

# Transformer T3-100, T3-150 and T3-200



# Design and quality by System 3R

# Contents

4	Scalable Automation
6	Customer-specific Solutions
8	Standardized modules
10	Preventive maintenance
11	Grippers to all your needs
12	Technical specifications
16	WorkShopManager

## **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!**

THE TRANSFORMER CONCEPT

# Grows with your needs

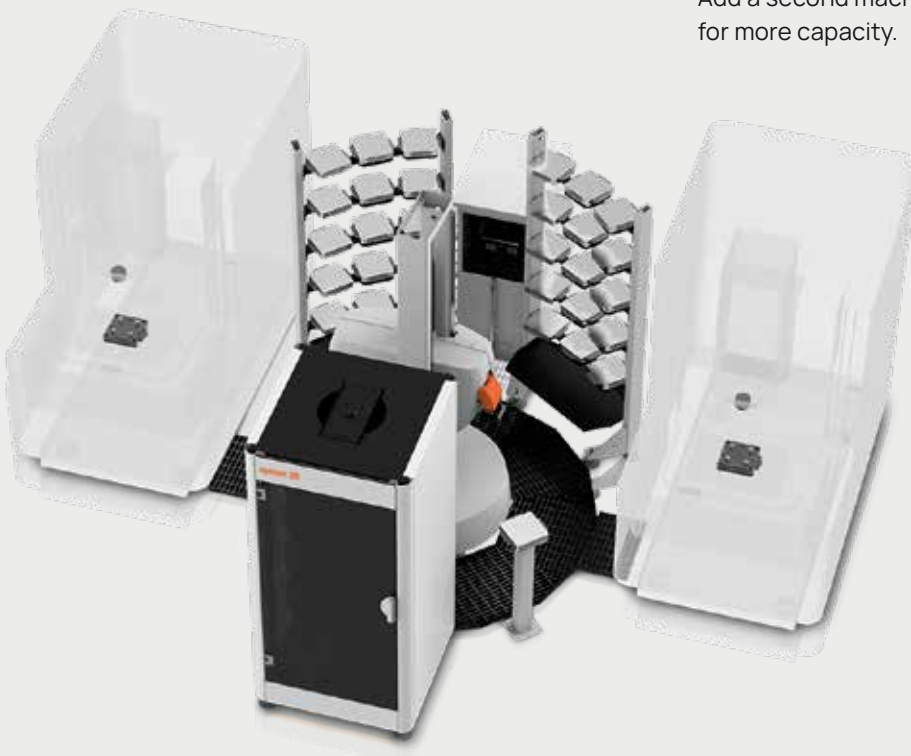
## BEGIN

Begin with a single machine and small magazine capacity.

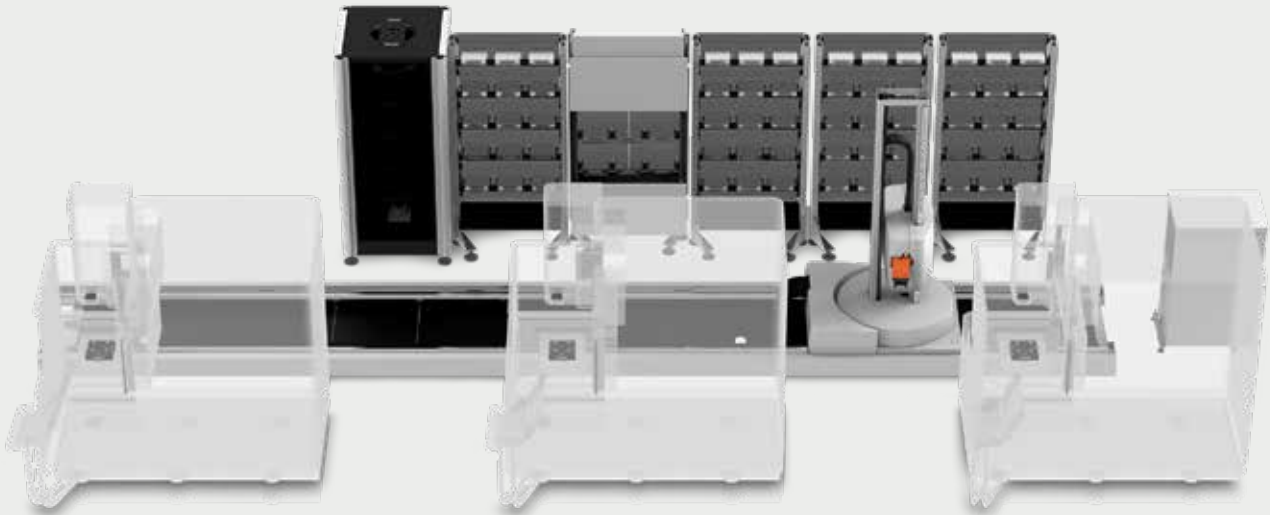


## ADD

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

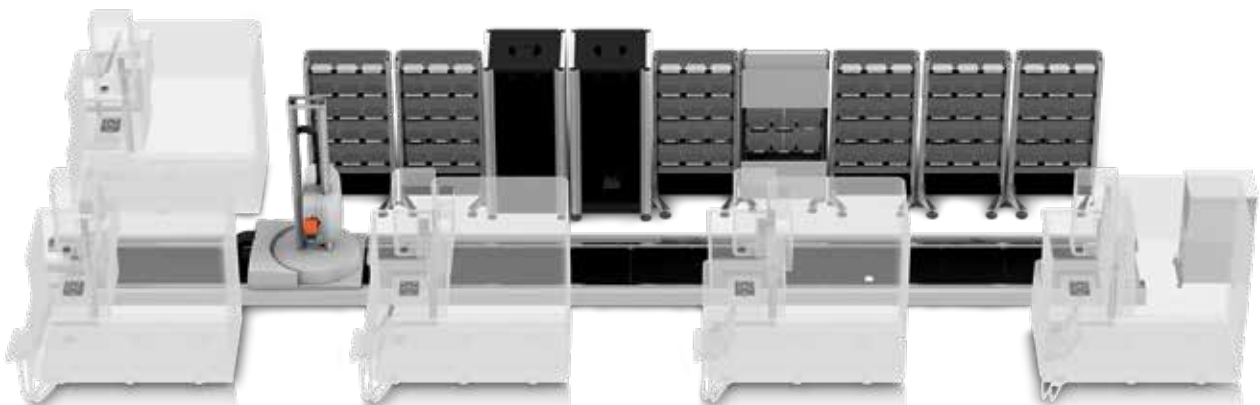


# EXTEND



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

# AND TRANSFORM

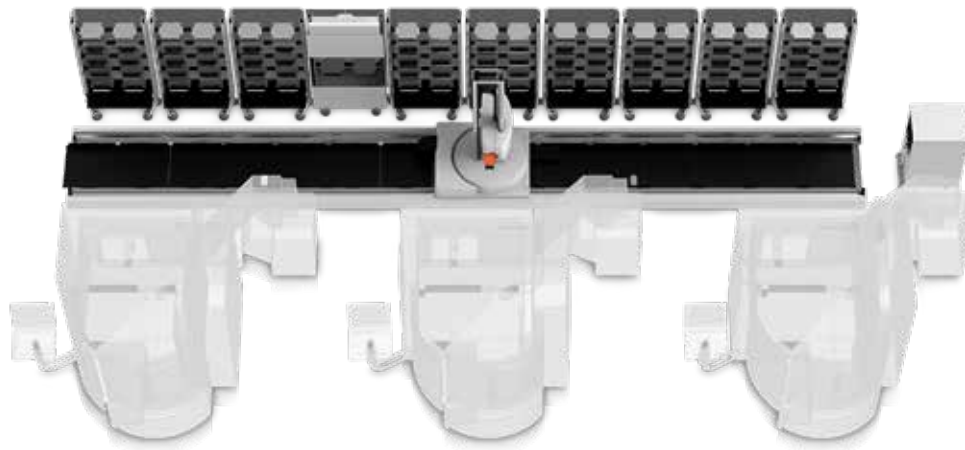


Extend the rails for even more magazine capacity and machines.

# Tailored to serve your needs

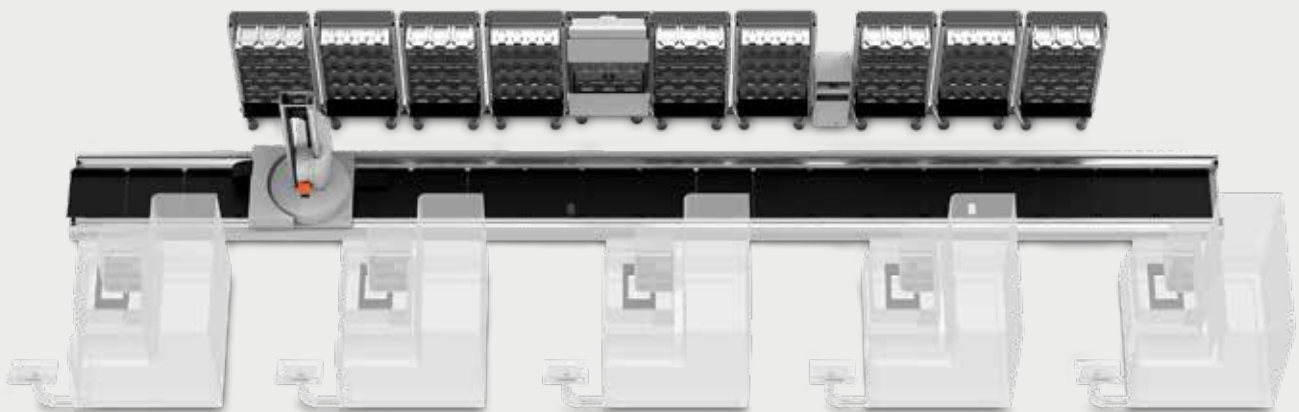
## MILLING APPLICATION

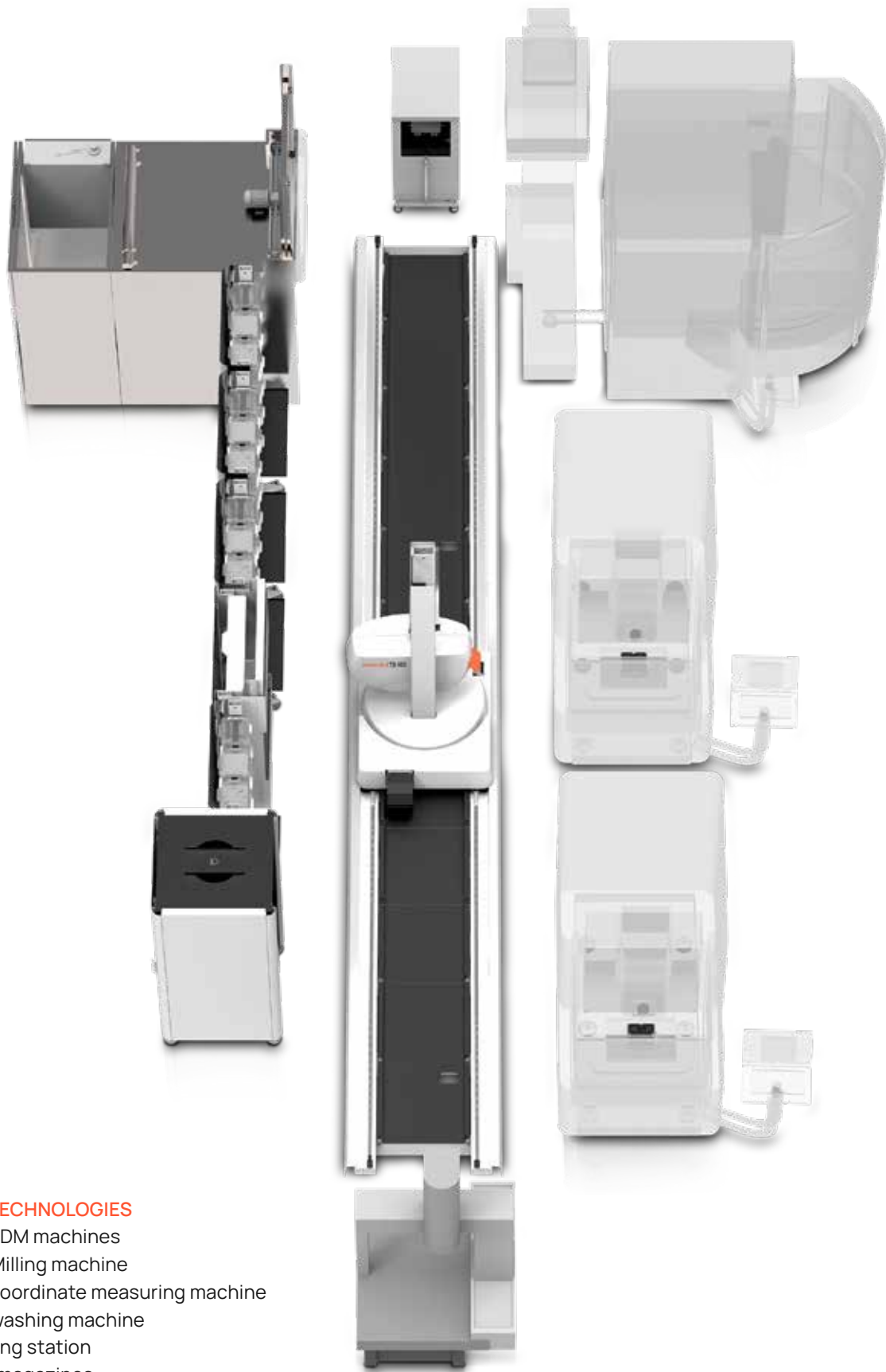
- Three Milling machines
- Rack magazines
- Multiple loading station
- Draining station



## 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

# For cost-efficient solutions



**ROTARY MAGAZINE**

Large capacity  
in a small footprint

**WORK PREPARATION/  
LOADING STATION**

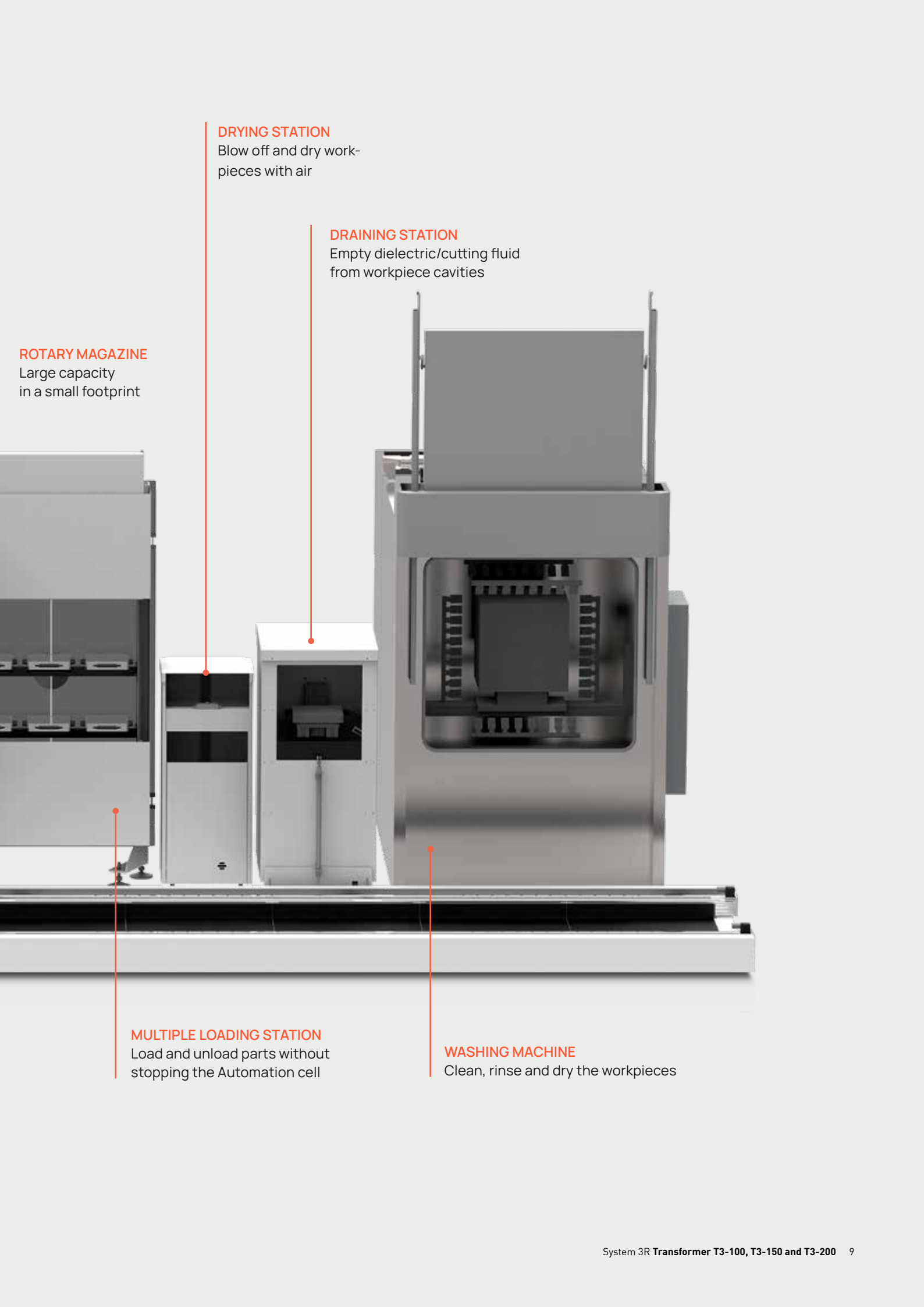
One single station for reloading  
workpieces on pallets or used as  
a loading station

**TRANSFORMER - WORKMASTER UNIT**

For 100/150/200 kg transfer weights

**RACK MAGAZINE**

Full rack magazine or half rack maga-  
zine for electrodes or workpieces



**DRYING STATION**

Blow off and dry workpieces with air

**DRAINING STATION**

Empty dielectric/cutting fluid from workpiece cavities

**ROTARY MAGAZINE**

Large capacity in a small footprint

**MULTIPLE LOADING STATION**

Load and unload parts without stopping the Automation cell

**WASHING MACHINE**

Clean, rinse and dry the workpieces

# Preventive maintenance

## AUTOMATION

- Mechanics
- Pneumatics
- Peripheral equipment



## REFERENCE SYSTEMS

- Rebuilding chucks
- Inspecting references
- Checking clamping force



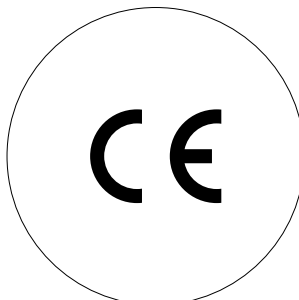
## MASTERS AND CALIBRATION TOOLS

- Cleaning and polishing
- CMM inspection
- Quality certificate



## CE CERTIFICATION

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

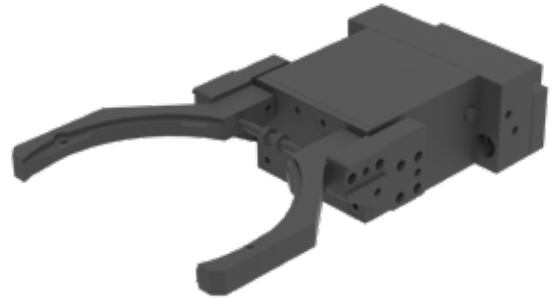


# Grippers for all your needs

Our Transformer concept is designed to handle a wide variety of tools; Transformer 3-axis 100, 150 and 200 kg handles everything from the small Macro (54 x 54 mm) to the large DelphinCompact (398 x 398 mm). Other manufacturers' tools can also be handled.

In each automation cell, all the machines and accessories have chucks suitable for getting pallets from the manipulator.

The automation cell's desired storage capacity is achieved by using a suitable number of magazines and adapting the layout appropriately.



## Standard grippers



MACRO GRIPPER



MACRO WEDM GRIPPER



MACRO MAGNUM GRIPPER



DELPHIN 398X398

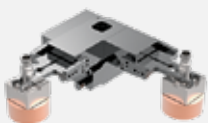


PALLET GRIPPER



PALGRIP

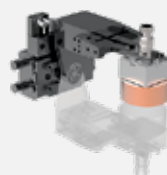
## Optional grippers



DOUBLE GRIPPER



TILTING GRIPPER



TURNING GRIPPER

## TECHNICAL SPECIFICATIONS

# Transformer unit

Transformer  
100/150/200



Transformer Linear  
100/150/200



### TECHNICAL SPECIFICATIONS: TRANSFORMER AND TRANSFORMER LINEAR – 100/150/200

Payload	100, 150 or 200 kg
Max. X-stroke	1250 mm (Transformer 100/150/200) or 1500 mm (Transformer 100/150)
Max. Z-stroke	1400 mm
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 and 200)
Max. rail length	Standard 20 m and Heavy 30 m
Max transfer weight (pallet and workpiece)	100 kg, Transformer 100 and Transformer Linear 100 150 kg, Transformer 150 and Transformer Linear 150 200 kg, Transformer 200 and Transformer Linear 200

### ACCESSORIES

Rack magazine, max. pallet size	700 x 450 mm
Rotary magazine	320 x 320 mm
Multiple loading station	Depending on tooling and number of positions
Loading station	max. 200 kg 450 x 450 mm
Cleaning machine	max. 200 kg 500 x 500 mm
Draining station	max. 200 kg 450 x 450 mm
Drying station wire EDM	max. 30 kg 300 x 300 mm

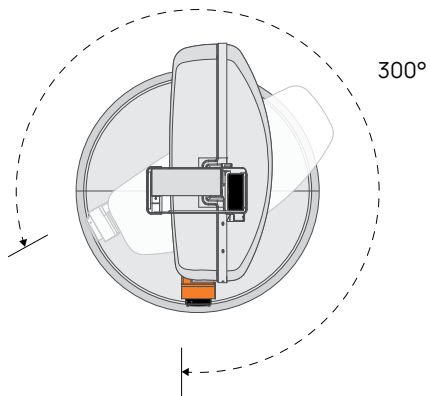
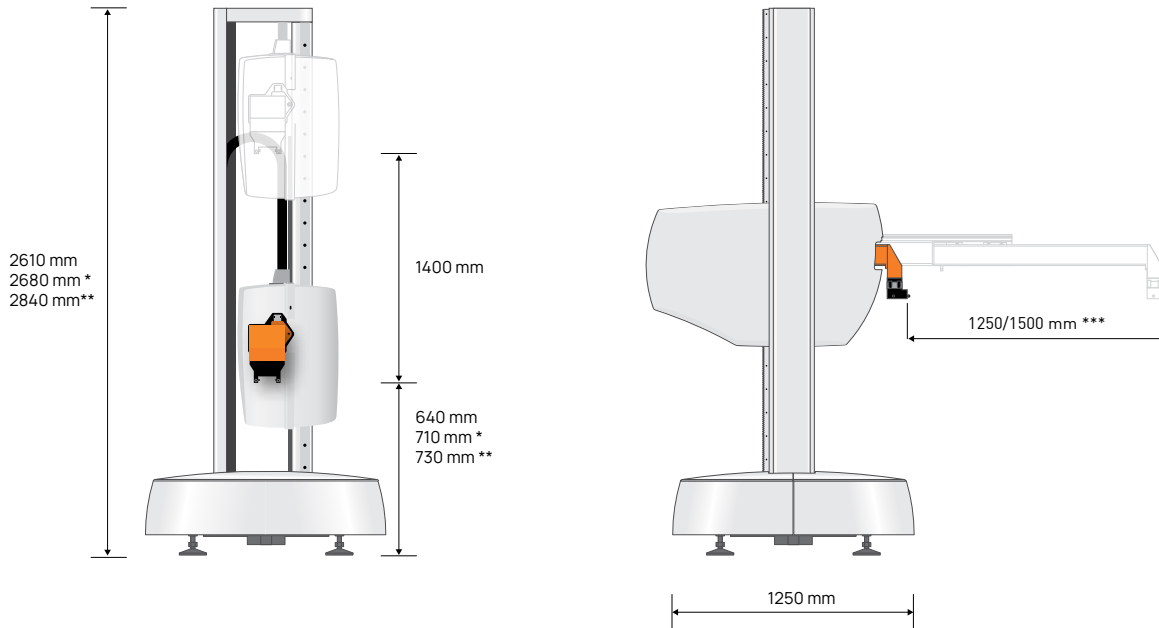
RAIL TYPE



Standard



Heavy



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

## TECHNICAL SPECIFICATIONS

# Magazines and tooling types



ROTARY MAGAZINE



FULL RACK



HALF RACK

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

### ROTARY MAGAZINE (EXAMPLES)

Tooling	Positions*	Size in mm
Dynafix	4	320 x 320
	5	290 x 290
GPS 240	4	320 x 320
	5	290 x 290
	6	260 x 260
MacroMagnum	8	210 x 210
	10	185 x 185
	12	160 x 160
GPS 120	12	160 x 160
Macro	36	65 x 65

### FULL-RACK MAGAZINE (EXAMPLES)

Tooling	Positions*	Size in mm
Macro	12	70 x 200
Macro 116	6	150 x 150
MacroMagnum	4	210 x 210
	5	170 x 170
Dynafix	2	210 x 210
	1	170 x 170
GPS 70	10	150 x 150
GPS 240	3	275 x 275
	2	400 x 400
Delphin	2	400 x 400
	1	700 x 500

### HALF-RACK MAGAZINE (EXAMPLES)

Tooling	Positions*	Size in mm
Dynafix	1	500 x 500
GPS 240	1	480 x 400
Delphin	1	480 x 400
400 x 400		

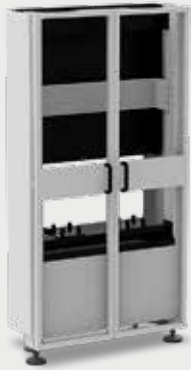
Optionally available with rotary magazines: Rapid ID scanning.

Optionally available with rack magazines: Additional shelves. Door for loading from behind.

\* Positions per level. Maximum workpiece height is determined by the number of levels.

## TECHNICAL SPECIFICATIONS

# Accessories



**MULTIPLE LOADING  
STATION**



**WORK PREPARATION  
STATION**



**WASHING MACHINE**



**DRYING  
STATION**



**DRAINING  
STATION**

### **MULTIPLE LOADING STATION – BIG ULD**

Enables loading and unloading without stopping the automation cell.

- The station has ID antennas and presence sensors.
- It can be configured to meet the requirements imposed by tooling types and part sizes.

### **PREPARATION STATION**

An optional, functional add-on for loading stations and loading bays. Features include:

- Max. load and max. dimensions for loading stations, 200 kg and 450 x 450 x 450 mm.
- Max. load and max. dimensions for loading bays, 600 kg and 800 x 800 x 800 mm.
- Presence monitoring and ID chip antenna.
- Manual indexing function (4 x 90°)
- Preparation via pedal-actuated chuck.

### **WASHING MACHINE**

The unit comprises an insulated cabinet (accessed via a raisable door), a fixed spraying system and a rotating fixture for the pallets.

Loading is automatic via a robot.

- The dimensions are 500 x 500 x 500 mm (pallet, chuck and workpiece included).
- Its maximum load (pallet, chuck and workpiece included) is 200 kg.

### **DRYING STATION**

A two-stage unit for drying workpieces.

In the first stage/compartment, compressed air blows fluids off workpieces. The workpieces are then air-dried in the second stage/compartment.

### **DRAINING STATION**

After machining, workpieces are placed here. Any remaining dielectric is tipped out of the cavities and fed back to the machine. Optional flushing nozzles available.



WSM 5 – WorkShopManager 5

# 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

### 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

### Monitoring – CellMonitor

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

### Statistics – WSM 5 Statistics

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

## Use our Customer Services to optimise your equipment uptime

System 3R's Customer Services department is uniquely positioned to help you maximise the availability, value, precision and productivity of your System 3R equipment. Our cost-effective, customer-centric and expert services put your success at the centre, 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 further details, contact your local System 3R dealer.

[www.system3r.com](http://www.system3r.com)