



All for dreams

PRESS RELEASE

4 MAR 2022

Nidec Machine Tool Launches Two New Hobbing Machines **With Higher Speed , Precision and Efficiency**

– GE15HS and GE25HS Models for Gears From 15 to 250mm –

- ◆ *Two models with enhanced precision and efficiency added to the GE Series.*
- ◆ *High-speed, high-torque main spindles provide optimal machine structure for high-efficiency processing of mass production gears.*

Ritto, 4 MAR 2022 – Nidec Machine Tool Corporation announces the launch of the new GE15HS and GE25HS models of hobbing machines. Emphasizing high speed, precision and efficiency, the new machines produce gears for electric and hybrid cars amid the global trend toward reducing the carbon footprint.

The GE15HS model is for gears with a maximum diameter of 150mm, widely used in automobiles and motorcycles. The high-speed, high-torque direct-drive motor^{*1} for the main cutting spindle provides a maximum spindle speed of 6,000 min^{-1*2} - three times faster than previous models. The high efficiency spindle holding the work piece uses a special table that provides high rigidity and high-speed rotation to handle the necessary thrust load^{*3} for high efficiency machining. Cutting gears with Nidec's super-hard cutting tools yields a surface roughness of less than Ra0.4^{*4}; on par with gear grinding. The GE15HS provides process efficiency, eliminating the finishing process of shaving prior to heat treatment, improving productivity and reducing processing cost.

The GE25HS is for larger gears up to 250mm in diameter, such as automobile differential gears. With its high-efficiency processing, this model utilizes a high-speed, high-power spindle eliminating the effects of temperatures variation during production. The high rigidity table has the backlash eliminator incorporated as standard equipment. In addition, the motor torque and maximum spindle rotation speed of the main spindle have been increased 1.5 times from previous models, providing a 42% reduction in processing time^{*5}.

Used in combination with Nidec Machine Tool's new materials and coatings for cutting tools, the GE25HS model provides stable mass production with a cutting speed of more than 400m/min.

More than 2,800 GE Series hobbing machines have been delivered and installed since the product launch in 2004.

Demand for mass production of high-precision gears is continuing to rise with the shift to electrification of vehicles. With the need for improvements in NVH and fuel efficiency, and the move toward low-cost manufacturing, Nidec Machine Tool, with expertise in both gear machine tools and cutting tools, offers a full lineup of gear production machines, including these two new models. By delivering precision cutting tools and processing solutions to achieve high-precision, high-efficiency processing, Nidec Machine Tool provides comprehensive support for manufacturing in a wide variety of industries.

Notes

- *1: Direct-drive mechanism motors utilize the torque coming from a motor without passing through a gear box or other mechanism in order to control driving loss due to friction and reduce wear on parts.
- *2: The "min⁻¹" notation is a unit expressing the number of turns in one minute, synonymous with "revolutions/rotations per minute" (rpm).
- *3: Thrust load is the force applied to the shaft in a horizontal (parallel) direction (the axial direction of the rotor).
- *4: In-house machining result with GE15S (Workpiece data: Module 1.6mm; No. of teeth 19; helix angle: 24°; face width: 24mm)
- *5: In-house machining result with GE25A-S (Workpiece data: Module 3mm; No. of teeth 54; helix angle: 30°; face width: 40mm)

	<u>GE15S</u>	<u>GE25A-S</u>
Max. workpiece diameter	150 mm	250 mm
Max. cutting module	4 mm	6 mm
Max. hob diameter	90 mm	130 mm
Max. hob length	190 mm	230 mm
Mount of hob shift	150 mm	180 mm
Max. spindle rotation speed	6,000 min ⁻¹ Direct drive mechanism	2,300 min ⁻¹
Main motor rated output	24 kW	25 kW

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