

System 3R

# Transformer





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## **Transform Your Business**

- Scalable Automation solutions for various types of machines from a multitude of machine tool manufacturers.
- Whatever the Automation requirement, the Transformer can be tailored to serve your needs: customer-specific solutions.
- Modern design and smart technical solutions using standardized modules allow for cost-effective yet flexible Automation.
- User-friendly cell management software: complex Automation made easy!
- Everything from your single source supplier: GF Machining Solutions

**Achieve greater return on your investment !**

Scalable Automation

# Grows with your needs



Begin with a single machine and small magazine capacity.

**Begin**

**Add**

Add a second machine and a rotary magazine for more capacity.



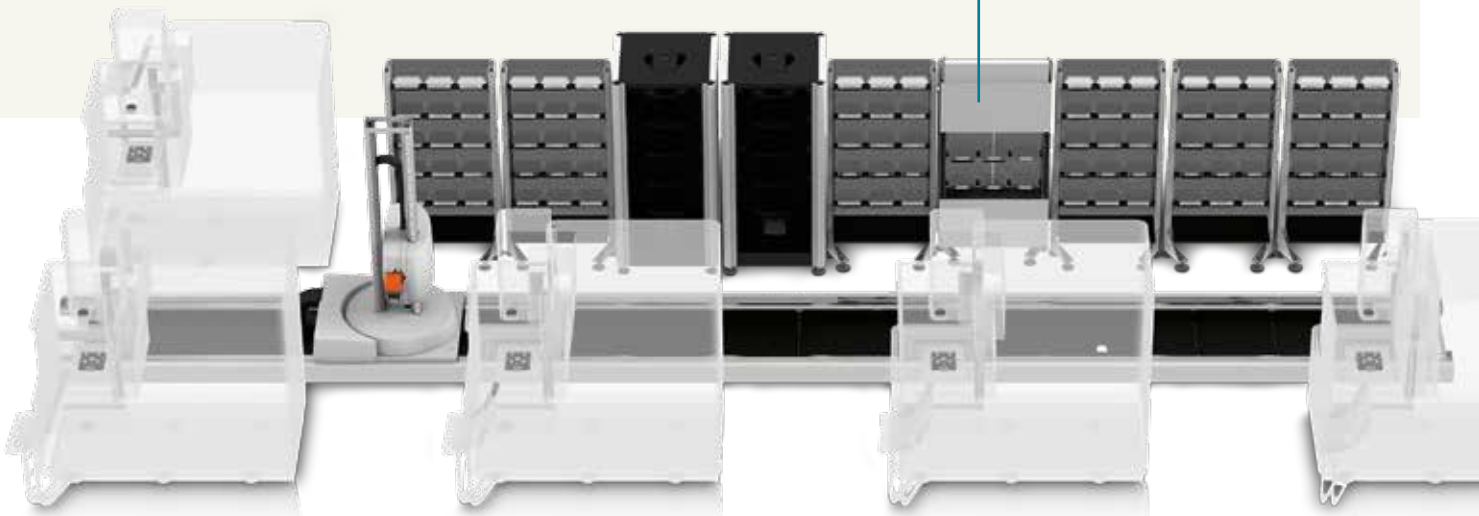


Place the Transformer on rails and add magazine capacity to serve additional machines, or start with a similar solution from the beginning.

# E X T E N D

## and Transform

Extend the rails for even more magazine capacity and machines.

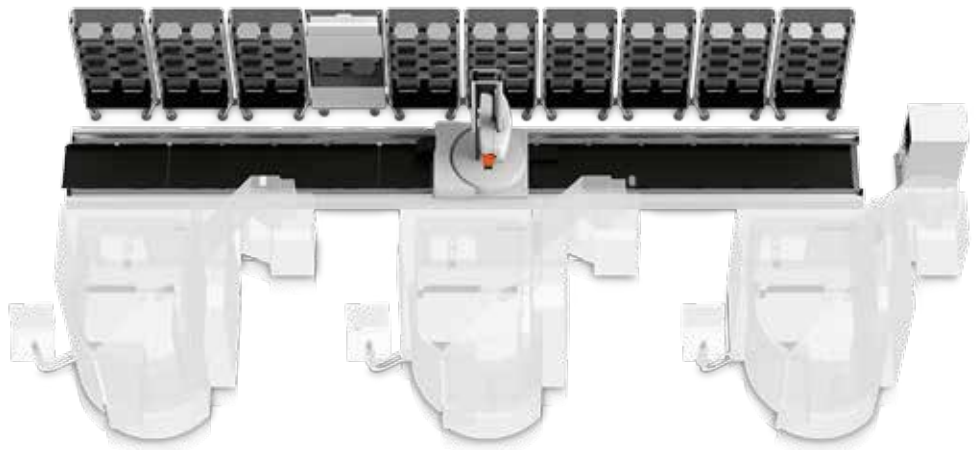


Customer-specific Solutions

# Tailored to serve your needs

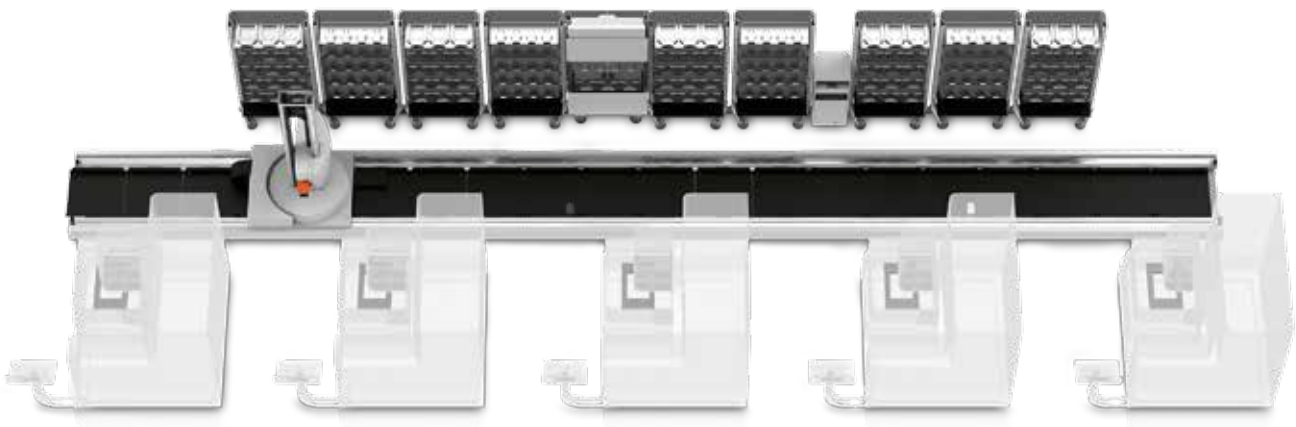
## Milling application

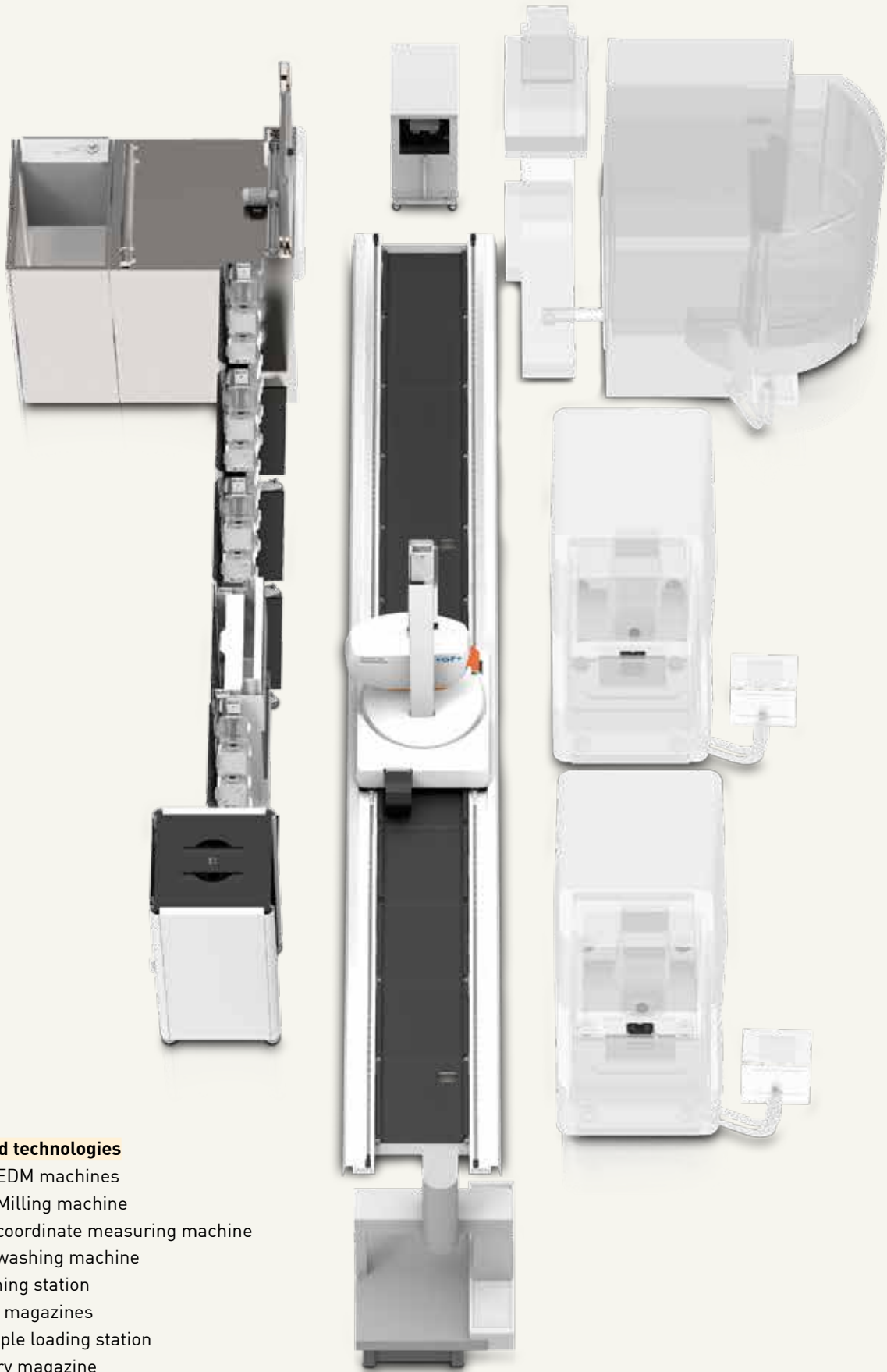
- Three Milling machines
- Rack magazines
- Multiple loading station
- Draining station



## Wire-cutting EDM (WEDM) application

- Five WEDM machines
- Rack magazines
- Loading station
- Drying station





**Mixed technologies**

- Two EDM machines
- One Milling machine
- One coordinate measuring machine
- One washing machine
- Draining station
- Rack magazines
- Multiple loading station
- Rotary magazine



Standardized modules

# For cost-effective solutions

**Rotary magazine**  
Large capacity in a small footprint

**Work preparation/  
loading station**  
One single station for reloading  
workpieces on pallets or used as  
a loading station



**Transformer unit**  
For 100/150/200 kg transfer weights

**Rack magazine**  
Full rack magazine or half  
rack magazine for electrodes  
or workpieces



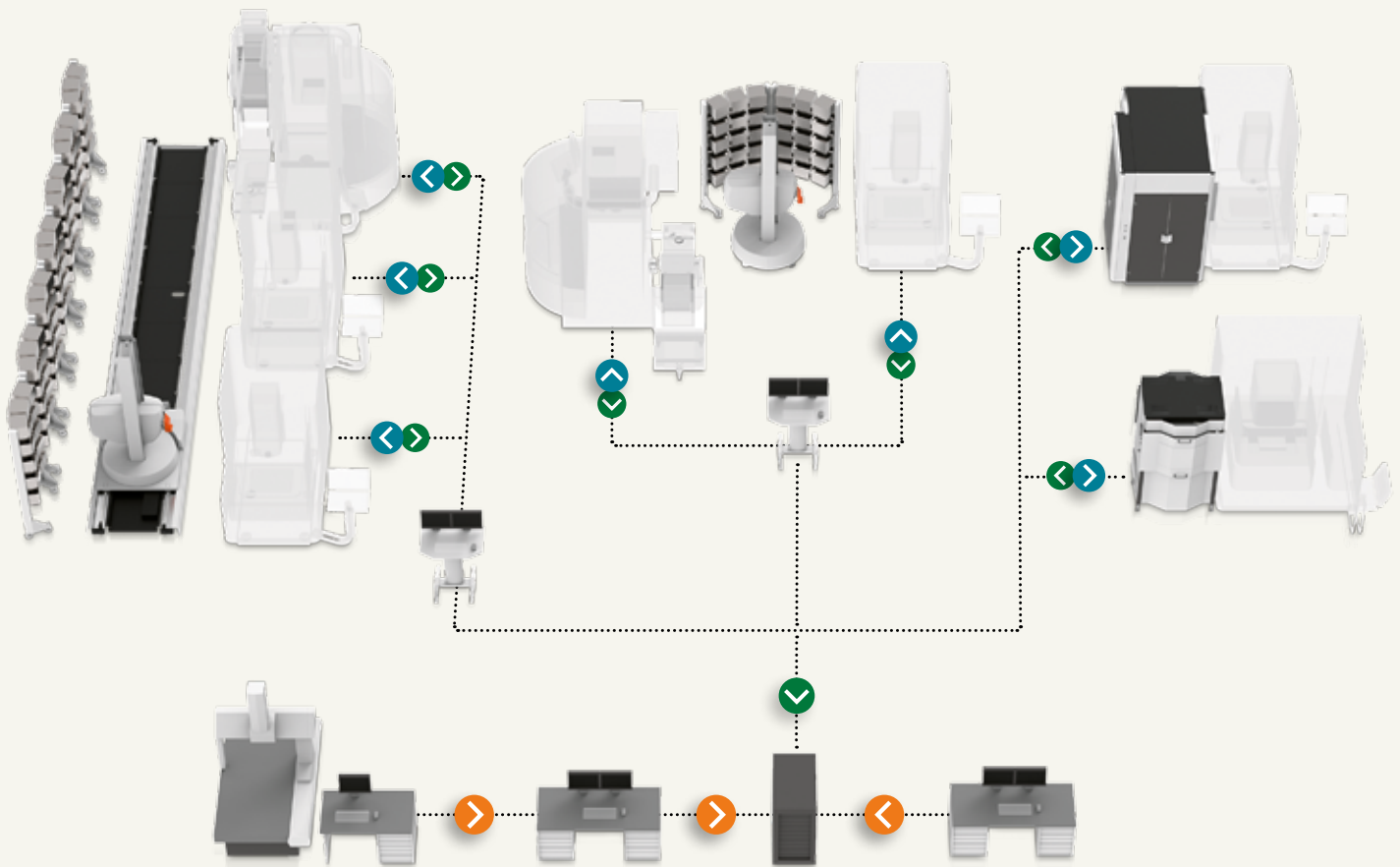


**Drying station**  
Blow off and dry workpieces  
with air

**Draining station**  
Empty dielectric/cutting fluid  
from workpiece cavities

**Multiple loading station**  
Load and unload parts without  
stopping the Automation cell

**Washing machine**  
Clean, rinse and dry the  
workpieces



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

**Statistics – WSM Statistics**

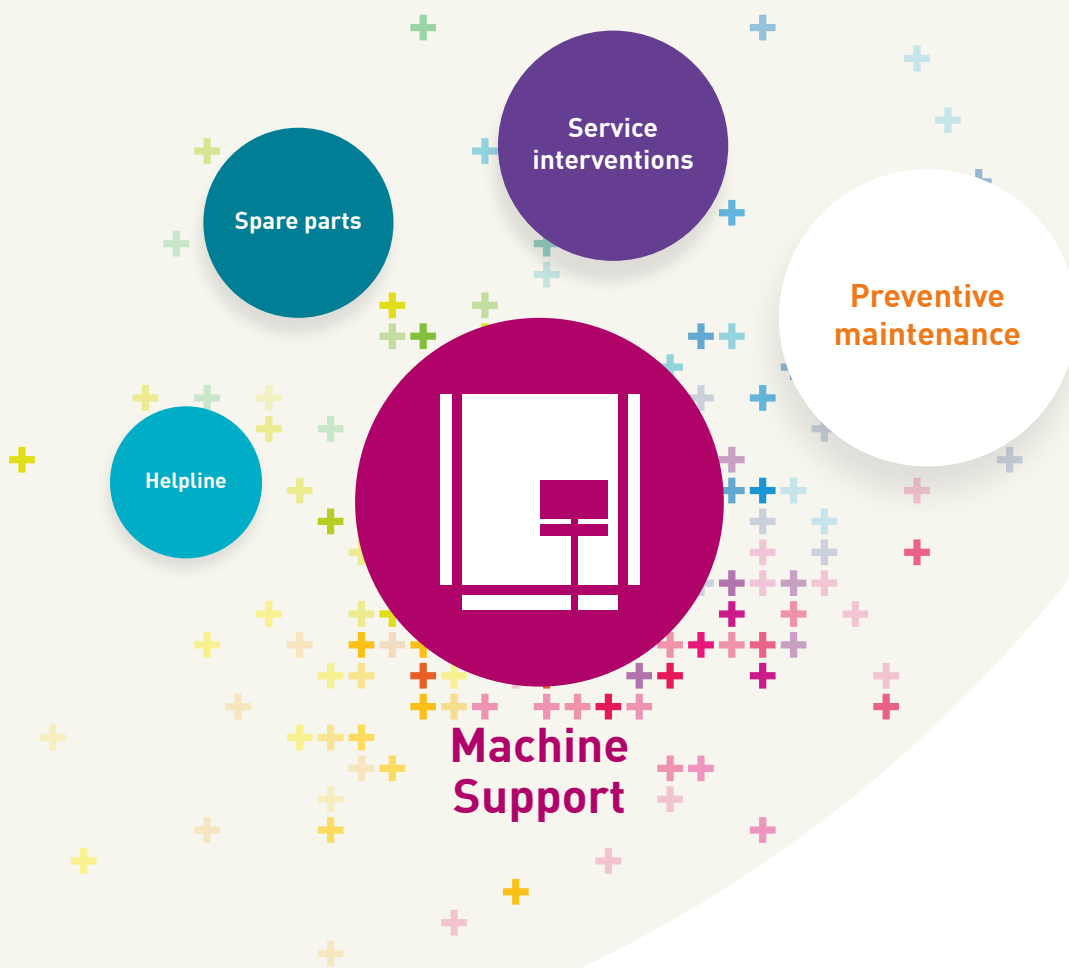
- Retrieve and analyze cell utilization data
- Retrieve and analyze order data

.....> **Execution – CellManager**

- Manages the pallet ID codes and magazine positions
- Creates priority lists
- Automatically starts available jobs in the order of the priority list
- Updates the information in the database with the status and machining times of individual orders

# 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



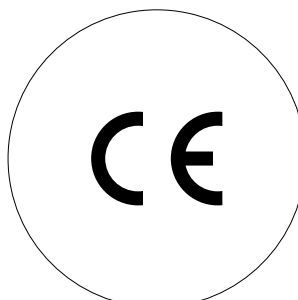
## Masters and calibration tools

- Cleaning and polishing
- CMM inspection
- Quality certificate



## CE Certification

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



# Technical specifications

## Transformer unit

### Transformer 100/150/200

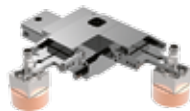


### Transformer Linear 100/150/200



		Transformer 100/150/200 Transformer Linear 100/150/200
Payload	kg lbs	100, 150, 200 220, 330, 440
Max. X-stroke	mm in	1250 or 1500 49.21 or 59.05
Max. Z-stroke	mm in	1400 55.12
Max. C-rotation	°	300
Stationary cell, max. # of machines		Up to 3
Linear cell, max. # of machines		Up to 12
Rail type		Standard (Transformer 100) Heavy (Transformer 150/200)
Max. rail length	m, in	25, 984 (Transformer Linear)
Max. transfer weight (pallet and workpiece)	kg, lbs	100, 220 (Transformer 100/Transformer Linear 100) 150, 330 (Transformer 150/Transformer Linear 150) 200, 440 (Transformer 200/Transformer Linear 200)
<b>Accessories</b>		
Rack magazine, max. pallet size	mm (in)	700 x 450 (27.56 x 17.71)
Rotary magazine, max. pallet size	mm (in)	320 x 320 (12.6 x 12.6)
Loading station	kg (lbs), mm (in)	max. 200 (440), 700 x 450 (27.56 x 17.71)
Washing machine	kg (lbs), mm (in)	max. 200 (440), 500 x 500 (19.68 x 19.68)
Draining station	kg (lbs), mm (in)	max. 200 (440), 450 x 450 (17.71 x 17.71)
Drying station WEDM	kg (lbs), mm (in)	max. 30 (66), 300 x 300 (11.81 x 11.81)

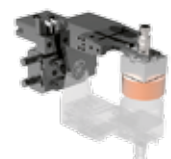
### Optional grippers



Double



Tilting



Turning

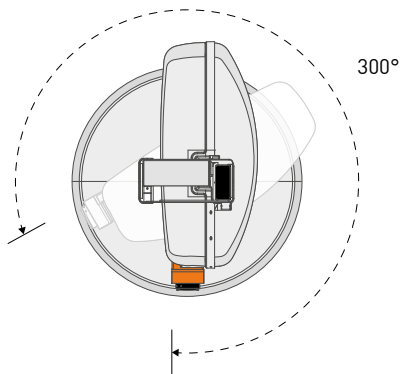
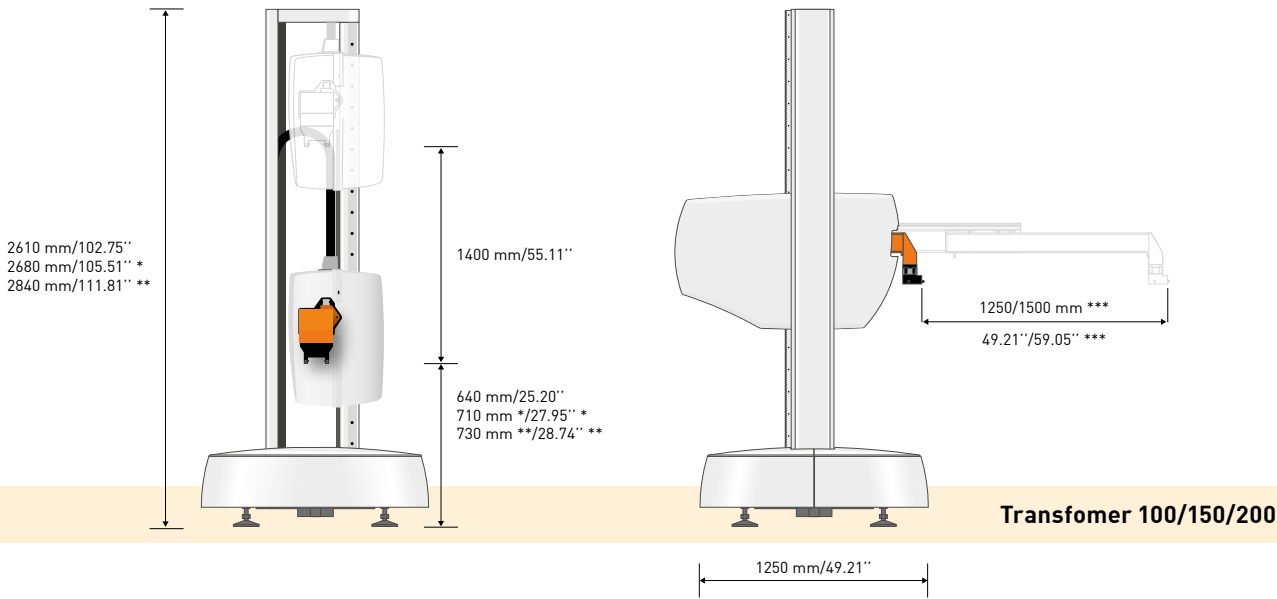
**Fanuc solution**  
 Fanuc six-axis robots are offered as an option instead of the Transformer manipulator unit for transfer weights ranging between 70-700 kg, or for applications requiring complex movements.



**Rail type**

Standard

Heavy



\* Rail type: standard  
 \*\* Rail type: heavy

# Technical specifications

## Magazines



**Rotary magazine**



**Full rack**



**Half rack**

Magazines are available in two basic designs: rack and rotary. Each magazine unit consists of a number of shelves (determined by the height of the workpieces in question).

### Rotary magazine

Tooling	Pos.*	Size in mm (in)
Dynafix	4	320 x 320 (12.6 x 12.6)
	5	290 x 290 (11.4 x 11.4)
GPS 240	4	320 x 320 (12.6 x 12.6)
	5	290 x 290 (11.4 x 11.4)
	6	260 x 260 (10.2 x 10.2)
Erowa UPC	4	320 x 320 (12.6 x 12.6)
Macro-Magnum	8	210 x 210 (8.27 x 8.27)
	10	185 x 185 (7.28 x 7.28)
	12	160 x 160 (6.3 x 6.3)
GPS 120	12	160 x 160 (6.3 x 6.3)
Macro	36	65 x 65 (2.56 x 2.56)

### Option

Rapid ID scanning

### Full rack magazine

Tooling	Pos.*	Size in mm (in)
Macro	12	70 x 200 (2.75 x 12.2)
Macro 116	6	150 x 150 (5.9 x 5.9)
Macro-Magnum	4	210 x 210 (8.27 x 8.27)
	5	170 x 170 (6.7 x 6.7)
Dynafix	2	400 x 400 (15.75 x 15.75)
	1	700 x 500 (27.56 x 19.68)
GPS 70	10	95 x 95 (3.74 x 3.74)
GPS 240	3	275 x 275 (10.83 x 10.83)
	2	400 x 400 (15.75 x 15.75)
Delphin	2	400 x 400 (15.75 x 15.75)
	1	700 x 500 (27.56 x 19.68)

### Half rack magazine

Tooling	Pos.*	Size in mm (in)
Dynafix	1	480 x 400 (18.9 x 15.75)
GPS 240	1	480 x 400 (18.9 x 15.75)
Delphin	1	480 x 400 (18.9 x 15.75)
400 x 400		

### Options

Additional shelves  
Door for loading from behind

\* Positions per level  
Note: The maximum height of the workpiece depends on the number of levels



# Technical specifications

## Accessories



**Multiple loading station**



**Work preparation station**



**Washing machine**



**Drying station**



**Draining station**

### Multiple loading station

Used for loading and unloading without the need to stop the Automation cell

The station is equipped with ID antennas and presence sensors.

It can be configured to meet the requirements of tooling type and part sizes.

### Work preparation station

Used for preparing the workpieces. The station has doors for easy access and side guards.

Max. workpiece size: 450 x 450 x 450 mm

Max. load: 200 kg

Drip tray for oil and flushing liquid

Presence monitoring

Prepared for chuck installation, including foot control and pneumatic connections

### Options

Manual flushing liquid sensor

Manual Indexing unit, 4 x 90 degrees, with locking device

ID antenna

### Washing machine

A washing machine intended for cleaning, rinsing and air drying metal components placed on a pallet.

The unit consists of an insulated cabinet with a lifting door, fixed spraying system and a rotating fixture for the pallets. The unit is automatically loaded by the robot.

### Maximum part size

500 x 500 x 500 mm including pallet, chuck and workpiece

### Maximum weight

200 kg including pallet, chuck and workpiece

### Drying station

A station with two stages to blow off and dry the workpiece.

First compartment removes fluids with compressed air.

Second compartment dries the workpiece.

### Draining station

After machining, the workpiece is placed in the station where the remaining dielectric is tipped out of the cavities and fed back to the machine.

Optional flushing nozzles available.

# 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 texturizing, 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.



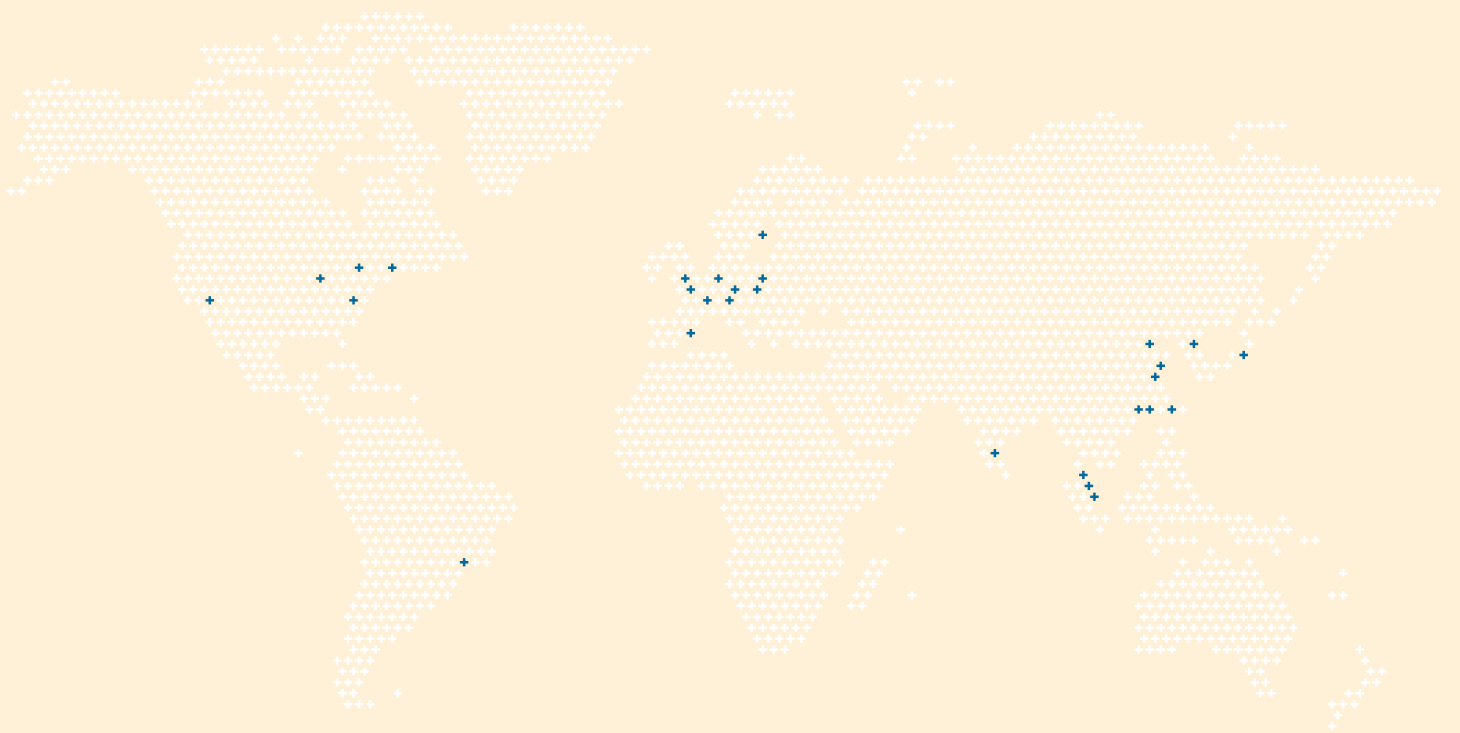
## Automation

**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.



## At a glance

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

[www.gfms.com](http://www.gfms.com)

