

## News Release

15 July 2005

**MAPPS III, a 3rd generation panel computer has been developed, raising productivity 50%  
· Equipped with interference check functionality, significantly reducing program creation time and machining time**

Mori Seki Co., Ltd. has developed the “MAPPS III”, a 3rd generation panel computer. “MAPPS III” is equipped with machine interference check functionality for Integrated Mill Turn Centers, and high-speed fixed cycle functionality. Mori Seiki plans to implement these functions to all machines by next spring, starting with the NT series that will go on sale in September.

For the Integrated Mill Turn Center field in particular, as tool spindles, turrets and No.2 spindles operate simultaneously, an advanced level of skill is necessary to operate it, either manually or automatically. Thus there is a possibility that even a slight mistake in operation may lead to a mechanical interference. For this reason, a function is needed to prevent accidents by stopping the machine prior to collision, even with incorrect operation or a program error, through real-time 3-dimensional interference checking. In order to achieve this, interference checks are implemented via simulation through operation of a 3-dimensional model of the machine beforehand, based on CNC interpolation. MAPPS III has the ample processing capacity for this simulation in real-time.

Furthermore, it is possible to reduce programming time by a maximum of 50% than before, due to high-speed canned cycles and extensive menus.

With some exceptions, it is possible to upgrade “MAPPS II” to “MAPPS III” by replacing hardware.

Machine	MAPPS III
Availability	Built in from the Integrated Mill Turn Center NT Series, on sale September 2005
Order Start	September 2005

### ■ Main Features

1. Improved CPU processing capacity
2. 3-dimensional interference check functionality
3. Integrated Mill Turn Center high-speed fixed cycle functionality
4. Strong intersection point computational capacity
5. Ample grooving menu
6. User-friendly guidance display
7. Optimal tool pass generation functionality
8. Ample milling menu
9. CAPS-NET, a network environment construction system

## ■ Features

### 1. Improved CPU processing capacity

Capacity for processing, including drawing, has been improved by changing the CPU and increasing memory size. By doing so, simulation speed has increased 2.5 times, and NC program creation time has been reduced by 25%. In addition, DNC operation transfer speed has been increased about 2.2 times, significantly increasing the processing speed.

### 2. 3-dimensional interference check functionality (automatic generation of model data)

Interference is completely checked in 3 dimensions for spindles, work, soft jaws, tools, holders and turrets. Machine models and standard tool model data are installed as standard. In addition, jaw and tool models are simply and automatically set from soft jaw forming and tool length measurement set-up data. Mechanical collisions are prevented via program operation from set-up due to interference detection in automatic type and manual operation modes.

The screenshot displays a CNC control interface with the following sections:

- Top Status Bar:** MEM \*\*\*, 0 mm/min, 0 min<sup>-1</sup>, 00002 N00024, 12:36:00
- Program Check (プログラムチェック):**
  - Program: 00002
  - Mode: (blank)
  - Comments:
 

```

          ;
          ; G40 G0 ;
          ; N10 ;
          ;
          ; (-120) ;
          ; X0 Y0 Z0 ;
          ; M9 ;
          ; N20 (CENTER.DRILL. 3.000,T5 H5) ;
          ; M5 ;
          ; T5 ;
          ; M1 ;
          ; M6 ;
          ;
          
```
- Operational Status (運転状態):**
  - Coordinate System: 座標1/2
  - Table:
 

	絶対座標		残移動量	原点
X	0.000	X	0.000	
Z	0.000	Z	0.000	
C	0.000	C	0.000	
Y	0.000	Y	0.000	
- Modal Data (モーダル 1/2):**
  - 送り: 0.00000 実送り
  - 回転速度: 0 実回転速度
  - 主軸最高回転速度: 32767
  - モード: G01, G54, G40, G25
  - Gコード: G80, G22, G97, G67
  - 繰返回数: 0
  - リセット: 0
  - 工具名: (blank)
  - 刃先C: (blank)
- 3D Simulation:** A 3D model of a lathe tool cutting a workpiece, showing the tool holder, tool, and workpiece.
- Bottom Panel:** Navigation buttons including 一覧, オフ, チェック/1列/2列, BG編集, 選択窓切替, N7-子, 頭出し.

### 3. High-speed fixed cycle functionality

An optimal inclined surface machining cycle, variable cutting depth drill cycle, square machining cycle via multifunctional tools, R-slot machining cycle via R tip and rough cutting step cycle have been developed. What conventionally took 20 minutes for program creation can now be created in only a minute, and program size has been reduced from 20KB to 0.1KB.

#### 4. Strong intersection point computational capacity

Even if there are a number of unknown coordinate values, intersection points are automatically calculated simply by entry according to the drawings. As manual calculations are unnecessary, program creation which took about 30 minutes via typical conversational system now takes a mere 3 minutes.

#### 5. Ample grooving menu

Response is possible whatever the groove form, thanks to enhancement of the automatic programming grooving menu.

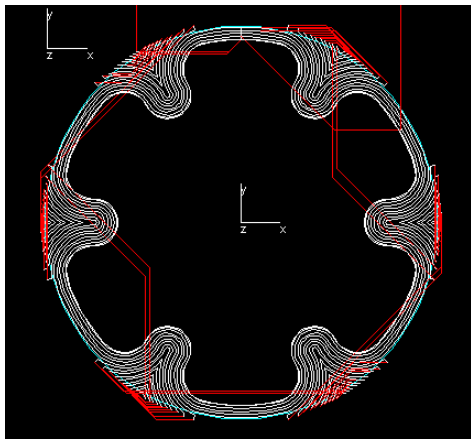
#### 6. User-friendly guidance display

As guidance messages and guidance figures are displayed at the automatic programming screen, input can be done simply, even by a beginner.

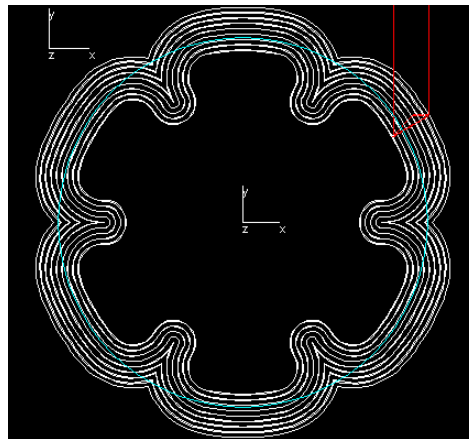
#### 7. Optimal tool pass generation functionality

Optimized tool pass is generated from the workpiece and product form, meaning that an efficient machining program is generated even for complicated inlet and island forms.

The result is a reduction in machining time. With MAPPS III, machining which took 24 minutes when tool pass was generated by typical conversational devices can be done in 16 minutes 44 seconds, realizing a 30% reduction in machining time.



MAPPSIII



Other Companies

#### 8. Ample milling menu

The hole position patterns are equipped with a 10-type hole menu, and the form pattern is equipped with a 35-type milling menu. Key entry is minimal thanks to the ample menu. Programs conventionally requiring about 450 key entries can be done with the same sample model in 152 key entries, reducing the work to about 1/3.

## 9. CAPS-NET, a network environment construction system

A communications module is built-in, enabling use of distant monitoring from the Mori Seki Service Center and confirmation of mechanical operations, right from the date of equipment delivery.

### ■ Main Specifications

Memory card	PCMCIA-TYPE II (front panel insertion/removal slot x 1)
Ethernet	100BASE-TX/10BASE-T x 1 ch
Interface	RS232C x 2ch, USB2.0 x 1ch, PCI expansion bus x 3 slots
LCD	10.4-inch TFT color/15-inch TFT color

[    ] indicates options

### ■ Other Information

This equipment will appear at the EMO2005, held in Germany from September 14th, and at the New Products Exposition, held at both the Chiba Campus and Iga Campus from September 14th to 17th.

End of announcement