JX-250

NAKAMURA-TOME
PRECISION INDUSTRY CO.,LTD.

Multitasking machine with ATC,
Tool spindle and twin-turrets

In pursuit of genuine Multitasking

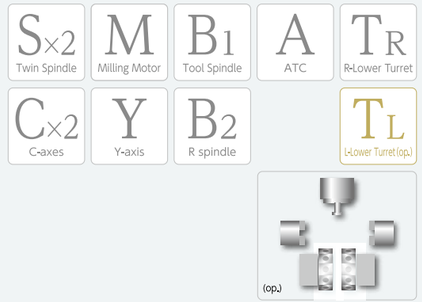
Innovative Technology
～Creating new values～

JX-250

State of the art Tool Spindle Multitasking machine, with ATC, 2 Lower Turrets* and Y-axis(std.).
Featuring a wide variety of software and "Smart Cube", the world's most compact Tool Spindle in its class.
This machine is the answer to the most complex machining needs.

※ L side turret (op.)

- "NT Smart Cube" is the World's Shortest Tool-Spindle in its class
- ATC tool spindle motor 22/15kW
  Tool spindle speed 12,000min^{-1} (op. 18,000min^{-1})
- Number of tools 80 (op. 40,120)
- X-axis travel below spindle center is 125mm
  Y-axis travel is +/-125mm from the spindle center
- Milling and Y axis are standard on the left and right side lower turrets (left side lower turret is op.)
  The two-turret machine features a lower Z-axis cross-over stroke (R：490mm, L：140mm), responding to a wider machining range, especially for longer parts
- 5.5/3.7kW milling motor on the lower turret
  Rotation speed 6,000min^{-1}
- Floor space 5,550mm × 3,257.7mm
  (including standard coolant tank)
- Large variety of software



Machining Capabilities

Having the world's most compact tool spindle in its class, this machine is featuring phenomenal machining capabilities

With NT Smart Cube, the world's most compact tool spindle in its class, this machine was developed to make effective use of a wide machining area. Additionally, it is featuring high performance Tool Spindle motors with up to 22/15kW (op.), an ATC with a capacity of up to 120 tools (op.), twin-turrets※ (2nd turret op.) equipped with Y-axis as standard, as well as crossover stroke on the lower Z-axis, which together contribute to unprecedented machining capabilities for a wide range of complex parts.
In addition, the user friendly "NT Thermo Navigator AI" provides accurate thermal compensation, resulting in stable high-accuracy machining.
Nakamura-Tome multitasking machines are not only known for high machining capabilities, but are also known for "high rigidity" and "high precision".
※(L side turret op.)

Turning

L-Spindle

Spindle motor	15/11kW 18.5/15kW(op.)
Spindle speed	4,500min⁻¹ 3,500min⁻¹(op.)

R-Spindle

Spindle motor	15/11kW
Spindle speed	4,500min⁻¹

Cutting cross section	3.3mm²/rev
Depth of cut	6mm
Feed	0.55mm/rev
Cutting speed	120m/min

Milling

Tool spindle

Spindle motor	22/15kW
Tool spindle speed	12,000min⁻¹ 18,000min⁻¹(op.)
B-axis swivelling range	±120°
Y-axis travel	±125mm

Lower turret

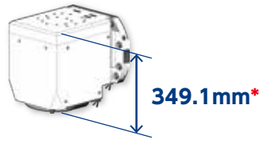
Motor power	5.5/3.7kW
Milling spindle speed	6,000min⁻¹

The world's shortest tool spindle in its class*

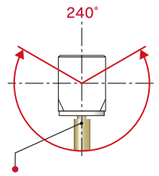
NT Smart Cube

The world's shortest tool spindle in its class.
Thanks to the ultra-compact size of the Tool Spindle, interference is reduced, and a wider machining area is ensured.
* Based on our survey in the multitasking machine market

■ Tool Spindle (NT Smart Cube)

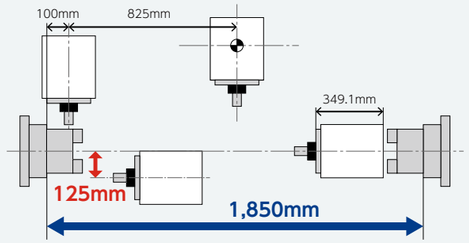


Length *349.1mm**
* The length is 428.6mm in case the tool spindle speed is 18,000min-1



Max.tool diameter (without adjacent tool): Φ130mm
Max.tool length: 300mm
400mm(op.)

Tool spindle motor *22/15kW*
12,000min-1
18,000min-1 (op.)



■ L-spindle Φ65 / Φ71 (op.) / Φ80mm (op.)

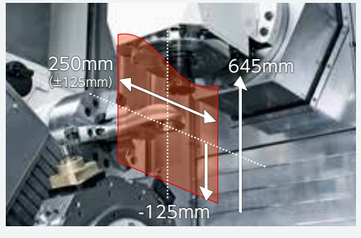
L-spindle motor *15/11kW*
18.5/15kW (op.)
*For ϕ80, only 18.5/15kW.
4,500min-1
3,500min-1 (op.)

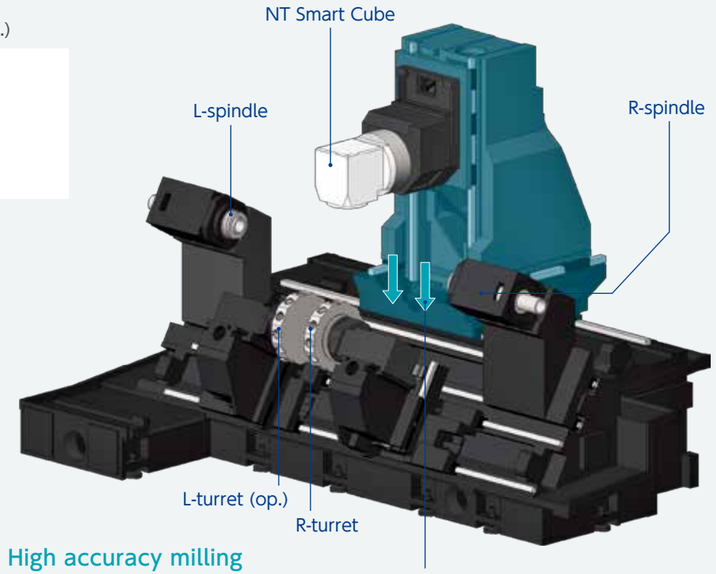
■ R-spindle Φ65 / Φ71mm (op.)

R-spindle motor *15/11kW*
4,500min-1

■ L-lower turret(op.) & R-lower turret

Milling spindle motor *5.5/3.7kW*
6,000min-1





High accuracy milling

Thanks to large Y-axis travel and 125mm 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.

Vertical column structure

Strong and stable structure, where the load is evenly applied.

168 tools

Up to 168 tools available !

In addition to 120 qualified ATC tools (op.) for the Tool Spindle, up to 24×2 turning tools (12×2 milling tools) can be mounted on the lower turrets.

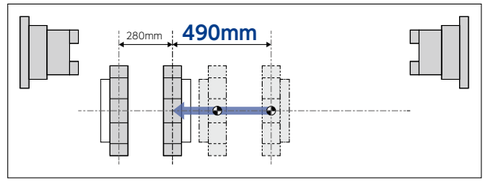
ATC Maintenance Navigator

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.

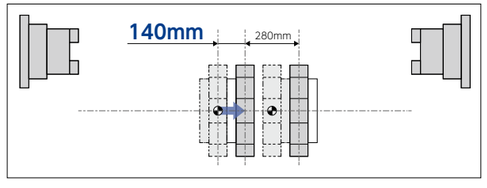
Cross Over Travel for Lower Z-axis (op. L lower turret)

When one turret is retracted in the Z-axis direction, the other turret can advance beyond its Z-Axis reference point, ensuring a larger Z-axis travel. This greatly increases the machining range of the lower turrets.

■ R-lower turret / Z2 stroke



■ L-lower turret / Z3 stroke



■ Capacity

Max. turning diameter	320mm
Distance between spindles	max.1,850mm / min.300mm
Max. turning length	1,650mm
Bar capacity	ϕ65mm / ϕ71mm(op.) / ϕ80mm(op. Only L)
Chuck size	8" (ϕ65, ϕ71) / 10" (ϕ80)

■ Axis travel • Rapid feed

X1-Axis slide travel	645mm
X2/X3(op.)-Axis slide travel	215mm / 215mm (op. L ϕ80 215mm / 190mm)
Z1-Axis slide travel	±825mm (at ATC −1,005mm)
Z2/Z3(op.)-Axis slide travel	1,490mm(Without Z3), 1,095mm(With Z3) / 745mm
Y1-Axis slide travel	±125mm
Y2/Y3(op.)-Axis slide travel	±40mm / ±40mm
B2-Axis slide travel	1,550mm
X1/X2/X3-Axis rapid feed rate	36m/min / 16m/min / 16m/min
Z1/Z2/Z3-Axis rapid feed rate	40m/min / 40m/min / 40m/min
Y1/Y2/Y3-Axis rapid feed rate	36m/min / 6m/min / 6m/min
B2-Axis rapid feed rate	40m/min

■ Left spindle	φ65	φ71(op.)	φ80(op.)
Spindle speed	4,500min^{-1}	4,500min^{-1}	3,500min^{-1}
Spindle speed range	Stepless	Stepless	Stepless
Spindle nose	A2-6	A2-6	A2-8
Hole through spindle	80mm	80mm	90mm
I.D. of front bearing	120mm	120mm	130mm
Hole through draw tube	66mm	72mm	81mm

■ Right spindle	φ65	φ71(op.)	
Spindle speed	4,500min^{-1}	4,500min^{-1}	-
Spindle speed range	Stepless	Stepless	-
Spindle nose	A2-6	A2-6	-
Hole through spindle	80mm	80mm	-
I.D. of front bearing	120mm	120mm	-
Hole through draw tube	66mm	72mm	-

■ ATC Tool spindle

Tool spindle speed	12,000min^{-1} / 18,000min^{-1} (op.)
Swiveling range	240° (±120°)
Tool coupling type	CAPTO C6 / HSK-A63(op.)
Number of tools	80, (40, 120 op.)
Max. tool diameter / Without adjacent tool	ϕ90mm / ϕ130mm
Max. tool length	300mm(op. 400mm)

●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.

Nakamura-Tome

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■ R-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)	□25mm
Tool size (round shank)	ϕ32mm

■ Milling : R-lower turret

Rotary system	Individual rotation
Milling spindle speed	6,000min^{-1}
Spindle speed range	Stepless
Number of milling stations	12
Tool size	Straight holder ϕ1mm ～ϕ16mm
	Cross holder ϕ1mm ～ϕ16mm

■ L-lower turret (op.)

Type of turret head	Dodecagonal drum turret
Number of tool stations	12 (Max.24)
Number of Indexing positions	24
Tool size (square shank)	□25mm
Tool size (round shank)	ϕ32mm

■ Milling : L-lower turret (op.)

Rotary system	Individual rotation
Milling spindle speed	6,000min^{-1}
Spindle speed range	Stepless
Number of milling stations	12
Tool size	Straight holder ϕ1mm ～ϕ16mm
	Cross holder ϕ1mm ～ϕ16mm

■ Drive motor

L-spindle	15/11kW / 18.5/15kW(op.) *For ϕ80, only 18.5/15kW.
R-spindle	15/11kW
Tool Spindle	22/15kW
Milling (Lower turret)	5.5/3.7kW

■ General

Height		2,942.5mm
Floor space (L x W)		5,550mm ×3,257.7mm(ATC40, 80) 5,550mm ×3,765.7mm(ATC120)
Machine weight (incl. control)	Without L-lower turret	22,500kg (ATC 40) 23,000kg (ATC 80) 24,000kg (ATC 120)
	With L-lower turret	23,500kg (ATC 40) 24,000kg (ATC 80) 25,000kg (ATC 120)

■ Power requirements

Power supply	Without L-lower turret	65.7kVA (L-spindle 15/11kW, R-spindle 15/11kW)
		69.3kVA (L-spindle 18.5/15kW, R-spindle 15/11kW)
	With L-lower turret	70.7kVA (L-spindle 15/11kW, R-spindle 15/11kW)
		74.3kVA (L-spindle 18.5/15kW, R-spindle 15/11kW)

●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.

* This catalog was published in February 2024. Specifications, illustrations and data given herein are subject to change without notice.