

TAKISAWA®

TAKISAWA Superb Turning Center

TS-5000

TS-4000

TS-3000

Further Evolution of TAKISAWA Superb Turning Center

T S



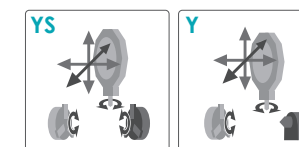
- **STRONGER 10HP MILL POWER**
- **LONGER 4.7" Y-axis**
- **STIFF Box Guide Ways**
- **SUFFICIENT 20 Position Turret (20,15,12 or 10)**
- **SUPERABUNDANT 30HP Main Motor**
(TS-4000/TS-5000)

■ Composition

		2 Spindle Type	1 Spindle Type
		YS (Standard Model)	Y
Items	Right Spindle Stock	●	-
	Tailstock *1	-	●
	Y-Axis	●	●
	C-Axis (Left)	●	●
	C-Axis (Right)	●	-
	Milling	●	●

● : Standard
- : None

*1) NC Servo Tailstock

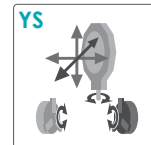


The Definitive Structure

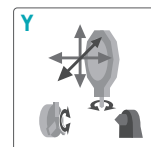
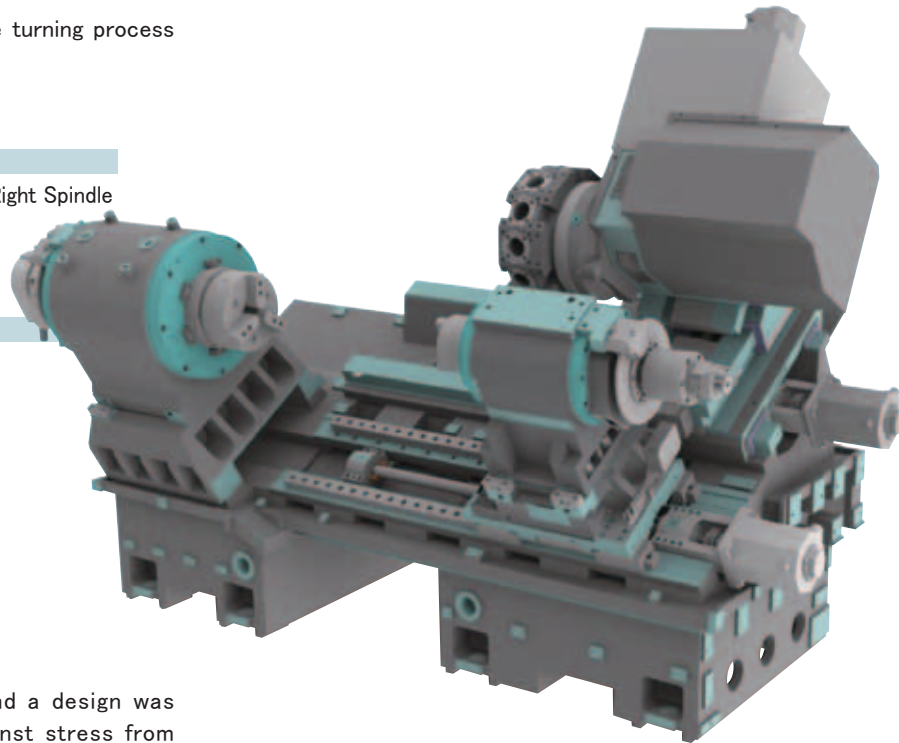
Bigger Axis Configuration

Configuration 6 control axes and can execute turning process and milling process continuously.

YS (Standard) : 6-Axes
X/Z/Y/C1/C2/A
Left Spindle + Milling Turret + Right Spindle



Y (Standard) : 5-Axes
X/Z/Y/C/A
Left Spindle + Milling Turret + NC Servo Tailstock

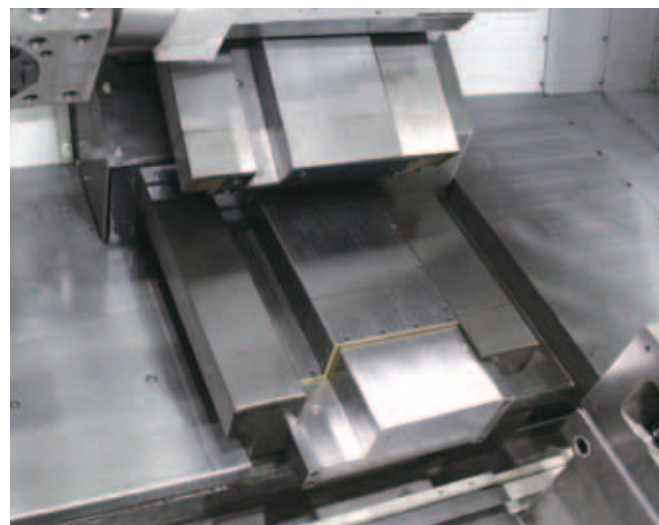



Advanced 3D Analysis

The structure way analyzed thoroughly and a design was adopted which can maintain accuracy against stress from various directions during combined machining.

Sturdy Structure

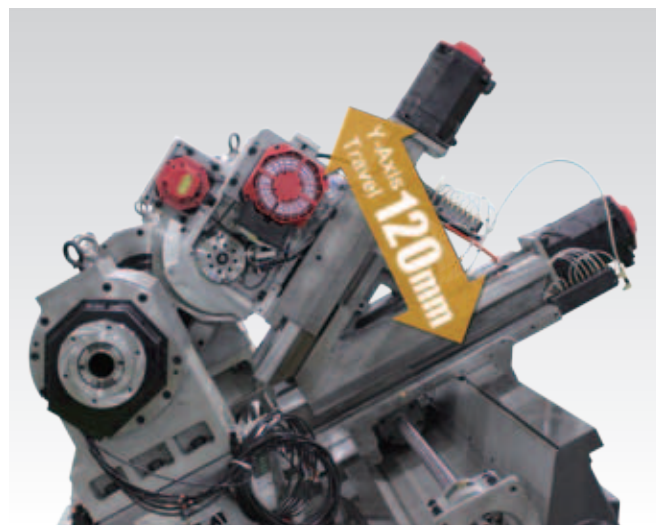
The highly rigid 30° slant bed and rectangular slideways on the sliding axes (X, Y, Z) ensure stable machining.



120mm Y-Axis Travel

The plus side is increased by 40% (-50 to +70 mm) compared to our former machine.

The 3.0kW high power servomotors are used.



Advantage

Stronger Milling Power 7.5kW, 12-Station Milling Turret

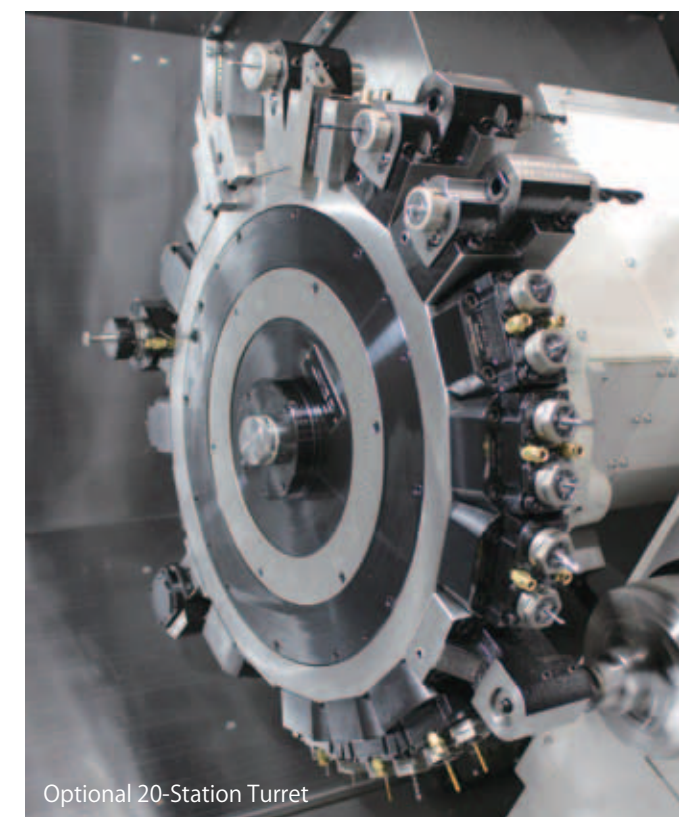
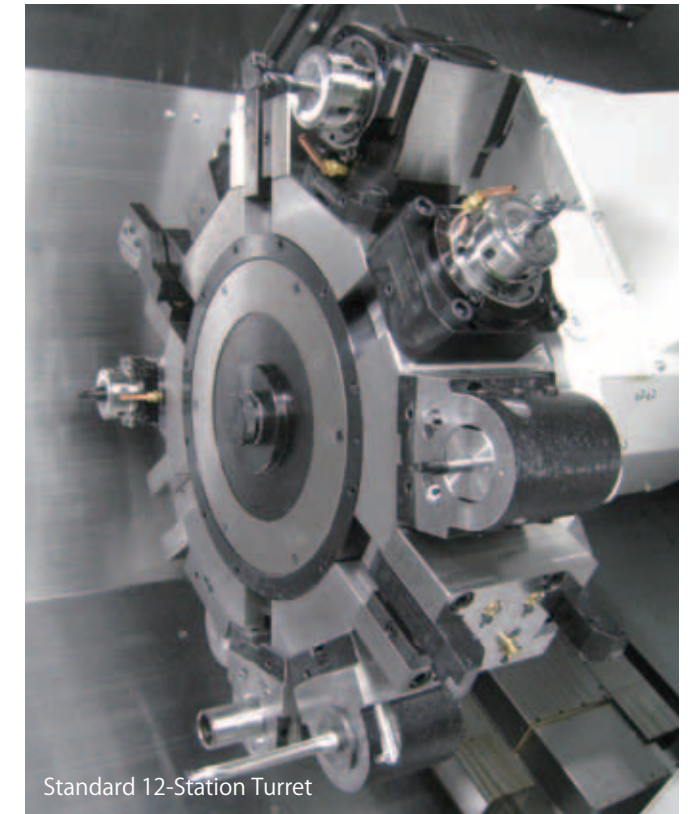
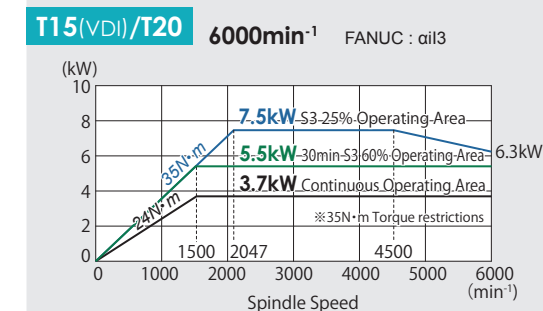
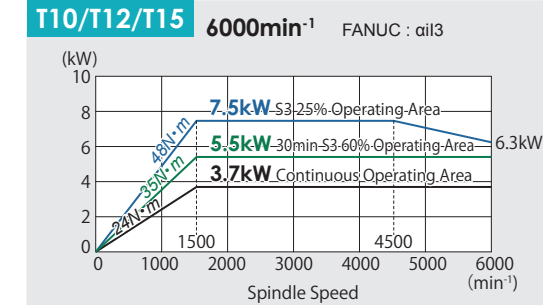
All holder type employing bolt tightening system. Powerful holders taking advantage of 7.5 kW motor achieve great milling capability.

The number of tools of a turret can be selected from 12 (T12) as standard and 10 (T10)/15 (T15)/20 (T20) as optional for optimum machining.

VDI type 15-station turret is also available.

Type of Turret	T12 (STD.)	T10	T15/T15VDI	T20
Number of Attachable Tools	12	10	15	20
Height of Square Tool Shank	25		20	
Diameter of Boring Bar Shank	50		40	
Diameter of Rotary Tool Shank	26		20	

Power Tool



Capability • Performance

High Power Built-in Motor



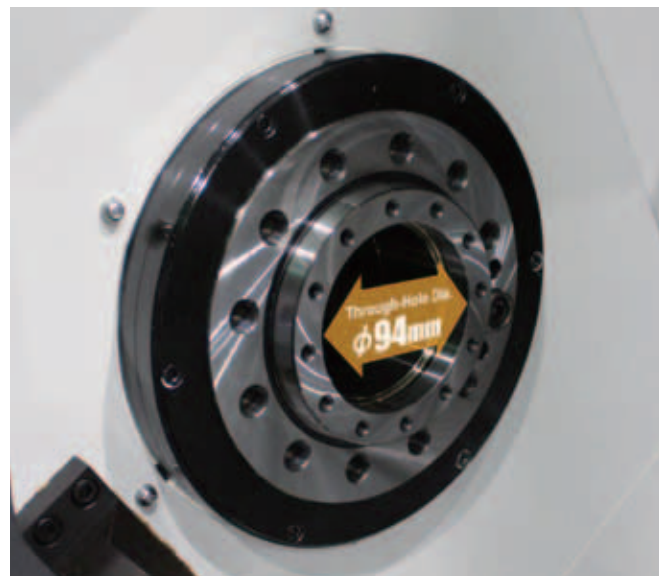
TS-4000YS 10" Chuck

High power built-in motor spindles are used for the left spindle and the right spindle.



		TS-3000	TS-4000	TS-5000
Left Spindle	Motor	15/11kW	22/15kW	22/15kW
	Spindle Speed	5000min ⁻¹	4200min ⁻¹	2500min ⁻¹ OP.4200min ⁻¹
Right Spindle	Motor	11/7.5kW	11/7.5kW	11/7.5kW
	Spindle Speed	6000min ⁻¹	6000min ⁻¹	5000min ⁻¹ OP.6000min ⁻¹

φ94mm Hole Through Spindle

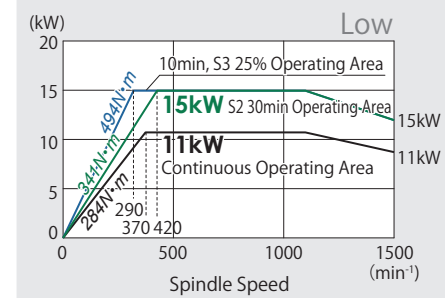
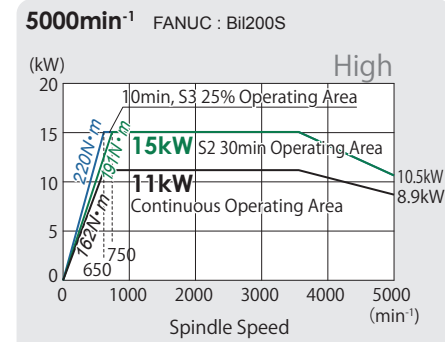


Large spindle-through hole supports bar machining. Automatic machining can be realized by installing optional bar feeder.

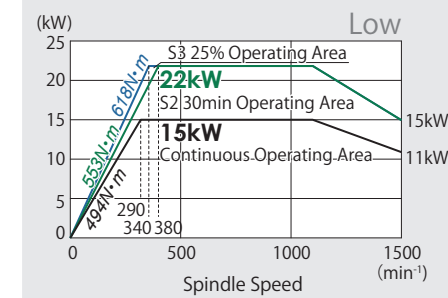
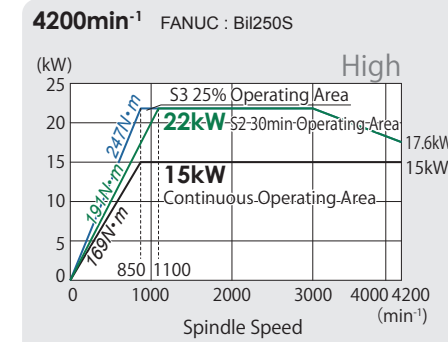
		TS-3000	TS-4000	TS-5000
Left Spindle	Through-Hole Dia.	77mm	94mm	111mm OP.94mm
	Bar Capacity	67mm	82mm	102mm OP.82mm
Right Spindle	Through-Hole Dia.	53mm	53mm	63mm OP.53mm

Main Spindle (Left Side)

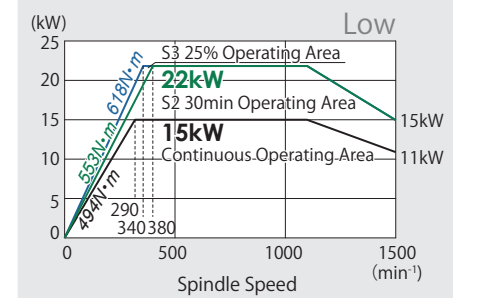
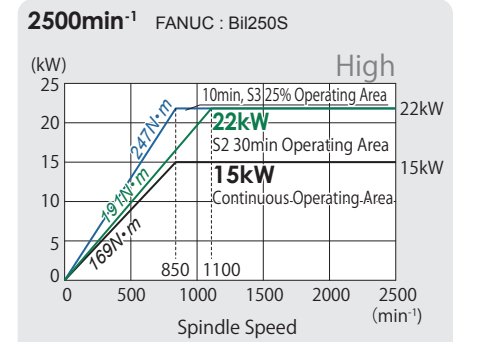
TS-3000



TS-4000/TS-5000 (Op.)

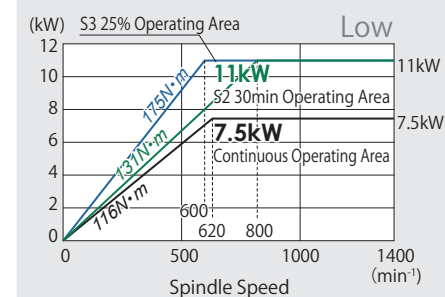
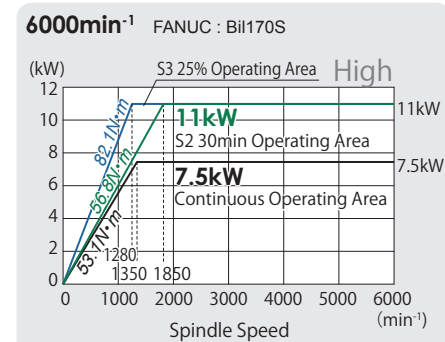


TS-5000

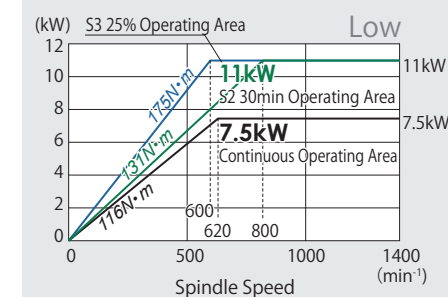
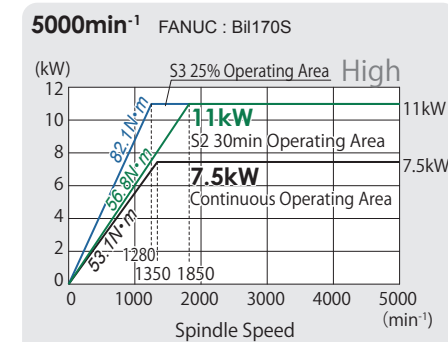


Sub Spindle (Right Side, For YS Type)

TS-3000/TS-4000

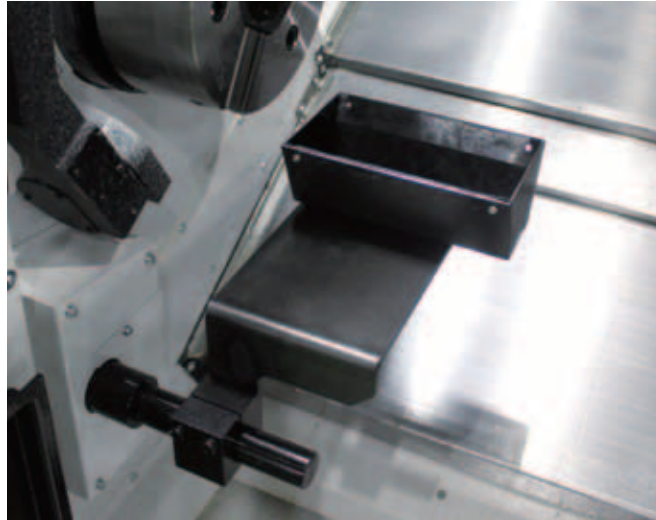


TS-5000



Parts Catcher *1

Ability of parts catcher OD ϕ 80mm, Length 200mm, Weight 3kg.

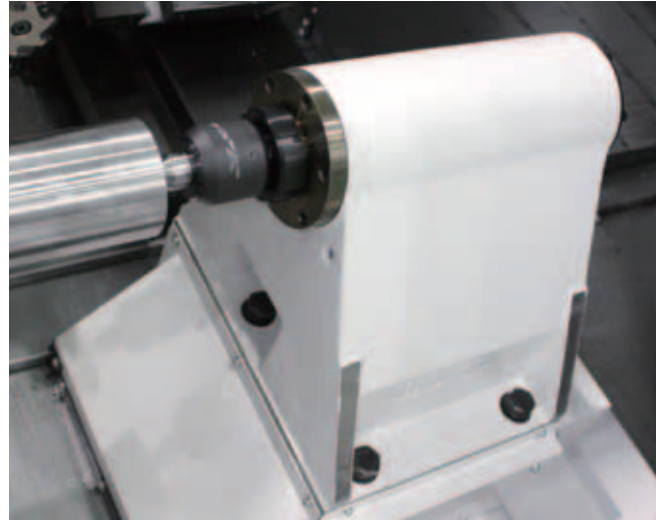


Workpieces cut off during bar machining are safely caught and unloaded to the collection box.

*1) It does not support TS-5000.

NC Servo Tailstock

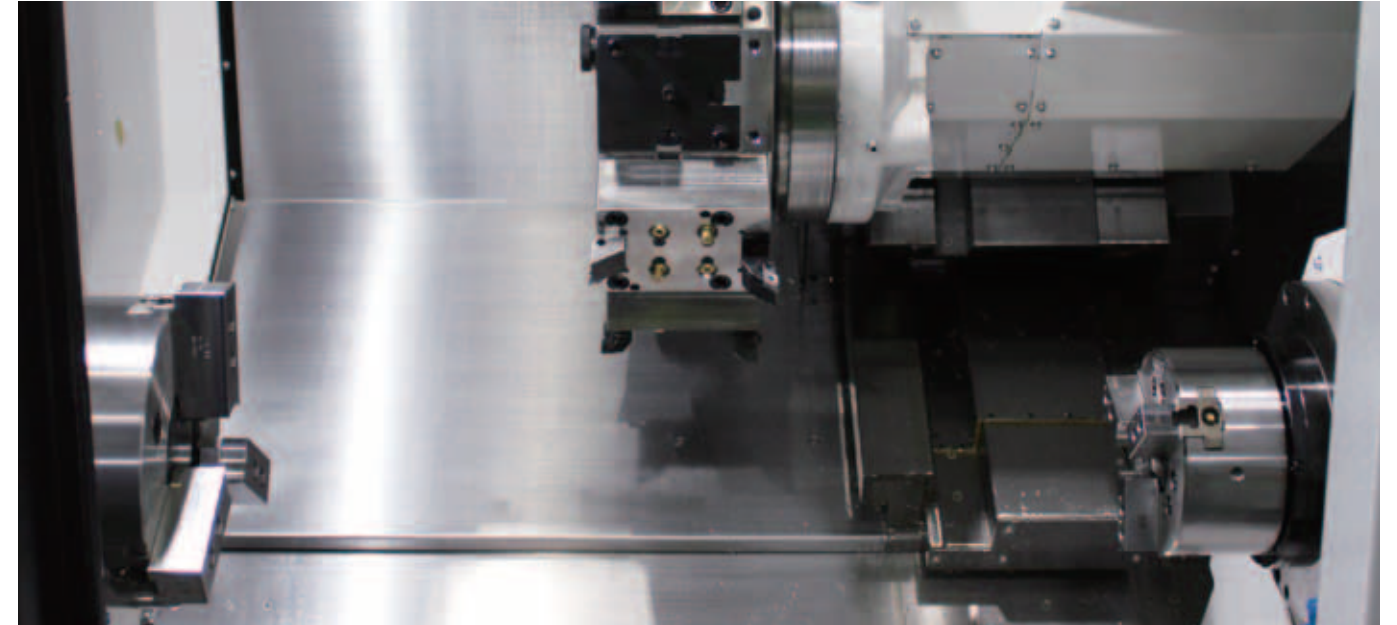
NC servo tailstock is a standard accessory of Y specification. Even shaft workpieces can be machined powerfully without paying attention to runout.



	TS-3000	TS-4000	TS-5000
A-Axis Travel	665mm	780mm	1480mm
Quill Taper	MT No.4	MT No.5	MT No.6 OP.MT No.5

*With Ejecting Nut

Standard/Maximum Turning Diameter ϕ 280/ ϕ 370 (T12, OD Tool Overhang 40mm)

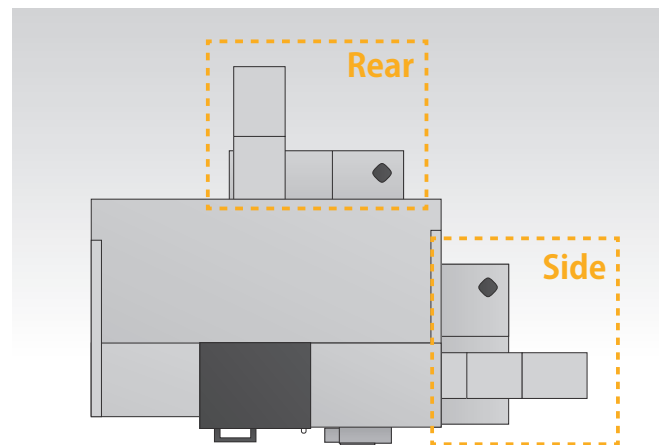


Selectable Discharge Direction

Chip flow allows maximum space efficiency.

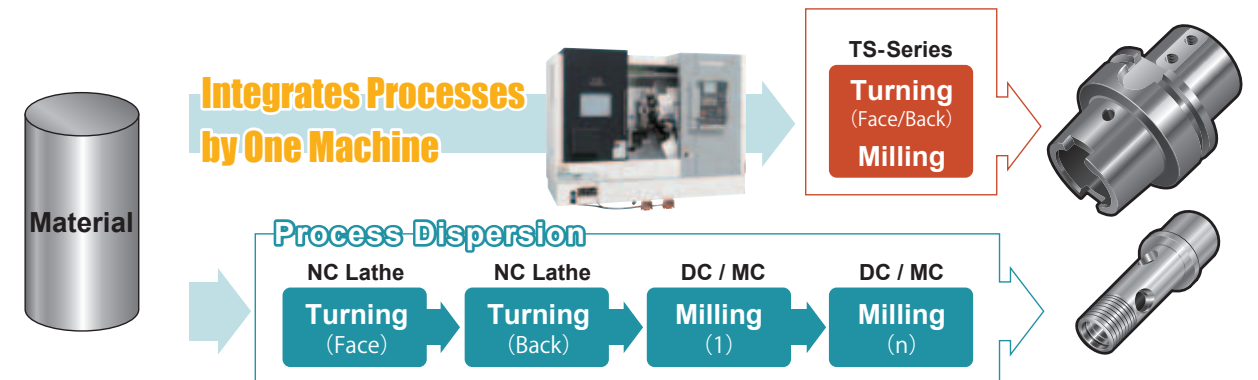
Rear discharge*3 or side discharge is selectable according to the machine layout.

*3) It does not support TS-5000.



Process Integration Flow Chart

Demonstrates the efficiency / advantages of one multi purpose machine against a cell of lathes and machining centres and highlights the advantages.



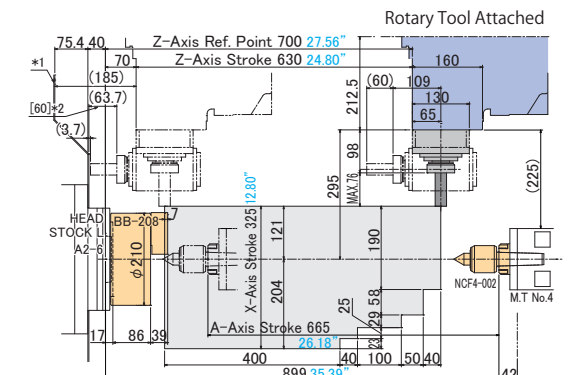
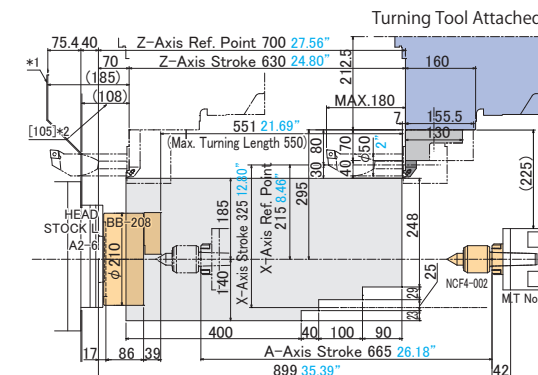
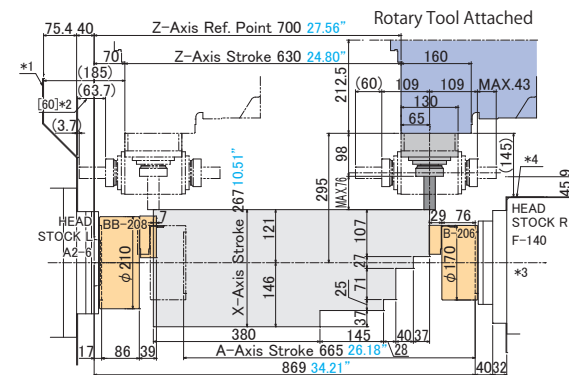
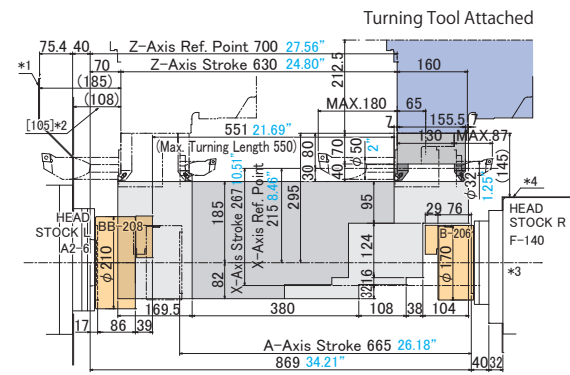
Travel Range TS-3000YS

Unit : mm inch

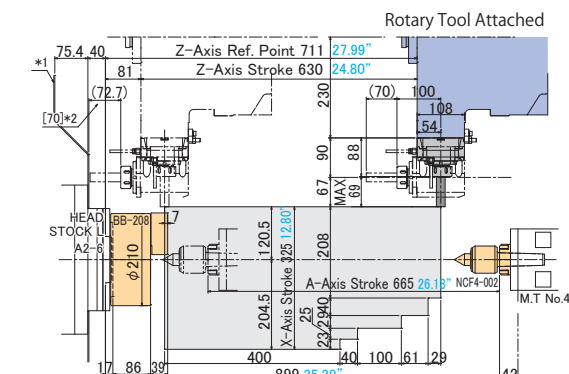
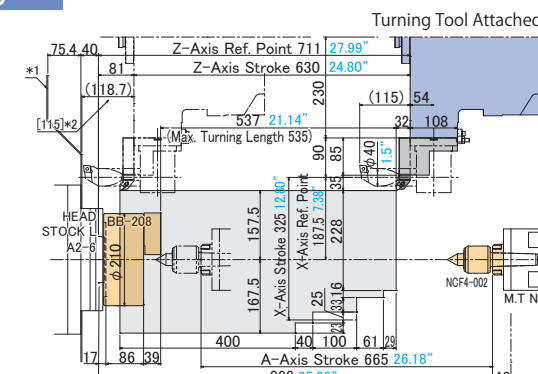
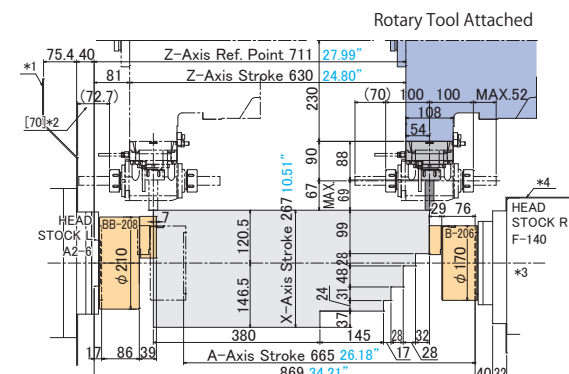
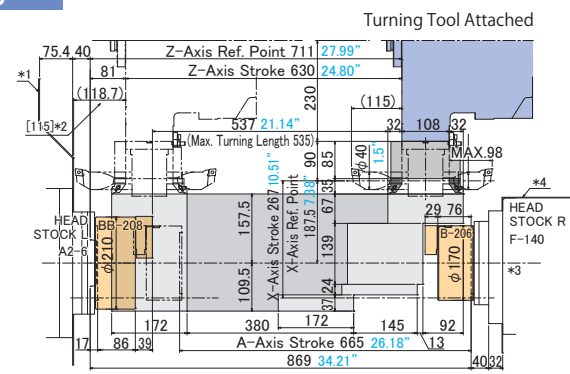
Travel Range TS-3000Y

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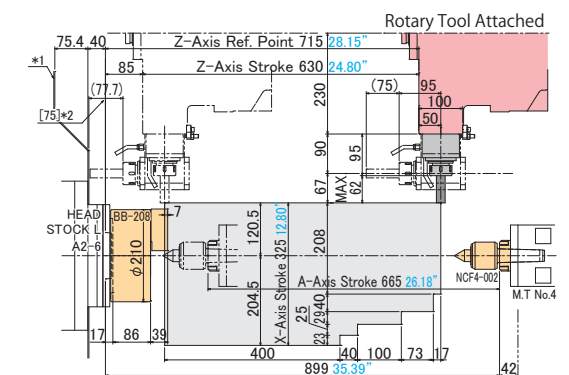
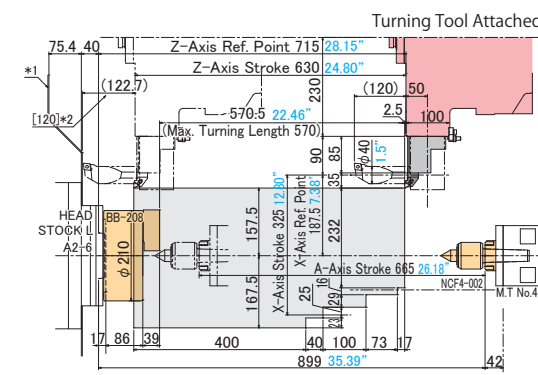
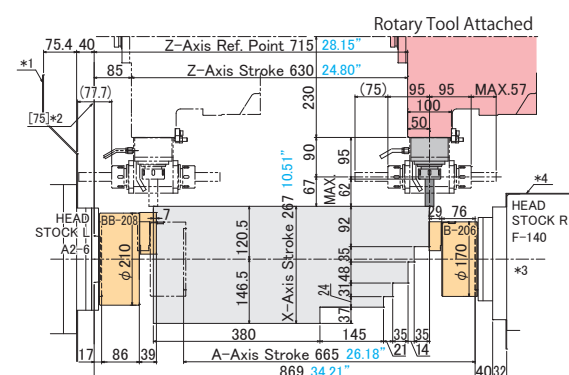
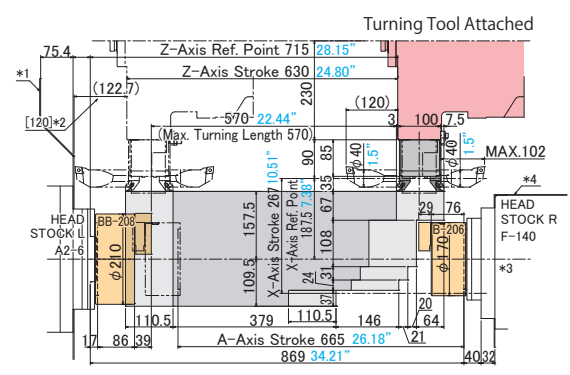
T10/T12



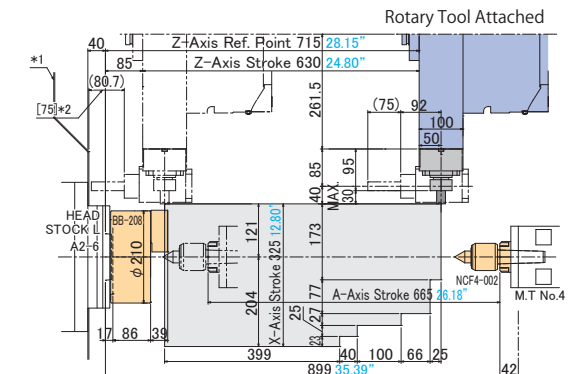
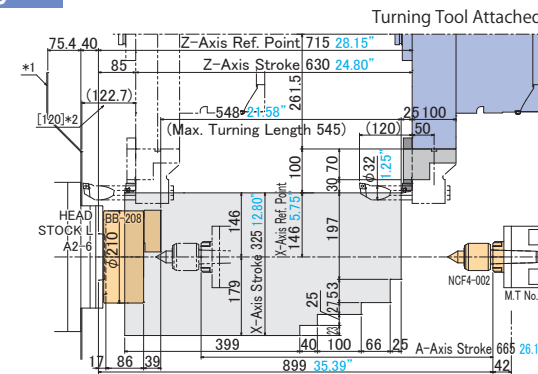
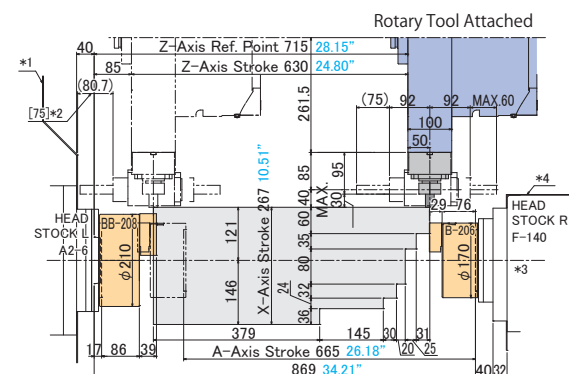
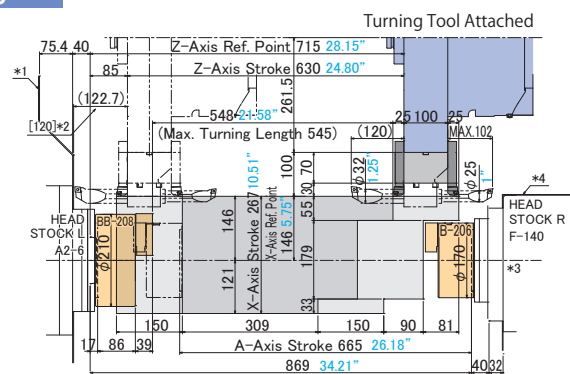
T15



T15 (VDI)



T20



*1) Space for escaping turret near the splash guard.
*2) Tools protruding beyond the dimension in [] are indexed to retract position.

*3) The right spindle cannot pass the turret.
*4) Sub spindle cover

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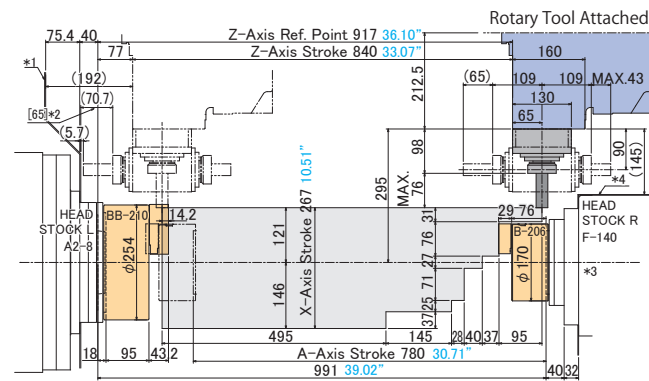
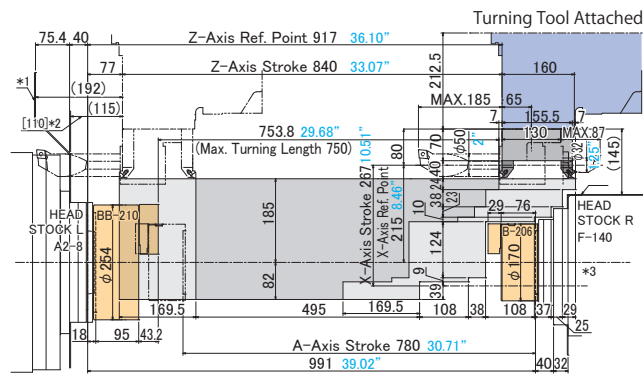
Travel Range TS-4000YS

Unit : mm inch

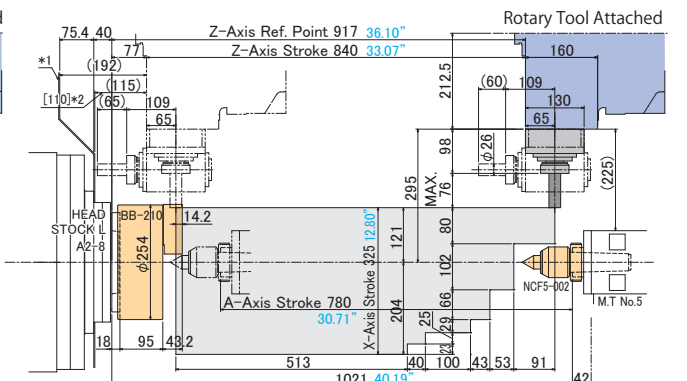
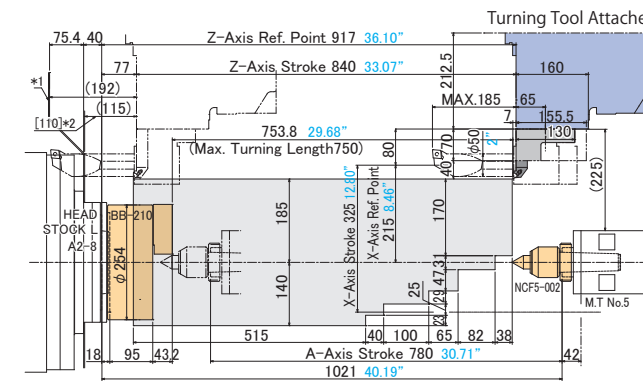
Travel Range TS-4000Y

Unit : mm inch

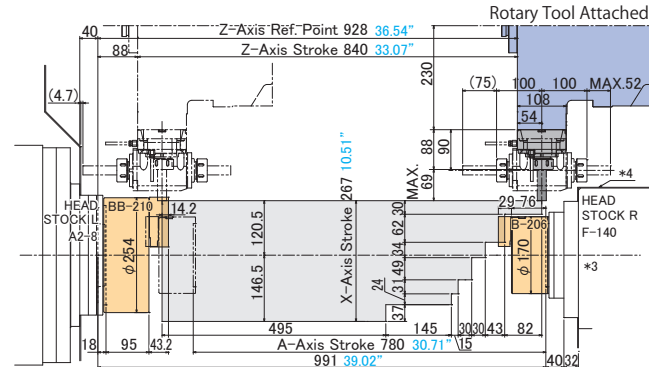
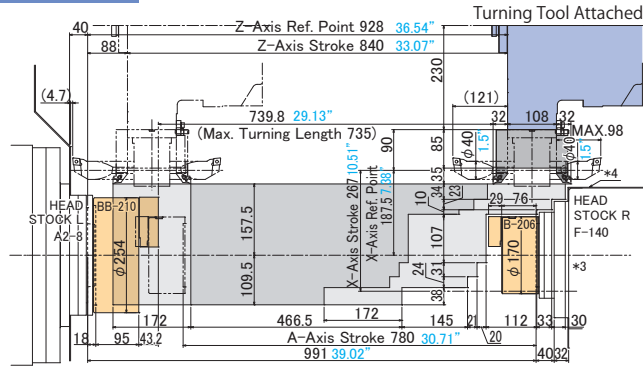
T10/T12



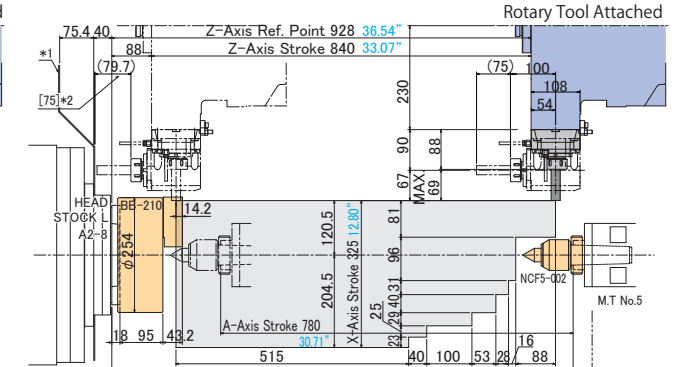
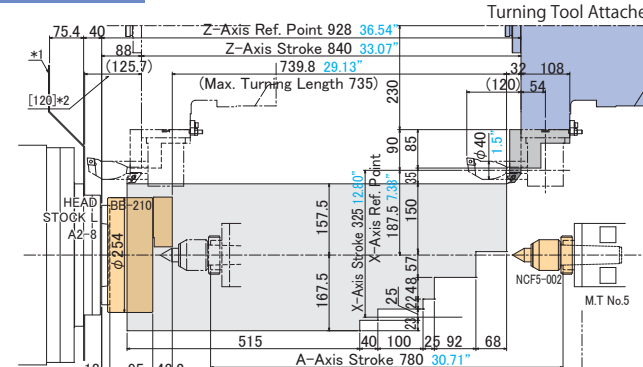
T10/T12



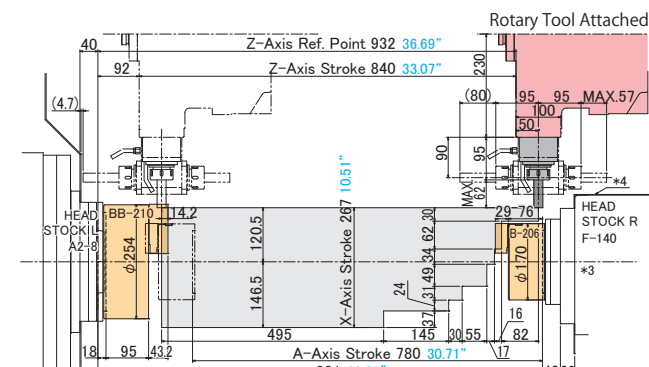
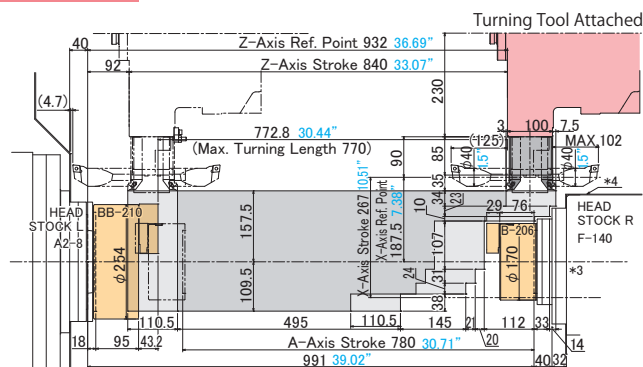
T15



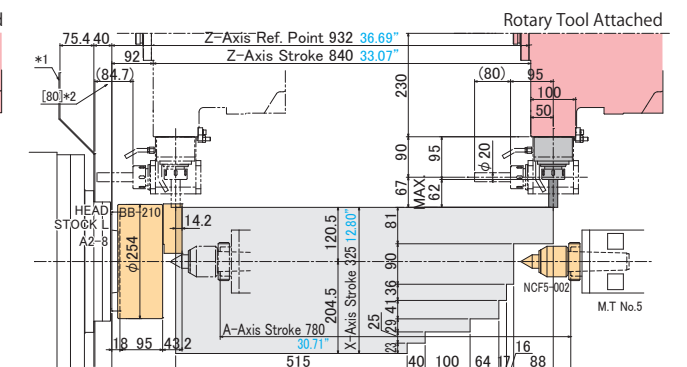
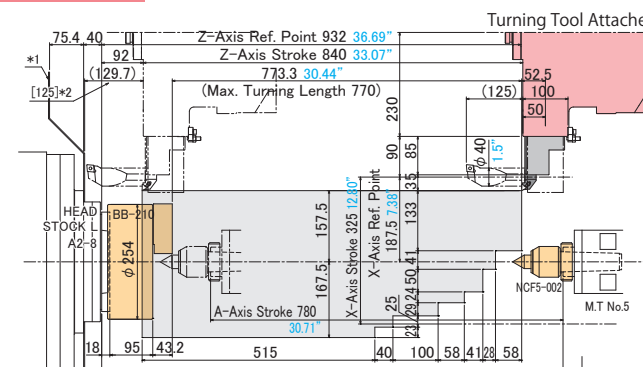
T15



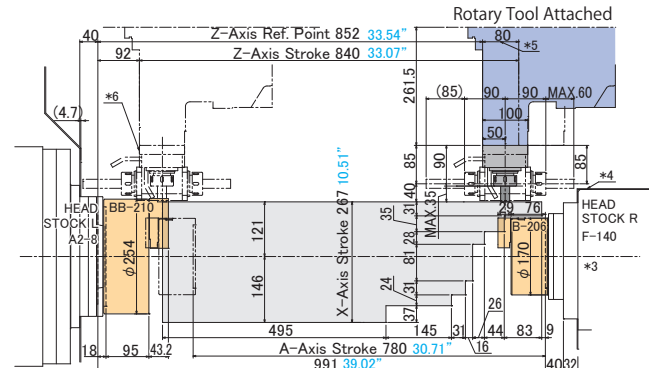
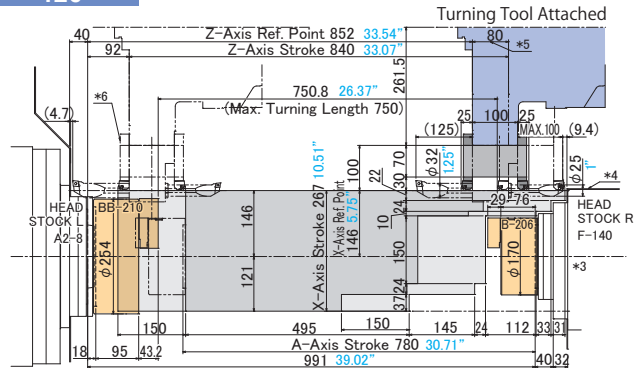
T15 (VDI)



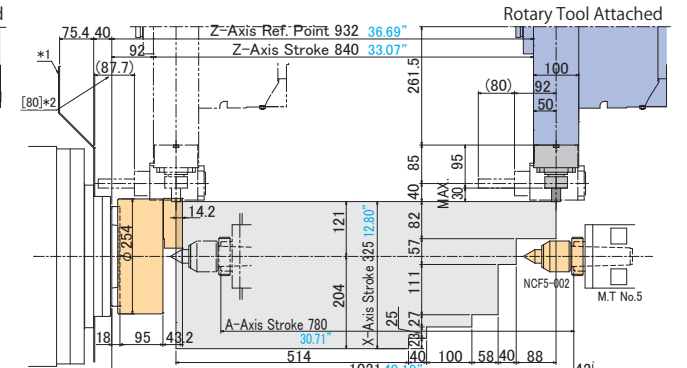
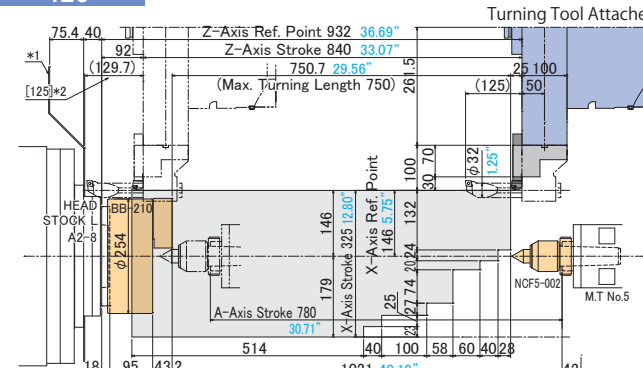
T15 (VDI)



T20



T20



- *1) Space for escaping turret near the splash guard.
- *2) Tools protruding beyond the dimension in [] are indexed to retract position.
- *3) The right spindle cannot pass the turret.

- *4) Sub spindle cover
- *5) In this zone, turret can't be rotated.
- *6) Index the holder without interference with left/right spindle or chuck.

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Travel Range TS-5000YS

Drawings shows the Spindle Nose:A2-11

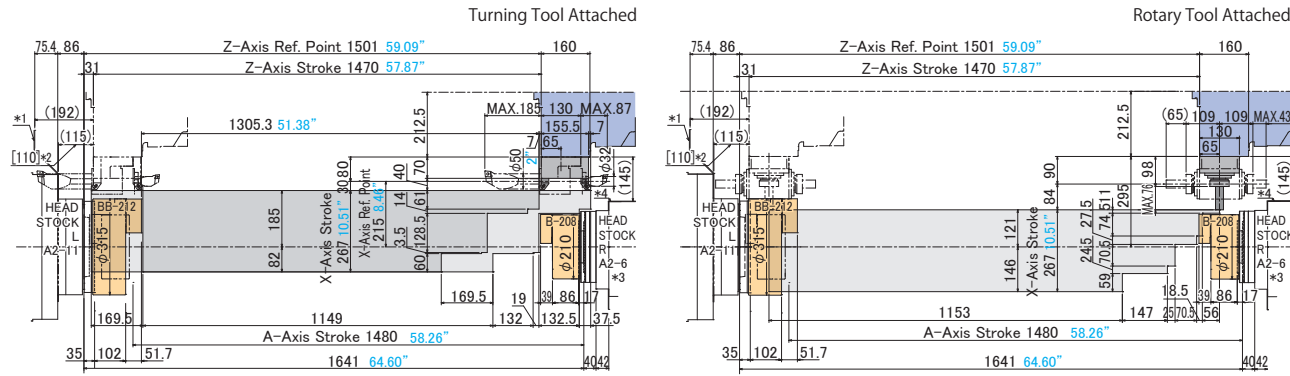
Unit : mm inch

Travel Range TS-5000Y

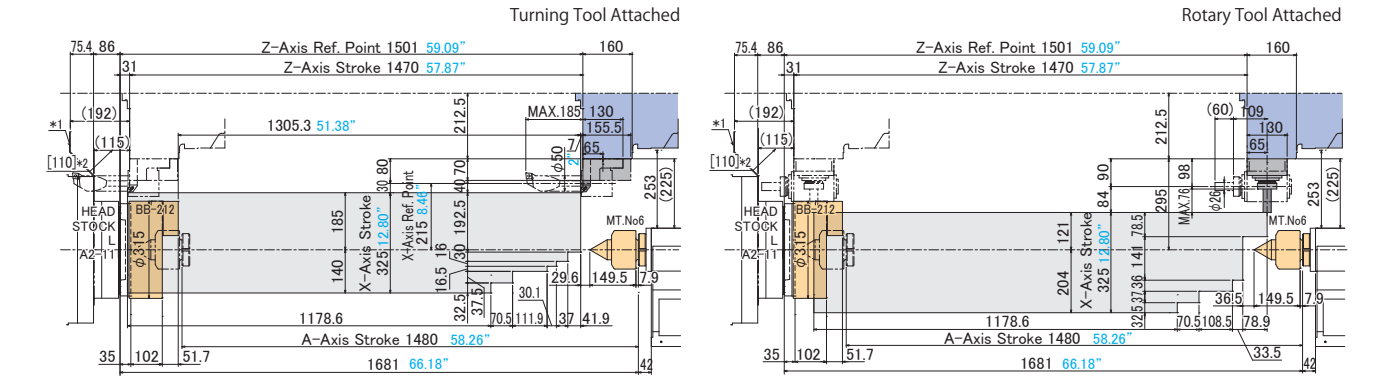
Drawings shows the Spindle Nose:A2-11

Unit : mm inch

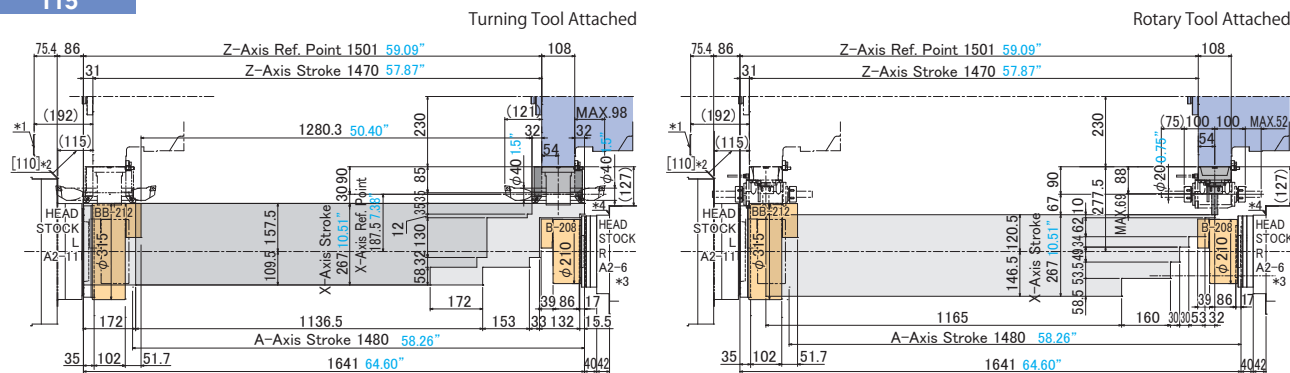
T10/T12



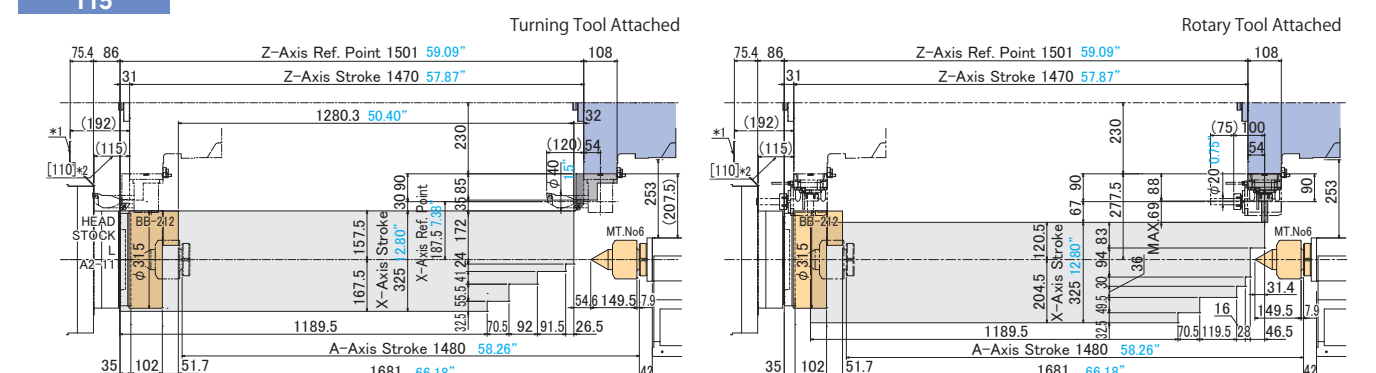
T10/T12



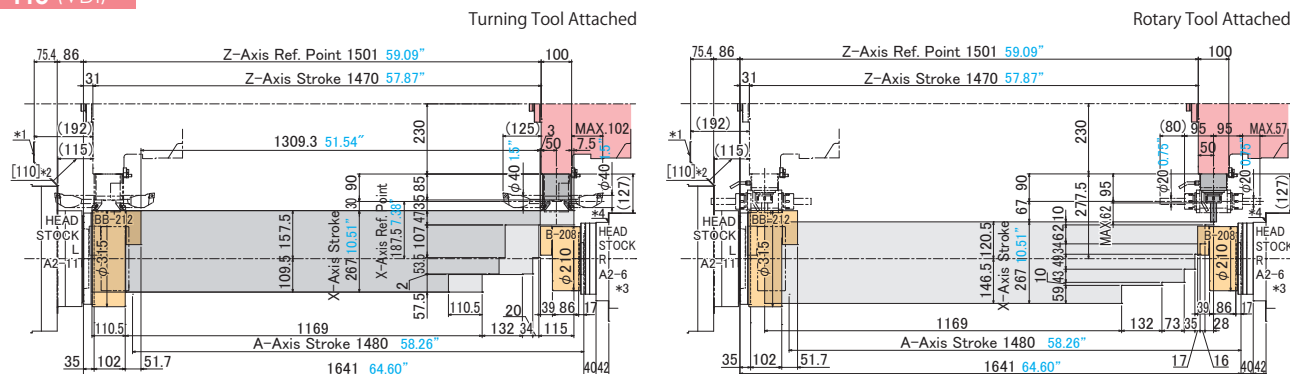
T15



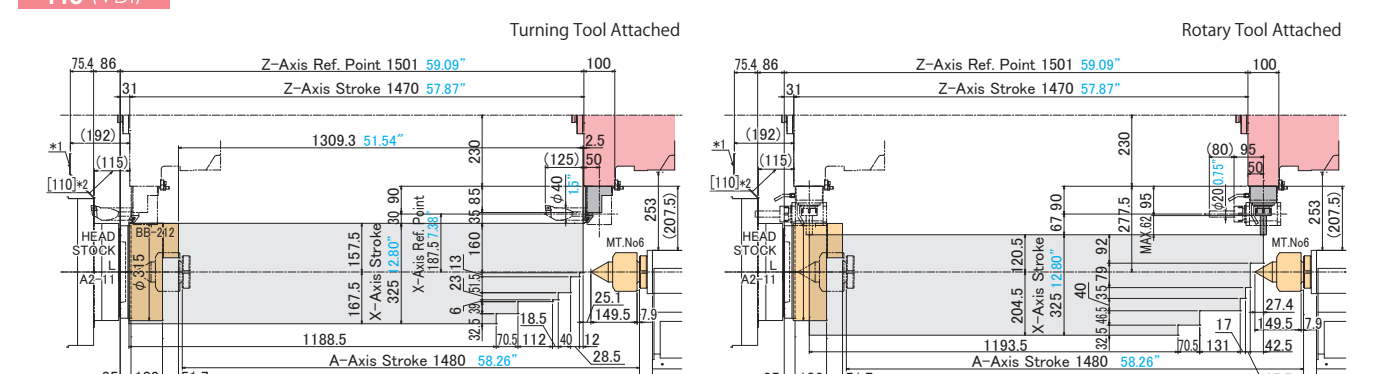
T15



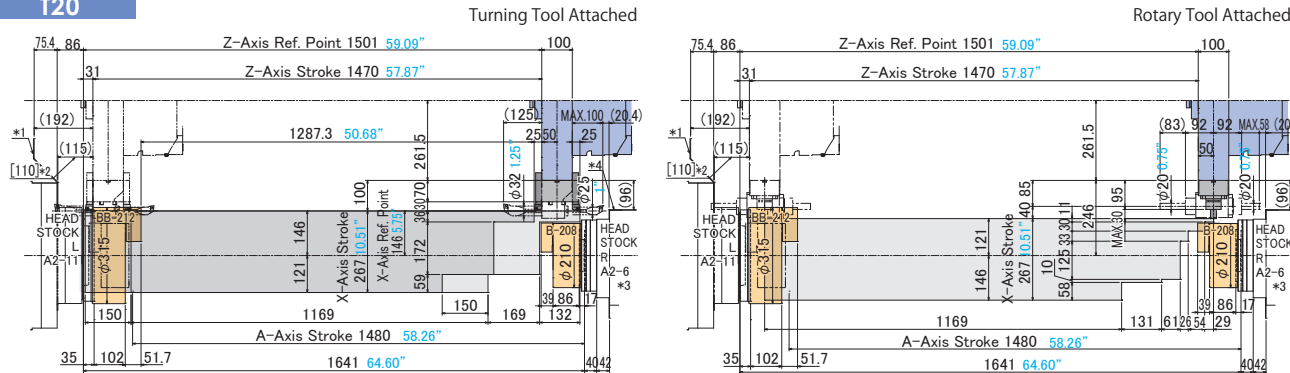
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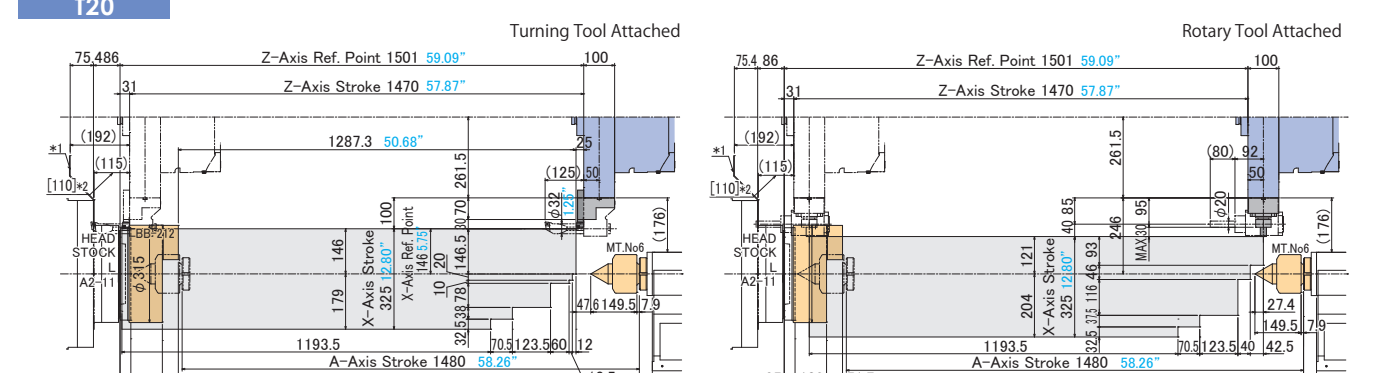
T15 (VDI)



T20



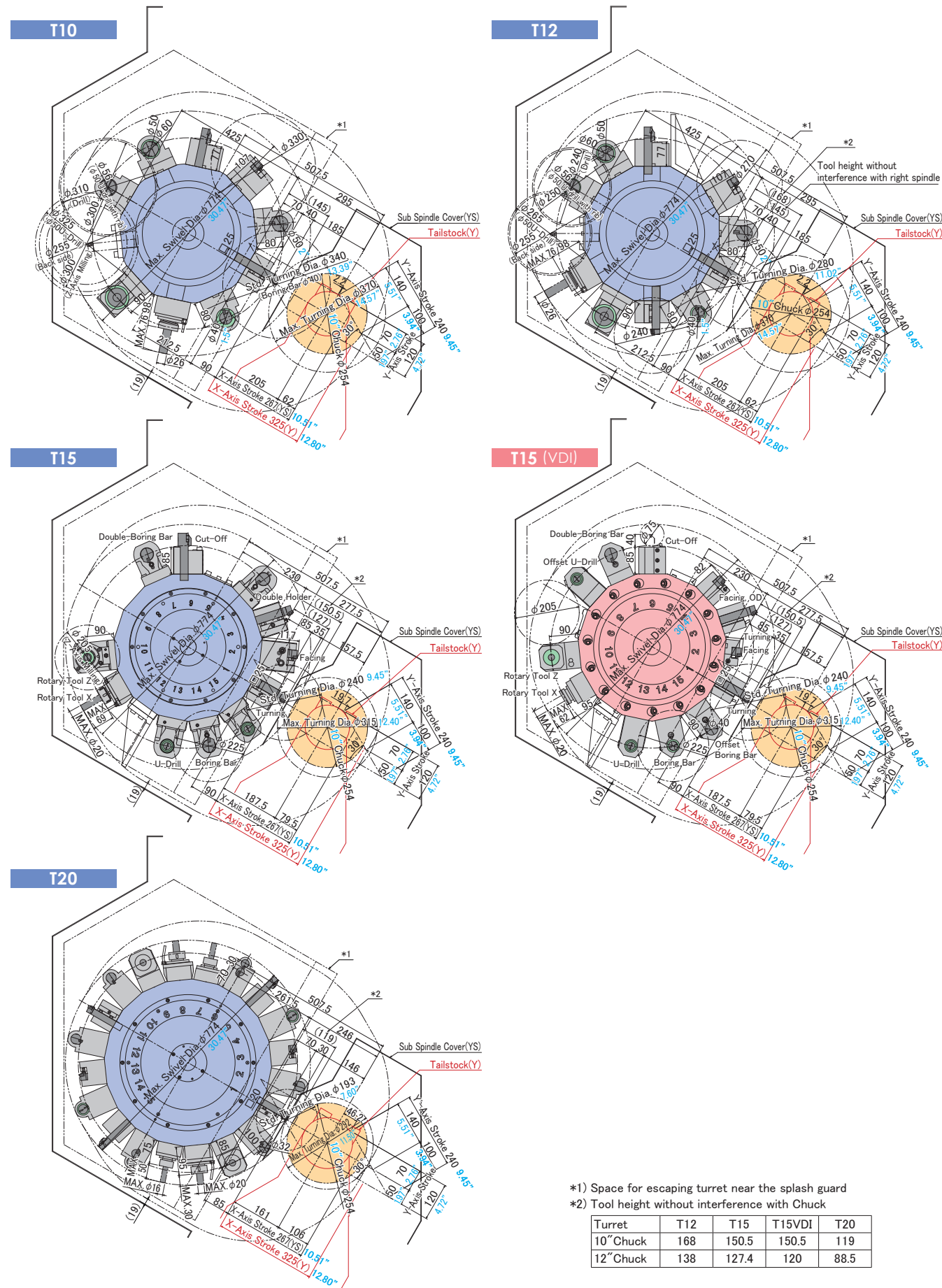
T20



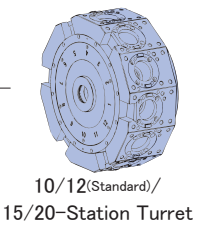
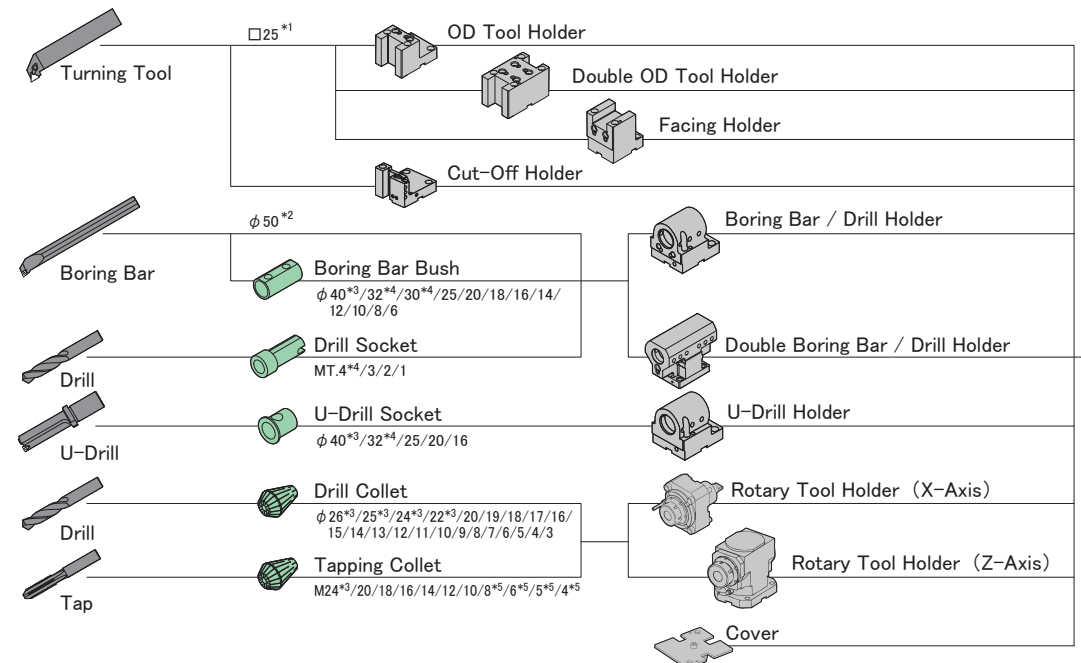
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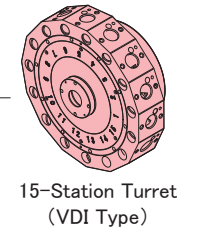
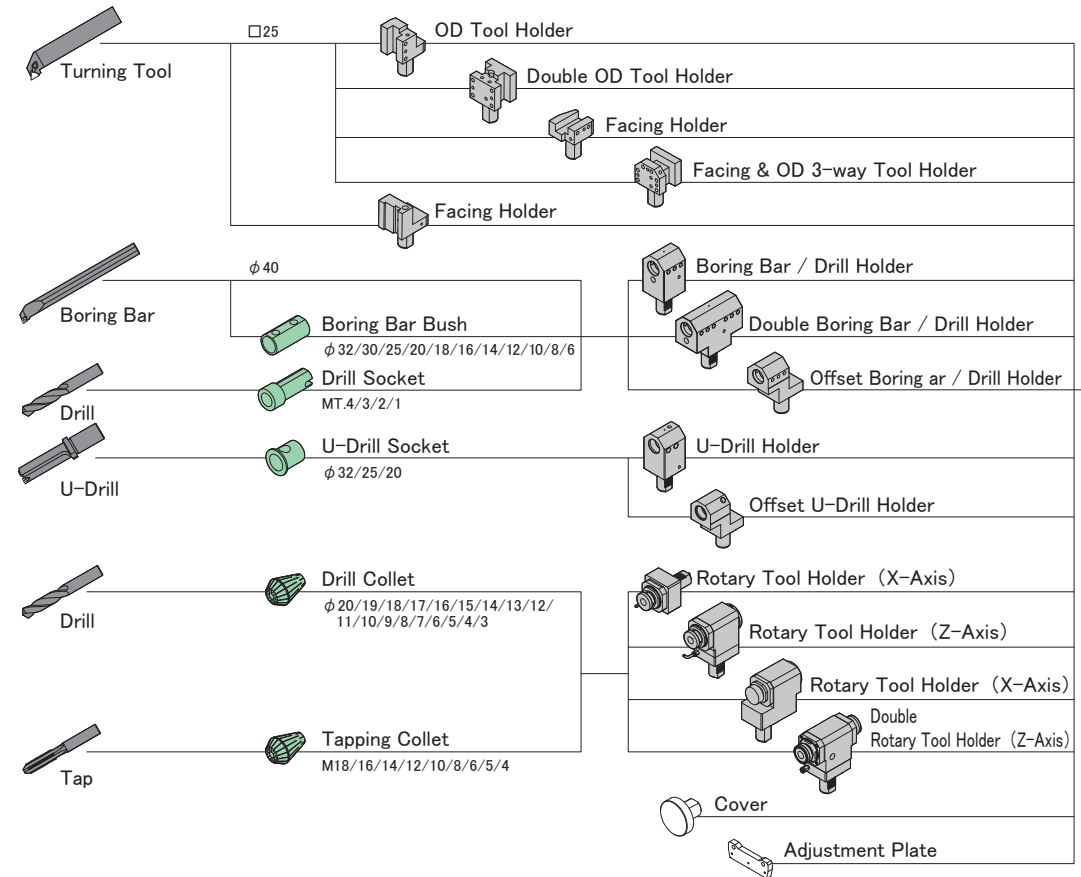


T10/T12/T15/T20 Side Holder Type (Bolted)



*1) T20 is □20.
 *2) T15 is φ32. T20 is φ32.
 *3) T15 and T20 does not correspond.
 *4) T20 does not correspond.
 *5) T12 does not correspond.

T15 (VDI) VDI Type



TiwaP-1

Knowledge of the G-codes is not necessary to create programs.

Anyone can easily create programs.

TiwaP-1 is Takisawa Original Software Which is Easy for

"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

The arrangement of machining spindles and processes is automatically recognized to execute the spindle control and C-axis zero point return operation efficiently.

Stored Number of Program — **99**

Available for max 999 Process on each program (incl. last process) and available max 99 Cutting Configurations.

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

COOPERATION

Further, **TiwaP-1** enables the interactive program to perform machining in cooperation with an NC program".

- ① NC program¹ can be called (set) in the interactive (TiwaP-1) program.
- ② NC program² 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.
*2: O number call.

▼ NC Program Edit Screen

▼ Interactive Program Edit Screen



Machining Simulation

Tool passes can be certainly checked before test cuttings by "3D Animation" or "Tool Tracking".



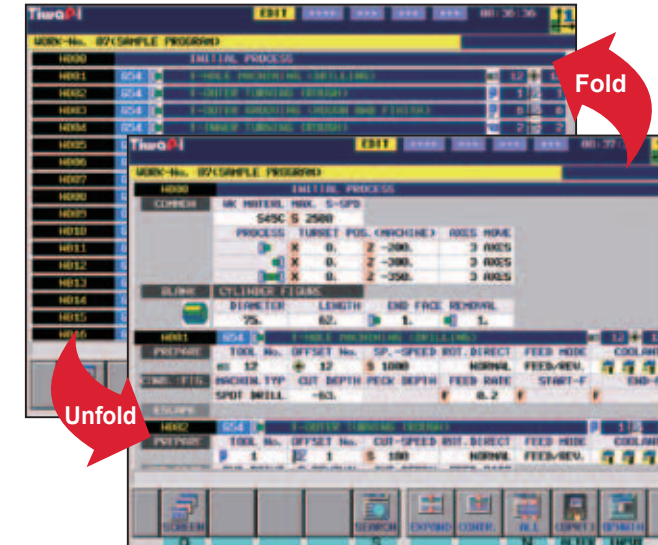
Feature of TiwaP-1

Easy to See

Takisawa's original "Process fold /unfold function" and lucid icons improve visibility.

Operator-friendly and easy to see screen is realized.

- ▼ 【Folder Display for all Process】
All the flows of Process can be checked on the screen.



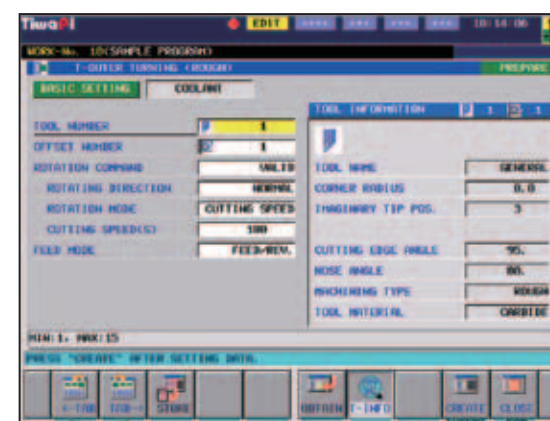
- ▲ 【Elaborate Process display function】
All processing data can be checked and seen on the screen.

Speed Up

When inserting a new processing data through interactivity, there are less items to enter due to Takisawa Standard Initial Value & Tooling/Material Data.



Example) When selecting "workpiece process" just press numeric key "5".



In case of new workpiece programming, the number of input items is decreased due to automatic cutting data setting.

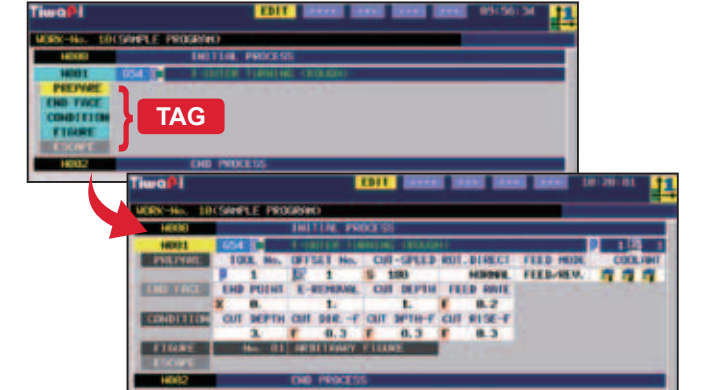
Easy to Use

During preparing Program, "Reliable Guide Function" provides support

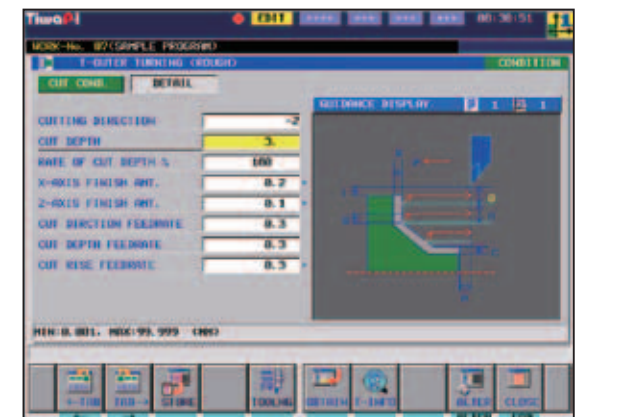
- ▶ "Reliable Guide Function"
The tag will be arranged in the optimum order automatically by interacting with the machine and selecting the required program.

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.

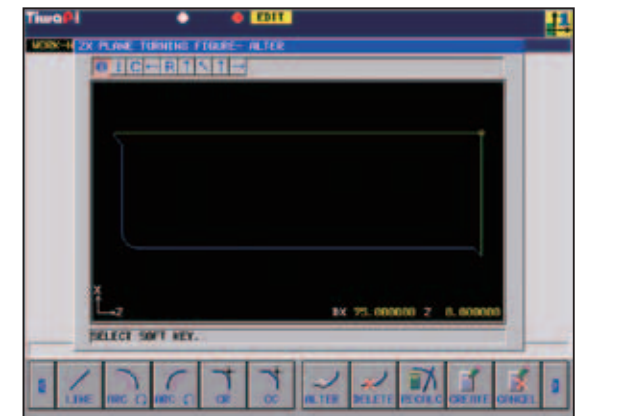
- ▼ By "Reliable Guide Function" Process Tag will be made automatically



- ▲ By just inserting Cutting data on each process Tag, the Process can be completed.



Suitable Cutting Data can be selected from reference Data Bank



A certain shaped window with a built-in intersection point that contains an automatic calculation.

Takisawa Standard Initial Value can be customized with your know-how.

- ▶ 【Tooling Data & Cutting Parameter】

Cutting parameters (cutting speed, feed rate, and depth of cut) are automatically selected and suggested to the operator by the combination of work piece and the material of inserted tool.

It is a great assist for set-up programs.

Machine Specifications

Items	Turret Type	TS-3000YS				TS-3000Y				TS-4000YS				TS-4000Y				TS-5000YS				TS-5000Y			
		T12 (STD.)	T10	T15	T20	T12 (STD.)	T10	T15	T20	T12 (STD.)	T10	T15	T20	T12 (STD.)	T10	T15	T20	T12 (STD.)	T10	T15	T20	T12 (STD.)	T10	T15	T20
Capability • Capacity	Max. Swing	600 23.62"				600 23.62"				600 23.62"				600 23.62"				600 23.62"				600 23.62"			
	Standard Turning Diameter	280 11.02"	340 13.39"	240 9.45"	193 7.60"	280 11.02"	340 13.39"	240 9.45"	193 7.60"	280 11.02"	340 13.39"	240 9.45"	193 7.60"	280 11.02"	340 13.39"	240 9.45"	193 7.60"	280 11.02"	340 13.39"	240 9.45"	193 7.60"	280 11.02"	340 13.39"	240 9.45"	193 7.60"
	Max. Turning Diameter	370 14.57"		315 12.40"	292 11.54"	370 14.57"		315 12.40"	292 11.54"	370 14.57"		315 12.40"	292 11.54"	370 14.57"		315 12.40"	292 11.54"	370 14.57"		315 12.40"	292 11.54"	370 14.57"		315 12.40"	292 11.54"
	Max. Turning Length	550 21.65"		535 21.06"	545 21.46"	550 21.65"		535 21.06"	545 21.46"	750 29.53"		735 28.94"	750 29.53"	750 29.53"		735 28.94"	750 29.53"	1300 51.18"		1285 50.59"	1300 51.18"	1300 51.18"		1285 50.59"	1300 51.18"
	Bar Capacity	67 *2 2.64"				67 *2 2.64"				82 *2 3.23"				82 *2 3.23"				102 82 4.02" 3.23"				102 82 4.02" 3.23"			
Travel	X-Axis Travel	267 10.51"				325 12.80"				267 10.51"				325 12.80"				267 10.51"				325 12.80"			
	Z-Axis Travel	630 24.80"				630 24.80"				840 33.07"				840 33.07"				1470 57.87"				1470 57.87"			
	Y-Axis Travel	-50 ~ +70 -1.97" ~ +2.76"				-50 ~ +70 -1.97" ~ +2.76"				-50 ~ +70 -1.97" ~ +2.76"				-50 ~ +70 -1.97" ~ +2.76"				-50 ~ +70 -1.97" ~ +2.76"				-50 ~ +70 -1.97" ~ +2.76"			
	A-Axis Travel	665 26.18"				665 26.18"				780 30.71"				780 30.71"				1480 58.26"				1480 58.26"			
Left Spindle	Spindle Speed	5000				5000				4200				4200				2500 4200				2500 4200			
	Spindle Nose	A2-6				A2-6				A2-8				A2-8				A2-11 A2-8				A2-11 A2-8			
	Through-Hole Diameter	77 3.03"				77 3.03"				94 3.70"				94 3.70"				111 94				111 94			
	Bearing Inside Diameter	120 4.72"				120 4.72"				140 5.51"				140 5.51"				160 140				160 140			
Right Spindle	Spindle Speed	6000				-				6000				-				5000 6000				-			
	Spindle Nose	F140				-				F140				-				A2-6 F140				-			
	Through-Hole Diameter	53 2.09"				-				53 2.09"				-				63 53				-			
	Bearing Inside Diameter	90 3.54"				-				90 3.54"				-				100 90				-			
Turret	Type of Turret	Side Holder Type (Bolted)		Side Holder Type (Bolted) / VDI	Side Holder Type (Bolted)	Side Holder Type (Bolted)		Side Holder Type (Bolted) / VDI	Side Holder Type (Bolted)	Side Holder Type (Bolted)		Side Holder Type (Bolted) / VDI	Side Holder Type (Bolted)	Side Holder Type (Bolted)		Side Holder Type (Bolted) / VDI	Side Holder Type (Bolted)	Side Holder Type (Bolted)		Side Holder Type (Bolted) / VDI	Side Holder Type (Bolted)	Side Holder Type (Bolted)		Side Holder Type (Bolted) / VDI	
	Number of Attachable Tools	12	10	15	20	12	10	15	20	12	10	15	20	12	10	15	20	12	10	15	20	12	10	15	20
	Turret Opposite Side	425 16.73"		460 18.11"	523 20.59"	425 16.73"		460 18.11"	523 20.59"	425 16.73"		460 18.11"	523 20.59"	425 16.73"		460 18.11"	523 20.59"	425 16.73"		460 18.11"	523 20.59"	425 16.73"		460 18.11"	523 20.59"
	Height of Square Tool Shank	25 1"		25 1"	20 0.75"	25 1"		25 1"	20 0.75"	25 1"		25 1"	20 0.75"	25 1"		25 1"	20 0.75"	25 1"		25 1"	20 0.75"	25 1"		25 1"	20 0.75"
	Diameter of Boring Bar Shank	L:50, R:32 L:2", R:1.25"		40 1.5"	L:32, R:25 L:1.25", R:1"	L:50, R:32 L:2", R:1.25"		40 1.5"	L:32, R:25 L:1.25", R:1"	L:50, R:32 L:2", R:1.25"		40 1.5"	L:32, R:25 L:1.25", R:1"	L:50, R:32 L:2", R:1.25"		40 1.5"	L:32, R:25 L:1.25", R:1"	L:50, R:32 L:2", R:1.25"		40 1.5"	L:32, R:25 L:1.25", R:1"	L:50, R:32 L:2", R:1.25"		40 1.5"	L:32, R:25 L:1.25", R:1"
Rotary Tool	Number of Rotary Tools	12	10	15	20	12	10	15	20	12	10	15	20	12	10	15	20	12	10	15	20	12	10	15	20
	Spindle Speed	6000				6000				6000				6000				6000				6000			
	Max. Tool Shank Diameter	26 1"		20 0.75"	26 1"		20 0.75"	26 1"		20 0.75"	26 1"		20 0.75"	26 1"		20 0.75"	26 1"		20 0.75"	26 1"		20 0.75"	26 1"		20 0.75"
	Tool Spindle Taper Hole	AR40		AR32	AR40		AR32	AR40		AR32	AR40		AR32	AR40		AR32	AR40		AR32	AR40		AR32	AR40		AR32
	Tool Spindle Bearing Inside Diameter	45 1.77"		35 1.38"	45 1.77"		35 1.38"	45 1.77"		35 1.38"	45 1.77"		35 1.38"	45 1.77"		35 1.38"	45 1.77"		35 1.38"	45 1.77"		35 1.38"	45 1.77"		35 1.38"
Feedrate	Rapid Traverse Rate (X/Z/Y/A)	30/30/10/30 1181.10"/1181.10"/393.70"/1181.10"				30/30/10/13 1181.10"/1181.10"/393.70"/511.81"				30/30/10/30 1181.10"/1181.10"/393.70"/1181.10"				30/30/10/13 1181.10"/1181.10"/393.70"/511.81"				30/30/10/13 1181.10"/1181.10"/393.70"/511.81"				30/30/10/13 1181.10"/1181.10"/393.70"/511.81"			
Tailstock	Quill Taper	-				Rolling Center (MT. No.4)				-				Rolling Center (MT. No.5)				-				Rolling Center (MT. No.6) Rolling Center (MT. No.5)			
Motors	Spindle Motor (30 min/continuous)	15/11 20/14.7		15/11 20/14.7		22/15 29.3/20		22/15 29.3/20		22/15 29.3/20		22/15 29.3/20		22/15 29.3/20		22/15 29.3/20		22/15 29.3/20		22/15 29.3/20		22/15 29.3/20		22/15 29.3/20	
	Right Spindle Motor (30 min/continuous)	11/7.5 14.7/10		-		11/7.5 14.7/10		-		11/7.5 14.7/10		-		11/7.5 14.7/10		-		11/7.5 14.7/10		-		11/7.5 14.7/10		-	
	Rotary Tool Motor (S3 25%/continuous)	7.5/3.7 10/4.9		7.5/3.7 10/4.9		7.5/3.7 10/4.9		7.5/3.7 10/4.9		7.5/3.7 10/4.9		7.5/3.7 10/4.9		7.5/3.7 10/4.9		7.5/3.7 10/4.9		7.5/3.7 10/4.9		7.5/3.7 10/4.9		7.5/3.7 10/4.9		7.5/3.7 10/4.9	
	Feed Axis Motor (X/Z/Y/A)	3.0/3.0/3.0/2.5 4/4/4/3.3		3.0/3.0/3.0/2.5 4/4/4/3.3		3.0/3.0/3.0/2.5 4/4/4/3.3		3.0/3.0/3.0/2.5 4/4/4/3.3		3.0/3.0/3.0/2.5 4/4/4/3.3		3.0/3.0/3.0/2.5 4/4/4/3.3		3.0/3.0/3.0/2.5 4/4/4/3.3		3.0/3.0/3.0/2.5 4/4/4/3.3		3.0/3.0/3.0/2.5 4/4/4/3.3		3.0/3.0/3.0/2.5 4/4/4/3.3		3.0/3.0/3.0/2.5 4/4/4/3.3		3.0/3.0/3.0/2.5 4/4/4/3.3	
	Hydraulic Pump Motor	1.5 2		1.5 2		1.5 2		1.5 2		1.5 2		1.5 2		1.5 2		1.5 2		1.5 2		1.5 2		1.5 2		1.5 2	
	Coolant Pump Motor	0.52 0.7		0.52 0.7		0.52 0.7		0.52 0.7		0.52 0.7		0.52 0.7		0.52 0.7		0.52 0.7		0.52 0.7		0.52 0.7		0.52 0.7		0.52 0.7	
Required Power	Electric Power	29.0				29.0				33				33				33.0				33.0			
Tank Capacity	Coolant Tank	320 84.48		320 84.48		370 97.68		370 97.68		370 97.68		370 97.68		470		470		470		470		470		470	
Machine Size	Machine Height	2300 90.55"				2300 90.55"				2300 90.55"				2300 90.55"				2300 90.55"				2300 90.55"			
	Height from Floor to Spindle Centerline	1140 44.88"				1140 44.88"				1140 44.88"				1140 44.88"				1140 44.88"				1140 44.88"			
	Required Floor Space	2800 × 2140 *1 110.24" × 84.58"				2800 × 2114 *1 110.24" × 83.23"				3000 × 2140 *1 118.11" × 84.58"				3000 × 2114 *1 118.11" × 83.23"				4105 × 2255 *1 161.61" × 88.78"				4105 × 2255 *1 161.61" × 88.78"			
	Machine Weight	6200 13640		6000 13200		6700 14740		6500 14300		8700 19140		8500 18700		8500 18700		8500 18700		8500 18700		8500 18700		8500 18700		8500 18700	

Red is optional.
 *1) Without Oil Pan and Chip Conveyor
 *2) Please note the bar capacity follows types of chucks and cylinders.

Other Main Specifications • Accessories

Items	YS	Y
Spindle Cooler	●	●
Tool Setter	Main Spindle (Turn Type)	● (Turn Type)
	Sub Spindle (Removable Type)	—
Chuck Airblow	Sub Spindle	●
Parts Catcher *7	Main Spindle	○
Sub Spindle Work Extruder (Spring Type) *1 *7		●
NC Servo Tailstock *5		●
Rolling Center		○
OD Tool Holder (for Main Spindle)	● (2 Piece)	● (4 Piece)
Double OD Tool Holder (for Main/Sub Spindle)	● (2 Piece)	—
Boring Bar / Drill Holder	Includes 1 piece of self-boring	● (4 Piece)
		● (4 Piece)
Boring Bar Bush	● (4 Piece)	● (4 Piece)
Cut-Off Holder	● (1 Piece)	—
Front Door Interlock	●	●
Facing Holder	○	● (1 Piece)
Chuck Auto Open/Close M-Function	● (L/R Each 1)	● (L 1)
Chuck Open/Close Footswitch	●	●
Coolant Pump	520W : 1 Unit	●
Lubricant Collection Box *4		●
Lighting Apparatus	LED	●
Hydraulic Pressure Switch		●
Auto Power-Off System		●
Air Purge (L/R Spindle, Turret)		●
Tiwap-1 *6		●
Instruction Manual		●

Items	YS	Y
Bar Feeder Interface	○	○
Filler Tube	○	○
Work Pusher	Sub Spindle	○
Rotary Tool Holder for X-Axis Milling ($\phi 26, 6000\text{min}^{-1}$)	○	○
Rotary Tool Holder for X-Axis Face Mill (FMC22, 3500min^{-1})	○	○
Rotary Tool Holder for Z-Axis Milling ($\phi 26, 6000\text{min}^{-1}$)	○	○
Collet	○	○
Hollow Hydraulic Chuck *3	Main Spindle	○
	Sub Spindle	○
Hydraulic Chuck Cylinder *3	Main Spindle	○
	Sub Spindle	○
Spindle Through Coolant	Main Spindle	○
Chip Conveyor *2	Rear *7/Side Discharge	○
Chip Bucket		○
Signal Tower Light	3-Color, Lighting	○
Auto Door	Left Open	○
Counter		○
19" Touch Panel Monitor		○

● : Standard ○ : Optional — : None

* For other optional accessories, please contact us.

*1) Installation is allowed only when hollow type hydraulic chuck/cylinder are provided.

*2) Rear or side discharge chip conveyor must be selected and installed.

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

By default, the following hydraulic chuck/cylinder are provided.

	TS-3000		TS-4000		TS-5000	
	Main Spindle	Sub Spindle	Main Spindle	Sub Spindle	Main Spindle	Main Spindle
Hollow Hydraulic Chuck	BB-208	B-206	BB-210	B-206	BB-212	B-208
Hydraulic Chuck Cylinder	SS1666K	SIN-S100	SS1881K	SIN-S100	SS2110K	125SIN-S

*4) 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.

*5) With ejecting nut.

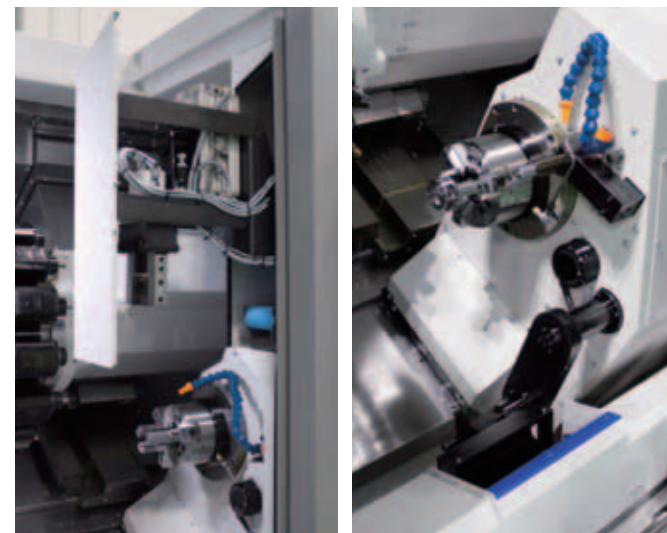
*6) Option in U.S.A.

*7) For TS-4000, TS-3000.

Special Specification Example

Work Discharging Unloader

Discharging Partscatcher



Network

The TAKISAWA Technology and Network Services the World.

Please feel free to contact us to your nearest sales representatives.

Overseas Networks



Sales Department Overseas Sales Section (TAKISAWA MACHINE TOOL CO., LTD.)

983 Natsukawa Kita-ku Okayama 701-0164 JAPAN
TEL : 086-293-1500 FAX : 086-293-5799

THAILAND	Takisawa (Thailand) Co., Ltd. Telephone : (66)2726-1530-2 Fax : (66)2726-1533
INDONESIA	PT. Takisawa Indonesia Telephone : (62)21-45852466 Fax : (62)21-45852467
INDIA	SAP Takisawa Machine Tools Private Ltd. Takisawa Machine Tool India Liaison Office Telephone : (91)80-26662386 Fax : (91)80-26662392

CHINA	Takisawa (Shanghai) Co., Ltd. Takisawa Machine Tool Shanghai Representative Office 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)2056-2598-15 Fax : (49)2056-5994-79

Domestic Networks

Sales Department Domestic Sales Section (TAKISAWA MACHINE TOOL CO., LTD.)

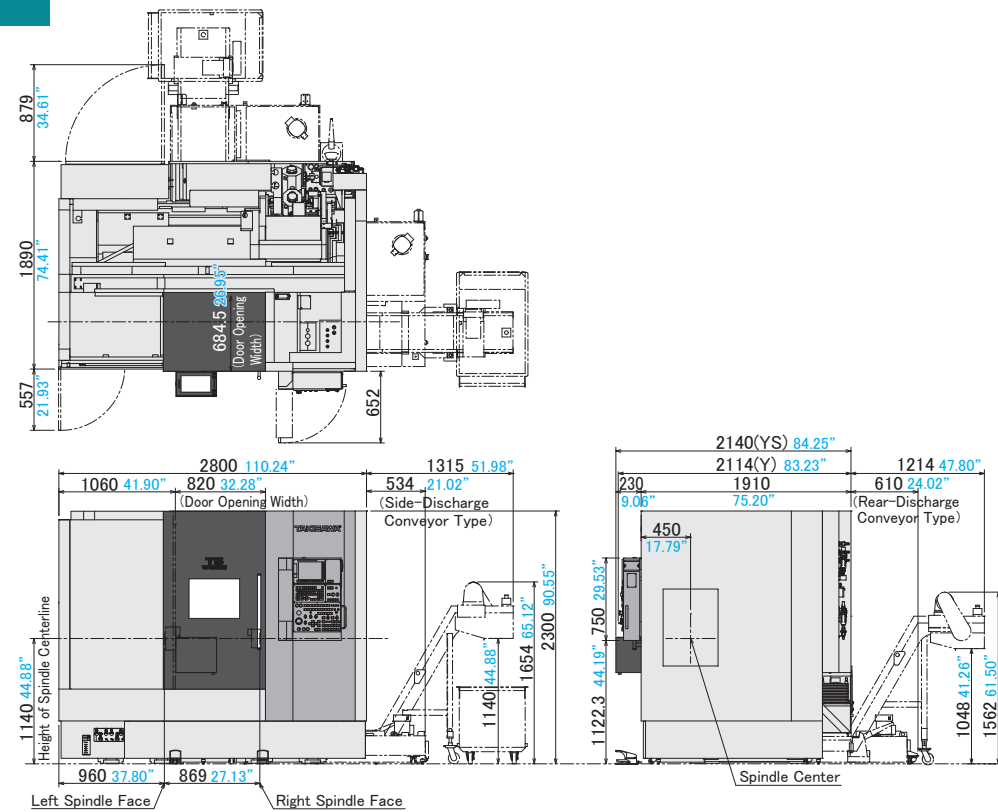
983 Natsukawa Kita-ku Okayama 701-0164 JAPAN
TEL : 086-293-1600 FAX : 086-293-1509

Yamagata Office	TEL : 023-625-0731 FAX : 023-625-0732
Kitakantou Office	TEL : 027-251-7417 FAX : 027-251-7437
Kantou Office	TEL : 048-421-8085 FAX : 048-421-0868
Nishikantou Office	TEL : 046-222-7763 FAX : 046-222-7764
Nagoya Office	TEL : 052-351-3291 FAX : 052-369-1002
Hamamatsu Office	TEL : 053-439-0131 FAX : 053-439-0141
Osaka Office	TEL : 072-965-4671 FAX : 072-965-4676
Okayama Office	TEL : 086-293-1520 FAX : 086-293-1509
Hiroshima Office	TEL : 082-282-7815 FAX : 082-282-7816
Fukuoka Office	TEL : 092-573-7201 FAX : 092-573-7237
Niigata Office	TEL : 0258-25-4450 FAX : 0258-22-7680
Nagano Office	TEL : 0263-53-5866 FAX : 0263-53-5870

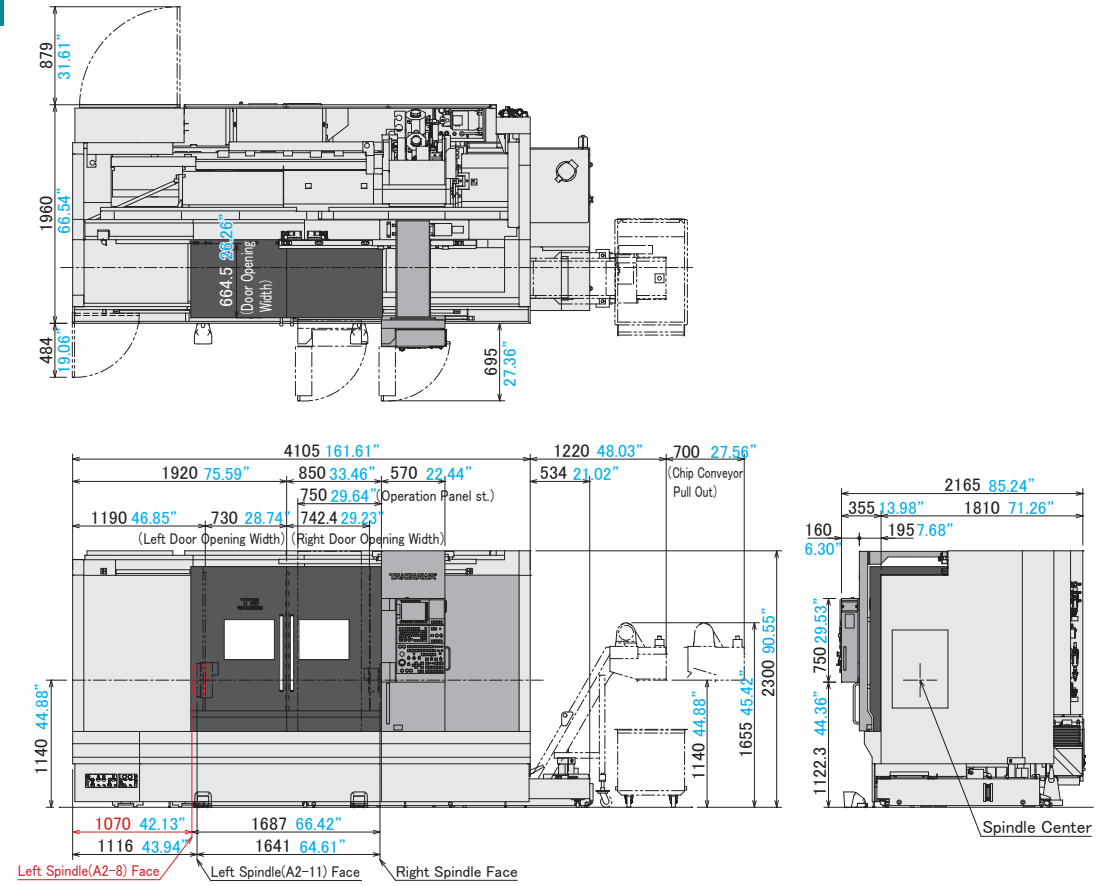


Machine Dimensions Unit : mm inch

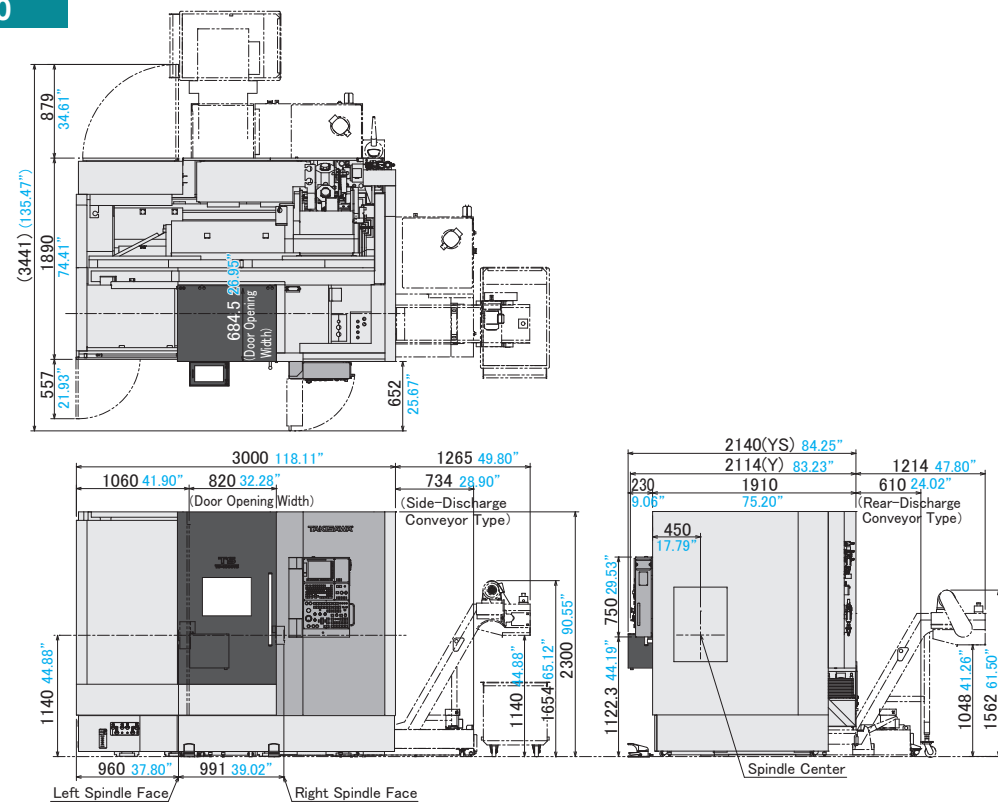
TS-3000



TS-5000



TS-4000



TS-5000Y



*Photo includes options.
(19" Touch Panel Monitor, Chip Conveyor, Signal Tower Light)

TS-3000/TS-4000

NC Unit Specifications

FANUC : 32I-B

※ Please contact our sales persons for further information.

Composition

Specifications·Contents	YS	Y
[NC Unit]		
Number of Control Axes	6	5
Simultaneous Number of Control Axes		4
[Operation Panel]		
Screen (10.4" color LCD/MDI)		●
[Software]		
Tiwap-1		● *17
RAKU-RAKU Monitor 3		○
Measurement Monitor 3 *1		◎
[Safety Devices]		
Front Door Interlock		●
Front Door Locking Mechanism		○
Dual Check Safety		CE
Control Panel Breaker with Tripper		●

Main Function List

Specifications·Contents	YS	Y
[Controlled Axes]		
Least Input Increment *2	●	●
Maximum Programmable Dimension (±999999.999)	●	●
Cs Contour Control	● L + R	●
Least Input Increment C *3	○	○
Inch/Metric Selection	●	●
Interlock	●	●
Machine Lock	○	○
Emergency Stop	●	●
Stored Stroke Check 1	●	●
Stored Stroke Check 2, 3 *4	○	○
Stroke Limit Check Before Movement	○	○
Chuck and Tail Stock Barrier *5	○	○
Mirror Image (Each Axis)	▲	▲
Follow-up	●	●
Chamfering ON/OFF	●	●
Overload Detection *6	○	○
Position Switch	◎	◎
[Operation]		
Auto Run (Memory)	●	●
MDI Run	●	●
DNC Run with Memory Card *7 *8	◎	◎
Program Number Search	●	●
Sequence Number Search	●	●
Sequence Number Collation and Stop	○	○
Program Restart	◎	◎
Manual Interrupt·Restore	○	○
Wrong Operation Preventive	▲	▲
Buffer Register	●	●
Dry Run	●	●
Single Block	●	●
Jog Feed	●	●

Specifications·Contents	YS	Y
Manual Reference Point Return	●	●
Dogless Reference Point Setting	●	●
Manual Handle Feed, 1 Unit	●	●
Manual Handle Wedge	◎	◎
Jog and Handle Simultaneous Mode	▲	▲
[Interpolating Functions]		
Nano Interpolation	●	●
Positioning (G00)	●	●
Linear Interpolation (G01)	●	●
Circular Interpolation (G02/G03)	●	●
Dwell (G04)	●	●
Polar Coordinate Interpolation	●	●
Cylindrical Interpolation	●	●
Helical Interpolation	●	●
Thread Cutting, Synchronous Cutting	●	●
Multiple Thread Cutting	●	●
Continuous Thread Cutting	●	●
Variable Lead Thread Cutting	○	○
Circular Threading	○	○
Polygon Machining Between Spindles	○	○
Skip (G31)	◎	◎
Torque Limit Skip	●	●
Reference Point Return (G28)	●	●
Reference Point Return Check (G27)	●	●
2nd Reference Point Return (G30)	●	●
3rd, 4th Reference Point Return	○	○
[Feed Functions]		
Rapid Traverse Override (0,F0,10%,25%,50%,100%)	●	●
Feed Per Minute	●	●
Feed Per Revolution	●	●
Constant Tangential Speed Control	●	●
Cutting Feedrate Clamp	●	●
Automatic Acceleration/Deceleration	●	●
Rapid Traverse Bell-Shaped Accel/Decel	●	●
Bell-Shaped Accel/Decel After Feedrate Interpolation	○	○
Feedrate Override (21 Steps)	●	●
Jog Override (21 Steps)	●	●
Override Cancel	●	●
Manual Feed per Revolution	▲	▲
Linear Accel/Decel After Feedrate Interpolation	●	●
[Program Input]		
Program Code	●	●
Label Skip	●	●
Parity Check	●	●
Control In/Out	●	●
Optional Block Skip, 1 Piece	●	●
Optional Block Skip (2 to 9 Pieces)	◎	◎
Program Number O4 Digits	●	●
Program File Name 32 Characters	●	●
Sequence Number N8 Digits	●	●
Absolute/Incremental Command	●	●
Decimal Point Input/Pocket Calculator Type Decimal Point Input	●	●
Diameter/Radius Programming	●	●
Rotary Axis Designation	●	●
Rotary Axis Rollover	●	●
Coordinate System Setting (G50)	●	●
Auto Coordinate System Setting	○	○
Workpiece Coordinate System	Tiwap *17	○
Workpiece Coordinate System Preset	Tiwap *17	○
Drawing Dimension Direct Input *9	○	○
G-Code System A	●	●
G-Code System B/C *10	○	○
Chamfering/Corner R Programming *11	●	●
Programmable Data Input (G10)	●	●
Sub Program Call (10 Levels)	●	●
Custom Macro	●	●
Additional Custom Macro Common Variables	○	○
Single Canned Cycle	●	●
Combined Canned Cycle	●	●
Combined Canned Cycle II	●	●
Drilling Canned Cycle	●	●
Arc Radius Programming	●	●

Specifications·Contents	YS	Y
Auto Corner Override	○	○
Workpiece Coordinate System Shift	●	●
Workpiece Coordinate System Shift Direct Input	●	●
Program Coordinate System Switching Function	●	-
[Miscellaneous Functions/Spindle Functions]		
M Function (M8 Digits)	●	●
Second Miscellaneous Function (B8 Digits)	◎	◎
High-Speed MSTB Interface	●	●
Miscellaneous Functions Instructions (3 Pieces)	●	●
Spindle Functions (S5 Digits)	●	●
Constant Surface Speed Control	●	●
Spindle Override	●	●
Number of Spindle Controls	3	2
Extended Spindle Orientation (Max. 3)	●	●
Synchronous Spindle Control	●	-
Simple Spindle Synchronous Control *12	●	-
Multi Spindle Controls	●	●
Rigid Tap (Spindle Center)	●	●
Rigid Tap (Rotary Tool)	●	●
[Tool Functions/Tool Offset Functions]		
T Function (T2+2 Digits)	●	●
T Function (T2+3 Digits)	○	○
Tool Offsets, 64 Pieces	●	●
Tool Offsets, 99 Pieces	○	○
Tool Offsets, 200 Pieces	○	○
Tool Offsets, 400 Pieces	○	○
Tool Position Offset	●	●
Y-Axis Offset	●	●
Tool Diameter/Nose R Compensation	●	●
Tool Geometry/Wear Compensation	●	●
Tool Offset Counter Input	●	●
Tool Offset Measured Value Direct Input	●	●
Tool Offset Measured Value Direct Input B *13	●	●
Tool Life Management *14	○	○
Tool Offset Memory Switching Function	●	-
[Accuracy Offset Functions]		
Backlash Compensation	▲	▲
Backlash Compensation by Rapid Traverse / Feedrate	▲	▲
Smooth Backlash Compensation	▲	▲
[Editing]		
Part Program Memory Capacity 128Kbyte	●	●
Part Program Memory Capacity 256Kbyte	○	○
Part Program Memory Capacity 512Kbyte	○	○
Part Program Memory Capacity 1Mbyte	Tiwap *17	Tiwap *17
Part Program Memory Capacity 2Mbyte	○	○
Registrable Programs, Extended 1	●	●
Program Editing	●	●
Program Protection	●	●
Extended Program Editing	●	●
Machining Time Stamp	○	○
Multiple-Programs Simultaneous Editing	●	●
[Setting/Display]		
Status Display	●	●
Clock Function	●	●
Current Position Display	●	●
Program Display (32 Characters)	●	●
Parameter Setting and Display	●	●
Alarm Display	●	●
Alarm Log Display	●	●
Operation Log Display	▲	▲
Run Hours and Parts Count Display	●	●
Actual Speed Display	●	●
Actual Spindle Speed and T Code Display	●	●
Servo Adjustment Screen	●	●
Maintenance Information Screen	●	●
Software Operator's Panel	◎	◎
Data Protection Key, 1 Kind	●	●
Screen Clear	●	●
System Configuration Screen	●	●
Help Function	●	●
Self Diagnostic Function	●	●
Scheduled Maintenance Screen	●	●
[Display Languages]		
English *15	●	●

Specifications·Contents	YS	Y
Japanese (Kanji) *15	▲	▲
Other Language *15 *16	○	○
Display Language Dynamic Switching	▲	▲
[Data I/O]		
RS-232C Interface for 1ch	○	○
External Tool Offset	◎	◎
External Message	●	●
Memory Card I/O	●	●
USB Memory I/O	●	●
Screen Hard Copy	●	●
Automatic Data Backup (1 Piece)	●	●
[Other]		
Status Output Signal	●	●

● : Standard ○ : Optional ◎ : Special - : None
▲ : 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) IS-C 0.0001mm 0.001deg 0.00001inch
- *4) Not coexistent with chuck tailstock barrier.
- *5) Not coexistent with Stored Stroke Check 2, 3.
- *6) Required when RAKU-RAKU Monitor 3 is used.
- *7) DNC run mode transfer switch is required.
- *8) CF card and adaptor is required.
- *9) Not coexistent with chamfering/corner R.
- *10) Cannot be used on Tiwap-1.
- *11) Not coexistent with drawing dimension direct input.
- *12) Included in Synchronous Spindle Control.
- *13) Tool setter is required.
- *14) Cannot be used when RAKU-RAKU Monitor 3 is installed.
- *15) Cannot be simultaneous display the other languages.
- *16) German, French, Spanish, Italian, Chinese (traditional), Chinese (simplified), Korean, Portuguese, Dutch, Danish, Swedish, Hungarian, Czech, Polish, Russian, Turkish, Romanian, Bulgarian
- *17) U.S.A. spec does not have Tiwap-1 as standard. Carried with Tiwap-1.

TS-Series

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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.



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■ Overseas Network

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