DMG MORI CO., LTD.

Global Head Quarter: 2-3-23 Shiomi, Koto-ku, Tokyo, 135-0052, Japan TEL: +81(0)3-6758-5900

#### **Press Release**

November 2<sup>nd</sup>, 2022

### Mill-Turn Centers "NZ-Platform" Mass Production of Complex Parts with up to 4 Turrets

DMG MORI CO., LTD. (hereafter referred to as "DMG MORI") has released the "NZ-Platform" of Mill-turn centers fit for the mass production of complex-shaped parts. With max. 4 turrets available, these machines are the perfect solution for process integration of automotive and hydraulic/pneumatic component manufacturing.

For a sustainable future, the world is gradually shifting towards electric vehicles and industrial machinery with small carbon footprints and state-of-the-art hydraulic/pneumatic equipment. To reduce CO<sub>2</sub> emissions in not just these production processes but across the whole supply chain, machine tools capable of efficient large-lot production are in high demand.

The "NZ-Platform" is a lineup of Mill-turn centers specialized in integrating processes for highaccuracy/complex-shape workpieces on a single machine. By offering multiple machine structures and high flexibility, the "NZ-Platform" seamlessly adjusts to customers' production needs and enables high productivity.

Customers can freely choose the number of turrets, turret position, and whether to include B-axis<sup>\*1</sup> or not. The max. specification consists of 4 turrets. Milling function and Y-axis are available as standard and B-axis as option on all turrets. The basic machines are predefined by DMG MORI for customers to select the model which best suits their production: "NZ DUE" with 2 turrets, "NZ TRE" with 3 turrets, and "NZ QUATTRO" with 4 turrets. Two machining lengths are available, the Short Type with 740 mm and the Long Type with 1,290 mm. Also, for further cycle time reduction, customers may choose the newly developed Twin Spindle for double collet application on the Z-axis to perform 2 simultaneous processes on the Right and Left Spindle. The turnMASTER spindle with 7,000 min<sup>-1</sup> rpm<sup>\*1</sup> delivers highest performance on both sides; and the milling spindle with 12,000 min<sup>-1</sup> rpm<sup>\*1</sup> ensures high performance and accuracy. Finally, the "NZ-Platform" is 28%<sup>\*2</sup> more compact than its predecessors while also being more productive.

In addition, automation systems for mass production such as in-machine traveling loader systems<sup>\*1</sup> for inprocess workpiece transfer or a bar feeder interface<sup>\*1</sup> for automatic bar supply can be connected without

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taking much space and further raise productivity. Turrets can hold up to 64 tools to reduce tool setup time and enable long periods of unmanned operation. Furthermore, as the global DMG MORI has achieved carbon neutrality in all processes from parts procurement to product shipment, the "NZ-Platform" is a fully carbon neutral product. The reduction of cycle times through process integration and automation boosts productivity and helps reducing CO<sub>2</sub> emissions and power consumption.

To experience the "NZ DUE" for yourself, visit the DMG MORI Open House at Tokyo Global Headquarters held in parallel to JIMTOF2022 from November 8-13, 2022. DMG MORI is happily awaiting your visit!

Please take a look at the movie on the DMG MORI website:

https://www.dmgmori.co.jp/movie\_library/movie/id=6366

### Features

- ① Various different unit configurations
  - + 2-4 turrets, milling function on all turrets, Y-axis function as standard, B-axis function<sup>\*1</sup> available
  - + Choose your ideal configuration!
    - "NZ DUE" with 2 turrets
    - "NZ TRE" with 3 turrets
    - "NZ QUATTRO" with 4 turrets
  - + Twin Spindle<sup>\*1</sup> available for highly efficient production of long shaft parts
    - · Swiss Type: With rotary guide bush for efficient bar machining
    - Double Collet (max. 4,000 min<sup>-1</sup> rpm): Simultaneous machining on Left/Right Spindle
    - · Hydraulic Steady Rest: High-precision machining of long shaft parts
- ② High productivity
  - + Shorter cycle times and efficient production with max. 4 turrets / 3 spindles
  - + High-performance turning spindle "turnMaster"
    - Built-in motor with max. speed 5,000 min<sup>-1</sup> (option 7,000 min<sup>-1</sup>)
    - 8 mm cutting depth possible on all turrets<sup>\*3</sup>
  - Built-in motor turret for max. milling spindle speed at 12,000 min<sup>-1\*1</sup>,
    High-accuracy machining with small diameter tools possible
  - + B-axis with 110° swivel angle to realize simultaneous 5-axis machining. No special tool holders required; tool setup reduced. Mass production of complex parts, such as spinal bevel gears.
  - + Twin Spindle<sup>\*1</sup> for simultaneous processing with same circularity and high concentricity

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- + Direct scale feedback as standard on all linear axes
- + Circulated cooling of spindles, turrets, ball screw nuts and feed boxes to reduce thermal displacement
- 3 Chip solutions & Operability
  - + Vertical bed structure to reduce chip accumulation and improve chip evacuation
  - + Improved accessibility to the workpiece for easier setup, cleaning, etc.
  - + DMG MORI SLIMline with 19-inch touch screen for excellent operability
- ④ Footprint
  - + 28% smaller footprint than predecessor machines with higher productivity
- (5) Automation
  - + Bar feeder interface<sup>\*1</sup>
  - · Paired with workpiece unloader. Allows full bar machining on compact space
  - + In-machine traveling loader system<sup>\*1</sup>
    - In-process workpiece transfer for zero idle time
    - · Loading/unloading on both spindles
    - Max. travel speed 30 m/min, Loader arm movement range 35°
- 6 Energy saving
  - + Optimized energy efficiency to reduce CO<sub>2</sub> emissions.

DMG MORI will continue to attend to customer needs and develop highly functional, reliable and investment-worthy products.

Target industries      Automotive, Aerospace, Construction, Energy, Robot, etc.	Product name	Mill-turn Centers "NZ-Platform"
	Target industries	Automotive, Aerospace, Construction, Energy, Robot, etc.

\*1 Option

<sup>\*2</sup> When comparing NZX 1500/800 SY2 with bar feeder and NZ DUE (short bed) with bar feeder

<sup>\*3</sup> For material <JIS> S45C, cutting diameter Φ65 mm, cutting speed 270 m/min, feed 0.4 mm/rev and material removal 750 mL/min %DMG MORI CO., LTD., NZ-Platform, NZ DUE, NZ TRE, NZ QUATTRO, turnMASTER and DMG MORI SLIMline are registered trademarks or trademarks of DMG MORI CO., LTD.

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NZ-Platform (from the left) NZ DUE、NZ TRE、NZ QUATTRO



Inside view: NZ DUE

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### Inside view: NZ TRE



Inside view: NZ QUATTRO (with Twin Spindle)

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Machining with Twin Spindle (double collet)