Mikron

MILL P

900
GFMachiningSolutions

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 service 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.
The vertical, three-axis Mikron MILL P 900 is designed in a robust, portal structure with high static stiffness. It guarantees high quality parts for mold-makers in information and communications technology (ICT), automotive, home appliances and consumer goods, with the benefit of real roughing and finishing performance on the same machine.
Market segments and applications

Typical 3-Axis applications

- **Electronic components**
- **Information and communications technology (ICT)**
- **Packaging**
- **Automotive**
- **Home appliances**
- **General machinery**
Dynamic and stable
Technology

High-performance Milling triggers your success

+ Best surface finish
+ Accuracy
+ High chip removal
+ Outstanding efficiency
Solutions

The right solution— for you

- Performant, stable and precise process thanks to a symmetrical portal architecture allowing roughing and finishing in one machine setup.
- Integrated Automation and chip management to accelerate your productivity and efficiency.
- Best surface quality and high positioning and contour accuracy, thanks to this high-performance machine’s polymer concrete base, thermal management and direct measuring on all axes.

+ Polymer concrete machine base for best damping characteristics
+ Thermostabilized machine body
+ Renowned and stable Heidenhain and Fanuc control
+ High-performance Spindle
+ Ergonomic accessibility
+ Easy to automate
Robust and precise

**MILL P 900**
core components

**Robust construction**
With its robust portal structure featuring high dynamic stiffness, this solution is especially designed for mold and die and part producers looking for best surface quality and very high positioning and contour accuracy.

**Power at your fingertip**
Experience the power of real roughing and finishing performance on a single machine. This machine range’s one-touch process puts them both at your fingertip.
Stable accuracy

Experience the high precision that comes from long-term stability and robustness—even in hard Milling. This machine’s symmetrical portal design, polymer concrete structure and high thermostability are your foundation for precision.

- Thermostabilized body
- Cooling system for Spindle
- Thermal-controlled drive motors
- Temperature-controlled coolant
- Cooling loop inside table

Fifty-year legacy of machine design expertise
smart machine

The new dimension in modern production

This includes a range of modules that are collectively referred to under the generic term “smart machine” and that fulfill various functions. In order to make the Milling process “intelligent,” various requirements have to be implemented.

1 Establishing comprehensive communication between man and machine, which makes available precise information that the operator requires to assess the Milling process.
2 Supporting the operator in the optimization of the process, which considerably improves the performance.
3 The machine optimizing 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 seem to him to be the best option for improving 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
High-tech motor Spindles

Best surface finish for both roughing and finishing

The high-performance Spindles from Step-Tec are designed to do heavy roughing and Milling to best surface finish all in one. With a bearing design with three preloaded hybrid ball bearings in the front and a thermally robust hybrid cylindrical roller bearing on the back, you are guaranteed a super-rigid rotating system that enables Milling with extra-long tools reaching into deep cavities. Ramp up your chip removal, thanks the feed rates made possible by this solution’s absorption of high Milling forces at the tool tip.

Incorporated into the HPC190 line is the well-proven OptiCool principle that keeps the front bearing area cool while the extra heat barrier cooling loop keeps the motor heat away from the Spindle nose. That results in a thermally balanced Spindle thus assuring a high level of precision, repeatability and surface finish.

The 36,000 rpm HVC150 Spindle is the optimum solution for mold and die machining. It reaches a superb surface finish thanks to its great axial stability. Due to the specially chosen bearing arrangement with two hybrid ball bearings in the rear instead of the common roller bearing system, this Spindle stands out with very low dynamic axial growth. This precision bearing arrangement offers the best in repeatability for machining operations.
Space for performance
Tool magazines

Choice of solutions to meet your needs

**Tool magazine for every need**
- Disc-type or chain magazine
- Capacity of up to 60 tools with a magazine internal to the machine’s standard footprint
- Touch probe orientation

**Ergonomic and user friendly**
- Ensure productivity and process reliability
- Parallel machining and tool loading
- Easy tool loading possibilities thanks to an ergonomic tool loading door

60 tools

30 tools
Chip management

Wet or dry – clean machining

Customer benefits
- Optimum chip flow to steep and smooth cabin walls
- Wash-down nozzles for all corners to prevent chip accumulation
- Large and strong chip augers to transport high volume of chips

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
Automation with pallet magazine

Lower your costs, increase productivity with Automation

Take your productivity to new levels while reducing your costs with our superior Automation solution. The Pallet Magazine generously dimensioned door allows optimum pallet access for loading light parts by hand and heavy parts by crane. Larger windows allow a good view into the pallet area, and pallets are managed by using the machine control.

Configuration as System 3R

<table>
<thead>
<tr>
<th>Pallet Automation</th>
<th>5 Delphin 400 x 400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pallet changing time</td>
<td>30 s</td>
</tr>
<tr>
<td>Max. payload</td>
<td>200 kg</td>
</tr>
</tbody>
</table>

Ergonomic door design for easy loading of parts up to 200 kg
Automation from the back, full access on the front
We take you to new heights

Guiding your ascent

Whether it is Milling, EDM, Laser Texturing or Additive Manufacturing, our Service + Success experts guide you throughout the entire lifecycle of our Machining and Automation tools in order to help you reach your peak performance. Our trusted experts backed by our latest cutting-edge, intelligent Digital Solutions, provide a full range of services.

Advanced diagnosis
Machine check-up, preventive maintenance and advanced services including original spare parts availability in all our hubs around the world

Certification
State-of-the-art reference by industry sector and on machining equipment

Upgrades
Designed to add value to the original machine investment in order to achieve higher sustainable productivity

Training
Performance oriented academy with a human-centric approach of knowledge transfer in order to realize the full potential of our solutions

Transformation
Strategic partnership from made-to-measure advice on business model evolution to industrial implementation

Operational steering
Hands-on and operational service interventions with supply of consumables and wear parts

Financial solutions
For the optimization of operating costs featuring minimal initial expenditure programs and leasing options
Our Success Packs

As a long-time partner, since 1802 we have been serving various industrial segments and have been dedicated to providing you with a first-in-class combination of services.

We have conceived our new Success Packs range for maximizing your return on investment, empowering you in your quest for success whatever your industrial profile.

Silver
Secure your future

Silver
Set the foundation for growth

Bronze+
Achieve flawless production

Bronze
Get back on track fast
Options

Multiple options to drive your success

Infrared touch probe
Laser measuring system
Through-Spindle cooling

External coolant supply
Wash-down system
Band filter system

Rotary viewing window
Machine and Spindle Protection (MSP)
smart machine

Fanuc or Heidenhain control
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 provides a digital services platform for all GF Machining Solutions technologies. This modular system includes a range of services – all backed by TÜViT-certified cybersecurity – to increase your manufacturing productivity.

rConnect Messenger lets you track production status with machine data updates on your mobile device. Monitor your entire shop and maximize your productivity from anywhere in the world, right on your smartphone.

rConnect Live Remote Assistance (LRA) enables our expert engineers to help you maximize machine uptime with quick responses to your service requests through audio, video chat and more.
## Technical data

### MILL P 900

<table>
<thead>
<tr>
<th>Axis travel</th>
<th>mm (in)</th>
<th>900 (35.43)</th>
<th>600 (23.62)</th>
<th>450 (17.71)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longitudinal X</td>
<td>m/min (ipm)</td>
<td>30 (1,181)</td>
<td>30 (1,181)</td>
<td>30 (1,181)</td>
</tr>
<tr>
<td>Lateral Y</td>
<td>kW / Nm</td>
<td>36 / 120</td>
<td>33 / 21.3</td>
<td></td>
</tr>
<tr>
<td>Vertical Z</td>
<td>mm (in)</td>
<td>400 x 400 (15.75 x 15.75)</td>
<td>1,000 (2,204)</td>
<td></td>
</tr>
</tbody>
</table>

### Tool Spindle (40% ED, S6)

<table>
<thead>
<tr>
<th>Tool Spindle</th>
<th>kW / Nm</th>
<th>20,000 min⁻¹, HSK-A63 S6</th>
<th>36 / 120</th>
</tr>
</thead>
<tbody>
<tr>
<td>36,000 min⁻¹, HSK-E50 S6</td>
<td>33 / 21.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Work table

<table>
<thead>
<tr>
<th>Work table</th>
<th>mm (in)</th>
<th>Chuck Delphin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pallet/clamping surface</td>
<td>400 x 400 (15.75 x 15.75)</td>
<td></td>
</tr>
<tr>
<td>Max. table load</td>
<td>1,000 (2,204)</td>
<td></td>
</tr>
</tbody>
</table>

### Tool magazine

<table>
<thead>
<tr>
<th>Tool magazine</th>
<th>kg (lbs)</th>
<th>DT 30 / CT 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSK-A63 tool holder</td>
<td>DT 30 / CT 60</td>
<td></td>
</tr>
<tr>
<td>HSK-E50 tool holder</td>
<td>DT 30 / CT 60</td>
<td></td>
</tr>
</tbody>
</table>

### Automation

<table>
<thead>
<tr>
<th>Automation</th>
<th>mm / piece (in / piece)</th>
<th>Delphin 400 x 400 / 5 (Delphin 15.75 x 15.75 / 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pallet size / Number</td>
<td>200 (441)</td>
<td></td>
</tr>
<tr>
<td>Maximum additional load</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Weight

<table>
<thead>
<tr>
<th>Weight</th>
<th>kg (lbs)</th>
<th>12,000 (26,455) with CT60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine</td>
<td>1,455 (3,207)</td>
<td></td>
</tr>
<tr>
<td>Pallet changer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Control

<table>
<thead>
<tr>
<th>Control</th>
<th>TNC 640</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heidenhain</td>
<td>Fanuc 31i-B</td>
</tr>
<tr>
<td>Fanuc</td>
<td></td>
</tr>
</tbody>
</table>

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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.
At a glance

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 services completes our proposition.

www.gfms.com