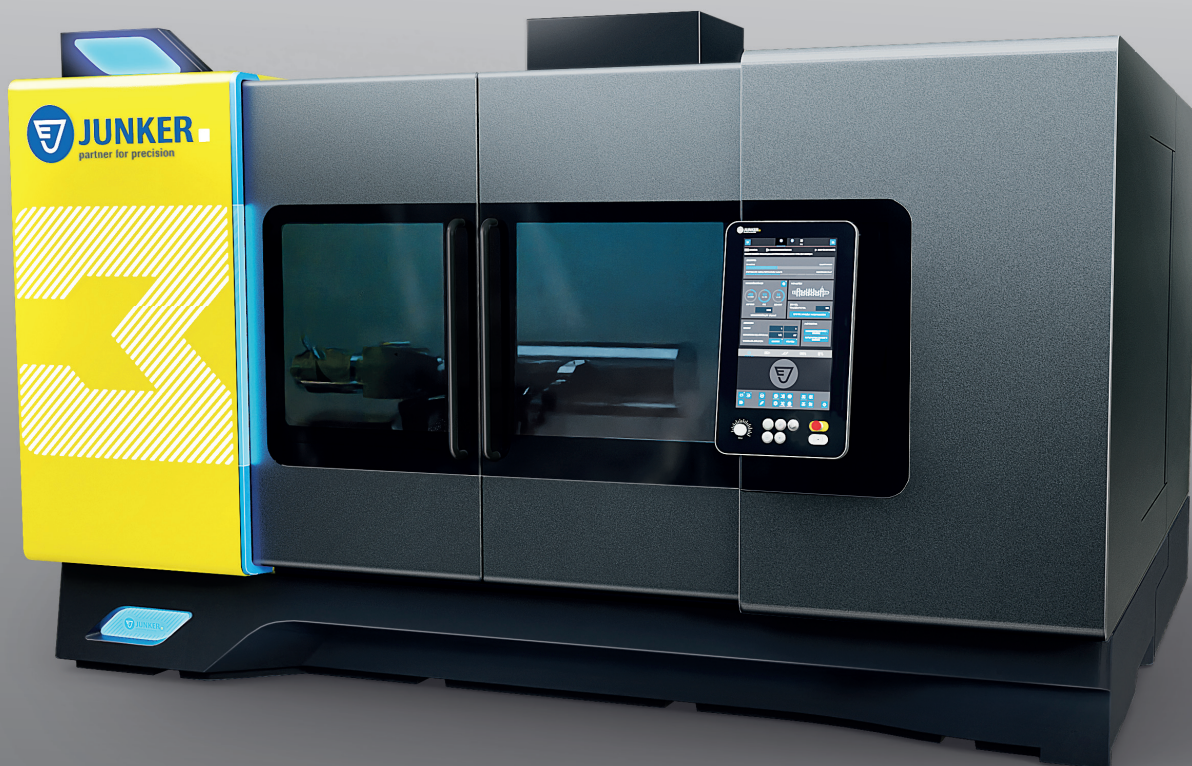
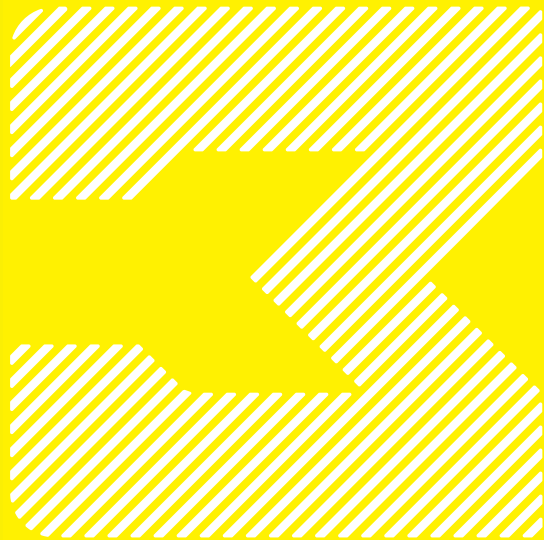


PLATFORM 3

THE IDEAL BASIS



NEW DEVELOPMENT IN A CLASS OF ITS OWN



JUNKER opens up far-reaching options for the future and – very importantly – investment security with the new development of Platform 3.

JUNKER's grinding technologies are constantly further developed to meet the challenges of the market. With ever more productive grinding concepts, JUNKER offers the perfect solution for permanently increasing demands on cost-effectiveness and precision. The Platform 3 was developed and designed precisely for this purpose.

THE INTENTION

The modular grinding machines of Platform 3 were developed based on the latest market requirements: small lot sizes and increasing part variety. Both combined the need for flexibility of a high-performance grinding machine.

The new JUNICOR covers all conventional corundum grinding requirements in addition to the high-speed grinding machines with CBN and diamond grinding wheels, such as the JUMAT, JUCAM, QUICKPOINT and JUCRANK. Flexibility and precision keep the balance, and our high-performance grinding machines are suitable for producing individual parts in small batches and larger workpiece series.

THE DEVELOPMENT

Significant objectives of the new development are increased flexibility and cost-effectiveness through optimizing our modular system. Customer will benefit from shorter lead times achieved through quicker production through puts. Included in the modular system is a uniform machine bed for all machine models of the new Platform 3, an extension of the base machine is possible by a wide range of configuration options, such as individual table assemblies and grinding spindle heads. The configurations range from standard to custom-made solutions and achieve the best efficiency, flexibility, and economic results.

Platform 3 is versatile and ideally suited to the needs of a wide range of industries, whether small or large series production at Tier 1, 2 or 3 suppliers or one-piece requirements in a research and development environment.



THE IDEAL BASIS



THE MACHINES

The design of Platform 3 allows a high degree of flexibility in machine configurations for specific projects. At the same time, it provides for individual customer requirements with a convincing price-performance ratio.

For different accuracy requirements in both main axes, X and Y, you can choose between different guide systems and drive variants. JUNKER offers the right solution depending on the to be ground requirements.

Another highlight of the new Platform 3 is the integrated automation concept. The machine can be loaded manually or fully automated. The internal gantry loading system can quickly adapt to new part configurations, with little effort and ensures smooth part handling. Easy access to all components on the outside and inside of the machine, combined with optimized setup capability, is the foundation of the entire system.

THE GRINDING PROCESSES

The new and economical Platform 3 enables a wide range of grinding processes such as; cylindrical and non-cylindrical applications of OD and ID, regular plunge and angular grinding, more complex operations such as profile, face, surface, and groove grinding, as well as the traditional JUNKER QUICKPOINT grinding process.



HIGHLIGHTS

- Cost effectiveness thanks to modular design
- Short delivery and through-put times for single machines and whole concepts
- Guaranteed spare part availability
- Optimized uptime due to reduced service and repair times
- Future oriented investment thanks to flexibility of machine components that allow easy changeovers for second and third product cycle
- Highest precision thanks to perfect thermal stability
- Highest rigidity due to robust construction
- Quick startup due to integrated peripherals
- Pioneering operating and software concept
- Operator and maintenance-friendly machine platform
- Optimized machine layout that requires less floor space

EQUIPMENT AND OPTIONS

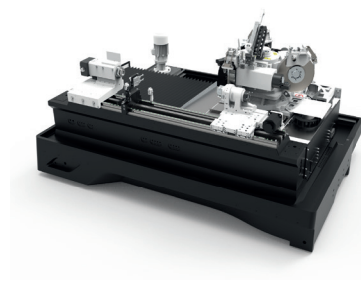
MACHINE BED

The machine foundation is made of mineral casting and impresses with its dampening qualities and torsional rigidity. Its temperature stability makes it easy to compensate for fluctuations of the ambient temperature. This ensures a high level of dimensional accuracy over a longer production period. The innovative back circulation of the coolant ensures that the machine bed is kept perfectly clean.



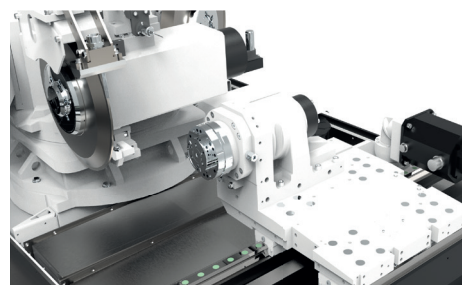
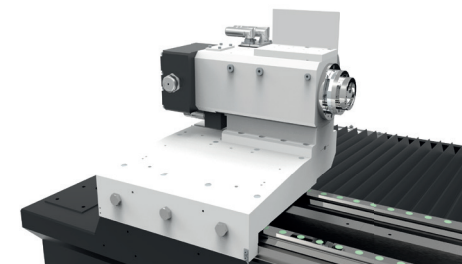
TABLE ASSEMBLIES

The table assemblies are mounted on a linear guide on the grinding table using a standardized interface. The table assemblies can be adjusted manually or fully automatic and therefore allow flexibility for any part type. This modular concept enables a highly flexible and individual component arrangement for every requirement and also allows the components to be economically reconfigured for future grinding tasks.



MAIN AXES

The cross-slide design of Platform 3, in which the main axes X and Z are arranged under the grinding wheel head, is compact and enables a smaller foot print without restricting the grinding length. The guideways of the main axes are equipped with modular high-precision circulating roller units to efficiently meet different accuracy requirements and ensure an optimum cost-benefit ratio. Platform 3 offers a versatile drive selection, with both cost-efficient ball screws and more powerful linear motors available, both of which ensure high precision and reproducible accuracy.

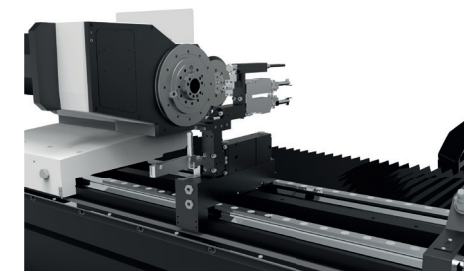
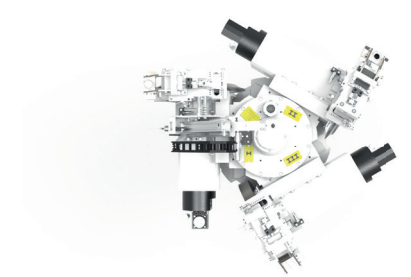


WORKPIECE SPINDLE AND TAILSTOCK

The workhead for CBN grinding machines is equipped with a high-precision spindle and a patented 3-point interface for different clamping systems. The maximum clamping length varies depending on the clamping system. The JUNCOR workhead is designed as a belt-driven version and prepared for an ISO universal interface accessories; the tailstock is equipped to accommodate a stationary or live center and can be individually adjusted manually or automatically to the respective part length. Maximum clamping length also depends on the clamping system used and the axial length adjustment of workhead and tailstock can be either done manually, hydraulically or NC controlled. Axial displacement becomes necessary when mixing OD and ID operations or for single part productions and retooling means.

GRINDING WHEEL HEAD

The wide range of grinding wheel head variants, with up to three grinding spindles, ensure maximum flexibility. The belt-driven or high-frequency spindles are manufactured by JUNKER and designed precisely for the grinding process. JUNKER offers the right, application optimized configuration for the Platform 3 machines for either CBN high-speed grinding with a peripheral speed of up to 125 m/s or conventional grinding with aluminum oxide and a peripheral speed of up to 63 m/s. The automatic swiveling B-axis with a positioning accuracy of less than one angular second was specially designed for Platform 3 to ensure a high-precision grinding process for every requirement.

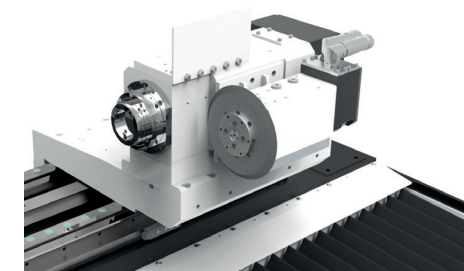
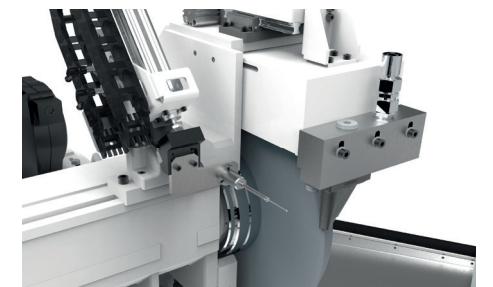


IN-PROCESS-MEASURING SYSTEM

The need for efficiency in production cycles, optimized grinding times and increasing demand for part quality require the use of high-precision measuring instruments. A digital measuring head measures the required part dimensions in process. Measured values are stored, and the correction data is calculated in order to minimize process influences due to temperature fluctuations or tool wear. A new feature in this machine class is the use of an absolute measuring system to reduce set-up times between different part types.

LONGITUDINAL AND RADIAL POSITIONING

Part position must be determined precisely after clamping. The length positioning probe measures the axial position of the part using a reference surface to compensate for fluctuations of the part blank. Measured values are automatically used by the grinding process and are integrated by the control system.

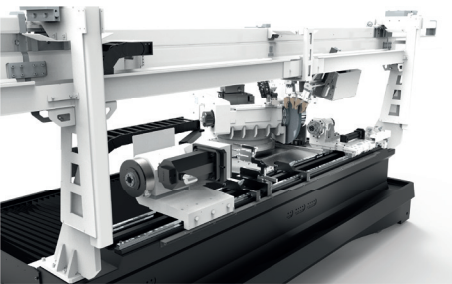


DRESSING

Dressing the grinding wheel creates the exact geometry and sets the surface requirements of the part. The dressing process is optimized to increase the wheel life and the surface quality of the part. Platform 3 is able to accommodate fixed and rotary dressing tools, which can be mounted depending on the application on either workhead or tailstock. For high-speed grinding applications, the workhead C-axis also serves as dressing spindle and the dressing disc is mounted directly on the spindle; for maximum flexibility, the dressing spindle can also be mounted directly to the grinding table, actuated by and means of a linear guide.

PERIPHERY

In addition to the powerful grinding machine, the peripherals are the perfect complement. Our focus was to reduce the overall machine layout. Both the hydraulic and cooling units as well as the air filtration system are optimally positioned, the return pump is installed directly at the grinding machine. A standardized system for application specific coolant pressure as well as rinsing pumps for high-speed grinding applications is also available.



LOADING SYSTEM

Another highlight of the new Platform 3 is the integrated automation concept. Various loading concepts are compatible with the Platform 3, this includes manual loading solutions, industrial robots as well as external or internal gantry systems. The internal gantry loading system can be converted to new part configurations with little effort and ensures smooth part handling.

FILTRATION SYSTEM

LTA Lufttechnik GmbH manufactures solutions for compact filtration systems and plans and installs filtration systems for large extraction systems. They cover solutions for oil and emulsion mists as well as dust and chip extraction for particle sizes between 0.001 and 100 µm. Thanks to their expertise in piping systems, flow simulations, safety technology and turnkey solutions, LTA generates a wide range of added value for customers over the entire life cycle of a system.



TECHNICAL DATA



PLATFORM 3	JUNICOR 3S	JUNICOR 3L	JUMAT 3S JUCAM 3S QUICKPOINT 3S JUCRANK 3S
Clamping length / Grinding length	max. 800 mm	max. 1.600 mm	max. 800 mm
Workpiece weight	max. 250 kg	max. 250 kg	max. 80 kg
Grinding wheel diameter	508/610 mm	508/610 mm	400/500 mm
Circumferential diameter	max. 450 mm	max. 450 mm	max. 290 mm
Spindle power	17 kW	17 kW	42 kW
Travel length of the X-axis	500 mm	500 mm	340 mm
Travel length of the Z-axis	1.300 mm	2.100 mm	1.300 mm
W x D x H mm (without peripheals)	3.250 x 2.600 x 2.200	4.050 x 2.600 x 2.200	3.250 x 2.250 x 2.200

DYNAMIC AND EFFICIENT INTERACTION

DESIGNED TO BE EASY APPLICABLE AND USER-FRIENDLY

Machine operators demand intuitive control concepts that minimize the complexity of interaction for the operator while making full use of the machine's functional capabilities. Innovation and future-proofing have top priority when selecting suitable technologies for the HMI concept. These include full-touch technology for the best possible information and operating design, status-based operator guidance and an RFID system for an optimal authorization concept.

The new and dynamic operating panel of Platform 3 simplifies everyday work in many ways. It impresses intuition thanks to clearly recognizable input options and ensures optimized and guided operation as well as centralized correction options of the grinding machine.

An integrated RFID interface is used for simple and secure machine login. The login can be broken down into different authorization levels for operators, maintenance personnel or administrators, for example.

Thanks to excellent user guidance and clearly designed operating aids, errors can be avoided and processes optimized. The focus here is on the areas of Home, Run-Up, Correction and Set-up. The individual areas in detail:



Home:
All at one glance



Correction:
Centralised correction options



Run-Up:
Guided operation from starting the machine up to the grinding process



Set-Up:
Guided performance steps for efficient retooling

In addition to the software for optimal operation, the Platform 3 machines are equipped with the latest JUPRO and JUWOP software generations developed by JUNKER, guaranteeing high efficiency and maximum profitability.

The JUPRO software is engineered for the complex operation of the machine and evaluation of various process data, such as cycle time, temperatures, and spindle utilization.

This software manages set-up, maintenance, adjustment, and commissioning. The JUWOP software serves to program workpiece machining programs and the associated cylindrical and non-cylindrical grinding operations. The parametric programming of geometries and technologies in conjunction with workpiece and technology assistants allows effective programming of the grinding task.



HIGHLIGHTS

- New JUNKER operator panel
- 24" Touch Screen
- Intuitive user guidance
- HMI can be flexibly adapted to the user requirements and the task at hand
- Ergonomically tilted panel
- Integrated operation of all peripheral devices such as measuring or balancing systems

HIGHLIGHTS

- Programming of cylindrical and non-cylindrical machining
- Pre-defined processing cycles
- DIN ISO Programming
- Various geometry import option

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