

## System 3R

# WorkPartner 1+



### **GF Machining Solutions: all about you**

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 world-class electrical discharge machines (EDM), Laser texturing and Additive Manufacturing through to first-class Milling and Spindles, Tooling, Automation and software systems – all backed by unrivalled customer service and support – we, through our AgieCharmilles, Microlution, Mikron Mill, Liechti, Step-Tec and System 3R technologies, help you raise your game and increase your competitive edge.

# Swedish design and quality

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Automation



## Partnering your production

- Can serve one or two machines in a production cell.
- One or two magazine capability gives exceptionally flexible capacity.
- Large doors facilitate loading of workpieces and tools into the magazines.
- Integrated pneumatic control of gripping devices and table chucks.
- Minimal floor space requirements.

**Achieve greater return on your investment!**

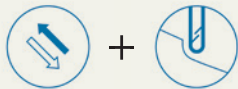
Customer-specific Solutions

# Modularly adapted to your needs



## Milling application

WorkPartner 1 + (LR Version)  
Large magazine capacity  
Two types of tooling  
Heavy loading station



Automation

Milling



## Wire-cutting EDM (wireEDM) application

WorkPartner 1 + (LH Version)  
Heavy loading station

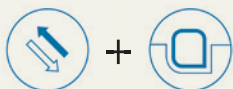


Automation

Wire cutting

## EDM application

WorkPartner 1 + (LH Version)  
Heavy loading station  
Drain station



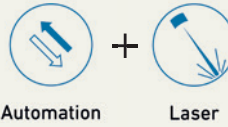
Automation

Die sinking





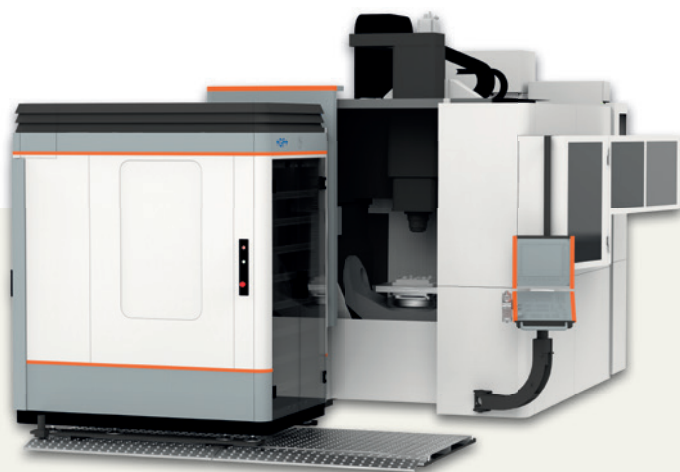
**Laser application**  
WorkPartner 1+ (LL Version)



**Mixed technologies EDM & Milling**  
WorkPartner 1+ (LH Version)  
Large magazine capacity  
Two types of tooling  
Heavy loading station  
Drain station



Automation + Milling + Die sinking



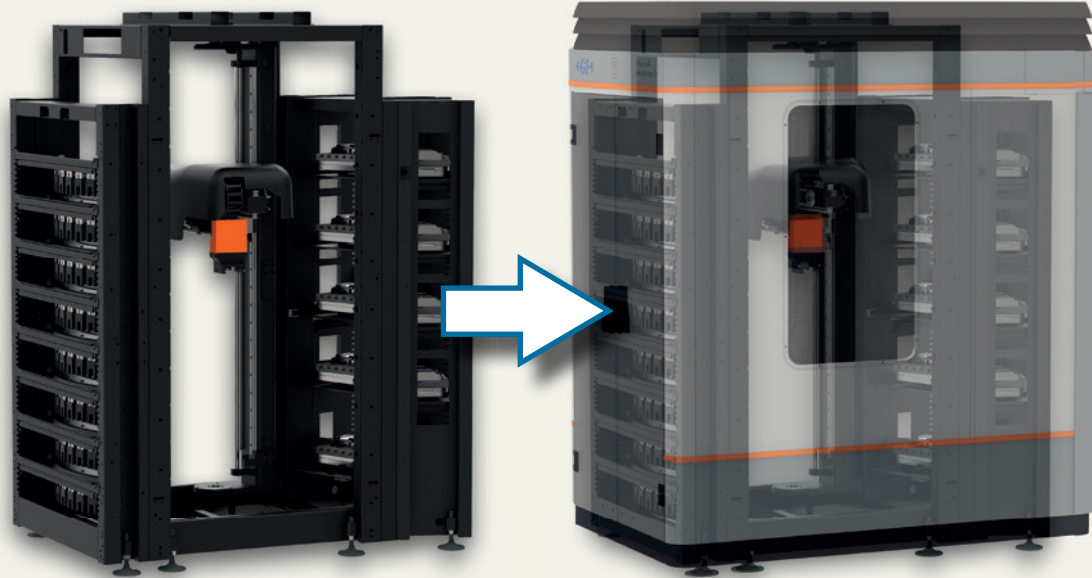
**Rail application for front loaded milling machines**  
WorkPartner 1+ (LH Version)  
Heavy loading station



Automation + Milling

Standardized modules

# 8 modular models!

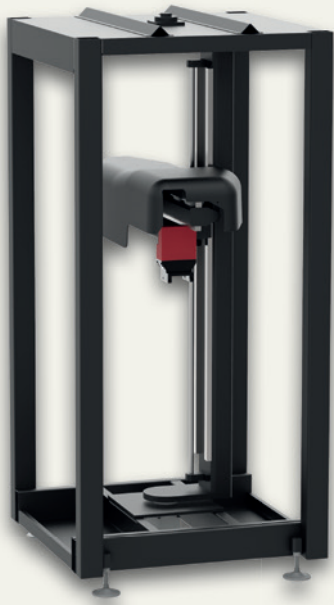


WorkPartner 1+ offers maximum magazine capacity in minimum floor space. Unlike many other solutions on the market, there is no risk of “painting yourself into a corner”. Our modular magazines give an unprecedented flexibility that can be adapted to each user’s needs. If you start with a single magazine, one more can be added whenever required.

WorkPartner 1+ is equally ideal for milling machines, die-sinking, wire EDM machines, laser machines and grinding machines. Similarly, it is equally efficient whether used in one-off or series production.

With generous magazine doors that facilitate loading/unloading, WorkPartner 1+ is extremely user friendly. Other advantages include rapid change cycles, integrated pneumatic control of gripping devices and table chucks and minimal floor space requirements.

## Modular components



**Manipulator unit**



**Light magazine**



**Heavy magazine**



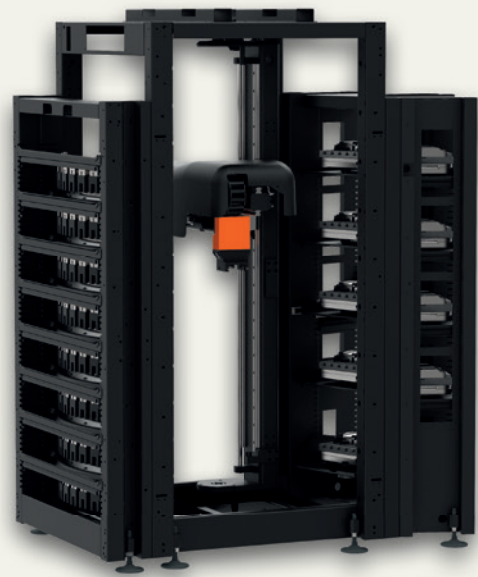
**Rotary magazine**



**WorkPartner 1 +**

With two magazines (LL version):

- + Two light magazines (in this case 16 levels and 10 pallets/level. Total 160 Macro 54 pallets)



**WorkPartner 1 +**

With two magazines (LH version):

- + One light magazine (in this case 8 levels and 10 pallets/level. Total 80 Macro 54 pallets)
- + One heavy magazine (in this case 5 levels and 2 pallets/level. Total 10 Dynafix 350 pallets).



**WorkPartner 1 +**

With two magazines (LR version):

- + One light magazine (in this case 8 levels and 10 pallets/level. Total 80 Macro 54 pallets)
- + One rotary magazine (in this case 5 levels and 4 pallets/level. Total 20 Dynafix 350 pallets).



**WorkPartner 1 +**

With one magazine (L Version):

- + One light magazine (in this case 8 levels and 10 pallets/level. Total 80 Macro 54 pallets)





**WorkPartner 1 +**

With two magazines (HR version):

- + One heavy magazine (in this case 5 levels and 2 pallets/level. Total 10 Dynafix 350 pallets)
- + One Rotary magazine (in this case 5 levels and 36 pallets/level. Total 180 Macro 54 pallets).



**WorkPartner 1 +**

With one magazine (H version):

- + One heavy magazine (in this case 5 levels and 2 pallets/level. Total 10 Dynafix 350 pallets)



**WorkPartner 1 +**

With two magazines (HH version):

- + Two heavy magazines (in this case 10 levels and 2 pallets/level. Total 20 Dynafix 350 pallets)

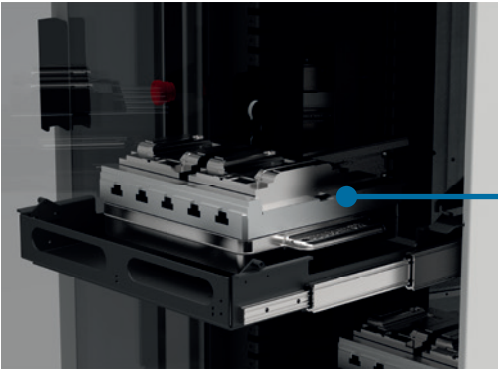


**WorkPartner 1 +**

With one magazine (R version):

- + One rotary magazine (in this case 5 levels and 4 pallets/level. Total 20 Dynafix 350 pallets)

# Options



## Loading door

With one sliding shelf as a loading station.



- + Doors for loading and unloading
- + Security glass door, 10 mm



## Cell PC

WorkPartner 1+ equipped with Cell PC.



## Drain station

For emptying fluids from workpieces.

## Technical specifications – general

### WorkPartner 1+



#### Foot print

One light magazine	A = 1310, B = 1800, C = 2460 mm (A = 52, B = 71, C = 97 in)
One heavy magazine	A = 1310, B = 2060, C = 2460 mm (A = 52, B = 81, C = 97 in)
One rotary magazine	A = 1310, B = 2638, C = 2460 mm (A = 52, B = 104, C = 97 in)
Two light magazines	A = 1310, B = 1800, C = 2460 mm (A = 52, B = 71, C = 97 in)
Two heavy magazines	A = 1310, B = 2480, C = 2460 mm (A = 52, B = 97.5, C = 97 in)
One light magazine & one heavy magazine	A = 1310, B = 2060, C = 2460 mm (A = 52, B = 81, C = 97 in)
One light magazine & one rotary magazine	A = 1310, B = 2638, C = 2460 mm (A = 52, B = 104, C = 97 in)
One heavy magazine & one rotary magazine	A = 1310, B = 3060, C = 2460 mm (A = 52, B = 120, C = 97 in)

#### Specifications

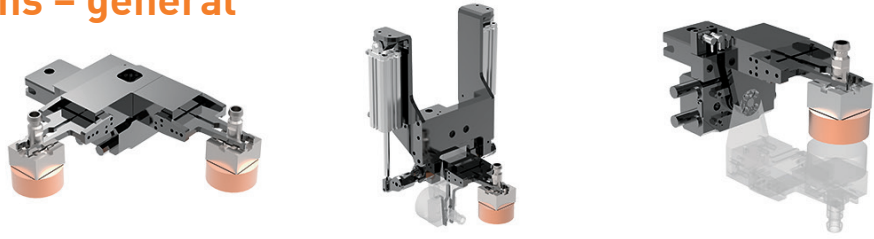
Transfer weight	80 kg. (pallet with workpiece) 177.8 lbs (pallet with workpiece)
Max. X-reach	1244 mm (two magazine versions), 49 in (two magazine versions)
Max. Z-reach	1500 mm 59 in
Max. C-rotation	330°
Required air pressure	6 ± 1 bar, 150 litres/minute
Required power supply	Single-phase, 180-240 V AC, 14 A at 180 V AC, 20 A at 230 V AC.
Interface	RS-232, 24V I/O, (Various) Industrial Field Buses
Double emergency stop	

#### Options and accessories

Loading station	
Draining station	
ID-system with or without automatic scanning	
Internal magazine lighting (LED)	
Cell PC with WSM software	
Customer chosen color for outer casings	
Manual rail	

# Technical specifications – general

## WorkPartner 1+



**Optional grippers**

Double

Tilting

Turning



**Option**

Manual rail – slide away WorkPartner 1+ for manual operation of front-loaded machines

**Magazine capacity**

There are three types of magazine, light (L), heavy (H) and rotary (R).  
Up to two magazines can be connected to the changer unit.

One magazine: L, H or R.

Two magazines: L + L, H + H, L + H, H + R or L + R.

Note: Each individual magazine is intended for one and the same pallet system.

The magazine capacity is determined entirely by the shape and size of the workpieces. The tables below show only “guideline values” for each pallet system carrying workpieces of a “standard” size and shape.

Pallet systems in the LIGHT magazine	No of levels	No of pallets/level	Total
Macro 54/70	8	10	80
Macro PT (70x70)	8	10	80
Macro 116	8	6	48
Macro Chip Guard	8	6	48
Matrix 110	8	6	48
Matrix 142	5	5	25
MacroMagnum 156	5	5	25
GPS 70	8	10	80
GPS 120	8	6	48
ITS50	8	10	80
ITS72	8	9	72
ITS115	8	6	48
ITS148	5	5	25

Pallet systems in the HEAVY magazine	No of levels	No of pallets/level	Total
MacroMagnum 156	5	4	20
Matrix 110	5	4	20
Matrix 142	5	4	20
GPS 240	5	2	10
Dynafix 280/350	5	2	10
ITS148	5	4	20
UPC Fork/RCS	5	2	10

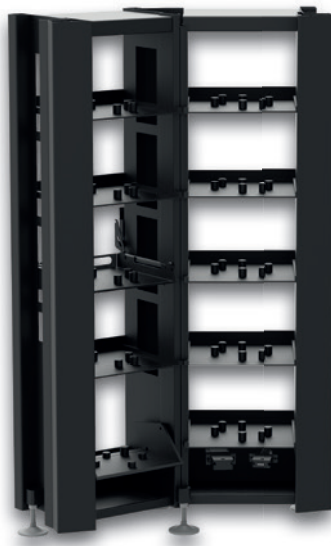
Note: When carrying out wire EDM with Macro, MacroTwin or Unimatic, solutions are customer specific – the number of positions per rack is entirely determined by the nature of the devices securing the workpiece and not by the pallet system.

Pallet systems in the ROTARY magazine	No of levels	No of pallets/level	Total
Macro 54	7	36	252
Macro 70	7	30	210
Macro 116	5	12	60
Matrix 110	5	12	60
Matrix 142	5	12	60
MacroMagnum 156	5	12	60
GPS 70	7	20	140
GPS 120	5	12	60
GPS 240	5	6	30
Dynafix 280	5	5	25
ITS50	7	36	252
ITS148	5	12	60
UPC Fork/RCS	5	4	20

Note: When carrying out wire EDM with Macro, MacroTwin or Unimatic, solutions are customer specific – the number of positions per rack is entirely determined by the nature of the devices securing the workpiece and not by the pallet system.



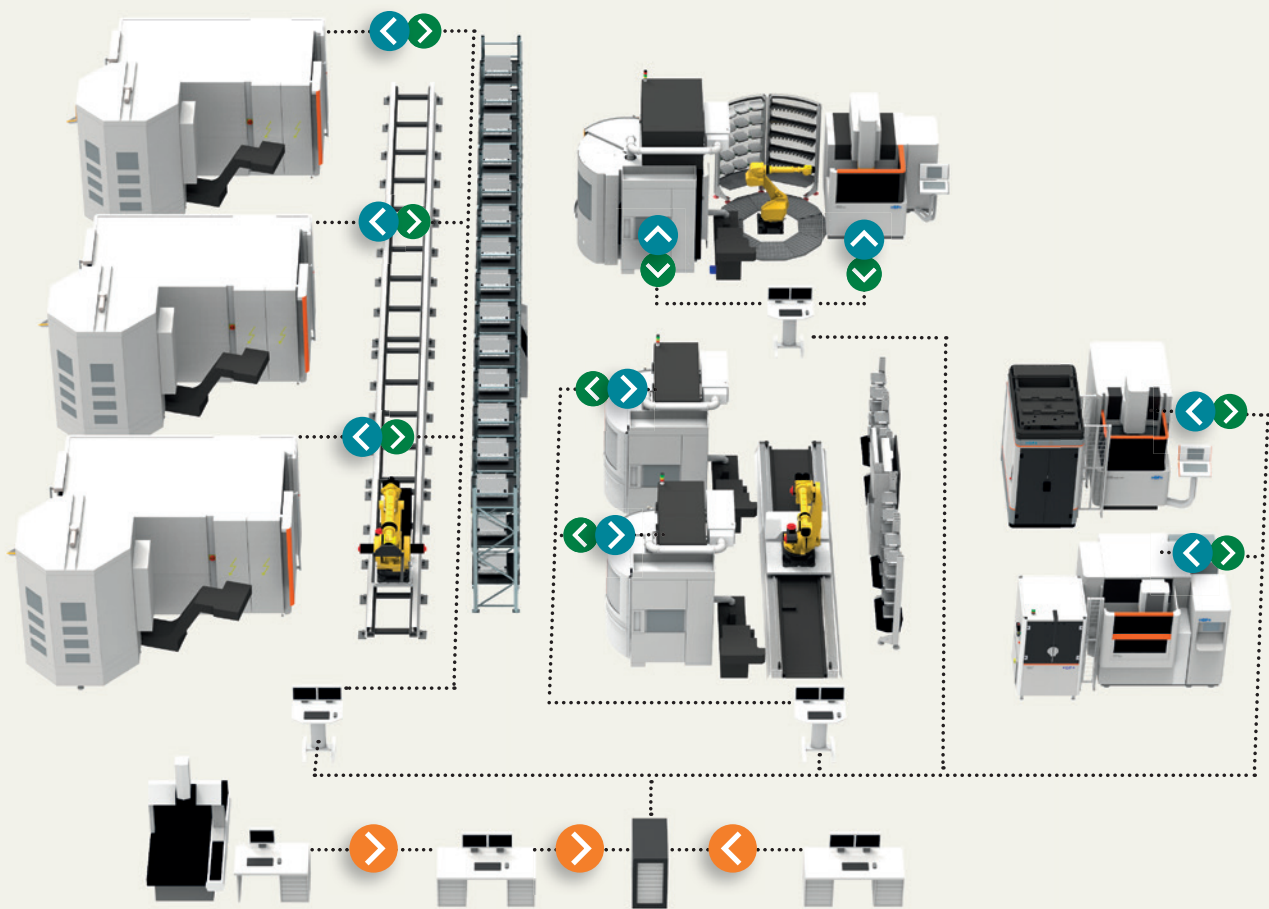
**Light magazine**



**Heavy magazine**



**Rotary magazine**



WSM – WorkShopManager

# User-friendly Cell Management Software

- Necessary data is entered quickly and in a structured manner.
- Quick, precise overview of the entire process chain.
- Increased flexibility: the order of priority can be changed at any time.
- Simpler, safer preparation of automated cells.
- The risk of errors due to the human factor is minimized.
- Increased process security.



## Preparation – WorkCenter

- Create an order
- Assign operations and NC programs
- Retrieve offset values
- Release the order for production

## Monitoring – CellMonitor

- Display status of all cells
- Display status of individual machines and processes

## Execution – CellManager

- Manage the pallet ID codes and magazine positions
- Create priority lists
- Automatically start available jobs in the order of the priority list
- Update the information in the database with the status and machining times of individual orders

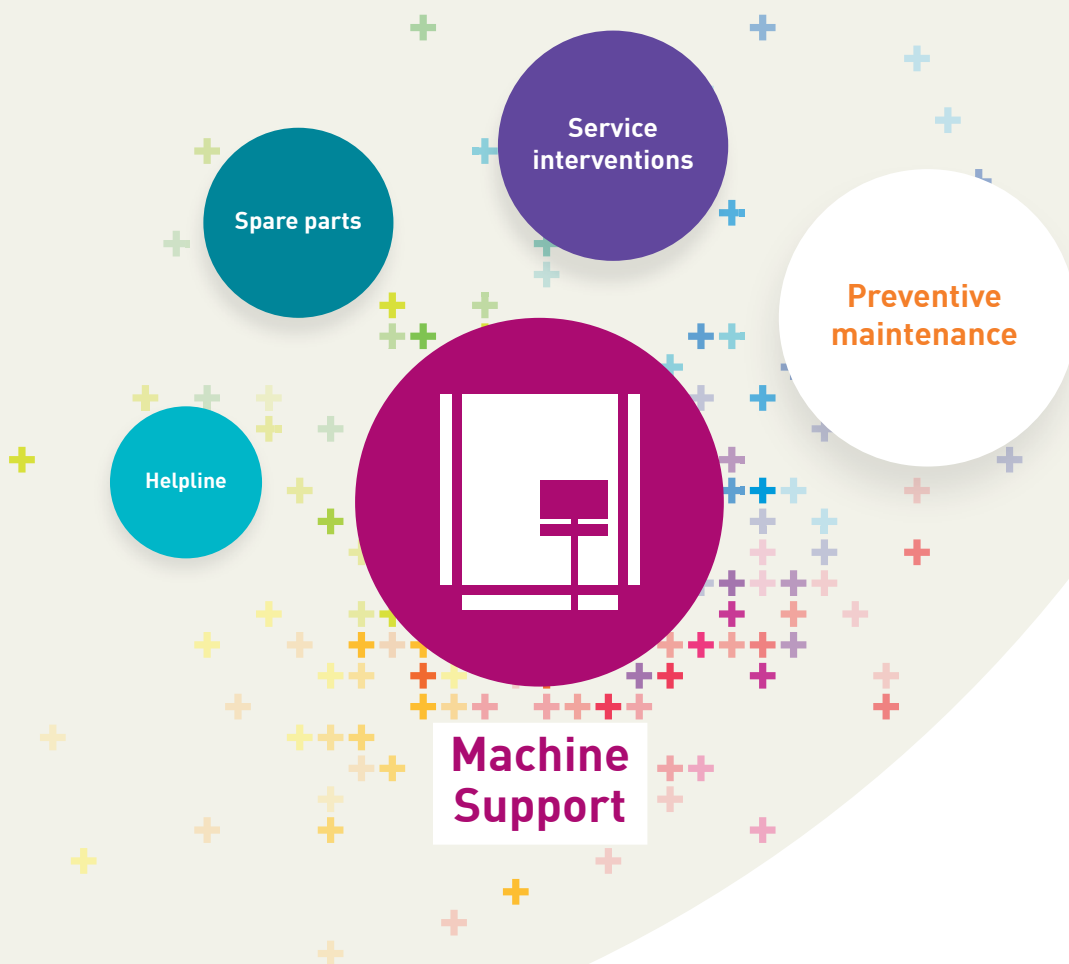
## Statistics – WSM Statistics

- Retrieve and analyze cell utilization data
- Retrieve and analyze order data

Customer Services

# Optimize the uptime of your equipment with our Machine Support services

Annual reconditioning minimizes production stops and optimizes function, precision and performance. GF Machining Solutions offers comprehensive services for your Automation, reference systems and masters and calibration tools.



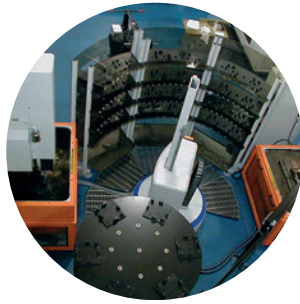


# Preventive maintenance

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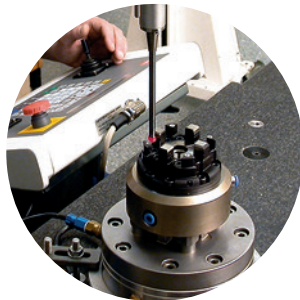
## Automation

- Mechanics
- Pneumatics
- Peripheral equipment



## Reference systems

- Rebuilding chucks
- Inspecting references
- Checking clamping force



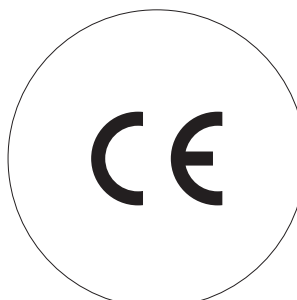
## Masters and calibration tools

- Cleaning and polishing
- CMM inspection
- Quality certificate



## CE Certification

GF Machining Solutions' Customer Services also offers CE Certification of Conformity for complete Automation cells.



# GF Machining Solutions



## Milling

**High-Speed and High-Performance Milling Centers.** In terms of cutting speed, HSM centers are 10 times faster than conventional milling machines. Greater accuracy and a better surface finish are also achieved. This means that even tempered materials can be machined to a condition where they are largely ready to use. One essential advantage of HSM is that with systematic integration, the process chain can be significantly shortened. HSM has developed alongside EDM into one of the key technologies in mold and tool making.



## EDM

**Electric Discharge Machines.** EDM can be used to machine conductive materials of any hardness (for example steel or titanium) to an accuracy of up to one-thousandth of a millimeter with no mechanical action. By virtue of these properties, EDM is one of the key technologies in mold and tool making. There are two distinct processes — wire-cutting EDM and die-sinking EDM.



## Laser

**Laser texturing.** Laser texturing supplements and extends the technologies offered by GF Machining Solutions. With our laser technology we enable you to produce texturing, engraving, microstructuring, marking and labeling of 2D geometries right through to complex 3D geometries. Laser texturing, compared to conventional surface treatment using manual etching processes, offers economic, ecological and design advantages.



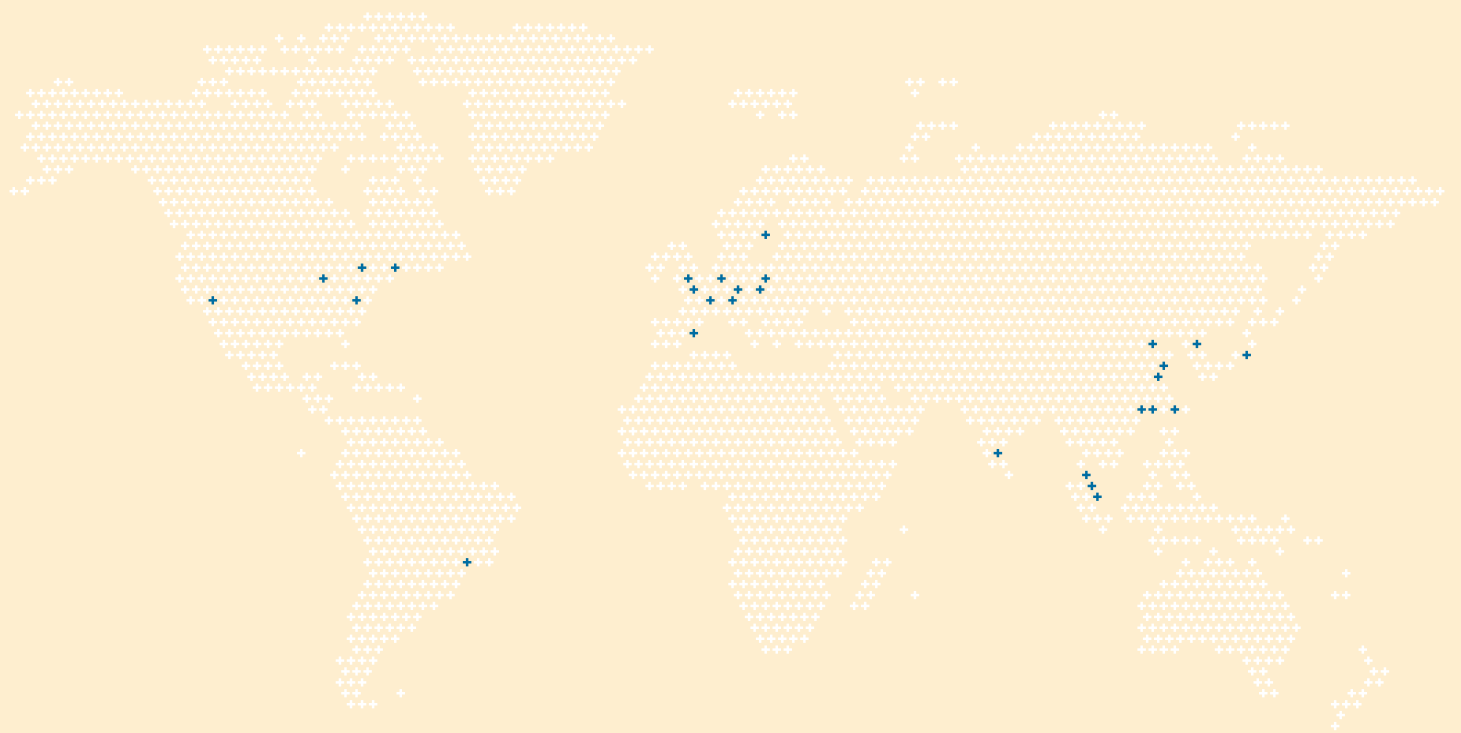
## Automation and Tooling

**Tooling, Automation, Software.** Tooling for fixing workpieces and tools; automation systems and system software for configuring machine tools and recording and exchanging data with the various system components and design advantages.



## Customer Services

**Operations, Machine and Business Support.** Customer Services provides with three levels of support all kind of services for GF Machining Solutions machines. Operations Support offers the complete range of original wear parts and certified consumables including wires, filters, electrodes, resin and many other materials. Machine Support contains all services connected with spare parts, technical support and preventive services. Business Support offers business solutions tailored to the customer's specific needs.



## Optimize the uptime of your equipment with our Customer Services

- + Ensuring productivity.
- + Reducing running costs and wasted parts.
- + Maximizing the return on your System 3R investments.
- + Extending the product lifetime of your System 3R equipment while maintaining optimum precision.
- + Ensuring robot cell safety satisfies present machine directives.

System 3R's Customer Services is uniquely positioned to help you maximize the availability, value, precision and productivity of your System 3R equipment. Our cost-effective, customer-centric and expert services put your success at the center, ramp up your productivity and ensure predictable, uninterrupted uptime. System 3R's service engineers are your expert partners for a wide range of success-triggering services.

For more info ask your local System 3R dealer.

For contact details, please refer to:  
[www.system3r.com](http://www.system3r.com).

