

Academy training

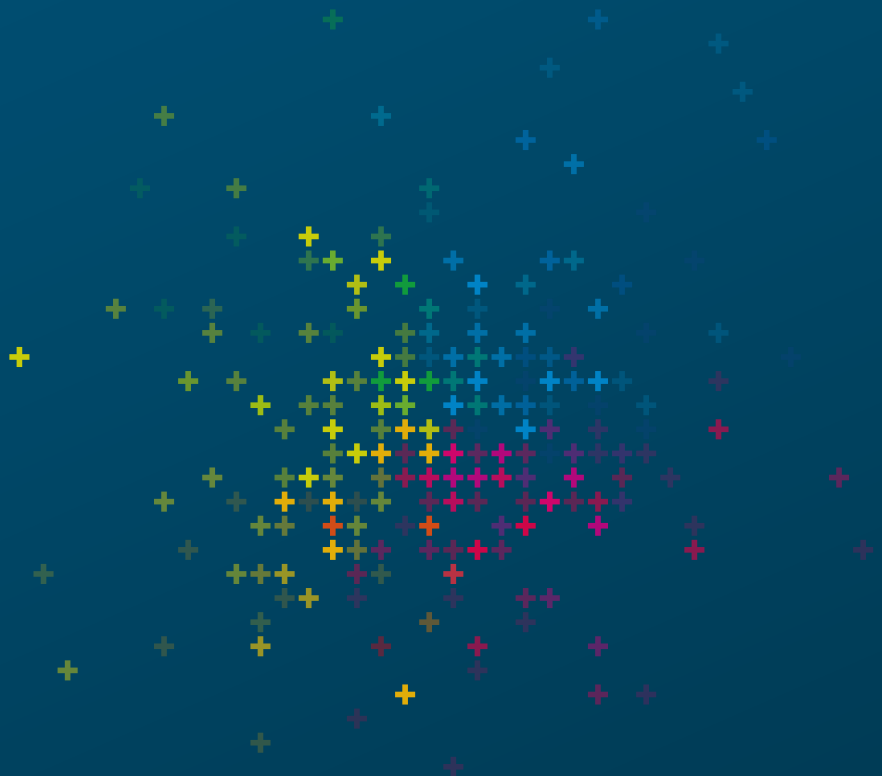
EDM Wire



Passion for Precision

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.



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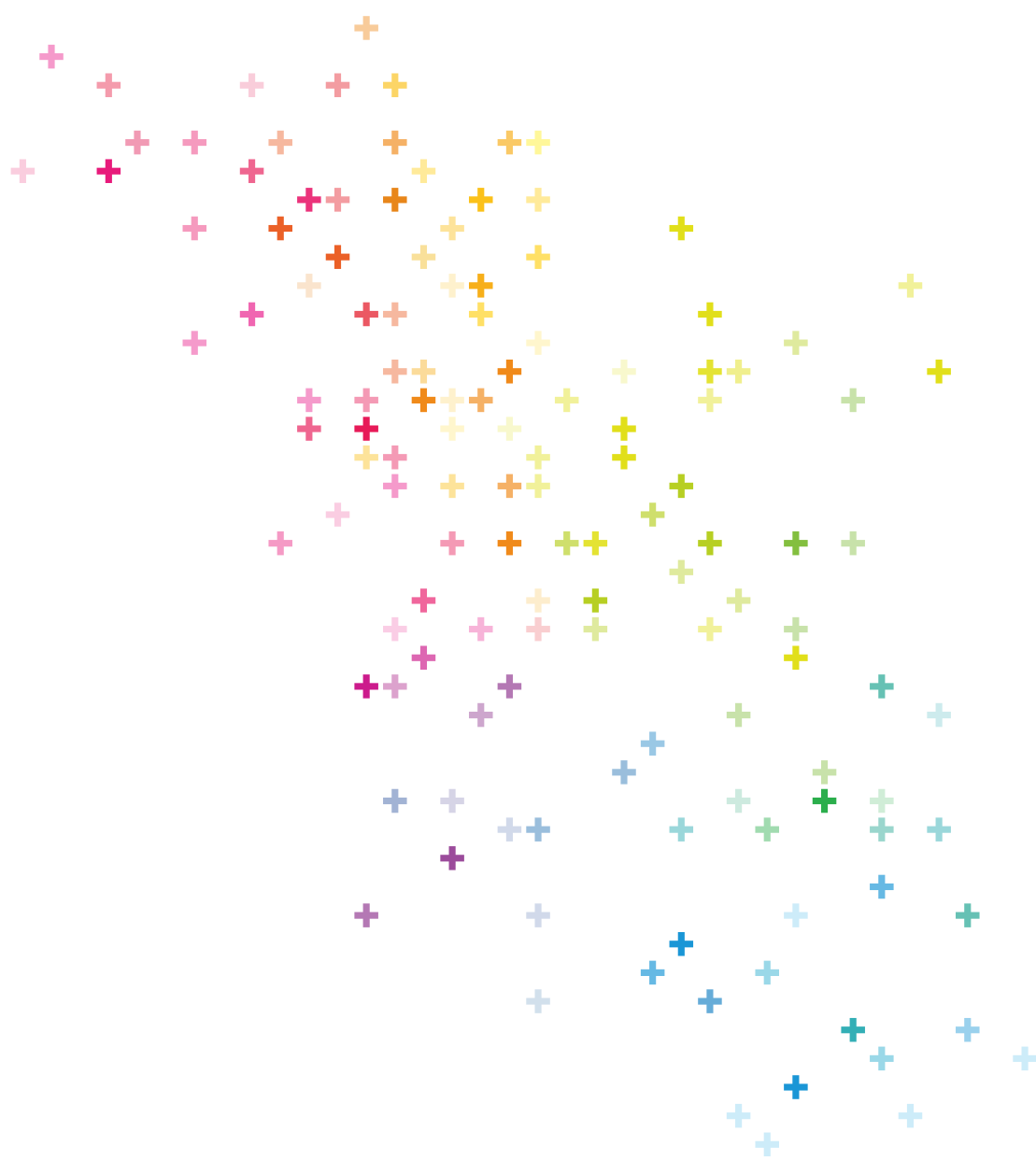
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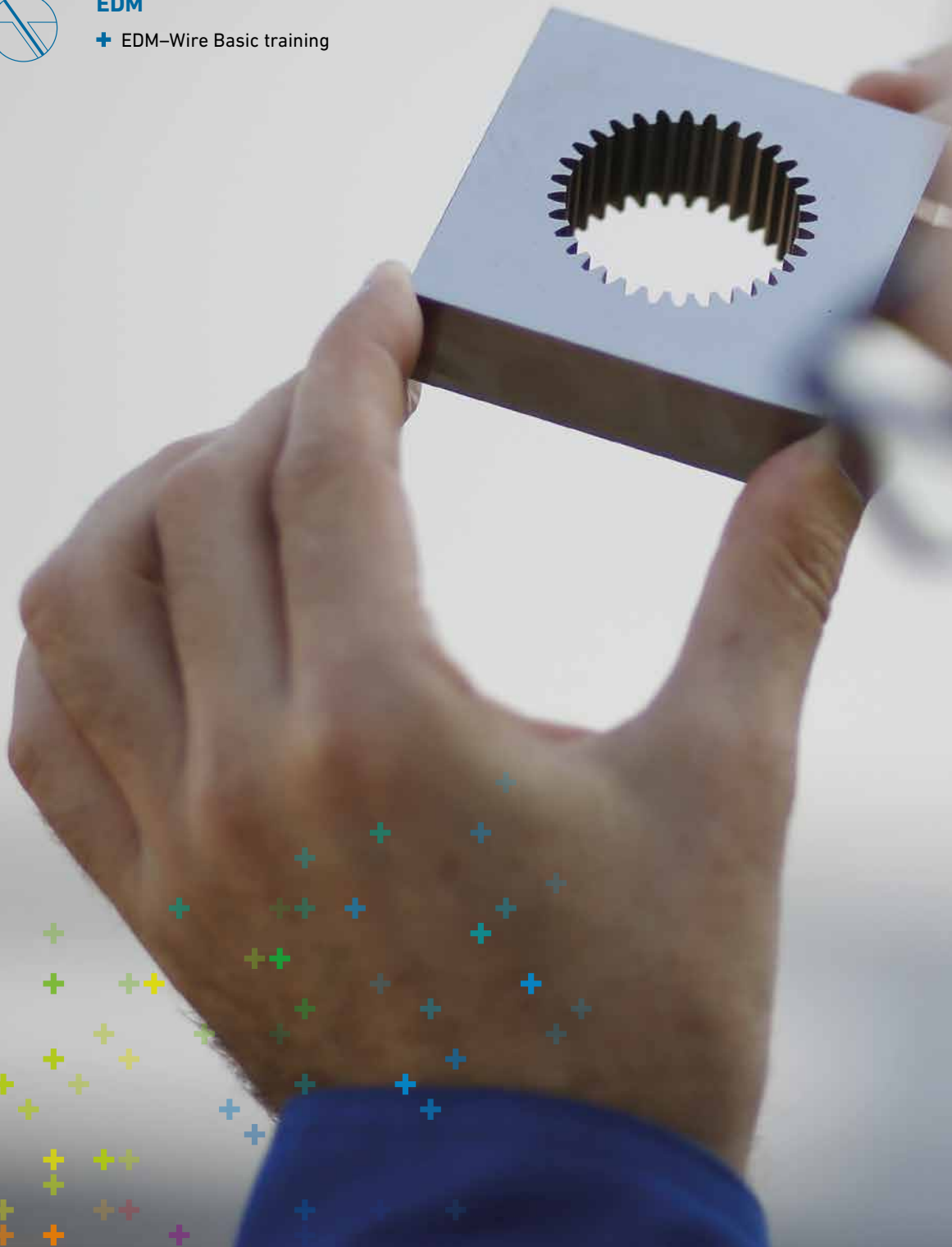
Learn to operate

We provide you with indepth training to share with you the basic knowledge to use your new machine autonomously/independently.



EDM

+ EDM-Wire Basic training



Learn to operate training

EDM- Wire Basic training

article n°200010361 (at GF site)

article n°200010362 (at customer site)



Wire cutting



Duration	Number of participants	Experience level	Requirements	Machines
3 days	4	Beginner	Basic mechanical skills	AC Progress, CUT E, CUT P, CUT P Pro, CUT X 000

Face every precision and part production challenges perfectly with the Wire technology

What are the course contents?

- + Understanding the EDM process
- + Mastering the HMI:
- + Navigating through the different screens
- + Machine language: Command (CMD), ISO
- + Write a machine tooling program using the Expert tool
- + Machine settings:
- + Preparing the machine and its environment
- + Wire tension and stability
- + Position and alignment of guides
- + Threading positions
- + Verification of control points
- + References and position of workpieces
- + Learning and using machining parameters
- + Machine maintenance

What is the course objective?

- + In this course, participants learn how to make their first workpieces on a wire EDM machine and work unassisted.

What are the course benefits?

- + Learn the main functionalities to perform with the EDM Wire technology

Maximize performance

Developing your knowledge to an expert level, to enhance your machine performances.



EDM

- + EDM-Wire Advanced training
- + EDM-Wire Thin wires
- + EDM-Wire Advanced programming
- + EDM-Wire Taper-Expert



Maximize performance training

EDM–Wire Advanced training

article n°200010681 (at GF site)

article n°200010682 (at customer site)



Wire cutting

Duration	Number of participants	Experience level	Requirements	Machines
3 days	4	Intermediate	EDM-WIRE Basic training	AC Progress, CUT E, CUT P, CUT P Pro, CUT X 000

Increase productivity with EDM Wire cutting by optimizing process parameters

What are the course contents?

- + Review of basic course modules
- + Mastering generator parameters
- + Possibility of introduction of very fine wire (≤ 0.1 mm)

What is the course objective?

- + In this course, participants have the chance to increase their basic knowledge and optimize machining sequences for nonstandard scenarios (stepped sections, exotic materials, etc.).

What are the course benefits?

- + Enhancing the productivity of your equipment thanks to better knowledge of the interaction of the primary machining parameters.

Maximize performance training

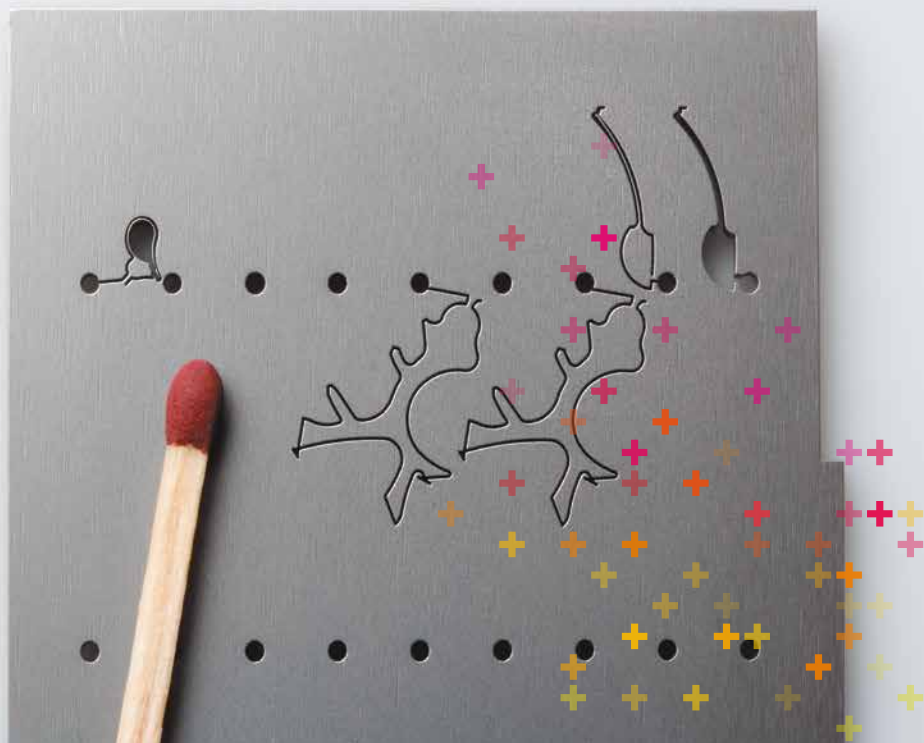
EDM–Wire Thin wires

article n°200010685 (at GF site)

article n°200010686 (at customer site)



Wire cutting



Duration	Number of participants	Experience level	Requirements	Machines
1 day	4	Intermediate	EDM-WIRE Basic training Advanced training	AC Progress, CUT E, CUT P, CUT P Pro, CUT X 000

Produce high precision parts in EDM Wire cutting by mastering thin wires set-up and process

What are the course contents?

- + Presentation of objectives of machining with fine wire
- + Presentation of fine wire ranges and their respective applications
- + Raising awareness of the importance of wire quality
- + Machine configurations
- + Option assembly
- + Machine settings
- + Creating a full example

What is the course objective?

- + In this course, participants learn how to make high-precision pieces with radii less than 0.1 mm.

What are the course benefits?

- + Gain the skills you need in order to produce small-radius pieces.
- + Answer customers' needs and open new market horizons.
- + Learn to produce very high-precision, fine-geometry pieces (slot type, miniature gears, clock mechanisms, etc.).

Maximize performance training

EDM–Wire Advanced programming

article n°200010689 (at GF site)
article n°200010690 (at customer site)



Wire cutting

Duration	Number of participants	Experience level	Requirements	Machines
2 days	4	Intermediate	EDM-WIRE Basic training Advanced training	AC Progress, CUT E, CUT P, CUT P Pro, CUT X 000

Master productivity in EDM Wire cutting by using advanced programming

What are the course contents?

- + Introduction to specific advanced programming language
- + Automation of repetitive measurements of pieces and machining processes
- + Creation of standardized routines
- + Creation of a measurement ratio program
- + Strategy for optimized machining of one or more workpieces
- + Creating a full example

What is the course objective?

- + In this course, participants learn how to standardize complex routines, such as measurement of pieces and automated machine Tooling.

What are the course benefits?

- + Make productivity gains, eliminate the risk of error, and profit from enhanced flexibility by machining at different levels of precision.

Maximize performance training

EDM–Wire TAPER-EXPERT

article n°200010691 (at GF site)

article n°200010692 (at customer site)



Wire cutting



Duration	Number of participants	Experience level	Requirements	Machines
1 day	4	Intermediate	EDM-WIRE Basic training Advanced training	AC Progress, CUT E, CUT P, CUT P Pro, CUT X 000

Master precision and surface finish on conical workpieces with EDM Wire cutting

What are the course contents?

- + Machine configurations
- + Option assembly
- + Machine settings
- + Raising awareness of the importance of wire quality
- + Definition of objective and limits
- + Selection of wires according to required precision and inclination
- + Creating a full example

What is the course objective?

- + In this course, participants learn how to machine precision conical workpieces without affecting the surface finish.

What are the course benefits?

- + Acquire knowledge on important and necessary elements for the successful machining of ultra-precise angles in order to make productivity gains and eliminate the risk of error.

Dedicated training

Customized training based on your specific needs to increase your knowledge and machine performance.



Training for all level

Dedicated training

article n°200011001 (at GF site)

article n°200011002 (at customer site)



Duration	Number of participants	Experience level	Requirements	Machines
Based on your needs	Based on your needs	All levels	Based on your expectations	For all technologies

Realize the full potential of your machine with training customized to your needs

What are the course contents?

- + Adapted to your machine
- + Adapted to your operator's skill level
- + Adapted to your business needs

What is the course objective?

- + Provide your operators with the key knowledge to achieve your business objectives.

What are the course benefits?

- + Acquire the knowledge essential to successful machining.

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.

EDM (Electrical Discharge Machining)



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

Die-sinking EDM

GF Machining Solutions is revolutionizing die-sinking EDM with features like iGAP technology to dramatically boost machining speed and reduce electrode wear. All of our die-sinking systems offer fast removal and deliver mirror finishes of Ra 0.1 µm (4 µin).

Hole-drilling EDM

GF Machining Solutions' robust hole-drilling EDM solutions enable you to drill holes in electrically conductive materials at a very high speed—and, with a five-axis configuration, at any angle on a workpiece with an inclined surface.

Milling



Milling

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.

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 productivity by producing at the lowest cost per part.

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.

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.

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.

Tooling and Automation



Tooling

Our customers experience complete autonomy while maintaining extreme accuracy, thanks to our highly accurate System 3R reference systems for holding and positioning electrodes and work pieces. All types of machines can easily be linked, which reduces set-up times and enables a seamless transfer of workpieces between different operations.

Automation

Together with System 3R, we also provide scalable and cost-effective Automation solutions for simple, single machine cells or complex, multi-process cells, tailored to your needs.

Software



Digitalization solutions

To drive its digital transformation, GF Machining Solutions acquired symmedia GmbH, a company specialized in software for machine connectivity. Together, we offer a complete range of Industry 4.0 solutions across all industries. The future requires the ability to adapt quickly to continual digital processes. Our intelligent manufacturing offers embedded expertise, optimized production processes, and workshop Automation: solutions for smart and connected machines.

Customer Services



Worldwide for you

Ensuring the best performance throughout the lifetime of our customers' equipment is the goal of our three levels of support. Operations Support offers the complete range of original wear parts and certified consumables. Machine Support includes spare parts, technical support, and a range of preventive services to maximize machine uptime. Business Support offers customer-specific business solutions.



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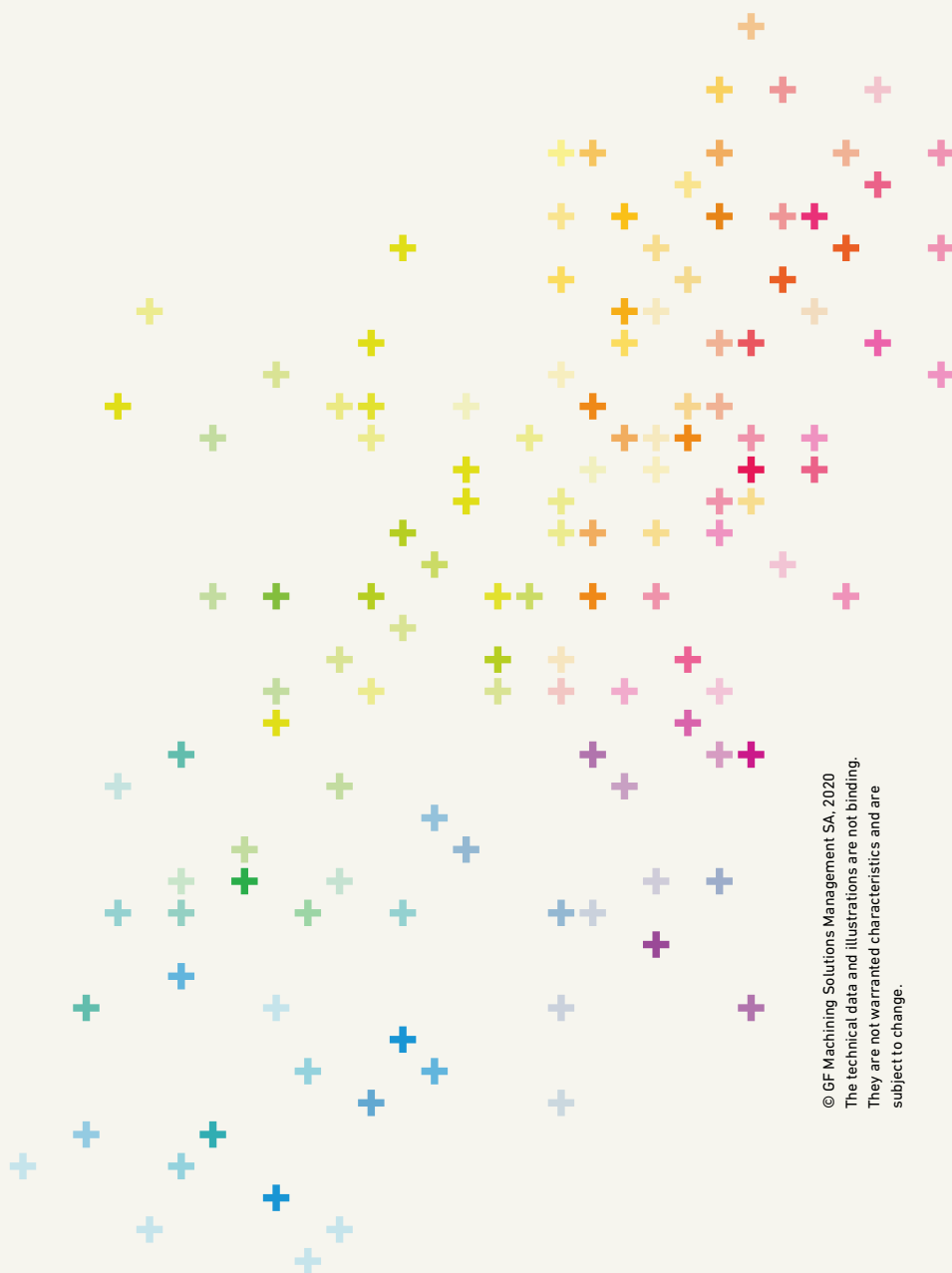
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At a glance

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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