

Mikron

MILL P

500 U
800 U



Passion for Precision

GF Machining Solutions

When all you need is everything, it's good to know that there is one company that you can count on to deliver complete solutions and services. From unmatched Electrical Discharge Machining (EDM), Laser texturing, Laser micromachining, Additive Manufacturing and first-class Milling and Spindles to Tooling and Automation, all of our solutions are backed by unrivaled Customer Services and expert GF Machining Solutions training. Our AgieCharmilles, Microlution, Mikron Mill, Liechti, Step-Tec and System 3R technologies help you raise your game—and our digital business solutions for intelligent manufacturing, offering embedded expertise and optimized production processes across all industries, increase your competitive edge.



+ We are Mikron Mill.
We are GF Machining Solutions.

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The Mikron MILL P 500 U / 800 U are 5-Axis high performance machines for both precision part manufacturers active in the aerospace, machinery and defence industries, general mechanic industries and precision mold makers active in industries such as automotive and home appliance.

Market segments and applications

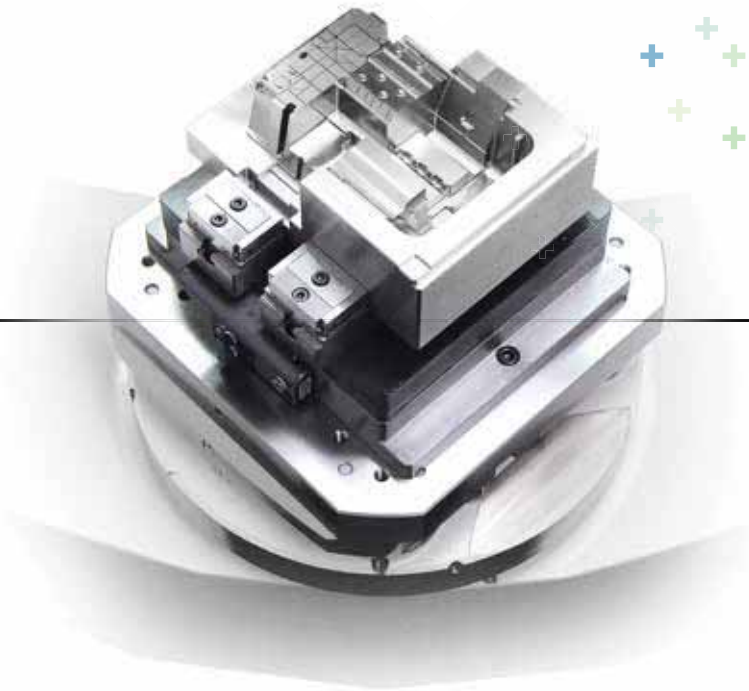
Mold and Die



Automotive



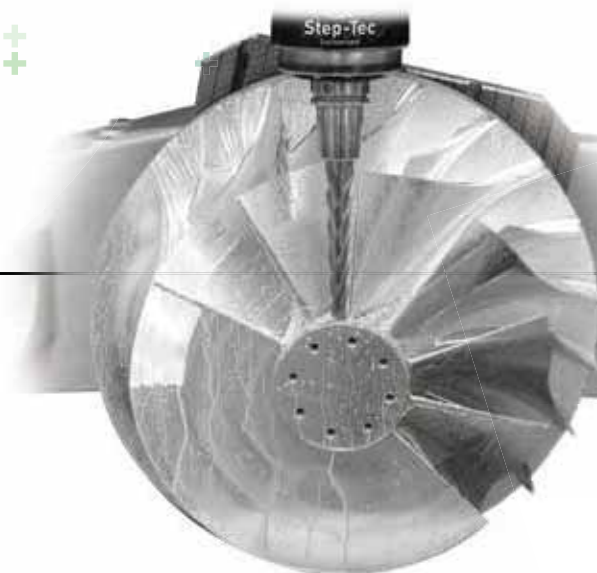
Home appliances



Part production



General machinery



Aeronautics and
Power generation



Technology

High-Performance Milling: Powerful parts and tools machining

- + High material removal rate
- + Performant with tough materials
- + Dynamic Milling of heavy duty parts
- + Meant for productive purpose
- + Heavy load possibility up to 1,000 kg



**Accurate parts achieved
with dynamic performance**

Solutions

Productive and accurate machining of parts up to 1000 kg

- + Gantry concept with shortest force flow which results in outstanding machining stability
- + Solid, vibration-damping machine bed
- + Thermo-symmetrical design and water-cooled components for long-term accuracy
- + Extremely compact construction
- + Big work area with user-friendly access
- + Step-Tec Spindle with powerful and flexible power/speed range characteristics
- + Wide range of compact tool magazines
- + Machine and Spindle Protection (MSP) along all axis
- + Integrated or third-party Automation in smallest footprint
- + Siemens or Heidenhain control enhanced by GF's smart machine
- + Integral connectivity opening the path to Internet of Things integrations
- + Ready for modular digital services

- Ensures best-in-class accuracy on parts and process reliability
- Provides highest business efficiency from multiple setups to automated production, through dynamic machining
- Achieves state-of-the-art productivity by maximizing uptime, from setup to maintenance through process control



MSP

Machine and Spindle Protection



The world's only Spindle protection that works in all directions

Collisions usually occur when a new computer numerical control (CNC) program is first executed. MSP offers the best security for this.

How it works

The Spindle is deflected when the force acting on the tool during a collision would damage the Spindle bearing. With this deflection, the axis drives gain the space required for automatic emergency braking. Braking distance depends on travel speed and is allowed within the clearance gained. Thus, damage-free braking is made possible up to 12 m/min. MSP works regardless of direction and with no impact on machining speed in most materials.

Use the M-function M304 to simply run the machine within the safe speed limits (e.g., first run of a machining program): up to 12 m/min. along X, Y, Z linear axes and up to 2,250°/min. respectively 3,150°/min along A- resp. C-rotary Axis. After it has successfully run through the process, the fast feed rate limitation can be disabled with M305.

The protection is always active even if the machine runs faster than 12 m/min., and the maintenance-free MSP system works without wear.

With the M304 function activated, the Spindle is damage-free during a tool or toolholder collision, and all crash events. M304/M305 events are duly recorded within the CNC.

Statements

Insurances company:
"In a machine lifetime there are in average 2-3 spindle crashes."

Finance department:
"The investment into MSP is paid off already with the first spindle crash."

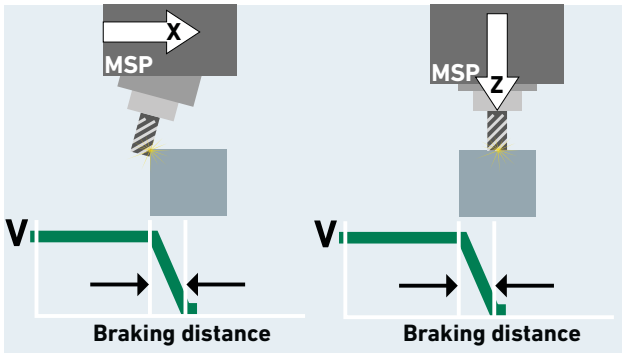
Relaxed operators:
"It really works."

- Protected machine geometry
- Reduced machine downtime
- Full cost control
- Reduced machine-breakage insurance premium
- To restart after crash only 10 min production interruption

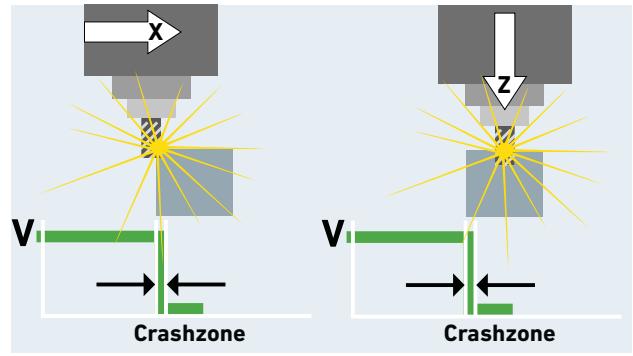
Facts

- + The protection is always active
- + Available on 20,000 min⁻¹ Spindle
- + Unlimited roughing performance
- + M304/305 safety speed limit
 - X/Y/Z axes up to 12 m/min./472 in/min
 - C axis up to 3,150°/min. (8.75 min⁻¹)
 - A axis up to 2,250°/min. (6.25 min⁻¹)

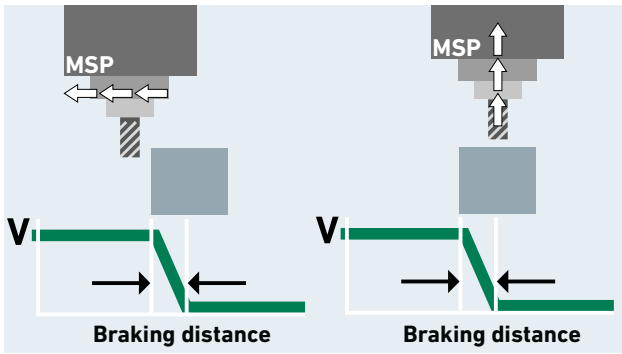
Crash protection by MSP
Machine and Spindle Protection in every direction



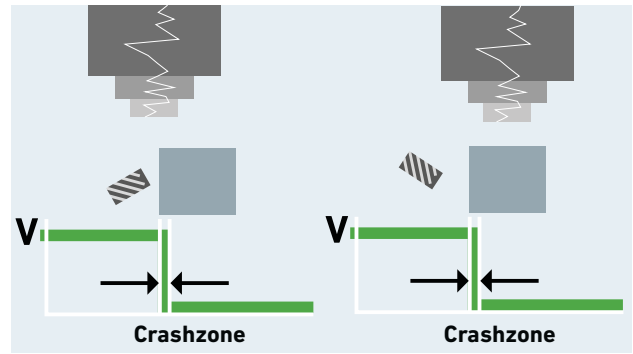
Crash



Software-supported tool retracting



Spindle crash without braking activity



Verify geometrical accuracy with KinematicsOpt or other tools

- + Same Spindle without repairs
- + Without machine realignment
- + Without machine downtime

- Spindle damaged
- Machine geometry misaligned
- Machine downtime
- Significant costs

This part was machined after 200 crashes



smart machine

Enhance your process beyond program and machine setup

This includes a range of modules that are collectively referred to under the generic term "smart machine" and that fulfil various functions. For the Milling process to become intelligent, it must:

- ... establish comprehensive communication between man and machine, which makes available precise information that the operator requires to assess the Milling process.
- ... support the operator in the optimization of the process, which considerably improves the performance.
- ... optimize the Milling process, which improves process safety and workpiece quality—especially important in unmanned operation.

smart machine construction kit system

Each of the modules fulfills a specific task. Just like in a construction kit, the user can select the modules that fits best to improve his process.

The facts

- + Greater accuracy in shorter machining times
- + Increase in the workpiece surface quality as well as the surface and shape accuracy
- + Recognition of critical machining strategies
- + Improved process safety
- + Higher availability
- + Better operating comfort
- + Considerable increase in reliability in unmanned operation

- Produce your workpieces in a process-secure and precise manner
- Increase reliability in unmanned operation
- Boost the service life of the machine
- Significantly reduce production costs



Precision

ITC, OSS and KinematicsOpt support the precise base of your machining center to reach an even more precise final part down to 2 µm.



Protection

MSP, PFP or ISM protect and extend the lifetime of your machine and tools.



Time

OSS, ISM and software tools such as rConnect boost your productivity. OSS Extreme = Up to 24% faster with improved surface finish and accuracy.



Saving energy

Econowatt saving up to 50% energy, is a ecological necessity with attractive economic advantages.

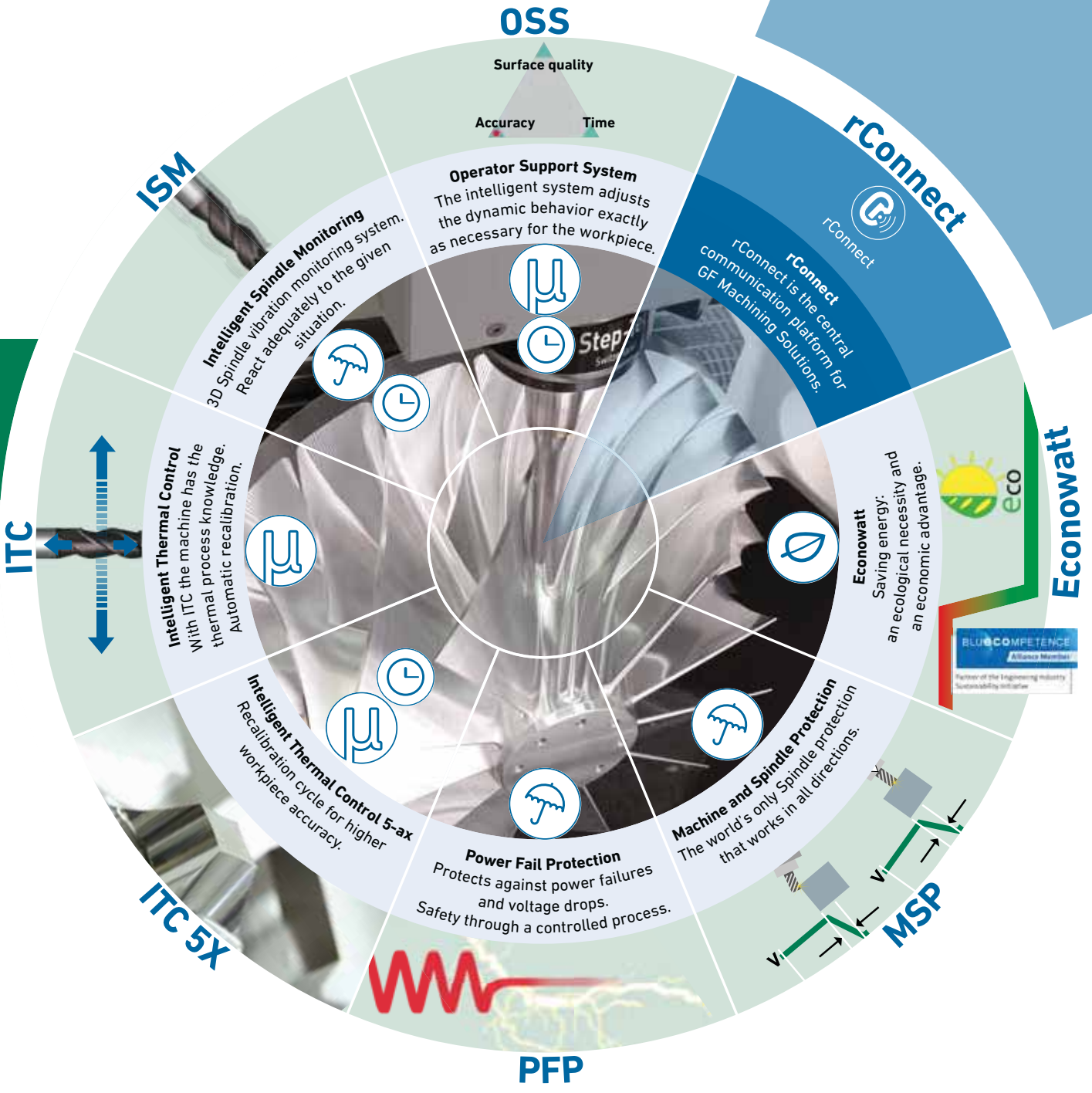
Also available in Heidenhain

KinematicsOpt, Power Fail Protection (PFP), Adaptive Feed Control (AFC), DXF file import, DNC remote network access on control

Included in Siemens control

MDynamics

Simply better results with the smart machine



Accuracy and productivity from base machine

The benchmark for precision machining and agile productivity

+ $\pm 2 \mu\text{m}$
precision in X/Y plane

Constant dimensional precision and 24/7 process reliability

+ 365 days
per year flexibility

Dynamic machining and broad performance versatility

+ ~10 minutes
to resume full production

after a crash thanks to Machine and Spindle Protection (MSP)

+ 250 percent
higher productivity

Increased profit thanks to integrated Automation

**+ Your most competitive
business center**



Z

MILL P 500 U 450 mm
MILL P 800 U 550 mm

• Lower production costs through a reliable and dynamic machine on a small footprint

X

MILL P 500 U 500 mm
MILL P 800 U 800 mm

Y

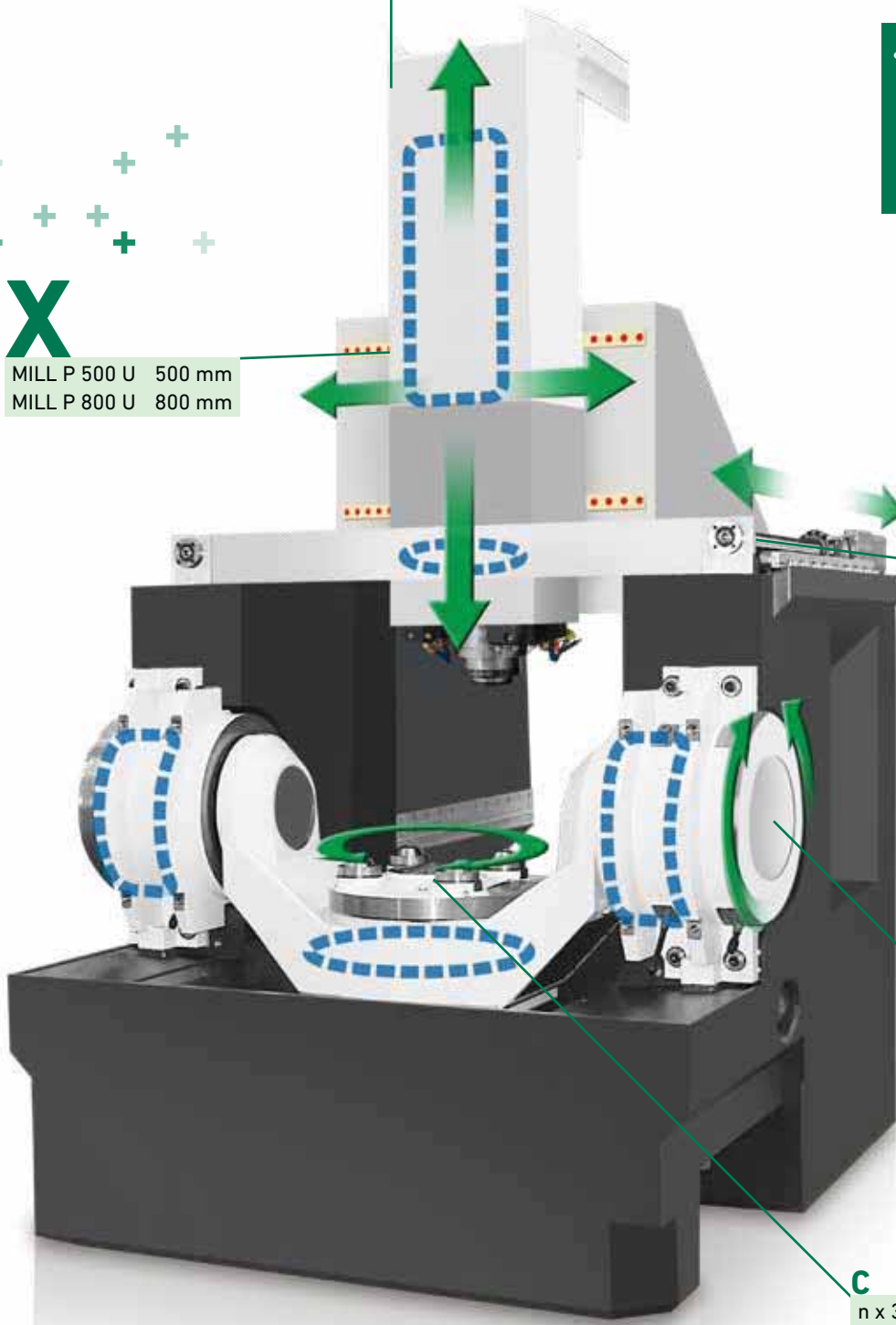
MILL P 500 U 600 mm
MILL P 800 U 800 mm

A

+91/-121

C

n x 360°



Automation

Automated pallet handling: ideal accessibility to the workpiece

The Mikron MILL P 500 U / 800 U machines have been designed to accommodate automated pallet handling.

In the loading station, the raw parts are set up on the pallet while the machine is machining the workpiece on the other pallet.

This greatly increases the productivity of the machine.

- + Very good access to the workpiece
- + The pallets in the loading station can be manually rotated 360 degrees.



- **Small footprint**
- **24/7 production**
- **Efficient machining for highest productivity**
- **Best total cost of integration and ownership**

To increase your autonomy, there are very compact pallet magazines available which can be loaded with up to 12 pallets with optimal ergonomics.

- + With every Automation solution the pallets can be loaded up to 500/600 kg
- + Multiple workpieces in the pallet magazine require multiple tools
- + The three pallet dimensions are available with thread holes
- + Additionally, the sizes 500 x 630 mm and 500 x 500 mm come with T-slots
- + Optionally, the pallet in the loading station can be hydraulically raised for manual rotation
- + 30 to 245 tools can be selected with this scalable solution

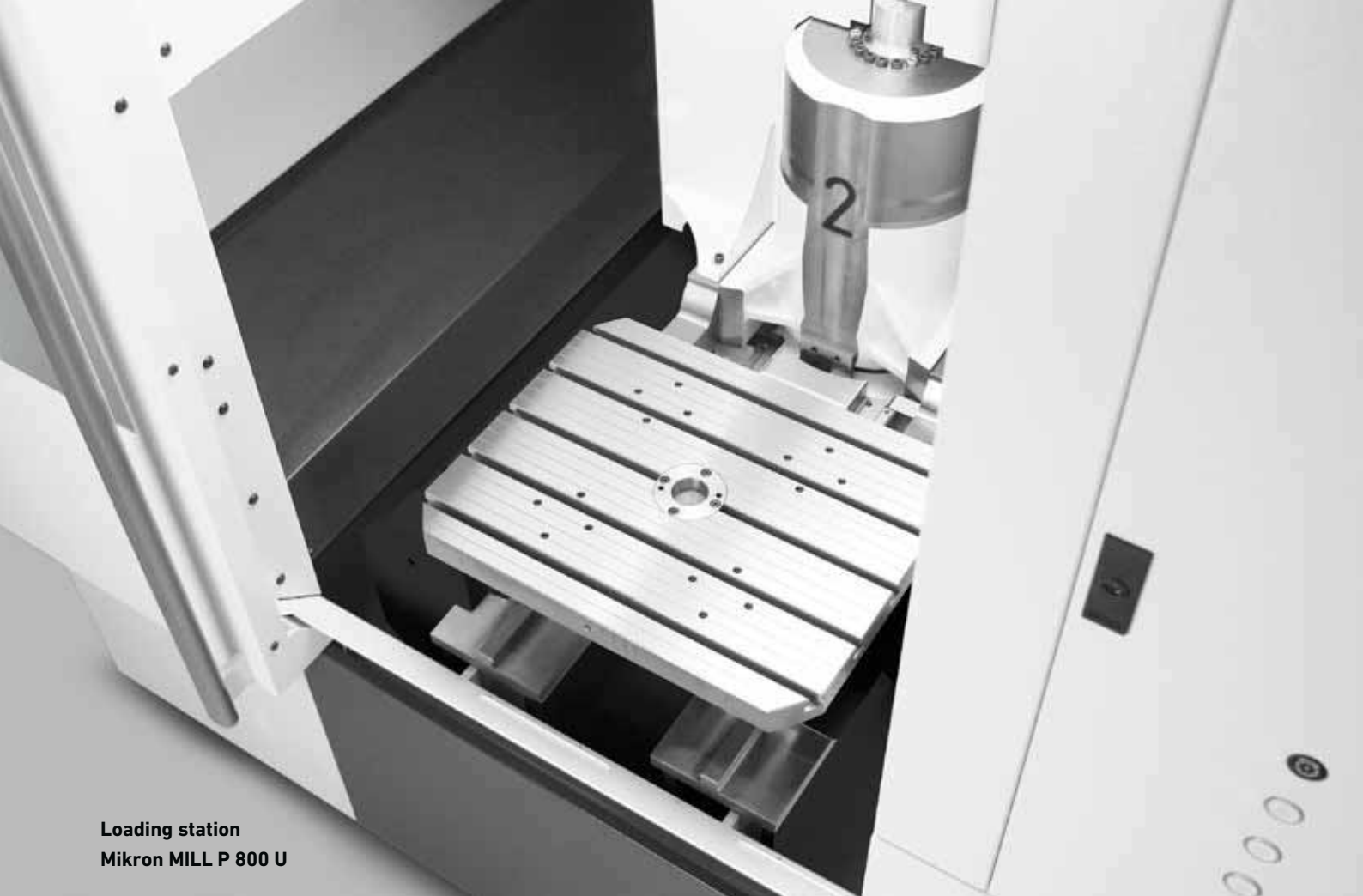
Standardized robot interface

The Mikron Mikron MILL P 500 U / 800 U can be linked to System 3R robot systems as well as operated with robot systems from other well-known suppliers.

Regardless of the handling system used, the machine offers comfortable accessibility when integrated into a line.



Direct robot loading

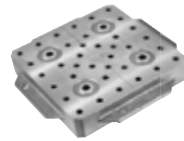


Loading station
Mikron MILL P 800 U

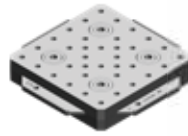


Pallet magazine
Mikron MILL P 800 U

As flexible as needed



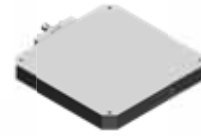
System 3R
GPS 240
240x240 mm



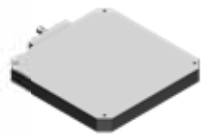
EROWA
UPC
320x320 mm



System 3R
Dynafix
280x280 mm
350x350 mm



EROWA
MTS
400x400 mm



System 3R
Delphin
400x400 mm

Mikron MILL P 500 U
200 kg



7
Pallets

7
Pallets

7
Pallets

5
Pallets

5
Pallets

Mikron MILL P 500 U
400 / 600 kg



Mikron MILL P 500 U
Table
Ø 500 mm



Mikron MILL P 800 U
500 kg

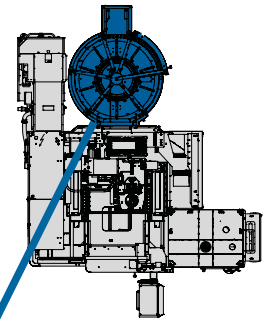
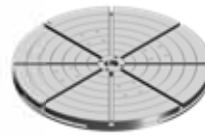
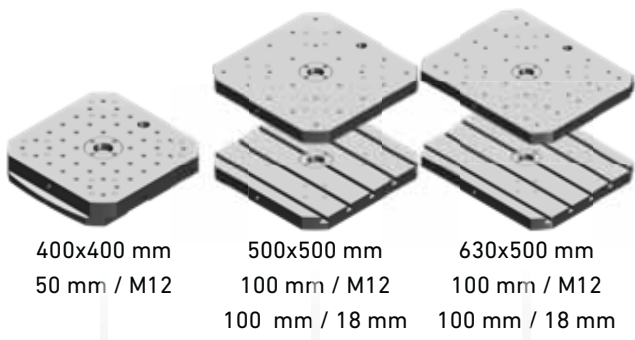


Mikron MILL P 800 U ST
800 kg

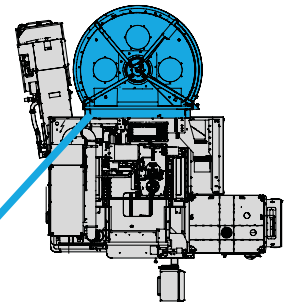


Mikron MILL P 800 U
Table
Ø 500 mm
Ø 631 mm

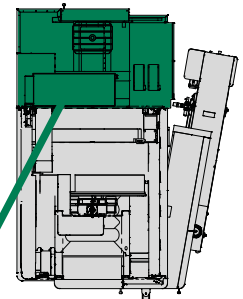




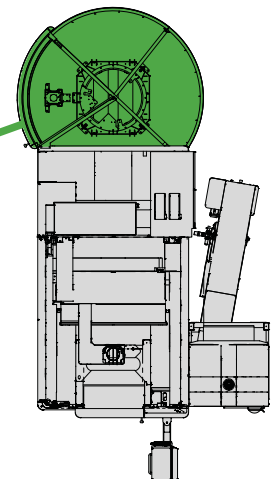
Mikron MILL P 500 U



Mikron MILL P 500 U



Mikron MILL P 800 U



Mikron MILL P 800 U

4
Pallets

4
Pallets

2
Pallets

2
Pallets

2
Pallets

2
Pallets

2
Pallets

12
Pallets

9
Pallets

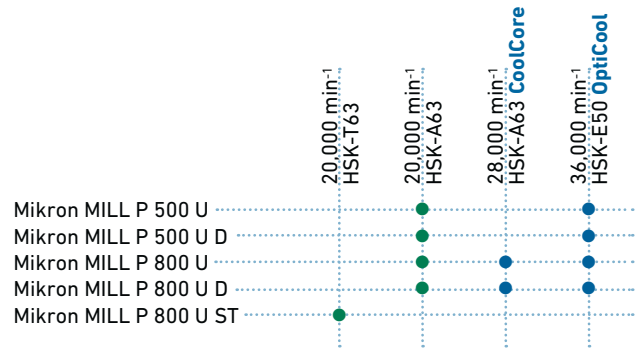
7
Pallets

9
Pallets

7
Pallets

High-tech Spindles

Tool Spindles for demanding machining

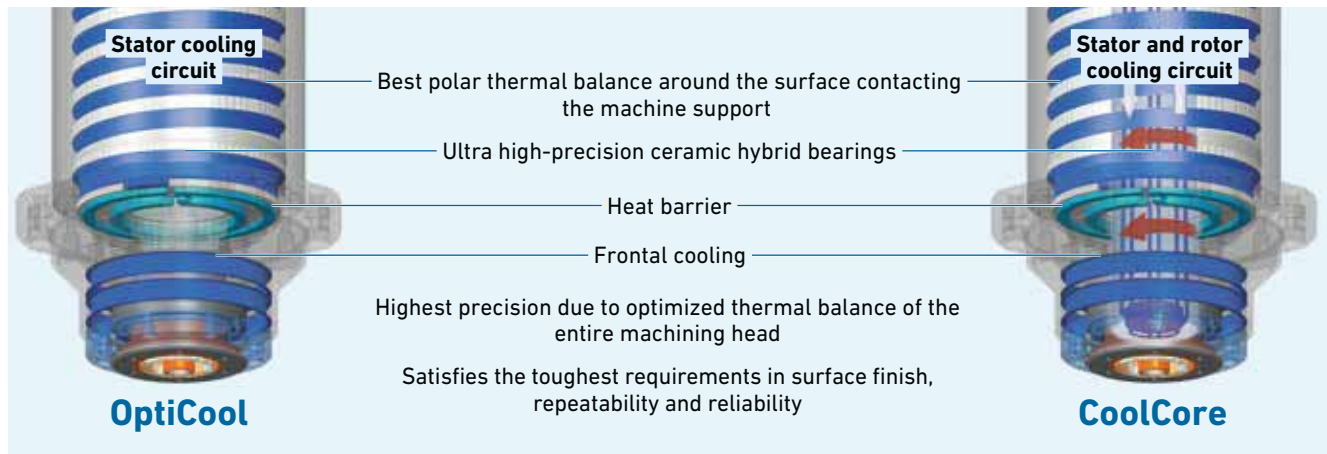


OptiCool

Step-Tec's OptiCool Spindle series ensures not only that the Spindle remains thermally stable, but that natural heat transfer to the Spindle support (e.g., Z-Axis) is limited to the lowest amount possible, in order to preserve the machine's geometry.

CoolCore

Where conventional stator cooling reaches its limits, Step-Tec's CoolCore Spindle goes beyond the ordinary to lower the temperature and minimize temperature fluctuations in the rotating shaft.



20,000 min⁻¹ / HSK-A63

- + Precise high-performance
- + Available with or without internal coolant supply
- + Compressed air blow through Spindle

28,000 min⁻¹ / HSK-A63

- + Water-cooled rotor shaft (CoolCore) which stabilizes the temperature and consequently the expansion in the rotor shaft
- + Very accurate machining, because it minimizes thermal influences of the Spindle
- + Through-tool coolant is an available option

36,000 min⁻¹ / HSK-E50

- + Precise high-performance for use in the tire mold field
- + Available with or without internal coolant supply (TSC)
- + Compressed air blow through Spindle

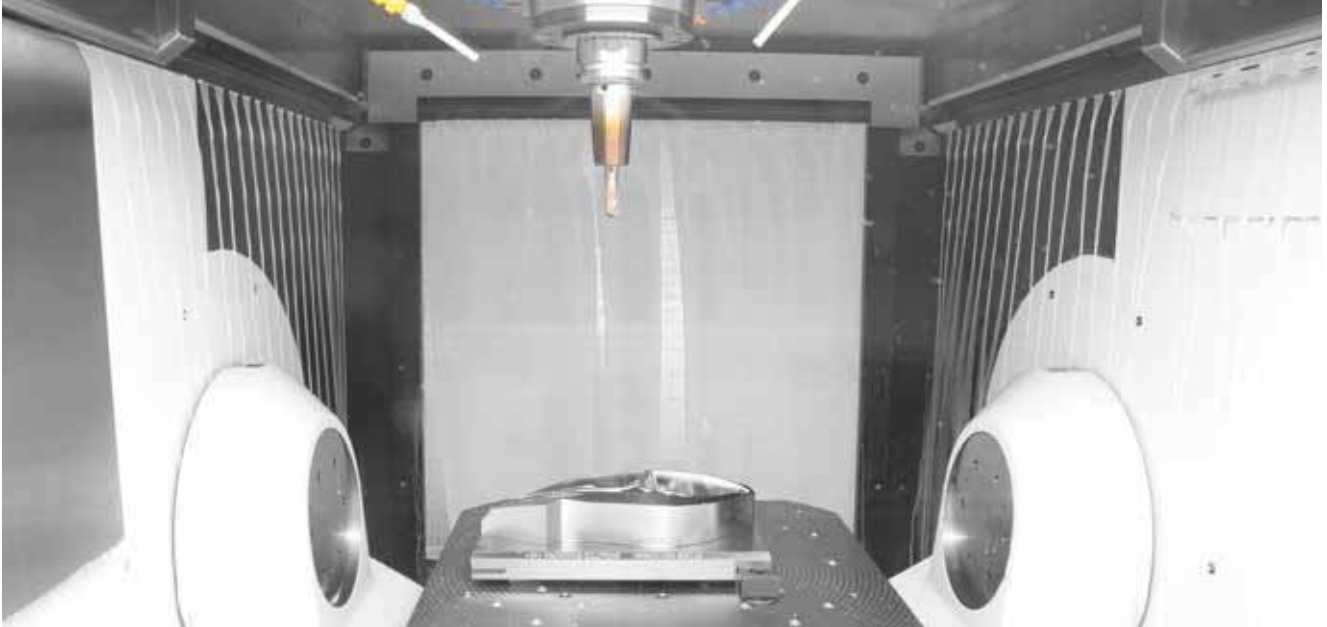
Additional advantages of CoolCore

- + Cooled shaft reduces the natural thermal shaft growth by half
- + Greatest thermostability and highest precision due to lower temperature fluctuations down to the tool tip
- + Significant reduction of thermal recovery time resulting in a productivity gain

• **The Spindle is the heart of our machines.**
 Beyond Step-Tec Spindle performance, we ensure a comprehensive set of services and maintenance options. Ask us.
 Check our website: www.step-tec.com

Chip management

Clean machining, wet or dry



Optimum chip clearance due to steep, smooth cabin walls.
Washer jets prevent chip accumulation.

- **Reliable production process through a trouble-free chip flow**

Adapted chip management



- + Solution for high-volume aluminum Milling chips.
With slat band lift-up chip conveyor and coolant unit with fine filtration
- + Solution for high-volume steel Milling chips with scraper lift-up chip conveyor and coolant filtration unit



Options

- + Through-Spindle coolant
- + Wash down system
- + Coolant thermal control
- + Oil skimmer



**Load
parts
up to
1'000 kg**



**Dynamic
and stable**

Easy to use



Tool magazines

Rapid tool provision



30 tools



60 tools

120 - 215 tools



- Better overview allows faster preparation and maintenance
- Whatever your requirement, the most suitable tool magazine is available

All tools visible

Tools are visible through a window on the front of the magazine. Damaged tools can be quickly identified and replaced. If tools are required on other machines, you can see straight away where each tool is.

Smooth and swift

The magazine chain (60 tools) is moved and positioned by a controlled drive. The tools therefore glide swiftly and smoothly to the changing position. This means that tools can be made available much more quickly.

Vibrations that could have a negative impact on the Milling process are also prevented.

HSK-A63

- + Up to 80/160 mm diameter (depending on magazine type)
- + Max. length 350 mm

245 tools



Ready for tire mold production

Better fit with tire mold parts and applications

Tires must be produced in narrower geometric tolerances in order to generate less friction and reduce fuel consumption and CO2. To make that possible, the molds for these "green" tires must be made on a machine that fulfills the certain precision and surface quality requirements. The size of the machine in combination with high axis feed rate, a high-dynamic rotary tilting table and a high-speed Spindle give this machine the ability to deliver best surface finish on precise tire molds.

- + Slim shape tilt rotary table for small interfering contour when Milling slots on the edge of the mold segments with highest dynamic 75 / 120 rpm by 55 rad/s² / 130 rad/s²
- + Travel with 36,000 min⁻¹ Step-Tec-Spindle: 75-625 mm above table surface
- + Workpiece up to 150 kg and up to Ø 860mm, fitting for not only segments but also complete side walls machining in aluminum and steel
- + Heidenhain TNC 640 control in combination with a CAD/CAM system from OPEN MIND is an excellent solution

Improved productivity: one-touch strategy

Thanks to our Step-Tec Spindle, your process goes from roughing to finishing on the same machine, in a single process step.

- + 36,000 min⁻¹ / 21.3 Nm Step-Tec Spindle for performance machining up to high-speed applications
- + Fully automated tool changer with 30 positions up to 290 mm tool length

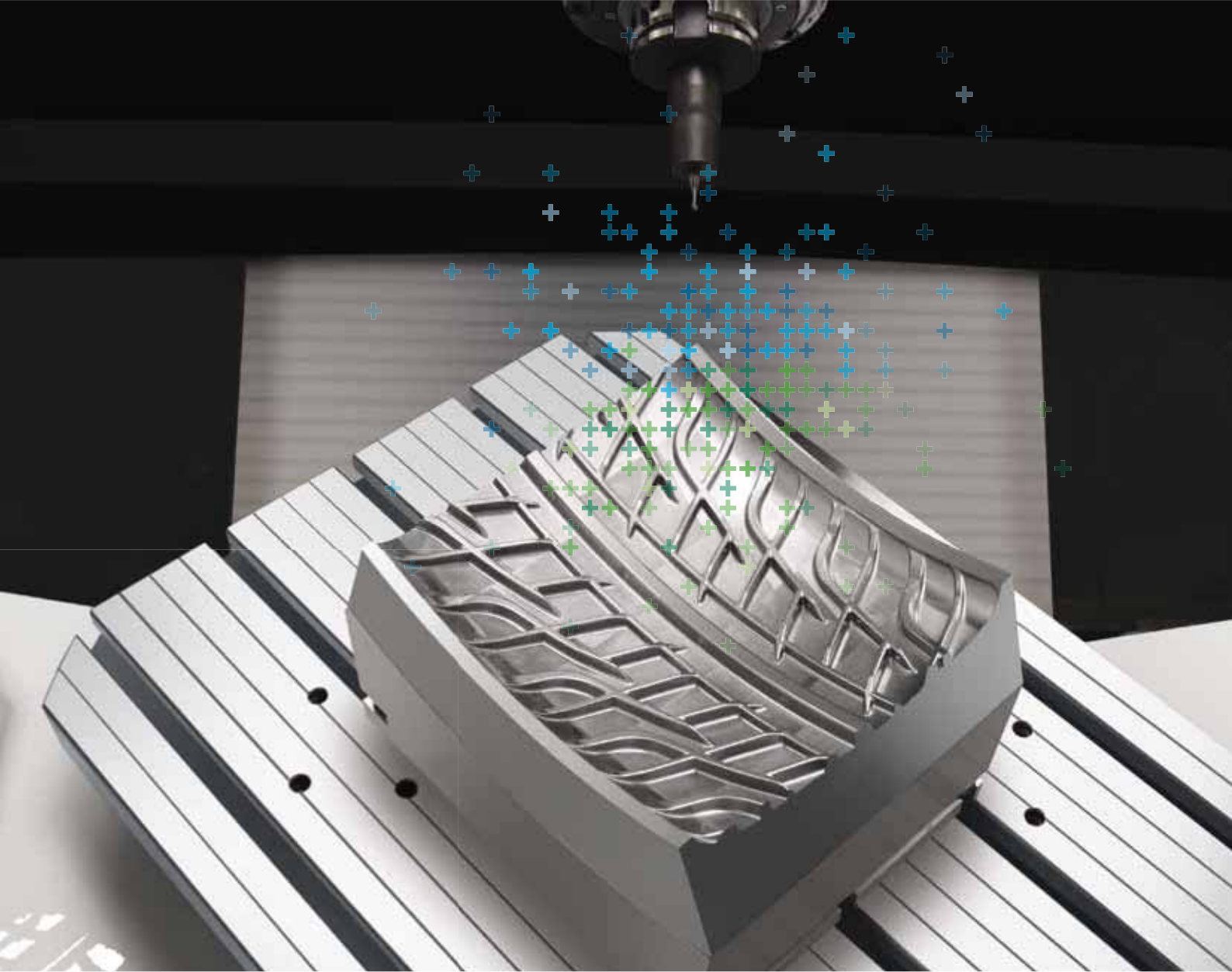
- The ideal solution answering to the latest tire performance regulatory requirements
- The only machine allowing a smooth evolution from indirect wood (resine) positive to direct aluminum/steel mold Milling
- The Milling dedicated package for tire mold production is part of GF Machining Solutions dedicated offer: From Laser to EDM, through Automation for above-average performances and profits

Dry or wet machining: dedicated environments

The integrated dust extraction system for resin machining and dedicated Knoll chip management provide a tire mold machining-ready environment.

- + High-efficiency dust extraction system for synthetic materials, with air return (closed loop system)
- + Slim Spindle nose shape for best access to the workpiece with dust extraction fully integrated in the Z sledge for best results
- + Reliable high-performance chip management for all steel/aluminum applications with lots of options

Complete solutions – for you



Dedicated option for perfect dust removal through the Z sledge

Closed loop suction system

- + The tire-mold-dedicated dust suction system collects the dust right at the source
- + Suction nozzle in plastic with pipe diameter of 200 mm surrounding the Spindle nose
It can be trimmed if necessary
- + Equipped with a clean air return and provides constant airflow in the work area



Mikron MILL P 800 U ST - Milling and Turning

Turning. Roughing. Finishing. One clamping operation.

Quick and precise

Complete machining on the Mikron MILL P 800 U ST quickly produces more accurate workpieces. Unnecessary rechucking results in a more precise runout, faster workpiece handling and setup time.

Most compact

Reduced investment and operating costs, thanks to space-saving, complete machining center.

Perfect Automation

Optimal integration into production thanks to various Automation solutions compatible with the Mikron MILL P 800 U series either from the front or from the back.

Quality

Simultaneous turning allows a permanent positioning of the tool in its optimal cutting position, perpendicular to the work piece surface. This ensures the best precision and surface quality.

Productivity

Automated pallet handling without restriction of access to work area.

The pallet changer passes through the machine.

Production service package

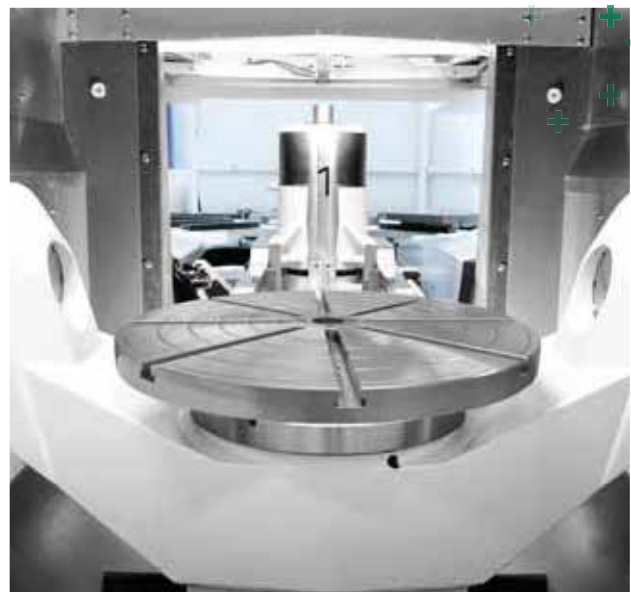
Specific services and maintenance options are to be considered for this solution, in relation to safety and continuous operation matters.

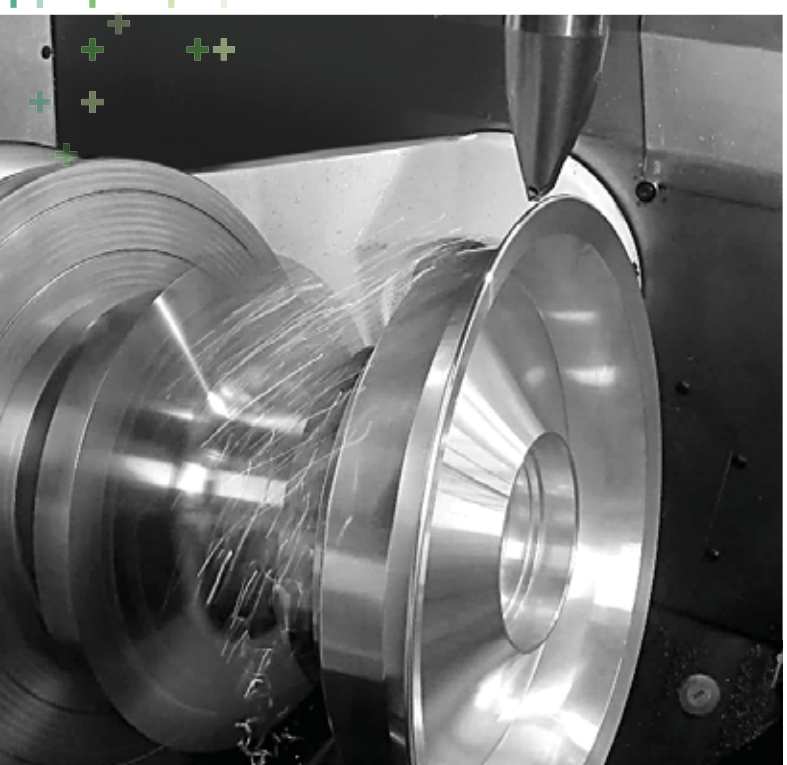
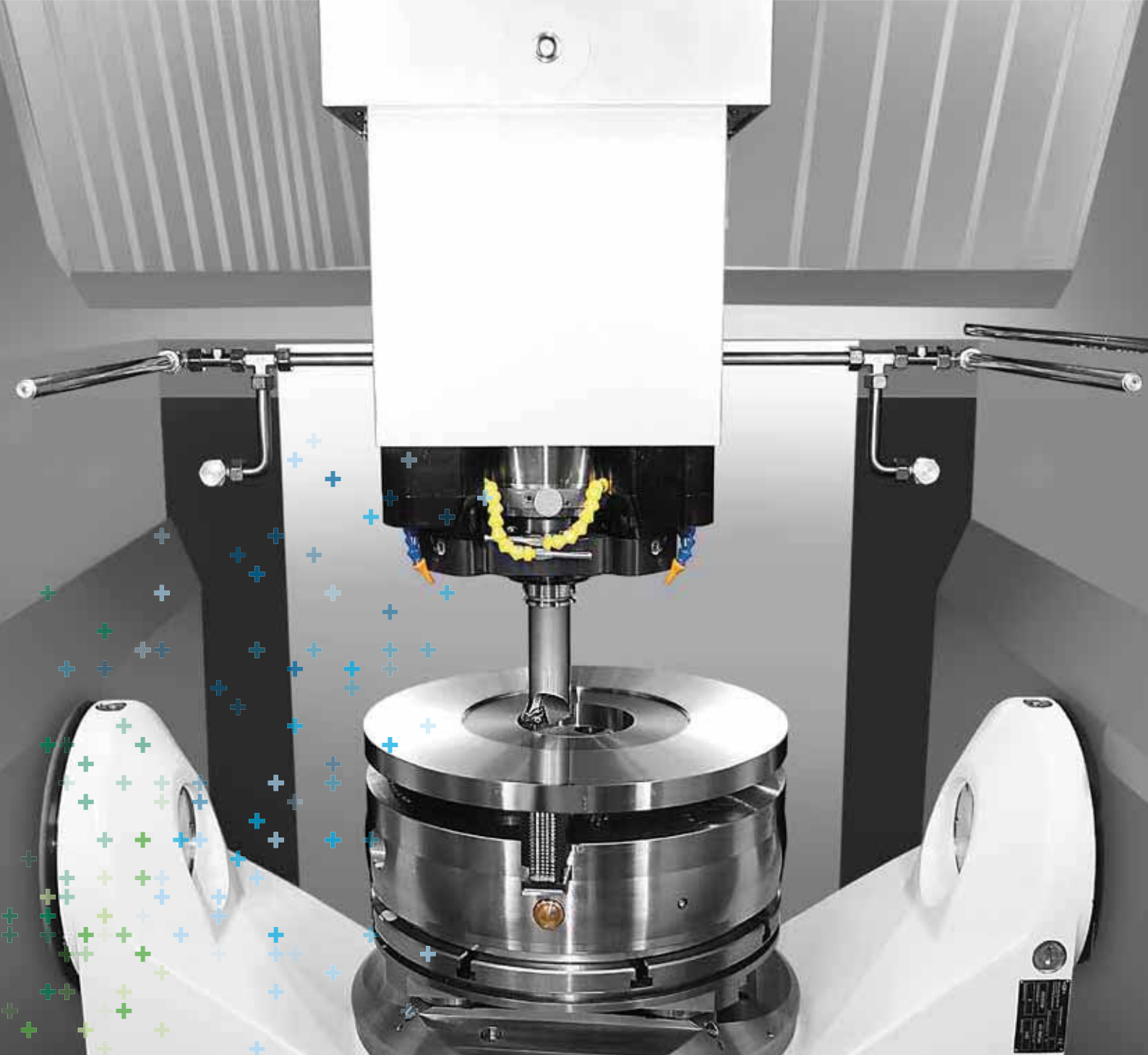
Ask us.

Visit our website: www.gfms.com

Complete and automated simultaneous machining in one setup

- Meet challenging requirements in an easier and faster manner: Reduce your setup hurdle by more than 50% and convert it into billable production time
- Reduce your cost: Rough faster by turning while achieving savings on tool cost with a ratio of 1/100
- No compromise on process productivity and precision: Our safe enclosure does not impact the axis motion performance: 1.7g all the way!





Options

Geared up for a multitude of options



Infrared touch probe



Laser measuring system



Minimum quantity cooling lubrication



Through-Spindle cooling



External coolant supply



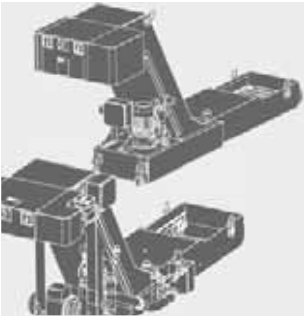
Optional nozzle ring



Flushing nozzle system



Band filter system



Lift-up slat band chip conveyor or lift-up scraper type chip conveyor



Coolant thermal control



Mist extraction



Automatic cabin roof



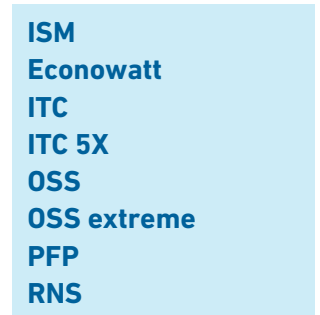
Rotating viewing window



Signal light



MSP
Machine and Spindle Protection



ISM
Econowatt
ITC
ITC 5X
OSS
OSS extreme
PFP
RNS
smart machine

System 3R - Pallet and tool management software

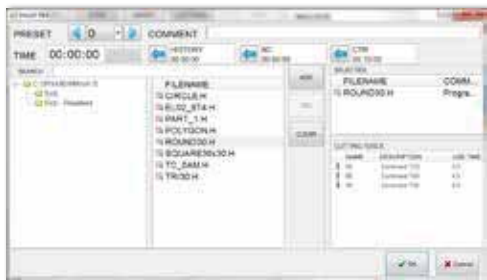
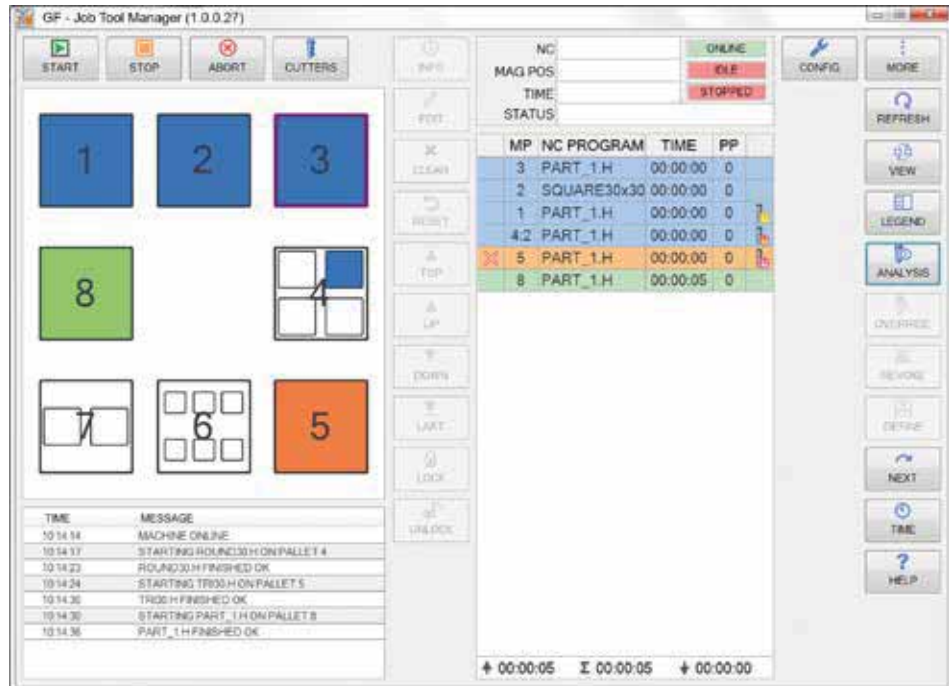
JTM JobToolManager

User friendly software for one machine with integrated pallet changer.

Assign NC programs to pallet position by drag and drop on a touch screen, close to the pallet changer.

Advantages

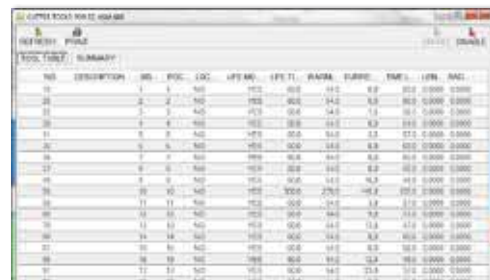
- + Easy to change priorities when the machine is working
- + Add or remove jobs while machining
- + Jobs where cutters are missing will not be started
- + Estimated and present machining time for the magazine content are calculated.



Assign NC file, check tool capacity, schedule

By selecting the NC program, JobToolManager registers the tools used in the program. Time is stored if the NC program defines the time for the entire machining or if each tool has its use time.

If the program has been used earlier, it automatically displays the last recorded time.



Manage tools upon jobs to be done

Each time a new job is started, JobToolManager checks the machine tool table to see the availability of tools. If a tool is broken and no sister tool is available, will the job be blocked.

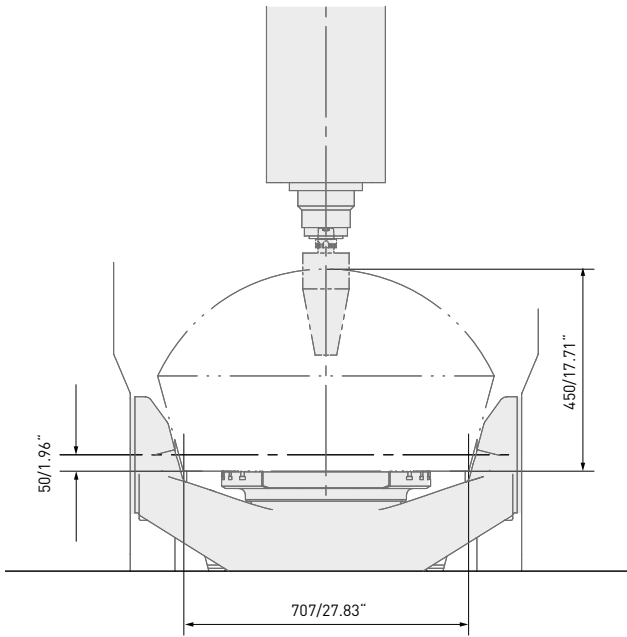
Technical data

Mikron MILL P 500 U Mikron MILL P 500 U D Mikron MILL P 800 U Mikron MILL P 800 U D Mikron MILL P 800 U ST

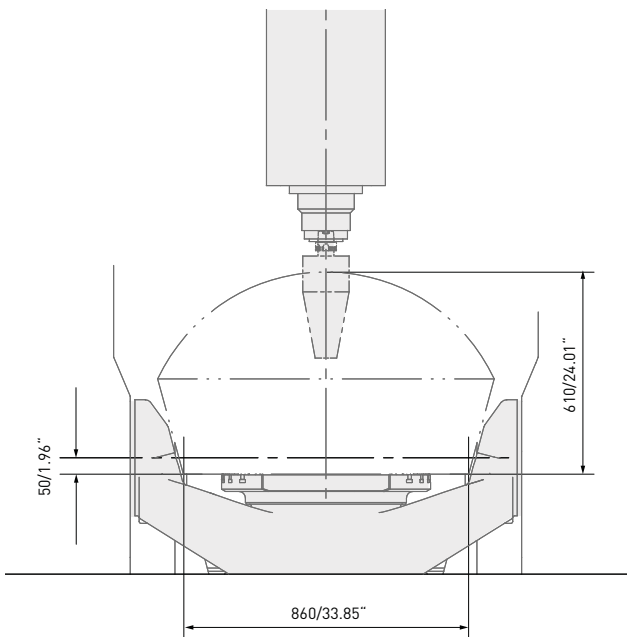


	Mikron MILL P 500 U	Mikron MILL P 800 U	Mikron MILL P 800 U ST
Working range			
Longitudinal / Cross / Vertical X x Y x Z	mm	500 x 600 x 450	800 x 800 x 550
A-Axis	°	+91/-121°	+91/-121°
C-Axis	°	n x 360°	n x 360°
Number of simultaneous axes	pce.	5/5 simultaneous	5/5 simultaneous
Feed Drives			
Feed rate / (D) Rapid traverse X, Y, Z	m/min	45 / (61)	45 / (61)
A, C	min ⁻¹	25, 35 / (50, 60)	25, 35 / (50, 60)
Working spindle (40% ED, S6)			
20,000 min ⁻¹ , HSK-A63 / HSK-T63	kW/ Nm	36 / 120	36 / 120
28,000 min ⁻¹ , HSK-A63	kW/ Nm	-	36 / 36
36,000 min ⁻¹ , HSK-E50	kW/ Nm	33 / 21	33 / 21
Accuracy XYZ ISO 230-2(97)			
Accuracy A	μ	8	8
Repeatability R	μ	5	5
Work table			
Clamping surface	∅ mm	500	500 / 631
Peak torque C-Axis	Nm	-	-
Max. workpiece weight	kg	200 / 400 / 600	500 / 1,000
Automation			
Tool magazine	Positions	30, 60, 120, 170, 215	30, 60, 120, 170, 215
Laser tool measurement		Option	Option
Infrared touch probe		Option	Option
Pallets (see page 16/17)	pce.	4, 5, 7	2, 7, 9, 12
Weight			
Machine weight (60 tools)	kg	11,100	15,500
Options			
MSP Machine and Spindle Protection		+	+
Coolant sump, chip conveyor		+	+
Minimum-quantity cooling lubrication		+	+
Mist extraction unit, etc.		+	+
Compressed air blow through Spindle		+	+
Ancillary services			
Programming courses		+	+
Technology courses		+	+
Service training courses		+	+
Control unit			
Heidenhain TNC 640		+	+
Siemens 840D sl		+	+

Mikron MILL P 500 U - Workarea

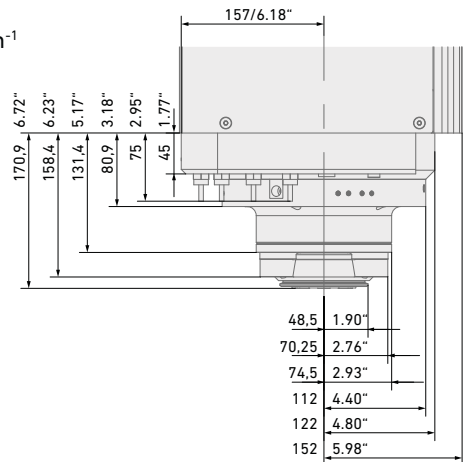


Mikron MILL P 800 U - Workarea

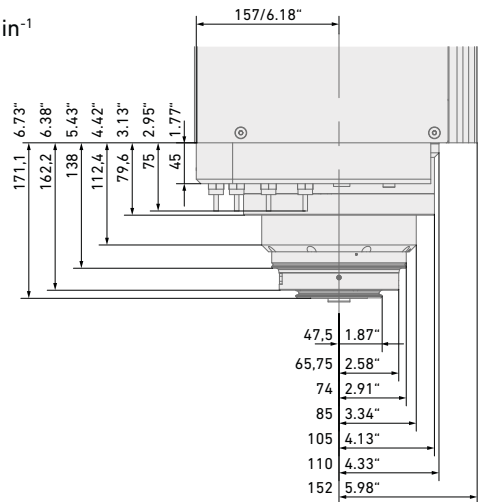


Spindles

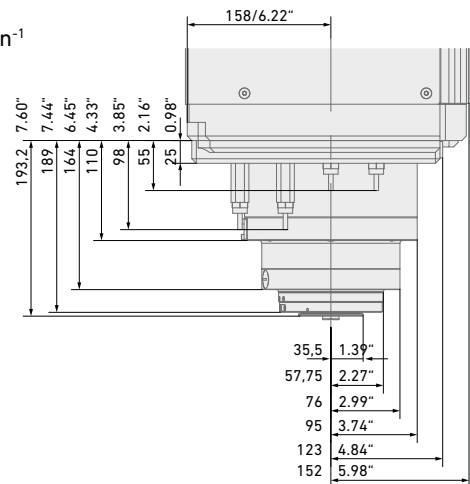
20,000 min⁻¹
 HSK-A63
 HSK-T63



28,000 min⁻¹
 HSK-A63



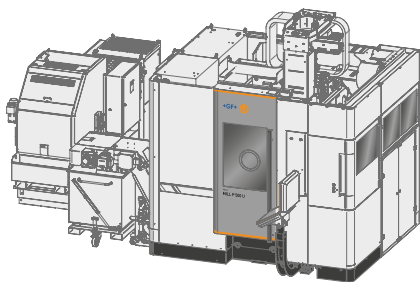
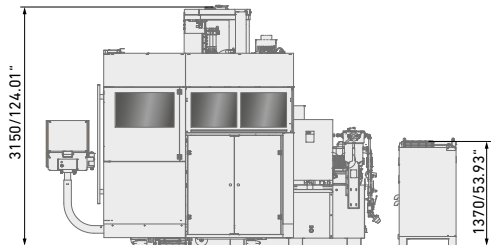
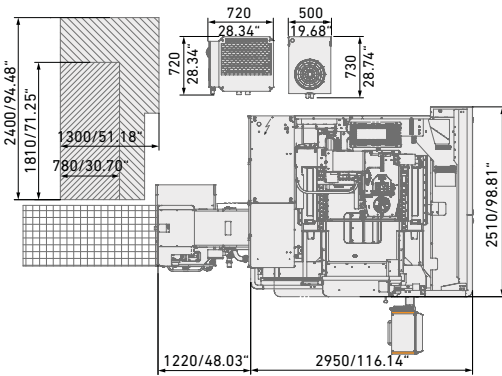
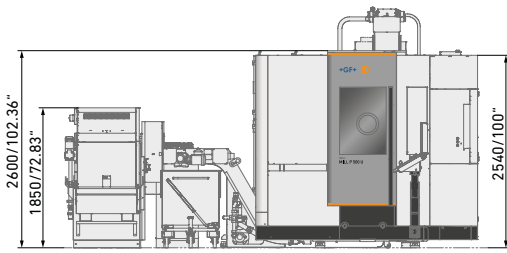
36,000 min⁻¹
 HSK-E50



Mikron MILL P 500 U / D

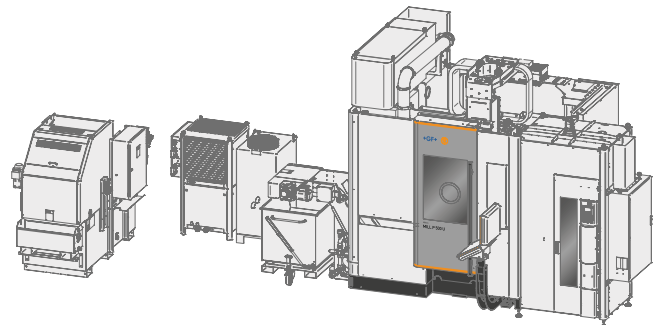
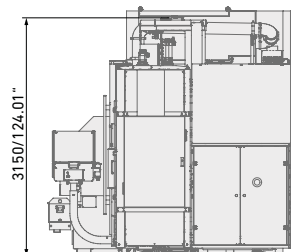
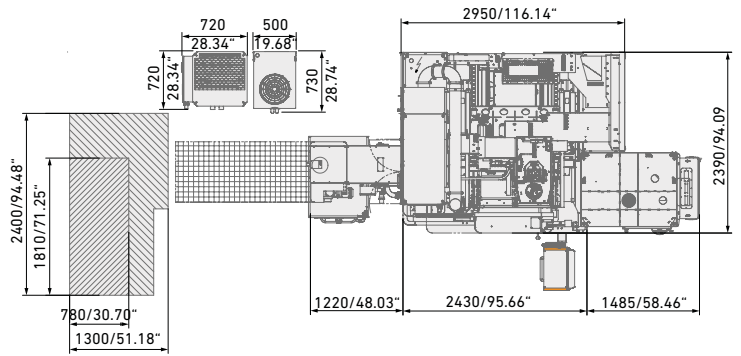
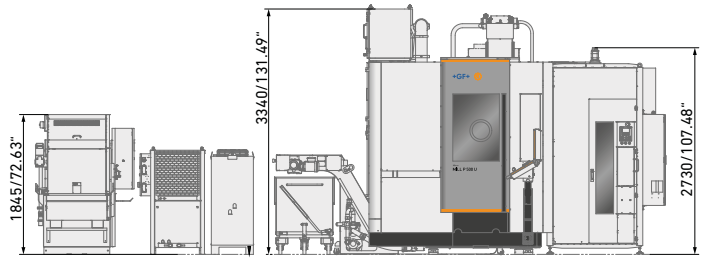
30 / 60 tools

Robot



Mikron MILL P 500 U

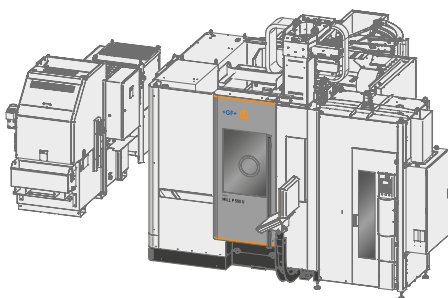
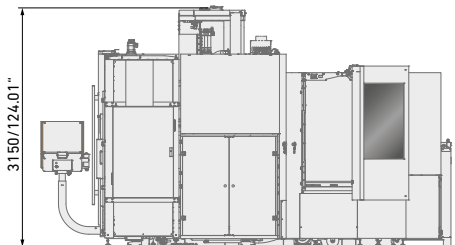
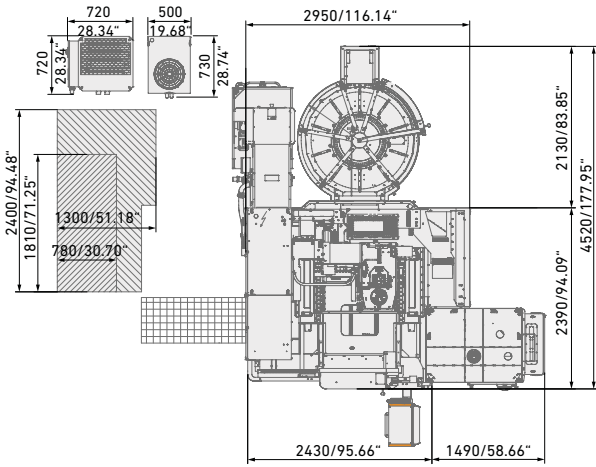
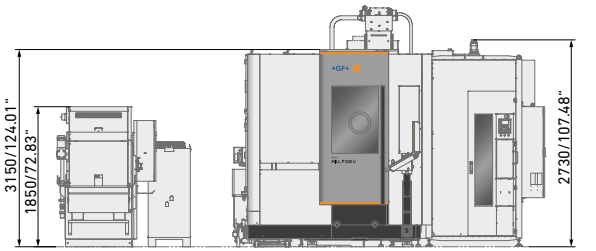
120-215 tools



Mikron MILL P 500 U

5/7 pallets

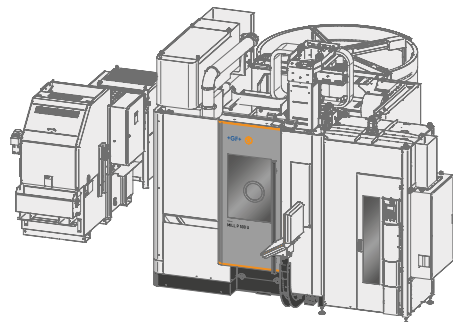
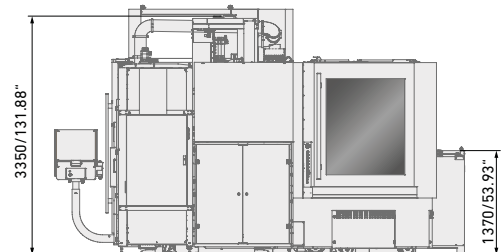
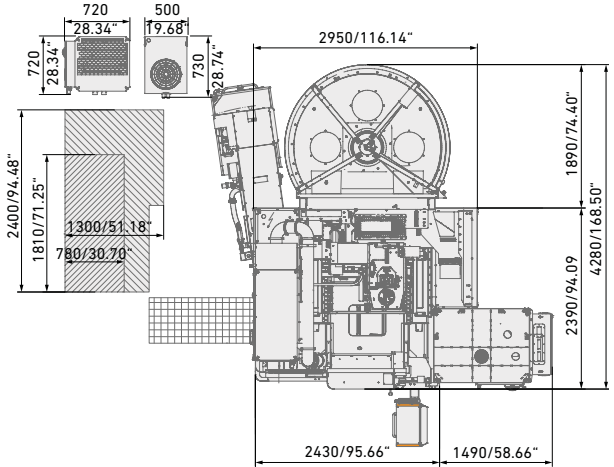
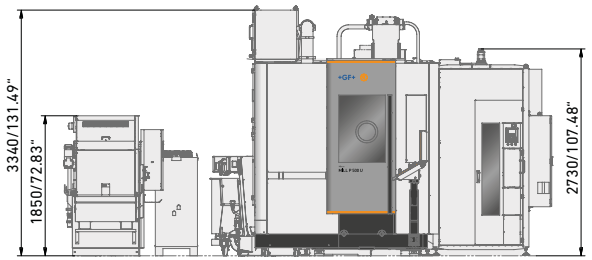
120 - 215 tools



Mikron MILL P 500 U

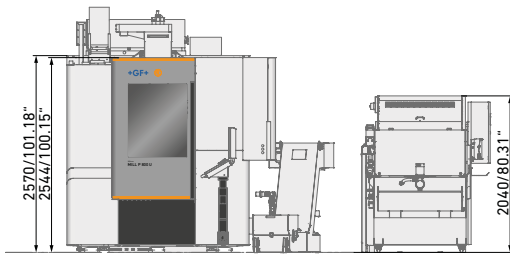
4 pallets

120 - 215 tools



Mikron MILL P 800 U

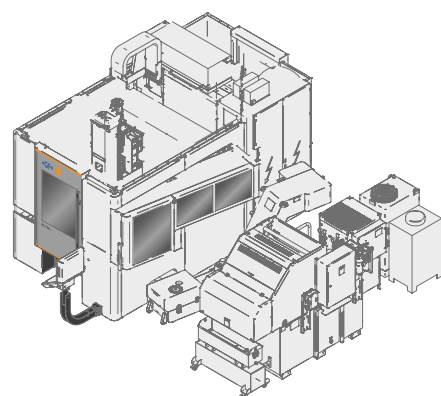
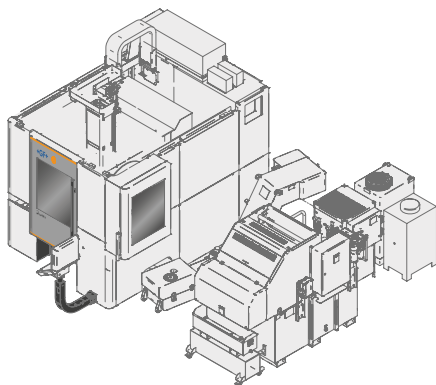
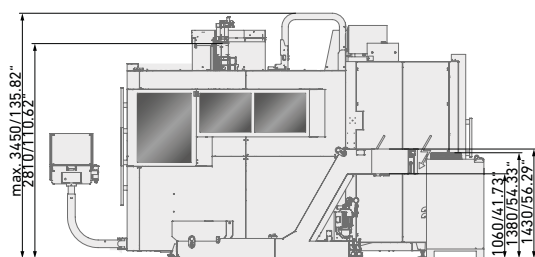
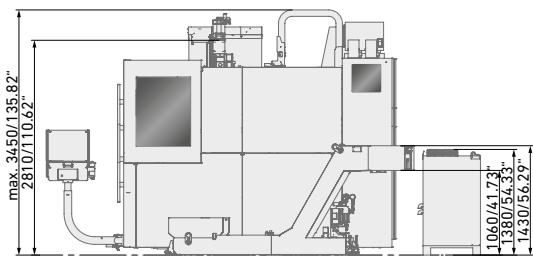
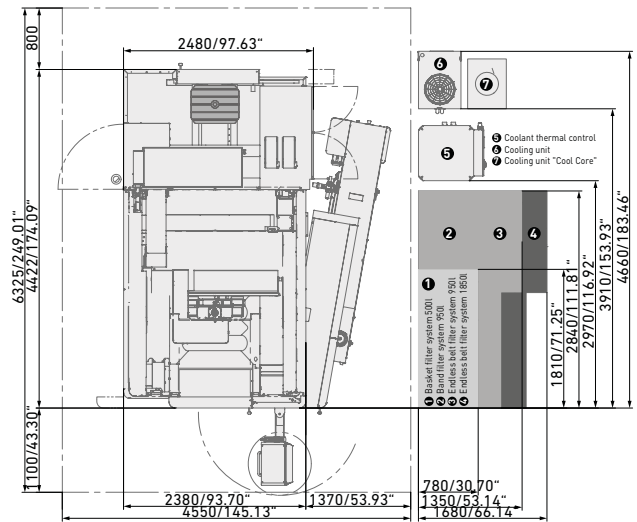
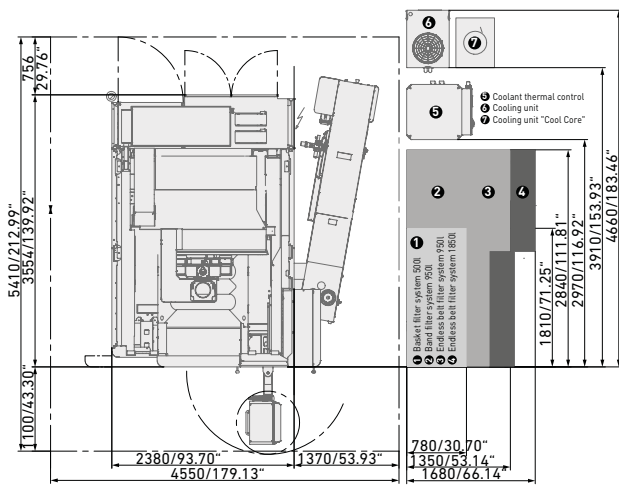
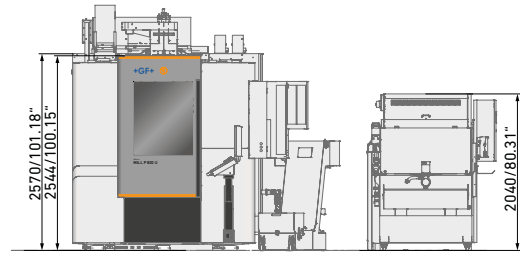
30 tools



Mikron MILL P 800 U

2 pallets

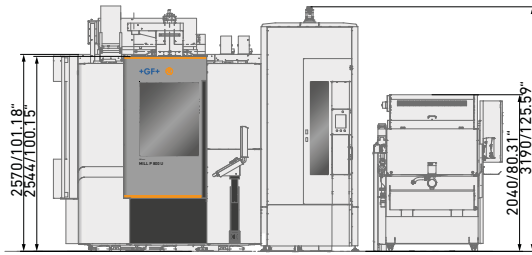
60 tools



Mikron MILL P 800 U

7-12 pallets

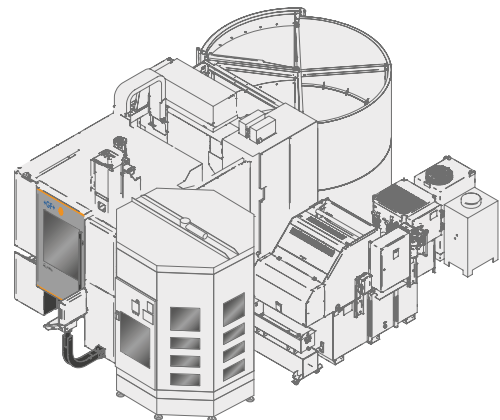
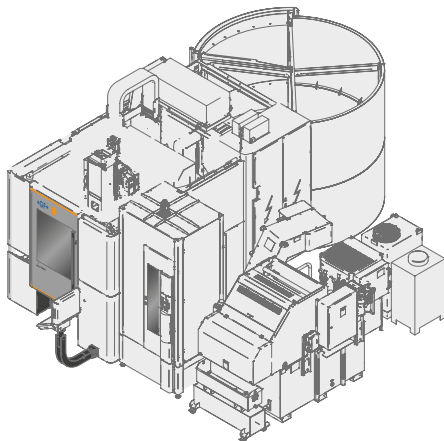
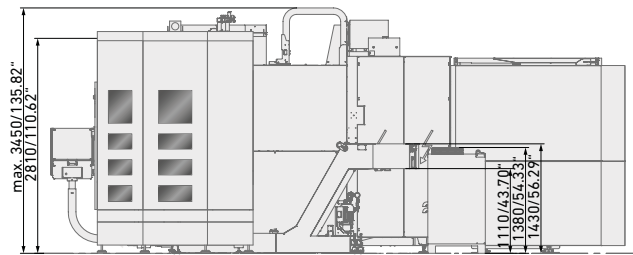
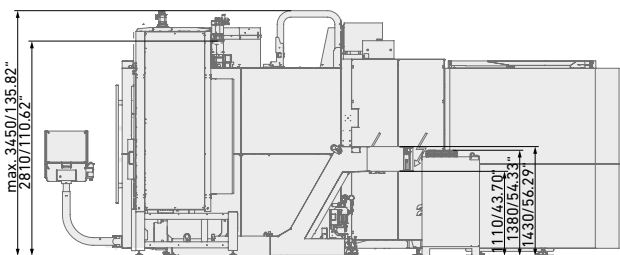
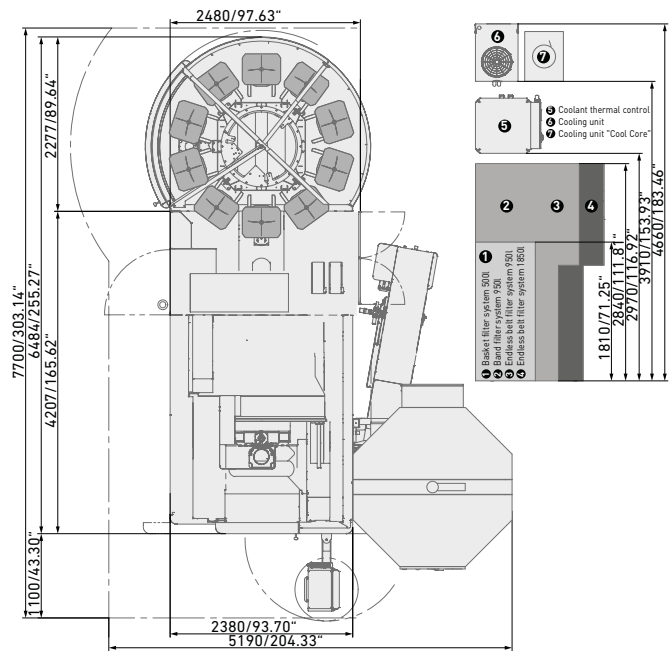
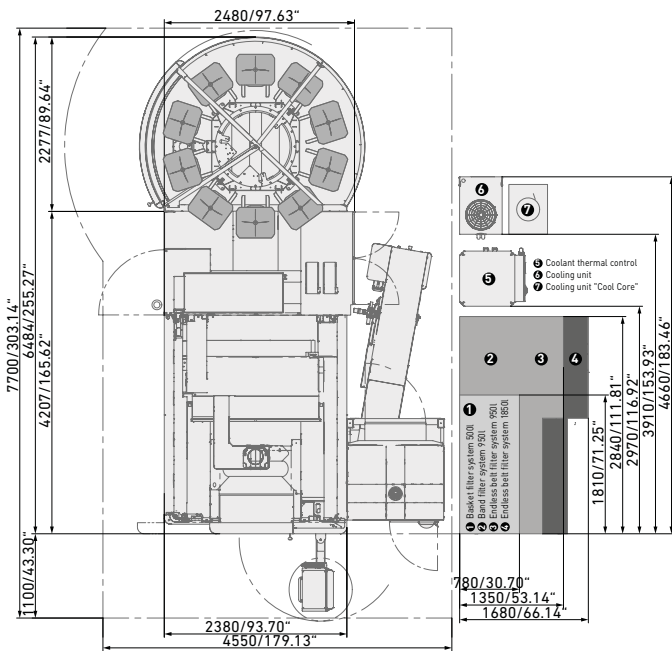
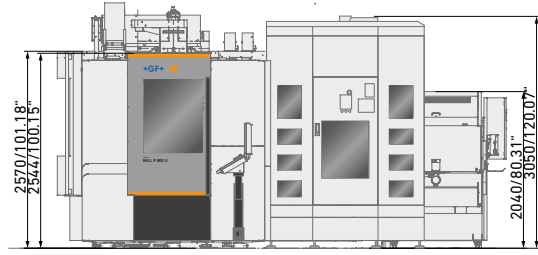
120 - 215 tools



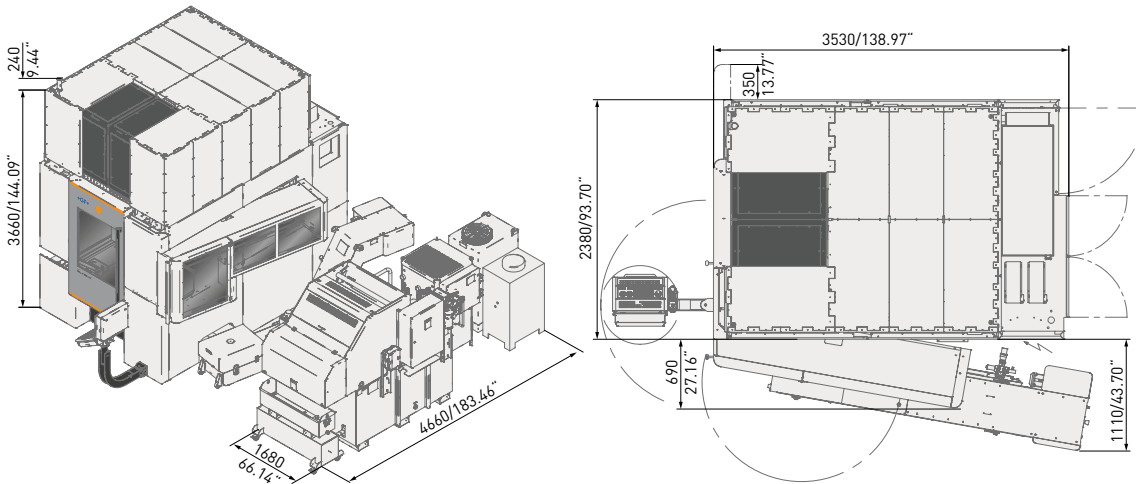
Mikron MILL P 800 U

7-12 pallets

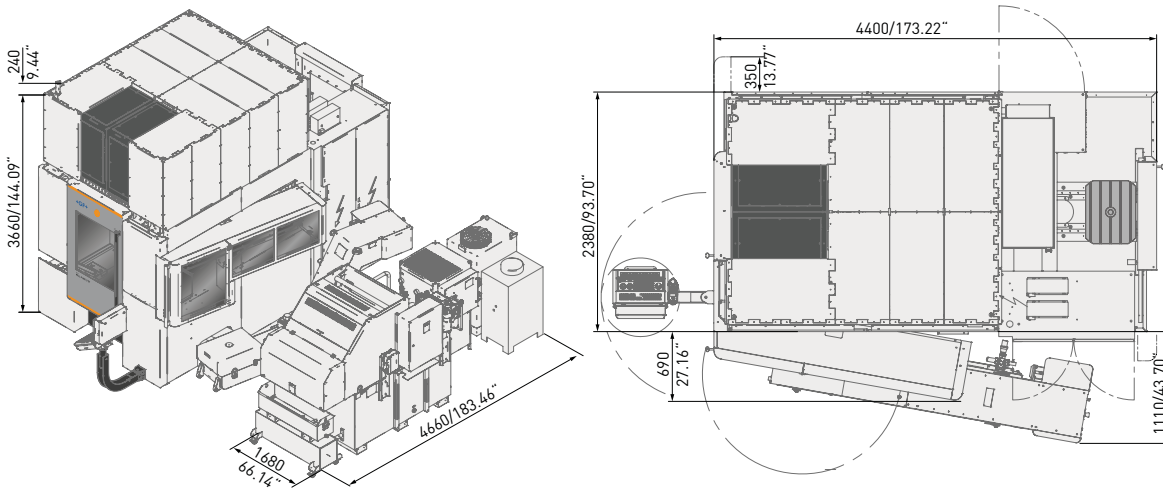
245 tools



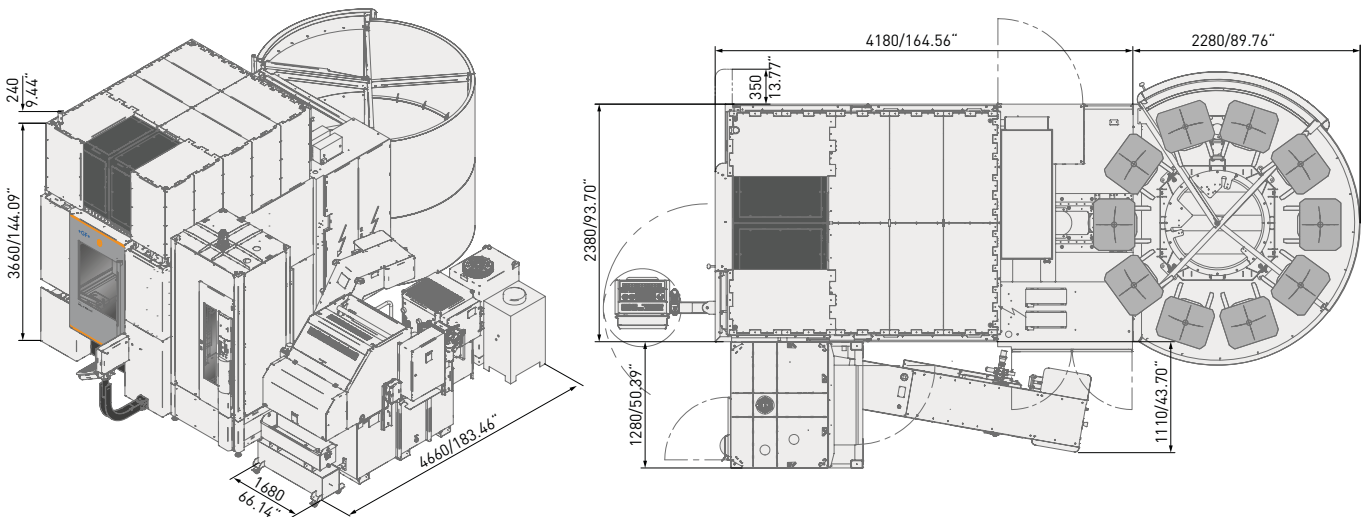
Mikron MILL P 800 U ST, 60 tools



Mikron MILL P 800 U ST, 60 tools, 2 pallets



Mikron MILL P 800 U ST, 120–215 tools, pallet magazine with 7–9 pallets



Customer Services

New digital service possibilities

GF Machining Solutions Customer Services continues to push technological boundaries to deliver the future of services to you—today.



rConnect is the digital services platform available for all GF Machining Solutions technologies. Following a modular approach, rConnect comprises a range of services that empower you to increase your manufacturing productivity. Certified with the TÜViT Trusted Product Certificate.

rConnect Messenger, we deliver machine data to your mobile device to keep you constantly informed about your production. You can supervise your workshop from your smartphone.

rConnect Live Remote Assistance (LRA), our expert engineers rapidly respond to your service requests. LRA allows effective face-to-face assistance using audio, video, chat and many more functionalities.



About GF Machining Solutions

Multi-technology solutions provider

Our commitment to you and your specific applications is proven by the value-adding intelligence, productivity and quality delivered by our multi-technology solutions. Your success is our chief motivator. That's why we are continuously advancing our legendary technical expertise. Wherever you are, whatever your market segment and whatever the size of your operation, we have the complete solutions and the customer-centric commitment to accelerate your success—today.

EDM (electrical discharge machining)



Wire-cutting EDM

GF Machining Solutions' wire-cutting EDM is fast, precise and increasingly energy efficient. From ultraprecise machining of miniaturized components down to 0.02 mm to powerful solutions for demanding high-speed machining with respect to surface accuracy, our wire EDM solutions position you for success.

Die-sinking EDM

GF Machining Solutions is revolutionizing die-sinking EDM with features like iGAP technology to dramatically boost machining speed and reduce electrode wear. All of our die-sinking systems offer fast removal and deliver mirror finishes of Ra 0.1 µm (4 µin).

Hole-drilling EDM

GF Machining Solutions' robust hole-drilling EDM solutions enable you to drill holes in electrically conductive materials at a very high speed—and, with a five-axis configuration, at any angle on a workpiece with an inclined surface.

Tooling and Automation



Tooling

Our customers experience complete autonomy while maintaining extreme accuracy, thanks to our highly accurate System 3R reference systems for holding and positioning electrodes and work pieces. All types of machines can easily be linked, which reduces set-up times and enables a seamless transfer of workpieces between different operations.

Automation

Together with System 3R, we also provide scalable and cost-effective Automation solutions for simple, single machine cells or complex, multi-process cells, tailored to your needs.

Milling



Milling

Precision tool and mold manufacturers enjoy a competitive edge with our Mikron MILL S solutions' fast and precise machining. The Mikron MILL P machines achieve above-average productivity thanks to their high performance and Automation. Customers seeking fastest return on investment benefit from the affordable efficiency of our MILL E solutions.

High Performance Airfoil Machining

Our Liechti turnkey solutions enable the highly dynamic manufacturing of precision airfoils. Thanks to their unique performance and our expertise in airfoil machining, you increase productivity by producing at the lowest cost per part.

Spindles

As part of GF Machining Solutions, Step-Tec is engaged in the very first stage of each machining center development project. Compact design combined with excellent thermal and geometric repeatability ensure the perfect integration of this core component into the machine tool.

Software



Digitalization solutions

To drive its digital transformation, GF Machining Solutions acquired symmedia GmbH, a company specialized in software for machine connectivity. Together, we offer a complete range of Industry 4.0 solutions across all industries. The future requires the ability to adapt quickly to continual digital processes. Our intelligent manufacturing offers embedded expertise, optimized production processes, and workshop Automation: solutions for smart and connected machines.

Advanced manufacturing



Laser texturing

Aesthetic and functional texturing is easy and infinitely repeatable with our digitized Laser technology. Even complex 3D geometries, including precision parts, are textured, engraved, microstructured, marked and labeled.

Laser micromachining

GF Machining Solutions offers the industry's most complete line of Laser micromachining platforms optimized for small, high-precision features to meet the increasing need for smaller, smarter parts to support today's leading-edge products.

Laser Additive Manufacturing (AM)

GF Machining Solutions and 3D Systems, a leading global provider of additive manufacturing solutions and the pioneer of 3D printing, have partnered to introduce new metal 3D printing solutions that enable manufacturers to produce complex metal parts more efficiently.

Customer Services



Worldwide for you

Ensuring the best performance throughout the lifetime of our customers' equipment is the goal of our three levels of support. Operations Support offers the complete range of original wear parts and certified consumables. Machine Support includes spare parts, technical support, and a range of preventive services to maximize machine uptime. Business Support offers customer-specific business solutions.



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We enable our customers to run their businesses efficiently and effectively by offering innovative Milling, EDM, Laser, Additive Manufacturing, Spindle, Tooling and Automation solutions. A comprehensive package of Customer Services completes our proposition.

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