

TAKISAWA

Multi-Tasking Machine, CNC Lathe (2-Spindles, 2-Turrets)

TM-Series

TM-2000Y2

TM-3000Y2

TM-4000IIY2

CNC Multitasking Lathe with
upper and lower Y-axes specialized
for bar machining.



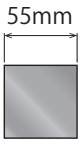
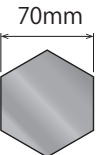
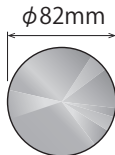
TM-4000II Y2

TM-Series



Compatible with various bars.*

TM-4000II Y2



Highly productive compact machine.
Bar capacity: $\phi 82$ mm. Multi-Tasking CNC lathe with upper
and lower Y-axes optimum for bar workpieces.
In-machine workpiece discharge is automated, and automatic
discharge is enabled without considering floor space.

- 8"+8" TM-4000II Y2**
A2-8+A2-6 : Opposed Twin-Spindle
+ Twin-Turret with Y-Axis
(Upper and Lower)
- 8"+6" TM-3000Y2**
A2-6+A2-5 : Opposed Twin-Spindle
+ Twin-Turret with Y-Axis
(Upper and Lower)
- 6"+6" TM-2000Y2**
A2-5+A2-5 : Opposed Twin-Spindle
+ Twin-Turret with Y-Axis
(Upper and Lower)



TM-3000Y2



TM-2000Y2

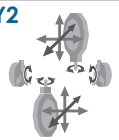
*) Please note the bar capacity follows types of chucks and cylinders.

The Definitive Structure

Axis Configuration

Configuration of up to 9 control axes can execute turning process and milling process continuously.

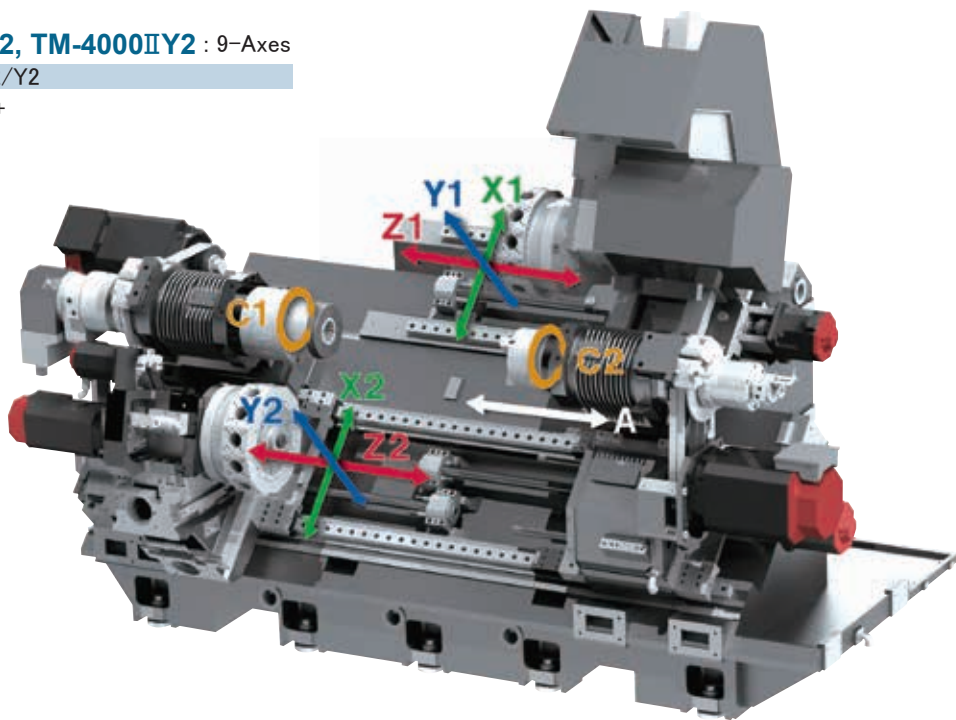
Y2



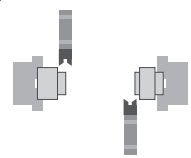
TM-2000Y2, TM-3000Y2, TM-4000II Y2 : 9-Axes

X1/Z1/Y1/C1/C2/A/X2/Z2/Y2

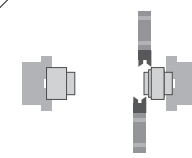
Left Spindle + Upper Turret +
Right Spindle + Lower Turret



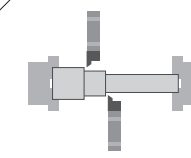
With a multi-tasking machine, all workpieces can be covered with a wide variety of machining variations.



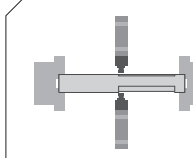
Complete machining of front and back with one chucking.



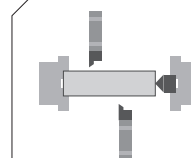
Highly efficient machining with simultaneous approach.



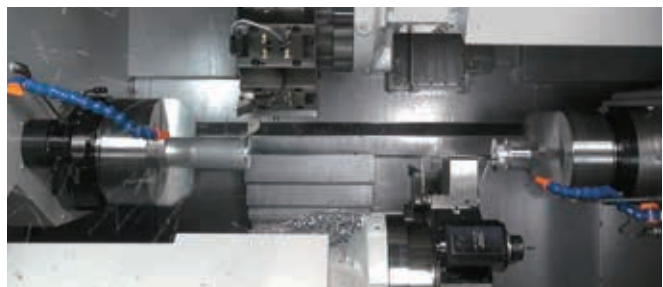
Highly efficient machining of bar with simultaneous approach.



Simultaneous upper and lower milling and drilling.



Long workpiece processing using the right spindle as a tailstock.



Capability • Performance

Highly Rigid Slant Bed Structure

The highly rigid 45° slant bed structure, box slide way and high performance roller guides are combined in this structure.

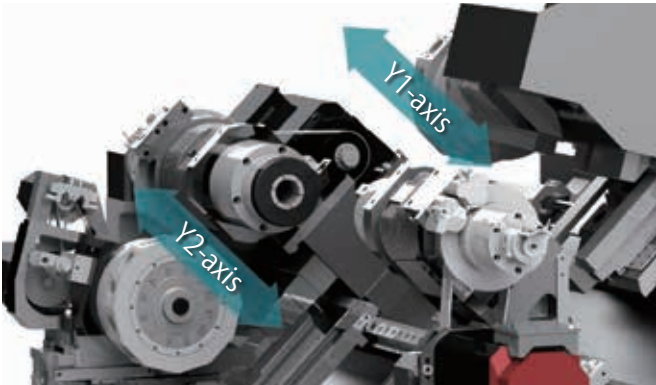
Items		TM-2000Y2 TM-3000Y2	TM-4000II Y2
Guide Type	X1/2-axis	Box slide	Box slide
	Y1/2-axis	Roller	Box slide
	Z1/2-axis	Roller	Roller
	A-axis	Roller	Roller



Upper/Lower Y-Axis

The TM-2000Y2 has a 90mm (±45 mm) Y-axis stroke due to a synthetic Y-axis structure of 45 degrees up and down. In addition, TM-4000II Y2 has a long stroke of 120 mm (+70 to -50 mm) for the Y1 axis and 80 mm (+30 to -50 mm) for the Y2 axis, both of which can handle all types of workpieces in a wide machining area.

Items		TM-2000Y2 TM-3000Y2	TM-4000II Y2
Travel	Y1-axis mm	90 (±45)	120 (+70 ~ -50)
	Y2-axis mm	90 (±45)	80 (+30 ~ -50)



The machine is compact, but enables a wide range of machining.

Compact machine size with a large bar capacity. The maximum turning length is 640 mm for TM-2000Y2/TM-3000Y2 and 800 mm for TM-4000II Y2. The compact size and process integration of the upper and lower Y-axis increase the productivity per unit area. The large-opening front door remarkably improves setup workability. It also facilitates workpiece changing with a crane.

Items		TM-2000Y2	TM-3000Y2	TM-4000II Y2
Max. Turning Length	mm	640	620	800
Door Opening Width	mm	800	800	950

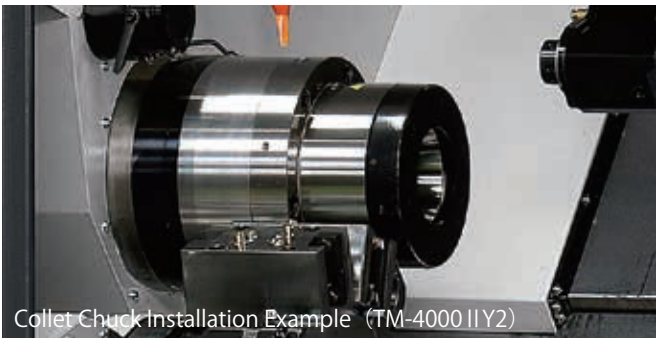


Left Spindle of Large Diameter Through Hole

Large spindle-through hole supports large diameter bar machining. Automatic machining can be realized by installing optional bar feeder.

Items		TM-2000Y2	TM-3000Y2	TM-4000II Y2
Left	Through-Hole Diameter mm	63	77	94
	Bar Capacity mm	51	65	82
Right	Through-Hole Diameter mm	53	53	77

*) Please note the bar capacity follows types of chucks and cylinders.



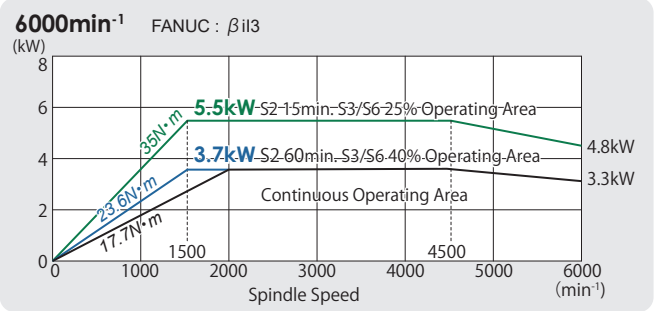
Capability • Performance

Stronger Milling Motor, 12-Station Milling Turret

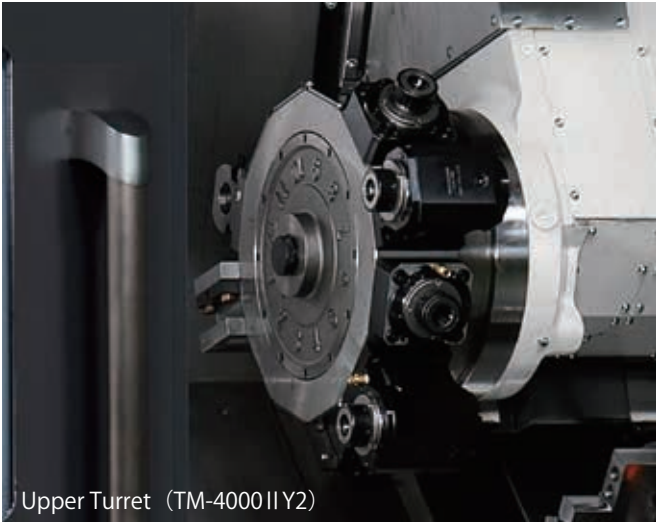
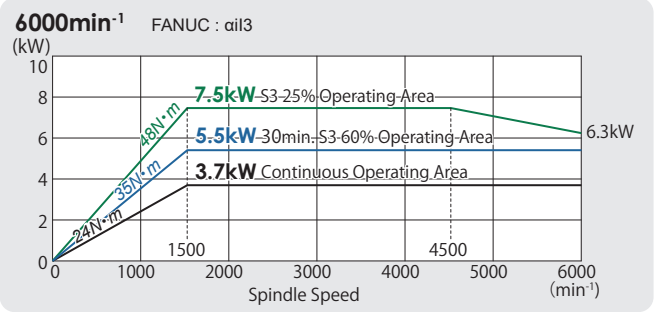
Powerful turret with stronger milling motor.
All holder type employing bolt tightening system. The tool mounting capacity is 12 tools, and up to 24 tools is possible on the upper and lower turrets. Up to 48 tools can be attached by using the double tool holder, so there is no problem with the number of tools.
TM-2000Y2 and TM-3000Y2 uses a non-lift turret to further shorten the cycle time.

Items	TM-2000Y2 TM-3000Y2	TM-4000II Y2
Number of Attachable Tools	12	12
Height of Square Tool Shank mm	25	25
Diameter of Boring Bar Shank mm	32	40
Diameter of Rotary Tool Shank mm	16	20

Rotary Tool TM-2000Y2/TM-3000Y2



TM-4000II Y2

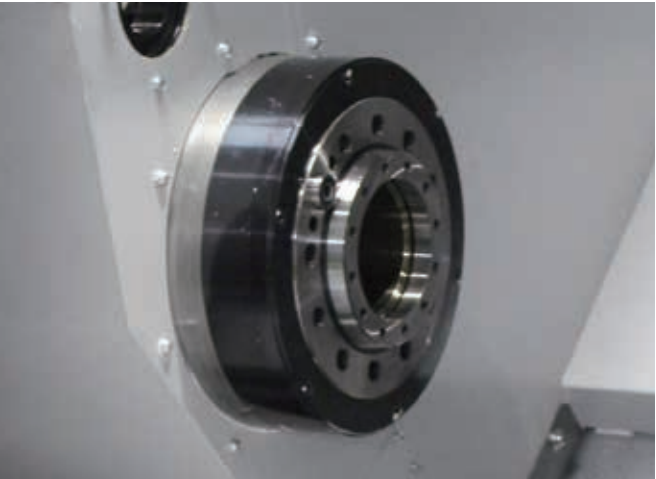


Upper Turret (TM-4000II Y2)

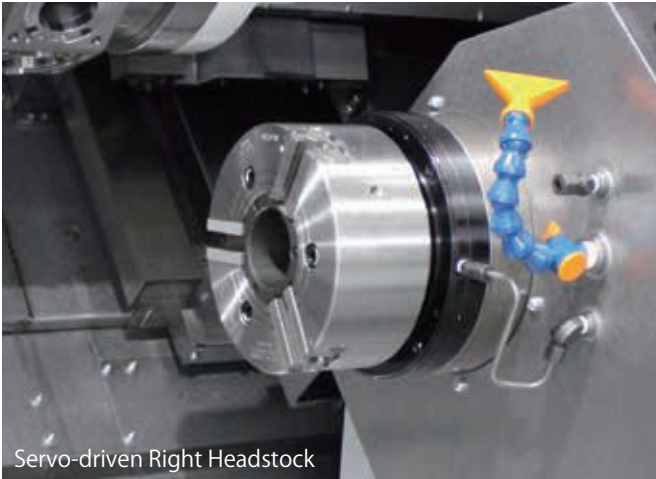


Lower Turret (TM-4000II Y2)

High-power Spindle Motors!



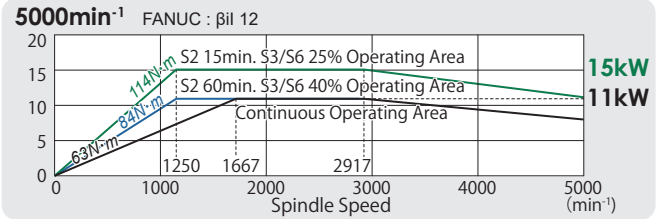
The left spindle and right spindle use belt drive type high-power spindle motors. The right headstock is servo-driven and can also be used as a tailstock by torque control. Teaching in arbitrary positions is possible. The servo motor is equipped with a brake as standard, so it is safe even in emergency.



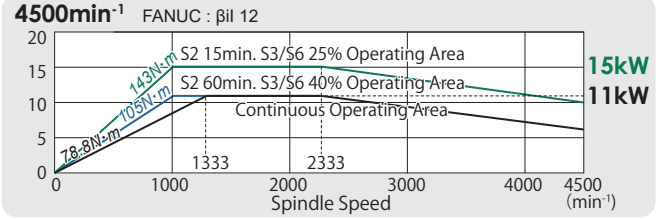
Servo-driven Right Headstock

Items	TM-2000Y2	TM-3000Y2	TM-4000II Y2
Left Motor kW	15/11	15/11	18.5/15
Spindle Speed min ⁻¹	5000	4500	4200
Right Motor kW	11/7.5	11/7.5	15/11
Spindle Speed min ⁻¹	6000	6000	5000
A-Axis Travel mm	660	660	900

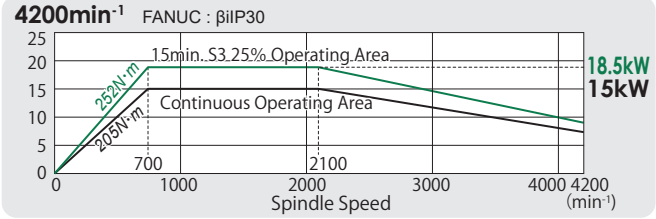
Left Spindle TM-2000Y2



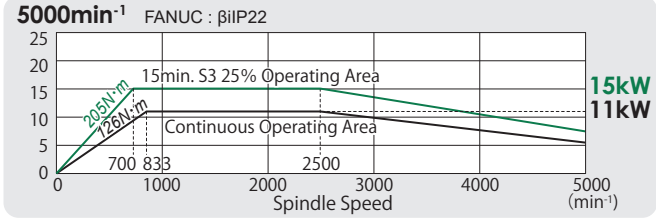
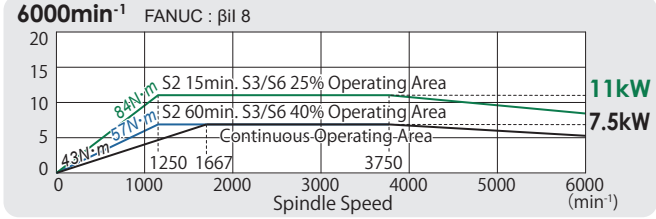
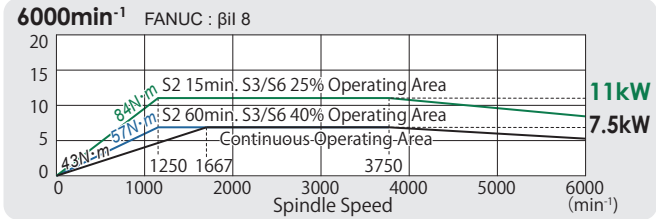
TM-3000Y2



TM-4000II Y2



Right Spindle



Control Function



Operation Panel

The 15” monitor provides a wealth of information at a glance.
The switches are laid out for ease of use.
The monitor is touch panel compatible for more intuitive operation.

Chattering Suppression Function

This function suppresses chattering by varying the spindle speed.

Smart Thermal Control

To avoid overheating of the spindle motor, spindle output is controlled by monitoring the cutting load to reduce downtime.

Unexpected Disturbance Torque Detection Function

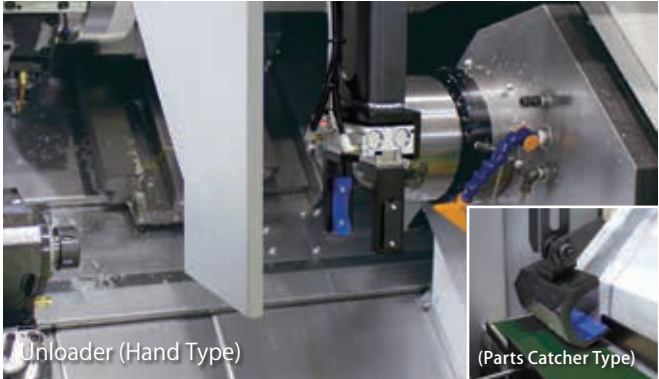
The load is constantly monitored while the feed axis is moving, and in the unlikely event of a machine collision and abnormal load is detected, the axis will stop trackback, reducing machine damage and downtime.

Environmental Performance

- The power source regeneration system to return regeneration energy generated during deceleration of the power consumption reduction motor to the power source.
- The Control panel cooling is designed to reduce electric power using the natural heat release system.
- Lubricant Collection Box
The floating oil recovery unit, recovering oil from machine coolant without using power and producing new waste, is equipped as standard.
- Hybrid Hydraulic Unit
The hybrid hydraulic unit excellent in energy saving is equipped as the standard.

Optional

Supporting Turnkey (Finished workpieces can be discharged quickly and exactly)



Supporting automation with in-machine unloader and discharge conveyor. Automatic workpiece transfer can be achieved without concerning installation area.
The high speed & universal positioning servo system can be serving for the various work pieces.
To accommodate all kinds of work, we prepared two kinds of hand specifications and parts catcher specifications.



Target Workpiece
TM-2000Y2/TM-3000Y2
Max. Diameter : $\phi 65\text{mm}$, Max. Length : 150mm,
Max. Weight : 3kg
TM-4000II Y2 Max. Diameter : $\phi 80\text{mm}$, Max. Length : 200mm,
Max. Weight : 3kg

Bar Feeder Specification Example

TM provides excellent machining capability in bar machining. Complete parts are cut out of a long solid bar material.

Items	TM-2000Y2	TM-3000Y2	TM-4000II Y2
Bar Capacity (Left Spindle) mm	$\phi 51$	$\phi 65$	$\phi 82$



BK105L + TM-4000Y2 ($\phi 8-105\text{mm}$, L1600mm)

Robot Specification Example

The robot system supports mass production of irregularly shaped workpieces that cannot be handled by the gantry loader system*.

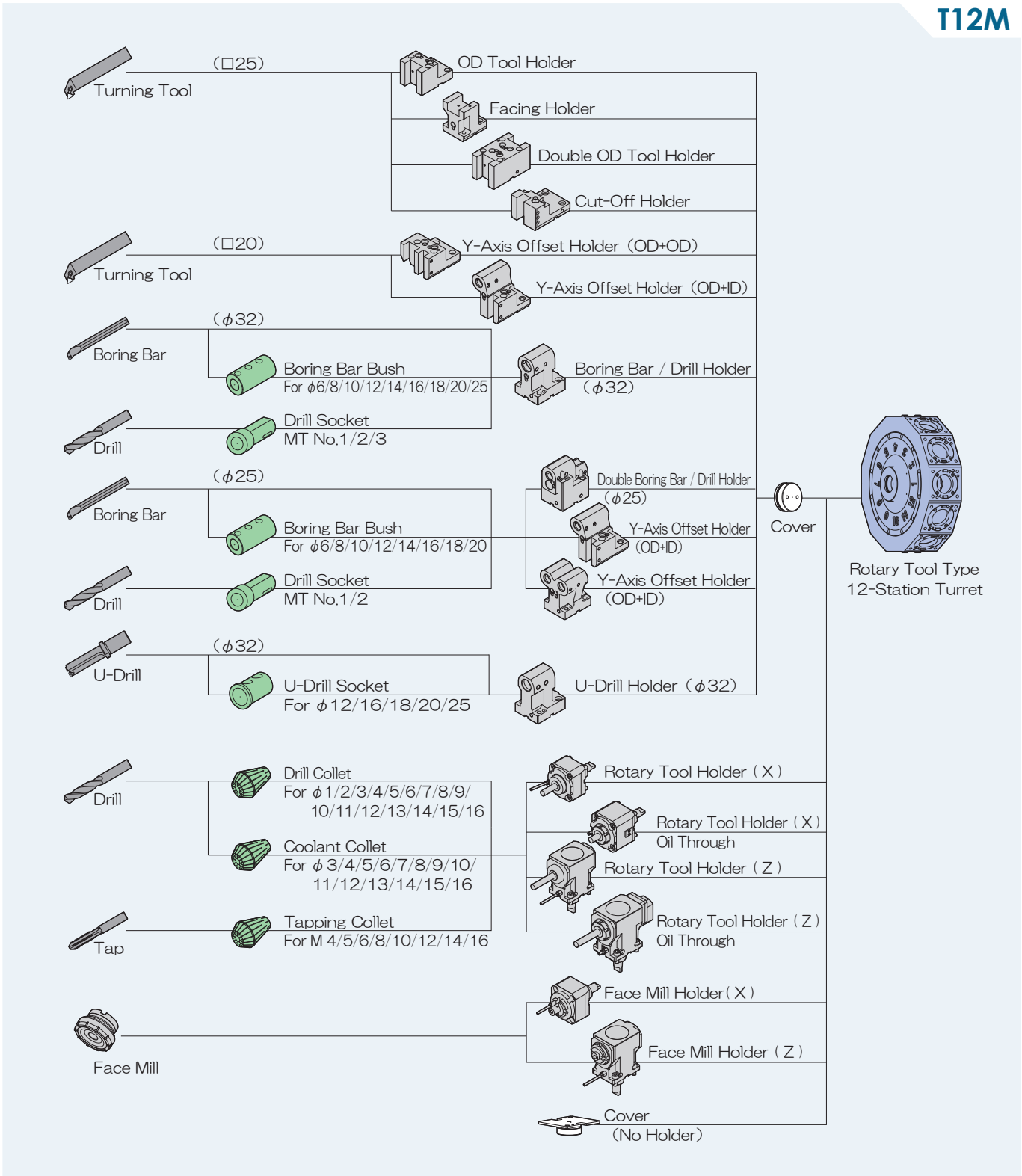


*) Gantry loader system is supported by TM-4000Y2G.
Please contact our sales representatives for details.

Tooling System

TM-2000Y2/TM-3000Y2

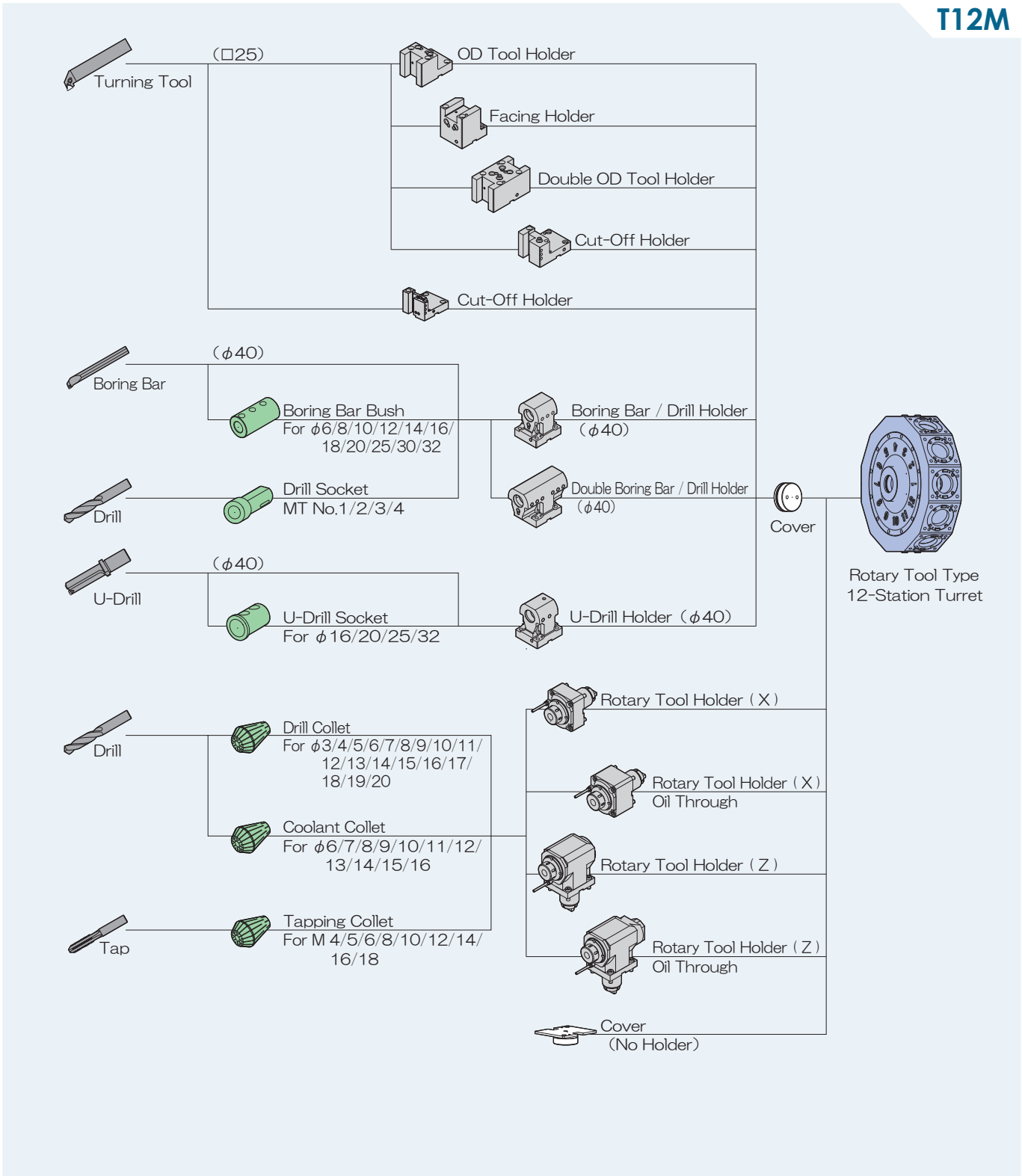
T12M



Tooling System

TM-4000 IIY2

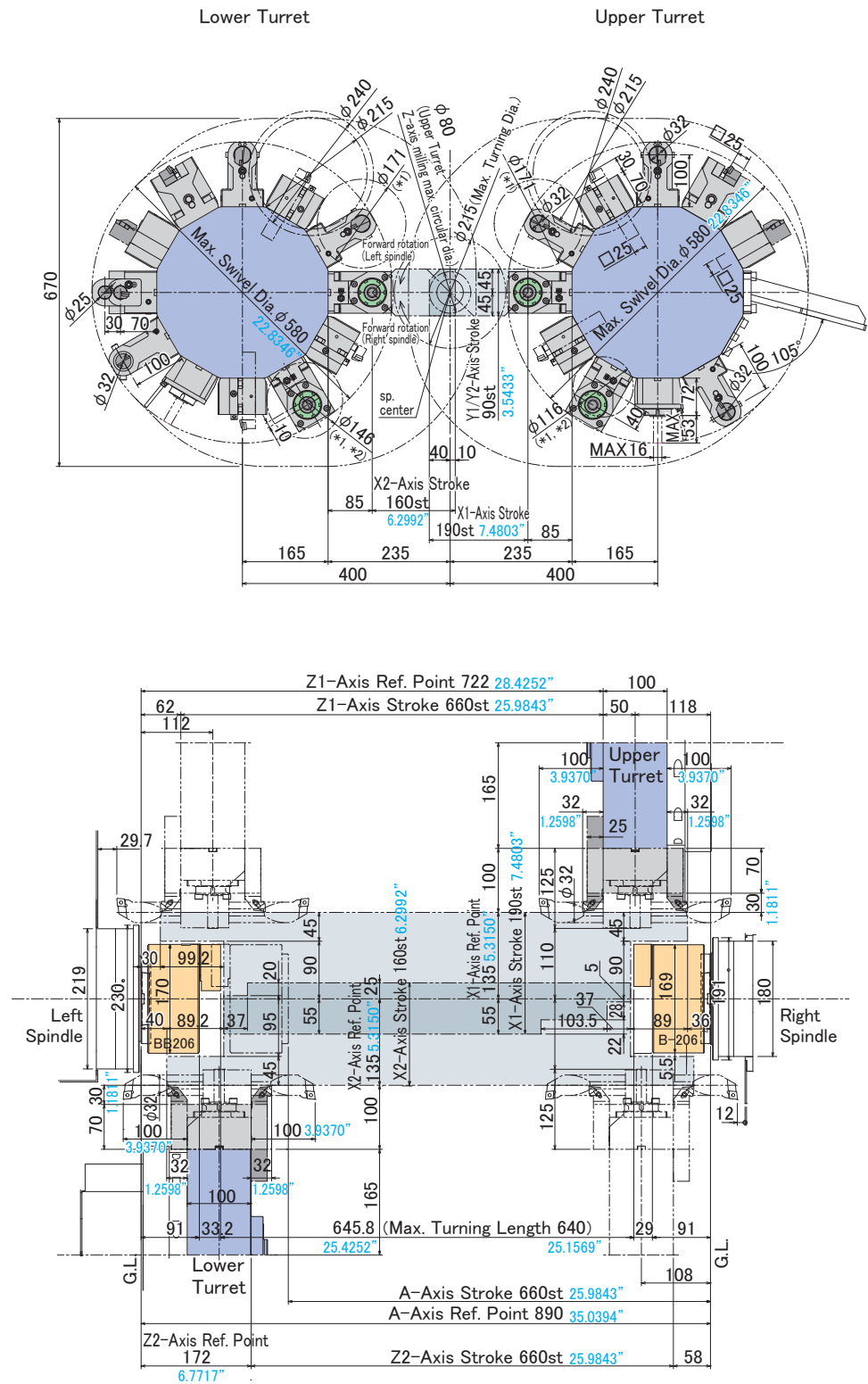
T12M



Interference • Travel Range

Unit : mm *inch*
Ranges depends on chuck type.
*1) When the OD tool holder is adjacent, there is a limit to the turning diameter from the end face of the turret to 26 mm (25 mm + clearance 1 mm).
*2) This figure shows the interference diameter when there is no Y-axis movement. When moving the Y-axis, it is necessary to check the interference diameter.

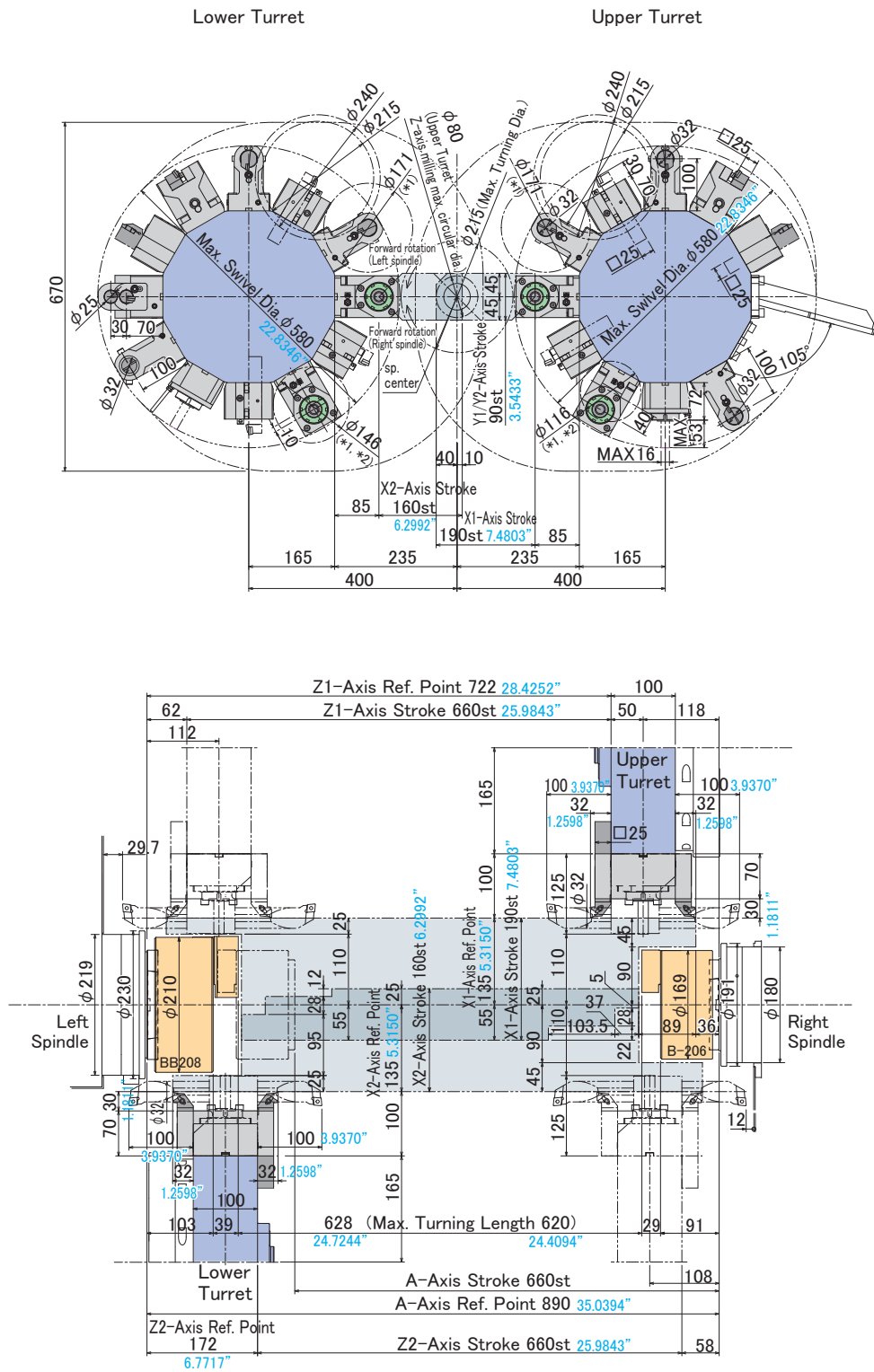
TM-2000Y2



Interference • Travel Range

Unit : mm *inch*
Ranges depends on chuck type.
*1) When the OD tool holder is adjacent, there is a limit to the turning diameter from the end face of the turret to 26 mm (25 mm + clearance 1 mm).
*2) This figure shows the interference diameter when there is no Y-axis movement. When moving the Y-axis, it is necessary to check the interference diameter.

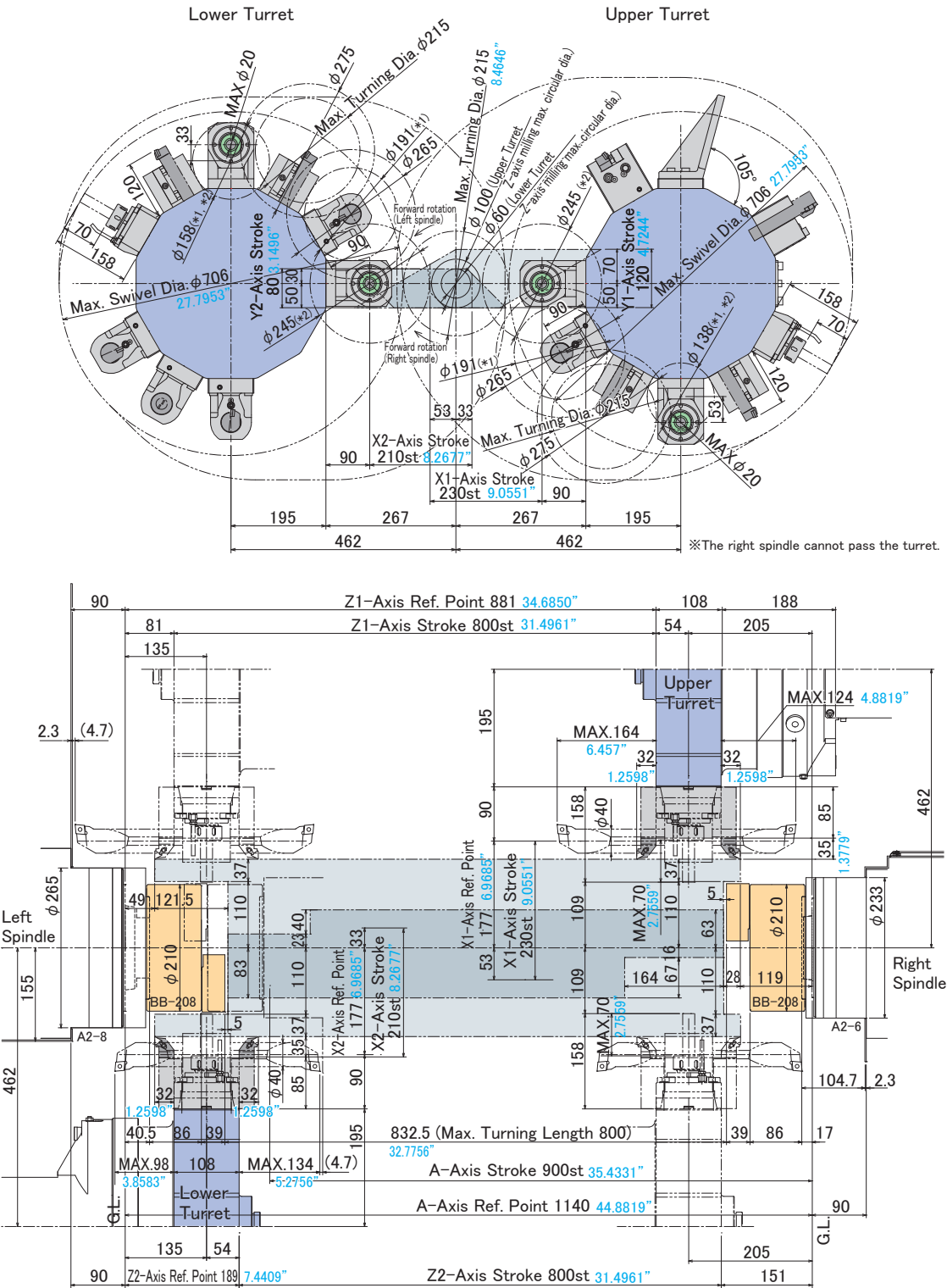
TM-3000Y2



Interference • Travel Range

Unit : mm inch
Ranges depends on chuck type.
*1) When the OD tool holder is adjacent, there is a limit to the turning diameter from the end face of the turret to 26 mm (25 mm + clearance 1 mm).
*2) This figure shows the interference diameter when there is no Y-axis movement. When moving the Y-axis, it is necessary to check the interference diameter.

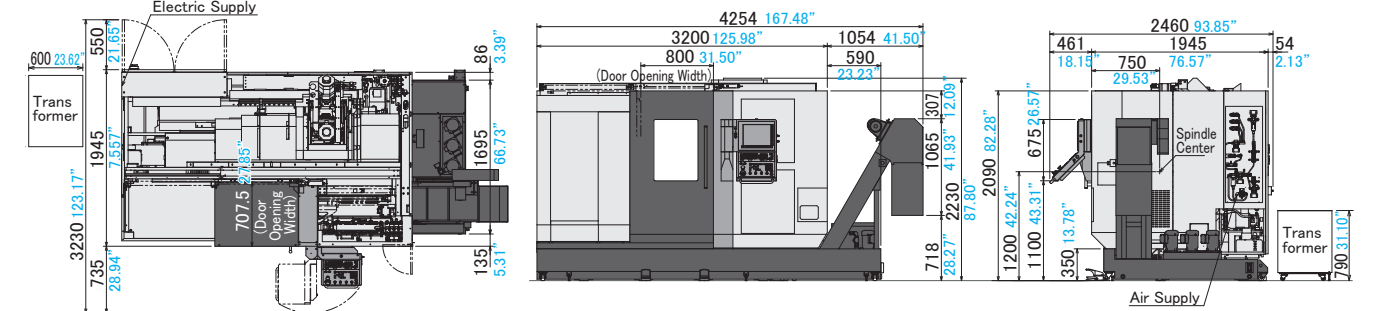
TM-4000 II Y2



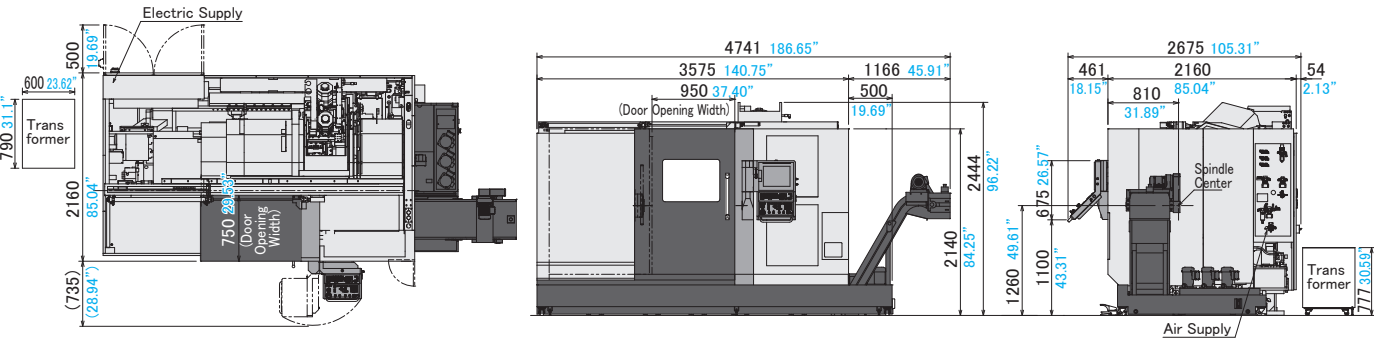
Machine Dimensions

Unit : mm inch

TM-2000Y2/TM-3000Y2



TM-4000 II Y2



Consistent Support at Shop Floor



Comfortable and easy operation along work flow!!

Consistently supports operation by functions necessary for "Planning", "Machining", and "Improvement" processes on site!



Home Screen



Touch Type Operation Panel 15 inch (Standard) 19 inch (Option)

Supports operation by careless mistake prevention function.



Handle Feed Direction Display

Supports operation by careless mistake prevention function.

Prevention of careless mistakes!
Coordinate system or path selection indicator equipped.



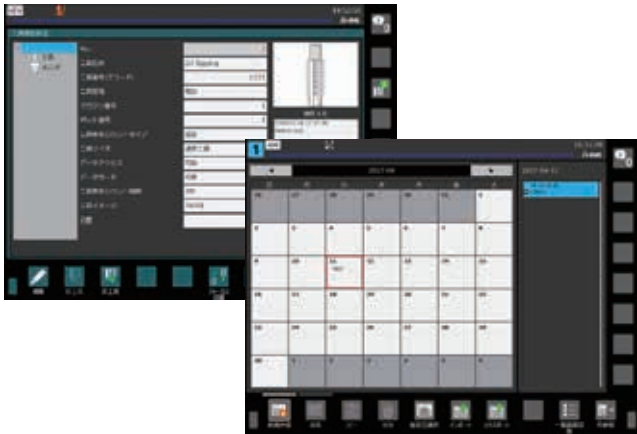
Planning

Individual Tool Settings

The tool information provided by Machining Cloud and the tool compensation measured by the tool pre-setter can be imported.

Calendar

Calendar allows you to register, check, and edit schedule. You can receive a notification about your schedule from the information center at the specified time.



Machining

NC Operation

All tasks required for machining such as operating, editing, setup can be performed.

Data Logger or Maintenance Information Management

Maintenance Manager monitors the state of a maintenance target, and notifies alarms and maintenance timings for efficient preventive maintenance of machinery.

Improvement

SERVO Viewer

SERVO Viewer observes information, such as the position, speed, or torque of the feed axis or spindle, and displays it in waveform.

Utility

Manual Viewer

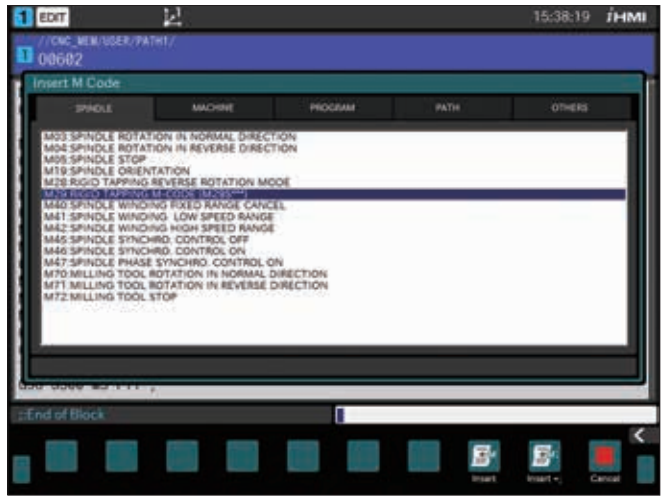
You can read various manuals.

Memo Function

Memo Function allows you to draw lines, paste memos, and insert images to "whiteboard".

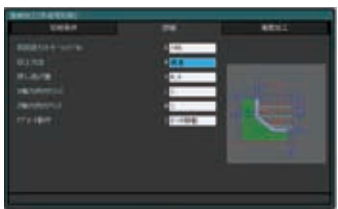


iHMI Machining Program Creation Support



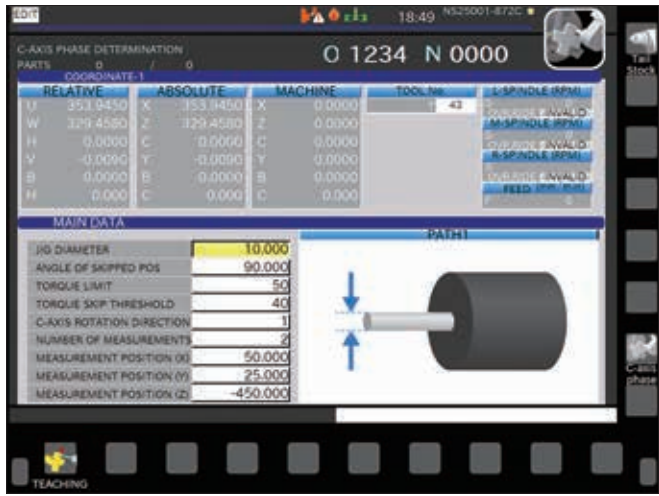
Programming support function is provided as standard.
Programming can be performed comfortably.

- Displaying Images on Program List
- Inserting Fixed Sentences
- Tool Information on Sliding Display
- Inserting M Codes
- Sentence Structure Check
- Setup for Machining (Stylizing MDI Command)



Turning (Outer Rough) Details Input Screen

TAKISAWA Maintenance Software



It can switch to various screens instantly from the vertical soft key.



Supporting Programming

TAKISAWA
Original
Software

TiwaP-1

【Optional】

Reducing a lead time:
Inclined drilling and milling combined
machining can be programmed easily
using the interactive function.



Takisawa original software **TiwaP-1** completely
supports the **Input** **Confirmation** **Operation**

Input

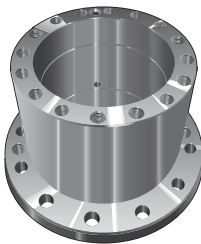
Easy Programming by Dialogue Conversation
Tiwap-1 is based on Process Registration type
Programming involving step by step Process

Confirmation

Machining Simulation
Cutting Detail will be Simulated by “3D Animated
Cartoon” or “Tool Trace display”

Operation

Automatic Operation
Interactive programs can run directly on the Tiwap-1
screen without converting into NC programs.



Utilizing G code knowledge, **TiwaP-1** creates
a program of complicated processes.

Further, Tiwap-1 enables the interactive program to perform
machining in cooperation with an NC program*1.
① NC program*1 can be called (set) in the interactive (Tiwap-1)
program.
② NC program*2 converted into NC statements by interactive
operation (Tiwap-1) can be called (set) in the NC program
edited manually.

*1: File name to which NC programs edited manually or created by
CAD/CAM have been registered.

▼ Interactive Program Edit Screen



▼ NC Program Edit Screen

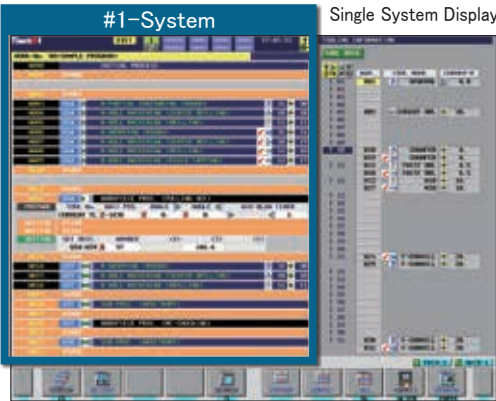
Cooperation

Easy to See

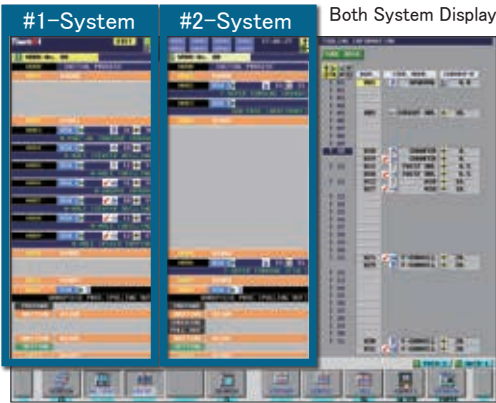


Takisawa's original “Process fold or unfold function” and lucid icons improve
visibility. Operator-friendly and easy to see screen is realized.
The main screen is operator-friendly, because machining programs are
displayed not only in “single system display” but also in “both system display”.

◇ Single System Display = The program of the selected system is displayed.
◇ Both System Display = The programs of the both systems are displayed.
When the same synchronization numbers appear in both systems, they are
displayed on the same line (indicating synchronization). Therefore, you can
understand the flow of a whole program between the systems at one view.



Single System Display



Both System Display

Easy to Use



By “Reliable Guide Function” Process Tag will be made automatically
Process can be completed by just setting processing data to the “Tag”
which automatically made through.
During preparing Program, “Reliable Guide Function” provides good
support.
► “Reliable Guide Function”
The tag will be arranged in the optimum order automatically by interacting
with the machine and selecting the required program.



It is easy for beginners to use interactive data inputting with
guiding Figures & Icons.
Symbolic soft key on the exclusive window helps inputting
complicated arbitrary shapes.

Machine Specifications

Items			TM-2000Y2		TM-3000Y2		TM-4000ⅡY2		
Machine Composition	Upper Turret Y-Axis (Y1-Axis)		●		●		●		
	Lower Turret Y-Axis (Y2-Axis)		●		●		●		
	Right Spindle		●		●		●		
Capability・Capacity	Standard Turning Diameter	mm inch	215	8.4646″	215	8.4646″	215	8.4646″	
	Max. Turning Diameter	mm inch	215	8.4646″	215	8.4646″	215	8.4646″	
	Max. Turning Length	mm inch	640	25.1569″	620	24.4094″	800	31.4961″	
	Bar Capacity *1	Left Spindle	mm inch	51	2.01″	65	1.65″	82	3.23″
		Right Spindle	mm inch	42	1.65″	42	1.65″	65	1.65″
Travel	Upper Turret (X1/Y1/Z1)	mm inch	190/90 (± 45) /660 7.4803″/3.5433″/25.9843″		190/90 (± 45) /660 7.4803″/3.5433″/25.9843″		230/120 (-50 ~ +70)/800 9.0551″/4.7244″/31.4961″		
	Lower Turret (X2/Y2/Z2)	mm inch	160/90 (± 45) /660 6.2992″/3.5433″/25.9843″		160/90 (± 45) /660 6.2992″/3.5433″/25.9843″		210/80 (-50~+30)/800 8.2677″/3.1496″/31.4961″		
	Right Spindle (A)	mm inch	660	25.9843″	660	25.9843″	900	35.4331″	
Spindle (Left Spindle/ Right Spindle)	Spindle Speed	min ⁻¹	5000/6000		4500/6000		4200/5000		
	Type of Spindle Nose		A2-5/A2-5		A2-6/A2-5		A2-8/A2-6		
	Through-Hole Diameter	mm inch	63/53	2.48″/20.9″	77/53	3.03″/20.9″	94/77	3.7″/3.03″	
	Inner Diameter of Bearing	mm inch	100/90	3.94″/3.54″	110/90	4.33″/3.54″	140/120	5.51″/4.72″	
Turret (Upper, Lower)	Type of Turret		Bolt Tightening Type		Bolt Tightening Type		Bolt Tightening Type		
	Number of Attachable Tools		12		12		12		
	Height of Square Tool Shank	mm inch	25	1″	25	1″	25	1″	
	Diameter of Boring Bar Shank	mm inch	32	1.25″	32	1.25″	40	1.5″	
Rotary Tool (Upper, Lower)	Number of Rotary Tools		12		12		12		
	Spindle Speed	min ⁻¹	6000		6000		6000		
	Maximum Tool Shank Diameter	mm inch	16	0.63″	16	0.63″	20	0.75″	
	Tool Spindle Taper Hole		AR25		AR25		AR32		
Feedrate	Upper Turret (X1/Y1/Z1)	m/min ipm	20/12/40 787.40″/472.44″/1574.80″		20/12/40 787.40″/472.44″/1574.80″		22/12/30 866.14″/472.44″/1181.10″		
	Lower Turret (X2/Y2/Z2)	m/min ipm	20/12/40 787.40″/472.44″/1574.80″		20/12/40 787.40″/472.44″/1574.80″		20/12/30 787.40″/472.44″/1181.10″		
	Right Spindle (A)	m/min ipm	40	1574.80″	40	1574.80″	30	1181.10″	
Motors	Left Spindle (S3 25%/continuous)	kW HP	15/11	20/14.7	15/11	20/14.7	18.5/15	24.7/20	
	Right Spindle (S3 25%/continuous)	kW HP	11/7.5	14.7/10	11/7.5	14.7/10	15/11	20/14.7	
	Rotary Tool Motor (S3 25%/continuous)	kW HP	5.5/3.7	7.3/4.9	5.5/3.7	7.3/4.9	7.5/3.7	10/4.9	
	Feed Axis (X1/Y1/Z1)	kW HP	2.5/2.5/3.0	3.3/3.3/4.0	2.5/2.5/3.0	3.3/3.3/4.0	2.5/2.5/2.5	3.3/3.3/3.3	
	Feed Axis (X2/Y2/Z2)	kW HP	2.5/1.2/3.0	3.3/1.6/4.0	2.5/1.2/3.0	3.3/1.6/4.0	2.5/1.2/2.5	3.3/1.6/3.3	
	Feed Axis (A)	kW HP	2.5	3.3	2.5	3.3	2.5	3.3	
	Hydraulic Pump Motor	kW HP	1.5	2.0	1.5	2.0	1.5	2.0	
	Coolant Pump Motor	kW HP	0.4 × 3	0.3 × 3	0.4 × 3	0.3 × 3	0.4 × 3	0.5 × 3	
Required Power	Electric Power	kVA	35		35		50		
Tank Capacity	Coolant Tank	L gal	450	118.80	450	118.80	420	110.88	
Machine Size	Machine Height	mm inch	2230	87.80″	2230	87.80″	2444	96.22″	
	Height form Floor to Spindle Centerline	mm inch	1200	47.24″	1200	47.24″	1260	49.61″	
	Depth form Front to Spindle Centerline	mm inch	750	29.53″	750	29.53″	810	31.89″	
	Required Floor Space *2	mm × mm inch × inch	4254 × 2460 167.48″ × 96.85″		4254 × 2460 167.48″ × 96.85″		4741 × 2675 186.65″ × 105.31″		
	Machine Weight	kg lbs.	8300	18260	8300	18260	9880	21736	

●:Standard —:None

Accessories

Items		TM-2000Y2 TM-3000Y2	TM-4000ⅡY2
Y-Axis	Upper Turret	●	●
	Lower Turret	●	●
C-Axis Milling	Upper and Lower Turret	●	●
Chuck Open/Close Footswitch		●	●
Hollow Hydraulic Chuck *1		○	○
Chuck Plate		●	●
Hydraulic Chuck Cylinder *1	Left Spindle	●	●
	Right Spindle	●	●
Chuck Auto Open/Close M-Function		●	●
Spindle Air Purge		●	●
Chuck Airblow	Left Spindle	○	○
	Right Spindle	●	●
Spindle Above Coolant		●	●
Rotary Tool Type	Bolted	●	●
12-Station Turret		●	●
Turret Air Purge		—	●
Rotary Tool Holder	X-Axis Milling	○ AR25	○ AR32
	Z-Axis Milling	○ AR25	○ AR32
Collet		○	○
OD Tool Holder		○	○
Double OD Tool Holder	Upper and Lower Turret Each 2 Pieces	●	●
Boring Bar / Drill Holder	Upper and Lower Turret Each 4 Pieces	●	●
Boring Bar Bush		○	○
Cut-Off Holder		○	○
Facing Holder		○	○
Y-Axis Offset Holder	OD + OD □20	○	—
	ID + ID φ25	○	—
	OD + ID □20+φ25	○	—
Turret Cover	Upper and Lower Turret Each 6 Pieces	●	●
Work Pusher	Turret Installed	○	○
Tool Setter	Shared by Right and Left Spindles	○	○
In-machine Parts Catcher *4 + In-machine Conveyor	Right Spindle	○	○
In-machine Unloader *4 + In-machine Conveyor	Right Spindle	○	○
Remaining Parts Discharge Unit	Bucket Mounting on the Lower Turret	○	—
Chip Conveyor	CE, Side-Discharge	●	●
Chip Bucket		○	○
Auto Door		○	○
Powered Door		○	○
Pneumatic Device		●	●
Pneumatic Pressure Switch		●	●
Hydraulic Unit		●	●
Hydraulic Pressure Switch		●	●

Items		TM-2000Y2 TM-3000Y2	TM-4000ⅡY2
Automatic Lubrication Unit		●	●
Oil-Water Separator		●	●
Lubricant Collection Box *3		●	●
Energy-Saving Circuit for Hydraulic Unit		○	○
Coolant Pump	400W, 3 Units	●	●
High Pressure Coolant Pump Unit	1MPa 7MPa	○	○
Coolant Cooling Unit		○	○
Air Conditioner in Control Panel		○	○
Oil Skimmer		○	○
Mist Collector		○	○
Signal Tower Light	3-Color, LED	○	○
	1-Color, Rotary	○	○
Counter	1-Color, LED	○	○
	Display	○	○
Lighting Apparatus	LED	●	●
Leveling Plate Set	Turret Installed	●	●
Auto Power-Off System		●	●
Bar Feeder Interface		○	○
Robot Interface		○	○
Trans	Other than CE	○	○
	CE	●	●
Instruction Manual		●	●

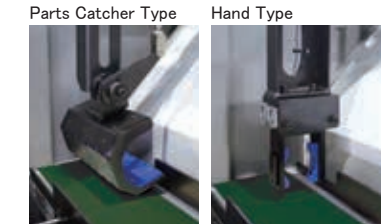
●:Standard ○:Optional —:None

* For other optional accessories, please contact us.
A variety of optional accessories are available for respective models. The specifications of optional accessories vary depending on the model, thus requiring a separate discussion.

*1) Please note the bar capacity follows types of chucks and cylinders.
By default, the following hydraulic cylinder are provided.

	TM-2000Y2		TM-3000Y2		TM-4000ⅡY2	
	Left Spindle	Right Spindle	Left Spindle	Right Spindle	Left Spindle	Right Spindle
Hydraulic Chuck Cylinder	KITAGAWA SS1452K	SMW SIN-S100 (Solid)	KITAGAWA SS1666K	SMW SIN-S100 (Solid)	KITAGAWA SS1881K	SMW SIN-S125 (Solid)
Inner Diameter of Draw Tube	52	—	66	—	81	—
Bar Capacity	51	—	65	—	80	—

*2) With Work Oil Pan, Chip Conveyor and Operation Panel.
*3) Lubricant mixing in water soluble coolant is separated, and only the coolant is returned to the coolant tank. The lubricant collected in the lubricant collection box must be drained periodically.
*4) In-machine unloader has parts catcher type and hand type.



TM-Series

NC Unit Specifications

FANUC : Oi-TF Plus

※ Please contact our sales persons for further information.

■ Composition

Specifications・Contents	TM-2000Y2 TM-3000Y2 TM-4000ⅡY2
[NC Unit]	
NC Unit	0i-TF Plus
LCD (Integrate Type) 15" PANEL iH	●
[Software]	
iHMI	●
iHMI machining cycle	●
Tiwap-1	○
RAKU-RAKU Monitor 3	○
Measurement Monitor 3 *1	◎
[Safety Devices]	
Front Door Interlock	●
Front Door Locking Mechanism	○, CE
Dual Check Safety	○, CE
Control Panel Breaker with Tripper	●

■ Main Function List

Specifications・Contents	TM-3000Y2 TM-4000Y2 TM-4000II Y2	
	NC Unit	0i-TF Plus
[Controlled Axes]		
Least Input Increment *2		●
Cs Contouring Control		●
Synchronous/Composite Control *3		●
Increment System C *4		○
Inch/Metric Conversion		○
Interlock		●
Machine Lock		○
Emergency Stop		●
Stored Stroke Check 1		●
Stored Stroke Check 2, 3 *5		○
Stored Limit Check Before Move		●
Chuck and Tail Stock Barrier *6		○
Mirror Image (Each Axis)		▲
Chamfering ON/OFF		●
Unexpected Disturbance Torque Detection Function *7		●
Position Switch		◎
[Operation]		
Automatic Operation (Memory)		●
MDI Operation		●
DNC Operation *8		○
DNC Operation with Memory Card *9		○
Program Number Search		●
Sequence Number Search		●
Sequence Number Comparison and Stop		○
Program Restart		◎
Tool Retract and Recover		○
Wrong Operation Prevention		●
Retraction for Rigid Tapping		○

Specifications · Contents	TM-2000Y2 TM-3000Y2 TM-4000II Y2
	NC Unit
Buffer Register	●
Dry Run	●
Single Block	●
Manual Continuous Feed (JOG)	●
Manual Reference Position Return	●
2nd, 3rd, 4th Manual Reference Position Return	◎
Reference Position Setting without DOG	●
Manual Handle Feed, 1 Unit	●
Manual Handle Retrace	◎

【Interpolation Functions】

Nano Interpolation	●
Positioning (G00)	●
Exact Stop Mode (G61)	●
Tapping Mode (G63)	●
Cutting Mode (G64)	●
Exact Stop (G09)	●
Linear Interpolation (G01)	●
Circular Interpolation (G02/G03)	●
Dwell (G04)	●
Polar Coordinate Interpolation	●
Cylindrical Interpolation	●
Helical Interpolation	○
Thread Cutting, Synchronous Cutting	●
Multi Threading	●
Thread Cutting Retract	●
Continuous Threading	●
Variable Lead Thread Cutting	●
Circular Thread Cutting	○
Polygon Machining with Two Spindles	○
Skip (G31) *10	◎
Torque Limit Skip	●
Reference Position Return (G28)	●
Reference Position return Check (G27)	●
2nd Reference Position Return (G30)	●
3rd, 4th Reference Position Return	◎
Balanced Cutting	○
General Purpose Retract	●

【Feed Functions】

Rapid Traverse Override *21	●
Feed Per Minute	●
Feed Per Revolution	●
Constant Tangential Speed Control	●
Cutting Feedrate Clamp	●
Automatic Acceleration/Deceleration	●
Rapid Traverse Bell-Shaped Acceleration/Deceleration	●
Linear Acceleration/Deceleration After Cutting Feed Interpolation	●
Bell-shaped Acceleration/Seceleration After Cutting Feed Interpolation	○
Smart Overlap	●
Feedrate Override (21 Steps)	●
Jog Override (21 Steps)	●
Override Cancel	●
Manual per Revolution Feed	▲
AI Contour Control I	○
AI Contour Control II	○

【Program Input】

Program Code (EIA/ISO Auto Recognition)	●
Label Skip	●
Parity Check	●
Control In/Out	●
Optional Block Skip, 1 Piece	●
Optional Block Skip (2 to 9 Pieces)	◎
Max. Programmable Dimension (± 999999.999)	●
Program File Name 32 Characters	●
Program Number O4 Digits	●
Sequence Number N8 Digits	●
Absolute/Incremental Programming	●
Decimal Point Programming/ Pocket Calculator Type Decimal Point Programming	●
Diameter/Radius Programming (X-Axis)	●
Dynamic Switching of Diameter/Radius Specification	○

Specifications Contents	NC Unit	0i-TF Plus
Plane Selection G17,G18,G19		●
Rotary Axis Designation		●
Rotary Axis Rollover		●
Coordinate System Setting (G50) *11		●
Automatic Coordinate System Setting *20		●
Workpiece Coordinate System		●
Workpiece Coordinate System Preset		●
Direct Drawing Dimension Programming *12		○
G-Code System A		●
G-Code System B/C *11		○
Chamfering/Corner R *13		●
Programmable Data Input (G10)		●
Sub Program Call (10 Levels)		●
Custom Macro		●
Additional Custom Macro Common Variables *22		○
Canned Cycle		●
Multiple Repetitive Cycles		●
Multiple Repetitive Cycles II		●
Canned Cycle for Drilling		●
Circular Interpolation by R Programming		●
Coordinate System Rotation		○
3D Coordinate System Conversion *14		○
Coordinate System Shift		●
Direct Input of Coordinate System Shift		●
Embedded Macro		◎
Real Time Custom Macro		◎
Program Coordinate System Changing Function		●

【 Auxiliary/Spindle Speed Function 】

M Function (M3 Digits)	●
2nd Auxiliary Function (B Function)	◎
Waiting Function	●
Waiting M Codes of High-speed Type	●
Multiple Command of Auxiliary Function (3 Pieces)	●
Spindle Speed Function (S Functions)	●
Constant Surface Speed Control	●
Spindle Override	●
Spindle Orientation	●
Spindle Synchronous Control	●
Rigid Tap (Spindle Center)	●
Rigid Tap (Rotary Tool)	●
Smart Rigid Tap	●

【 Tool Functions / Tool Compensation 】

Tool Function	●
Tool Offset Pairs 64-pairs Each of Upper and Lower	●
Tool Offset Pairs 99-pairs Each of Upper and Lower	○
Tool Offset	●
Y-Axis Offset	●
Tool Radius • Tool Nose Radius Compensation	●
Tool Geometry/Wear Compensation	●
Tool Offset Value Counter Input	●
Direct Input of Tool Offset Value Measured	●
Direct Input of Tool Offset Value Measured B *15	○
Tool Life Management *16	○
Tool Offset Memory Switching Function	●

【Accuracy Offset Functions】

Backlash Compensation	▲
Backlash Compensation for Each Rapid Traverse and Cutting Feed	▲
Smooth Backlash Compensation	▲
Smart Backlash Compensation	●

【Editing】

Part Program Storage Size 2Mbyte	●
Number of Registerable Programs, 1000 Programs	●
Part Program Editing	●
Extended Part Program Editing	●
Program Protect	●
Machining Time Stamp	○
Background Editing	●
Multi Part Program Editing	●

【 Setting / Display 】

Status Display	●
Clock Function	●

Specifications・Contents	TM-2000Y2 TM-3000Y2 TM-4000II Y2
NC Unit	0i-TF Plus
Current Position Display	●
Program Comment Display (31 Characters)	●
Parameter Setting and Display	●
Alarm Display	●
Alarm Log Display	●
Operator Message History Display	●
Operation History Display	▲
Run Hours and Parts Count Display	●
Actual Cutting Feedrate Display	●
Display of Spindle Speed and T Code at All Screens	●
Servo Setting Screen	●
Spindle Adjustment Screen	●
Maintenance Information Screen	●
Data Protection Key, 1 Kind	●
Erase CRT Screen Display	●
Parameter Set Supporting Screen	●
Help Function	●
Self-diagnosis Function	●
Periodic Maintenance Screen	●
Display of Hardware and Software Configuration	●
Graphic Function	●

【 Multi-language Display 】

English *17	●
Other Language *17 *18	▲

【Data I/O】

Fast Data Server	Ⓢ
External Workpiece Number Search	Ⓢ
Memory Card I/O	●
USB Memory I/O	●
One Touch Macro Call	Ⓢ
Automatic Data Backup	●

【Communication Function】

Embedded Ethernet	●
Fast Ethernet *19	◎

【 Other 】

Touch Panel	●
-------------	---

●:Standard ○:Optional ◎:Special ▲:Parameter setting is required.
(Note: Normally, the parameters need not to be changed. If the parameters are to be set or changed, understand completely the functions of such parameters. Wrong setting could cause the machine to be moved unexpectedly, resulting in machine or workpiece damage or personal injury.)
CE : CE type standard specification. Tiwap : Tiwap-1 standard specification.

- *1) I/O addition and the PC change are necessary.
- *2) 0.001mm, 0.0001inch, 0.001deg
- *3) Synchronous control: X-axis/Z-axis/C-axis, Composite control: C-axis/A-axis
(Tiwap specification supports C-axis only.)
- *4) IS-C 0.0001mm 0.001deg 0.00001inch
- *5) Not coexistent with chuck tailstock barrier.
- *6) Not coexistent with Stored Stroke Check 2, 3.
- *7) Required when RAKU-RAKU Monitor 3 is used.
- *8) DNC run mode transfer switch and RS-232C interface for 1ch are required.
- *9) DNC run mode transfer switch, CF card and adaptor are required.
- *10) Used for touch sensor, etc.
- *11) Cannot be used when Tiwap-1.
- *12) Not coexistent with chamfering/corner R.
- *13) Not coexistent with drawing dimension direct input.
- *14) Angle Holder is required.
- *15) Tool setter is required.
- *16) Cannot be used when RAKU-RAKU Monitor 3 is installed.
- *17) Cannot be simultaneous display the other languages.
- *18) Japanese (Kanji), German, French, Spanish, Italian, Chinese (traditional), Chinese (simplified), Korean, Portuguese, Dutch, Danish, Swedish, Hungarian, Czech, Polish, Russian, Turkish, Romanian, Bulgarian, Slovak, Finnish, Vietnamese, Indonesian, Hindi, Slovenian
- *19) Hardware option is required.
- *20) Not coexistent with Workpiece Coordinate System.
- *21) 0 ~ 100% (10% increments).
- *22) #100 ~ #199, #500 ~ #999

TM-Series



TAKISAWA MACHINE TOOL CO., LTD.

983 Natsukawa, Kita-ku, Okayama 701-0164, JAPAN

Telephone : (81)86-293-1500

Fax : (81)86-293-5799

Website : <https://www.takisawa.co.jp>

E-mail : tkj-1@takisawa.co.jp (America)

tkj-2@takisawa.co.jp (Europe)

tkj-3@takisawa.co.jp (Asia)

Japanese laws prohibit this machine from being used to develop or manufacture "weapons of mass destruction" or "conventional arms", as well as from being used to process parts for them.

Export of the product may require the permission of governmental authorities of the country from where the product is exported.

Should you wish to resell, transfer or export the product, please notify Takisawa Machine Tool Co., Ltd. or our distributor in advance.

*The appearance, specifications, and relevant software of the product are subject to change for improvement without notice.
*Please make an inquiry to our sales representatives for details of the product.

NC81E2309MN1000A

■ Overseas Network

THAILAND	Takisawa (Thailand) Co., Ltd. Telephone : (66)2-012-1701-3 Fax : (66)2-012-1705
VIETNAM	Takisawa Machine Tool Vietnam Representative Office Telephone : (84)247-1088-669 Fax : (84)247-1088-669
INDONESIA	PT. Takisawa Indonesia Telephone : (62)21-221-57456 Fax : (62)21-891-18818
INDIA	SAP Takisawa Machine Tools Private Ltd. Telephone : (91)80-26662386 Fax : (91)80-26662392
CHINA	Takisawa (Shanghai) Co., Ltd. Telephone : (86)21-6235-0938 Fax : (86)21-6235-0905
USA	Takisawa, Inc. Telephone : (1)847-419-0046 Fax : (1)847-419-0043
GERMANY	Takisawa Machine Tool Germany Representative Office Telephone : (49)2102-9288477 Fax : (49)2102-9288478