

# Röders Precision Technologies PRECITEMP®

RPT 600  
RPT 600 DSH

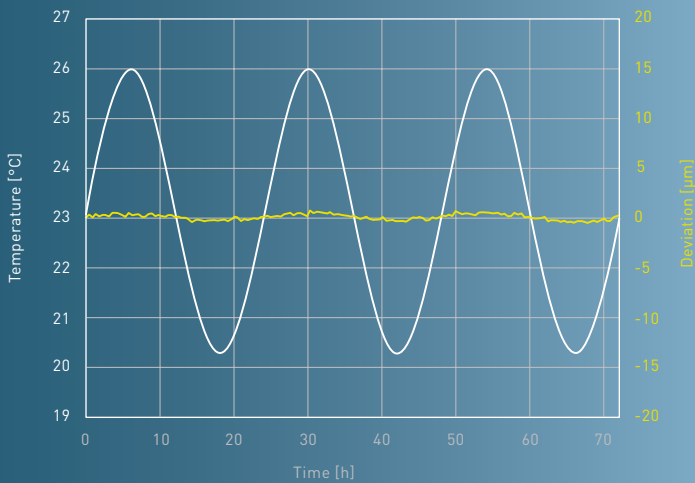
**röders**  
**TEC**

# Röders RPT 600 / RPT 600 DSH



## MILLING, GRINDING, MEASURING IN ONE MACHINE

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.

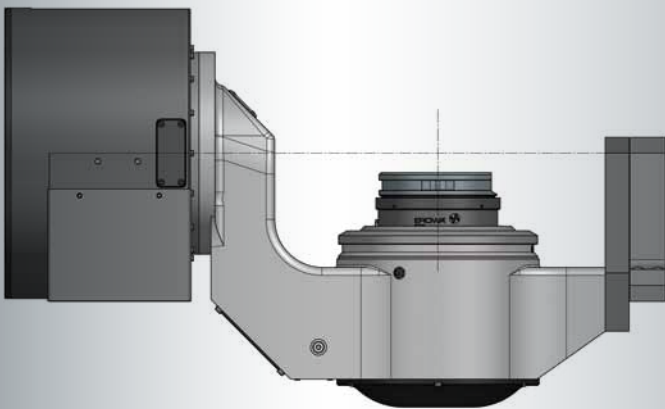
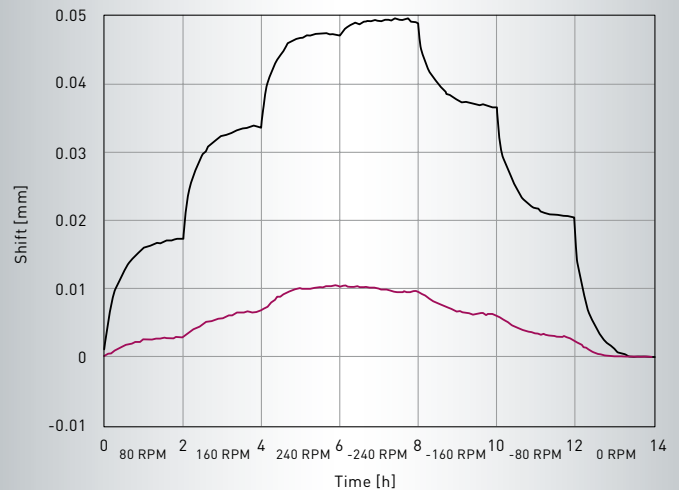


### > PRECITEMP® I, II, III

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.

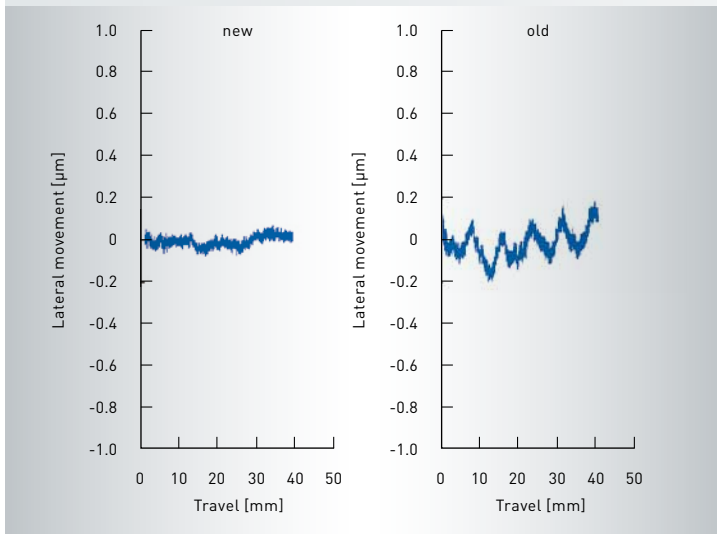
### > TEMPERATURE CONTROLLED ROTARY AXIS BEARINGS

For rotary axes with torque motors it is common to temper the motors with water. Röders goes one step further and optionally also tempers the bearings and the machine table in the rotary axes. Dimensional deviations at higher speeds are thus significantly reduced. As for the RXP series, tempering of the linear roller guideways is still available.



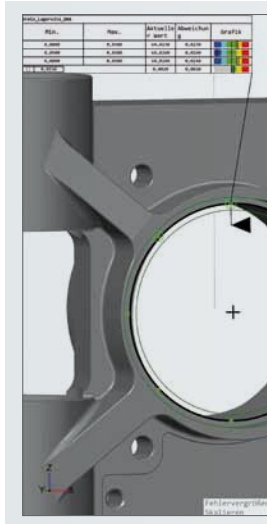
### > LARGE OFFSET OF C-AXIS

The workpiece is placed in the center of the swivel and rotary axes. As a result, the linear axes have to make substantial less compensating movements for 5-axis machining. The processing times are significantly reduced and the workpieces are more precise.



### > “QUASI HYDROSTATIC RUNNING CHARACTERISTICS” OF THE LINEAR GUIDWAYS

The disadvantage of roller guideways compared to hydrostatic guideways is that they run less smoothly. In this regard, a quantum leap could be achieved in cooperation with a well-known roller guideway manufacturer, which results in considerable advantages, especially for high surface requirements. The generous dimensioning of the guideways ensures long durability.



### > MEASURING IN THE MACHINE

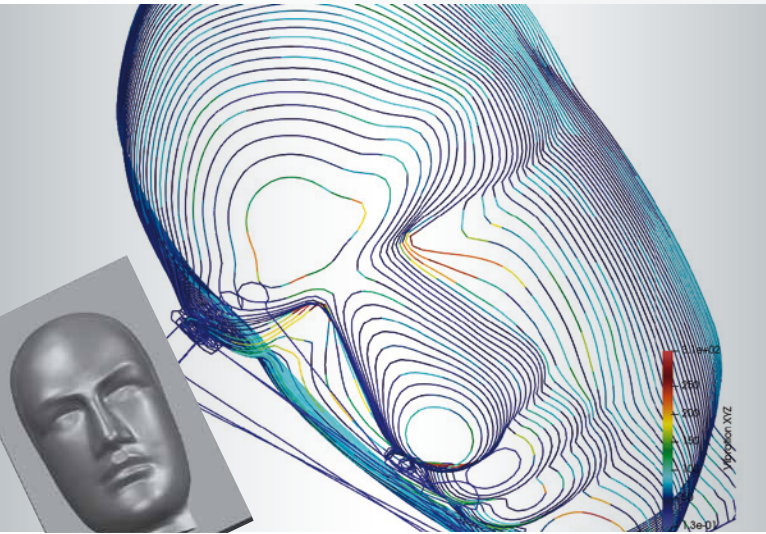
The reliable geometric stability of the RPT machines enables quality control of the machined workpieces directly in the machine. Röders offers procedures for geometric precision control of the machines, which check their measuring accuracy. In this way, the extra step of workpiece quality control in a separate measuring room can be saved for many applications. The measurement protocols and measurement strategies were developed together with well-known providers of measuring equipment.



### > 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 Röders, has been maintained, which offers great advantages, especially for automated machines.





### > VIBRATION MONITORING OF THE SPINDLE

The use of high-speed spindles requires a limitation of the maximum spindle load in order to avoid bearing damage or a severe reduction in service life. Optionally, the spindles can be equipped with vibration sensors. A function in the control can be activated that automatically reduces the feed and, if necessary, the RPM of the spindle in the event of high vibrations. In addition, a coloured graphic illustration of the vibrations along the milling path is possible. As a result, any areas in the milling path with high vibrations can easily be identified and can safely be avoided in recurring machining processes by adapting the CAM programming.

### > COMPENSATION OF SPINDLE ELONGATION

Röders machines have been known for years for their external high-precision sensor for spindle elongation compensation. Since the heat from the spindle shaft is transferred into the tool holder and it also lengthens as a result, a warm-up phase had to be programmed for high-precision machining applications before starting the machining operation. Meanwhile, the Röders technicians have succeeded in modelling the dynamic heating process directly after the spindle has accelerated to full RPM, so that a warm-up phase can be skipped in many applications.



### > DYNAMICS

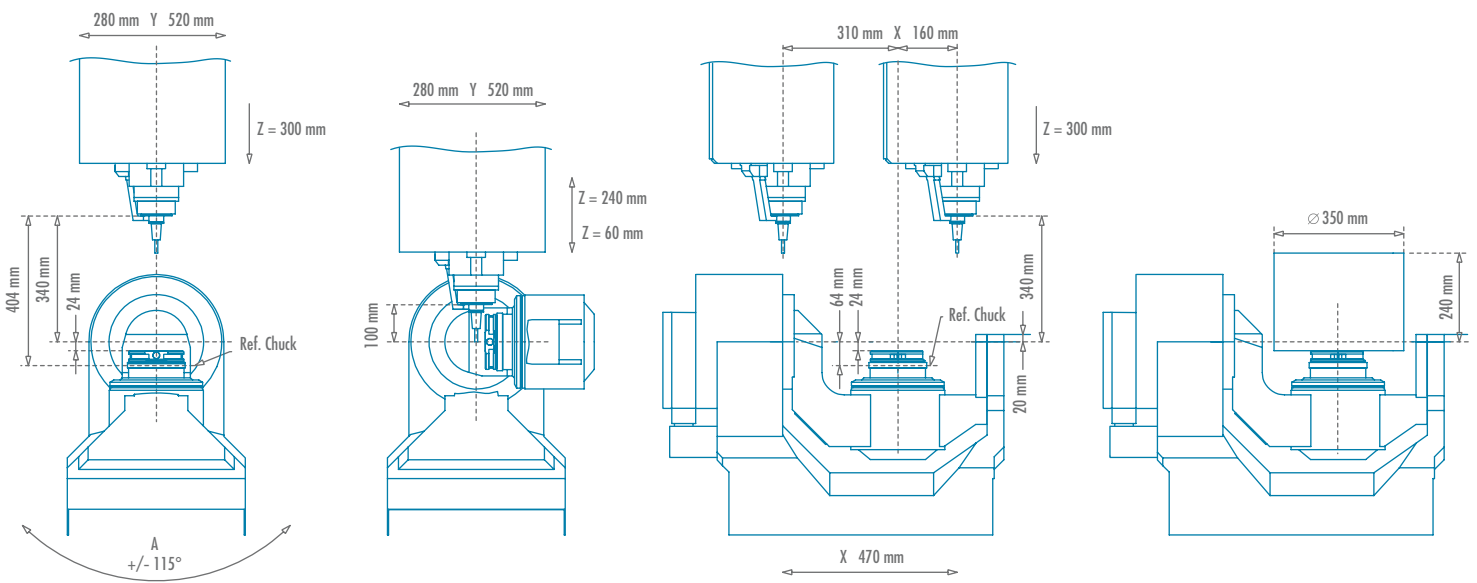
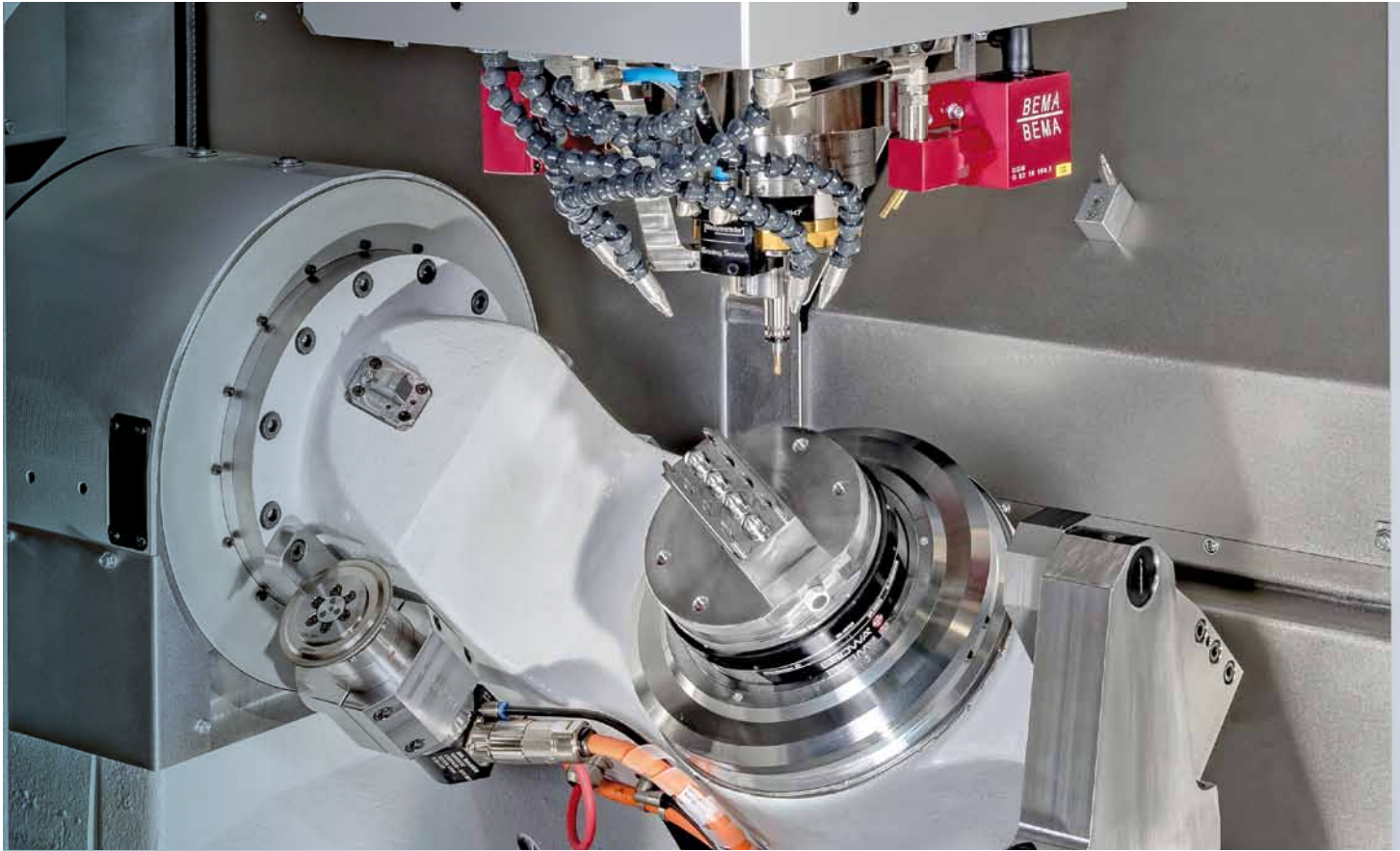
Powerful motors and a rigid construction enable even faster stroke frequencies for chop grinding, more reserves are available for drilling and roughing and the dynamics are correspondingly higher, which leads to considerably shorter machining times.



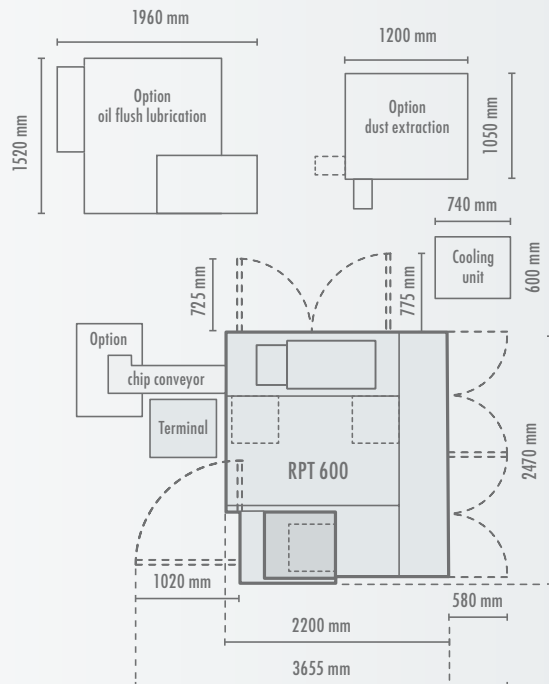
### > DURABILITY AND ENERGY EFFICIENCY

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.



| Technical data             | RPT 600  | RPT 600 DSH   |
|----------------------------|--|---|
| Machining range            | 630 mm x 530 mm x 300 mm   | 470 mm x 530 mm x 300 mm  |
| Swivelling range           | -  | +/- 115 degrees   |
| Rotation range             | -  | Almost unlimited  |
| Table size                 | 600 mm x 500 mm, T-slots 14 mm   | Ø 250 mm  |
| Clamping unit              | Eropa UPC / System 3R Dynafix / Parotec Power Grip 160                                     | Eropa ITS148 PowerChuck / System 3R Magnum / Parotec Power Grip 160 |
| Workpiece weight           | Maximum 400 kg   | Maximum 60 kg   |
| Feed                       | 0–60,000 mm/min  | 0–60,000 mm/min   |
| Milling spindle (standard) | 42,000 RPM, 14 kW, HSK E40, maximum tool diameter 16 mm (others on request)                |   |
| Tool changer               | 42 or 87 places for HSK E40, 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             | ~8.0 t   | ~8.5 t  |
| Required space             | W 2200 mm x L 2500 mm x H 2540 mm  | W 2200 mm x L 2500 mm x H 2720 mm                                   |



>> Machines for Milling and Grinding >> Blow Moulds for PET Bottles  
>> Röders Pewter & Röders ART



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