MORI SEIKI
THE MACHINE TOOL COMPANY

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Press Release

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Announcing High Rigidity, High Precision CNC Lathe "NLX2500/1250" for Long Workpiece

On April 23, Mori Seiki Co., Ltd. has started taking orders for the NLX2500/1250 of a new lineup of the popular NLX2500 Series of high-rigidity, high-precision CNC lathe.

The NLX2500/1250 is a CNC lathe with a 10-inch chuck for machining long workpiece with a maximum turning length of 1255mm, which is extended 550 mm from the present NLX2500/700. The machine uses highly rigid slideways with superior damping performance on all axes and a new coolant circulation technology for its bed to control thermal displacement. As a result, the NLX2500/1250 allows high-precision machining. Design of the tool spindle and the turret is highly reliable because of continuing improvements based on customers' requests to our conventional machines. Furthermore, a variety of option such as loader and steady rest contribute to increase productivity of shaft workpiece. Here, we would like to highlight other features from the perspectives of; (1) High Rigidity, (2) High machining ability, (3) High Precision, (4) Higher Reliability, (5) Wide Variety of Models, (6) Energy saving, (7) MAPPS IV + ESPRIT, and (8) Compliance with Safety Standards.

(1) High-Rigidity

Including slideways with high damping performance, the NLX2500/1250 strengthens the bed and each structure, and it improved the machine rigidity by 30% compared to the conventional machines. Also, optimized ball screws improved the axis rigidity by more than 40%. By improving the rigidity of the structure to support weight of moving parts, the chatter during heavy-duty cutting or continuous cutting is minimized.

(2) High machining ability

The maximum spindle speed of the NLX2500/1250 is 4,000 min-1 and the high output motor of 26/22 can be equipped as an option. **BMT®(Built-in Motor Turret)**, which the motor is embedded in inside the turret, is adopted for the turret. The BMT® reduces temperature increase in the turret to 1/10 or less, and vibrations during machining to 1/3 or less compared with the conventional belt-drive machines. By transmitting the drive power directly, the milling ability is enhanced.

The high damping and high rigidity machine structure draw out these high cutting ability to the full and the NLX2500/1250 realizes the best performance from high speed cutting of aluminum to heavy-duty cutting of difficult-to-cut material.

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(3) High precision

The NLX25000/1250 adopts coolant circulation inside the bed as a standard to uniform the temperature of cast iron by circulating the coolant inside the bed. Coolant circulation inside the bed controls deformation of machine caused by heat generated on the slideways during machining and changes in ambient temperature. For the customers who require higher precision, optional direct scale feedback, whose resolution is 0.01 μm, made by Magnescale Co.,Ltd. is available.

(4) Higher reliability

The NLX2500/1250 is a highly reliable machine and is used for a long time by reflecting the know-hows cultivated from the customer needs to previous models. The NLX2500/1250 spindle has an advanced labyrinth structure that coolant hardly enters inside the spindle unit. In turrets, the drain holes and the air purge are optimized to prevent coolant entry into the built-in-motor. Increasing the durability of the spindle and the turret, major mechanisms, improves the reliability.

(5) Wide Variety of Models

The NLX2500/1250 has the MC type (Milling), the Y type (Y-axis), the SMC type and the SY type, which are equipped with the sub spindle with the MC and the Y types. Also the automated support equipment such as the loader and the bar feeder is available. Customers can choose the ideal machines and specifications according to their workpieces and production conditions.

Model	Function
NLX2500MC/1250	With milling function
NLX2500Y/1250	With Y-axis and milling function
NLX2500SMC/1250	With sub spindle and milling function
NLX2500SY/1250	With sub spindle, Y-axis and milling function

(6) Energy Saving

Power supply for a spindle motor, servo motors and a fan inside the electrical cabinet can be stopped in the shutdown mode, thereby contributing to reduction in environmental burden and running costs. With a new, low-power-consumption NC and LED lighting, the NLX2500 achieves approximately 30% reduction in power consumption during standby.

(7) MAPPS IV＋ESPRIT

The machine uses the MAPPS IV high-performance operating system for its operation panel. MAPPS IV is equipped with the conversational automatic programing function as standard, and the ESPRIT CAM software license is available as an optional feature. The combination of ESPRIT and MAPPS IV enables creation of complex machining programs on a PC that is connected to the machine via the network. Other features of MAPPS IV include a 50 MB user memory area for program storage, which is separate from the NC memory, and the USB interface which facilitates easy data transfer between the machine and the PC. The programs stored in MAPPS can be used by transferring them to the NC unit directly.

(8) Compliance with Safety Standards

The NLX2500/1250 complies with safety standards all over the world, including IEC Standards, UL Standards and JIS standards.

Mori Seiki will continue to improve our product line-up in order to meet the needs of an even wider range of customers.

Type	Rigid and Precise CNC Lathe
Model name	NLX2500MC/1250 NLX2500Y/1250 NLX2500SMC/1250 NLX2500SY/1250
Market	Automobile, construction machinery, hydraulic/pneumatic equipment, etc.
Order starts	April 23, 2012
Production	7 units/month

■**Main specifications**

Item		NLX2500MC/1250	NLX2500Y/1250	NLX2500SMC/1250	NLX2500SY/1250
Max. turning diameter	(mm)	φ366			
Max. turning length	(mm)	1,255			
Bar work capacity	(mm)	80			
Axis travel (X/Z/Y)	(mm)	260/1,345/-	260/1,345/±50	260/1,345/-	260/1,345/±50
Rapid traverse rate (X/Z/Y)	(m/min)	30/30/-	30/30/10	30/30/-	30/30/10
Max. spindle speed (Spindle 1)	(min^{-1})	4,000 [4,000[*1]] [2,500[*2]]			
Max. spindle speed (Spindle 2)	(min^{-1})	-		6,000 [5,000[*3]]	
Spindle 1 drive motor	(kW)	18.5/18.5/15 (25%ED/50%ED/cont.) [26/26/22 (10 min. /30 min. /cont.)[*1]] [22/18.5 (30 min. /cont.)[*2]]			
Spindle 2 drive motor	(kW)	-		11/7.5 (25%ED/cont.)	
Number of tool station on the turret		10 [12]	12 [10]		
Max. rotary tool spindle speed	(min^{-1})	6,000 [10,000[*4]]			
Rotary tool drive motor	(kW)	5.5/5.5/3.7 (3 min. /5 min. /cont.)			
Floor space (Including chip conveyor)	(mm)	5,049 × 2,200			

[ ] Option

*1 High-output specifications

*2 High-torque specifications

*3 Through-spindle hole diameter φ73 mm

*4 High-speed specifications (Rotary tool spindle)

Fig.1 Exterior

Fig.2 Machining of shaft workpiece