GF Machining Solutions

+GF+

Complete solutions for you

At a glance

Core technologies

Milling EDM Laser
Additive Manufacturing
Tooling and Automation
Service + Success
Digitalization

GF Machining Solutions

Becoming better every day – since 1802

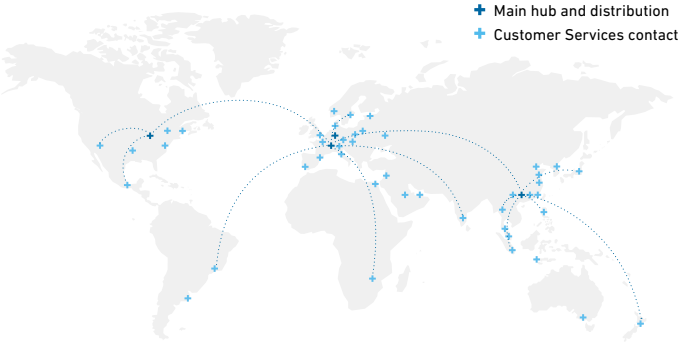
As a sustainability and innovation leader, we strive for profitable and sustainable growth.
We are committed to providing superior value to our customers and to investing in sustainable operations and solutions.

We are industrial pioneers

GF is proud of a long and remarkable history of technological innovations and advancements, and has grown to be one of the largest publicly traded companies in the world. GF has been listed on the Swiss Stock Exchange since 1903.

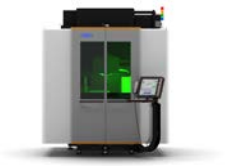
Complete solutions provider

GF Machining Solutions is the leader in machine tools, Tooling and Automation solutions, Digitalization solutions and customer services for the production of molds, dies and high value-added metal parts. GF Machining Solutions is headquartered in Switzerland and present in over 50 locations worldwide.



Diversified profile

As a group, GF delivers premium expertise and service to its global customers via its three industrial divisions:

GF Piping Systems	GF Casting Solutions	GF Machining Solutions
		
1,708 million CHF	**752** million CHF	**725** million CHF

Total sales in 2020: CHF 3.184 billion

Dedicated solutions

GF Machining Solutions is the partner of choice to successful tool, mold and die makers in fast-growing market segments such as electronic components, information and communications technologies, automotive and packaging, and to producers of high-value parts for the aerospace and aeronautics, automotive industry, and many other industrial areas.

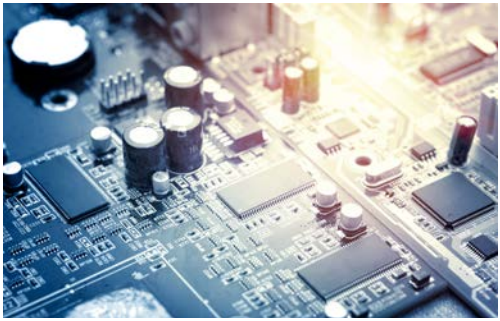
Aerospace

Medical

Automotive

Energy

Packaging



ICT and Electronic components

Digitalization solutions

GF Machining Solutions offers a range of Digitalization solutions combining intelligent manufacturing production processes and workshop Automation solutions for smart and connected machines, allowing real-time process monitoring as well as digital remote services.

eTRUE (True Response to User Expectation) and Multi-Process Preparation (MPP)

eTRUE is an automated, highly precise solution for the mold and die industry which assists from CAD/CAM to the execution of the final part. MPP, a software optimizing the die-sinking EDM process based on the true geometry of the electrode, is “the heart” of eTRUE.

eTracking

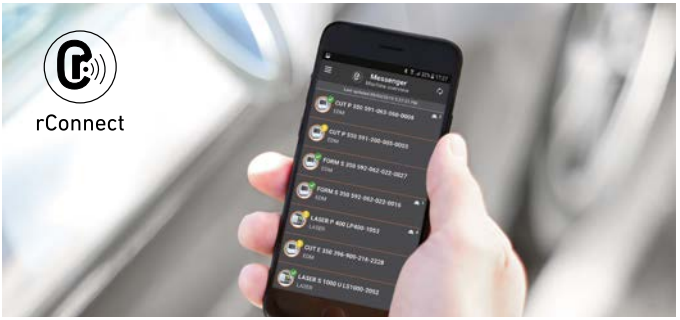
GF Machining Solutions’ eTracking software ensures quality by monitoring the EDM process and reduces costs by decreasing the number of rejected parts. It provides full data traceability and is fully compliant with the most demanding quality certifications, for example in Aerospace.

WorkShopManager (WSM)

WSM manages your Automation processes. It is based on a user-friendly cell management software that brings all your production technologies together in one process chain and keeps your production running with standardized procedures.

rConnect

GF Machining Solutions' rConnect platform represents Industry 4.0's vision of intelligent and high-performing services, and is the machine tool industry's most in-depth remote machine tool analysis.



rConnect Messenger delivers machine data directly to your mobile device. You gain insight into the efficiency of your workshop by continuously monitoring the status of your machines, and can send digital service requests to our experts via the Messenger app.

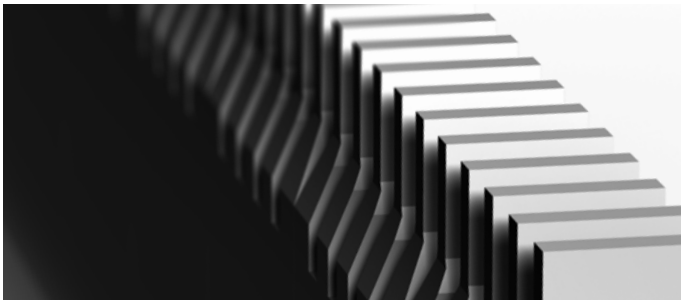
rConnect activation kit contains all the components that our service engineers need to properly install the hardware. Once activated, you have access to GF Machining Solutions' digital services world with its innovative modular services.

rConnect Customer Cockpit and Live Remote Assistance (LRA) allows you to access the HMI and CNC of your machines, while rConnect LRA provides you with direct access to our expert service engineers using the latest secure encrypted point-to-point connection technology.

Electrical Discharge Machining (EDM)

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 and safe solutions for demanding high-speed machining with respect to surface accuracy, our wire EDM solutions position you for success.

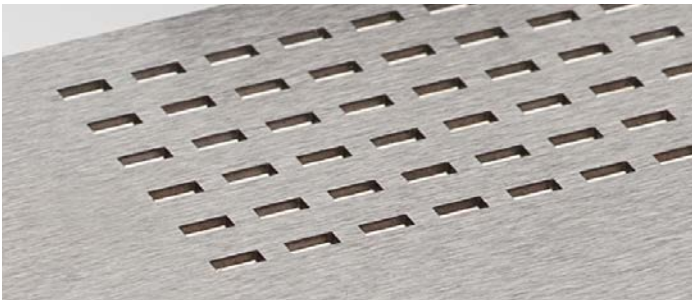


	X	Y	Z	U, V	Workpiece
CUT E 350	350	250	250	± 45	820 x 680 x 245
CUT E 600	600	400	350	± 50	1030 x 800 x 345
CUT P 350/350 Pro	350	220	220	350 x 220	800 x 550 x 220
CUT P 550/550 Pro	550	350	400	550 x 350	1000 x 700 x 400
CUT P 800/800 Pro	800	550	510	800 x 550	1300 x 950 x 510
CUT P 1250	1250	850	700	1250 x 850	2300 x 1300 x 750
CUT 1000	220	160	100	± 40	300 x 200 x 80
CUT 2000 S/X	350	250	256	± 70	750 x 550 x 250
CUT 3000 S/X	500	350	256	± 70	1050 x 650 x 250
CUT AM 500	–	650	200	–	510 x 510 x 510

All dimensions in mm

Die-sinking EDM

GF Machining Solutions' EDM technologies are continuously updated and improved. This allows users to dramatically boost machining speed while reducing electrode wear at the same time. All of our die-sinking systems offer fast removal and deliver mirror finishes of Ra 0.1 µm (4 µin).



	X	Y	Z	Workpiece
FORM E 350	350	250	250	800 x 500 x 265
FORM E 600	600	400	400	1000 x 700 x 400
FORM P 350	350	250	300	700 x 460 x 285
FORM P 600	600	400	450	1040 x 730 x 410
FORM P 900	900	700	500	1670 x 1120 x 560
FORM S 350	350	250	300	700 x 460 x 285
FORM X 400	400	300	350	820 x 580 x 250
FORM X 600	600	400	500	1200 x 800 x 350

All dimensions in mm

Milling

Milling machines

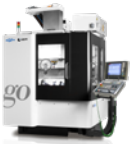
Precision tool and mold manufacturers enjoy a competitive edge with our Mikron MILL S solutions' fast and precise machining. The Mikron MILL P machines achieve above-average productivity thanks to their high performance and Automation. Customers seeking fastest return on investment benefit from the affordable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

	X	Y	Z	Rot. axis	Max. workpiece weight (kg)	
MILL E 800	850	600	600	–	800	
MILL E 1200	1250	600	600	–	1200	
MILL P 500	500	450	350	–	300	
MILL P 900	900	600	450	–	1000	3-axis
MILL S/X 400	500	450	360	–	120	
MILL S 500	500	450	360	–	200	
MILL S/X 600	600	600	500	–	500	
MILL S/X 800	800	600	500	–	1000	
MILL E 500 U	500	450	400	+120°/-65°, 360°	300	
MILL E 700 U	700	600	500	+120°/-65°, 360°	450	
MILL P 500 U	500	600	450	+91°/-121°, 360°	600	
MILL P 800 U	800	800	550	+91°/-121°, 360°	1000	5-axis
MILL S 200 U	160	160	200	+30°/-120°, 360°	8	
MILL S/X 400 U	500	240	360	+110°/-110°, 360°	25	
MILL S/X 600 U	800	600	500	+30°/-110°, 360°	120	

All dimensions in mm

High Performance Airfoil Machining

Our Liechti turnkey solutions enable the highly dynamic manufacturing of precision airfoils. Thanks to the unique performance and our expertise in airfoil machining, you increase profitability by producing at the lowest cost per part. Liechti develops, distributes and maintains the Turbosoft plus CAM system dedicated for airfoils such as blades and blisks.



Application	g-Mill	Turbomill	go-Mill
BLISK/BLING (Ø)	200-1350	–	100-800
Blade (length)	–	20-2200	20-350

All dimensions in mm

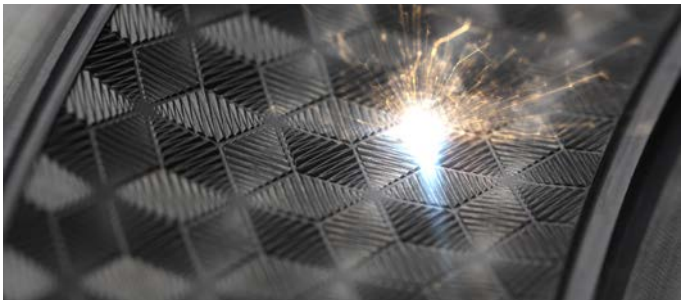
Spindles

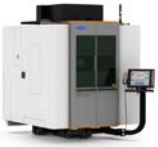
As part of GF Machining Solutions, Step-Tec is engaged in the very first stage of each machining center development project. Compact design combined with excellent thermal and geometric repeatability ensure the perfect integration of this core component into the machine tool.

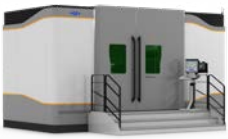
Advanced manufacturing

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.





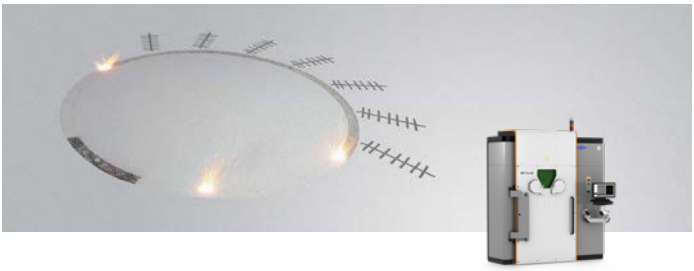


	X	Y	Z	A/B	Machining volume
LASER P 400	600	400	300	-	600 x 400 x 250 *
LASER P 400 U	600	400	300	+115-105°/720°	Ø 120 x 120 Ø 380 x h540 with F100
LASER P 600 U	600	460	830	180°/720°	Ø 420 x 530
LASER P 1000 U	1000	550	880	180°/720°	Ø 510 x 480 Ø 460 x h570 with F160
LASER P 1200 U	1200	900	1200	180°/720°	Ø 865 x 790 Ø 590 x h770 with F254
LASER P 4000 U	4000	3000	1500	270°/370°	4000 x 3000 x 1170 (3ax) Ø 1800 x h1450 (Full 5ax) All with f420
LASER S 1000 U	1000	550	880	180°/720°	Ø 660 x 550 Ø 510 x Z480 with F163
LASER S 1200 U	1200	900	970	180°/720°	Ø 810 x 850 Ø 560 x Z 710 with F255
LASER S 2500 U	2500	2000	1200	200° (-50/+150) 720° (± 185)	2700 x 2300 Ø 750 x Z 1340 with F340

All dimensions in mm * 3-axis machining

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.



	Available materials **	Build envelope size	Laser sources
DMP Factory 500	4	500 x 500 x 500 * mm	3 x 500 W
DMP Flex/Factory 350	13	275 x 275 x 420 * mm	1 x 500 W

* height inclusive of build plate ** more info on www.gfms.com

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.

	X	Y	Z	Rotary 4/5 axis	Laser sources
ML-5	280	350	300	A +95°-45° / C 360°	10/20/50 W

All dimensions in mm

Tooling, Automation and Software

Automate your production

Our customers experience complete autonomy while maintaining extreme accuracy, thanks to our Tooling systems for palletizing workpieces and electrodes in order to link various machines and processes together. In parallel, our Automation and control software solutions optimize machine utilization for greater return on investment.

WorkPal 1

WorkPartner 1+

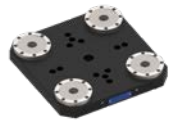
Transformer WorkMaster

Transformer 6-axis robot

System 3R Software portfolio

Macro

Matrix



DelphineOne

Service + Success

Solutions for you

We care about your investment with lifecycle solutions. With our range of consumables and wear parts, you can operate your equipment at peak precision and performance. You can optimize your uptime and keep your equipment in perfect order and condition through our Preventive maintenance and Advanced Services wide portfolio. We can also support your business to upgrade your equipment to the latest state of art with new Digital Services and retrofits.

GF Machining Solutions Academy

The Academy focuses on a human-centric mission of managing the knowledge transfer from Research and Development to Customer Services, sales, application support and training. It provides training modules as well as on-demand options tailored to customers' specific requests, all aimed at helping customers exploit the full capabilities of their GF Machining Solutions machines.

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 Customer Services completes our proposition.

www.gfms.com

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