

## Press Release

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July 19, 2011

### **No. 50 Taper Spindle Becomes Available for the NVX5000 Series in the X-class!!**

Mori Seiki Co., Ltd. has started taking orders for **No. 50 taper spindle specifications** for the **NVX5000 Series** of high-precision vertical machining centers from July 19, 2011.

The NVX5000 Series is a premium product range that, while providing options and applications equivalent to those of the NV5000 Series that sold more than 8,000 units, achieves high levels of rigidity, thermal displacement stability and energy saving. In addition to the NVX5000 machine with No. 40 taper spindle specifications that was already released and has been highly praised by many customers, we launch the No. 50 taper spindle and expand our product line-up.

We would like to introduce the highlights of No. 50 taper spindle specifications for the NVX5000 Series in terms of (1) High precision, (2) High rigidity, (3) Expansion of machining variation, (4) Energy saving, (5) MAPPSIV + ESPRIT, and (6) High investment value.

#### **1. High precision**

The machine employs a technology that circulates coolant inside castings of a bed and column (option) as well as a spindle using a heat-symmetrical structure that minimizes thermal displacement. This enables the machine to achieve thermal displacement of 7 μm or less in response to an 8 degrees C change in ambient temperature. Thermal displacement has been suppressed to less than half and responsiveness of minimal feed has been improved, which realize doubled machining accuracy compared with conventional machines. This has improved the accuracy of microfabrication by 100%, which requires high accuracy, even on the high rigidity machine with the No. 50 taper spindle. This allows machining of various materials and workpieces under the ideal machining conditions.

#### **2. High rigidity**

The NVX5000 Series uses slideways on all axes, offering increased machine rigidity. No. 50 taper spindle specifications include a high output motor with 30/22 kW (25%ED/cont.). The machine has achieved high rigidity by making spindle bearing inner diameter larger up to φ120 mm, which is the largest in its class. High rigidity of the machine and high output/high rigidity of the spindle have improved heavy cutting ability by 30%.

#### **3. Expansion of machining variation**

The X-axis stroke is available in three choices (600 mm, 800 mm, 1,050 mm), allowing you to select the specifications that suit your workpiece size. The specifications also allow up to a 240 mm diameter tool to be used, offering enhanced heavy-duty cutting ability.

#### 4. Energy saving

Power supply for a spindle motor, servo motors and a fan inside the electrical cabinet can be stopped during shutdown mode, thereby contributing to reduction in environmental burden and running costs. The total electrical power capacity is also reduced compared with conventional machines and we have achieved electrical power saving by 30% in total.

#### 5. MAPPSIV + ESPRIT

The NHX Series uses the MAPPS IV high-performance operating system for its operation panel. In addition to automatic programming software, ESPRIT CAM software is available as an option. The combination of MAPPS IV and ESPRIT allows the machine to handle complex machining programming and to flexibly meet customer needs.

Also, MAPPSIV is equipped with MORI-NET, which enables remote maintenance of the machine and confirmation of operation status.

#### 6. High investment value

As improving the cutting ability, accuracy, and product quality, the machine price is equal to conventional machines.

Mori Seiki will continue to contribute to improving our customers' productivity by developing machine tools that meet their requirements.

Type	High-Precision Vertical Machining Center
Model	NVX5060/50, NVX5080/50, NVX5100/50
Market	Automobiles, dies and molds, general parts
Orders start	July 19, 2011
Production	15 units/month

#### ■ Major specifications

Item	NVX5080/50
Axis travel (X/Y/Z) (mm)	800/530/510
Table working surface (mm)	1,100 X 600
Max. table loading capacity (kg)	1,000
Max. spindle speed (min <sup>-1</sup> )	8,000 [15,000]
Rapid traverse rate (mm/min)	30,000
Type of tool shank	BT50 [CAT50/DIN50/HSK-A100]
Tool storage capacity (tools)	30 [60]
Spindle drive motor (kW)	30/22 (25%ED/cont)
Floor space (width × depth) (mm)	2,780 X 3,718

[ ]Option



Fig 1. Exterior



Fig 2. No. 50 Taper Spindle  
(with  $\phi$  240 mm face mill)