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Nidec Machine Tool to Launch GE25CF, a Hobbing Machine that Integrates Hobbing and Chamfering Processes to Help Automation and Reduce Labor of Gear Manufacturing

Nidec Machine Tool Corporation (“Nidec Machine Tool” or the “Company”) announced today that it will launch on June 02 **GE25CF, a hobbing machine that can perform both gear cutting and chamfering operations**. This process-intensive model is capable of performing hobbing, which is a coarse process in gear manufacturing, and of chamfering and deburring both ends of a gear, in a machining process.

Amid the growing demand for lower noise and better transmission efficiency for electric vehicles (EVs) and other products, the Company has successfully developed GE25CF to fulfill the needs for better productivity, automation, and labor saving in producing high-precision gears. In addition, by adopting the generating method^{*1} to machine high-precision gears with high efficiency, GE25CF can chamfer a shape more accurately than in the conventionally mainstream phrasing process^{*2} (a plastic method), and remove burrs from coarse processing as well.

Furthermore, GE25CF boasts a smallest-in-class size as a hobbing machine with an integrated chamfering function.



GE25CF, the hobbing machine that can perform both cutting and chamfering



A gear (left) and ChamferX, a dedicated chamfering tool (right)

GE25CF's features

1. Better accuracy

Being made based on the GE series, the Company's long-selling hobbing machines, GE25CF is a process-intensive model equipped with hobbing and chamfering functions. To ensure accurate chamfering after a hobbing process, GE25CF adopts a generating-method-based cutting and removal system that uses ChamferX, a dedicated tool that the Company developed (a product on sale). Unlike in the phrasing process, this system does not generate any metal embossment (secondary burrs) toward tooth flanks and end faces, and thus secures a high quality of gear faces. In addition, the system can chamfer a root (an operation difficult to perform with the phrasing process), secure a chamfering width of 1mm or wider, and remove burrs from the hobbing process.

2. Better productivity & operability

To secure better productivity, GE25CF adopts a ring loader for workpiece (object to be machined) exchange, enabling simultaneous hobbing and chamfering operations. Capable of performing chamfering within hobbing time, GE25CF has successfully shortened cycle time. Further, to be a user-friendly product, GE25CF has, among other features, a wider opening to its front door, and an operating board with a rotary joint, making itself highly operator-friendly and maintainable. Moreover, the width of its chamfering unit at a smallest-in-class level, GE25CF contributes to making compact line layouts, and to automated and labor-efficient operations via process integration.

3. The dedicated tool ChamferX

ChamferX, the dedicated tool that works with machines to realize high-speed and high-accuracy processing, is

designed, manufactured, and sold by Nidec Machine Tool, and utilizes cutting-edge tool-designing simulations to enable on-target chamfering and deburring. In addition, thanks to their long lives, ChamferX's tools boast low exchange frequency, while the Company provides after-sales services such as re-sharpening and recoating, reducing ChamferX's total running costs.

As a manufacturer that can propose gear machining-related total solutions ranging from gear machines to cutting tools, and also from crude processing to finish processing, Nidec Machine Tool remains committed to contributing to the world's gear manufacturing.

■ Main specifications of GE25CF, a cutting & chamfering hobbing machine

Specifications			GE25CF
Max. workpiece diameter		mm	Φ 250
Max. module		mm	6
Hobbing processing	Max. spindle rotation speed	min ⁻¹	2,000
	Max. table rotation speed	min ⁻¹	200
Machine weight		kg	12,000

*1. Generating method: A gear-machining method that uses screw-type tools to generate a shape based on a synchronized motion of the tools and a gear to be machined (a workpiece).

*2. Phrasing process: A machining method that uses a phrasing cutter to roll both ends of a gear to generate a chamfering shape.

■ Link to the webpage on details of [GE25CF](#), a cutting & chamfering hobbing machine

For more information, please contact Nidec Machine Tool's Gear Machine System Business Department by using [this inquiry form](#). Thank you.

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