

Press Release

June 22, 2006

Pursuit of Greatest Reliability and Cost Performance We start sales of the Dura Series

Vertical Machining Center and 2-axis Lathe which Triple Productivity Compared with Conventional Machines

Mori Seiki Co., Ltd. will start accepting orders for the Dura Series, which pursues excellent reliability and cost performance.

Due to the increasing demand for complex-shaped workpieces and the pursuit of productivity in large-variety, large-lot production, recent machine tools have become more complex and more expensive. Under such circumstances, there are many customers who want a powerful, easy-to-use machine with basic functions, at a reasonable price.

To this large market, we will introduce our vertical machining center, the DuraVertical, and our 2-axis lathe, the DuraTurn, which were born based on the concepts of "Reliability," "Versatility" and "Reasonable Price."

Both the DuraVertical and the DuraTurn were designed with no waste, based on the know-how which has been cultivated within Mori Seiki. By sharing parts among the Series, reviewing specifications and developing new units, we achieved a price and delivery time which will satisfy our customers.

Compared with the machines in the same class, the Series is equipped with a large-torque spindle which enables high-precision, heavy-duty cutting. The axis structure uses a stable **C-shape structure** (for the DuraVertical), **roller guides**, and a **flat bed** (for the DuraTurn), offering high rigidity and ease of assembly.

Despite its compactness in machine size, the DuraVertical's Y-axis stroke is **530 mm**, the DuraTurn's X- and Z-axis strokes are **215 mm and 570 mm** (the DuraTurn 2050), boasting ample travels to suit a variety of workpieces. Also, we placed a chip bucket at the front of the machine so that the operator does not have to walk around. It can easily replace conventional machines.

Mori Seiki will display the DuraVertical and the DuraTurn, which faithfully achieved the machines' basic concept of "rigid and precise," at the Summer Productivity Show 2006, which will be held at the Iga Campus from June 22.

Type	Vertical machining center, 2-axis CNC lathe
Model	DuraVertical 5060 DuraTurn 1530/2030/2050/2550 (4 models)
Market	General metal parts machining
Orders from	June 22, 2006
Production	DuraVertical 50 units/month DuraTurn Series 50 units/month

■ Main features

1. **High rigidity and definite cutting power**
2. **High precision**
3. **Versatility and operability**
4. **Excellent reliability**
5. **Superior cost performance and short delivery time**
6. **Eco-friendly**

■ Features and explanation

1. High rigidity and definite cutting power

The DuraVertical has 2.3 times the spindle torque of conventional machines, and a high-speed spindle with a maximum speed of 10,000 min⁻¹. With high spindle torque, 3 times that of conventional machines, the DuraTurn can do heavy-duty cutting. Structurally, by using a highly stable **C-shaped structure (Note 1)** on the DuraVertical, and **roller guides (Note 2)** for the guideway mechanism on the DuraTurn, we achieved high rigidity and stable machining, even during long-term operation.

2. High precision

The DuraVertical has contouring accuracy (accurate circle cutting) of **1.76 μm**, and the DuraTurn has roundness of **0.42 μm** (actual value). We have achieved stable machining with precision which customers can rely on.

3. Versatility and operability

Despite reducing the width and depth of the machines in comparison to previous models, by using a design with no waste space, the DuraVertical's Y-axis stroke of **530 mm** is the longest in its class. The DuraTurn also has plenty of travel, with X-axis and Z-axis strokes of **215 mm and 570 mm**. The turret holds 12 tools as standard, making it suitable for a variety of workpieces. Also, the Dura Series has good access from the front cover to the tool, and features such as placing the chip bucket in the front save **working space**.

4. Excellent reliability

We have made parts compatible throughout the series, and reduced the number of parts. Also, for dealing with chips, which can cause many problems, the DuraVertical has an internal conveyor as a standard feature and the DuraTurn has a slant angle of 30°. These features stop chips from penetrating or accumulating, thereby preventing secondary problems.

5. Superior cost performance and short delivery time

By using fewer structural parts so that assembly is easy, sharing parts, reviewing specifications and remodeling the DuraTurn's flat bed (Note 3), we have achieved superior cost performance and shorter delivery times.

6. Eco-friendly

By using an oil-bath ATC structure and self-lubricating linear guides consumption of lubricating oil has been dramatically reduced to 1/9 that of conventional machines. And this machine is also designed to consume less electricity, with an inverter-type oil cooler and a spiral-type chip conveyor.

■ Main specifications

DuraVertical 5060

Travel (X, Y, Z axes)	600 mm, 530 mm, 510 mm
Table working surface	900 mm x 600 mm
Table loading capacity	500 kg
Max. spindle speed	10,000 min ⁻¹
Spindle drive motors (5 min./30 min./cont.)	15/13/11 kW
Rapid traverse rate (X, Y, Z axes)	36,000 mm/min, 36,000 mm/min, 20,000 mm/min
Tool storage capacity	30 tools
Tool changing time (chip-to-chip)	1.3 sec.
Machine size (width x depth x height)	1,900 mm x 2,315 mm x 2,674 mm
Machine mass	5,800 kg

DuraTurn 2050

Max. turning diameter	φ360 mm
Max. turning length	530 mm
Axis travel (X, Z axes)	215 mm, 570 mm
Max. spindle speed	4,000 min ⁻¹
Rapid traverse rate (X, Z axes)	24,000 mm/min, 24,000 mm/min
Number of tools in turret	12 tools
Spindle drive motors (5 min./30 min./cont.)	13.5/13.5/11 kW
Machine size (width x depth x height)	2,190 mm/ 1,747 mm/ 1,758 mm

■ Notes

- 1: For the C-shaped structure, please refer to Fig. 1.
- 2: Ordinary linear guides use balls for the rolling elements, but roller guides use rollers instead. In the same-sized guide, the rolling elements' contact surface is bigger than for balls, so rigidity is increased.
- 3: For the flat bed, please refer to Fig. 2.



DuraVertical



DuraTurn

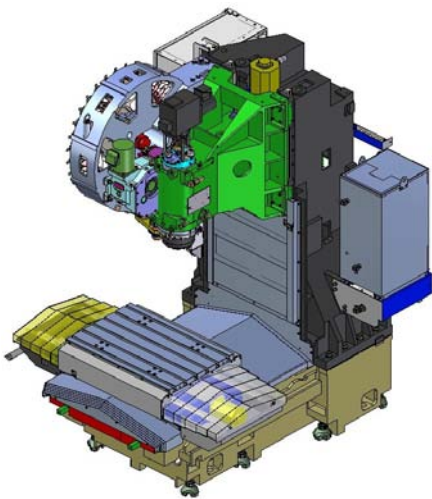


Fig. 1 C-shaped structure

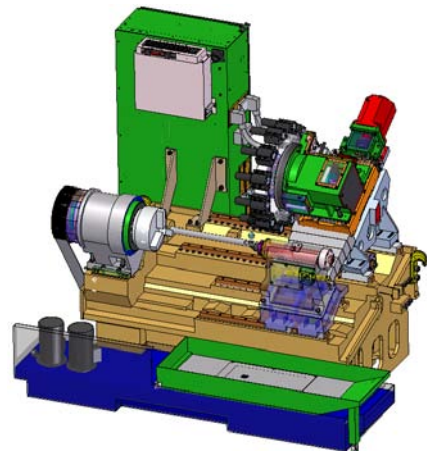


Fig. 2 Flat bed