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Press Release

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Outstanding Cutting Capability
High-precision 5-axis Control Machining Center DMU 50 3rd Generation with High-performance Spindle speedMASTER

DMG MORI CO., LTD. (hereinafter called DMG MORI) began taking orders for the DMU 50 3rd Generation, a high-precision 5-axis control machining center equipped with the high performance spindle speedMASTER.

In developing the 3rd generation model, DMG MORI incorporated customer feedback on its existing models into machine design in order to improve performance in every aspect.

The new DMU 50 comes standard with the high-performance spindle speedMASTER. The spindle, developed in-house, offers a maximum spindle speed of 15,000 min^{-1} and maximum torque of 111/85 Nm, and achieves a 50% greater cutting capability than the existing models. The machine also employs the full closed loop control (scale feedback) on all axes as standard to achieve a positioning accuracy of 6 µm or less. Additionally, with the directry driven ball screws on the X, Y and Z axes, the machine achieves a rapid traverse rate of 42 m/min, providing high speed and high accuracy machining. Despite its compact footprint of only 6.7 m^2, the DMU50 3rd Generation offers a 78% larger machining envelope than its predecessor, ensuring better visibility to the work area and exceptional accessibility to the inside of the machine. The NC rotary table with a wide B-axis swivel range of 145° (-35° to +110°) made it possible to machine a complex-shaped workpiece with only one setup.

The DMU50 3rd Generation was launched at the EMO show which took place last month in Hannover, Germany. Since then the machine has been well received around the world as a standard model in the simultaneous 5-axis machining range. It will make its Japan premiere at Mechatronics Technology Japan (MECT) 2017 to be held from October 18 to 21.

The features of the DMU 50 3rd Generation include: 1) High speed and high accuracy; 2) Space efficiency; 3) Varieties of Technology Cycles; 4) Compatibility with Industry 4.0 and Connected Industries; and 5) Automation systems.

1) High Speed & High Accuracy

- speedMASTER as standard
  The speedMASTER, an in-house developed high performance spindle, is employed as standard. With a spindle speed up to 15,000 min^{-1} and high torque up to 111/85 Nm, it achieves a 50% greater cutting capability.
- High-performance linear scale as standard
  The standard full closed loop control mounted on all axes ensures a positioning accuracy of 6 µm or less.
- The directry driven ball screws on the X, Y and Z axes help achive a rapid traverse rate of 42 m/min.

2) Space Efficiency

- 78% larger machining envelop is achieved in a compact body of only 6.7 m^2
- Large B-axis tilt angle: 145° (-35° to +110°)
  Axis travel: X: 650 mm, Y: 520 mm, Z: 475 mm
- 30-tool magazine as standard

3) Varieties of Technology Cycles

A variety of Technology Cycles are available to meet many different customer needs.

- MPC (Machine Protection Control) as standard
- 3D quickSET, ATC (Application Tuning Cycle), etc. available as options

4) Compatibility with Industry 4.0 & Connected Industries

DMG MORI's one-of-a-kind human machine interface (HMI), CELOS, clarifies production challenges and helps maximize productivity.

- Visualize the machining status of the networked machines and operating status of the whole factory. (DMG MORI Messenger)
- Machine data recorded by each sensor enables early detection of problems with the machine or machining status. (Condition Analyzer)

5) Automation Systems

DMG MORI offers high-quality, comprehensive automation systems which include machine tools, transfer units, peripherals, production control systems, and even machining technologies, fixtures/jigs, tools and measurements in a short delivery time.

DMG MORI will continue to provide products that are reliable, highly functional and worthy of investment to meet each and every customer need.

Item	High-speed, high-precision 5-axis control machining center
Model name	DMU 50 3rd Generation
Market	General machinery parts, aircraft parts, etc.
Start of order taking	September 18, 2017
Planned sales volume	1,000 units/year on global basis (Japan: 100 units/year)

■Main specifications

Item		DMU 50 3rd Generation
X-axis travel	(mm)	650
Y-axis travel	(mm)	520
Z-axis travel	(mm)	475
Table size	(mm)	φ 630 x 500
Table loading capacity	(kg)	300
Max. spindle speed	(min^{-1})	15,000 [20,000] *
Rapid traverse rate (X/Y/Z)	(m/min)	42
Tool storage capacity	(tool)	30 [60/120]
Spindle drive motor (40/100% ED)	(kW)	21/16 (15,000 min^{-1}) [35/25 (20,000 min^{-1})]
Footprint (width × depth)	(mm)	2,350 x 2,850

*Option

Photo 1. DMU 50 3rd Generation

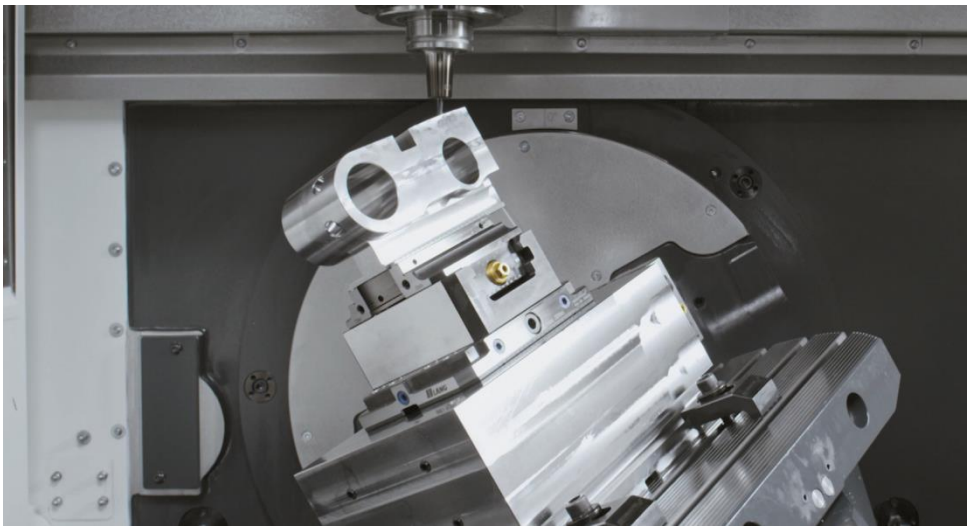

Photo 2. Machining