

MIX-100

NAKAMURA-TOME
PRECISION INDUSTRY CO.,LTD.

Flexibility and
Compact Floor
Space

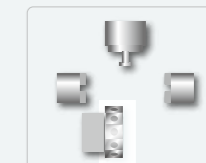
Innovative
Technology

~ Creating new values ~

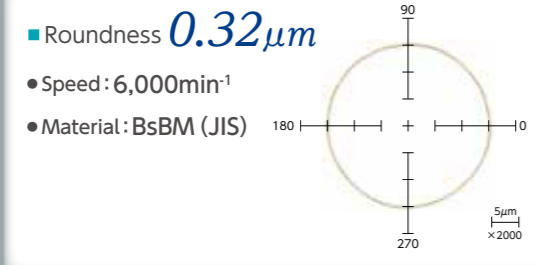
MX-100

State-of-the-art, compact high-precision Multitasking Machine, with the capabilities of a Machining Center and a Turning Center, featuring advanced software, smart features and up to 96 tools, to ensure high-productivity machining of a wide range of parts, and to smartly meet the needs of various manufacturing sectors.

- Milling•Y-axis standard
- ATC tool spindle standard
- Tool spindle power 11/7.5kW
Spindle speed 12,000min⁻¹ (op. 20,000min⁻¹)
- ATC storage capacity 36 tools (op. 48, 72 tools)
- X-axis travel up to 50 mm below spindle center.
Y axis travel ± 105 mm with respect to the spindle center
- Floor space 4,350mm x 2,795mm (including chip tank)
- Lower turret milling motor power 7.1/2.2 kW with Max. speed 6,000 min⁻¹
- Eco-friendly: Grease lubrication of slide axes
- Advanced software and Smart features



Perfection and Flexibility



The MX-100 is a compact Multitasking Machine with a wide machining range, and up to 96 tools (72 tools for ATC[op.] and 24 tools for lower turret), ensuring versatility and maximum performance in a small footprint.

The built-in spindle motors feature superior cutting capabilities, with the possibility to upgrade the left spindle to 15/11 KW motor (Bar capacity Dia. 65mm op.), ensuring higher performance and more rigidity.

With the MX-100, Nakamura-Tome continues its pursuit not only to offer high-accuracy and high-rigidity, but also to ensure the highest performance and the most outstanding cutting capabilities.



Turning



L-Spindle

- Cutting cross section **2.25mm²/rev**
- Depth of cut **5mm**
- Feed **0.45mm/rev**
- L-Spindle motor **11/7.5kW**
Material : S45C

Milling



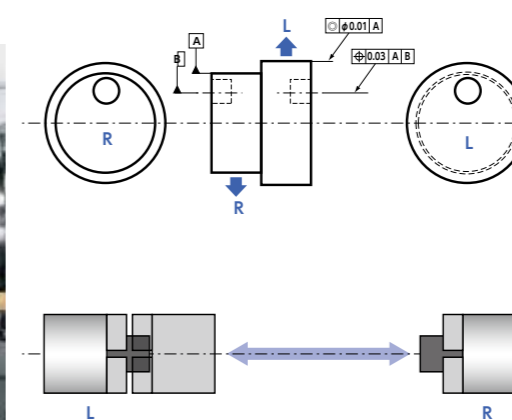
Tool spindle

- Metal Removal Rate **57.30cc/min**
- Tool spindle motor **11/7.5kW**

Lower turret

- Metal Removal Rate **18.88cc/min**
- Milling motor **7.1/2.2kW**
Material : S45C

Part Transfer Accuracy



Outside turning coaxiality

- Required accuracy **φ0.01mm**
- Actual value **φ0.005mm**

Hole positioning accuracy

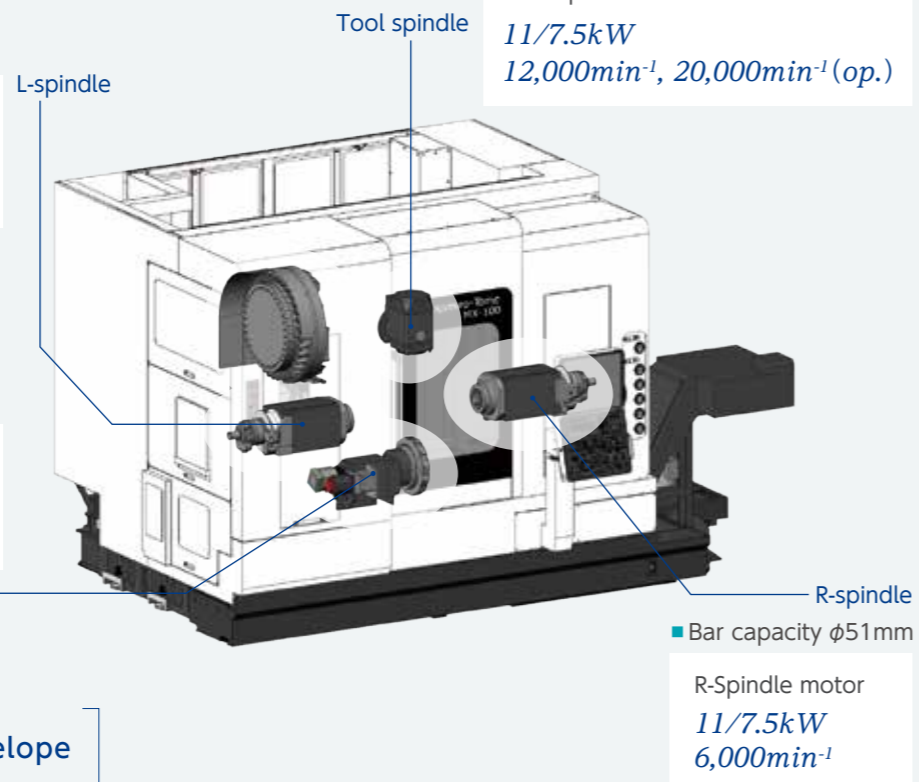
- Required accuracy **φ0.03mm**
- Actual value **φ0.009mm**

Solid performance.
Combining the Capabilities of a Machining Center
and a Turning Center.

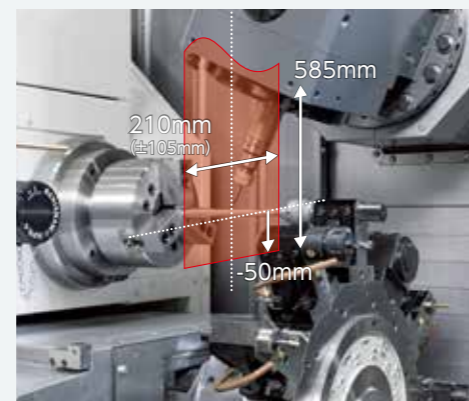
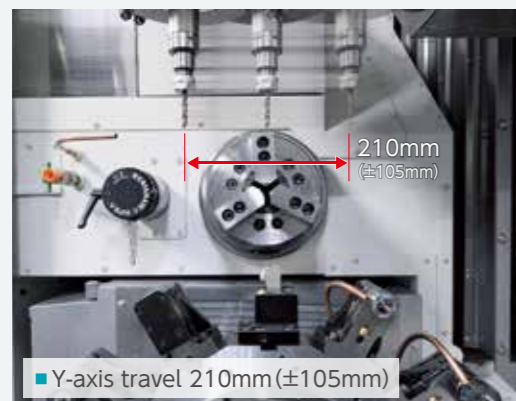
■ Bar capacity $\phi 51, \phi 65\text{mm}$ (op.)

L-Spindle motor
11/7.5kW, 15/11kW (op.)
6,000min⁻¹, 4,500min⁻¹ (op.)

Lower turret motor
7.1/2.2kW, 6/1.5kW (op.)
6,000min⁻¹, 8,000min⁻¹ (op.)



Ensuring a large work envelope
in a compact machine



High accuracy
machining.

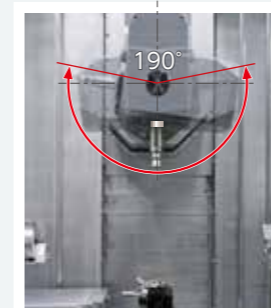
Thanks to large Y-axis travel and 50mm X-axis travel beyond the spindle center, various machining operations can be performed without rotating the C-axis, such as square milling in the X-Y plane or deep hole drilling in the X-axis direction, ensuring faster cycle time and higher precision.

Floor space (Machine only)

Standard specification

L3,200mm × W2,485mm × H2,662mm

*not including chip tank or chip conveyor.



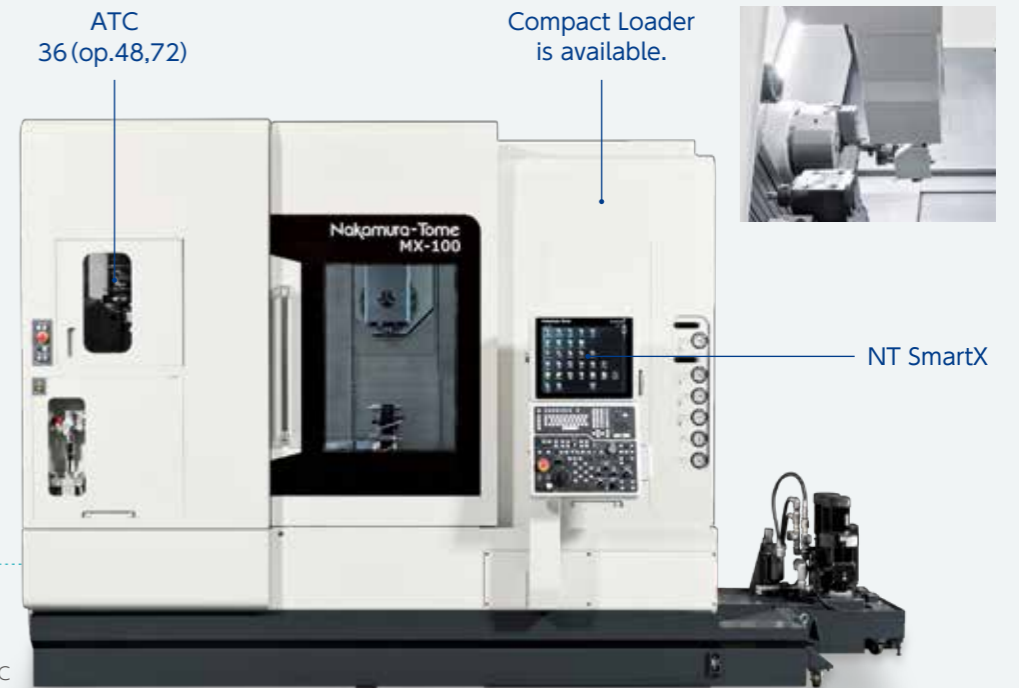
Max. tool diameter
(Without adjacent tool)
Φ80mm

Max. tool length
180mm

96 tools

Up to 96 tools
available!

In addition to 36 (op. 48 or 72) ATC tools for Tool Spindle, up to 24 turning tools (12 milling tools) can be mounted on the lower turret.



36 (op.48,72) ATC tools



Max. tool diameter	55mm (80mm Without adjacent tool)
Max. tool length / Max tool weight	180mm / 4kg
Tool shank type	Sandvik Capto C4
Tool change time	1.3 Sec

ATC Maintenance Navigator



In addition to the information about the ATC status and position of the Tool Changer arm. The step by step ATC recovery guidance screen ensures fast ATC recovery and shorter machine down time.

Lower turret



Type of turret head	Dodecagonal drum turret / 24st
Number of tools	24 tools (turning tools)
Number of driven-tool stations	12
Milling tool size	Φ1~Φ14mm

■ Capacity

Max. turning diameter (Tool spindle /Lower turret)	305mm / 220mm
Distance between spindles	max.1,000mm / min.230mm
Max. turning length	834mm
Bar capacity	φ51mm / φ65mm (op. only for L)
Chuck size	6" / 8"

■ Axis travel · Rapid feed

X1/X2 axis slide travel	585mm / 130.5mm
Z1/Z2 axis slide travel	780+320(only during ATC)mm / 713mm
Y1 axis slide travel	± 105mm
B2 axis slide travel	770mm
X1/X2 rapid feed rate	30m/min / 16m/min
Z1/Z2 rapid feed rate	40m/min / 40m/min
Y1 rapid feed rate	16m/min
B2 rapid feed rate	40m/min

■ Left spindle	φ51mm	φ65mm(op.)
Spindle speed	6,000min ⁻¹	4,500min ⁻¹
Spindle speed range	Stepless	Stepless
Spindle nose	A2-5	A2-6
Hole through spindle	63mm	80mm
I.D. of front bearing	100mm	120mm
Hole through draw tube	52mm	66mm

■ Right spindle	φ51mm
Spindle speed	6,000min ⁻¹
Spindle speed range	Stepless
Spindle nose	A2-5
Hole through spindle	63mm
I.D. of front bearing	100mm
Hole through draw tube	52mm

■ ATC Tool spindle

Tool spindle speed	12,000min ⁻¹ , 20,000min ⁻¹ (op.)
Swiveling range	190° (±95°)
Tool shank type	CAPTO C4 , HSK-T40 (op.)
Number of tools	36, (op. 48, 72)
max. tool diameter / without adjacent tool	φ55mm / φ80mm
max. tool length	180mm

■ Lower turret

Type of turret head	Dodecagonal drum turret
Number of tool stations	12 (Max.24)
Number of Indexing positions	24
Tool size (square shank)	□20mm (12st) / □16mm (24st)
Tool size (round shank)	φ25mm

■ Milling (Lower turret)

Rotary system	Individual rotation
Milling spindle speed	6,000min ⁻¹ , 8,000min ⁻¹ (op. only for L φ65)
Spindle speed range	Stepless
Number of milling stations	12
Tool size	Straight holder φ1mm ~φ14mm
	Cross holder φ1mm ~φ14mm

■ Drive motor

L-spindle	11/7.5kW , 15/11kW (op. φ65)
R-spindle	11/7.5kW
Tool Spindle	11/7.5kW
Milling (Lower turret)	7.1/2.2kW, 6/1.5kW (op. 8,000min ⁻¹)

■ General

Height	2,662mm (ATC 36)
	2,858mm (ATC 48/72)
Floor space (L × W)	4,350mm × 2,795mm
Machine weight (incl. control)	14,000kg (ATC 36)
	14,800kg (ATC 48)
	15,100kg (ATC 72)

■ Power requirements

power supply	45.1kVA (49.1kVA) (L spindle 11/7.5kW)
	48.2kVA (52.2kVA) (L spindle 15/11kW op.)

● Safety quality specifications

Various interlocks, such safety fences, auto extinguisher devices, and other safety related equipment may be required. These have to be selected during the configuration of the machine.

① Safety devices include electromagnetic door lock, chuck interlock, hydraulic pressure switch, air pressure switch, short circuit breaker and quill interlock. (Door interlock and chuck interlock are standard equipment.)

② In case of automation, various safety fences may be required, such as work stocker safety fences, robot safety fences, ...etc.

During the configuration of machine specifications, please discuss these requirements with the Nakamura-Tome machine sales representative.

● Precautions on the use of cutting fluids and lubricating oils

◦ Some types of cutting fluids (coolant) are harmful to machine components, causing damages such as peeling of paint, cracking of resin, expanding of rubber, corrosion and rust build up on aluminum and copper.

To avoid causing damage to the machine, never use synthetic coolants, or any coolants containing chlorine. In addition, never use coolants and lubricating oils which contain organic solvents such as butane, pentane, hexane and octane.

◦ Machine warranty terms are void for any claims or damage arising from the use of inappropriate cutting fluids or lubricating oils.



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