

JX-200

NAKAMURA-TOME
PRECISION INDUSTRY CO.,LTD.

Change the IMPOSSIBLE
to POSSIBLE

Innovative
Technology

~ Creating new values ~

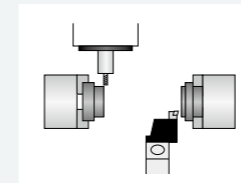
JX-200

Ultra-modern 6 to 10-inch chuck multitasking machine. With tool spindle and a lower turret equipped with a standard Y-axis featuring the "NT Smart Cube", the shortest tool spindle in its class. The machining area can be used effectively, thus covering a wide range of machining needs. Additionally, a full range of Nakamura-Tome user-friendly software is available.



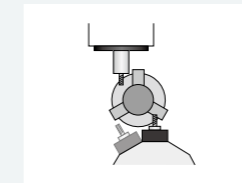
Change the IMPOSSIBLE to POSSIBLE

The world's shortest tool spindle in its class, "NT Smart Cube" allows for more effective use of its large machining area. By combining the Lower turret, various machining operations can be supported, such as simultaneous machining with L/R spindles, simultaneous machining with Upper and Lower turrets, and center support on the Lower turret. With the ability to handle a workpiece covering the entire volume zone and a flexible unit configuration that enables any types of process. These are some examples of the various operations that this machine can do.



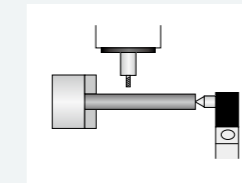
Flexible machining with L/R spindles

Flexible machining with L/R spindles to reduce the cycle time.



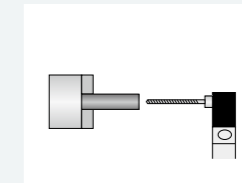
Simultaneous Y-axis vertical machining

Wide variety of milling operations, thanks to its Y-axis travel of $\pm 105\text{mm}$ on the tool spindle and $\pm 35\text{mm}$ on the lower turret.



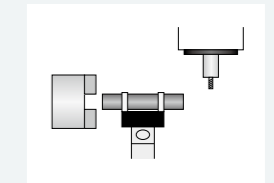
Turret Center-support

The center support on the Lower turret is ideal for long workpieces.



Long drill machining

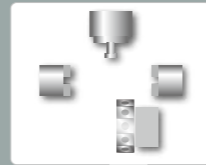
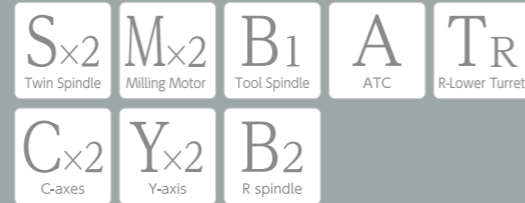
Enables the use of long drills that do not fit in the ATC magazine.



Semi-automatic

Loading/Unloading workpieces by the work rest on the turret.

POSSIBLE to perform several different processes with just one machine!



- "NT Smart Cube" is one of the world's shortest tool spindles in its class
- ATC tool spindle motor 15/11kW Tool spindle speed 12,000min⁻¹ (op. 18,000min⁻¹)
- The number of ATC tools:80 (op. 40,120)
- 5.5/3.7kW milling motor on the lower turret rotation speed 6,000min⁻¹ (op. 8,000min⁻¹)
- Increased stability thanks to a heavy-duty column structure
- Floor space 2,925mm ×5,250mm(including standard coolant tank)
- Extensive variety of Nakamura-Tome user-friendly software



Tool spindle swings from -95° to +95°, and the Lower turret with Y-axis flexibly handles small to large diameter workpieces, long workpieces, and complex shapes.



L-spindle

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

R-spindle

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

Turning (Tool spindle)

Common cutting condition

- Material **S45C**
- Cutting speed **120m/min**

- Cutting cross section
3.6mm²
- Depth of cut **6mm**
- Feed **0.6mm/rev**

- Cutting cross section
2.65mm²
- Depth of cut **5mm**
- Feed **0.53mm/rev**

- Material **S45C**
- Cutting speed **100m/min**

- Groove width **8mm**
- Feed **0.1mm/rev**

- Groove width **5mm**
- Feed **0.1mm/rev**



The world's shortest tool spindle in its class*

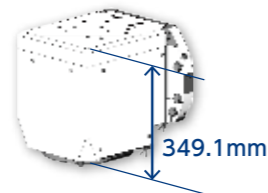
NT Smart Cube

Tool Spindle (NT Smart Cube)

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

Y-axis slide travel **±105mm**

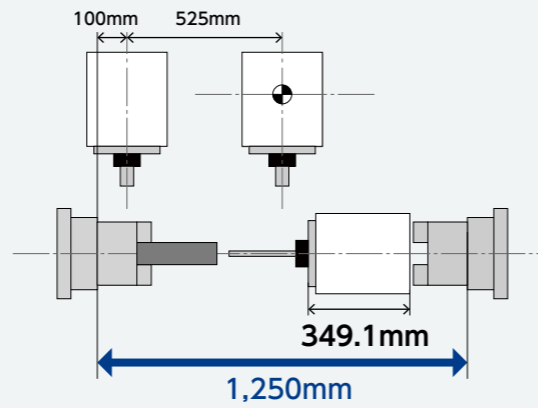
15/11kW
 Tool spindle motor **12,000min⁻¹**
18,000min⁻¹ (op.)



Large machining area

The world's shortest tool spindle in its class! Thanks to the ultra-compact size of the Tool Spindle, the interference is reduced, and it ensures a larger machining area.

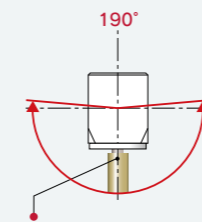
* Based on our survey in the multitasking machine market



144 stations

Up to 144 tools available!

In addition to 120 ATC tools(op.) for the Tool Spindle, 24 tools(half index) can be mounted on the Lower Turret.



Max.tool diameter / Without adjacent tool : $\phi 90 / \phi 130\text{mm}$
 Max.tool length : 300mm

High accuracy milling

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



R-lower turret

Y-axis slide travel **±35mm**

Milling motor **5.5/3.7kW**
6,000min⁻¹
8,000min⁻¹ (op.)



ATC Maintenance Navigator

In addition to 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 downtime.



L-spindle

Standard

Bar capacity **$\phi 65\text{mm}$**

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

Option

Bar capacity **$\phi 80\text{mm}$**

L-spindle motor **18.5/15kW**
3,500min⁻¹

* Specification of $\phi 51\text{mm}$ bar capacity is not available on R-spindle when $\phi 80\text{mm}$ bar capacity is selected on L-spindle.

R-spindle

Standard

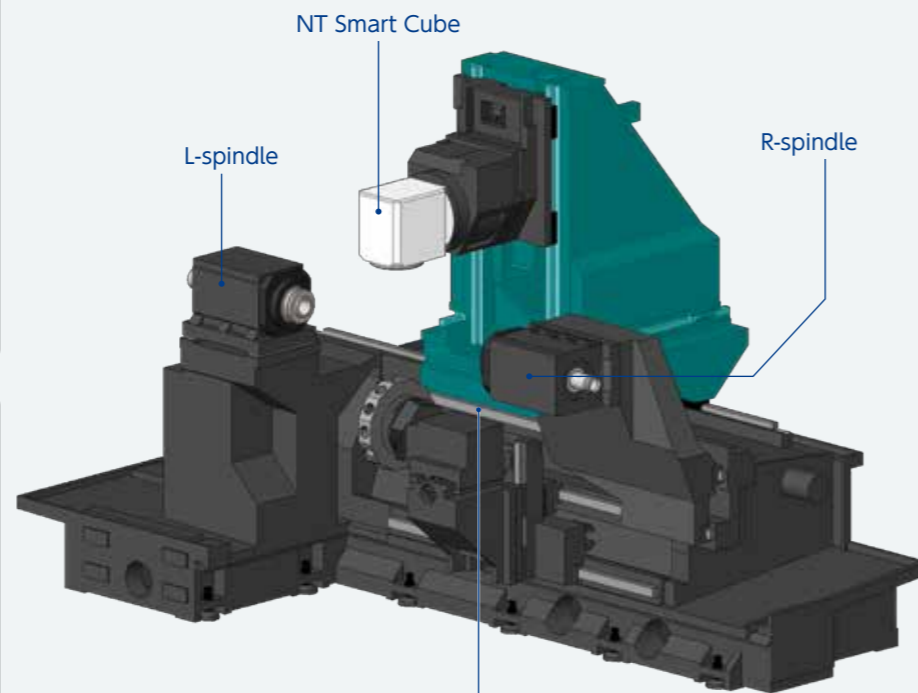
Bar capacity **$\phi 51\text{mm}$**

R-spindle motor **11/7.5kW**
6,000min⁻¹

Option

Bar capacity **$\phi 65\text{mm}$**

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



Stable and rigid structure with less vibration

ATC 80 (op.40,120)

NT SmartX



Parts catcher type G		$\phi 65$	$\phi 80$
Workpiece size	Diameter (mm)	$\phi 12-65$	$\phi 31-80$
	Length (mm)	15-150	
	Weight (kg)	3.0	
Ejecting method		Belt conveyor & Chute	



Capacity	φ51	φ65	φ80*
Max. turning diameter (Tool spindle / Lower turret)	325mm / 255mm		
Distance between spindles	max.1,250mm / min.240mm		
Max. turning length	1,058mm		
Bar capacity	φ51mm	φ65mm	φ80mm
Chuck size	6" / 8" / 10"		

Axis travel

X1-Axis slide travel	585mm
X2-Axis slide travel	162.5mm
Z1-Axis slide travel	1,050mm (at ATC+180mm)
Z2-Axis slide travel	1,005mm
Y1-Axis slide travel	±105mm
Y2-Axis slide travel	±35mm
B2-Axis slide travel	1,010mm

Rapid feed

X1-Axis rapid feed rate	30m/min
X2-Axis rapid feed rate	16m/min
Z1-Axis rapid feed rate	40m/min
Z2-Axis rapid feed rate	40m/min
Y1-Axis rapid feed rate	16m/min
Y2-Axis rapid feed rate	6m/min
B2-Axis rapid feed rate	40m/min

L-spindle

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

R-spindle

	φ51	φ65(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	-

* Specification of φ51mm bar capacity is not available on R-spindle when φ80mm bar capacity is selected on L-spindle.

Safety quality specifications

Various interlocks, such as 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.



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ATC Tool spindle

Tool spindle speed	12,000min ⁻¹ / 18,000min ⁻¹ (op.)
Swiveling range	190° (±95°)
Tool coupling type	CAPTO C6 / HSK-T63(op.)
Number of tools	80, (40, 120 op.)
Max. tool diameter / Without adjacent tool	90mm / 130mm
Max. tool length	300mm

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

Rotary system	Individual rotation
Milling spindle speed	6,000min ⁻¹ / 8,000min ⁻¹ (op.)
Spindle speed range	Stepless
Number of milling stations	12
Tool size	Straight holder φ1mm-φ16mm
	Cross holder φ1mm-φ16mm

Drive motor

	φ51	φ65	φ80*
L-spindle	-	15/11kW	18.5/15kW(op.)
R-spindle	11/7.5kW	15/11kW(op.)	-
Tool Spindle	15/11kW		
Milling (Lower turret)	5.5/3.7kW		

General

Height	2,925mm	
Floor space (L x W)	5,250mm × 2,987.2mm	
Machine weight (incl. control)	ATC 80	23,000kg
	ATC 40(op.)	22,500kg
	ATC 120(op.)	24,000kg

Power requirements

Power supply	59.5kVA(63.5kVA) (L-spindle 15/11kW, R-spindle 11/7.5kW)
	62.5kVA(66.5kVA) (L-spindle 15/11kW, R-spindle 15/11kW)
	66.1kVA(70.1kVA) (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 July 2024. Specifications, illustrations and data given herein are subject to change without notice.

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