

Press Release

September 6, 2011

With up to 3 Turrets High-efficiency Multi-axis Turning Centers for Mass Production "NZX1500" and "NZX2000" Launched!

Mori Seiki Co., Ltd. has started taking orders for the **NZX1500** with a 6-inch chuck and **NZX2000** with an 8-inch chuck, high-precision high-efficiency multi-axis turning centers from the **NZX Series** on September 6, 2011. The NZX Series is a new line-up of the "X class".

The NZX1500 and NZX2000 are lathe-base multi-axis turning centers equipped with up to 3 turrets, and all of them have the milling function as standard. It is possible to choose the Y-axis function for all the turrets. By taking advantage of the multiple turrets, they offer high-efficiency machining for mass production of automobile, hydraulic/pneumatic equipment parts, and for complex shaped parts with the Y-axis function. On this occasion, we introduce the NZX1500 and NZX2000 from the aspects of (1) Original technologies, (2) Wide variations, (3) High-efficiency machining, (4) Reliability, (5) MAPPS IV + ESPRIT, and (6) Compliance with safety standards.

(1) Original technologies

All the turrets of NZX1500 and NZX2000 are **BMT® (Built-in Motor Turret)** as standard. By placing the motor inside the turret, the BMT® reduces temperature increases in the turret to 1/10 or less, and vibration during machining to 1/3 or less compared with the conventional belt-drive machines. The built-in motor is a high output and high speed specification with a maximum output of 7.5 kW (1.7 times higher compared to the conventional model), and a maximum rotational speed of 12,000 min⁻¹ (4 times faster compared to the conventional model). This high machining capacity dramatically reduces machining time.

The **ORC® (Octagonal Ram Construction)** is used for Turret 2. The slideways on the Y-axis as a feed mechanism enhance the damping performance and rigidity. Moreover, the slideways, which are located diagonally from each other, offset each other's thermal displacement because their distortion in response to heat is symmetrical. As the result, it offers highly accurate machining without chattering, and high speed feed which is not affected by thermal displacement.

(2) Wide variations

The NZX1500 and NZX2000 have T specification (3 turrets), Y specification (Y-axis), S specification (Spindle 2), and L specification (turning). **DL type**, which has a partition, is available with the 2 turret specifications. By having the partition between machining areas, separate machining processes are available on both Spindle 1 and 2 at the same time. It is highly flexible that you can choose the processes based on the workpieces and the production status, such as setting up with one spindle when machining with another spindle.

*BMT® and ORC® are trademarks or registered trademarks of Mori Seiki Co., Ltd. in Japan, the USA and other countries.

(3) High-efficiency machining

16 tools on each turret, in other words, maximum 48 tools can be installed. In addition to Y-axis function, it offers process integration. The through spindle hole diameters are 61 mm for NZX1500 and 73 mm for NZX2000 with the improved spindle motor outputs show the high bar work capacity. By combining loader, bar feeder, and workpiece discharge unit, it enables complete machining of complex shaped workpieces. With three turrets, it reduces machining time dramatically. Compared with a conventional type machine with 1 turret, it reduces maximum 70% for machining the same workpiece.

(4) Reliability

For the heavy use of the high-pressure coolant, the NZX1500 and NZX2000 spindles have the advanced labyrinth structure that coolant hardly enters inside the spindle unit. By adding air purge to BMT[®] for protecting the milling motor, the durability is enhanced. Even if coolant enters inside the turrets, it doesn't stay inside because it is sucked out.

(5) MAPPS IV + ESPRIT

The NZX1500 and NZX2000 use the MAPPS IV high-performance operating system for its operation panel. In addition to the automatic conversational programming function (standard), ESPRIT CAM software and a 19-inch large screen is available as standard. The combination of MAPPS IV and ESPRIT allows the machine to flexibly meet customer needs for complex machining programming. Additionally, the machine is equipped with MORI-NET that provides remote maintenance and operating status monitoring, as standard.

(6) Compliance with safety standards

The NZX1500 and NZX2000 comply with safety standards of the respective countries around the world. (IEC marking, UL, JIS and other standards)

The NZX2000 will be exhibited at **EMO Hannover 2011** Machine Tool World Exhibition to be held from September 19 to 24 in Hannover, Germany. We are looking forward to seeing you at our booth.

Mori Seiki will continue to improve our product line-up and work hard to meet the needs of more customers.

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| Type | High-Precision High-Efficiency Multi-Axis Turning Center |
| Model | NZX1500 NZX2000 |
| Market | Automobile parts, electrical and communications equipment, hydraulic/pneumatic equipment, etc. |
| Order start | September 6, 2011 |
| Production | 15 units/month |

■Main specifications (3 turrets, 3 Y-axes specification)

| | NZX1500/800STY3 | NZX2000/800STY3 |
|---|---|------------------------|
| Max. turning diameter (mm) | φ 320 | |
| Max. turning length (mm) | 810 | |
| Bar work capacity (mm) | φ 52 | φ 65 |
| X-axis travel (mm) | 210 | |
| Z-axis travel (mm) | Z1, Z3: 300 / Z2: 810 | |
| Y-axis travel (mm) | Y1, Y3: 110 (+65, -45) / Y2: 110 (+45, -65) | |
| B-axis travel (mm) | 900 | 870 |
| Rapid traverse rate (mm/min) | X: 30,000 Z: 50,000 Y: 20,000 | |
| Max. spindle speed (min ⁻¹) | 6,000 | 5,000 |
| Spindle drive motor (kW) | 22/18.5 (25%ED/30 min. /cont.) [25/22 (40%ED/30 min. /cont.)]* | 25/22 (30 min. /cont.) |
| Max. rotary tool spindle speed (min ⁻¹) | 6,000 [12,000] | |
| Rotary tool drive motor (kW) | 7.5/5.5 | |
| Number of tool stations on the turrets | 16×3 | |

[]Option

* High-output specification



Fig.1 Exterior (NZX2000)