MFP 30

COMPACT SOLUTION
FOR HIGH PRODUCTIVITY

C.O.R.E.®

MÄGERLE

A member of the United Grinding Group

MFP 30

HARDWARE

- Tool changer with 24 positions
- 5 or 6-axis system
- Spindle speeds up to 12,000 rpm
- Driving power: 26 kW from 1750 rpm
- Torque: 140 Nm
- Grinding, milling and drilling in a single clamping
- Through-spindle coolant
- C.O.R.E. Panel

SOFTWARE

- Pre-programmed grinding and dressing cycles
- User-specific programmable interface
- Intuitive operation
- Focus on work and production safety
- C.O.R.E. OS operating system

DIMENSIONS

- X-axis – longitudinal stroke: 500 mm
- Y-axis – vertical stroke: 450 mm
- Z-axis – transverse stroke: 500 mm

The compact MFP 30 5-axis grinding center from MÄGERLE is ideally suited for grinding complex geometries, particularly those of blades and vanes or heat shields for aviation turbines. The workpieces to be machined are ergonomically loaded into the work area directly from the front. Heavy workpieces with a clamping fixture can be loaded from the top using a crane. The compact and space-saving design allows optimal use of the available production area and enables an effective production flow.

The powerful drive of the high-performance spindle enables different grinding processes to be combined, such as creep feed grinding with aluminum oxide or grinding with CBN. The full performance and a high torque are available even at low spindle speeds. The robust tool holding fixtures enable wide machining contours to be achieved, together with high removal rates. The grinding process can use emulsion or oil. The high-performance spindle offers optimal machining conditions for demanding grinding and high speed milling processes in a single clamping.

Like the larger models from MÄGERLE the MFP 30 also comes equipped with a vertical axis supported by hydrostatic guideways, enabling it to withstand high stresses free of wear throughout its lifetime.

Easy access for servicing and maintenance work supports the excellent ergonomics of the MÄGERLE grinding center.

YOUR BENEFIT

- Compact design
- Automatic tool changer
- Flexible machining options
- Highest grinding and cooling capacity
- Powerful drive for high speeds
- Table dressing device with wide profile roll
- Hydrostatic guideways
- Intuitive, user-friendly, and efficient operation
- Access to important information directly at the control panel (e.g. production progress, task details, etc.)
- Reduced programming when exchanging data between C.O.R.E. machines
- Use of UNITED GRINDING Digital Solutions™ products directly on the machine
- Fast support thanks to direct interaction with our Customer Care team on the machine

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

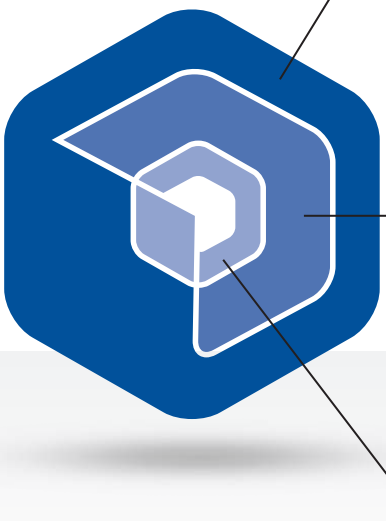
C.O.R.E. helps us make your production fit for the digital future.
It's based on a new operating system, C.O.R.E. OS, that equips the machine with intelligence.

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.

What does this mean for you?

- The user-friendly, intuitive, and uniform operation makes work easier for machine setters, machine operators, and maintenance staff
- Standardized data collection and intelligent processing of data creates transparency and supports process optimization
- The uncomplicated and consistent use of modern digital software solutions is guaranteed - directly on the machine
- The technical platform for the use of modern IoT and data applications has been established

C.O.R.E. ELEMENTS



HUMAN MACHINE INTERFACE

- Uniform and intuitive operation
- User-specific configurable interface
- Modern 24" multi-touch display

CORE SYSTEM

- Operating system:
- Powerful industrial PC
- Ethernet Connectivity
- Various interfaces and protocols
- Data security

MACHINE CONTROL

- C.O.R.E. OS is compatible with all of the CNC controls that we use
- Simple switch to the native CNC surface possible

C.O.R.E. PANEL – THE FUTURE OF OPERATION

Intuitive
Thanks to intuitive design with self-explanatory icons, navigation through the machine menu and process steps is quick and easy. Instead of buttons, the user is presented with a modern and clearly arranged multi-touch display.

User-friendly
Each user configures their own user interface individually. This is called up automatically with the RFID chip after logging in. When the user leaves the machine, the panel switches to "Dark Factory Mode."

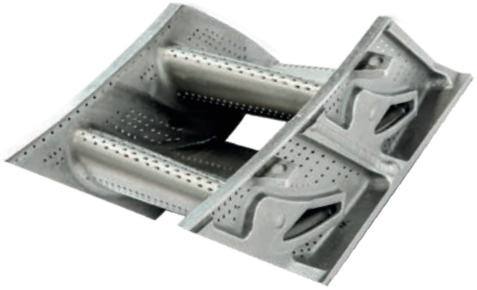
Production progress and the machine state are also clearly visible from a distance. And thanks to the ergonomic design, the panel can be tilted and individually adjusted easily.

Efficient
The uniform and intuitive operating philosophy reduces training time. The configurable and role-specific interface helps prevent errors and increases the efficiency and quality of programming. Information can be exchanged quickly and in realtime via the front camera and Bluetooth headset. UNITED GRINDING Digital Solutions™ products can be used directly on the panel.

Technical Specifications
- 24" Full HD multi-touch display
- 16-position rotary override switch
- Electronic key switch (RFID)
- Integrated front camera
- Bluetooth V4.0 for headset connection
- 2x USB 3.0 ports
- Adjustable tilt

COMPACT DESIGN

The compact MFP 30 5-axis grinding center from MÄGERLE is ideally suited for grinding complex geometries, particularly those of blades and vanes or heat shields for aviation turbines. The workpieces to be machined are ergonomically loaded into the work area directly from the front. Heavy workpieces with a clamping fixture can be loaded from the top using a crane. The compact and space-saving design allows optimal use of the available production area and enables an effective production flow.

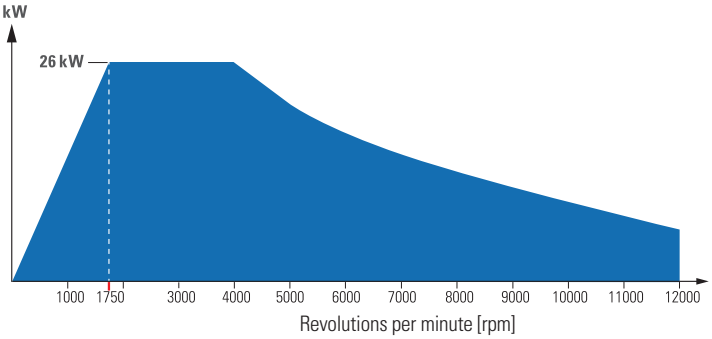


HIGH PERFORMANCE AND HIGH TORQUE

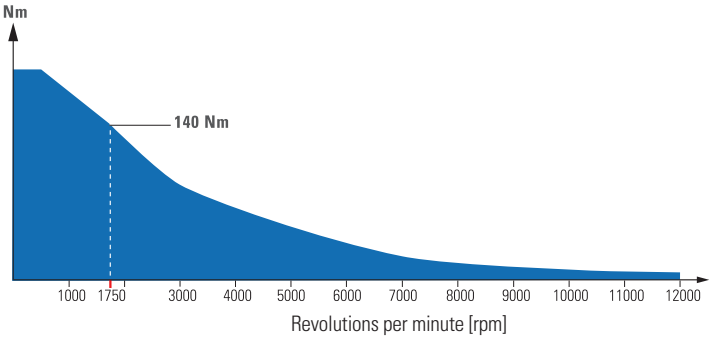
The direct drive motor for the grinding spindle enables high performances and torques across the entire speed range. This leads to outstanding results in terms of removal rates.

The high speeds of up to 12,000 rpm offer optimal conditions for CBN grinding processes and milling operations, which significantly increases the machining clearance for complex workpieces.

Spindle capacity



Torque

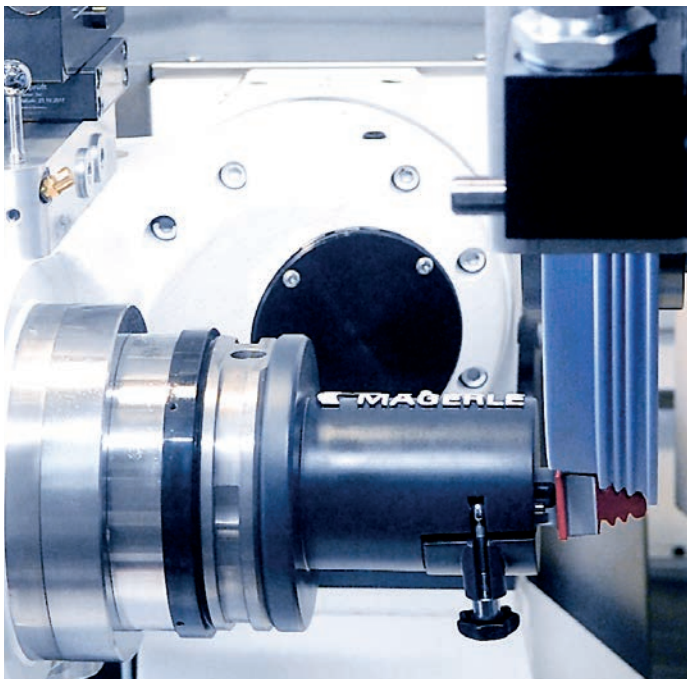


S6 = 40% duty cycle

LARGE GRINDING WHEEL DIMENSIONS

The powerful drive is designed for wide grinding wheels up to 60 mm. Operations can thus be combined with wide machining profiles. The maximum diameter of 300 mm allows a long service life of the grinding wheel and reduces the number of grinding wheel changes.

The HSK-B80 flange mountings guarantee a high rigidity, thanks to the generous support on the tool holding fixture via the collar. They are also the key to quick tooling changes with absolute repeatable precision.



AUTOMATIC TOOL CHANGER

The tool changer includes 24 positions. It can be equipped with different grinding wheels according to the process requirements. The grinding process can be supplemented with the machine's drilling and milling capability, which supports a flexible machining platform for complex workpieces. In addition, the magazine can be loaded with a measuring probe which allows for dimensioning or workpiece position checks.

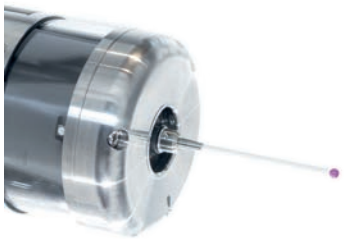
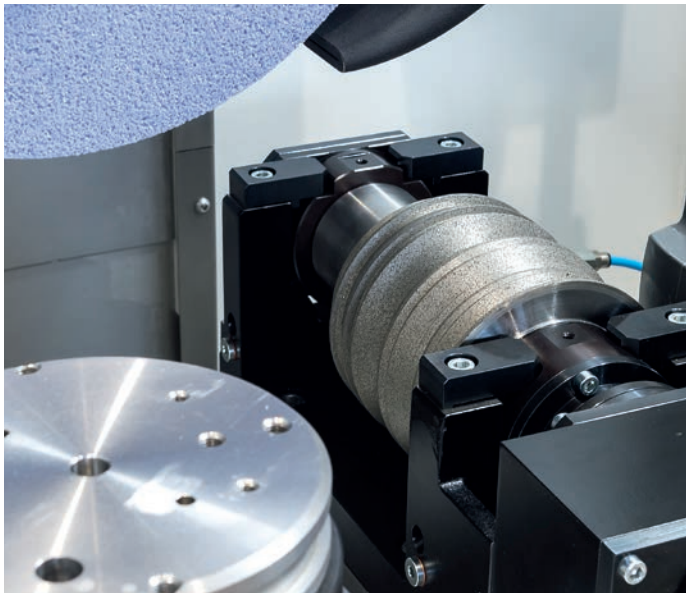


TABLE DRESSING FOR A MULTITUDE OF PROFILES

The large table dressing device enables the mounting of wide diamond rolls with a multitude of machining profiles for different workpieces and makes a significant contribution to minimizing changeover times. The two bearings and the servo motor drive enable reliable dressing across the entire speed range.



WEAR-FREE GUIDE CONCEPT

The unique design principle of MÄGERLE machining centers forms the basis for the overall machine quality. The vertical axis is supported by hydrostatic wrap-around guideways on a thin oil film and is completely separated from the column's upper section. This principle enables the machines to withstand very high stresses free of wear, even in long-term use. The oil film also has a vibration-damping effect and guarantees high-precision machining of simple or complex workpieces.

COOLING INTELLIGENCE

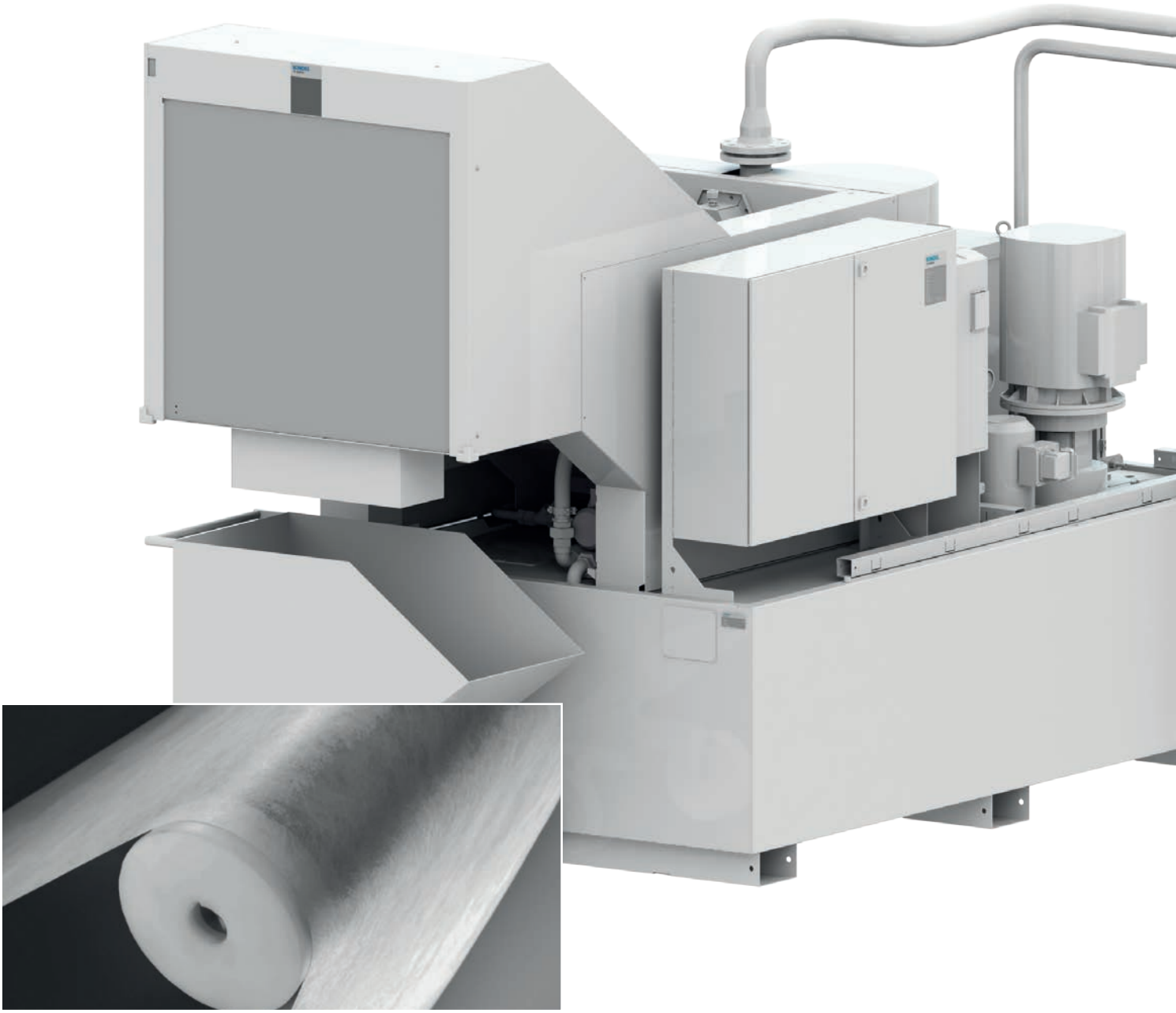
The NC controls of the MÄGERLE grinding centers enable precise positioning of the coolant supply, taking into account the respective grinding wheel geometry. Labyrinth seals with a sealing air arrangement protect all bearings in the machining area from impurities and contribute to the long working life of the overall system. Integrated grinding wheel cleaning ensures that the grinding wheel remains clean and sharp for longer during the grinding process. This increases removal rates and at the same time reduces grinding wheel wear.

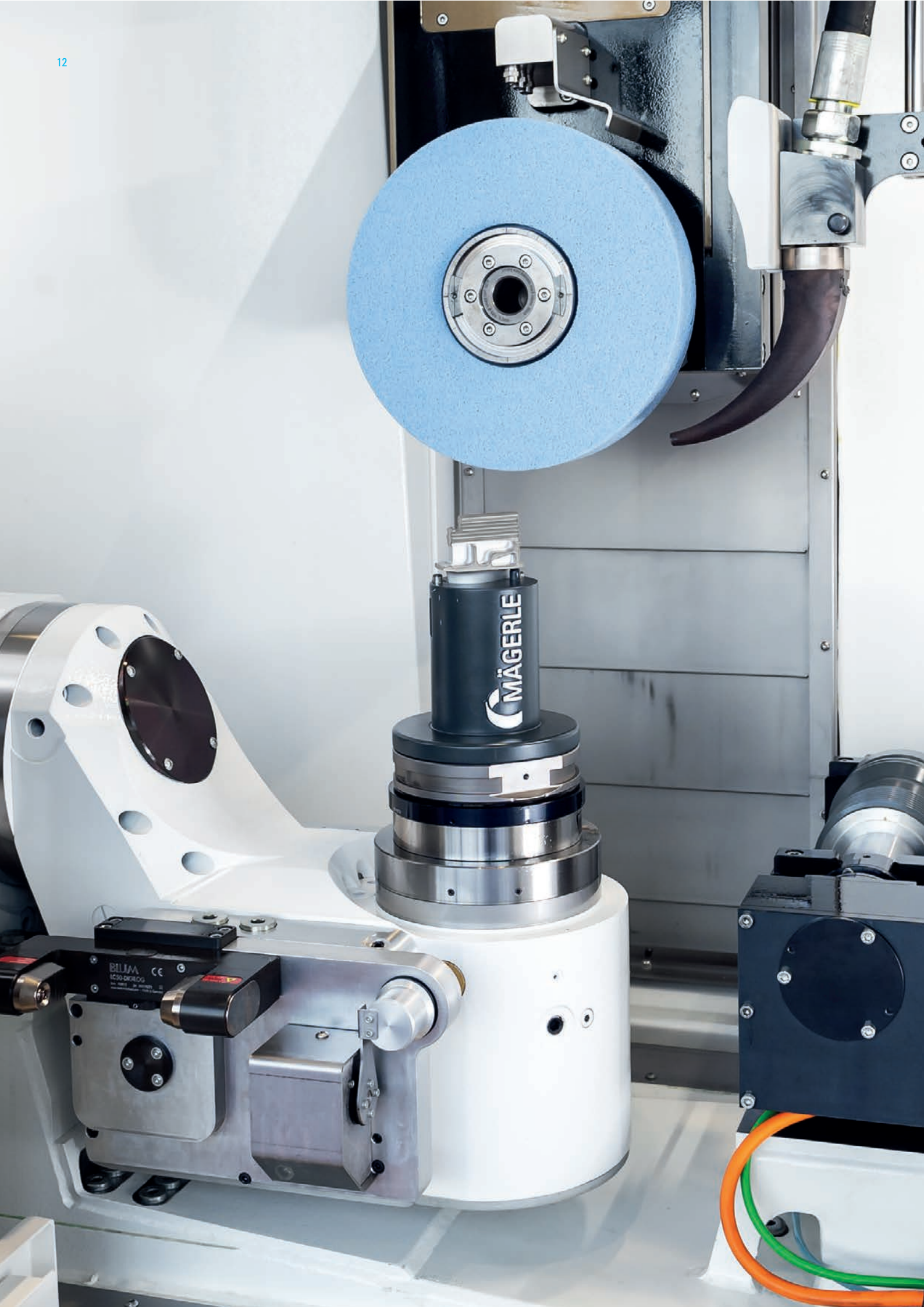
Nozzles are available on the grinding support for drilling and milling tools, and a coolant supply can be optionally provided through the spindle.

COOLANT FILTRATION SYSTEMS

The optimal solution for every application

MÄGERLE considers the grinding process as a system of different components and thus creates the necessary conditions for a high cost effectiveness. The system concept for coolant supply and cleaning is of central importance. Correct dimensioning is essential for utilization of the full coolant potential with low disposal costs. Taking account of these economic and ecological aspects, MÄGERLE in conjunction with the coolant system supplier matches integrated solutions to the customer-specific requirements.

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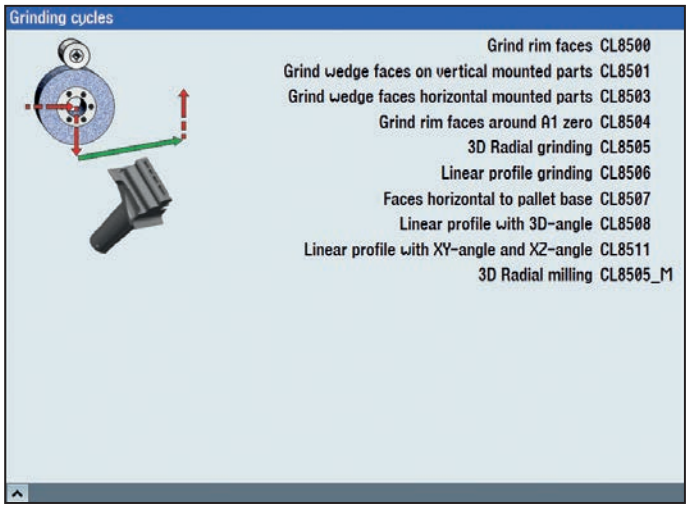
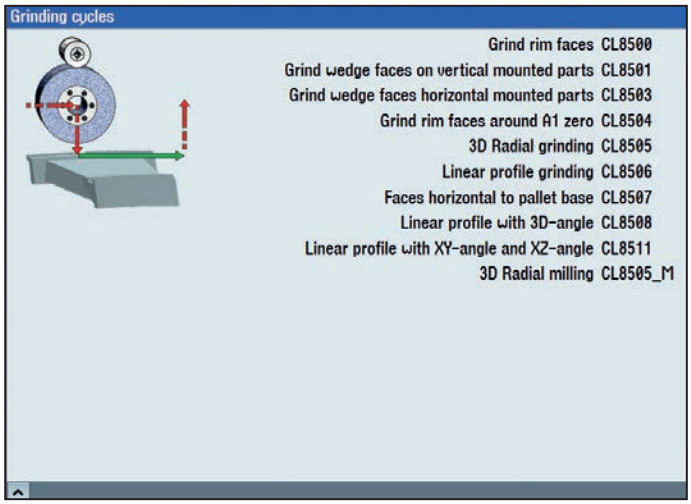
PROGRAMMING

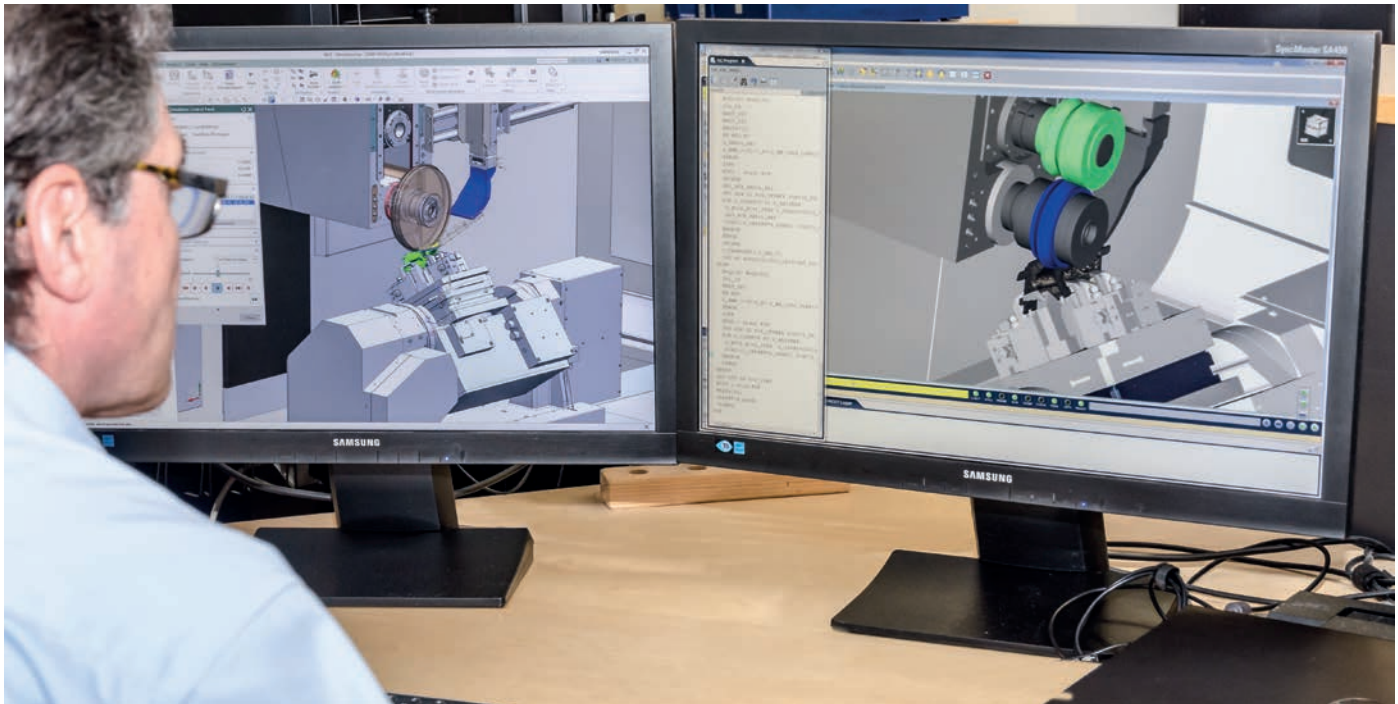
The grinding center is equipped with the SIEMENS Sinumerik 840D Solution Line control. Specially visualized and parameterizable grinding and dressing cycles are available for efficient programming of the workpieces. In 5-axis machining, 3D grinding and auxiliary cycles can be programmed for milling and drilling operations.





CAD/CAM CONNECTION

A SIEMENS NX postprocessor is available for CAM process development. The generated NC programs take account of the Mägerle grinding cycles. As a result the programs can be easily edited on the machine control unit via operator guidance. Mägerle provides a Vericut package for simulating and checking the programs.



WE ARE HERE FOR YOU!

BRAND products are designed to meet customer demands for as long as possible, they are intended to operate efficiently, reliably and be available at any time.

From «Start up» through to «Retrofit» – our Customer Care is there for you throughout the working life of your machine. For this reason, you can rely on competent HelpLines worldwide and Service Engineers near you:

- We will provide you with fast, straight-forward support.
- We will help to increase your productivity.
- We work professionally, reliably and transparently.
- We will provide a professional solution to your problems.

Start up
Commissioning
Warranty extension

Qualification
Training
Production support

Prevention
Maintenance
Inspection

Service
Customer service
Customer consultation
HelpLine
Remote service

Digital Solutions
Remote Service
Service Monitor
Production Monitor

Material
Spare parts
Replacement parts
Accessories

Rebuild
Machine overhaul
Assembly overhaul

Retrofit
Modifications
Retrofits

UNITED GRINDING DIGITAL SOLUTIONS™

We develop solutions to support you in simplifying processes, boosting your machines' efficiency and increasing overall productivity under the UNITED GRINDING Digital Solutions™ brand.

Find out more about UNITED GRINDING Digital Solutions™ services on our website in the Customer Care section.

EASE OF OPERATION AND MAINTENANCE

Operation

The machine is operated via the swiveling control panel with a view of the working area in the front of the machine. When the splash guard is opened, heavy workpieces including clamping fixtures can also be loaded from the top with a gantry or jib crane.

① Working area
② Splash guard opened at the top
③ Tool changer loading

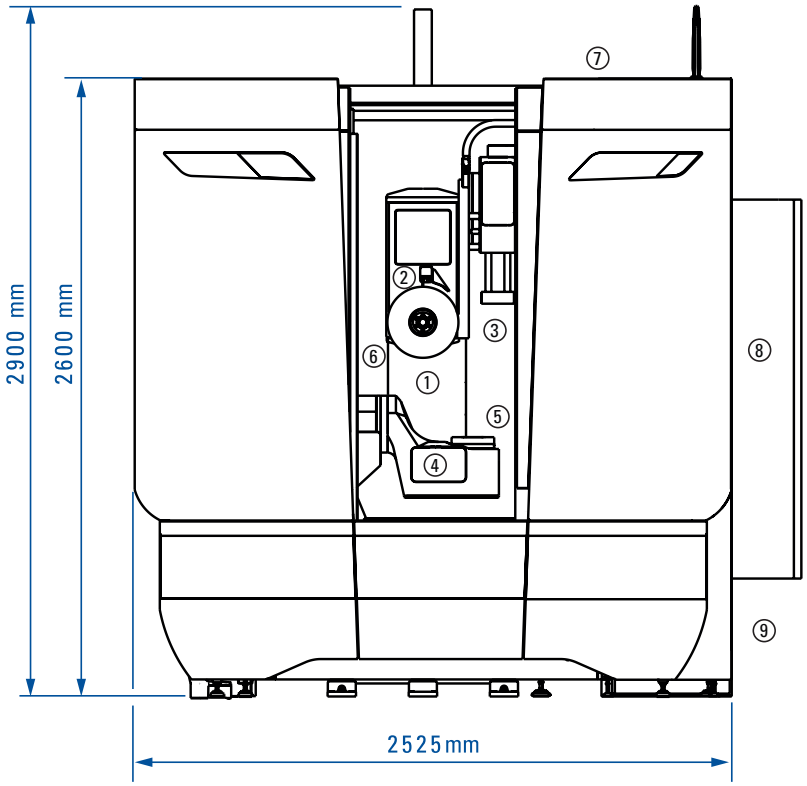
Maintenance

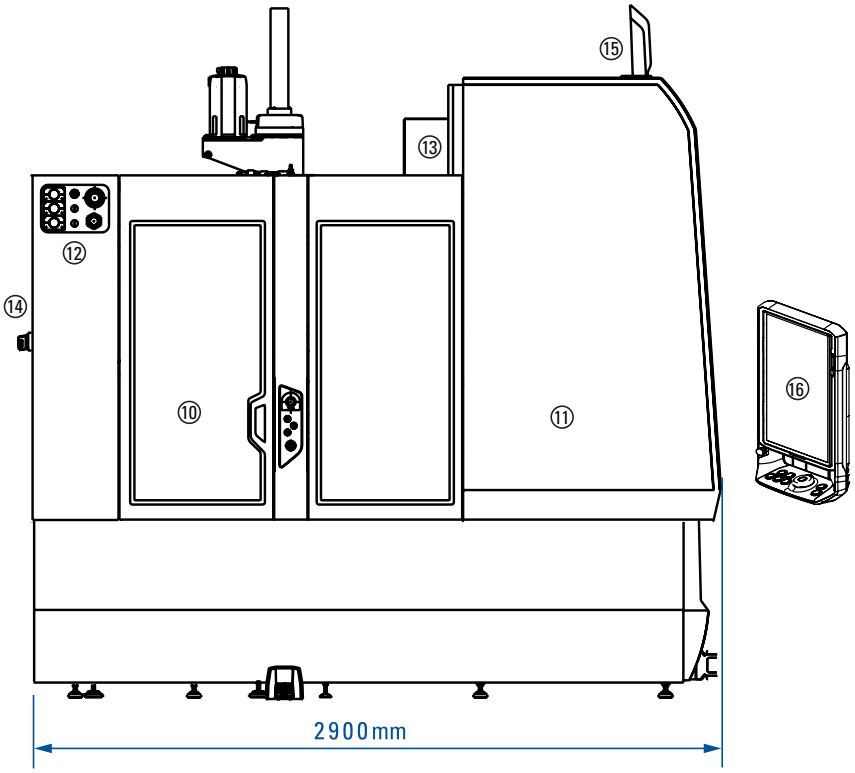
Access for maintenance of the respective units and components of the entire machine is centrally positioned and designed to make maintenance easy. Periodic maintenance activities can thus be efficiently performed.

① Electric cabinet
② Fluidics and pneumatics
③ Central lubrication

LAYOUT

① Working area
② Quick-change spindle for machining tools
③ Automatic coolant nozzles
④ NC indexing head 2/3 axes
⑤ Dressing device
⑥ Tool gripper
⑦ Automatic door drive
⑧ Electrical cabinet
⑨ Hydrostatic/Hydraulic unit





⑩ Tool change magazine
⑪ Safety splash guard cabin
⑫ Interface to coolant processing system
⑬ Interface to mist extractor
⑭ Centralized lubricating system
⑮ Machine status lamp
⑯ Operating panel

TECHNICAL DATA FOR MFP 30

X-axis	longitudinal stroke	mm	500
	travel speed	mm/min	0...50.000
Y-axis	vertical stroke	mm	450
	travel speed	mm/min	0...30.000
Z-axis	transverse stroke	mm	500
	travel speed	mm/min	0...30.000
Power grinding wheel drive S6-40% duty cycle		kW	26
Rpm range max.		min^{-1}	0...12.000
Quick-clamping spindle		type	HSK-B80
Tool changer positions		n	24
Tool length max.		mm	180
Profile dressing device, roll width, max.		mm	307
Profile dressing device, roll diameter, max.		mm	200
Grinding wheel dimensions (D x T x H)		mm	300 x 60 x 76,2
NC-combination – rotary/swivel axes		n/axes	2/3
Measuring system with measuring probe (optional)			

We reserve the right to make technical changes

MÄGERLE AG MASCHINENFABRIK

Precision, quality and flexibility are key attributes of the products manufactured by Mägerle AG Maschinenfabrik. A technology leader for high-performance surface and profile grinding systems, the company founded in 1929 primarily specializes in customized solutions.

At the heart of the international success of our high-quality Swiss machinery is the unique design principle of the MÄGERLE modular system. Thanks to state-of-the-art technology, MÄGERLE can offer customers from many branches of industry reliable grinding centers. The high machining precision of the grinding centers ensures that our customers remain competitive.

Alongside decades of accumulated expertise, our highly motivated and dedicated employees play a key role in the success of the company. As part of the UNITED GRINDING Group, MÄGERLE is a strong member of the group of globally leading machinery engineering companies for grinding machines. All over the world, this gives MÄGERLE customers access to an extensive network of experienced service and engineering technicians.

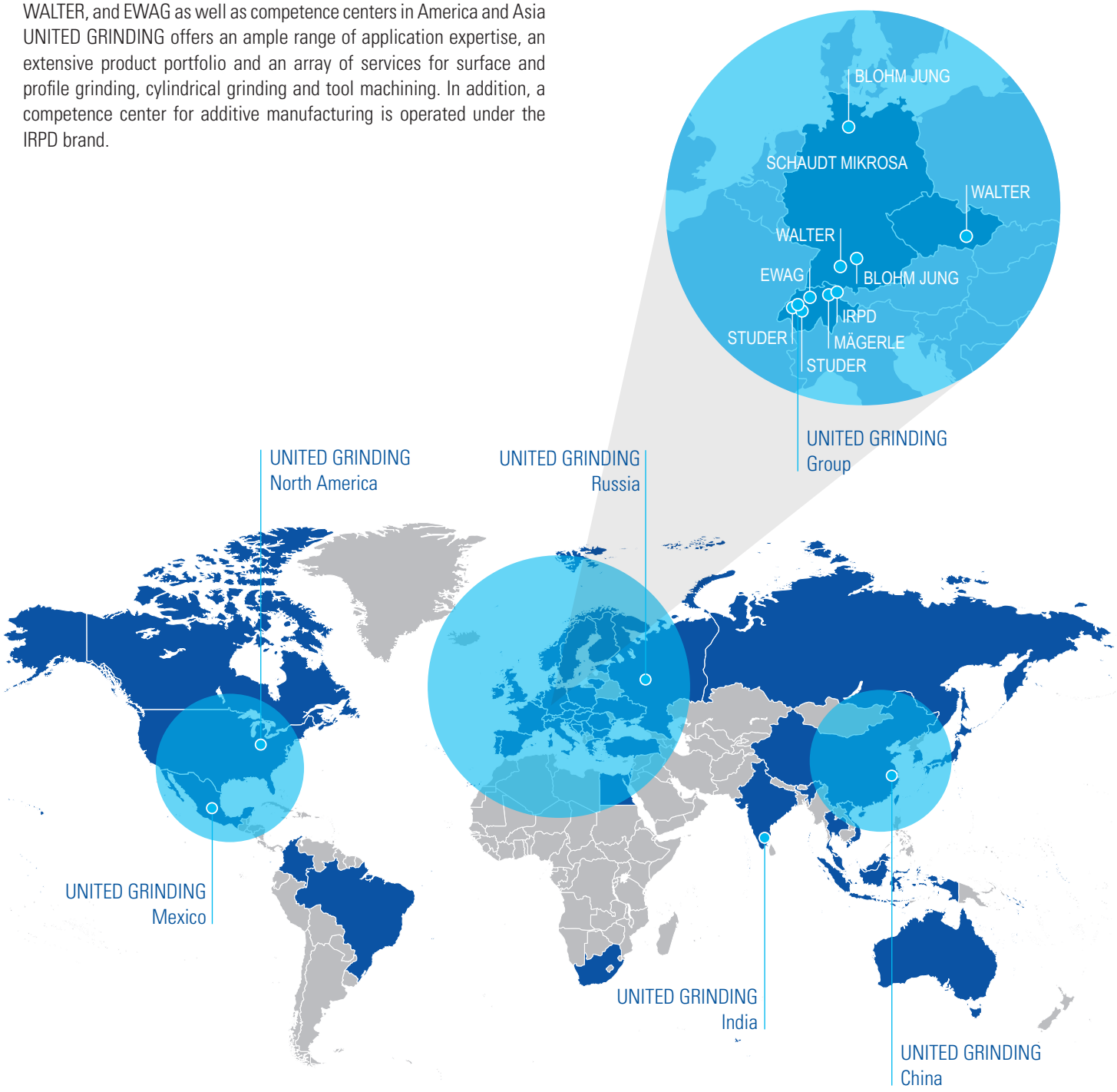
ABOUT US

UNITED GRINDING GROUP

UNITED GRINDING Group is one of the world's leading manufacturers of precision machines for grinding, eroding, laser, measuring and combination machining. With around 2,500 employees at more than 20 production, service and sales sites, the Group is organized in a customer-oriented and efficient way.

With its brands MÄGERLE, BLOHM, JUNG, STUDER, SCHAUDT, MIKROSA, WALTER, and EWAG as well as competence centers in America and Asia UNITED GRINDING offers an ample range of application expertise, an extensive product portfolio and an 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»



■ Sites and partners worldwide

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