JX-250

NAKAMURA-TOME
PRECISION INDUSTRY CO.,LTD.

Multitasking machine with ATC,
Tool spindle and twin-turrets

In pursuit of
genuine Multitasking

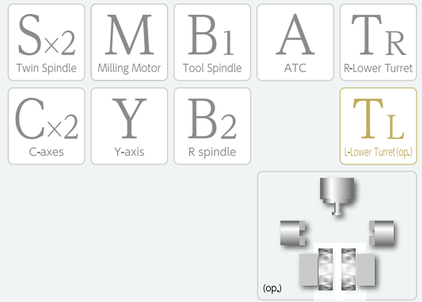
Innovative
Technology
～Creating new values～

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 5,578.5mm × 3,257.7mm
  (including standard coolant tank)
- Large variety of software



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

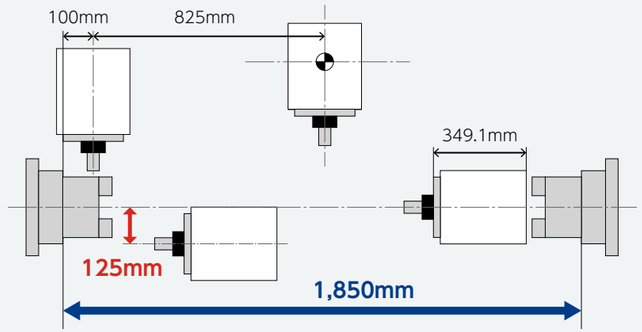
With NT Smart Cube, the world's most compact tool spindle in its class, this machine was developed to make effective use of a wide machining area. Additionally, it is featuring high performance Tool Spindle motors with up to 22/15kW (op.), an ATC with a capacity of up to 120 tools (op.), twin-turrets※ (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.)

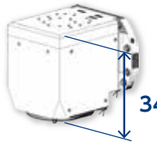
The world's shortest tool spindle in its class*

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.

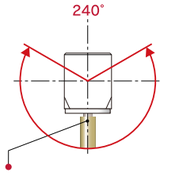
* Based on our survey in the multitasking machine market





Length	349.1mm*
Tool spindle motor	22/15kW
Tool spindle speed	12,000min-1 18,000min-1(op.)
Y-axis slide travel	±125mm

* 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.)

Turning

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

The combination of bar capacity and motor is available from following patterns.

Standard

■ L-spindle	■ R-spindle
Bar capacity *ϕ65mm(A2-6)*	Bar capacity *ϕ65mm(A2-6)*
Spindle motor *18.5/15kW*	Spindle motor *18.5/15kW*

Option

■ L-spindle	■ R-spindle
Bar capacity *ϕ71mm(A2-6)*	Bar capacity *ϕ65mm(A2-6)*
Spindle motor *18.5/15kW*	Spindle motor *18.5/15kW*

Option

■ L-spindle	■ R-spindle
Bar capacity *ϕ71mm(A2-6)*	Bar capacity *ϕ71mm(A2-6)*
Spindle motor *18.5/15kW*	Spindle motor *18.5/15kW*

Option

■ L-spindle	■ R-spindle
Bar capacity *ϕ80mm(A2-8)*	Bar capacity *ϕ65mm(A2-6)*
Spindle motor *22/18.5kW*	Spindle motor *18.5/15kW*

Option

■ L-spindle	■ R-spindle
Bar capacity *ϕ80mm(A2-8)*	Bar capacity *ϕ65mm(A2-8)*
Spindle motor *22/18.5kW*	Spindle motor *18.5/15kW**1

Option

■ L-spindle	■ R-spindle
Bar capacity *ϕ80mm(A2-8)*	Bar capacity *ϕ71mm(A2-6)*
Spindle motor *18.5/15kW*	Spindle motor *15/11kW*

Option

■ L-spindle	■ R-spindle
Bar capacity *ϕ90mm(A2-8)*	Bar capacity *ϕ65mm(A2-6)*
Spindle motor *22/18.5kW**2	Spindle motor *18.5/15kW*

Option

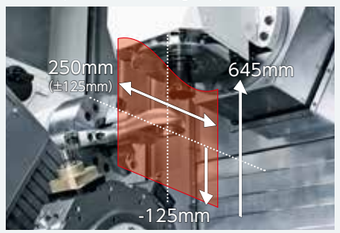
■ L-spindle	■ R-spindle
Bar capacity *ϕ90mm(A2-8)*	Bar capacity *ϕ65mm(A2-8)*
Spindle motor *22/18.5kW**2	Spindle motor *18.5/15kW**1

*1 15" chuck is available.

*2 It is only available for single turret machine.
It is NOT available for gantry loader specifications.

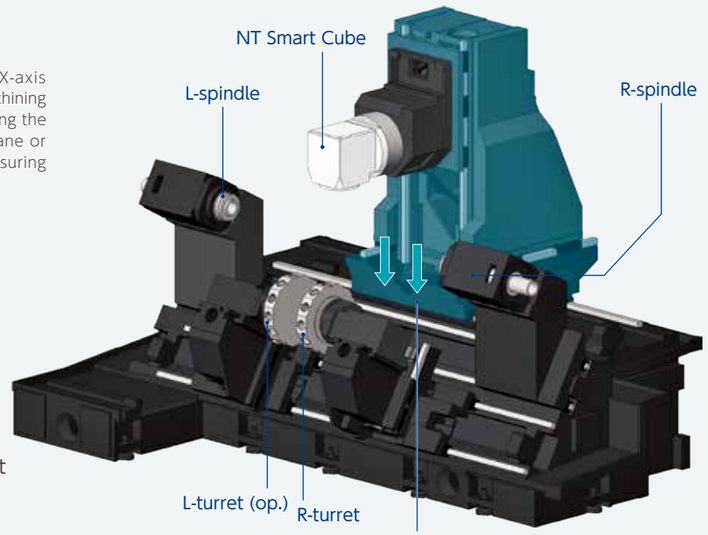
High accuracy milling

Thanks to large Y-axis travel and 125mm X-axis travel beyond the spindle center, various machining o perations 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.



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

Milling motor	*5.5/3.7kW* *6,000min-1*
Y-axis slide travel	*±40mm*



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.

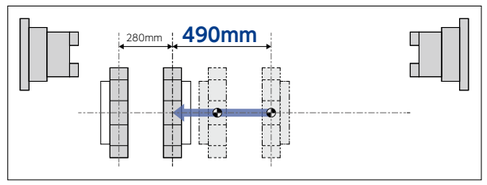
ATC Maintenance Navigator

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.

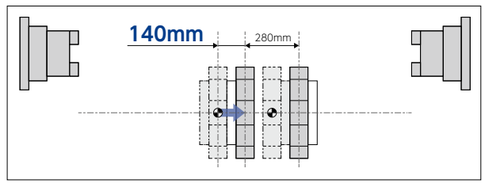
Cross Over Travel for Lower Z-axis (op. L lower turret)

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

	φ65	φ71(op.)	φ80(op.)	φ90(op.)*1
Max. turning diameter	320mm			
Distance between spindles	max.1,850mm / min.300mm			max.1,787mm / min.237mm
Max. turning length	1,650mm			1,587mm
Bar capacity	φ65mm	φ71mm	φ80mm	φ90mm
Chuck size	8", 10", 12", 15"	8", 10", 12"		

■ Axis travel • Rapid feed rate

X1-axis slide travel	645mm			
X2-axis slide travel	215mm / 190mm*2	215mm		
X3-axis slide travel(op.)	215mm		190mm	–
Z1-axis slide travel	±825mm (at ATC -1,005mm)			
Z2-axis slide travel	±745 (Without Z3) / +490, -605 (With Z3)			±745
Z3-axis slide travel(op.)	-605, +140			–
Y1-axis slide travel	±125mm			
Y2-axis slide travel	±40mm			
Y3-axis slide travel(op.)	±40mm			–
B2-axis slide travel	1,550mm			
X1-axis rapid feed rate	36m/min			
X2/X3-axis rapid feed rate	16m/min			
Z1-axis rapid feed rate	40m/min			
Z2/Z3-axis rapid feed rate	40m/min			
Y1-axis rapid feed rate	36m/min			
Y2/Y3-axis rapid feed rate	6m/min			
B2-axis rapid feed rate	40m/min			

■ L-spindle

Spindle speed	4,500min-1	4,500min-1	3,500min-1	2,500min-1
Spindle motor	18.5/15kW		18.5/15kW, 22/18.5W	22/18.5W
Spindle nose	A2-6	A2-6	A2-8	A2-8
Hole through spindle	80mm	80mm	90mm	107mm
I.D. of front bearing	120mm	120mm	130mm	150mm
Hole through draw tube	66mm	72mm	81mm	91mm

■ R-spindle

Spindle speed	4,500min-1*3	4,500min-1	–	–
Spindle motor	18.5/15kW	18.5/15kW, 15/11W	–	–
Spindle nose	A2-6, A2-8*2	A2-6	–	–
Hole through spindle	80mm	80mm	–	–
I.D. of front bearing	120mm	120mm	–	–
Hole through draw tube	66mm	72mm	–	–

● 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.

■ ATC Tool spindle

Tool spindle speed	12,000min-1 / 18,000min-1 (op.)
Tool Spindle motor	22/15kW
Swiveling range	240° (±120°)
Tool coupling type	CAPTO C6 / HSK-T63(op.)
Number of tools	80, 40(op.), 120(op.)
Max. tool diameter / Without adjacent tool	90mm / 130mm
Max. tool length	300mm / 400mm(op. ATC 80, 120)

■ 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 : Lower turret

Rotary system	Individual rotation
Milling speed	6,000min-1
Milling motor	5.5/3.7kW
Spindle speed range	Stepless
Number of milling stations	12
Tool size	Straight holder φ1mm – φ16mm
	Cross holder φ1mm – φ16mm

■ General

Height		2,954mm
Floor space (W x D)		5,578.5mm ×3,257.7mm(ATC 40, 80) 5,578.5mm ×3,765.7mm(ATC 120)
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	69.3kVA (L-spindle 18.5/15kW, R-spindle 15/11kW)
		72.7kVA (L-spindle 18.5/15kW, R-spindle 18.5/15kW)
		75.7kVA (L-spindle 22/18.5kW, R-spindle 18.5/15kW)
	With L-lower turret	74.3kVA (L-spindle 18.5/15kW, R-spindle 15/11kW)
		77.6kVA (L-spindle 18.5/15kW, R-spindle 18.5/15kW)
		80.7kVA (L-spindle 22/18.5kW, R-spindle 18.5/15kW)

*1 It is only available for single turret machine.
It is NOT available for gantry loader specifications.
*2 Specifications when 15 inch chuck is selected.
*3 There is limitation on maximum spindle speed with 15 inch chuck.

● 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.

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