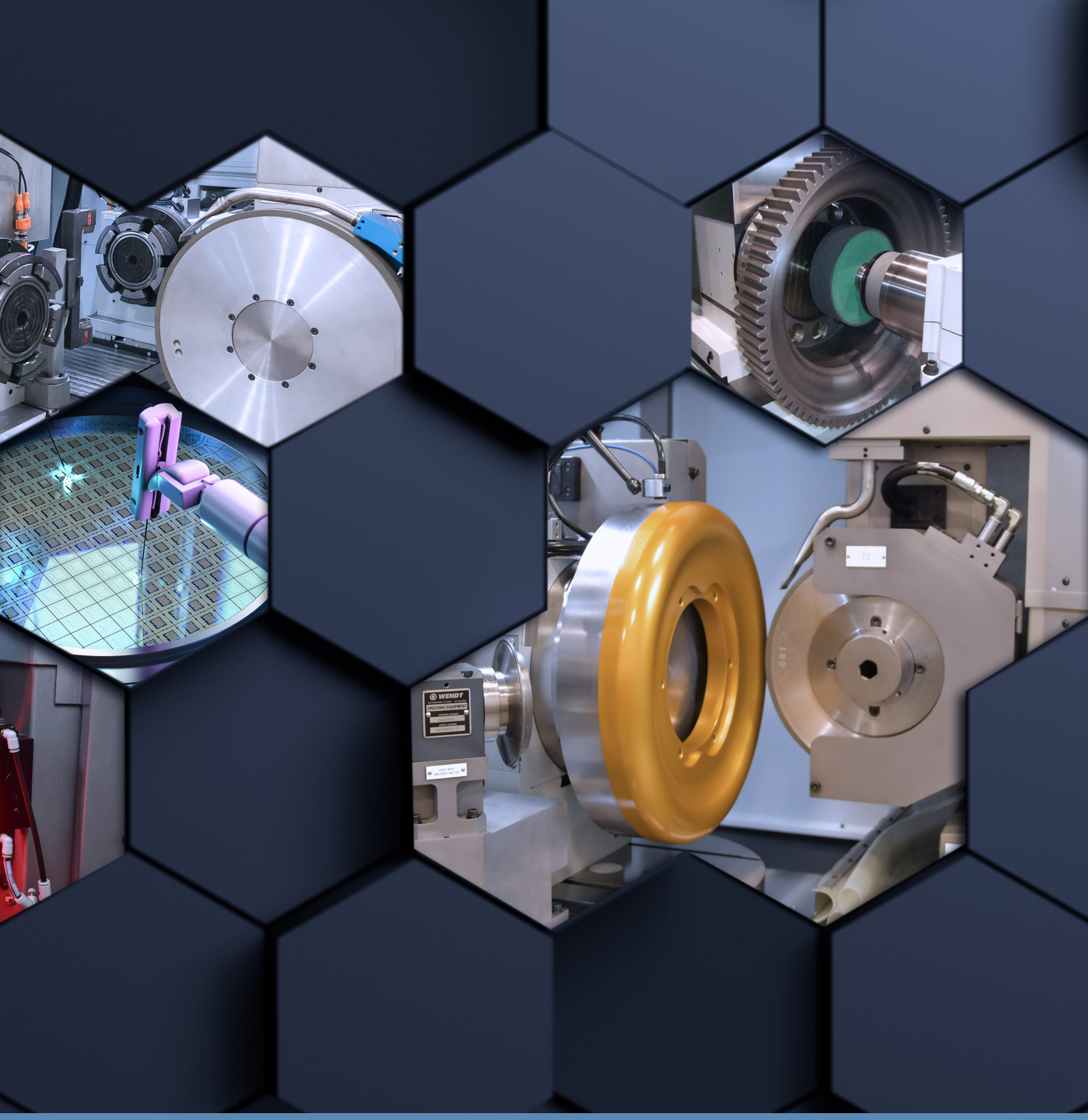


KELLENBERGER

ID/OD GRINDING TECHNOLOGY





DREAM IT. BUILD IT. TOGETHER.

Welcome to Kellenberger, the premier provider of cutting-edge technology in manufacturing systems. Located in Elgin, Illinois, our company boasts Swiss engineering roots and a steadfast commitment to turning your dreams into reality. For over half a century, we've collaborated closely with our clients to craft single-machine solutions and multi-machine production cells with seamless automation. From precision fuel injection components to aerospace engine parts, semiconductor boules to professional lawnmower blades, our revolutionary grinding systems have revolutionized industries across the board. Leveraging multi-axis interpolation and a suite of integrated technologies, including on-board gauge systems and X-ray guided part orientation, we deliver precision custom solutions tailored to diverse materials, including ceramics, silicon, and silicon carbide. At Kellenberger, we don't just meet expectations; we exceed them, offering the innovative solutions our clients have only dreamed of.



INDUSTRY APPLICATIONS

With Kellenberger's diverse portfolio, we have many solutions to solve industry challenges. Below are some of our recent solutions for popular industries. We strive to continuously learn about your respective industries so we can strategically be innovative to support your needs.



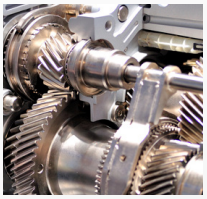
AGRICULTURAL

When it comes to gears, shafts, or cylinders for tractors and other farm equipment, KELLENBERGER U300 provides the highest precision grinders that best suit the needs of its customers. Cutting greens for the PGA requires high precision mower reels and KELLENBERGER U300 is a key supplier to multiple manufacturers who trust our machines to grind the cutting edge of the non-uniform welded reels of mowers to micron level precision.



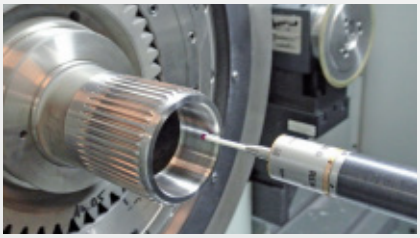
MEDICAL

KELLENBERGER U300 offers an exceptional range of machine features. These features, combined with the advanced software offered by KELLENBERGER U300, grant unmatched solutions for multi-axis interpolation grinding. The on-board gauge and vision systems guarantee the highest process consistency and overall part quality.



AUTOMOTIVE

By providing simultaneous grinding solutions with cutting edge automation systems, KELLENBERGER U300 provides reliable and cost-effective grinding solutions for drive-train, steering and electric motor components. Benefiting from its custom machine-building capabilities, machines and systems are built to meet and exceed automotive specifications. Interconnectivity and Industry 4.0 integration has been a standard for KELLENBERGER for years.



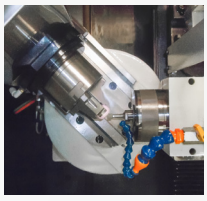
DEFENSE

We excel in custom grinding solutions for defense, munition and tactical systems to produce complex components in one setup. Our systems guarantee the highest product precision with revolutionary gauge systems and processes. Our custom machines provide our end users with cutting-edge solutions that are able to manufacture components with higher accuracies and improved operation quality, increasing overall customer satisfaction.



SEMI CONDUCTOR

Silicon Carbide (SiC) is vital in various electronic devices like diodes, MOSFETs, and JFETs, supplanting silicon in high-power, high-frequency applications such as electric vehicles and 5G. KELLENBERGER U300 has revolutionized the manufacturing of boules and etching chamber components by combining technologies to complete the parts in one process with only one machine. KELLENBERGER U300's approach reduces production costs and improves accuracy in semiconductor manufacturing.



ADVANCED MATERIAL

With its multi-axis interpolation capabilities, KELLENBERGER U300 provides unmatched grinding solutions for sphere and mirror grinding. Complex alumina applications are processed with several spindles and a variety of tools that are automatically changed into the grinding spindles. Combining processes in one machine that is equipped with multiple spindles provides customers with unique solutions that are able to accurately complete high-quality parts in one setup.



AEROSPACE

With decades of experience in custom machine building, KELLENBERGER U300 is specialized in producing ID/OD, universal, and cylindrical grinding solutions for small to large parts. From small injection components to large engine and landing gear components, we provide unique solutions that solve complex manufacturing challenges.

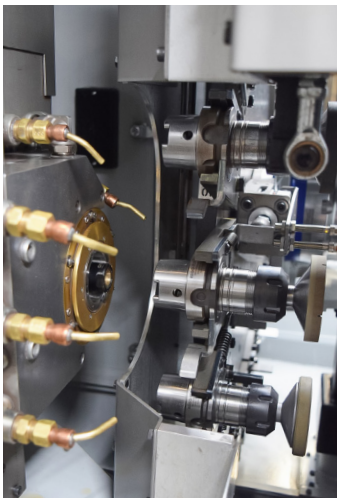
KEY FEATURES

AVAILABLE ON ALL PLATFORMS

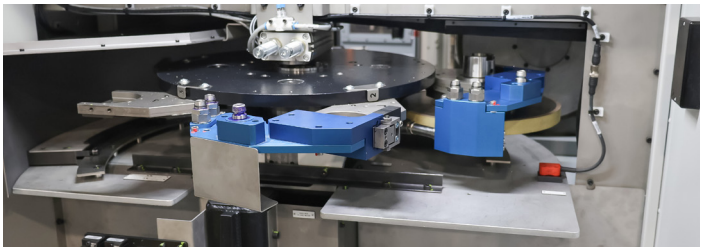
TOOL CHANGER HORIZONTAL AUTOMATIC COOLANT NOZZLE EXCHANGE

A game changer when it comes to complete grinding of parts in one setup. KELLENBERGER U300 offers horizontal and vertical tool changers to support multiple grinding spindles on its wheel head. With that, the ideal grinding speed with multiple spindles and tools can be accomplished. The wheel changers have a capacity of 6 - 20 tools, pending on the tool sizes.

With the spindles mounted on top of the X-Z cross axis system, the spindles are directly interfacing with the tool changers. To provide ideal coolant supply during machining / grinding coolant nozzles are exchanged with the wheels.

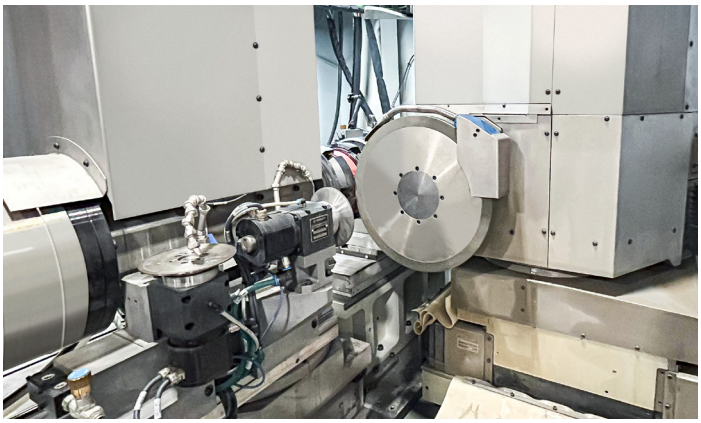


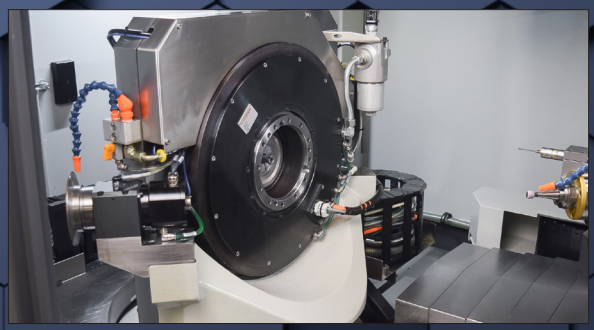




B2 AXIS WITH WORK HEAD AND TWO DRESSERS VERTICAL HORIZONTAL

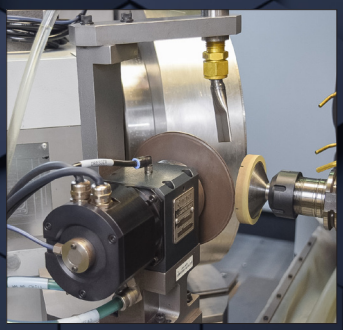
Multiple sizes of work-heads with sub micron roundness accuracy for part sizes of up to 36" are offered. All work-heads are directly driven providing programmable RPM, positioning and interpolation with up to 5 axes. For complete grinding of parts between two driven work heads, with or without centers, a second work head with independent axis is available. Precision OD's, round or non-round are ground between the two workheads. Faces and ID's on both sides of the part are sequentially ground, with a part handshake from one workholding to the other.

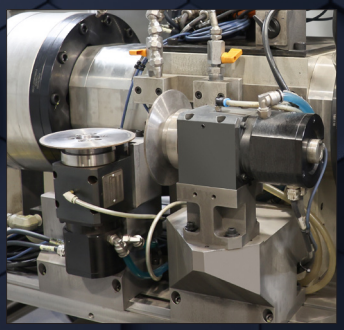




CENTER DRIVE

For parts that require grinding from both sides a center drive system is mounted on top of the B2 axis. The accuracy of the B-axis guarantees a repeatability and positioning accuracy of 20 millionths to present both sides of the part to the grinding spindles.





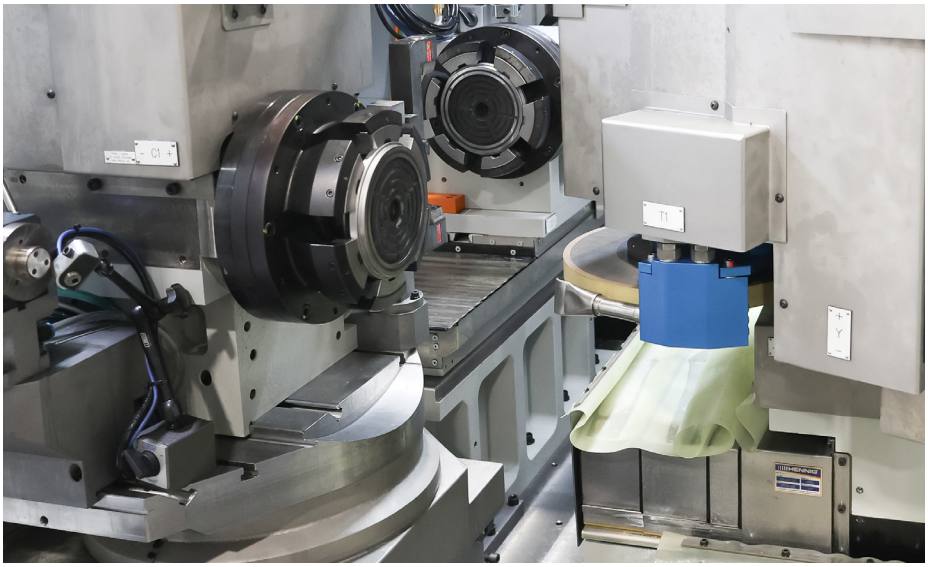
DRESSER FOR HORIZONTAL AND VERTICAL DRESSING MOUNTED ON WORK-HEAD B-AXIS

The sub micron positioning accuracy of the B2 axis allows the hosting of the dresser systems next to or behind the workhead. Thus eliminating the need for swing down attachments or occupying areas in the cross axis travel of the spindle.



4 SPINDLE WHEEL HEAD

The standard four (4) spindle wheel head can be equipped with a selection of spindles for wheel diameters ranging from 0.04" (1mm) to 20" (500mm). Equipped with the high precision infinitely adjustable b-axis OD's and ID's are ground in any angle. For interpolation grinding the optional hydrostatic b-axis is applied. Spindles are mounted on high precision infinitely adjustable hydrostatic swivel axis.



VERTICAL AXIS:

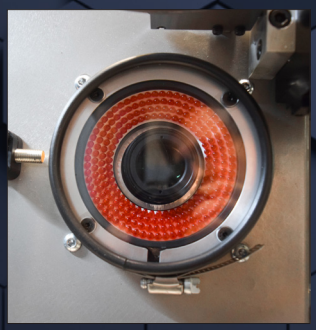
Y-Axis on the wheel head used for several applications.

- With horizontal spindle as an interpolation axis with the X-axis for bores, contours or threads located off center anywhere on the part.
- With vertical spindle as 5 axis interpolation grinder for OD and face contours or surface grinding of stationary parts clamped in the work head.
- With either solution a 3D or optical gauge is also mounted on the vertical axis to maximize gauging flexibility.



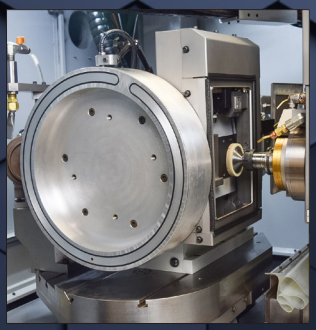
GAUGING SYSTEM

A multitude of gauging systems are implemented to control processes and to align and orient parts based on mechanical or structural features.



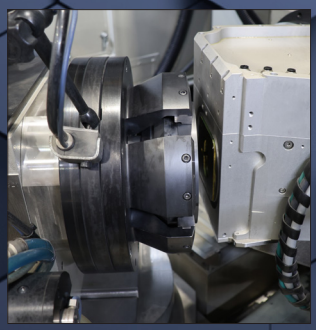
OPTICS

Optical gauging to locate special features on parts after clamping for radial part alignment.



WHEEL GAUGING WITH LASER GAUGE

Controlling the wheel diameter and wear of the dressing disc, KELLENBERGER U300 applies a laser gauge determining with sub-micron accuracy the size of the wheel and subsequently the wear of the dressing disc.



X-RAY

Revolutionizing the Si and SiC industry KELLENBERGER U300 applies X-ray Imaging technology to align the parts in the machine fully automatically based on the orientation of the parts micro structure.

PRO SERIES PLATFORM

The Pro Series machine platform combines multiple processes into one machine allowing parts to be ground on all sides. To gain access to the different sections of the part it is clamped multiple times during the process. Automatic part alignment is done by using a variety of vision, metrology, and gauge systems.

Equipped with two work heads the parts are ground driven by both work heads separately, allowing the access of the parts from both sides and the OD.

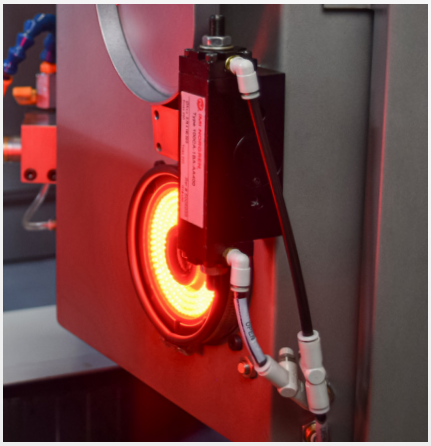
The wheel head can be equipped with horizontal and vertical grinding spindles. The wheels on all spindles can be automatically exchanged with the horizontal and vertical wheel changers.

True 6 axis interpolation is achieved by utilizing the two high precision hydrostatic B-axis work heads located beneath the grinding spindles.

Pro Series machines are especially effective when processing special materials, such as silicium carbide boules, saphire, ceramic, silicium and alumina.



KELLENBERGER U300



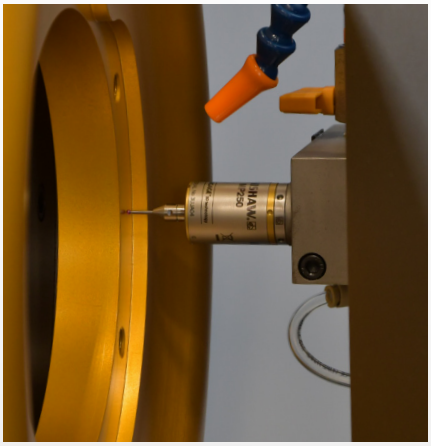
VISION SYSTEMS

Advanced vision systems enable precise part inspection and alignment, ensuring exceptional accuracy and quality in the grinding process.



METROLOGY INTEGRATION

X-ray part alignment guarantees consistent tool accuracy and contributes to the overall precision of the grinding operation.



PROBING

The incorporation of probing technology enables real-time feedback and tool corrections, further improving the accuracy and efficiency of the grinding process.

OPEN ARCHITECTURE SYSTEM©

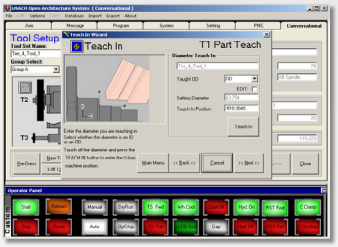
OPERATION AND PROGRAMMING SOFTWARE

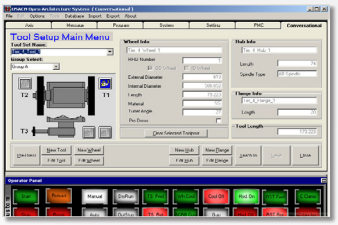
The Open Architecture System© is a PC based software package interfaced with Siemens or Fanuc control hardware.

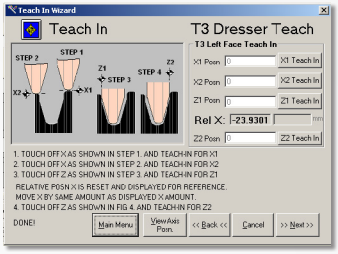
The Open Architecture System© takes conversational programming to the next level. Part programs, which can be freely named, are icon based and are created by simply dragging and dropping the desired operations into the program box.

The Open Architecture System© offers many cutting edge programming and operating tools such as:

- Dry run cycles
- Automatic wheel dressing feature
- Off line programming
- Contour programming in several axes
- Simple error debugging









DIGITAL TWIN

Our Digital Twin capability utilizes the Siemens Create MyVirtual Machine integrated software tool. This tool allows users to virtually run the controls software on their local PC. Pairing this with a 3D model of our machines enables the functionality to simulate axial movement, determine tool paths, and create cycle configurations; helping to alleviate the risk of testing new developments on physical machines.

The added benefit of this software is visible throughout our production process, from concept to finalization. The flexibility allows us to troubleshoot potential mechanical issues prior to finalizing designs of new machines, creating, and troubleshooting part programs, optimization of machine configurations/cycles, test integration of our HMI and Open Architecture, and simultaneous development with machine assembly. This is an interactive tool that we use both internally, as well as provide to our clients, to accelerate development and the functionality of our units.



ID GRINDING FEATURES

MULTI-SPINDLE TECHNOLOGY

Industry leading hydrostatic B1/B2 axes swiveling technology for both work head and wheel head sides for enhanced machine flexibility and to support fully integrated 5-Axis control architecture to achieve all grinding operation under optimal grinding conditions.

TOOL CHANGE SPINDLE (ATC)

For speeds up to 60,000 rpm
mounted on horizontal or vertical axis

VERTICAL Y AXIS IDEALLY SUITED FOR:

- Face grinding of stationary Parts
- Grooves and slots on face and OD
- Off-center hole drilling and tapping
- Gauging of off-center features
- Automatic Part Centering

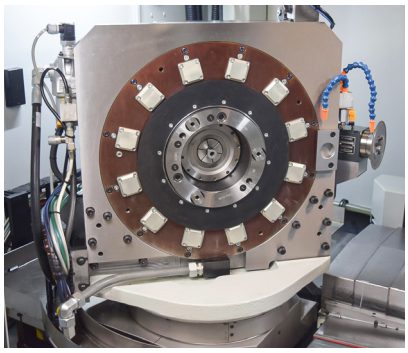
CENTER DRIVE SYSTEM

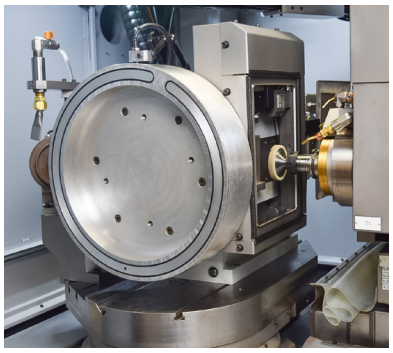
Solutions allow to grind ID's, faces and OD's on parts from both sides in sub-micron tolerances. The grinding surfaces are positioned to the grinding spindles using the two CNC B-Axes.

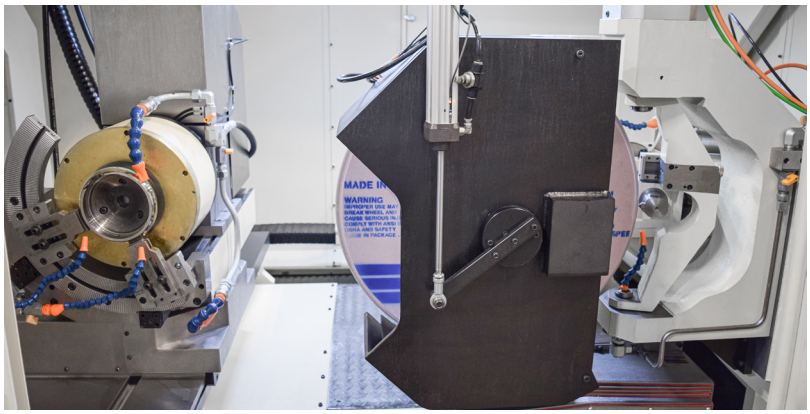
TOOL LASER MEASURING TECHNOLOGIES

For all wheels in tool changer and large OD wheels with automatic offset capabilities including compensating for wear of diamond dressing wheel.











AUTOMATION SYSTEMS

COMPLETE SYSTEMS PROVIDER:

- Robot systems
- Gantry systems
- Part management systems
- Complete production cells with a variety of machines and systems



KELLENBERGER SUPPORT TEAM

The Kellenberger support team is always available to answer your questions and service your needs. We strive to make sure your Kellenberger machines and equipment are always running at peak performance.

CONTACT US TODAY TO LEARN MORE

All prices and details are subject to change without notice. 1/2026

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