

# REISHAUER

Gear Grinding Technology

## RZ 160



**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 series RZ 60, RZ 160 and RZ 260 combines all technical highlights utilized in Reishauer Gear Grinding Technology. It is a scalable product and its modularity provides maximum productivity in large production series and maximum flexibility in small series. The machines are configurable to individual needs and can be adapted to changing boundary conditions.

## Your benefit:

- Einheitliches Anlagenlayout in der gesamten Produktion
- Common layout for all gear grinding machines
- Common interfaces to all peripheral systems
- Consistent operation, set-up and maintenance
- Common spare parts
- Operators that have been trained one type of the RZ 60 / 160 / 260 series are instantly familiar with the full range of these machines
- Exchangeable tooling
- Compatibility to other, even older Reishauer Gear Grinding Machines
- Hybrid design of machine bed and spindles for high stiffness and damping
- Multiply sealed guideways and drives for long lifetime and value retention
- Acoustic emission analysis for automatic set-up and dressing
- Reishauer balancing system for automatic balancing and monitoring of the grinding wheel
- Reishauer PrecisionDrive for adaptive control of the workspindles
- Reishauer Operator Interface with intuitive operator guidance

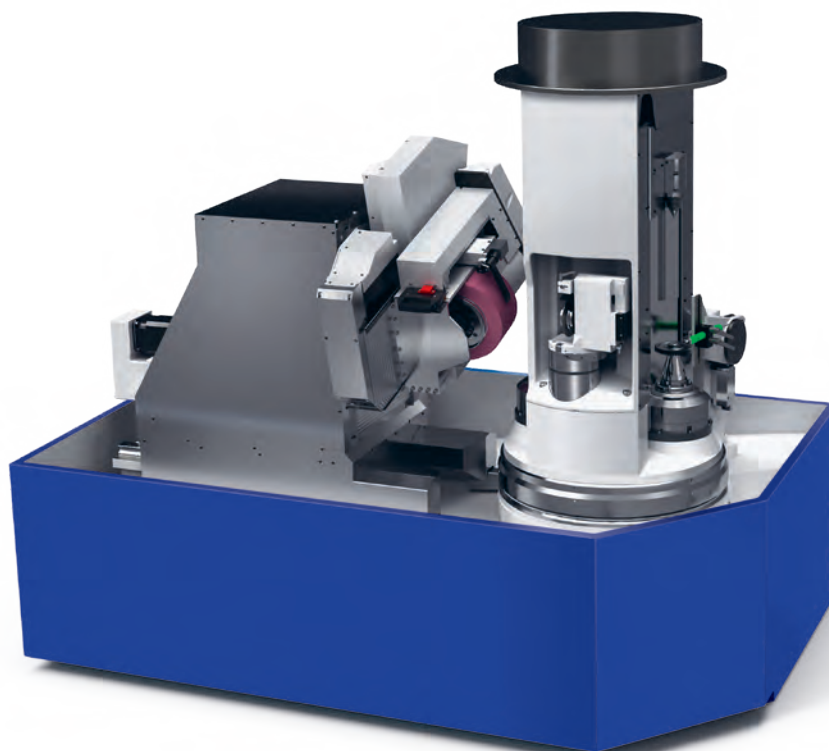
# Innovation and experience perfectly combined

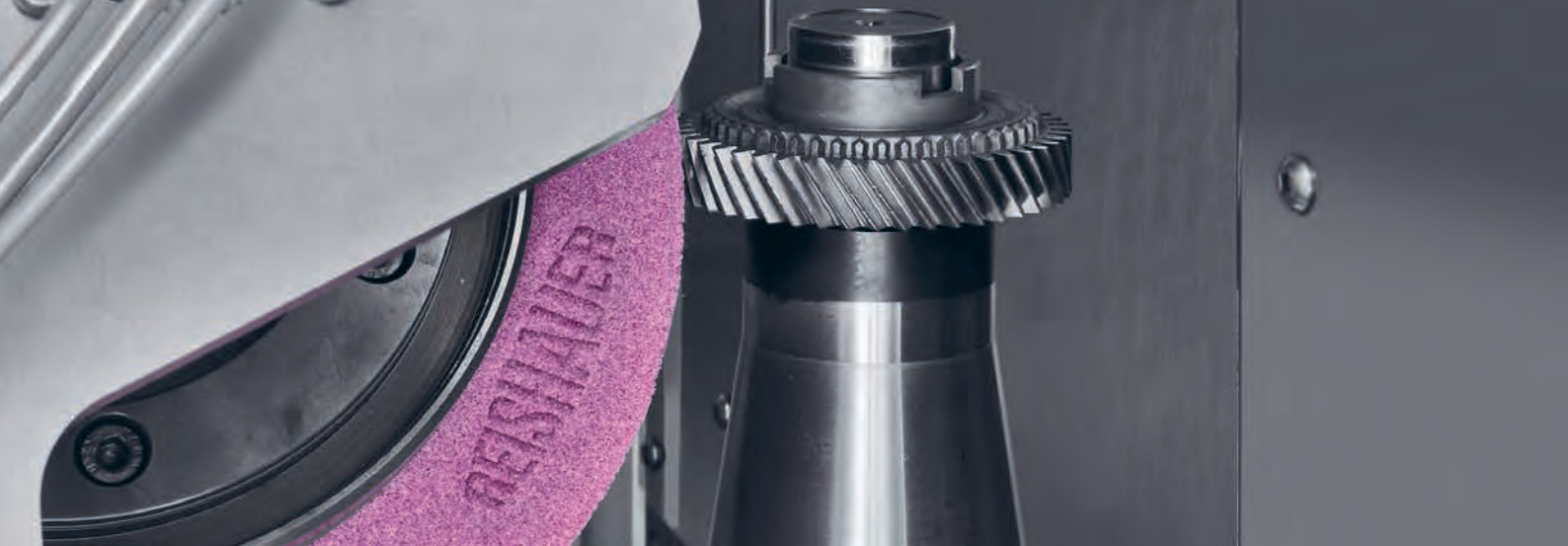
## Improving the best

The RZ 160 gear grinding machine continues the success of the well-known RZ 150. It adopts the significant successful features and has been improved at the same time in order to further increase the customer benefit.

## A unique concept

- Extremely compact design resulting in the smallest dual workspindle gear grinding machine in the market
- Revolving turret with one or two workspindles and the dressing unit integrated
- Separate diamond tool for quick and low-cost outside diameter dressing of the grinding wheel
- Separate door for quick and ergonomic set-up and change-over – even with an installed loading system
- Flexible connection to different loading systems by using the Reishauer standard interface
- Compact design facilitates convenient manual loading and/or rapid automatic loading
- Modular grinding head for the use of a wide range of continuous generating as well as profile grinding wheels rapid change between grinding technologies – not much longer than a tool change
- Tooling compatibility of existing RZ 150 gear grinding machines to RZ 160 gear grinding machines is 100% possible





### Modular and configurable for your production

The RZ 160 provides the possibility to adapt the machine individually to the demands of your particular production. Thus, it is possible to find the best compromise between productivity, flexibility and investment costs. Among others, the following options are available:

- Second workspindle for increase of productivity
- Backlash-free high-precision pivoting dressing spindle allows the use of lower cost flexible dressing tools and special technologies
- CNC tailstocks for accurately adjustable axial clamping force ensure high repeatability
- Profile grinding on main spindle or on Reishauer Profile Grinding Head with integrated high-speed spindle
- Measuring system with scanning stylus for short measuring times at high resolution



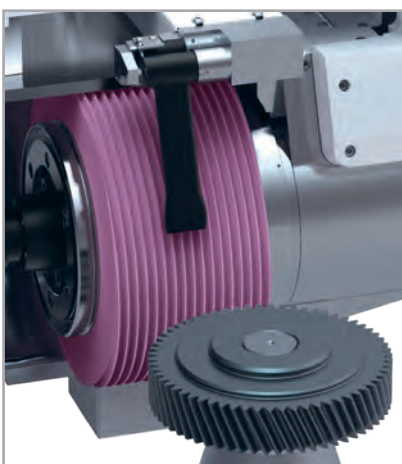
One workspindle,  
fixed dressing unit



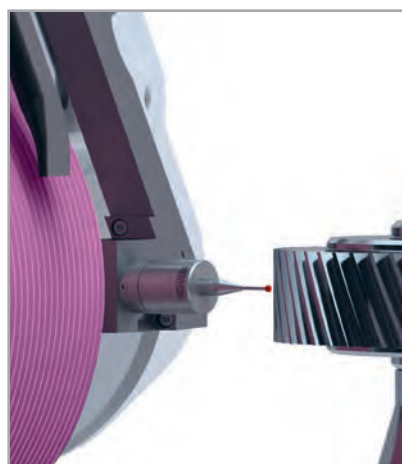
Two workspindles,  
pivoting dressing unit

### Upgrading is always possible

If you find out after start of production that options are required which have not been chosen, this is no problem. All options mentioned above can be retrofitted on site.



Continuous generating grinding



Gear inspection



Profile grinding with profile grinding head

# Technical Data

## Technical Data\*

Gear outside diameter	0 – 162 mm
Module	0.5 – 4 mm
Swivel angle (grinding head)	+/- 48°
Grinding stroke (max.)	180 mm
Shaft length (max.)	490 mm
Workspindle speed (max.)	3000 min <sup>-1</sup>
Workpiece weight (incl. fixture) (max.)	30 kg
Grinding speed (max.)	100 m/s
Grinding wheel outside diameter (max.)	275 mm
Face width of grinding wheel (max.)	125 / 160 mm
Diameter of dressing tools	123 / 140 mm

\*Out of range dimensions can be verified upon request

## Options (Extract)

Additional work spindle (C1- & C2-Axis)
Pivoting dressing unit (C4-Axis)
CNC tailstocks (W1- & W2-axis)
Profile grinding head
Gear inspection device
Polish grinding
Profile grinding
Reishauer TwistControl Grinding Technology – generation of specific twist
Grinding of conical gears (beveloid gears)
Grinding of non-involute gears
Line dressing
Integrated oil spinning
Reishauer ECO mode

## Control

Siemens Sinumerik 840D Solution Line
Reishauer PrecisionDrive
Reishauer operating software

All technical specifications are subject to change.



The RZ 160 is a very compact machine. The operator's panel can be easily moved from the grinding to the dressing position.

All service components are easily accessible and located in a central position, making the machine very user-friendly and efficient to operate.

# 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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