

Press Release

August 23, 2011

Ideal for machining difficult-to-cut materials High-rigidity Large Vertical Machining Center "NVX7000" Launched!

Mori Seiki Co., Ltd. has started taking orders for the **NVX7000** high-precision vertical machining center, a new line-up of the **NVX Series** vertical machining centers in the "X class" from August 23, 2011.

NVX7000 is a long-awaited large size vertical machining center in NVX Series. By launching the NVX7000 with table size of 1,700 mm×760 mm and Y-axis travel of 760 mm, the line-up of NVX Series is improved and expanded. We introduce the highlights of the NVX7000 in terms of (1) High precision, (2) High rigidity, (3) High speed (4) Reliability, (5) Wide variations, (6) MAPPS IV+ESPRIT, and (7) Compliance with safety standards.

(1) High precision

The machine features ball screw core cooling as standard and Z-axis feed box cooling, making it possible to maintain high-precision machining. The NVX7000 achieves roundness of 1.9 μm, which is improved by 70% compared to that of the conventional machine. For customers who require further high-precision machining, "High-precision multi-path oil controller" is available as option. Ideal control for thermal displacement is achieved by separately circulating the optimum temperature cooling oil in the multiple heat-generating components.

(2) High rigidity

With slideways on Y axis, which are always received cutting load, 2.4 times wider than the conventional machine, the machine provides higher rigidity. Additionally, this machine uses a spindle with an I.D. bearing diameter of 120 mm*¹, which is the largest in its class. As a result, the heavy duty cutting capacity is improved by 20%. The NVX7000 offers sufficient rigidity for various machining from heavy duty cutting to high precision machining.

(3) High speed

The balance of rapid traverse speed and acceleration/ deceleration speed is well considered on the basis that the machine will be used in various situations, such as mold machining requires repeating fine feed in the Z-axis direction, etc., By improving the acceleration/ deceleration speed twice faster compared to the conventional machine, the NVX7000 achieves higher speed of feed and shortens cycle time.

*1: High-torque specification

(4) Reliability

For the heavy use of the high-pressure coolant, the NVX7000 spindle has an advanced labyrinth structure that coolant hardly enters inside the spindle unit.

Universal type chip conveyor outside machine is available as a standard option. All types of chips, such as short chips and long chips, are reliably discharged outside of the machine. This is a highly reliable chip conveyor that reduces various troubles caused by chips.

(5) Wide variations

For BT40 spindle unit, high-speed specification with a maximum spindle speed of 20,000 min⁻¹, and for BT50 spindle unit, in addition to high-speed specification, high-torque specification are available to meet customers' needs. By incorporating a **DDRT (Direct Drive Rotary Table)**, which was developed by Mori Seiki, simultaneous 4-axis or 5-axis machining of complex shaped workpieces is also possible with DDRT additional 1 axis specification, or 5AX-DDRT additional 2 axes specification.

(6) MAPPS IV + ESPRIT

The NVX7000 uses the MAPPS IV high-performance operating system for its operation panel. Since a license for ESPRIT CAM software is included as option in addition to the automatic conversational programming function, the machine allows users to create highly complex machining programs on a PC connected to the machine through a network. Additionally, the machine is equipped with MORI-NET that provides remote maintenance and operating status monitoring, as standard.

(7) Compliance with safety standards

The NVX7000 complies with safety standards all over the world, including IEC standards, UL standards, and JIS standards.

The NVX7000 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 provide highly-functional and affordable machines to meet diversified customer needs.

Type	High-Precision Vertical Machining Center
Model	NVX7000
Market	Automobiles, industrial machines, aircraft, dies and molds, etc.
Order starts	August 23, 2011
Production	10 units/month

■Main specifications

	NVX7000/40	NVX7000/50
Axis travel (X/Y/Z) (mm)	1,540/760/660	
Table working surface (mm)	1,700×760	
Maximum table loading capacity (kg)	2,000	
Maximum spindle speed (min ⁻¹)	14,000 [20,000 ^{*2}]	10,000 [6,000 ^{*1} /15,000 ^{*2}]
Spindle drive motor (kW) (30 min/cont.)	22/18.5 [15/11] ^{*2}	30/25 [37/30] ^{*1} [30/25] ^{*2}
Type of tool shank	BT40 [CAT40/DIN40/HSK-A63]	BT50 [CAT50/DIN50/HSK-A100]
Rapid traverse rate (X/Y/Z) (mm/min)	20,000/20,000/20,000	
Tool storage capacity (tools)	30[60]	30 [40] [60]

[]Option

*1: High-torque specification

*2: High-speed specification



Fig. 1 Exterior



Fig. 2 Machining example (Automobile part)