WY-100V

NAKAMURA-TOME
PRECISION INDUSTRY CO.,LTD.

Both Turrets Equipped with Y-axis Two-spindle Two-turret Multitasking Machine

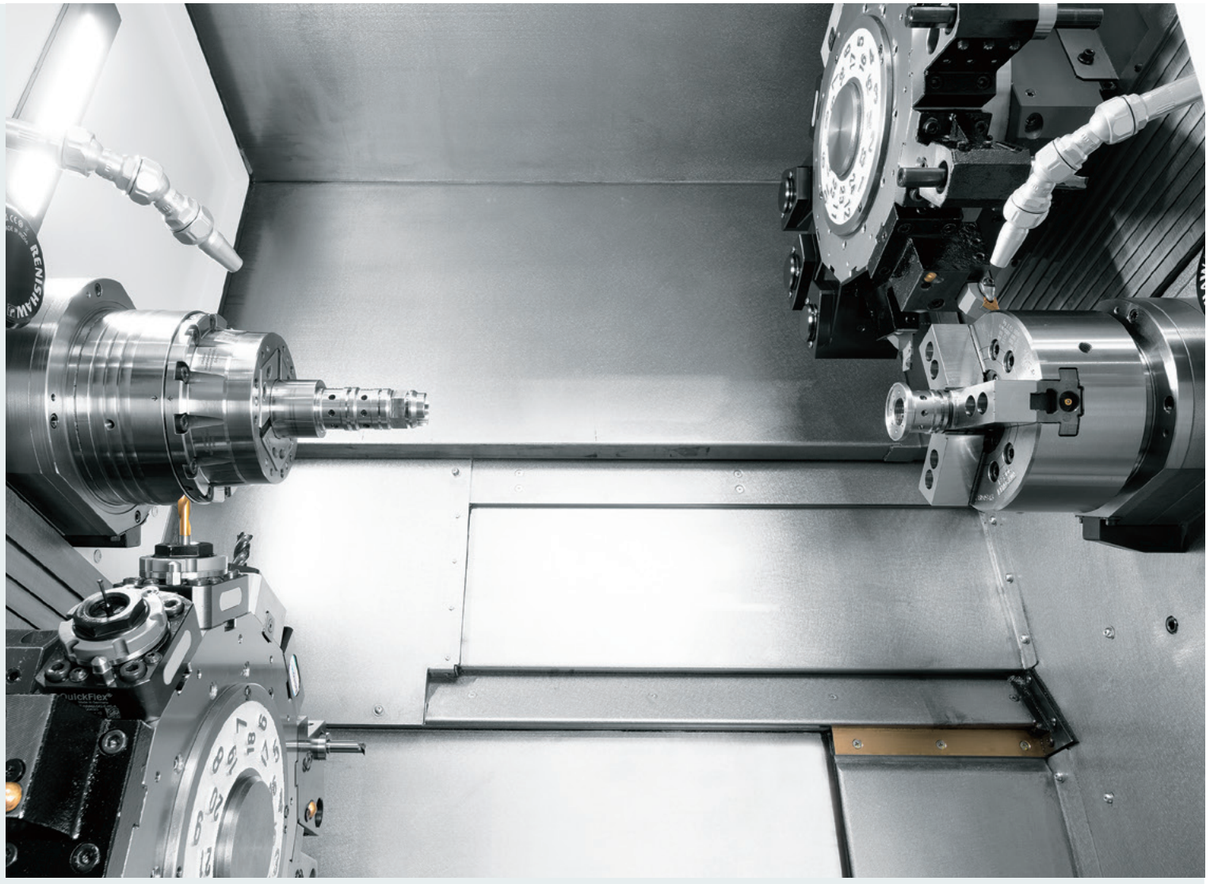
Faster than the fastest

Innovative Technology
～Creating new values～

WY-100V

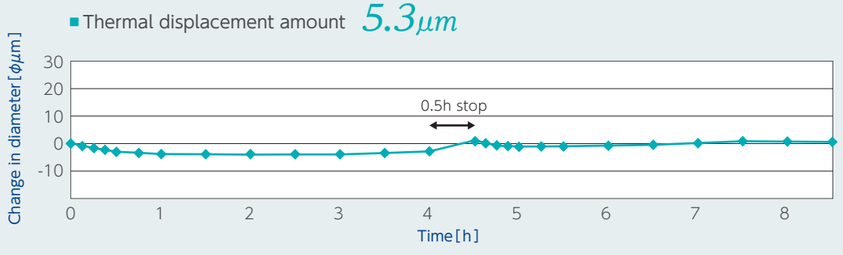
The first of the "V series" multitasking machines, with speed as the design concept behind it. Y-axis on the upper/lower turret and opposed twin spindles are standard equipment. Enhanced processing capabilities and simultaneous left/right and upper/lower machining reinforce speedy production. Furthermore, we have made software improvements to reduce idle time. It strives to be faster than the fastest that customers have ever experienced.

S×2 Twin Spindle	M×2 Milling Motor	B2 R-spindle
C×2 C-axes	Y×2 Y-axes	T×2 Double Turrets



Equipped it with the new NT Thermo Navigator to improve thermal displacement compensation.

■ Thermal displacement amount 5.3μm



*1 Actual Values shown here are obtained when ambient temperature conditions are met.
*2 These data may change depending on actual cutting and environmental conditions.

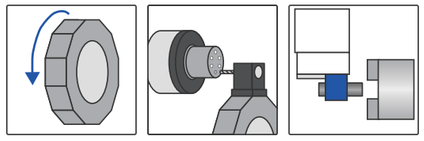
Machining Capabilities

30% Reduction in Cycle Time

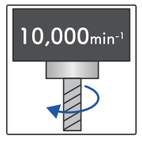
Starting with the implementation of "ChronoCut" to reduce processing idle time, numerous new technologies have been incorporated to enhance production speed.

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.

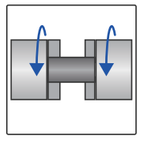


- High-speed indexing
- High-speed spindle synchronization
- Execution of multiple M-codes within the same block
- High-speed rigid tapping
- Reduction of PC-G unloading time, etc.



Machining conditions UP

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

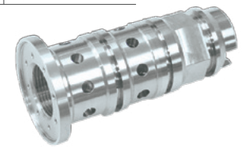


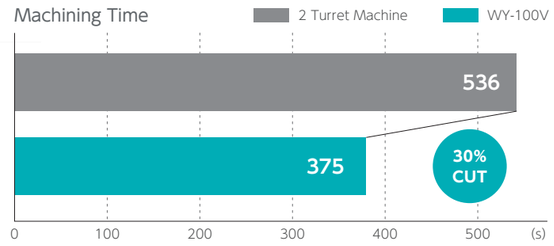
Acceleration / Deceleration UP

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

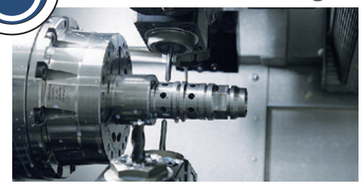
Hydraulic valve component (sample)

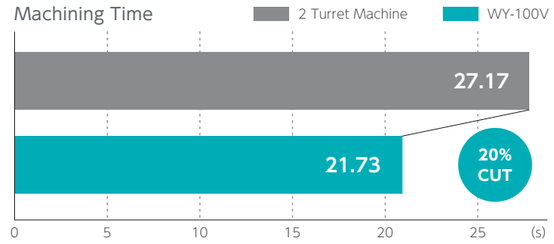
Material	S45C
Material Size	ϕ50mm×L96mm



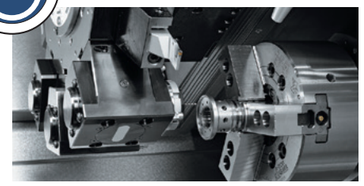


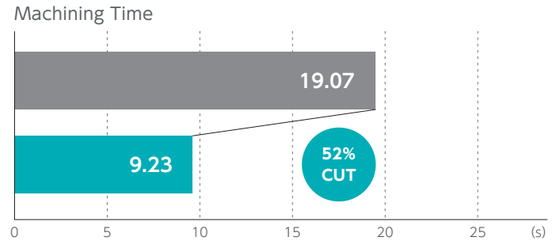
Drilling Operation with C-axis Positioning





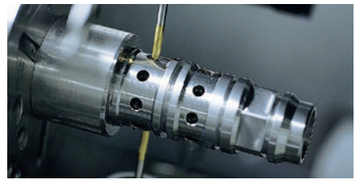
Rigid Tap Operation

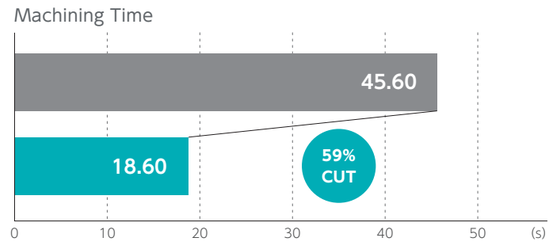




Chamfering

・6,000min-1→10,000min-1(op.)





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

■ L-spindle

Standard

Bar capacity $\phi 42mm$
Spindle speed $6{,}000min^{-1}$
Spindle motor $11/7.5kW$

Option

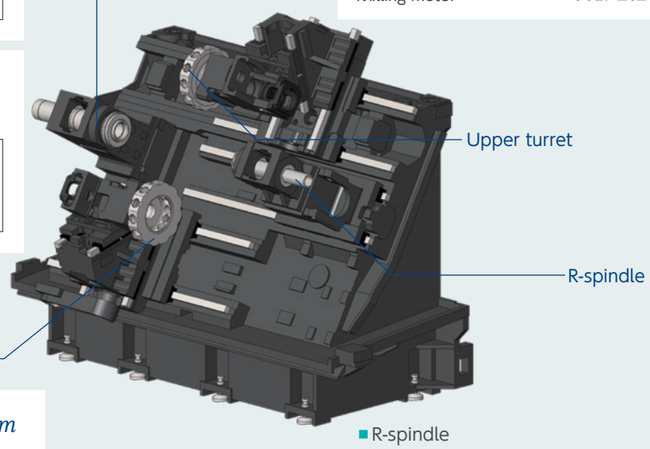
Bar capacity $\phi 51mm$
Spindle speed $6{,}000min^{-1}$

Option	Option
Spindle motor $11/7.5kW$	Spindle motor $15/11kW$

Option

Bar capacity $\phi 65mm$
Spindle speed $5{,}000min^{-1}$

Option	Option
Spindle motor $11/7.5kW$	Spindle motor $15/11kW$



■ Upper turret

Dodecagonal drum turret

Y-axis slide travel $\pm 42mm$
Number of milling stations / Number of indexing positions $12/24$

Standard	Option
Milling speed $6{,}000min^{-1}$	Milling speed $10{,}000min^{-1}$
Milling motor $7.1/2.2kW$	Milling motor $7.5/2.2kW$

15-station turret

Y-axis slide travel $\pm 31mm$
Number of milling stations / Number of indexing positions $15/15$
Milling speed $6{,}000min^{-1}$
Milling motor $7.1/2.2kW$

■ Lower turret

Dodecagonal drum turret

Y-axis slide travel $\pm 32.5mm$
Number of milling stations / Number of indexing positions $12/24$

Standard	Option
Milling speed $6{,}000min^{-1}$	Milling speed $10{,}000min^{-1}$
Milling motor $7.1/2.2kW$	Milling motor $7.5/2.2kW$

15-station turret

Y-axis slide travel $\pm 31mm$
Number of milling stations / Number of indexing positions $15/15$
Milling speed $6{,}000min^{-1}$
Milling motor $7.1/2.2kW$

Y-axis and Milling are standard.

■ R-spindle

Standard

Bar capacity $\phi 42mm$
Spindle speed $6{,}000min^{-1}$
Spindle motor $11/7.5kW$

Option

Bar capacity $\phi 51mm$
Spindle speed $6{,}000min^{-1}$

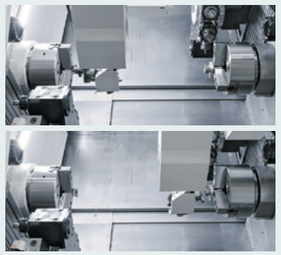
Option	Option
Spindle motor $11/7.5kW$	Spindle motor $15/11kW$

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.

Compact loader(op.)

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



Parts catcher type G(op.)

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

Tool setter(op.)

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.

Advanced Production System
NT SmartX

Setup Support
- Status Screen
- Setup Screen
- Geometry Navigator (op.)
- Path Checker
- Simple Call
- One Touch Production (op.)
- Digital Chuck Interlock

Programming Support
- Smart Support
- 3D Smart Pro AI
- 3D Smart Pro
- NT Manual Guide i
- Drop Converter

Machining Support
- NT Thermo Navigator AI
- Warm-Up Function
- NT NURSE
- Program Optimizer
- Chatter Canceller
- Oscillation Cutting (op.)
- Smart Tuning (op.)
- NT WORK NAVIGATOR

Dual Safety
- Airbag
- NT Machine Simulation
- NT Collision Guard

Maintenance
- ATC Maintenance Navigator
- Regular Maintenance Function
- Productivity Monitoring Function
- Operation Level Management Function
- Trouble Guidance
- Drive Recorder

Customer Support
- NT Update

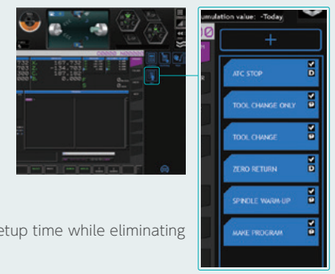
Nakamura-Tome AI

■ Powered by AI as standard equipment
- NT Thermo Navigator AI
- 3D Smart Pro AI

Digital Chuck Interlock
Set the Chuck Open and Close detection position easily.
The chuck open / close position is set up on the NT SmartX screen.
Setup time and machining cycle time are reduced.

One Touch MDI
This function is to register frequently used program blocks or cycles, such as zero return or tool change, and call them again with one touch.

Reduce programming and setup time while eliminating input errors.



NT Smart Sign
Nakamura-Tome IoT software

※Please refer to the NT Smart Sign exclusive catalog for details.

■ Monitoring

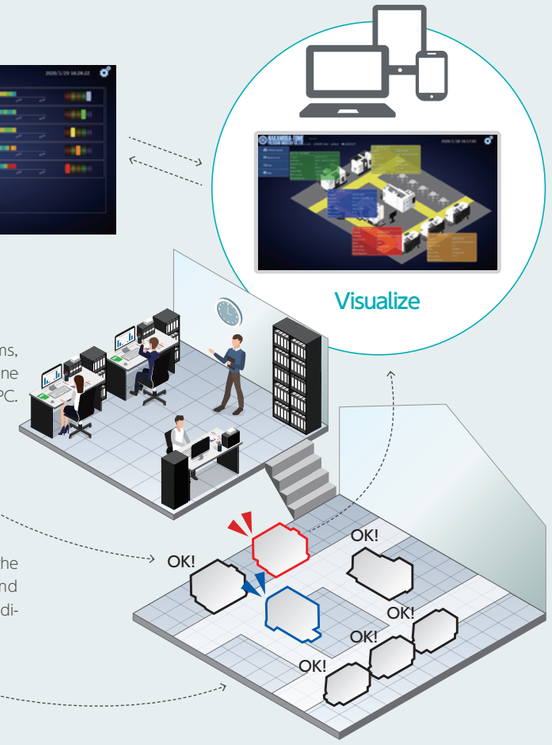
Real-Time Monitoring of machine running conditions, in addition to visualizing alarm history and past events.

■ Data Input / Output

Input and output programs, tool data and other machine data from the monitoring PC.

■ Diagnosis

Diagnose problems with the machine servo drives and spindle drives, using a dedicated program.



NT Thermo Navigator AI
Thermal Growth Compensation using AI.

Compensation model built using AI machine learning.

① Time
② Measured Dimensions
③ Retrieval of Wear Offset Data

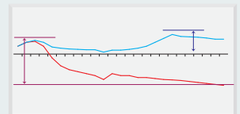
Acquired Data analyzed with NT Thermo Navigator AI

Feedback

Standard for NT SmartX

Powered by AI
Time and measured dimension data are input into a dedicated AI Learning software, to build an optimized thermal growth compensation model.

High Precision Thermal Growth Compensation
The compensation value is calculated from acquired data. The more data is input, the more accurate is the compensation value.

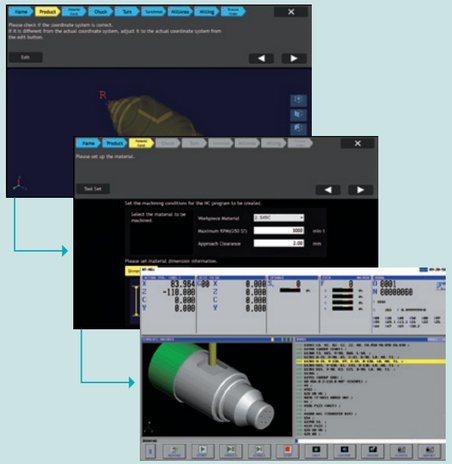


— Pre-correction thermal displacement data
— Thermal displacement data after correction

3D Smart Pro AI

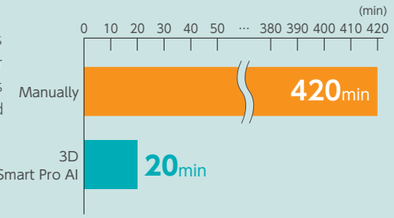
AI Analysis NC Programming Support Function

This function analyzes 3D CAD model data and generates an NC program for processing from blank to finished parts.
Simply follow the displayed guidance and enter the required information to create the program.



Operators can also set detailed machining methods.

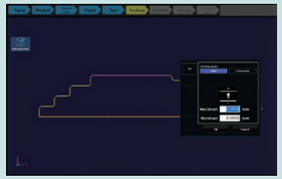
It drastically reduces man-hours required for creating NC programs and improves set up and production efficiency.



* NC programming level : Beginner engineer

Transfer Setting

Once the transfer position is set, the machining area and transfer program are created.



Tolerance Setting

Once the tolerance value is input, the target value for machining can be set.

Optimization of Machining Processes

In addition to defining the required machining processes, AI proposes a suitable machining process sequence.

Tool Guide

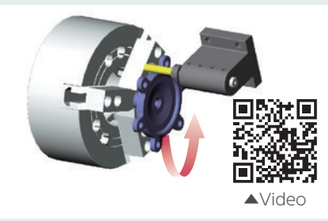
If the tool configuration is incomplete, the AI analyzes the CAD model data and provide the necessary tool information.

NT WORK NAVIGATOR

X Y Z B C

No fixtures required

Machining parts with non-round shapes, such as forgings or castings require that the raw part coordinates be recognized by the CNC control.
It works just by touching the part with a simple inexpensive probe (mostly a round bar mounted on a tool holder) and using the torque control feature of the servo-motor, which is to record required coordinates in the CNC.
The NT WORK NAVIGATOR is eliminating the need for positioning fixtures and special clamping devices.



▲Video

Double safety features for maximum protection

NT Machine Simulation / NT Collision Guard + Airbag (Overload detection)

The machine comes protected with dual safety features: "NT Machine Simulation / NT Collision Guard" to prevent a collision beforehand, and the "Airbag Function" minimizes damage to the machine in case of collision.

NT Machine Simulation

Machine collisions are avoidable with Preventive safety technology!

Interference checks can be carried out based on the machining paths obtained from the NC program. By simulating machine operations before starting machining, it is possible to reduce the risk of machining errors and interference.

Simulation is performed while checking the remaining movement amount and modal information.

It is possible to override the settings for rapid and cutting feed individually. Additionally, simulation by process or by single block is possible.

By process
Single feed

Image shown here is of a 2-turret machine

NT Collision Guard

NT Machine Simulation is synchronized with the machine operation, allowing the machine to be operated while performing interference checks. Available in automatic and manual mode. If interference is detected, the machine will stop just before the collision.

Image shown here is of a Tool spindle machine

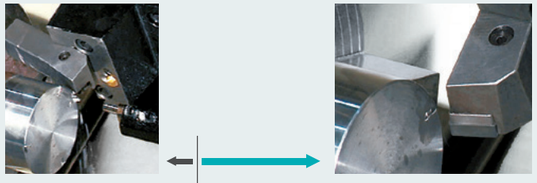
Airbag (Overload detection)

The software's barrier system is not foolproof. Making a data input mistake will result in a machine collision. However, Nakamura-Tome machines will not break even after the machine collision.

When the machine collides, there is no reason to panic.

The Airbag (Overload detection) of the machine tool significantly reduces the impact of a collision and protects the machine.

Barrier?
Even with barrier function, machine collisions may occur

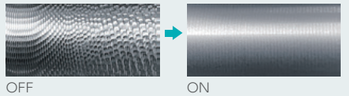


▲Video

* It is not a function that guarantees the prevention of machine break. This function does not eliminate the impact on the machine.

Chatter Canceller

Reduce the chatter and vibration by changing the spindle speed up/down continuously during cutting. This function can be turned ON/OFF simply by M-code.



OFF ON

* It does not guarantee that the function works without chatter and vibration.
* Chatter and vibration reduction depend on the setup and the cutting condition.

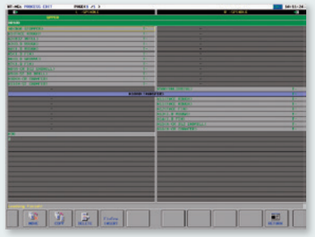
Oscillation cutting (op.)

By oscillating the tool for a certain period, the chips are cut into small pieces. It can be activated easily by using a simple Fanuc G-code and resolve workpiece damage issues caused by chips twined around the part.

Material : Aluminum
Cutting speed : 200mm/min
Cutting feed : 0.1mm/rev
Cutting depth : 1.0mm

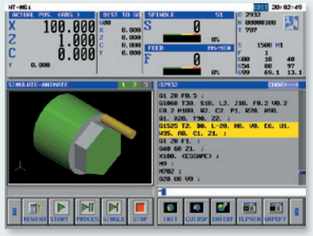
NT Manual Guide i (LUCK-BEI II)

A programming guidance system with the ability to generate NC programs (ISO/EIA G-code programs) easily. Processes created in conversational mode can be cut, copied or pasted ensuring flexibility. Additionally, several cycles such as part-transfer cycle, requiring waiting M-codes, are readily made with the "NC program editing support function". The "NC program simulation function" can be used to check created-programs by tool-path simulation or solid-model animation.



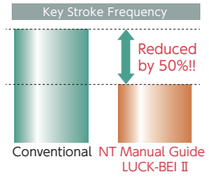
▲Process Editing Function
NT Manual Guide i automatically recognizes each process and lists all processes. Operator can easily change and optimize the program by moving processes, copying processes or adding waiting-functions.

▲Fixed-form sentence function
NT Manual Guide i contains more than 300 types of fixed form sentences. Operator can select these fixed form sentences for the program from a menu screen.



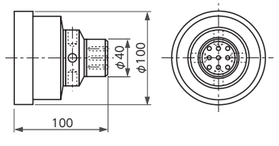
▲Simulation
Accurate simulation of turning and milling operations using a 3D solid model.

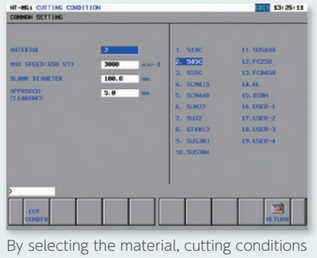
By introducing the “automatic cutting condition setting function”, the number of key strokes required to make a program were reduced by 50% reduced, compared with the previous NT Manual Guide i version.



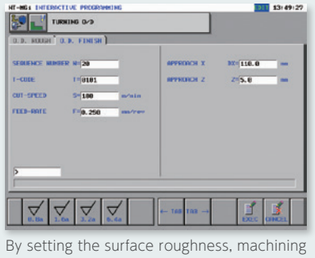
Automatic Cutting-Condition Setting Function

By setting the material type and required surface roughness, cutting conditions are automatically generated. These can be also changed depending on customer’s experience.

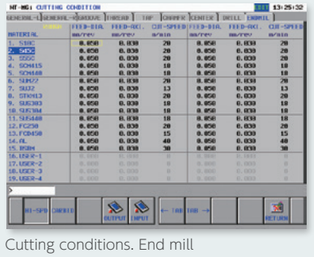




By selecting the material, cutting conditions are automatically input.

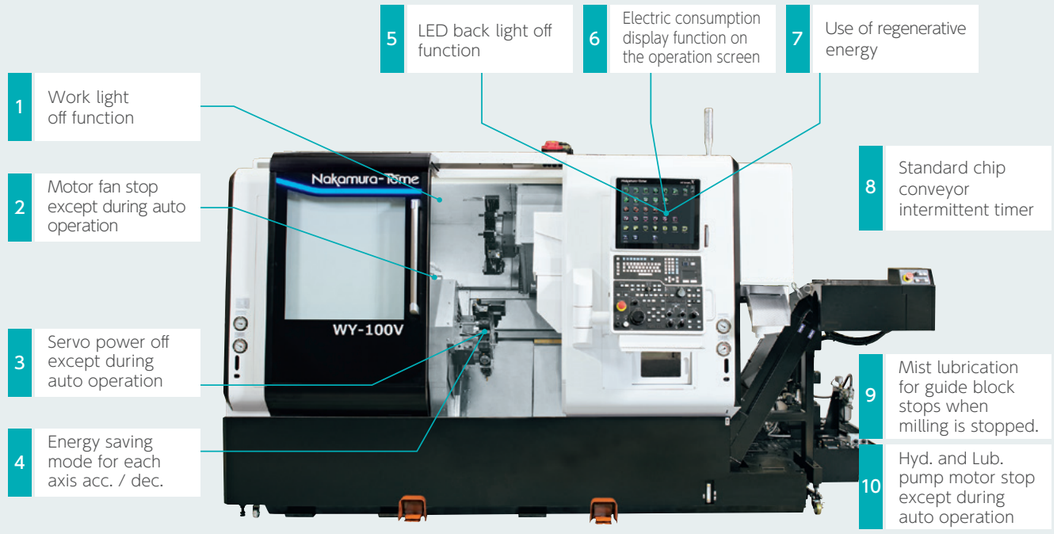


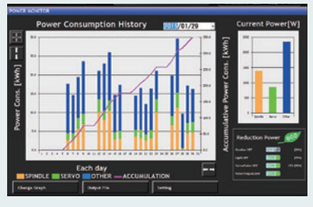
By setting the surface roughness, machining conditions are automatically input



Cutting conditions. End mill

Nakamura-Tome is committed to the environment as an eco-friendly manufacturer.

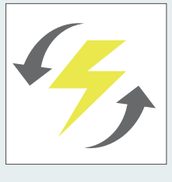




Power consumption monitoring screen

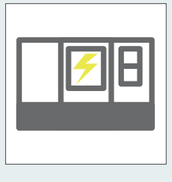
The monitor, lighting, and servo can be set to automatically turn off from the power saving setting screen. The amount of power consumption and the amount of power reduction by power saving settings are displayed.

Use of regenerative energy



Addition of ECO mode function to NT SmartX

Improvement of power control system



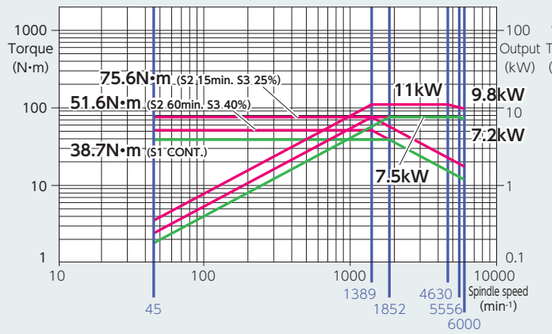
Inverter-Driven Hydraulic Power Unit

Grease lubrication for all liner axes

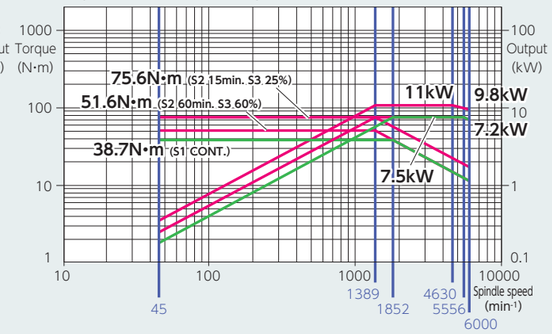
Torque/Output Chart

ϕ42mm 11/7.5kw — Standard

L-spindle／Max Rotational Speed : 6,000min-1

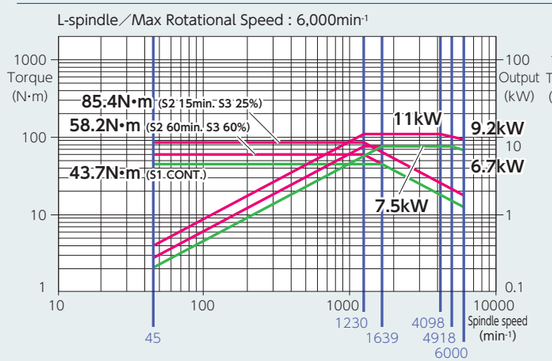


R-spindle／Max Rotational Speed : 6,000min-1

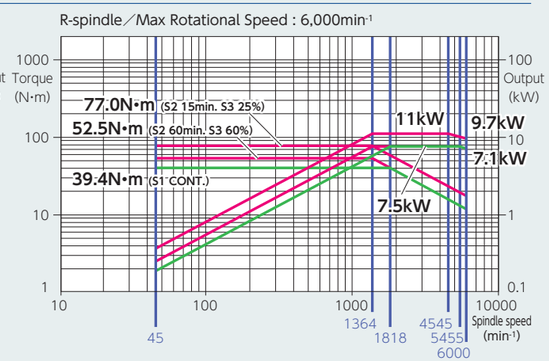


ϕ51mm 11/7.5kw — Option

L-spindle／Max Rotational Speed : 6,000min-1

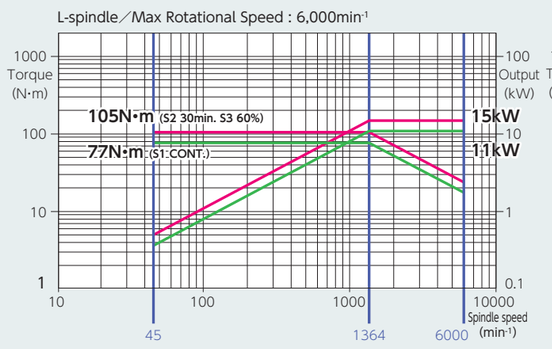


R-spindle／Max Rotational Speed : 6,000min-1

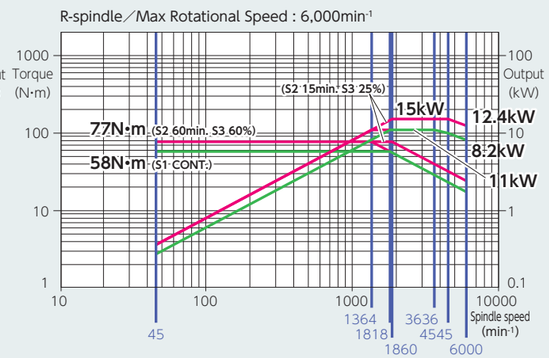


ϕ51mm 15/11kw — Option

L-spindle／Max Rotational Speed : 6,000min-1

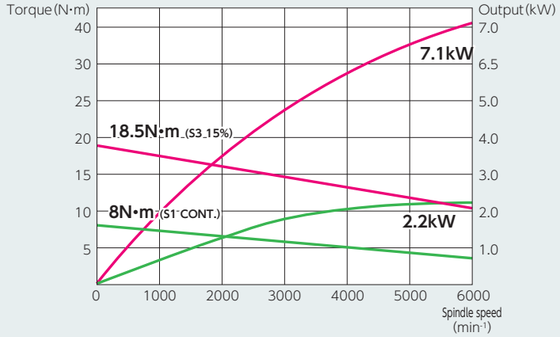


R-spindle／Max Rotational Speed : 6,000min-1



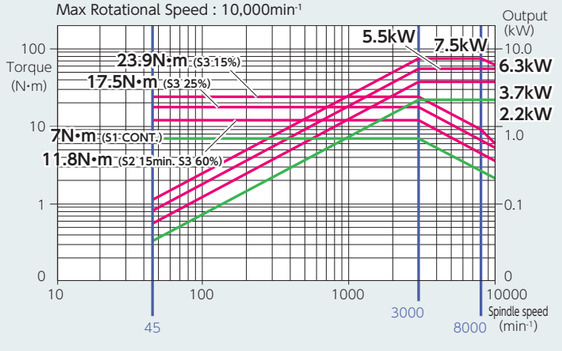
Milling motor 7.1/2.2kw — Standard

Max Rotational Speed : 6,000min-1



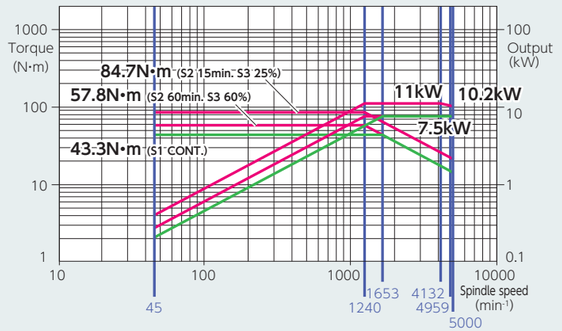
Milling motor 7.5/2.2kw — Option

Max Rotational Speed : 10,000min-1



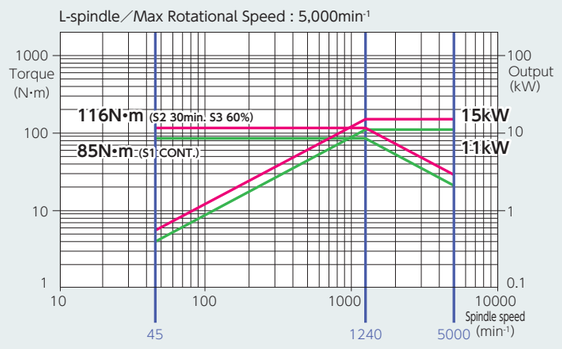
ϕ65mm 11/7.5kw — Option

L-spindle／Max Rotational Speed : 5,000min-1

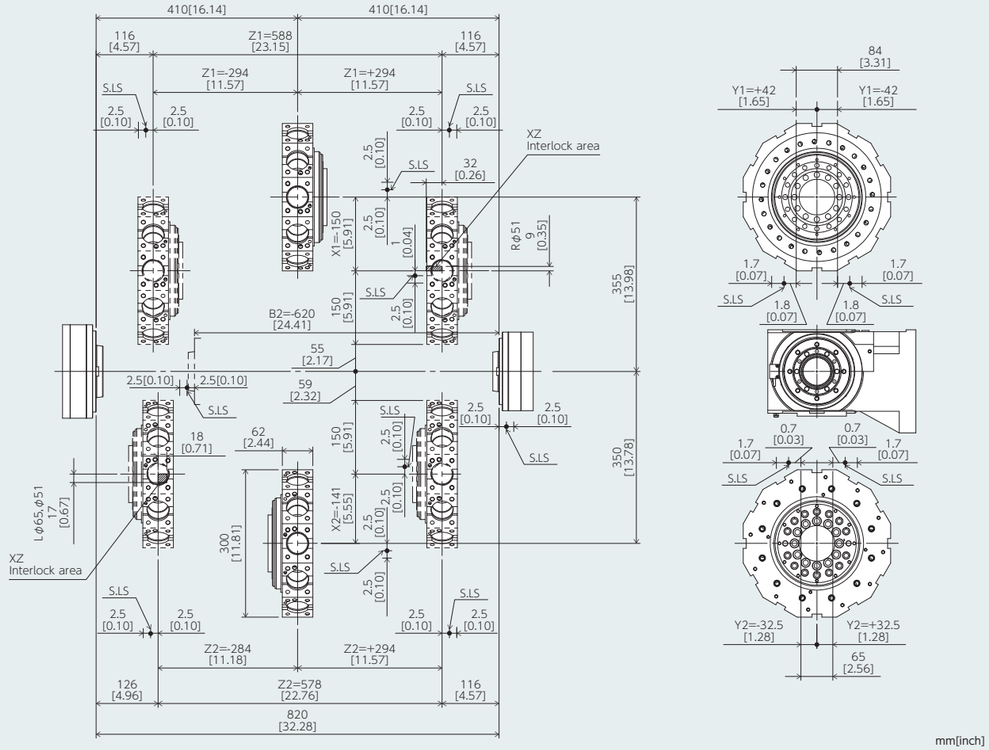


ϕ65mm 15/11kw — Option

L-spindle／Max Rotational Speed : 5,000min-1

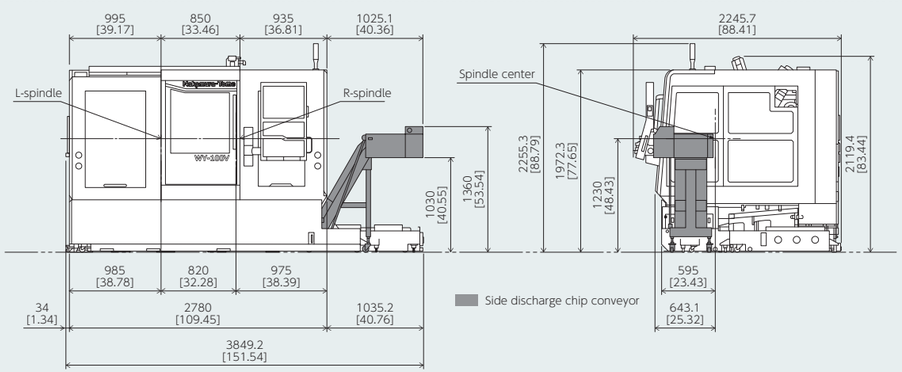


Travel Range



mm[inch]

Machine Dimensions



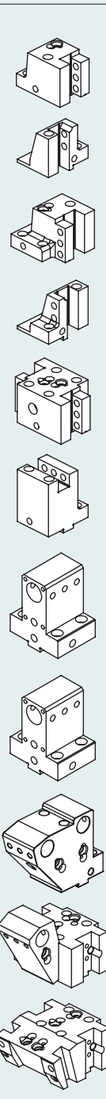
mm[inch]

Tooling System

Metric
Inch

Turret head

24ST



A1021201-01
A1022201-01
Turning Holder(AL)
CW

A1111201-01
A1112201-01
Cut-off Holder
CW

A1221201-01
A1222201-01
Turning Holder(AL)
CCW

A1311201-01
A1312201-01
Cut-off Holder
CCW

A1061201-01
A1062201-01
Double Turning Holder(ALD)

Qualified Tool
□20×90
□19.05×90

C26330
Cross Holder
(Max.ϕ13)

F26333
Straight Holder
(Max.ϕ13)

A1041202-01
A1042202-01
Turning Holder(B)

Qualified Tool
□20×90
□19.05×90

A1411252-01
A1412252-01
Boring Holder
(ϕ25)(ϕ25.4)

A1411252-12
A1412252-12
Boring Holder
(Coolant through)
(ϕ25)(ϕ25.4)

A1431251-01
A1432251-01
Double Boring Holder(B)
(ϕ25)(ϕ25.4)

A1101251-01
A1102251-01
Turning Boring Holder(ALS)
(□16, ϕ25)(□15.875, ϕ25.4)

A1081161-01
A1082161-01
Quadruple Turning Holder(AL)
(□16)(□15.875)

N3170(ϕ25)
N3180(ϕ25.4)
Set Ring

M2506(ϕ25-ϕ6)
M2508(ϕ25-ϕ8)
M2112(ϕ25-ϕ12)
M2113(ϕ25-ϕ10)
M2122(ϕ25.4-ϕ12.7)
M2123(ϕ25.4-ϕ9.525)
Tool Holder

M2110(ϕ25-ϕ20)
M2111(ϕ25-ϕ16)
M2120(ϕ25.4-ϕ19.05)
M2121(ϕ25.4-ϕ15.875)
Round Hole Bush

W145102
W145103
Clamp piece

Qualified Tool
□16×80
□15.875×80

Machine・Control Specifications

■ 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 axis slide travel	12st	150mm / 141mm
	15st(op.)	145mm / 130mm
Z1/Z2 axis slide travel	12st	588mm / 578mm
	15st(op.)	588mm / 560mm
Y1/Y2 axis slide travel	12st	±42mm / ±32.5mm
	15st(op.)	±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)	3,849.2mm ×2,245.7mm
Machine weight (incl. control)	9,500kg(Standard)

■ Power supply

Power supply	37.9kVA (L-spindle 11/7.5kW, R-spindle 11/7.5kW)
	41.0kVA (L-spindle 15/11kW, R-spindle 11/7.5kW)
	44.0kVA (L-spindle 15/11kW, R-spindle 15/11kW)

●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 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.

■Items

Control type	FANUC 31i-B Plus(2-PATH)

■Controlled axes

Controlled axes	9 axes	
Simultaneously controlled axes	Upper	4 axes(X1, Z1, C1(C2) , Y1 axis)
	Lower	4 axes(X2, Z2, C2(C1) , Y2, B2 axis)

■Input command

Least input increment	X, Z, Y, B2：0.001mm/0.0001inch (diameter for X-axis), C：0.001°
Least command increment	X：0.0005mm / Z, Y, B2：0.001mm / C：0.001°
Max. programmable dimension	±999999.999mm/±39370.0787in, ±999999.999°
Absolute / Incremental programming	X, Z, Y, C, B (absolute only for B) / U, W, V, H
Decimal input	Standard
Inch / Metric conversion	G20 / G21
Programmable data input	G10

■Feed function

Cutting feed	feed/min X, Z： 1-8000mm/min, 0.01-315inch/min (1-4800mm/min, 0.01-188inch/min) Y： 1-8000mm/min, 0.01-315inch/min (1-4800mm/min 0.01-188inch/min) C： 1-4800° /min B2： 1-8000mm/min, 0.01-315inch/min (1-4800mm/min, 0.01-188inch/min) feed/rev： 0.0001-8000.0000mm/rev (0.0001-4800.0000mm/rev) 0.000001-50.000000in/rev The maximum cutting feed rate is the value in AI contour control mode. In normal operation, it is enabled with G316 command. The values in parentheses are normal values.
Dwell	G04
Feed per minute / Feed per revolution	G98 / G99
Thread cutting	G32F designation
Thread cutting retract	Standard
Continuous thread cutting	Standard
Handle feed	Manual pulse generator 0.001/0.01/0.1mm,° (per pulse)
Automatic acceleration/ deceleration	Standard
Linear accel./ decel. after cutting feed interpolation	Standard
Rapid feed override	Low/25/50/100% (can be set from 0-100 in 10% intervals on NT Setting screen)
Cutting feedrate override	0-150%, (each 10%)
AI contouring control I	G5.1
Spindle override	50%-120% Set every 10%

■Program memory

Part program storage length / Number of registrable programs	4Mbyte Total 10240m	1000
		4000(op.)
	8Mbyte Total 20480m(op.)	1000(op.)
		4000(op.)
Part program editing	delete, insert, change	
Program number search	Standard	
Sequence number search	Standard	
Address search	Standard	
Program storage memory	Battery backup	
Background editing	Standard	
Call of sub-program in a memory card	Standard (Invoked by M200 / Not including memory card)	
Extended part program editing	Standard	

■Operation and display

HMI (Human Machine Interface)	NT SmartX
Operation panel : Display	19-inch color SXGA LCD touch panel
Operation panel : Keyboard	QWERTY keyboard

■Programming assist functions

Circular interpolation R programming	Standard
Direct drawing dimension programming or Chamfering/Corner R	Standard (Direct drawing dimension programming is standard)
Canned cycles	G90, G92, G94
Multiple repetitive canned cycles	G70-G76
Multiple repetitive canned cycles II	G71, G72
Canned cycles for drilling	G80-G89
Axis recomposition	Standard
Sub program	Standard
Custom macro	Standard(common variables #100-#149, #500-#549)
Additional customer macro variables	Standard(After addition, #100-#199, #500-#999)
Luck-bei Ⅱ / NT Manual Guide i	Standard
Abnormal load detection function	Standard
NT WORK NAVIGATOR	Standard(not including contact bar)
NT NURSE	Standard

■Machine support functions

Rigid tapping	Standard
Spindle synchronised control	Standard
C-axis synchronised control	Standard(G496 C1. rapid feed positioning)
Spindle orientation	Standard

■ECO functions

Servo motor power off	Standard (Switch on Power Saving Mode in NT Setting screen)
Control of motor output during acceleration and deceleration	Standard (Switch on Power Saving Mode in NT Setting screen)
G-code for servo motor energy-saving during acceleration and deceleration	G356 / G357
Automatic light off	Standard (Switch on Power Saving Mode in NT Setting screen)
Automatic monitor off	Standard (Switch on Power Saving Mode in NT Setting screen)

Nakamura-Tome

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