

## News Release

January 31, 2006

### We start accepting orders for the new CNC Lathes, NL3000/2000, NL3000/3000

**From the NL Series, with the only turret with a built-in milling motor™  
in the industry, a new series for machining long, large-diameter workpieces.**

Mori Seiki will start accepting orders for our high-rigidity, high-precision CNC lathes, the NL3000/2000 and NL3000/3000, from February 1.

We have had many requests from customers in the construction, printing and electrical industries for an NL Series machine (with 4 times the milling capacity of conventional machines) suitable for long workpieces, which they couldn't handle until now. In response to these requests, we have developed these models, designed for machining of long, large-diameter workpieces.

The NL Series made its debut in 2004 and has proved an enormous success, reaching a total of 3,400 machines ordered and a monthly production during FY2005 of 200 units. We already had 6 models in the NL Series, but with the new NL3000 we have added two variations with a maximum machining diameter of  $\phi$  420 mm and maximum machining lengths of 2,123 mm and 3,123 mm.

Thanks to 3-D structural analysis, we have achieved a highly rigid construction in the NL Series, which offers stable turning and cutting. In particular, the NL Series' greatest feature is the first turret with a built-in milling motor™ in the industry, which has turned conventional wisdom about milling with lathes on its head.

Also, by implementing heat insulation measures such as placing the oil cooler and hydraulic unit at the rear of the machine, separating the spindles from heat-generating areas, and fitting spindles with oil jackets as standard equipment, we have ensured stable machining, free from the influence of temperature changes.

Mori Seiki is proud to introduce the new **NL Series NL3000/2000, NL3000/3000** for machining long, large-diameter workpieces, which incorporates these various technologies, to the market.

Type	CNC lathe
Model	NL3000/2000, NL3000/3000
Target market	Long, large-diameter workpieces, etc. in the construction, transportation, printing and electrical industries.
Orders accepted from	1 February 2006
Production	10 units/month (each)

## ■ Main Features

1. Turret with a built-in milling motor™
2. Highly rigid construction
3. Heat insulation
4. 4 times the milling capacity of conventional machines
5. MAPPS II

## ■ Explanation of features

### 1. Turret with a built-in milling motor™

In the milling structure of conventional lathes, power is transmitted from the motor through many parts, such as gears, belts, etc, generating both heat and vibration. With the NL Series we have achieved the industry's first built-in construction, in which the motor is placed inside the turret. This results in greater transmission efficiency, and dramatic improvements in machining accuracy and cutting power.

With our technology, the NL Series received the 2004 JSME Medal for New Technology from the Japan Society of Mechanical Engineers.

### 2. Highly rigid construction

The guideways are 30% wider than those of conventional machines. Through 3-D structural analysis, we have achieved a highly rigid construction. This allows more stable cutting than ever before, not only for turning but for milling as well.

### 3. Heat insulation

We have adopted comprehensive heat prevention measures, such as using a full cover for the bed, isolating the sources of heat (the oil cooler, hydraulic unit, etc), cooling the spindles and spindle milling motor with oil jackets, and core-cooling for ball screws (optional). By doing this, we have succeeded in protecting the machine from the influence of changes in ambient temperature, ensuring stable machining accuracy.

### 4. 4 times the milling capacity of conventional machines

Thanks to the turret with a built-in milling motor™, the NL Series achieves a cutting performance 4 times that of conventional machines for grooving using the end mill, drilling and face milling, boasting milling performance approaching that of a 40-taper machining center.

### 5. MAPPS II

The conversational automatic programming function's many machining menus have significantly reduced programming time. Drawing checks (direct drawing) and direct operation are possible, based on the conversational data entered from the drawings.

## ■ Main Specifications

Maximum machining diameter	φ 420 mm
Maximum machining length	2,123 mm (NL3000/2000), 3,123 mm (NL3000/3000)
Axis travel (X/Y/Z)	280/120/2,170 mm (NL3000/2000) 280/120/3,170 mm (NL3000/3000)
Maximum spindle speed	3,000 min <sup>-1</sup>
Rapid traverse rate (X/Y/Z)	30/10/30 m/min
Turret tool storage capacity	10 [12]
Turret indexing time	0.3 sec.
Spindle drive motor (30 min/cont)	22/18.5 [30/25] kW
Machine size	6,094 (7,197) mm / 2,563 mm / 2,390 mm (NL3000/2000)
Width (incl. chip conveyor)/depth/height	7,174 (8,264) mm / 2,563 mm / 2,390 mm (NL3000/3000)
Machine mass	11,500 kg (NL3000/2000) 13,500 kg (NL3000/3000)

[ ] Options

## ■ Main Optional Equipment

12, 15 inch hydraulic chucks
Hydraulic steady rest (bolt-fastened, automatic)
Automatic in-machine tool presetter

## ■ Footnotes

Note 1: 6 models: NL1500/500, NL2000/500, NL2500/700, NL2500/1250, NL3000/700, NL3000/1250. The numbers following the / mark show the distance between centers.

## ■ Other

We have already received orders for more than 20 machines, as well as many inquiries.



NL3000/3000