

News Release

December 2, 2005

The NZ-S1500 2-Turret Shaft Lathe Has Been Released

World's smallest high-efficiency shaft machine, 1/3 the size of previous models

On December 1, 2005, Mori Seiki started receiving orders for the NZ-S1500 2-Turret Shaft Lathe, which specializes in shaft machining.

Workpieces that can be machined on the NZ-S1500 are restricted to those with a maximum machining diameter of $\phi 120$ mm, and a standard machining diameter of $\phi 60 \sim 20$ mm. The machine specializes in shaft machining and its size was reduced to one third of that of the previous model. In order to achieve the best operability and the most efficient machining, the machine uses a symmetrical construction in which the two turrets are aligned with the spindle, which is mounted on the vertical bed. This construction allows easy chip discharging as well as great visibility compared with conventional machines, since the machine height is only 1,500 mm. Its smaller size allows the operator to look over the whole factory, enabling easy management and maintenance of your factory.

At MECT 2005, a system with two NZ-S1500 machines combined with a loader with a rotary hand, which does not require a workpiece turnover unit, was shown off as a pre-release display, and received high praise from many customers. We would like to recommend these compact shaft machines, with brand new concepts which bring dramatic improvements in productivity in the shaft machining field.

Name	2-Turret Shaft Lathe
Model	NZ-S1500
Market	Machining of automotive parts (cam shafts, drive shafts, etc), motor shafts, other shafts
Sales from	December 1, 2005
Production	15 units/month

■ Main Features

1. Specifications which are specially designed for shaft machining
2. Machine height of 1,500 mm
3. Space-saving design
4. Symmetrical construction
5. Good accessibility and chip discharge due to vertical bed construction
6. No chip accumulation because of the vertical protector
7. Easy installation because of the 3-point support construction
8. High-speed loader with a rotary hand function

■ Features

1. Specifications which are specially designed for shaft machining

The NZ-S1500's standard machining diameter is restricted to $\phi 60$ mm. It is a compact 2-turret lathe that has minimum axis travel, spindle output and feed thrust force to remove all unnecessary functions.

2. Machine height of 1,500 mm

The operator can look over the top of the machine to see the rear. This also allows the operator to view the whole factory, enabling easy management and maintenance.

3. Space-saving design

The floor space is only 49% of that of conventional machines, and the volume only 35%. This allows a dramatic space reduction for machine lines.

4. Symmetrical construction

Placing the two turrets in alignment with the spindle mounted on the vertical bed has reduced the influence of heat and improved the accuracy of continuous machining. Even from a cold start, it can hold thermal displacement under $\pm 10 \mu\text{m}$.

5. Good accessibility and chip discharge due to vertical bed construction

The distance to the spindle center is 275 mm. The layout of the machine means that the operator can reach the workpiece easily, even with the manual workpiece attach/detach specifications. Because chips fall straight down into the chip pan, there will be no chip accumulation within the machining area.

6. No chip accumulation because of the vertical protector

The protector (movable cover) is vertical, so chips do not accumulate on top of it, and do not penetrate into the linear guide and ball screws

7. Easy installation because of the 3-point support construction

A 3-point support construction has been adopted. Machine installation only takes 10 minutes.

8. High-speed loader with a rotary hand function

The loader uses a rotary hand with a 180° turnover function, which does not require a turnover unit between processes and saves floor space.

■ Main Specifications

Maximum machining diameter	φ120 mm
Standard machining diameter	φ20~60 mm
Axis travel (X1,X2/Z1,Z2)	60,60/580,580 mm,
Max. spindle speed	3,500 min ⁻¹
Rapid traverse rate (X1,X2/Z1,Z2)	20,20/30,30 m/min
Tool storage capacity of turrets	upper 6+lower 6
Turret indexing time	0.2 seconds
Tailstock spindle diameter	φ85 mm
Tailstock spindle taper hole	MT4 (Rotary center)
Spindle drive motor (30min/cont.)	5.5/3.7 [7.5/5.5、11 (1 min.)/7.5/5.5] kW
Machine size (conveyor specifications)	(W)1,665 mm × (D) 1,641 (2,450) mm × (H) 1,500 mm
Machine mass	3,000 kg

[] indicates options

■ Main Options

In-out type hydraulic steady rest φ4~64 mm (manual travel, servo drive type)
6, 8 inch compensating chuck
Dry machining specifications
Tailstock spindle built-in center (MT3)
Automatic in-machine tool presetter
Gantry-type loader
Workpiece temporary rest (fixed type, in-out type)
Parts catcher
Workpiece ejector
Various workpiece stockers

■ Other

A system with two NZ-S1500 machines combined with a loader, and one NZ-S1500 machine will be displayed at the Winter Productivity Show 2005 at Mori Seiki's Chiba Campus from 8-10 December.



NZ-S1500