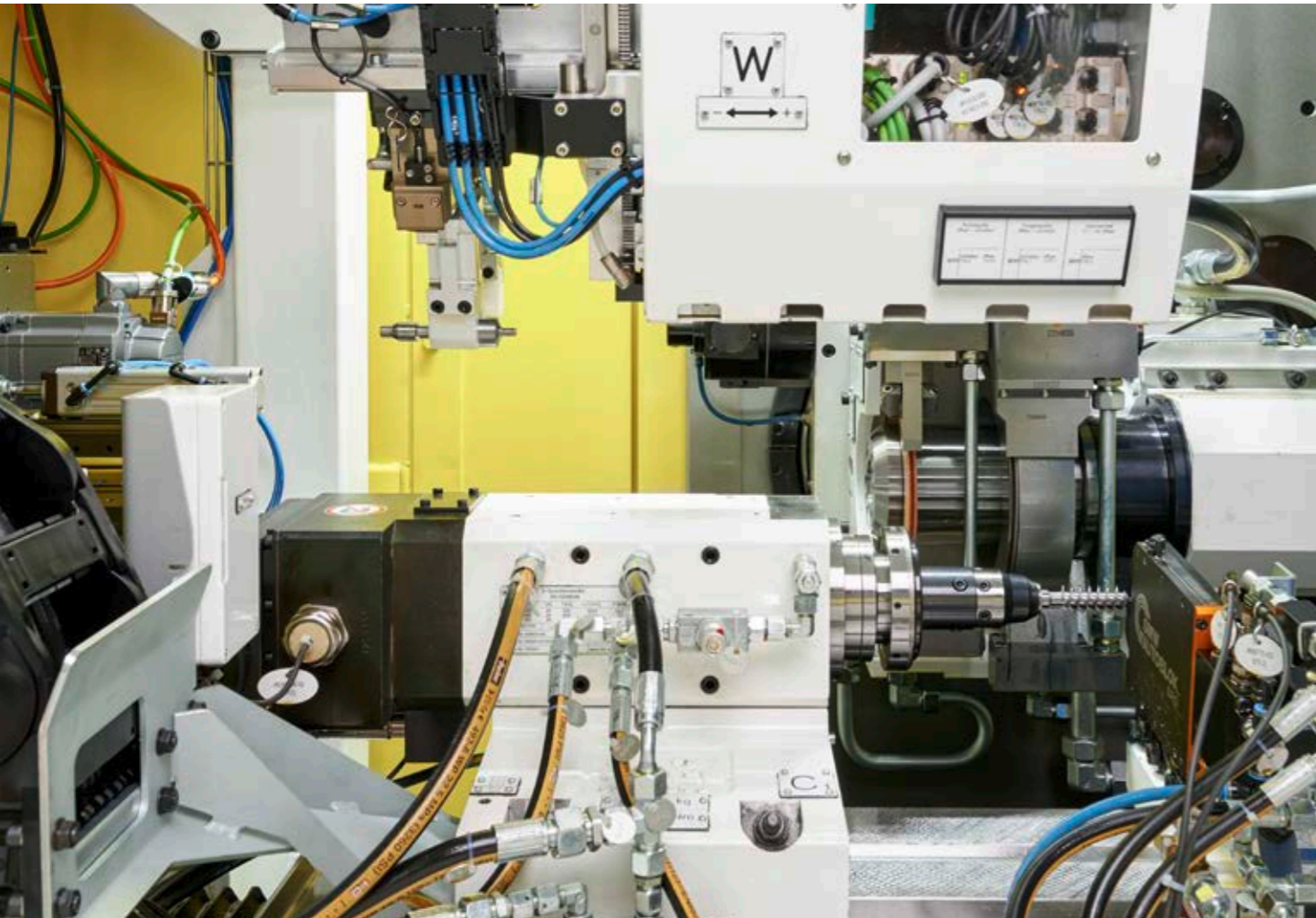


JUTWIST

WORM SHAFT GRINDING



UNBEATABLE CYCLE TIME FOR COMPLETE PROCESSING

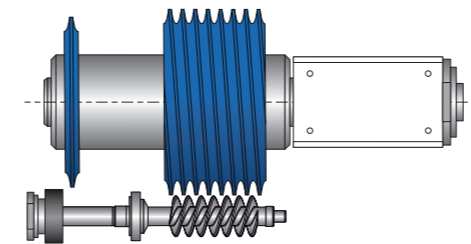


The JUTWIST 2000 high-speed grinding machine establishes worm shaft profiles from blank. The worm shafts are used, for example, in the automotive industry and in general mechanical engineering, where they are used for transmission and power transmission, and are fitted in various steering systems, servomotors and parking brakes, for example. The production process can be easily transferred to other, geometrically similar workpieces.

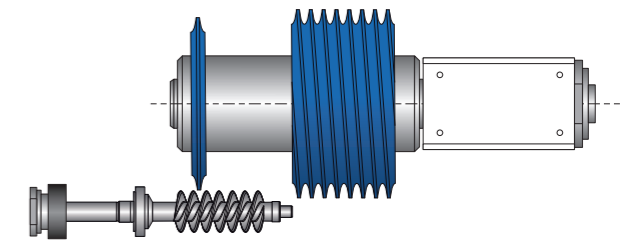
WORM SHAFT GRINDING

Thanks to the geometry calculation for the grinding wheel, the grinding medium is perfectly geared towards the thread shape of the workpiece. The electroplated profile grinding wheel that is used for the pre-grinding allows for a high cutting capacity and is ideal for processing soft materials but also the hardest materials. Thanks to the innovative grinding process, the profile can be ground

in a recess, which leads to enormous savings in the cycle time. For the subsequent finish-grinding with corundum, the passages are finalized and the final profile is produced. This results in workpieces with outstanding geometry and surface quality.

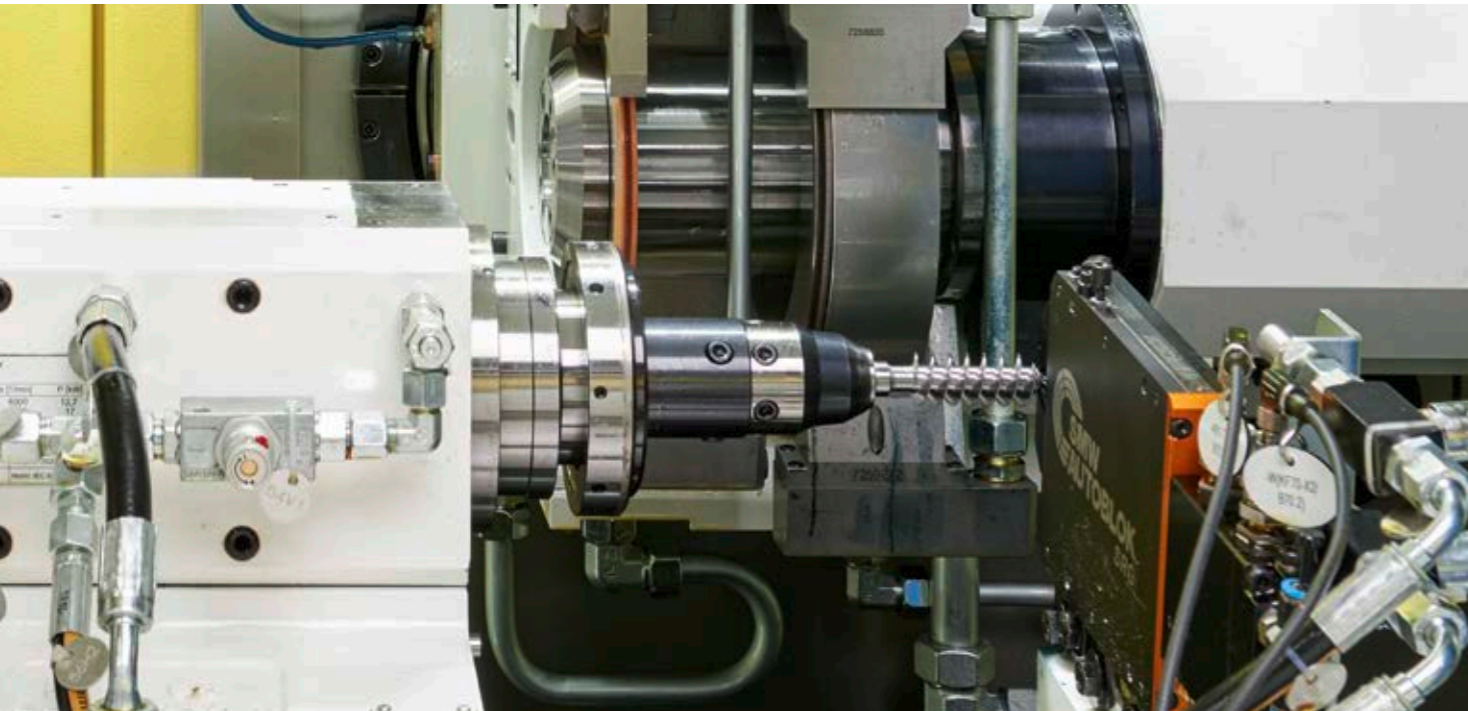


Pre-grinding



Finish-grinding

OUTSTANDING SURFACE QUALITY

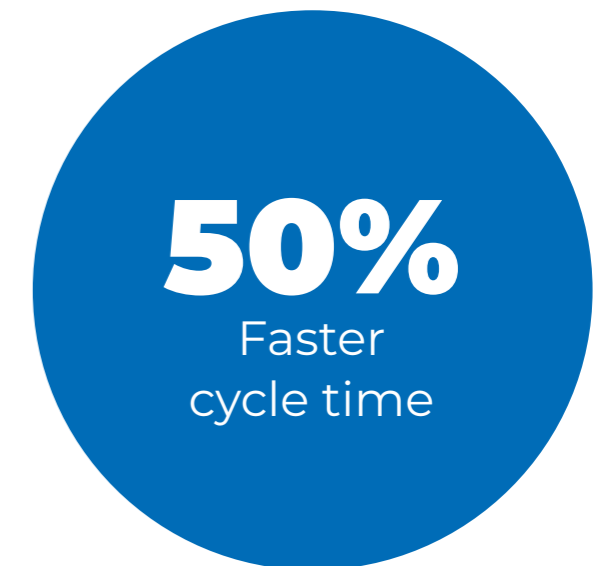
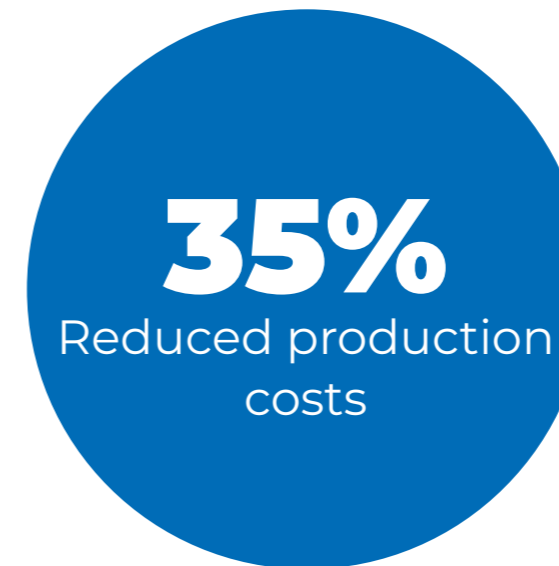


RANGE OF WORKPIECES

In just a single clamping setup, the JUTWIST grinds workpieces with multi-start threads and boasts using a clamping length of 300 mm and a swing diameter of up to 80 mm.

Which worm shafts can be ground?

- Right- and left-hand threads
- Open and closed profiles, as well as profiles that are closed on one side
- Shafts with multi-start threads
- Various materials



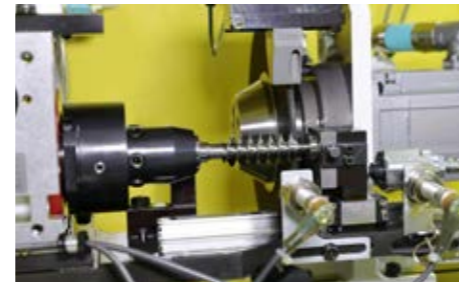
HIGHLIGHTS

- Pre- and finish-grinding in a single setting
- Long service life for the tools
- Low tool costs
- Multi-start threads can be ground
- High quality (roundness, concentricity, dimensional accuracy, diameter tolerance)
- Achievable surface quality of Rz 1 possible following the finish-grinding
- Process-reliable, high repeat accuracy
- Fast machine changeover

EQUIPMENT AND OPTIONS

DEBURRING STATION

With the integrated deburring station, JUNKER offers the reliable and process-reliable removal of the broken tooth on the worm shafts in parallel to the grinding process. The workpieces are transported directly to the clamping system via an internal loading gantry.



SETTING

The worm shaft is clamped on the workhead using a collet chuck. Furthermore, the workpiece is centrally clamped using a steady rest for the stock reference and using the tailstock for the center reference.

POSITIONING AND MEASURING SYSTEMS

The positioning button measures the longitudinal and radial position. The measured values are automatically integrated into the grinding process by the control system. You can also use the positioning button to carry out numerous measuring operations, such as crown and root circle measurement.



DRIVING AND GUIDING THE AXLES

The linear drive of the Z-axis allows for high moving and acceleration values. Furthermore, thanks to the interaction between the A-axis and the Y-axis, the profile's angle of inclination can be adjusted variably. As a result, the new technology provides the flexibility that is required in production.

The C-axis with direct drive allows for an extremely high speed range up to 10,000 rpm.

CONTROL SYSTEM

With the comprehensive JUWOP II software, the JUTWIST is optimally equipped and guarantees simple operation, fast loading and perfect programming results. The Erwin Junker Operator Touch Panel was specially developed for controlling grinding machines. All machine components are controlled via the control panel – irrespective of the series or the control system that is used. The identical structure, intuitive menu navigation and visualization of the workpiece geometry make it extremely user-friendly and flexible to operate. It is programmed directly via the control panel or via an external programming tool.



MACHINE BED

The mineral cast machine bed impresses with its damping performance and high torsional stiffness. Thanks to the temperature stability, fluctuations in the environmental temperature can be effortlessly offset. This guarantees high dimensional accuracy 24 hours a day.

LOADING SYSTEMS

Thanks to the optimized arrangement of the grippers for the blank and finished part, the internal V-loader allows for ideal workpiece handling. Within just a few seconds, the workpiece is changed and, thanks to the keyhole transfer, it is transferred to the external loading system – optimal production capacity while also easing the workload of the operating personnel. The loading systems can also be combined with various feeding and unloading systems, such as conveyor belts or systems that have been adapted to meet customer requirements.



As a full-service provider, the JUNKER Group provides tailor-made automation solutions.



DRESSING UNIT

The dressing of the grinding wheel is controlled by CNC. A driven diamond dressing wheel or a workpiece-dependent diamond profile roller can be used.

The dressing is carried out via an automatic dressing program with grinding wheel compensation. In parallel to the loading process, a dressing device can be used to dress the corundum grinding wheel. This reduces the auxiliary process times.



ABRASIVE

An electroplated CBN grinding wheel is used for the pre-grinding. Corundum is used as the abrasive for the finish-grinding.

FIRE PROTECTION AND LTA AIR FILTER

In the event of a deflagration, the inside of the machine is automatically hermetically sealed, meaning that a fire is extinguished before it can spread. If required, extinguishing systems (CO₂ or water mist fire extinguishers) and waste air purification plants can also be installed. LTA Lufttechnik GmbH is a competent partner for fire protection and filtration solutions. The company also belongs to the JUNKER Group and researches, develops and produces filter systems for industrial air purification.



SKILLS

TECHNOLOGY CENTER

Numerous grinding machines are available for presentations and customer-specific grinding tests in the JUNKER technology centers in Nordrach, Germany, and in Holic, Czech Republic. Many interested parties and customers are won over here – on their own workpieces – by the technical and economic performance of the JUNKER and ZEMA grinding machines.

SERVICE

The group's sales and service network, which is continuously growing, guarantees customer satisfaction right across the world. The JUNKER premium service operates quickly and competently across the world, is available 24 hours a day, and provides planning security: The highly qualified employees find a solution to every problem.

ENERGY EFFICIENCY

The characteristic value for the efficiency of a machine tool is the energy requirement per good part. With grinding machines from JUNKER this continuously decreases because more and more processing steps can be carried out in one machine, the auxiliary process times are reduced and the precision increases further.

As part of the energy management, energy-saving potential is continuously recognized and exploited. Examples include frequency-controlled components, regenerated brake energy or the optimized blast air consumption of the grinding spindle that was developed in-house.

PRODUCTION LINES

JUNKER has extensive references for the design and implementation of production lines that are perfectly tailored to the customer's requirements. As a general contractor, JUNKER places great importance on standardized interfaces, for example for workpiece transport, coolant systems or measuring equipment. This increases the efficiency and guarantees the long-term interaction of all system components.

SPECIAL SOLUTIONS

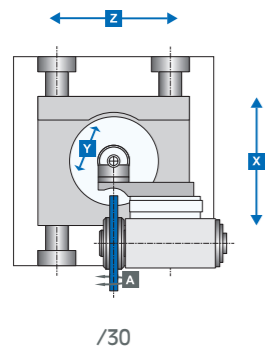
A new grinding challenge for JUNKER? "Tell us your grinding task and we will provide you with the perfect machine." With an enormous range of technologies, the engineers and technicians at JUNKER provide tailor-made solutions for all applications. Highest priority: Increase the workpiece quality, reduce the cycle time.

TECHNICAL DATA



PLATFORM	2000
Available Wheelhead variant	/30
Number of wheelheads	1
Grinding spindle	50 kW
Grinding length	300 mm
Clamping length	300 mm
Center height	150 mm
Workpiece weight	4 kg
Grinding wheel diameter (max.)	170–250 mm
Swing diameter	80 mm
W x D x H mm (without peripherals)	3000 x 2750 x 2430 mm
Weight	18,000 kg
Control system	Siemens 840 DSL

WHEELHEAD VARIANTS



EUROPE

Erwin Junker
Maschinenfabrik GmbH

Junkerstraße 2
77787 Nordrach
Germany

info@junker.de
+49 (0) 7838 84 0

Erwin Junker
Grinding Technology a.s.
Plant Holice
Pardubická 332
534 01 Holice
Czech Republic

info@junker.cz
+420 466 003 111

Erwin Junker
Grinding Technology a.s.
Russia Branch Office
Prospekt Tolbukhina 17/65
150000 Yaroslavl
Russian Federation

info@junker-russia.ru
+7 4852 206121

**JUNKER
GROUP**

Erwin Junker
Makina Sanayi Ticaret LTD. ŞTİ.
Esentepe Mah.
Milangaz Cad. No:75
Monumento
Kartal/Istanbul
Turkey

info@junker-turkey.com.tr
+90 216 5042811

LTA Lufttechnik GmbH
Junkerstraße 2
77787 Nordrach
Germany

info@lta-filter.com
+49 (0) 7838 84 245
www.lta-filter.com

LTA Industrial Air Cleaning Systems
s.r.o.
Lidická 66
252 68 Středokluky
Czech Republic

info@lta-filter.com
+420 233 012 113
www.lta-filter.com

AMERICA

Erwin Junker
Machinery, Inc.
2541 Technology Drive, #410
Elgin, IL 60124
USA

info@junker-usa.com
+1 847 4880406

Erwin Junker
de Mexico, S. de R.L. de C.V.
Av. de la Salvación 791
Torre C Int. 304
76147 Querétaro, Qro.
Mexico

info@junker.com.mx
+52 442 1995111

Erwin Junker
Máquinas Ltda.
Estrada do Capivari 751
Cep 09838-900
S.B. do Campo, São Paulo
Brazil

info@junker-group.com.br
+55 11 4153 9645
+55 11 4397 6008

ZEMA Zselics Ltda.

Estrada do Capivari 741
Cep 09838-900
S.B. do Campo, São Paulo
Brazil

zema@zema.com.br
+55 11 4397 6000
www.zema.com.br

ASIA

Erwin Junker
Maschinenfabrik GmbH
Shanghai Representative Office
Unit 1003, Floor 10
Tower II Kerry Ever Bright City
Enterprise Center
No. 209 Gonghe Road
200070 Shanghai
P.R. China

info@junker.com.cn
+86 21 61438528

Erwin Junker Machinery
(Shanghai) Co., Ltd.

Section D, Floor 6, Building 16#
No. 69 Xi Ya Road
Waigaoqiao Free Trade Zone
200131 Shanghai
P.R. China

services@junker.com.cn
+86 2150 463525

Erwin Junker
Maschinenfabrik GmbH
India Branch Office
Office No. 805, Deron Heights
Baner Road
Pune 411 045
India

info@junker.in
+91 20 27293403

www.junker-group.com

