

STUDER SOFTWARE

SIMPLE – RELIABLE – PRODUCTIVE



The Art of Grinding.

A member of the UNITED GRINDING Group

STUDER SOFTWARE

Do you need simple and intelligent software with intuitive operation?

STUDER can provide it. Thanks to our software the machine is quick to set up and easy to operate: Simply enter the workpiece dimensions and the material and StuderTechnology Integrated generates the grinding program automatically, using data from over 100 years of grinding experience and roughly 300 machine parameters. You can supplement the software with your own individual empirical values. The Studer-Pictogramming visual language facilitates programming and operation.

C.O.R.E. – CUSTOMER ORIENTED REVOLUTION

C.O.R.E. helps us make your production fit for the digital future.

It's based on a new operating system, C.O.R.E. OS that equips the machine with intelligence.

Thanks to the uniform C.O.R.E. software architecture, exchanging data between UNITED GRINDING machines is easy. The integrated umati API can be used to communicate with third-party systems as well. It also offers access to UNITED GRINDING Digital Solutions™ products directly on the machine. C.O.R.E. not only establishes the technical foundation for this and other IoT and data applications, it also forms the basis of revolutionary yet uniform operation.



ECONOMICAL PRODUCTION

STUDER software helps you reduce production costs, thanks to our flexible and simple software concept. For you this means: shortest setup, programming and grinding times, combined with the highest machine availability.

STUDER developed a visual language for programming, called «Pictogramming». No other supplier can offer such a multitude of setup functions, grinding cycles and auxiliary functions. This means that even complex grinding processes are easy to program and control. Your advantage: You can become proficient in STUDER software very quickly.

STUDER machines can always be upgraded with the latest functions, are always state-of-the-art and retain their value. They can also be equipped with a wide variety of expansion modules, which optimize your specific grinding process directly in the control system.



StuderWIN

The software of a cylindrical grinding machine must be able to deal with the most diverse customer profiles, from individual component and small-batch production through to large scale production. It must be equally accessible to all operators – from a novice through to a highly qualified technician.

StuderWIN enables the operator to set up the machine efficiently, without having to go into the menus in depth. The most important information is available at a glance. The software provides an incredible number of simple-to-operate functions for customers with particularly high requirements and finicky grinding tasks. Dialog guidance makes it easy for the operator to get to grips with the software structure. The system is transparent, enabling the operator to implement his own ideas and requirements in the software.

Set-up, tool definition and management, corrections, program creation, process visualization, as well as diagnostics and analysis are the most important areas of StuderWIN. STUDER software can be conveniently operated with or without touch screen.

Several hundred parameters of a grinding machine determine the machining process for cylindrical grinding. A complex process, which is the preserve of absolute specialists. Or is it? StuderTechnology breaks with this opinion, and also breaks records when it comes to grinding. Explained in simple terms, the software automatically determines all necessary data for cylindrical grinding. With just a few inputs the program calculates the production goal and grinds perfectly and with maximum feed at first attempt.

StuderWIN*focus*

StuderWINfocus is the special software for the S11. It is based on the StuderWIN operating software but has an operator interface specially developed for smaller screens. This is optimized for use on production machines with only one machining tool and one measuring tool.

Automatic selection of the right machining mode for the selected screen and a customizable process screen round off the functionalities. All software extensions can only be used as integrated tools in StuderWINprogramming.

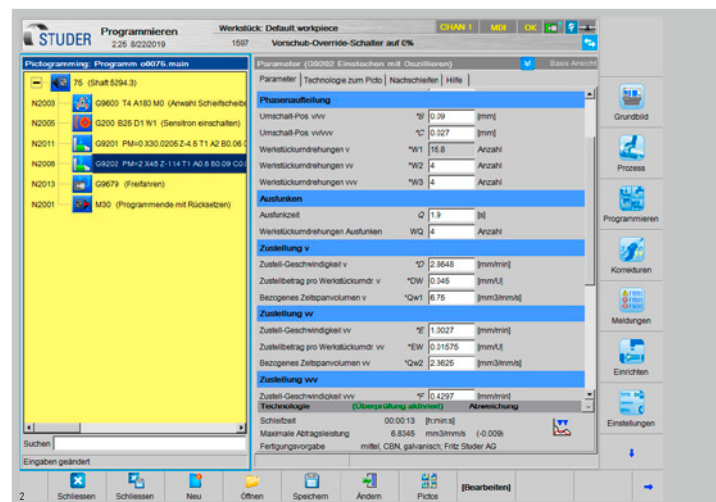
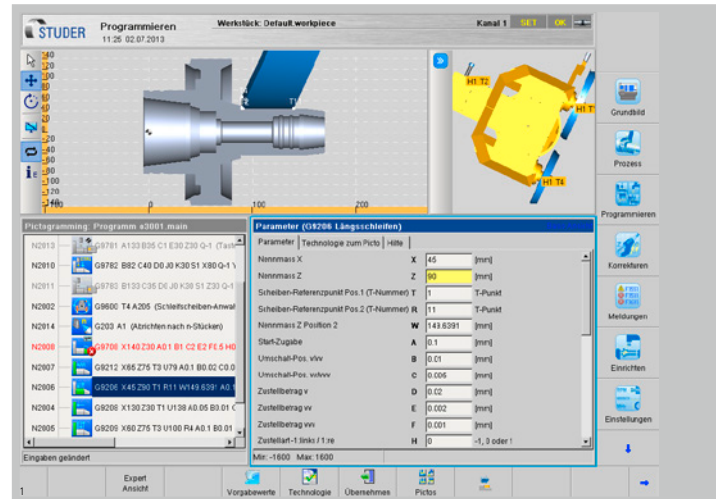
SIMPLE OPERATION THANKS TO STUDER PICTOGRAMMING

Time-consuming programming tasks? Not with STUDER's visual language. Our «Pictogramming» makes programming easy for the operator: He no longer has to think alphanumerically, but can think in images. The workpiece programs are displayed graphically and clearly. The cycles all have their own distinctive symbol, a «Picto», which enables the process parameters to be queried in a simple dialog. The created program can be precisely adapted to the customer's requirements at any time with ISO code commands.

The integrated contour editor enables the operator to draw his workpiece or import it from a DXF drawing. He then clicks on the parts of the workpiece that he wishes to grind and transfers the positions to his program. With the aid of the animated help graphics he can see which grinding wheel will engage with which part of the workpiece. In this way he can check his program.

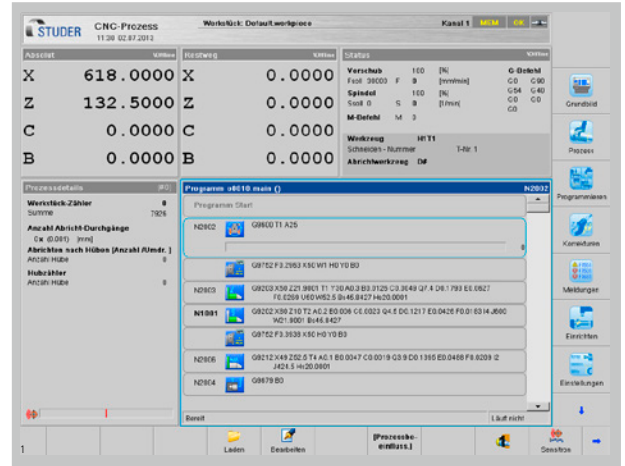
Technological programming

In addition to the usual STUDER process parameters, grinding technology inputs such as e.g. removal rate, contact ratio or speed ratio can also be used for programming.



PROCESS CONTROL FROM A TO Z

High complexity, small series and expensive materials. This is the trend of grinding tasks. Production errors are uneconomical, therefore the operator must be able to control the grinding process one hundred percent and correct it if necessary. With larger batches and automated systems, the necessary corrections are made completely automatically through in-process gauging or correction values are transferred directly to the machine from external measuring stations. Individual workpieces can be reground quickly and reliably at the push of a button without making any modifications to the program.



CORRECT AND DIRECT DIAGNOSTICS

Prevent expensive downtimes by finding causes of faults quickly. StuderWIN's diagnostic aids make on-screen error detection much easier, so that many faults can be recognized and rectified quickly. In the case of more serious problems, the STUDER specialists in Switzerland can connect directly to the machine via the optional «StuderRemote» software and determine the cause of the fault.

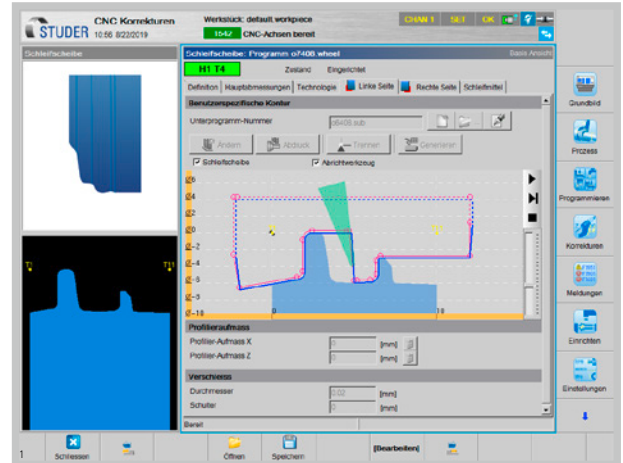


DRESSING

StuderWIN provides a large number of standard macros for dressing grinding wheels. If no standard grinding wheel shape exists, you can graphically create the shape quickly and easily with the integrated contour editor. From this shape the program – including approach and retraction movements – is then created automatically and graphically represented. Alternatively the shape can also be freely programmed in accordance with DIN66025.

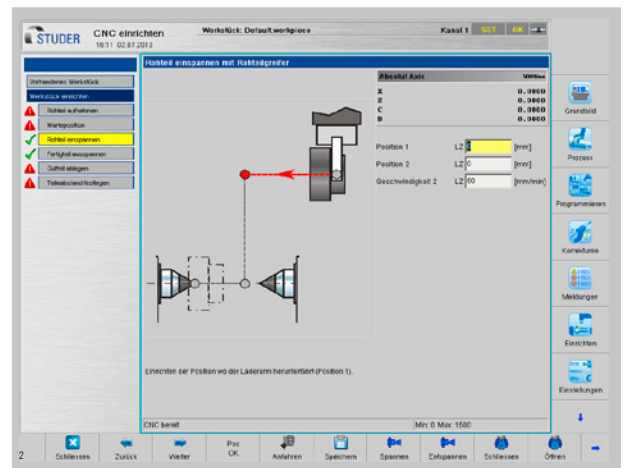
Even quicker and easier: Create an impression from the graphically defined workpiece. The grinding wheel can simply be dragged onto the workpiece using «Drag and Cut». Existing draft points facilitate positioning of the wheel on the desired reference points.

A travel-optimized reprofiling program can now be created for the defined dressing program with the StuderDress Integrated option. You can find out more about this on page 13 under StuderDress Integrated.



INTEGRATED LOADER FUNCTIONS

Handling systems are profitable even with small series – thanks to STUDER's solution. Incorporated into the normal operation, the loader is very simply configured. All positions of the portal can be set up using the teach-in procedure. Taught positions are automatically saved in the workpiece program and are always reactivated when the workpiece is changed. Functions such as the extraction of test pieces and reject parts are integrated, as well as the introduction of a calibration part for in-process gauging.



EXTENSION PACKAGES FOR StuderWIN

Studer QuickSet

The «STUDER QuickSet» function allows the machine to be set up in a short time with the help of an electronic measuring probe. All relevant points are registered using the teach-in procedure in a guided set-up process. The operator simply needs to touch the workpiece briefly with the probe, and all of the grinding wheels are immediately ready for use again. The angle used is not relevant here. STUDER QuickSet accurately converts all grinding wheel reference points. The repeated, time-consuming set-up of all grinding wheels can be omitted. As a result, set-up times and the associated unproductive downtimes can be reduced by up to 90%. (Only available on machines with swiveling wheelhead and active measuring probe).

STUDER Microfunctions

Programming convenience can be considerably enhanced using micro-functions. When standard grinding cycles are not flexible enough, and pure ISO code programming is too costly and time-consuming, micro-functions are just the solution. These functions can be used to achieve and control even more individual grinding processes without restricting programming convenience.

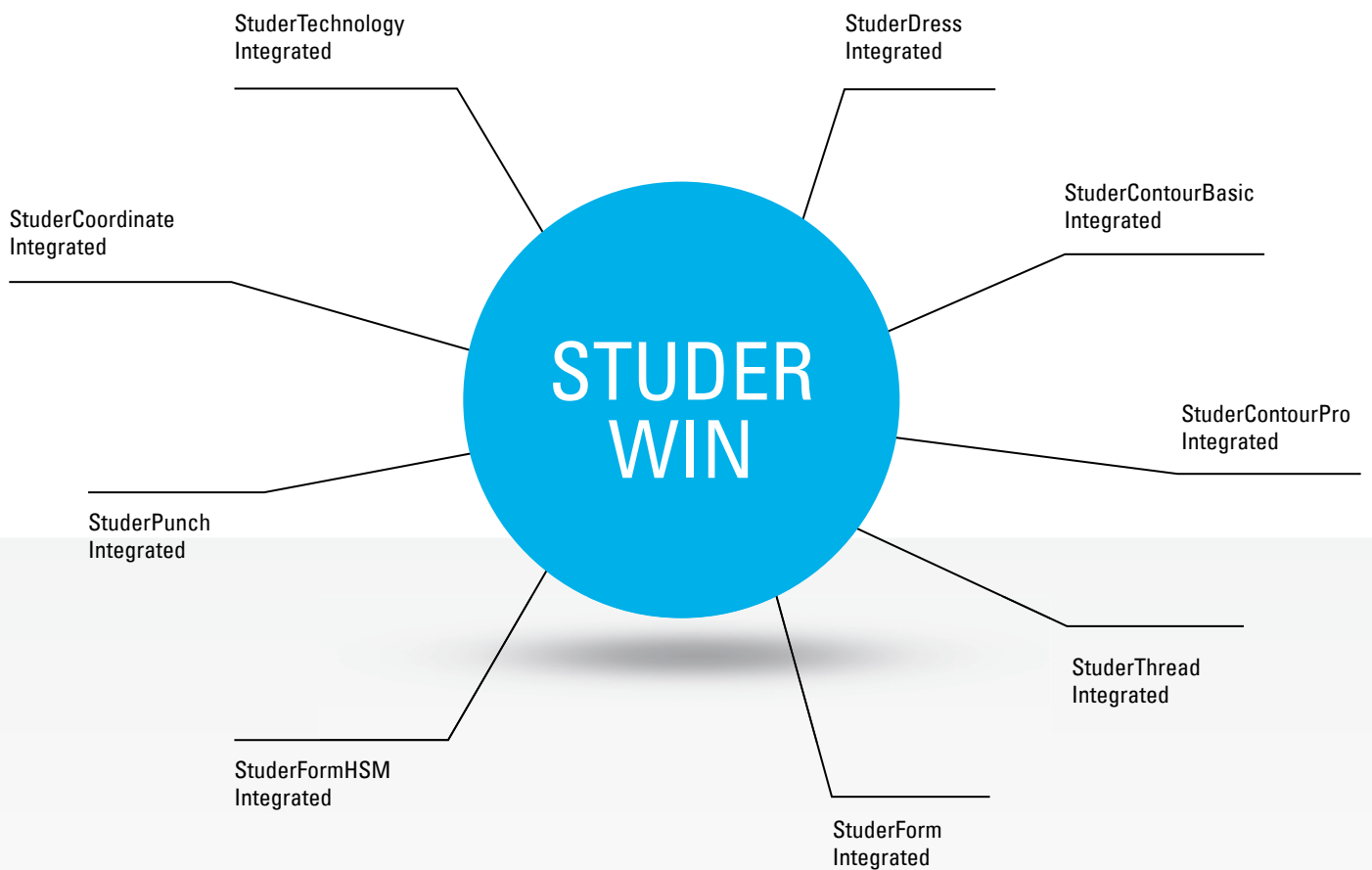
Control measuring cycles with touch probe

Using the measuring cycles with touch probe you can automatically calibrate the probe on the known diameter (e.g. barrel). You can flexibly measure the cycles for the diameter and the lengths. This function also enables you to carry out automatic allocation to the relevant tool.



STUDER INTEGRATED TOOLS

Thanks to the many different extension packages, the functionality of STUDER grinding machines can be considerably enhanced. STUDER offers the necessary software packages in the form of Integrated Tools.



StuderTechnology Integrated

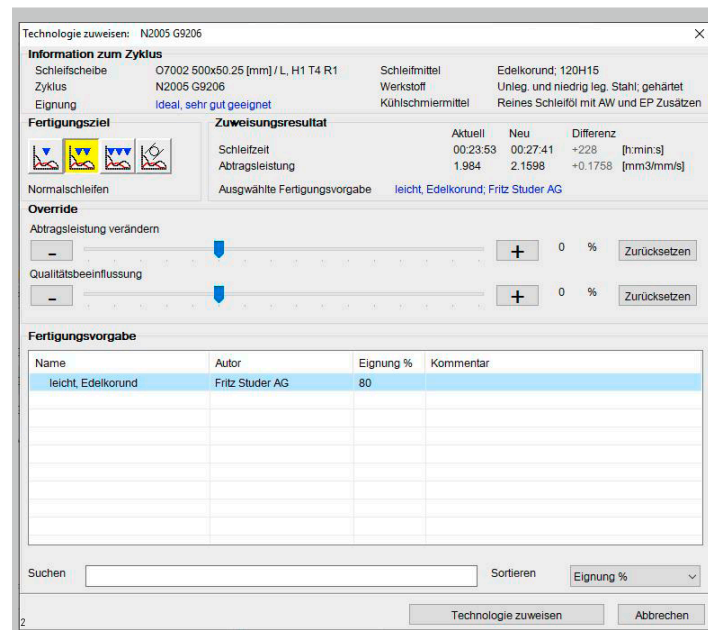
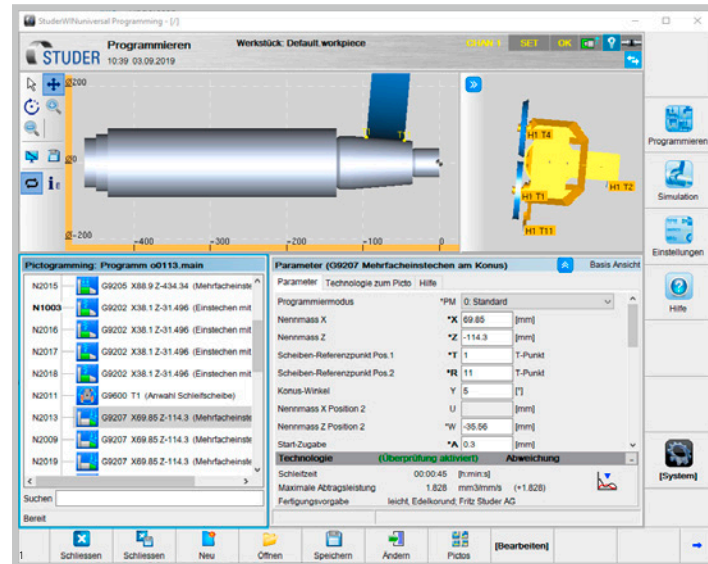
More than 100 years of know-how

StuderTechnology Integrated radically simplifies the operation of cylindrical grinding machines. Component quality, machining time, energy efficiency, in short: All key production factors benefit enormously. What makes this software so unique? Its history! It incorporates more than 100 years of grinding experience. It is a combination of formulas from grinding technology, empirical data and many years of expertise. The program contains data from countless grinding tests, in which the best machining strategy has been determined for a wide variety of components. StuderTechnology Integrated specifically refers to these values depending on the application.

This integrated grinding know-how can be further optimized as required by the individual grinding expert and stored as a customer-specific production specification. This also enables inexperienced grinders to benefit from specialist knowledge.

- Automatic calculation and design of process parameters
- Direct inclusion of 300 machine parameters and a database
- Integrated grinding know-how, which can be expanded and optimized by expert knowledge in customer-specific production specifications
- Technological analysis, monitoring
- Reduction of setup times
- Reduction of grinding times by up to 50 percent
- Reduction of optimization times to virtually zero
- Reduction of error costs

«With StuderTechnology the grinding process is far more efficient and higher quality than with empirical values»



StuderDress Integrated

Reprofiling a grinding wheel is one of the most time-intensive tasks on a grinding machine. The machine is blocked during this process and cannot produce any parts. This is where StuderDress Integrated comes in. By using an optimized number of cutting passes the wheel can be pre-formed in less than half the usual time.

Advantages

- For profiling new and reprofiling existing grinding wheels
- Suitable for standard and free grinding wheel shapes
- The new grinding wheel form is fitted automatically into the existing wheel profile
- Time-saving profiling thanks to optimized traverse movements
- Various roughing strategies to reduce dressing tool wear
- Graphic traverse path control
- Optimized traverse paths for STUDER-WireDress®

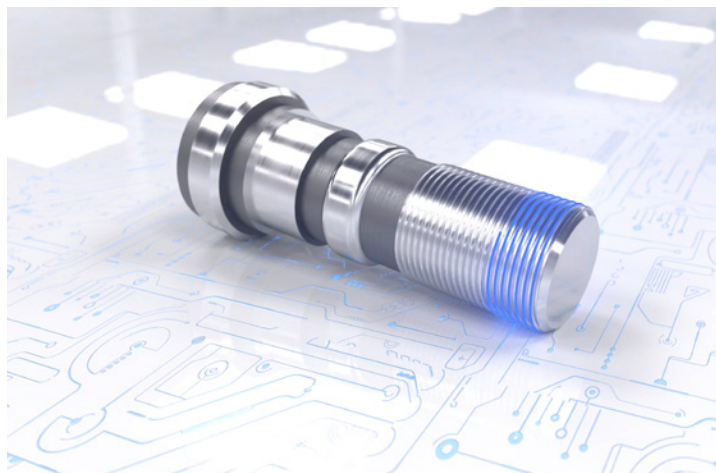


StuderThread Integrated

StuderThread Integrated expands a universal cylindrical grinder to give it the functionality of a thread grinding machine. This enables partial operations like thread grinding to be carried out in-house, thus saving time and costs.

Advantages

- Preset standard threads or any thread geometries
- Spectrum from fixing threads to gauge accuracy
- Run-in and run-out grinding of threads
- Regrinding of pre-machined threads
- Combinable: Non-circular, circular, threads – all in a single clamping
- Multiple and single profile wheel technology
- Profile calculations in combination with optional A-axis



StuderContourPro Integrated

StuderContourPro generates any geometry contours for external cylindrical grinding, such as rotary or peel grinding. Geometric programming is possible in StuderContourPro. As with turning, you machine the finished part with any number of cutting passes and different tools. StuderContourPro generates all programs – ready for program start. In comparison to StuderContourBasic, StuderContourPro has a much larger range of functions, typically for grinding milling and drilling tool blanks from cylindrical base bodies.

Advantages

- Geometric programming
- Especially suitable for peel grinding
- Different operation plans with optimized clearing strategies
- Active simulation
- Corrections to grinding wheel and workpiece geometry



StuderContourBasic Integrated

StuderContourBasic is for anyone who wants to trace any geometry contour with the grinding wheel easily, quickly and safely. Studer offers suitable grinding cycles, which can be combined in pictogramming with other grinding cycles such as plunging or traverse grinding.

Advantages

- Programming with pictogramming
- Combinable with other grinding cycles in a program
- Internal and external grinding are possible
- Can be used on universal grinding machines



StuderForm Integrated

The universal form grinding software StuderForm Integrated enables machining of curves and polygons for standard applications in small production runs.

Advantages

- Selection of standard forms
- Import of DXF and support point tables
- Completely generated ISO program
- Cartesian or Polar
- Many different analysis and correction options

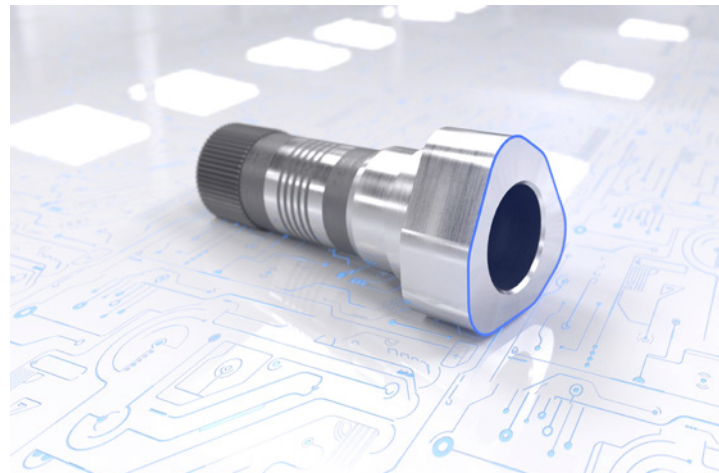


StuderFormHSM Integrated

This universal form grinding software enables machining of curves and polygons. HSM stands for High-Speed Machining. This software makes it possible to control the noncircular grinding process. Studer-FormHSM Integrated controls the axial drives directly and can thus comply with the highly dynamic process specifications. StuderFormHSM Integrated is easy to operate. Its high path precision in dynamic operations makes StuderFormHSM ideal for individual component and large-batch production.

Advantages

- Selection of standard forms. Optionally expandable with customer macros
- Import of DXF and support point tables
- Highest quality from the very first workpiece
- Many different analysis and correction options
- Automatically optimized speed profile
- Time calculation
- Constant grinding wheel wear due to dressing is automatically applied to geometry

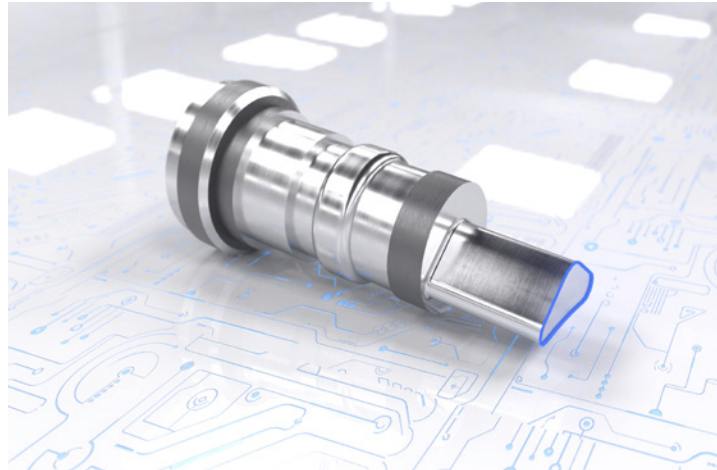


StuderPunch Integrated

StuderPunch Integrated is the perfect software for grinding press and die punches with a high degree of automation. StuderPunch generates all programs – ready for program start. Designed for individual components and small-batch production runs, StuderPunch Integrated can be used on universal grinding machines and on production machines specially adapted for this process. The respective company know-how can be stored in so-called production specifications.

Advantages

- Numerous predefined, customer-specific die punch cross-sections and any die punch geometries in DXF format.
- Fully automated and optimized for die and press punch component families.
- Very easy operation.
- Special software-supported machining strategy for much more efficient material removal.
- Lower tool costs thanks to reduced grinding tool wear.
- Perfect workpiece surface without damage to the surface-near zone and high shape accuracy.

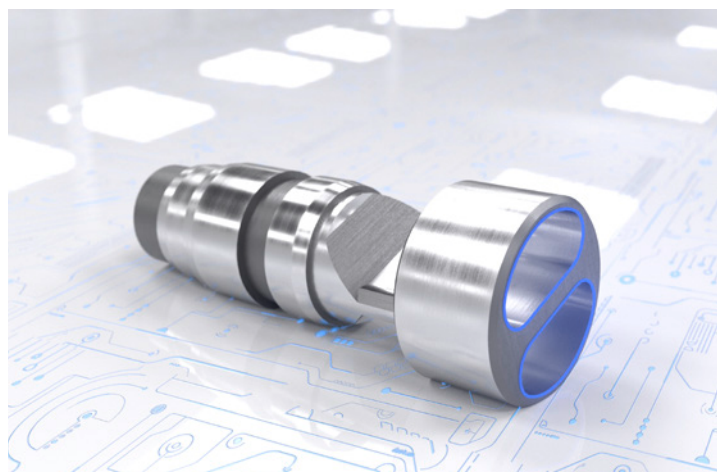


StuderCoordinate Integrated

StuderCoordinate Integrated enables grinding of eccentric internal geometries on STUDER cylindrical grinding machines. Hole patterns or other geometries, such as keyways for example, are ground using a seesaw movement of the C-axis in interpolation with the X-axis.

Advantages

- Alternative to the coordinate grinding machine
- Complete machining on one machine possible, resulting in shorter processing times and highest precision
- Dressing from grinding cycle possible
- All grinding data including grinding wheel wear always up-to-date thanks to clever software solution
- Minimal memory load, as required programs are always generated and processed just in time
- Analysis and correction options
- Macros for hole patterns
- DXF import of any geometries





EXTERNAL PROGRAMMING

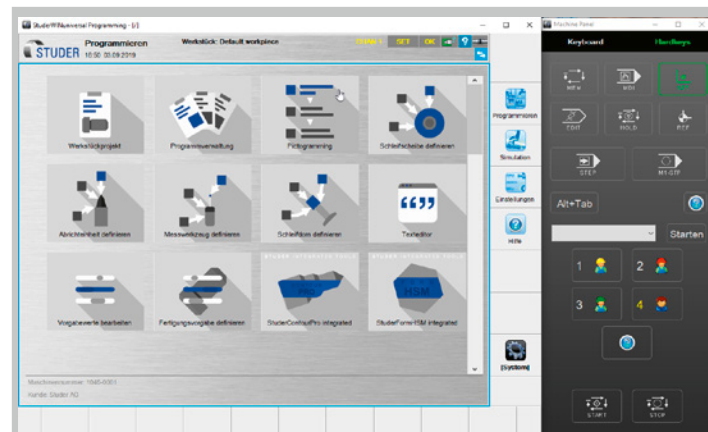
Program your grinding programs conveniently in the office. You can always see all machines at a glance in the MachineOrganizer. StuderWIN-programming is the perfect software package for the offline programming of grinding machines. Workpiece-oriented data management prevents data chaos and enables rapid retrieval of the required data. This software is just as easy to operate as StuderWIN on the machine. All integrated tools available on the machine are also available at the programming station. With StuderWINtraining you can learn set-up and programming processes without affecting the machine's productivity.

The advantages at a glance

- StuderPictogramming with graphic programming for the creation of grinding programs
- Programming of nominal positions directly from the workpiece drawing
- Grinding wheel and dressing tool definition
- Workpiece-oriented data management, archiving, documentation, reproduction
- File management with graphic preview and direct program call for additional modules
- Data transmission via RS232, HSSB, Ethernet
- Direct access to the NC memory of the control system
- Tried, tested and future-proof
- 1:1 mapping of the real machine including all integrated tools

StuderWINprogramming

StuderWINprogramming is the perfect software package for the offline programming of your grinding machines.



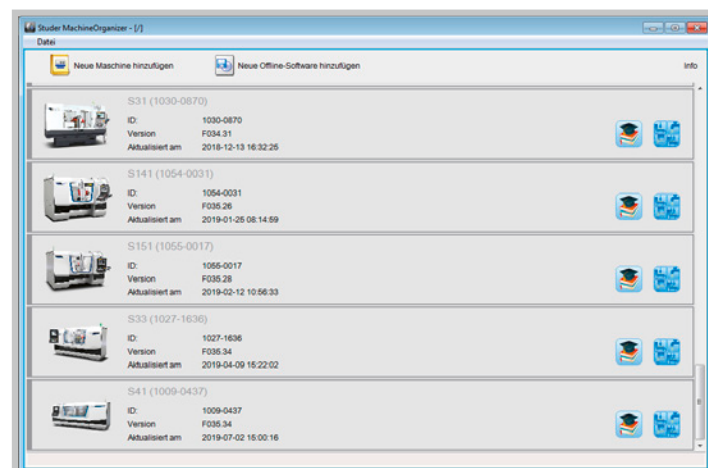
StuderWINtraining

StuderWINtraining is the perfect software for training your employees. You will find that operation is identical to that on the machine. Please note, however, that created programs cannot be used on the machine.



MachineOrganizer

The MachineOrganizer provides you with the ideal tool for managing your machines: You can always see all of your machines at a glance. It is easy to switch between your machines, even with different software versions.





StuderSIM

StuderSIM is the specially developed operating system for internal and radius grinding. It enables programming of all basic cycles for grinding, dressing and process-supporting measurement. The basic cycles such as surface grinding, bore grinding, cone grinding, thread grinding, dressing and measurement are defined in the Parameter In-put window.

This type of programming guarantees great flexibility and remains very user-friendly and workshop-oriented. Each cycle is equipped with a dynamic help system and guides the operator intuitively through the grinding data creation process.

The programmed sequence is visually simulated and optimized. This ensures reliability, as well as guaranteeing short programming times and increased cost-effectiveness.

- Simple to use and program thanks to HMI StuderSIM.
- StuderSIM programming and simulation software for the creation and simulation of grinding and dressing programs on the machine control or on an external PC.
- Standardized interfaces for loader and peripheral devices.

FRITZ STUDER AG

The name STUDER stands for more than 100 years of experience in the development and production of precision cylindrical grinding machines. «The Art of Grinding.» is our passion, highest precision is our aim and top Swiss quality is our benchmark.

Our product line includes both standard machines, as well as complex system solutions in high-precision cylindrical grinding for machining small and medium-sized workpieces. In addition we offer software, system integration and a wide range of services. As well as receiving a complete tailor-made solution the customer also benefits from our 100 years of know-how in relation to the grinding process.

Our customers include companies from the machine tool industry, auto-motive engineering, tool and die makers, the aerospace industry, pneu-matics/hydraulics, electronics/electrical engineering, medical technology, the watch industry and job order production. They value maximum precision, safety, productivity and longevity. As one of the market and technology leaders in universal, external, internal cylindrical and non-circular grinding, with 24,000 systems delivered, STUDER has stood for precision, quality and durability for decades. STUDER's products and services include hardware, software and a wide range of services in the pre- and after-sales sector.

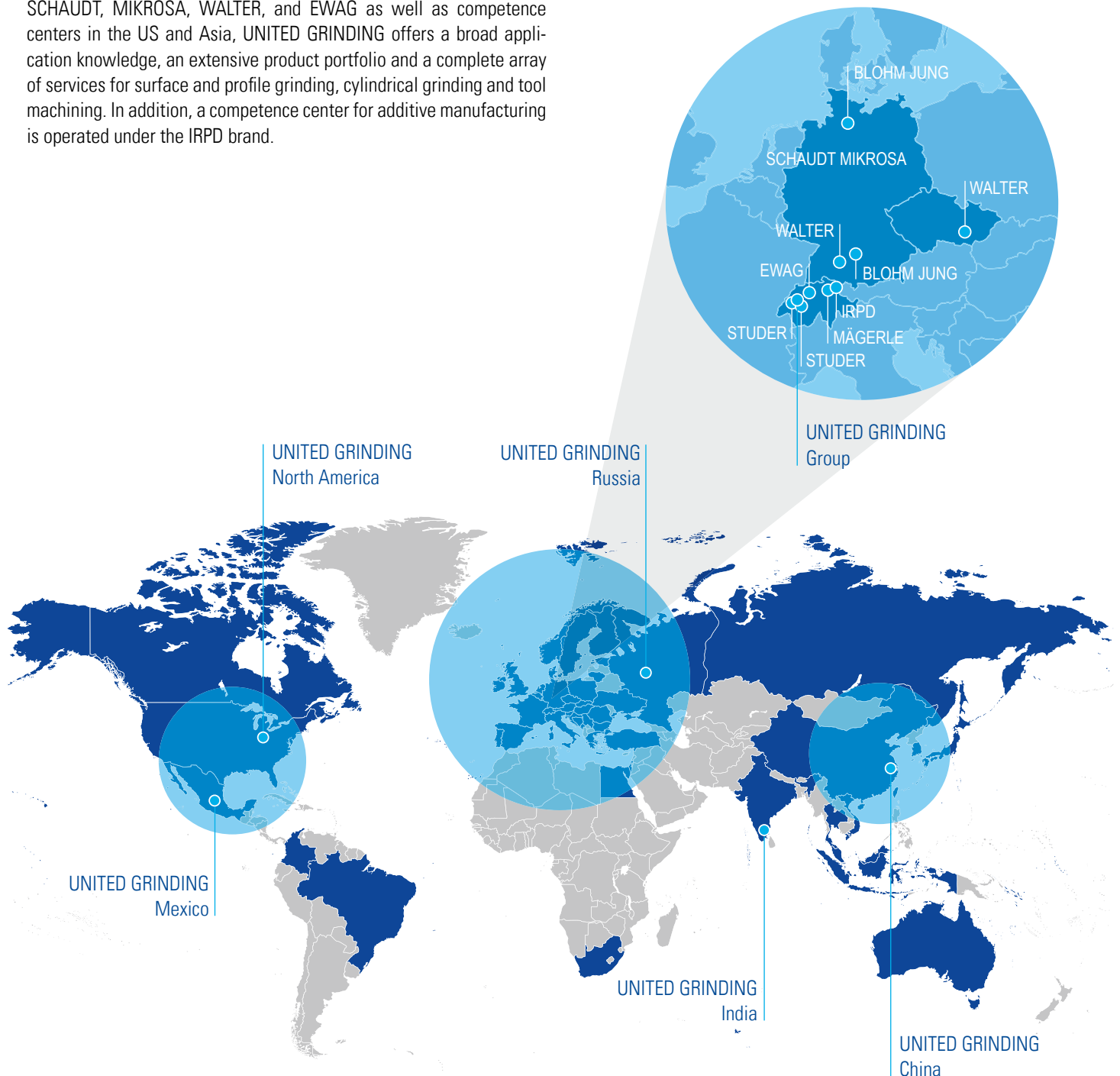


UNITED GRINDING GROUP

The UNITED GRINDING Group is one of the world's leading manufacturers of precision machines for grinding, eroding, laser, measuring, and combination machining. With around 2500 employees at more than 20 manufacturing, service, and sales locations, the Group has a customer-oriented and effective organization.

With its company brands MÄGERLE, BLOHM, JUNG, STUDER, SCHAUDT, MIKROSA, WALTER, and EWAG as well as competence centers in the US and Asia, UNITED GRINDING offers a broad application knowledge, an extensive product portfolio and a complete array of services for surface and profile grinding, cylindrical grinding and tool machining. In addition, a competence center for additive manufacturing is operated under the IRPD brand.

«We want to make our customers even more successful.»





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