

Media Release

Biel, Switzerland
October 2021

GF Machining Solutions highlights customer-centered manufacturing innovations at EMO Milano 2021

GF Machining Solutions showcases several manufacturing innovations at EMO Milano 2021 that resulted from the company's continuous collaborations with customers. These innovations – ranging from advanced milling, EDM and laser texturing to micro machining, additive manufacturing and automation – combine the experiences and application expertise of both parties to provide effective solutions for manufacturing success. At the show, GF Machining Solutions showcases them in Hall 1 at Stand C10 D05.

Milling

For advanced milling, GF Machining Solutions presents the Mikron MILL P 800 U S and the Mikron MILL P 900 with the new Heidenhain Touch Numerical Control (TNC) 640. The MILL P 800 U S provides 5-axis milling with perfect workpiece roundness, superior surface quality and high material-removal rates in a compact footprint. The machine allows shops to machine components fully on a single machine and eliminate transfer-related part errors, along with stacked tolerances, for enhanced quality of finished parts.

The Mikron MILL P 800 U S will be offered to customers as part of a complete newly designed service package. They can expect a full support with one supplier for the whole cell including automation. On top of that, they will receive extra hours of support, quick access to experts to get the machine on track up to 12 times faster, remote support using the latest digital technologies and advanced diagnostics on the spindle and the robot's motions. Further advantages for customers include the worldwide spindle exchange service within 24 hours, as well as original parts and upgrade to the latest software, reducing downtime significantly.

The MILL P 900 is a high-precision and productive 3-axis vertical machine that is especially well-suited for the mold and die work. This robust machine features a polymer concrete base that delivers extreme dynamic stiffness combined with thermal management, contour accuracy and precise positioning to create superior surface finishes. A symmetrical portal design and effective chip management heighten the machine's operational efficiency. The new TNC 640, now available worldwide, answers customers' need for greater flexibility with an intuitive, user-friendly interface and a wide range of functions designed to ensure great reliability.

EDM

On the EDM side, the GF Machining Solutions EMO stand features both wire-cutting and die-sinking technologies that include the AgieCharmilles CUT P Pro 550 and AgieCharmilles CUT X wire-cutting EDM machines and the AgieCharmilles FORM X 600 die-sinking EDM machine. The new CUT P Pro series features highly efficient power generators, robust designs and intuitive human-machine interfaces (HMIs) as well as several automation options for lights-out operation. With Intelligent Power Generator (IPG) technology, the machines deliver surface finishes as smooth as Ra 0.08 µm and heighten accuracy with integrated thermal regulation that maintains temperature consistently within $\pm 0.2^{\circ}\text{C}$ to achieve an accuracy of $\pm 2\text{ }\mu\text{m}$.

The AgieCharmilles CUT X series of wire-cutting EDM machines features new technologies that significantly increase operating precision, holding extreme pitch positions and contouring capabilities for superb part quality. The series includes the CUT X 350 and the CUT X 500 machines, which are equipped with GF Machining Solutions' new Uniqua HMI for optimal functionality and ergonomics.

Particularly for mold makers in microelectronics, telecommunications, medical technology, connectors and optical systems, the GF Machining Solutions FORM X 600 die-sinking EDM machine delivers positioning accuracy within 1 µm, and general machining accuracy on the workpiece down to 5 µm, combining speed and precision. The machine's latest-generation Intelligent Speed Power Generator (ISPG) reduces electrode wear by up to 50% for significant savings in electrode costs. Fewer electrodes also mean fewer electrode changes, which translates to shorter cycle times and reduced downtime.

Laser

As with all of GF Machining Solutions' LASER machines, the LASER P 400 series offers repeatable high performance, consistent accuracy and unvarying quality. Fully digitized texturing makes it easy to texture, mark, engrave and add functional surfaces to parts, molds and dies, even when dealing with complex 3D parts. The machine's modular concept includes a patented dual-laser head that features both a fiber nanosecond laser and femtosecond pulsed laser. This enables shops to texture and engrave a surface with a single setup, and extends the range of materials that the machine can process.

The laser machine displayed at EMO Milano 2021 virtually is the AgieCharmilles LASER S 2500 U dedicated to the automotive industry. Designed to answer upcoming trends in e-mobility, this fast, accurate new addition to the LASER S series facilitates textured surfaces to increase product differentiation. Its table can accommodate large molds up to 10 tons to handle large parts such as dashboards and door trims. The monobloc tri gantry design of the LASER S 2500 U and its thermo-stabilized areas ensure the highest graining quality.

Laser micromachining

Taking part production beyond the capabilities of traditional CNC machining, the GF Machining Solutions Microlution ML-5 is a five-axis ultrafast laser platform optimized for micro-scale holmaking and fine cutting, which it performs without creating any heat-affected zones. The machine's compact, high-performance, ultrafast femto laser reduces cycle times and tooling costs to enable the production of precision parts in seconds.

Additive manufacturing

Representing the future of additive manufacturing, the DMP Flex 350 metal 3D printer from GF Machining Solutions provides 24/7 part production. With a maximum part build size of 275 mm x 275 mm x 380 mm (10.83" x 10.83" x 14.96"), the machine enables more efficient production of dense, pure metal parts and includes improved gas flow technology for uniform part quality across the entire build area. The machine's repeatability and top quality result from a pure atmosphere during printing, a consistently low-oxygen environment with fewer than 25 parts per million. This solution ensures excellent microstructures, very high material density and stable mechanical properties.

Automation

As a highly flexible automation solution, the GF Machining Solutions System 3R WorkPartner 1+ (WPT 1+) modular automation system is for milling, EDM and laser micro machining applications, and the company showcases the WPT 1+ at EMO in the System 3R Stand F22 G25 in Hall 7. The WPT 1+ maximizes magazine capacity for loading and unloading both parts and electrodes while also conserving valuable shop floor space. With nine models from which to choose, shops can start with a single magazine unit, then add one or two more as production needs change.

Media Release

October 2021

Page 3/3

The WPT 1+ easily serves one or two machines within in a production cell thanks to the flexibility of its one, two or three-magazine capacities, along with fully integrated pneumatic control for gripping devices and table chucks. Large doors allow for fast and easy loading and unloading to help shorten changeover cycle times for both low and high-volume applications.

Customer Services

GF Machining Solutions' Customer Services offers four new categories of "Success Packs" to help customers reach their peak performance throughout the entire lifecycle of their machining and automation tools: Bronze, Bronze +, Silver and Silver +. Each of these Service + Success packs addresses different customer needs with various combinations of support features, ranging from hands-on operational assistance, performance-oriented training, state-of-the art certifications and financial solutions to hardware and software upgrades.

For further information please contact:

Johanna Lüder

Internal Communications and Media Relations Manager

Phone: +41 32 366 10 52

Mobile: +41 76 824 81 65

johanna.lueder@georgfischer.com

GF Machining Solutions SA

Roger-Federer-Allee 7

2504 Biel/Bienne

Switzerland

www.gfms.com

Profile of GF Machining Solutions

GF Machining Solutions is the world's leading provider of machine tools, diverse technical solutions and services to manufacturers of precision molds and tooling and of tight-tolerance, precision-machined components. The key segments we serve include the aerospace, automotive, medical, energy, information and communications technology (ICT) and electronics industries. Our extensive portfolio ranges from Electrical Discharge Machining (EDM) solutions, three- and five-axis Milling machines and Spindles, 3D Laser texturing machines, Additive Manufacturing and machines for Laser micromachining to solutions for Tooling, Automation, Software and Digitalization—all backed by unrivaled Customer Services and support. GF Machining Solutions is a globally acting Division of the Georg Fischer Group (Switzerland) and maintains a presence at 50 locations worldwide. Its 3,192 employees generated sales of CHF 725 million in 2020. More information can be found at www.gfms.com.

GF Machining Solutions SA, Roger-Federer-Allee 7, 2504 Biel/Bienne

T +41 32 366 11 11, F +41 32 366 19 20