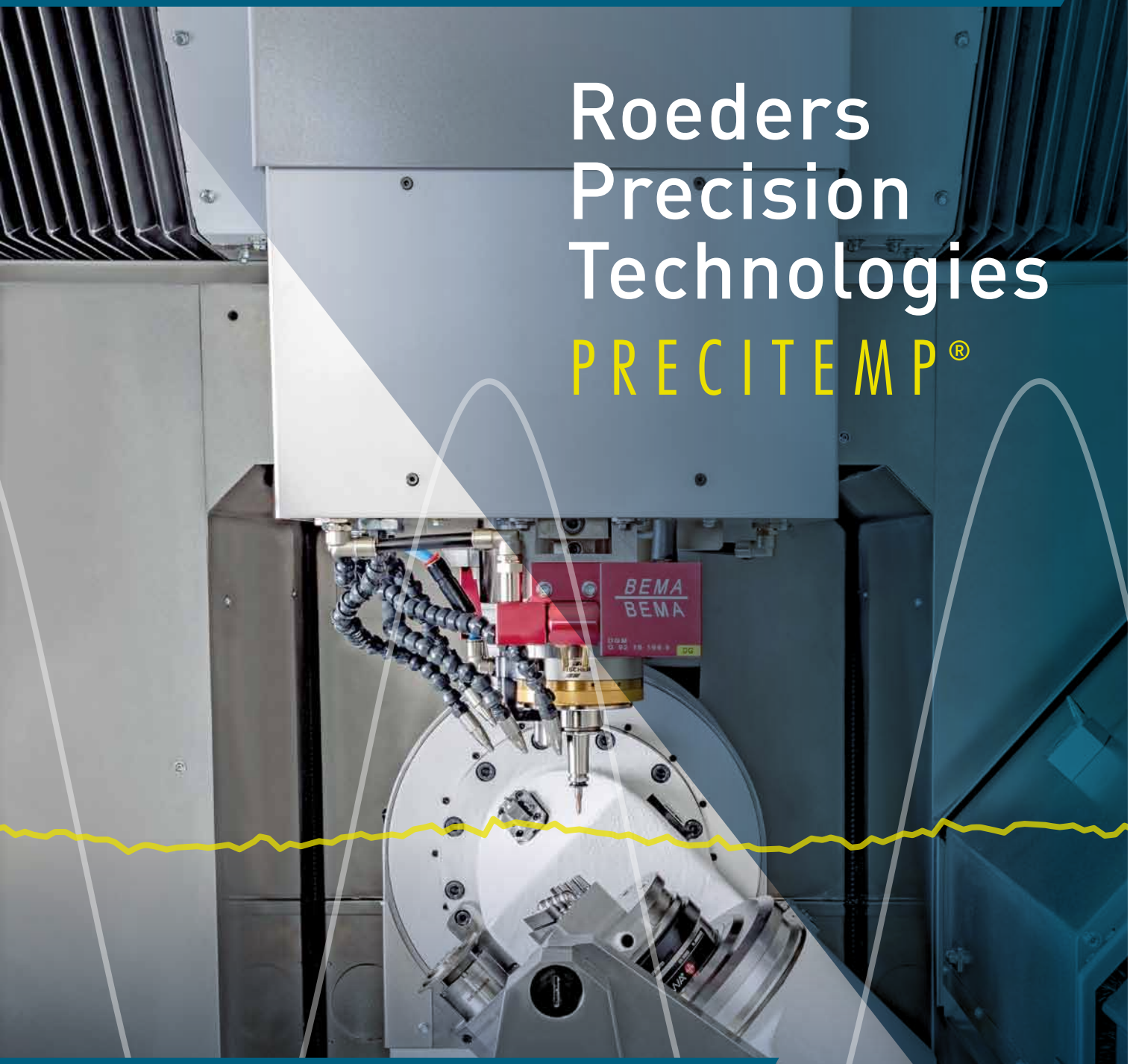
>> ENGLISH



Roeders Precision Technologies

PRECITEMP®

RPT
MACHINES

röders TEC

HIGH TECH FOR PRECISION

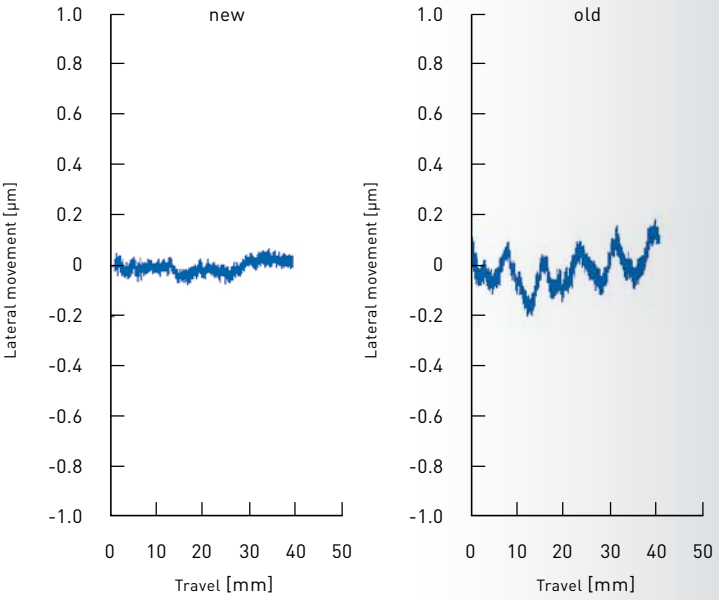
MILLING, GRINDING, MEASURING
with Roeders RPT Machines

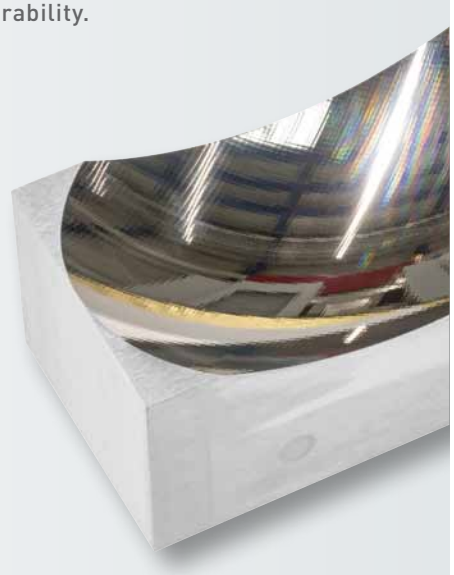
RELIABLY
PRECISE
ON EVERY WORKPIECE

Several years of groundbreaking developments are the foundation of the RPT series. Maximum precision, even better surfaces and shorter processing times lead to significant increases in productivity in mould and die making as well as production applications. All options known from the RXP series are fully available.

NANOTOL®
Guideway Concept

In cooperation with a well-known guideway manufacturer, a quantum leap in the running behaviour of the guideways with tolerances in nanometre range was achieved, which offers considerable advantages, especially for applications with high surface requirements. The generous dimensioning of the guideways ensures high rigidity and long durability.

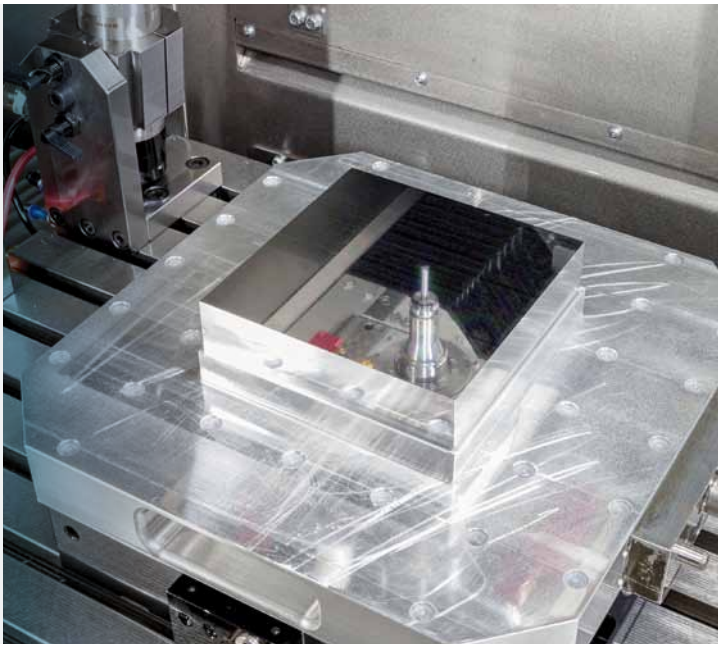




> REFLECTOR SURFACES WITH RA < 10 NM

>HIGHLY PRECISE GUIDEWAYS

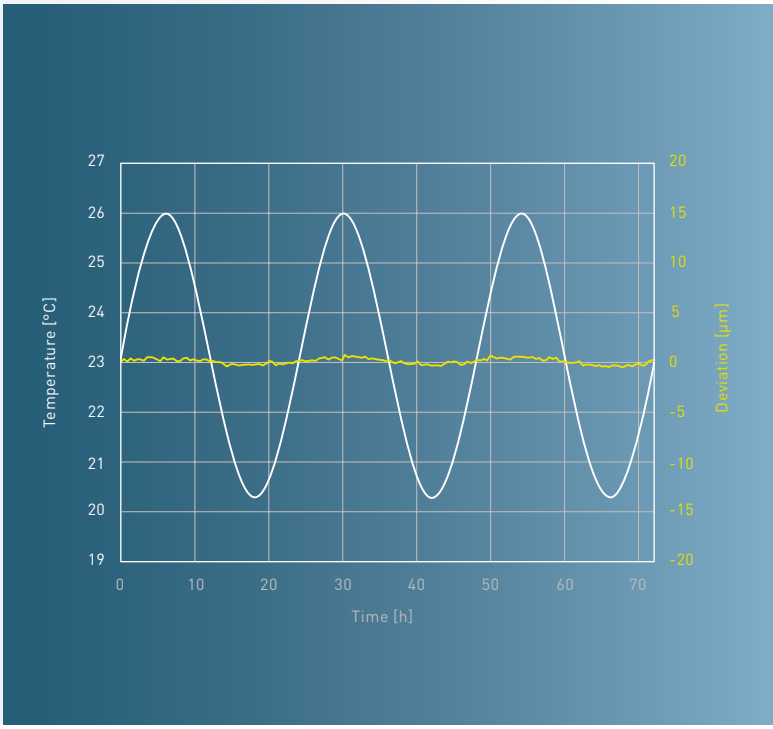
With highly precise guideways a flatness of the top surface and a straightness of the side surfaces < 1 µm are achieved

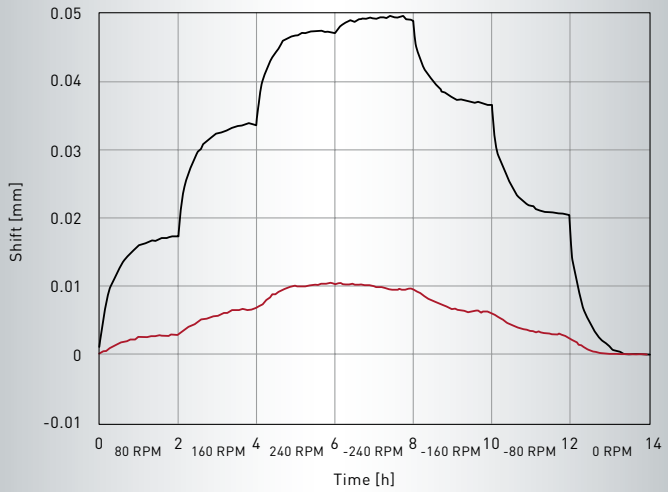


PRECITEMP®
High precision also in case of temperature fluctuations

>HOW DOES THE TEMPERATURE PROFILE LOOK LIKE IN YOUR WORKSHOP DURING THE COURSE OF THE DAY?

The main reason for dimensional deviations on workpieces are temperature fluctuations in the machine or the environment. With PRECITEMP® I, II or III this is no longer a problem. Depending on the requirements, the machine can be configured to the necessary level of precision by comprehensive tempering and software compensation with the PRECITEMP® I, II or III modules if ambient temperatures are not constant, as is often the case in workshops even if they are air-conditioned.





> TEMPERING OF THE MACHINE TABLE AND THE ROTARY AXIS BEARINGS

For the first time on the 5-axis RPT Machines, the rotary axis bearings and machine table can also be tempered. In addition, the torque motors in the rotary axes have Roeders' own greatly improved tempering. This significantly reduces dimensional deviations at higher speeds or high torque loads on the rotary axes.

> TEMPERING
OF THE AIR IN THE UPPER
COVER OF THE MACHINE

> TEMPERING
OF THE AIR IN THE
WORKING AREA

> TEMPERING
OF THE MACHINE PORTAL
WITH TIGHTLY PLACED
ZIGZAG PIPES

> SOFTWARE COMPENSATION
OF THERMALLY INDUCED
DEVIATIONS

> TEMPERING
OF THE AIR
IN THE X-AXIS

> HEAT SOURCES IN THE MACHINE SUCH AS MOTORS, MAIN SPINDLE, LINEAR GUIDEWAYS (OPTIONAL) AND ROTARY AXIS BEARINGS ARE ALSO TEMPERED WITH HIGH PRECISION.

> TEMPERING
OF THE MACHINE BASE
WITH TIGHTLY PLACED
ZIGZAG PIPES

CUSTOMER-ORIENTED design

> DESIGN AND ERGONOMICS

The modern design of the RPT series reflects the high precision and dynamics of the machine technology. Particular importance was devoted to simplest operation, like unlocking the doors at the touch of a button on the terminal.
The good accessibility of the machining area from two sides, well known from Roeders, has been maintained, which offers great advantages, especially for automated machines.

> DURABILITY AND ENERGY EFFICIENCY

The RPT series was designed for durability and energy efficiency down to the last detail. The control cabinet is usually integrated into the machine tool. For the RPT series, the electrical cabinet stands alone next to the machine so that electronic components are not affected by vibrations from machining or the dynamics of the machine. In addition, the high weight of the machine and the large distance between the machine feet ensure low stress despite the high dynamics of the axes. Numerous measures have been undertaken to significantly reduce energy consumption, e.g. a power-controlled cooling unit.

> STAINLESS STEEL COVERING INSIDE

Even after longer usage, the working area of the RPT machine will still look attractive thanks to the generous stainless steel covering. Chip nests cannot form.

>DYNAMICS

Powerful motors and a rigid construction enable even faster stroke frequencies for chop grinding, more reserves are available for drilling and roughing and the dynamics are correspondingly higher, which leads to considerably shorter machining times.

> ADDITIONAL LIGHTING

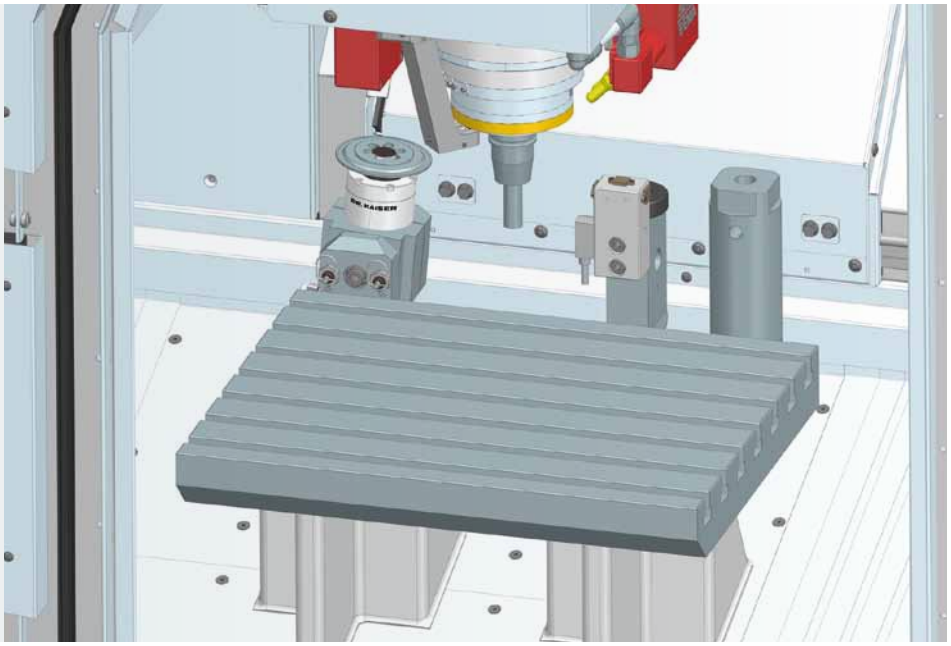
To enable the operator to optimally observe the machining process, an additional light can be installed next to the side door and under the Z-axis, which brightly illuminates the working area and the workpiece in the direction of the operators view. Lighting for the tool changer is also available.

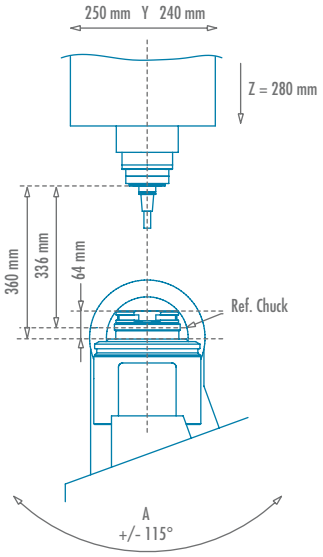
Roeders
RPT 450 / RPT 450 DS

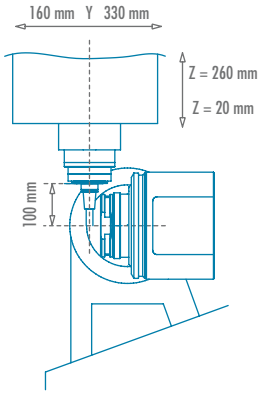
- For small workpieces, nevertheless for 5-axis machining powerful chuck for vibration-free machining integrated
- Biggest spindle with HSK E40 interface
- Milling, grinding and measuring as well as all lubricants available

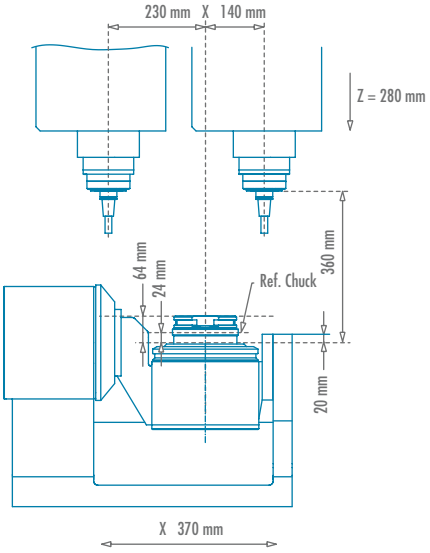
> 3-AXIS MACHINE

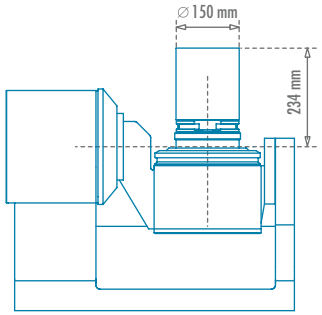
suitable for UPC pallets, auxiliary equipment for grinding etc. placed space efficient at the side of the machine table



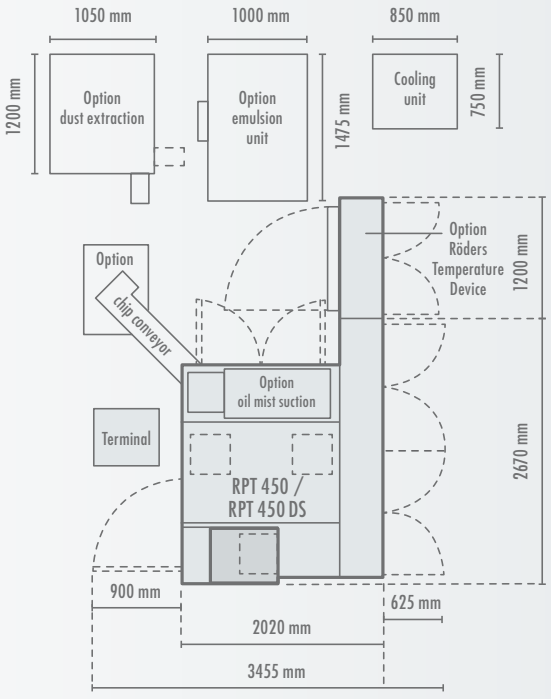

250 mm Y 240 mm
Z = 280 mm
360 mm
336 mm
64 mm
Ref. Chuck
A
+/- 115°


160 mm Y 330 mm
Z = 260 mm
Z = 20 mm
100 mm


230 mm X 140 mm
Z = 280 mm
64 mm
24 mm
Ref. Chuck
360 mm
20 mm
X 370 mm

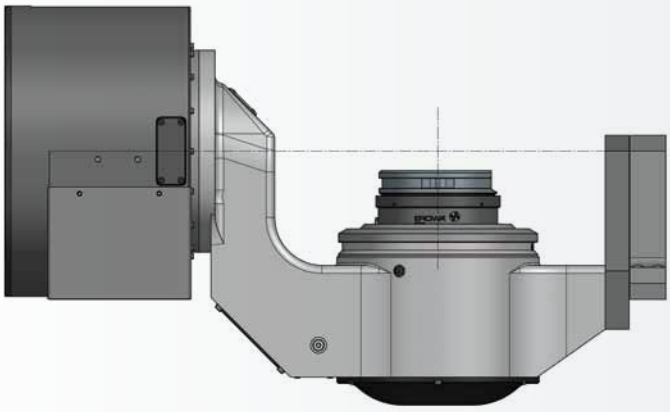

∅150 mm
234 mm

Technical data	RPT 450	RPT 450 DS
Machining range	470 mm x 490 mm x 280 mm	370 mm x 490 mm x 280 mm
Swivelling range	–	+/-115 degrees
Rotation range	–	Almost unlimited
Table size	450 mm x 360 mm, T-slots 14 mm	Ø 250 mm
Clamping unit	Erowa UPC / System 3R Dynafix / Parotec Power Grip 160	Erowa ITS148 PowerChuck / System 3R Magnum / Parotec Power Grip 160
Workpiece weight	Maximum 200 kg	Maximum 30 kg
Feed	0–60,000 mm/min	0–60,000 mm/min
Milling spindle (standard)	42,000 RPM, 15 kW, HSK E40, maximum tool diameter 16 mm, others on request	
Tool changer	31 or 75 places for HSK E40, optional larger changer available, integrated measuring laser	
Chip disposal	With 1 screw into chip box behind the machine or with additional chip conveyor or chip tray	
Machine weight	~8.0 t	~8.0 t
Required space	W 2020 mm x L 2670 mm x H 2700 mm	W 2020 mm x L 2670 mm x H 2700 mm



Roeders
RPT 600 / RPT 600 DSH

- Ideal for medium-sized workpieces
- 2 different rotary swivel units available for RPT 600 DSH
- Largest spindle with HSK A63 interface
- Milling, grinding, and measuring as well as all lubricants possible

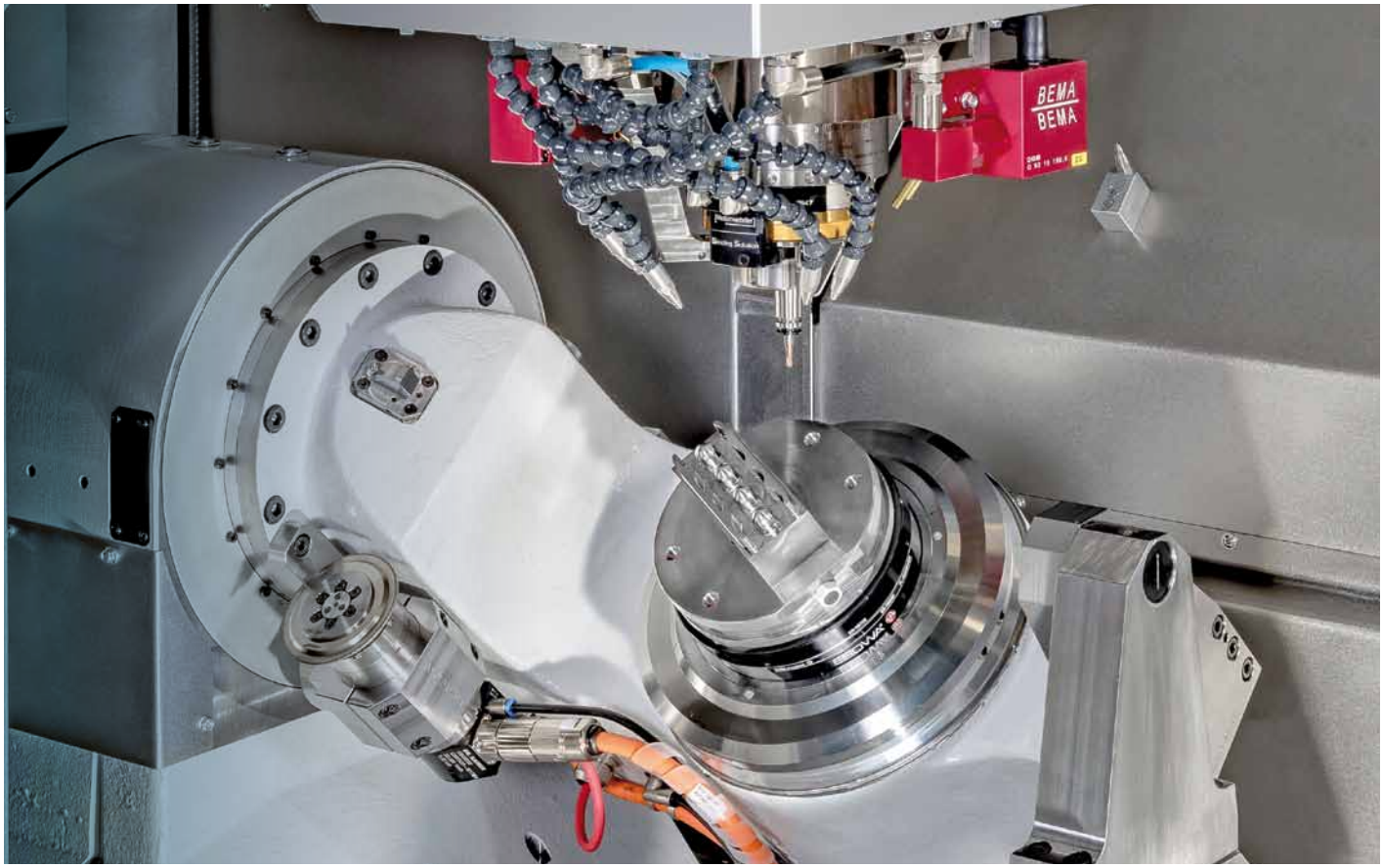


> LARGE OFFSET OF C-AXIS

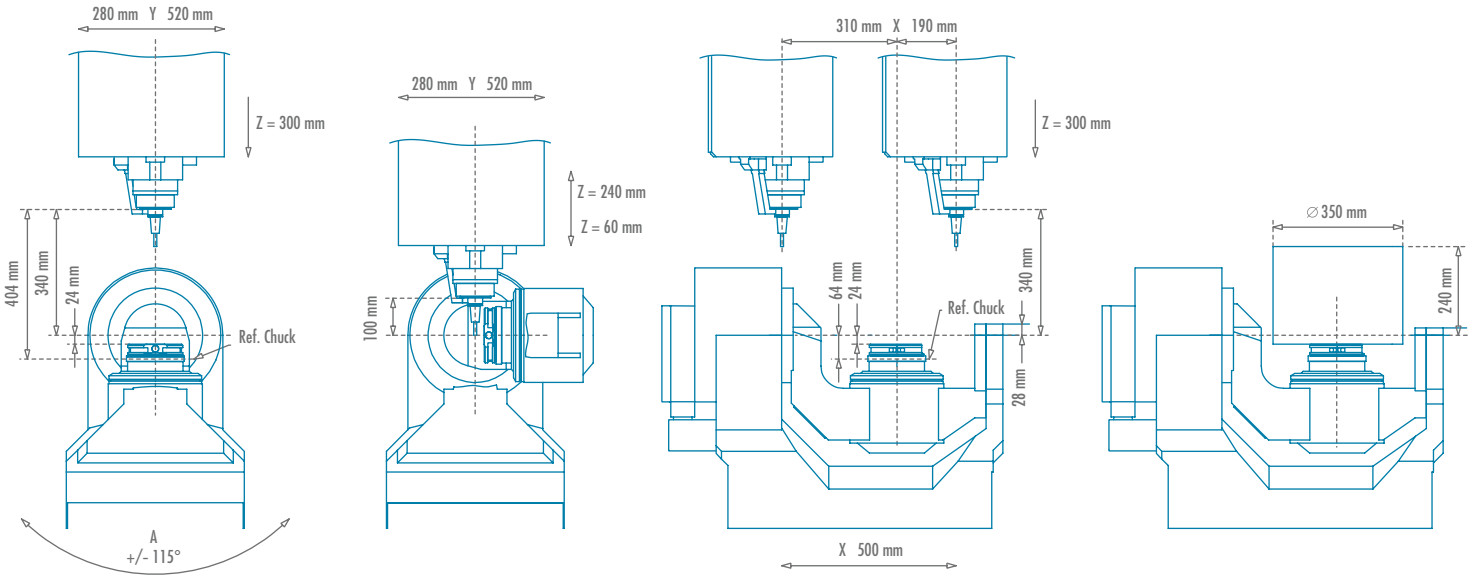
In the RPT 600 DSH with small C table the workpiece is placed in the center of the swivel and rotary axes. As a result, the linear axes have to make substantially less compensating movements for 5-axis machining. The processing times are significantly reduced and the workpieces are more precise.

> THE MACHINE PRODUCES ITS OWN PRECISION ...

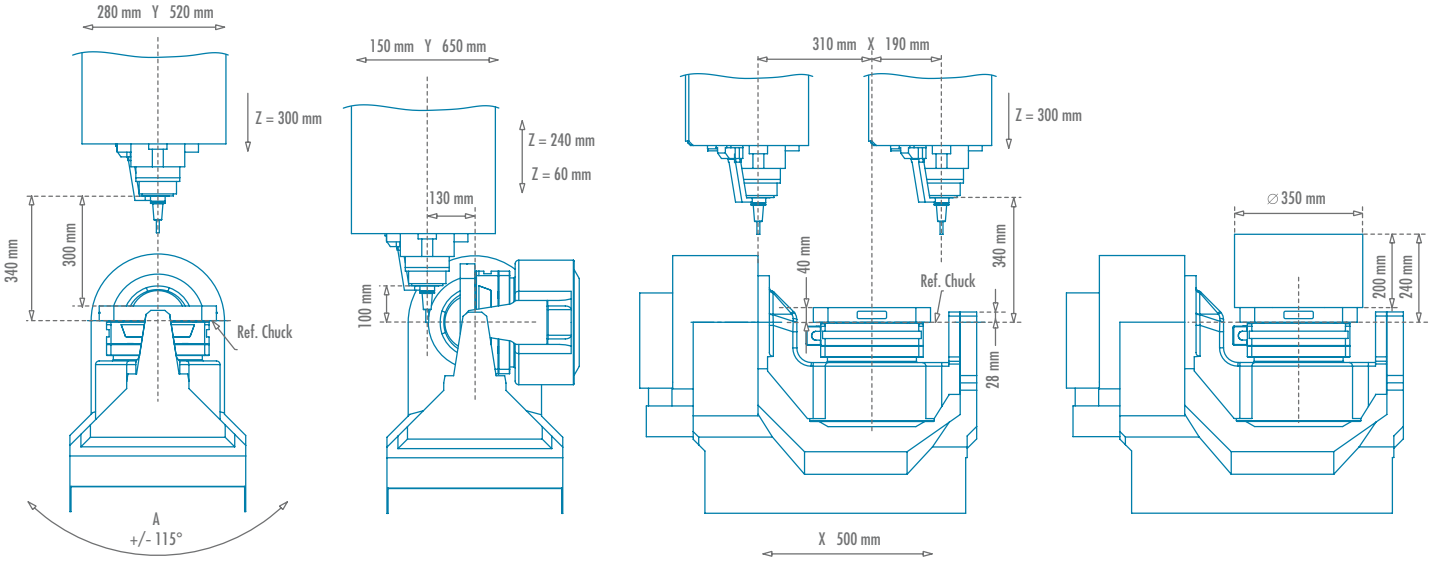
The machine table of the 3-axis machine is matched to the travel of the machine axes in such a way that the machine itself can produce perfect flatness and parallelism of the machine table with a fine finishing cutting path.



RPT 600 DSH WITH SMALL C TABLE



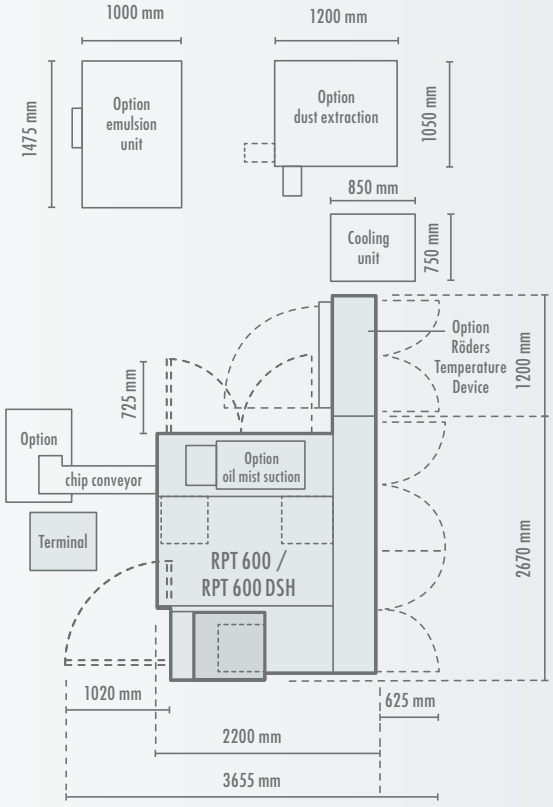
RPT 600 DSH WITH LARGE C TABLE



Technical data

Machining range	
Swivelling range	
Rotation range	
Table size	
Clamping unit	
Workpiece weight	
Feed	
Milling spindle (standard)	
Tool changer	
Chip disposal	
Machine weight	
Required space	

	RPT 600	RPT 600 DSH (250 mm table)	RPT 600 DSH (350 mm table)
	630 mm x 530 mm x 300 mm	500 mm x 530 mm x 300 mm	500 mm x 530 mm x 300 mm
	–	+/-115 degrees	+/-115 degrees
	–	Almost unlimited	Almost unlimited
	600 mm x 500 mm, T-slots 14 mm	Ø 250 mm	Ø 350 mm
	Erowa UPC / System 3R Dynafix / Parotec Power Grip 160	Erowa ITS148 PowerChuck / System 3R Magnum / Parotec Power Grip 160	Erowa UPC
	Maximum 400 kg	Maximum 60 kg	Maximum 100 kg
	0–60,000 mm/min	0–60,000 mm/min	0–60,000 mm/min
	42,000 RPM, 15 kW, HSK E40, maximum tool diameter 16 mm, others up to HSK A63 on request		
	42 or 87 places for HSK E40, optional larger changer available, integrated measuring laser		
	With 2 screws into chip box behind the machine or with additional chip conveyor or chip tray		
	~8.8 t	~9.3 t	~9.3 t
	W 2200 mm x L 2700 mm x H 2540 mm	W 2200 mm x L 2700 mm x H 2720 mm	W 2200 mm x L 2700 mm x H 2720 mm

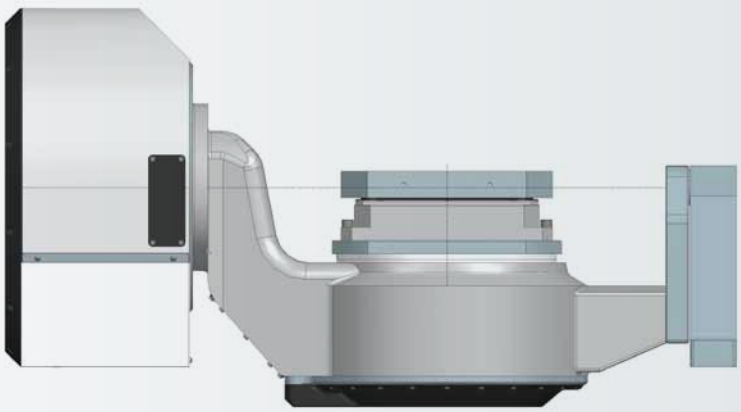


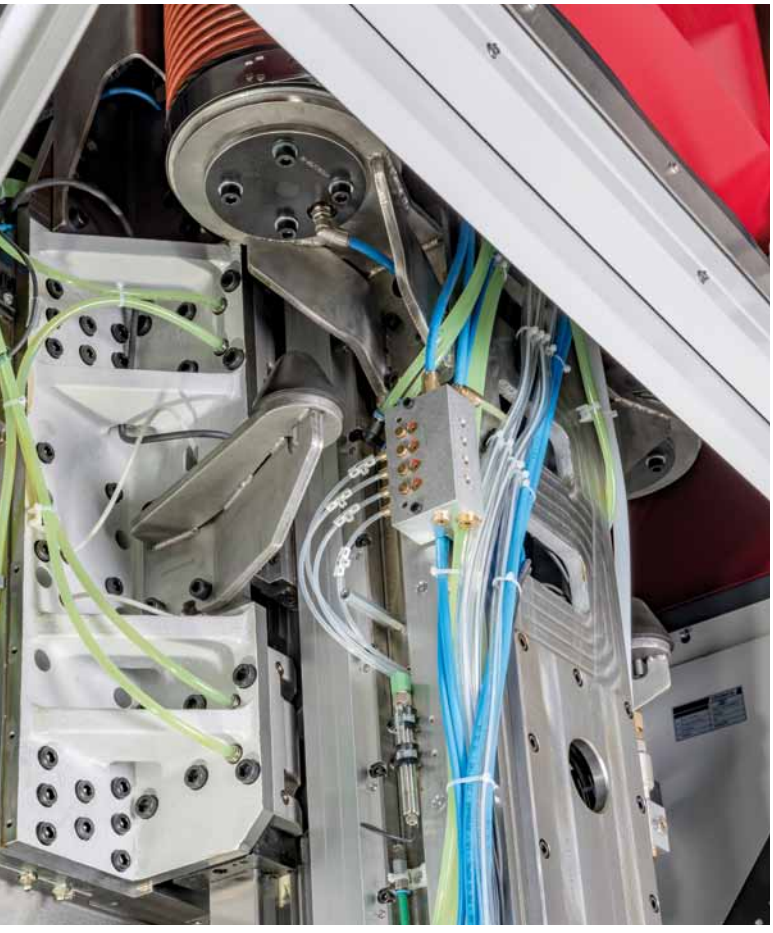
Roeders
RPT 800 / RPT 800 DSH

- Extra-long stroke in the Z-axis, also suitable for deep drilling
- Very large and therewith rigid guideways
- Largest spindle with HSK A63 interface
- Milling, grinding, and measuring as well as all lubricants possible

> BETTER OFFSET OF C-AXIS

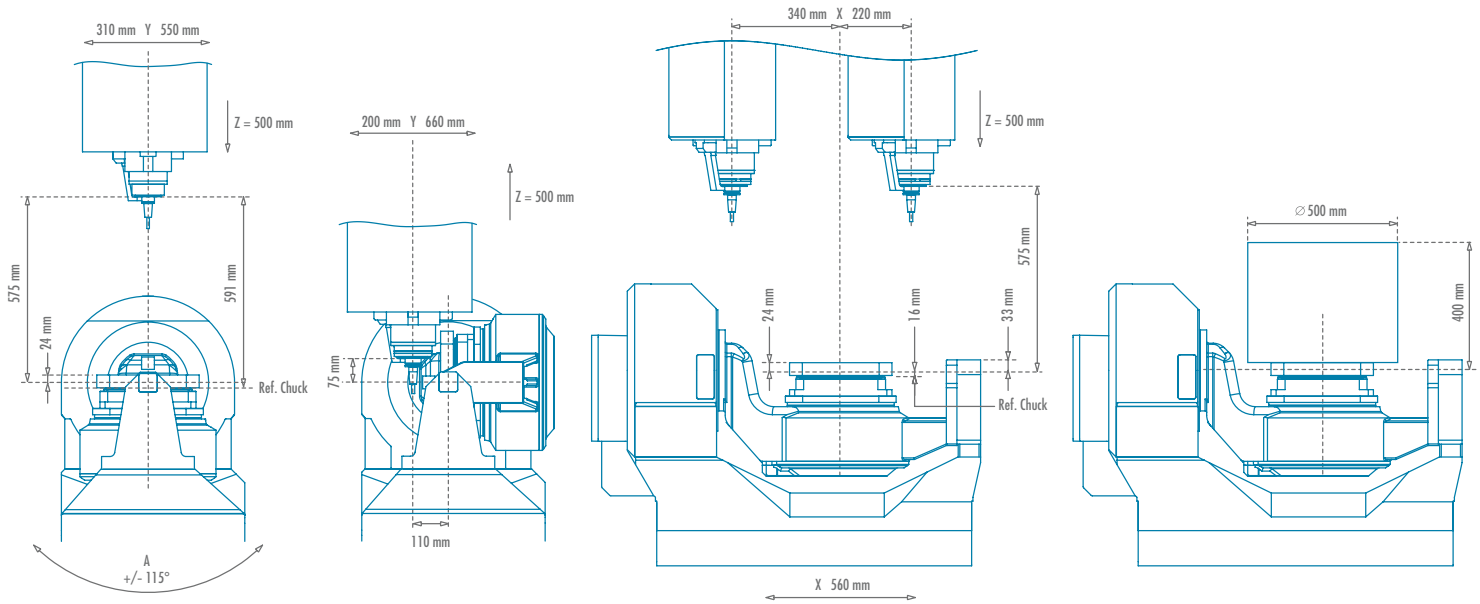
Also, workpieces clamped in the RPT 800 DSH on a chuck with pallet, e.g. EROWA UPC, are close to the swivel axis. This reduces the compensating movements of the linear axes required for 5-axis machining. Machining times are shorter and precision is improved.



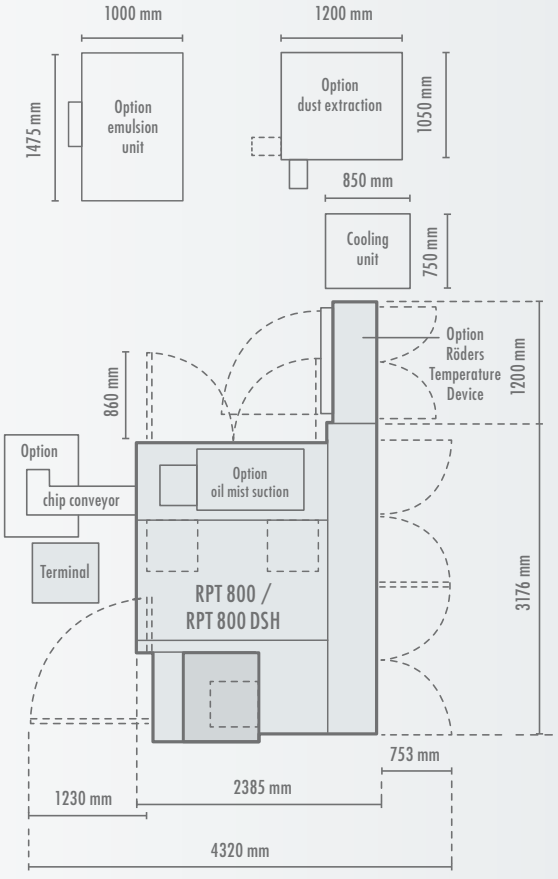


> QUADROGUIDE CONCEPT DEVELOPED FURTHER

The well proven QUADROGUIDE concept of the RXU series has been further developed for the RPT 800 and RPT 800 DSH. The Z-axis is kept slim and clamped between the guideway carriages. At the same time, the space required for the Y-slide has significantly been reduced, which also improves accessibility for the operator at the side door.


310 mm Y 550 mm
Z = 500 mm
575 mm
591 mm
24 mm
Ref. Chuck
A
+/- 115°
200 mm Y 660 mm
Z = 500 mm
75 mm
110 mm
340 mm X 220 mm
Z = 500 mm
575 mm
24 mm
16 mm
33 mm
Ref. Chuck
X 560 mm
∅ 500 mm
400 mm

Technical data	RPT 800	RPT 800 DSH
Machining range	840 mm x 635 mm x 500 mm	560 mm x 635 mm x 500 mm
Swivelling range	–	+/-115 degrees
Rotation range	–	Almost unlimited
Table size	796 mm x 596 mm, T-slots 14mm	350 mm / 400 mm round or square
Clamping unit	Individual solutions possible up to 600 mm width	Erowa UPC, Erowa ITS148 PowerChuck, Erowa ProductionChuck 210, Erowa MTS, System 3R Dynafix, Parotec Power-Grip 160
Workpiece weight	Maximum 800 kg	Maximum 200 kg
Feed	0–60,000 mm/min	0–60,000 mm/min
Milling spindle (standard)	36,000 RPM, 15 kW, HSK E50, maximum tool diameter 20 mm, others up to HSK A63 on request	
Tool changer	40 or 84 places for HSK E50, optional larger changer available, integrated measuring laser	
Chip disposal	With 2 screws into chip box behind the machine or with additional chip conveyor	
Machine weight	~10.5 t	~12.5 t
Required space	W 2400 mm x L 3200 mm x H 3175 mm	W 2400 mm x L 3200 mm x H 3450 mm



THE DECISIVE ADVANTAGE WITH ROEDERS: IN-HOUSE DEVELOPMENT

> CONSTRUCTION

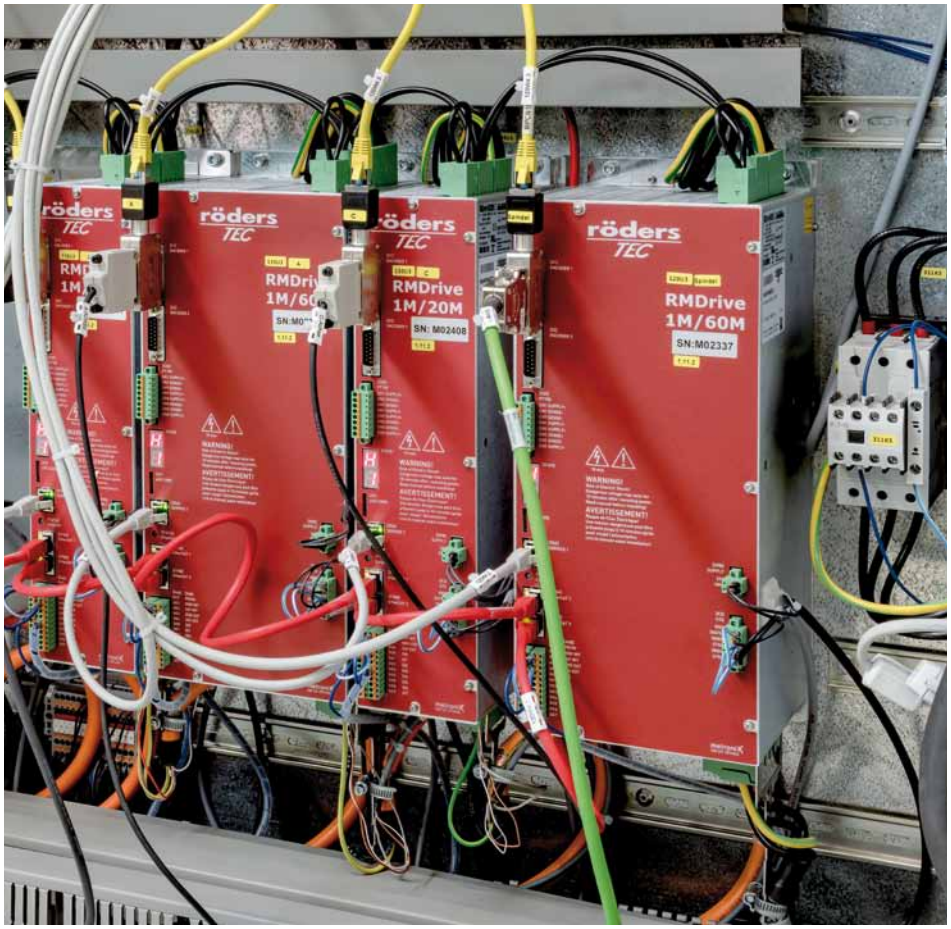
A machine technology that has been refined in every detail and with multiple patents gives the Roeders machines their unrivalled performance and reliability.

> NC CONTROL

The Roeders RMS6 machine control and drive technologies have continuously been developed and optimised for milling and grinding since 1994.
The open and robust control runs on two PC-based industrial computers. With Microsoft Windows as the operating system, the user interface is easy to operate and requires minimal training.
Numerous functionalities, some of them patented, have been integrated into the control, especially for highest performance in milling and grinding applications.

> DRIVE TECHNOLOGY

The drive control of the axes is critical for the machining results, for the level of precision as well as for the surface quality.
With a drive cycle frequency of 32 kHz Roeders' drives have been significantly faster than others for many years.
Oversampling for the encoder evaluation and many other special features achieve the highest possible axis precision and minimal energy consumption.



Subject to technical changes – 2509

>> Machines for Milling, Grinding and Measuring >> Blow Moulds for PET Bottles
>> Roeders Pewter & Roeders ART

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röders TEC

HIGH TECH FOR PRECISION