

# REISHAUER

Gear Grinding Technology

## RZ 410



MACHINES

PERIPHERAL SYSTEMS

TOOLING

TECHNOLOGY

SERVICES

## Gear Grinding Machines

# Generating Grinding: Invented and Refined to Perfection by Reishauer



## **Invented and refined to perfection by Reishauer – our gear grinding process offers valuable advantages:**

- Maximum productivity due to high material removal rates and short idle times
- Excellent grinding results
- Extreme process reliability due to continuous shifting and dressing of the grinding worm on the spindle
- Low perishable costs due to long life of the dressing tool and grinding wheel
- CNC machine kinematics allow a wide range of gear flank modifications
- Application of Reishauer Low Noise Shifting technology to produce quiet running gears
- Short contact times between gear and grinding worm flank result in high compressive residual stresses
- Grinding of root to achieve optimum load capacity
- Reishauer TwistControl Grinding technology enables the setting of defined values for flank twist

# Customer value is the focus of our innovation

## Swiss precision made by Reishauer

For over 70 years, Reishauer generating gear grinding machines have enjoyed an outstanding worldwide reputation. These machines guarantee the most reliable and efficient gear grinding processes.

The RZ 410 combines advanced technologies in order to provide excellent results over the entire life cycle of the machine.

## Your benefit:

- Hybrid design of machine bed and spindles manufactured for maximum stiffness and dampening
- Complex acoustic emission analysis for automatic set-up and dressing
- Highly accurate Reishauer balancing system for fully automatic balancing of the grinding wheel on the spindle of the machine
- Highly accurate Reishauer generating module for best possible gear quality
- Multiple sealed guideways for long life and high value retention
- CNC tailstock for accurately programmable quill forces and optimum reproducibility
- Rotating machine column for change of gear and clamping fixtures during dressing of the grinding wheel

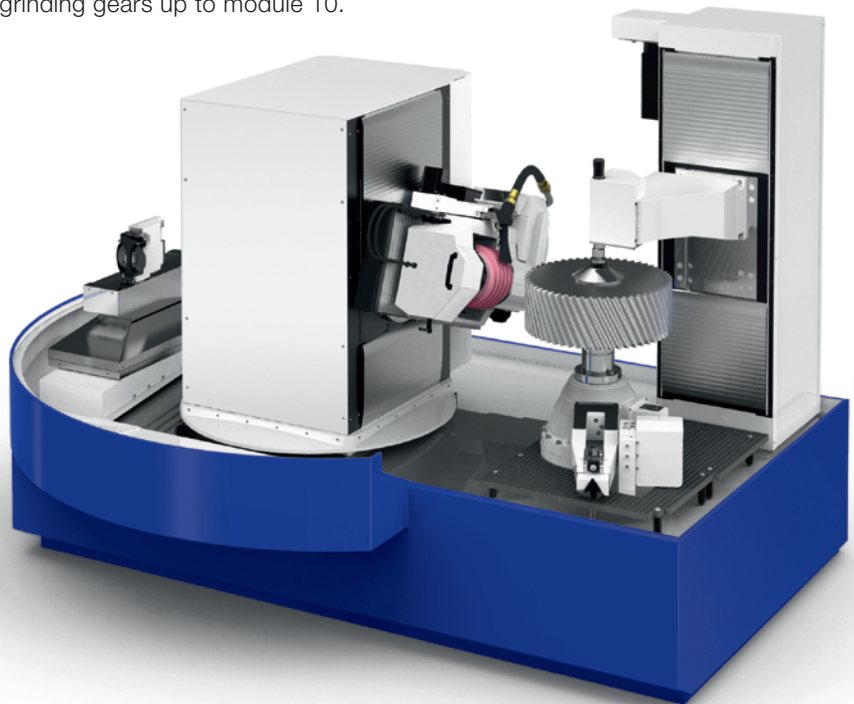
# Added value to your gears

## If the future is unknown

Within the Reishauer product line the RZ 410 represents maximum flexibility, succeeding the successful RZ 400 of which there are over 300 installations worldwide.

The working range of the new machine has been increased to 410 mm diameter and the machine is capable of grinding gears up to module 10.

Due to the large variety of options, the RZ 410 is easily adapted to the wide ranging needs of different customers and industries. Many of these options can be added to the machine after it has been installed at the customer's plant.



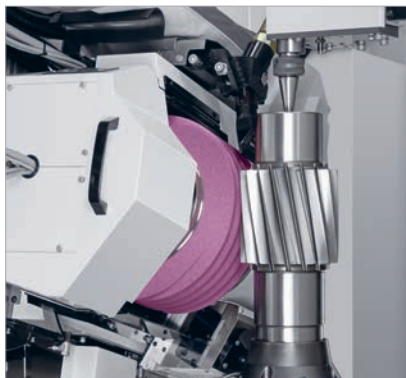
Grinding position



Wheel changing position



Dressing position

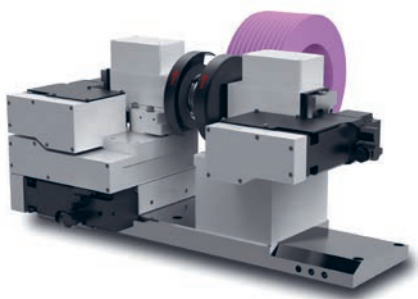


### Your choice

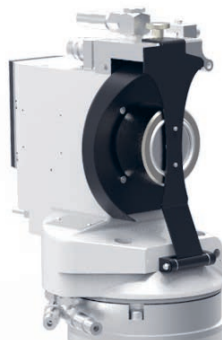
The RZ 410 can be equipped with a CNC tailstock. When using this option (W-axis), the stroke of the tailstock can be adjusted accurately, allowing precise and reproducible clamping forces.

You can choose between three different dressing devices, all equipped with a CNC pivoting axis. The choice of dressing units provides for a wide range of dressing methods that allow each customer to customize their machine to achieve the ideal mix of productivity and flexibility within their given budget.

For very small lot sizes form grinding may be the most viable alternative to the continuous generation method made famous by Reishauer. Discontinuous profile grinding using CBN plated or dressable grinding wheels is offered as an option on the RZ 410. Profile grinding increases the module range to 15 mm. Specifically in discontinuous profile grinding, the ability to measure the gear inside the machine is a useful option. By using on-board inspection, the changeover time can be significantly reduced.



RP 164-2



RP 163



Profile grinding

### Quick changeover

The unique architecture of the RZ 410 provides optimum accessibility during operation and changeover. By using a turret, the grinding spindle can be rotated between grinding position, dressing position and wheel-changing position. During the changeover this configuration allows the operator to change the clamping fixture while the grinding wheel is being dressed on the opposite side of the column.



Gear inspection

# Technical Data

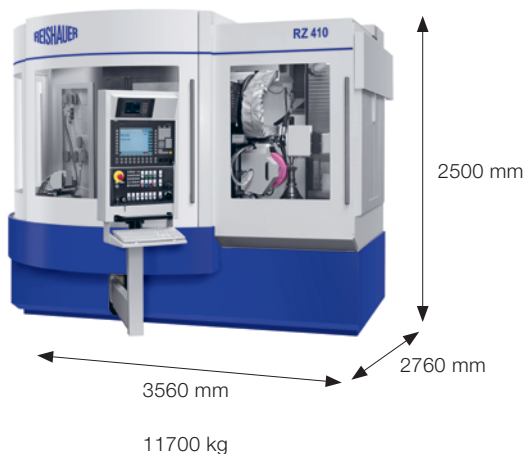
Technical Data*	
Workpiece diameter	5 – 410 (500) mm
Module range	0.5 – 10.0 mm
Swivel angle (wheel head)	+/- 45°
Grinding stroke (max.)	300 mm
Shaft length (max.)	700 mm
Workpiece rpm (max.)	600 min-1
Workpiece weight (max. incl. fixture)	600 kg
Operating speed (max.)	80 m/s
Grinding wheel outside diameter (max.)	300 mm
Grinding wheel width (max.)	145 (160) mm
Diameter of dressing tools	160 mm

\*Out of range dimensions can be verified upon request

Options (Extract)
Pivoting dressing unit
Gear inspection device
Profile grinding
Reishauer TwistControl Grinding Technology – generation of specific twist
Polish grinding
Grinding of conical gears (beveloid gears)
Grinding of non-involute gears
Line dressing
Reishauer ECO mode

Control
Siemens Sinumerik 840D Solution Line
Reishauer PrecisionDrive
Reishauer operating software

All technical specifications are subject to change.



The RZ 410 will be produced as a stock machine. All options of the RZ 550 are available. No special specifications can be accommodated.

# Circle of Competence



## The Reishauer Circle of Competence

The gear grinding machine, both in qualitative and quantitative performance levels for the large volume production of high-accuracy gears, is at the core of the continuous generating grinding technology invented by Reishauer. To ensure a steady and high production output of our machines at constant quality, and at lower costs per piece, we have

continuously extended our technical competency and support structure in the areas of automation, tooling, application engineering and service. Hence, today we are a single source supplier, and thus we guarantee our customers a long service life of the machine system and lower life cycle costs.

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