

# REISHAUER

Gear Grinding Technology

## Reishauer RS 300



MACHINE

AUTOMATION

TOOLING

TECHNOLOGY

DIGITAL

SERVICES

## Hard Gear Skiving Machine



# Swiss Precision. Made by Reishauer.



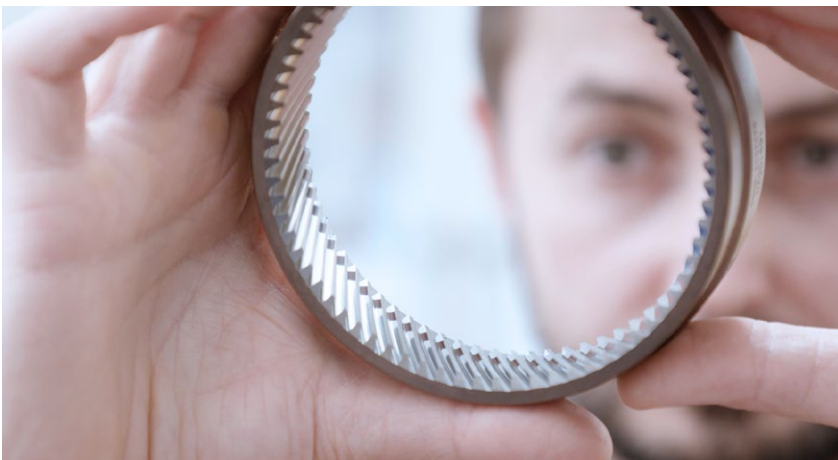
As far back as developing the world's first generating grinding machine, Reishauer has significantly impacted modern transmission production through its innovative developments in machine and process technologies. Our high-tech gear finishing machines, pioneering digital applications, efficient tooling, and proven clamping device concepts enable the production of reliable, efficient, and quiet transmissions.

## **Increased Requirements for New Energy Vehicles**

With New Energy Vehicles, i.e., vehicles with electric or hybrid drives, a new field of application has emerged where we once again take a pioneering role. Here, our core competence – the hard finishing of gears – meets the quality demands of varied gear types.

# Hard Gear Skiving of Internal Gears

High-performance planetary gearboxes with high efficiency and demanding NVH characteristics are increasingly used in the drivetrain of New Energy Vehicles. One of the main components – an internal ring gear, also called the annulus gear – can now be economically hard finished with the Reishauer RS 300. The RS 300 enables high precision with short processing times and long tool life.



## Gear Expertise

As the latest development from Reishauer, we present the RS 300 hard gear skiving machine, completing our range of gear machines. This allows all gears of modern traction drives to be hard finished on Reishauer machines.

Reishauer, as a leader in gear technology, possesses the necessary expertise to make this process both efficient and economical. In particular, the profound knowledge from our in-house tool manufacturing, combined with decades of expertise in

designing and building gear finishing machines, enables us to deliver exceptional results. This synergy enables perfect tool coordination, which is especially crucial in hard gear skiving.

## Economical Hard Gear Skiving of Internal Gears

The machining of hardened gear rings with a workpiece outer diameter of up to 300mm is the core application of the Reishauer RS 300. With the achievable gear quality, the RS 300 also meets future requirements with even tighter tolerances, where the highest precision and lowest flank surface roughness are of paramount importance.

## The Reishauer RS 300 is...

- ... a new development with a highly productive machining process
- ... the cost-efficient method for hard finishing of ring gears
- ... suitable for machining workpieces such as collision-critical gears
- ... flexibly usable – also for external gears
- ... the completion of the Reishauer portfolio, enabling hard finishing of all gears in a transmission
- ... compatible with the ARGUS process monitoring

# High Cutting Performance with Long Tool Life

Precision is our highest priority. Thanks to the highly rigid machine design and its primary axes in a gantry construction, the Reishauer RS 300 offers the best structural conditions for precise machining of complex gear geometries.

## High-Performance Cutting Material for Long Tool Life

The tool developed by Reishauer specifically for hard gear skiving is particularly powerful. The overall concept enables an exceptionally long tool life with high precision and short processing cycles. Especially the PCBN cutting material stands out with its properties and forms the basis for cost-efficient hard finishing in the



gear skiving process. In high-volume production, the thermal stability of the process and machine is crucial. One of the main development goals of the machine was therefore thermal symmetry, which ensures the highest dimensional accuracy across the entire batch.

With all six axes implemented as control axes, the RS 300 allows high degrees of freedom in modifying the gear flank topography. This enables the targeted adjustment of the gear flank twist (Twist Control) without significantly altering the cycle time.

The Reishauer RS 300 is optimized for dry machining, thus eliminating the need for coolant filtration systems. In addition to reduced floor space requirements, this significantly lowers energy consumption. The recycling of steel chips is also simplified, as no grinding sludge is generated.

## The Reishauer RS 300 offers...

- ... Reishauer-PCBN hard gear skiving tool, with high productivity due to high cutting speed and long tool life
- ... high gear quality with low gear flank surface roughness
- ... a highly rigid machine concept ensuring maximum repeatability over the entire machine lifecycle
- ... process-specific automatic drive tuning for reliable compensation of hardening distortions through the highest drive dynamics
- ... the most modern operating concept, Reishauer RSControl with the familiar interface and logic – derived from Reishauer grinding machines
- ... correction of profile angle and lead deviations directly in the HMI
- ... low energy and space consumption due to dry machining



# Technical Data



Reishauer RS 300	
Workpiece diameter internal skiving:	50 – 300 mm
Workpiece diameter external skiving:	50 – 200 mm
Number of teeth:	5 – 520
Module range:	1 – 3 mm
Workpiece length:	max. 150 mm
Axis crossing angle:	max. 35°
Tool spindle speed:	max. 3,600 min <sup>-1</sup>
Workpiece spindle speed:	max. 3,600 min <sup>-1</sup>
Axis travel X-, Y-, Z-axis:	400, 500, 350 mm
Power supply:	400 V / 50 Hz; 460 V / 60 Hz
Ambient temperature:	+15 to +45 °C
Weight:	14,000 kg

subject to technical changes

# Equipment



## Basic Equipment

- Direct-drive tool and workpiece spindles
- Position measurement systems on all linear axes
- Spindle cooling
- Centering device
- Contactless centering
- Emergency retraction to protect the machine and tooling
- Central lubrication of all linear axes
- Lifetime lubrication of all rotary axes
- IO-Link sensors
- Remote maintenance
- Ergonomic control panel with touch technology
- Semi-automatic tool change aid (HSK-F 125 interface)

## Options (non-exhaustive)

- Reishauer ECO-Mode
- Twist Control Skiving
- Interface for automation systems
- Automatic tool changer (HSK-F 125 interface)
- ARGUS Monitoring System

## Control System

- Siemens SINUMERIK ONE
- Reishauer RSControl operating software

subject to technical changes

# The Reishauer Circle of Competence

The Reishauer Circle of Competence describes the entirety of our offering. Reishauer offers products and services for the precise fine finishing of gears, providing a comprehensive solution from a single source, thereby ensuring long system life and reduced lifecycle costs.

## Machine

A broad portfolio, future-oriented controls and interface concepts, and state-of-the-art technologies – our machines have guaranteed maximum output with the highest precision, consistent quality, and unmatched machine availability for decades.

## Automation

Automation “Made by Reishauer”. Our automation solutions are perfectly matched to our machines and keep pace with their high output. Modular in design, they can be flexibly tailored to your production needs.

## Tooling

Perfectly matched, consistent in quality, and with guaranteed availability: Together with the machine, Reishauer tooling fulfills all factors for your successful machining processes.

## Technology

Reishauer technologies enable you to meet even the most demanding requirements and help you remain competitive. Our technology experts are here to support you with expert advice.

## Digital

System integration, in-depth process analysis, predictive maintenance – connected solutions for industrial operations are complex and diverse. Reishauer offers you a continuously growing portfolio of digital services to unlock the full potential of your machine.

## Service

The reliability of our machines and, thus, the machine availability is central to your competitiveness. Shortest response times, a globally expanded network of service engineers, and decentralized spare parts warehouses guarantee you maximum availability.



# Reishauer worldwide

## SWITZERLAND

Reishauer AG  
Industriestrasse 40  
8304 Wallisellen  
Switzerland  
☎ +41 44 832 22 11  
info@reishauer.com

## GERMANY

Reishauer GmbH  
Humboldtstrasse 32  
70771 Leinfelden-Echterdingen  
Germany  
☎ +49 711 947 56 0  
germany@reishauer.com

## CHINA

Reishauer AG  
Beijing Representative Office  
Room 1708, SCITECH TOWER  
No.22 Jian Guo Men Wai Da Jie  
Beijing 100004  
China  
☎ +86 10 651 571 75  
china@reishauer.com

## USA

Reishauer Corp.  
1525 Holmes Road  
Elgin, IL 60123  
USA  
☎ +1 847 888 38 28  
usa@reishauer.com

## FRANCE

Reishauer AG  
21 Rue de la Croix Blanche  
33000 Bordeaux  
France  
☎ +33 6 0830 64 20  
france@reishauer.com

## JAPAN

Reishauer KK  
2-14-30 Shinyokohama  
Kohoku-ku, Yokohama-shi  
222-0033 Kanagawa  
Japan  
☎ +81 45 476 58 33  
japan@reishauer.com

Find additional representatives at [www.reishauer.com](http://www.reishauer.com)

Head Office:

## Reishauer AG

Industriestrasse 40  
8304 Wallisellen  
Switzerland  
☎ +41 44 832 22 11  
reishauer.com

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