

NTY³-100V

NAKAMURA-TOME
PRECISION INDUSTRY CO.,LTD.

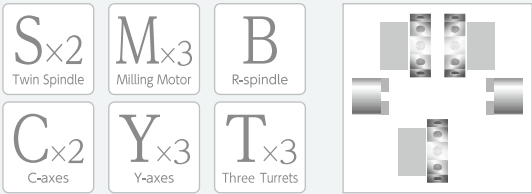
Faster than
the fastest

Innovative
Technology

~Creating new values~

NTY³-100V

The second machine in the 'V series' of multitasking machines prioritizes speed as its core design concept. Standard equipment includes Y-axis capabilities on all 3 turrets and opposed twin spindles. Enhanced processing capabilities and simultaneous left/right and upper/lower machining reinforce speedy production. Furthermore, we have made software improvements to reduce idle time. It strives to be faster than the fastest that customers have ever experienced.



30% Reduction in Cycle Time

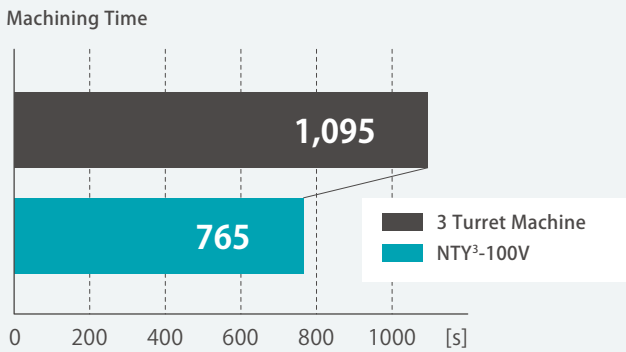
* Reduction time varies depending on the shape of the workpiece and cutting conditions.

Starting with the implementation of "ChronoCut" to reduce processing idle time, numerous new technologies have been incorporated to enhance production speed.



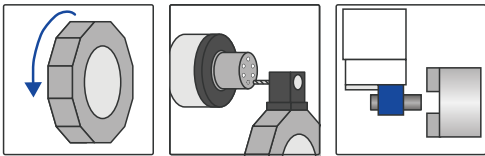
Semiconductor manufacturing equipment (sample)

Material	SUS303
Material Size	φ 50mm bar

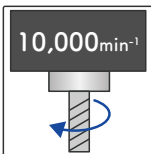


ChronoCut

A unique function by Nakamura-Tome designed to reduce idle time. This new software minimizes idle time during manufacturing without compromising accuracy, even without any changes to the cutting conditions.

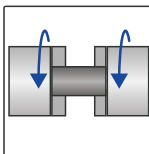


- High-speed indexing
- High-speed spindle synchronization
- Execution of multiple M-codes within the same block
- High-speed rigid tapping
- Reduction of PC-G unloading time, etc.



UP Machining conditions

By improving the machining capabilities of the milling speed, torque, and more, the machine achieves high performance under demanding conditions.



UP Acceleration / Deceleration

The acceleration and deceleration during starting and stopping have been improved, enabling quick attainment to the maximum speed.

Cycle Times are Faster Thanks to Simultaneous Machining with the L/R Spindles and Upper/Lower Turrets.

L-spindle

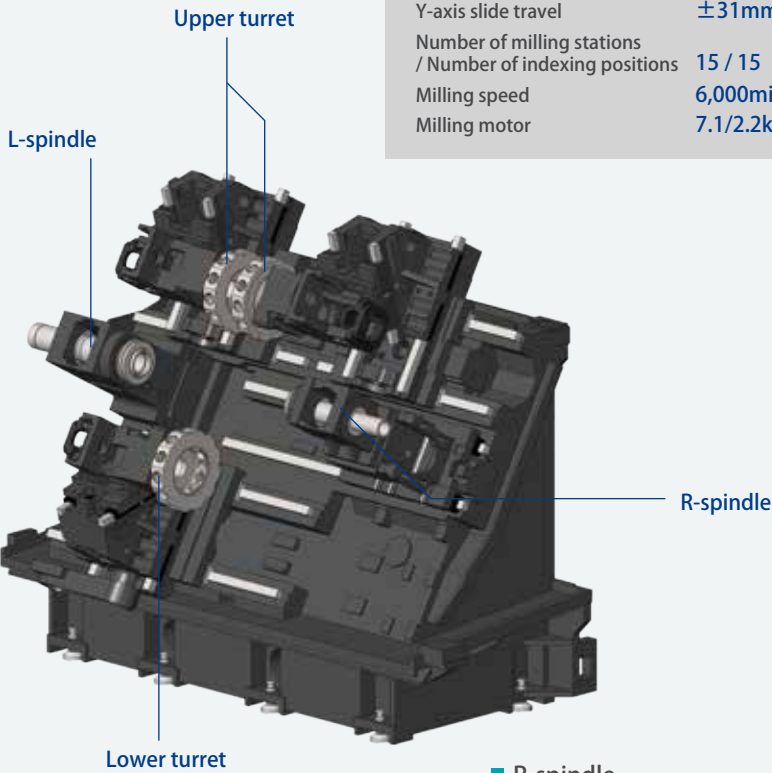
Standard	
Bar capacity	φ42mm
Spindle speed	6,000min ⁻¹
Spindle motor	11/7.5kW
Option	
Bar capacity	φ51mm
Spindle speed	6,000min ⁻¹
Option	Option
Spindle motor	Spindle motor
11/7.5kW	15/11kW
Option	
Bar capacity	φ65mm
Spindle speed	5,000min ⁻¹
Option	Option
Spindle motor	Spindle motor
11/7.5kW	15/11kW

Lower turret

Dodecagonal drum turret	
Y-axis slide travel	±32.5mm
Number of milling stations / Number of indexing positions	12 / 24
Standard	Option
Milling speed	Milling speed
6,000min ⁻¹	10,000min ⁻¹
Milling motor	Milling motor
7.1/2.2kW	7.5/2.2kW
15-station turret	
Y-axis slide travel	±31mm
Number of milling stations / Number of indexing positions	15 / 15
Milling speed	6,000min ⁻¹
Milling motor	7.1/2.2kW

Upper turret

Dodecagonal drum turret	
Y-axis slide travel	±42mm
Number of milling stations / Number of indexing positions	12 / 24
Standard	Option
Milling speed	Milling speed
6,000min ⁻¹	10,000min ⁻¹
Milling motor	Milling motor
7.1/2.2kW	7.5/2.2kW
15-station turret	
Y-axis slide travel	±31mm
Number of milling stations / Number of indexing positions	15 / 15
Milling speed	6,000min
Milling motor	7.1/2.2kW



Y-axis and Milling are standard.



R-spindle

Standard	
Bar capacity	φ42mm
Spindle speed	6,000min ⁻¹
Spindle motor	11/7.5kW
Option	
Bar capacity	φ51mm
Spindle speed	6,000min ⁻¹
Option	Option
Spindle motor	Spindle motor
11/7.5kW	15/11kW

GR-203 High-Speed(op.)

The entire process from loading the blank material, to unloading a finished part, can be automated.
* The image is of NTY³-100.



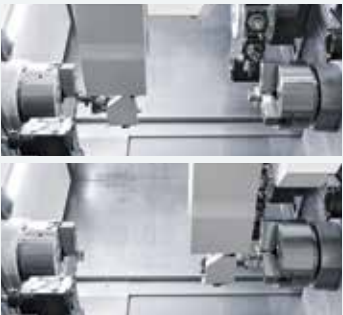
Parts catcher type G(op.)

Unloading a finished part can be automated.



Compact loader(op.)

The entire process from loading the blank material, to unloading a finished part, can be automated.



Large window for easy viewing of the machining area

The door windows are equipped with wipers that keep the windows clean.



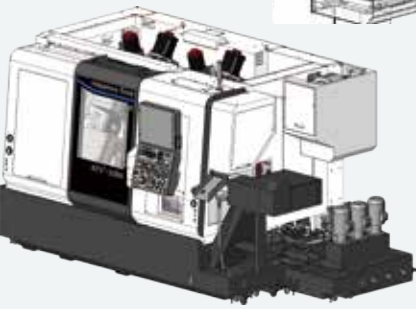
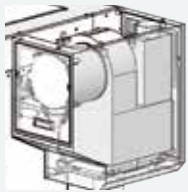
Chip conveyor(op.)

The discharge position can be selected from the following three options.
•Side
•Right side & Rear
•Left side & Rear



FogFree(op.)

"FogFree" is a built-in mist collector designed to prevent the deterioration of the work environment caused by mist.



Bar remnant parts catcher(op.)

The bar remnants can be collected from the chute in the lower right corner of the machine.



NT SmartX 19 inch touch screen

With a movable operation panel, the angle can now be adjusted by the operator.



■ Capacity		φ42	φ51(op.)	φ65(op.)
Max. turning diameter	12st	200mm		
	15st(op.)	190mm		
Distance between spindles		max.820mm / min.200mm		
Max. turning length		588mm		
Bar capacity		φ42mm	φ51mm	φ65mm
Chuck size		6"		

■ Axis travel

X1/X2/X3 axis slide travel	12st	150mm / 150mm / 141mm		
	15st(op.)	145mm / 145mm / 130mm		
Z1/Z2/Z3 axis slide travel	12st	245mm / 245mm / 578mm		
	15st(op.)	202mm / 202mm / 560mm		
Y1/Y2/Y3 axis slide travel	12st	±42mm / ±42mm / ±32.5mm		
	15st(op.)	±31mm / ±31mm / ±31mm		
B2-axis slide travel		620mm		

■ Rapid feed

X-axis rapid feed rate	20m/min
Z-axis rapid feed rate	40m/min
Y-axis rapid feed rate	8m/min
B2-axis rapid feed rate	40m/min

■ L-spindle

Spindle speed	6,000min ⁻¹	6,000min ⁻¹	5,000min ⁻¹
Spindle speed range	Stepless	Stepless	Stepless
Spindle nose	A2-5	A2-5	A2-6
Hole through spindle	56mm	63mm	80mm
I.D. of front bearing	80mm	90mm	110mm
Hole through draw tube	43mm	52mm	66mm

■ R-spindle

Spindle speed	6,000min ⁻¹	6,000min ⁻¹	-
Spindle speed range	Stepless	Stepless	-
Spindle nose	A2-5	A2-5	-
Hole through spindle	56mm	63mm	-
I.D. of front bearing	80mm	90mm	-
Hole through draw tube	43mm	52mm	-

■ C-axis

Least input increment	0.001°
Least command increment	0.001°
Rapid speed	600min ⁻¹
Cutting feed rate	1~4,800° /min
C-axis clamp	Disk clamp
C-axis connecting time	1.5s

*1 The maximum gripping diameter varies depending on the collet manufacturer.

■ Upper/Lower turret		φ42	φ51(op.)	φ65(op.)
Type of turret head	12st	Dodecagonal drum turret		
	15st(op.)	15-station turret		
Number of indexing positions	12st	24		
	15st(op.)	15		
Tool size (square shank)		□20mm / □16mm(24st)		
Tool size (round shank)		φ25mm		

■ Milling

Rotary system		Individual rotation	
Milling spindle speed	12st	6,000min ⁻¹ / 10,000min ⁻¹ (op.)	
	15st(op.)	6,000min ⁻¹	
Spindle speed range		Stepless	
Number of milling stations	12st	12	
	15st(op.)	15	
Holder type and Tool size		Straight holder φ1mm - φ14mm *1	
		Crossholder φ1mm - φ14mm *1	

■ Drive motor

L-spindle		11/7.5kW	11/7.5kW / 15/11kW(op.)	
R-spindle		11/7.5kW	11/7.5kW / 15/11kW(op.)	-
Milling	6,000min ⁻¹	7.1/2.2kW (18.5N·m)		
	10,000min ⁻¹ (op.)	7.5/2.2kW (23.9N·m)		

■ General

Height	2,255.3mm
Max. height of movable part	2,119.4mm
Floor space (W × D)	3,864.2mm × 2,245.7mm
Machine weight (incl. control)	10,000kg(Standard)

■ Power supply

Power supply	43.7kVA (L-spindle 11/7.5kW, R-spindle 11/7.5kW)
	46.7kVA (L-spindle 15/11kW, R-spindle 11/7.5kW)
	49.8kVA (L-spindle 15/11kW, R-spindle 15/11kW)

● 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 the 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, expansion 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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