

Opposed Twin-Spindle CNC Lathe

TCY Series

Next Generation Standard for Small Parts Machining



TAKISAWA®



Process Integration for the Combination Machining of Small Precision Components

A superior grade machine, the TAKISAWA TCY incorporates a variety of, "EASY TO USE" machining.

Features for improving the production rate of small high precision components.



**TCY-160
TCY-200**



L5



L3

TCY-160/TCY-200

The standard model "YS" is equipped with a "Y-Axis" and subspindle enabling the machining of complicated profiles and this also enables facing and back machining when utilising the subspindle. This machine is easily integrated into state of the art gantry loaded and bar feeder systems utilising TAKISAWA's extensive knowledge of full turnkey packages and extended unmanned production solutions. The NC system supports the interactive programming system "TiwaP-1" allowing programmes created by this system to control all the machining directly reducing lead times. The "TCY" series offers effective solutions to meet global manufacturing requirements, proven by excellent performance:

Environment Friendly



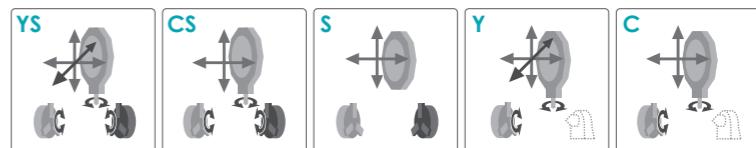
- Highly efficient latest technology servo motors reducing power consumption.
 - Automatic worklight off function used only when operator intervention is required.
 - Control panel cooling system designed for power saving by utilising the natural heat dissipation.
 - With the coolant pump only running when required for use in program un necessary power consumption is avoided.
 - The built in oil and coolant separator extends the coolant properties and coolant life.
- TCY concerns for the environment.

■ Composition

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

● : Standard
○ : Optional
— : None

*1) NC Servo Tailstock



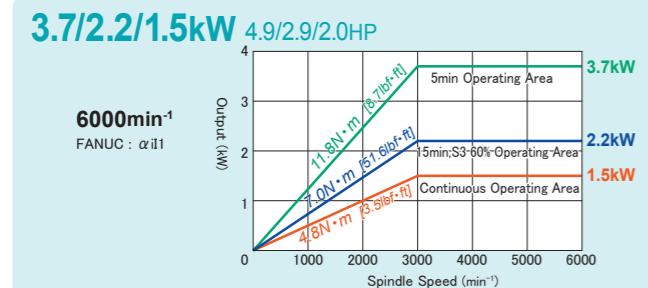
TCY-160/TCY-200

Powerful High Performance Milling Turret

The 12 station turret allows for the milling holders to be mounted in all stations. Each holder is clamped and rigidly bolted in position on the turret to ensure the effective processing of the component by using either milling, drilling, or turning tools.

Rotary Tool Spindle Speed
6000min⁻¹

Height of Square Tool Shank ··· 25mm
Diameter of Boring Bar Shank ··· 32mm
Tool Spindle Taper Hole ··· AR20
Max. Tool Shank Diameter ··· 13mm

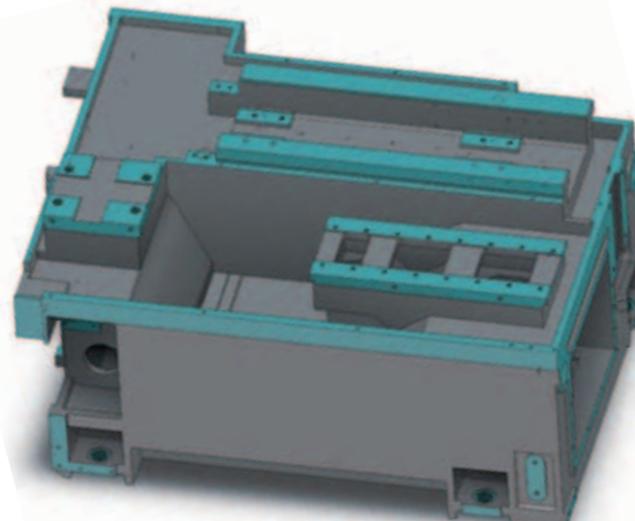
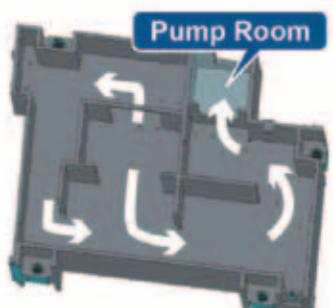


Thermal Balance

This cast machine bed is designed with rigid solid box slideways and incorporates a coolant tank within its base with interconnecting passages allowing the coolant to circulate dissipating any heat and restricting thermal displacement.

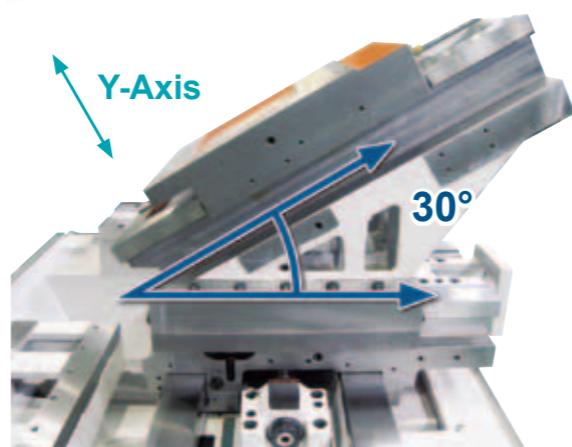
Coolant Tank

L3 200L
L5 250L



Y-Axis

The machine is designed with a low centre of gravity incorporating a 30 degree Y-Axis slideway. This solid box slideway construction ensures maximum durability and rigidity and the "designed in" optimum balanced slideway configuration ensures for high grade machining accuracy.



Tailstock

The high performance servo motor driving the tailstock ensures that the designated Thrust 1.0 kN - 4.0 kN can be applied and changed in programm to suit the component being machined.

Tailstock Travel

L3 380mm 15"
L5 580mm 22.8"

Quill Taper

TCY-160 MT.3
TCY-200 MT.4

Thrust

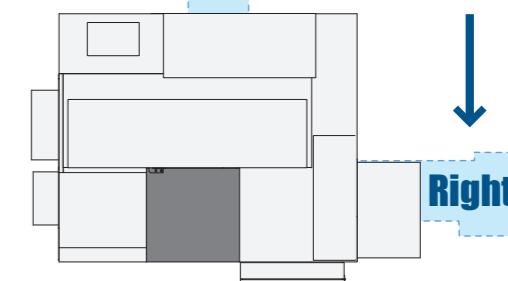
1.0kN ~ 4.0kN*

*) Thrust shows a setting range.
Actually, it must be adjusted according to the workpiece.



Rear

Selectable according to the machine layout.



Chip Conveyor

Side entry draw, or rear entry draw chip conveyors for ensuring chip management flexibility.
Chip conveyors to suit the customers machine layout and the machine working environment.

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.



Contribution to Cost Reduction

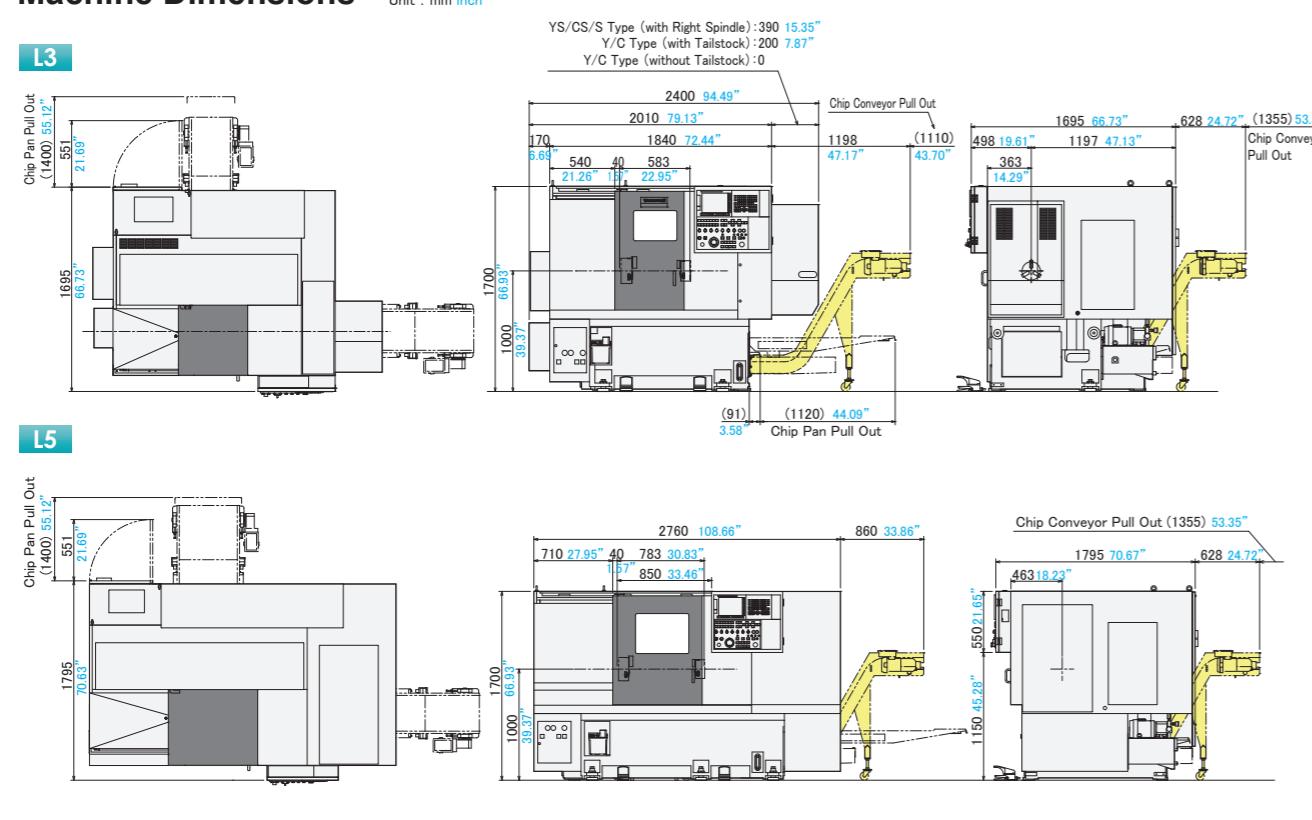


- Chuck Size**
6in
- Max. Turning Dia.**
Φ 220mm 8.66"
- Max. Turning Length**
L3 291mm 11.46"
L5 491mm 19.33"
- Bar Capacity**
Φ 42mm 1.65"

Photo is TCY-160YSL3 "TiwaP-I Type".

Machine Dimensions

Unit : mm inch



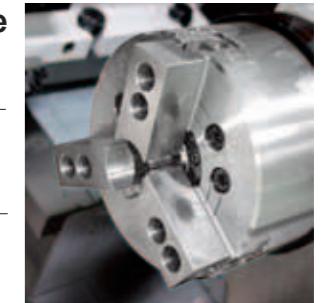
Spindle

This FANUC driven high performance spindle, with an inner bearing diameter of 90mm offers excellent rigid support for the combined heavy duty milling and turning forces found when processing a variety of component materials. The spindle has a maximum turning diameter of 220mm dia and a bar machining capacity of 42mm.



6" Left Spindle
Main (Φ140 Flat)

Spindle Motor
5.5/3.7kW
Optional : 7.5/5.5kW
Spindle Speed
4000min⁻¹
Optional : 6000min⁻¹



6" Right Spindle
Sub (Φ140 Flat)

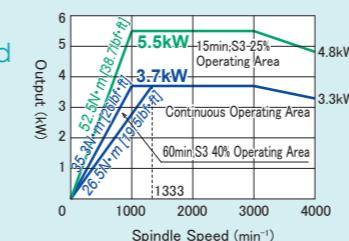
Spindle Motor
3.7/2.2kW
Spindle Speed
4000min⁻¹
Optional : 6000min⁻¹

The right spindle on YS/CS models is furnished with Cs control to carry out the combined machining processing of the component back face.

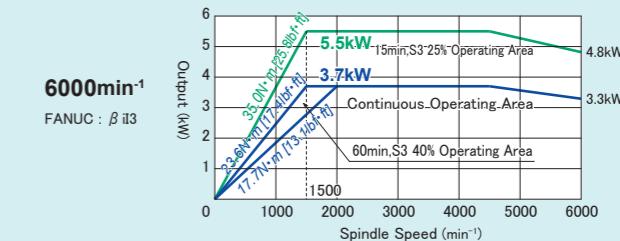
Left Spindle

5.5/3.7kW 7.3/4.9HP

Standard
4000min⁻¹
FANUC : β il3

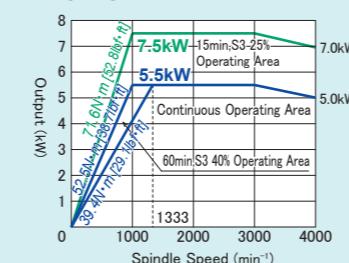


6000min⁻¹
FANUC : β il3

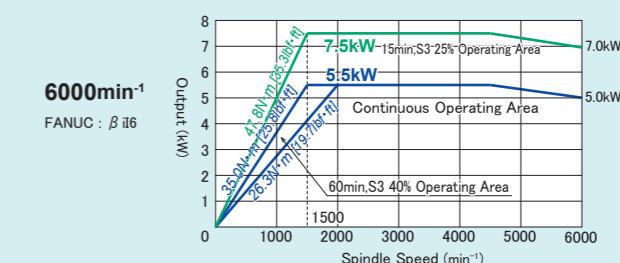


7.5/5.7kW 10/7.3HP

4000min⁻¹
FANUC : β il6



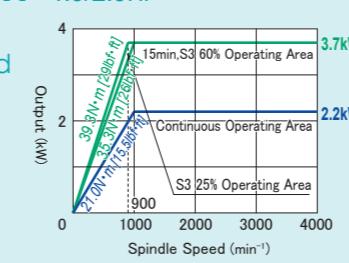
6000min⁻¹
FANUC : β il6



Right Spindle

3.7/2.2kW 4.9/2.9HP

Standard
4000min⁻¹
FANUC : α il2



6000min⁻¹
FANUC : α il2

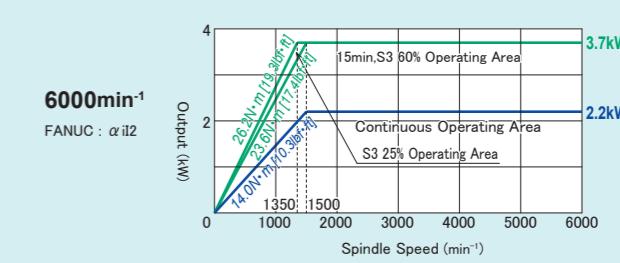
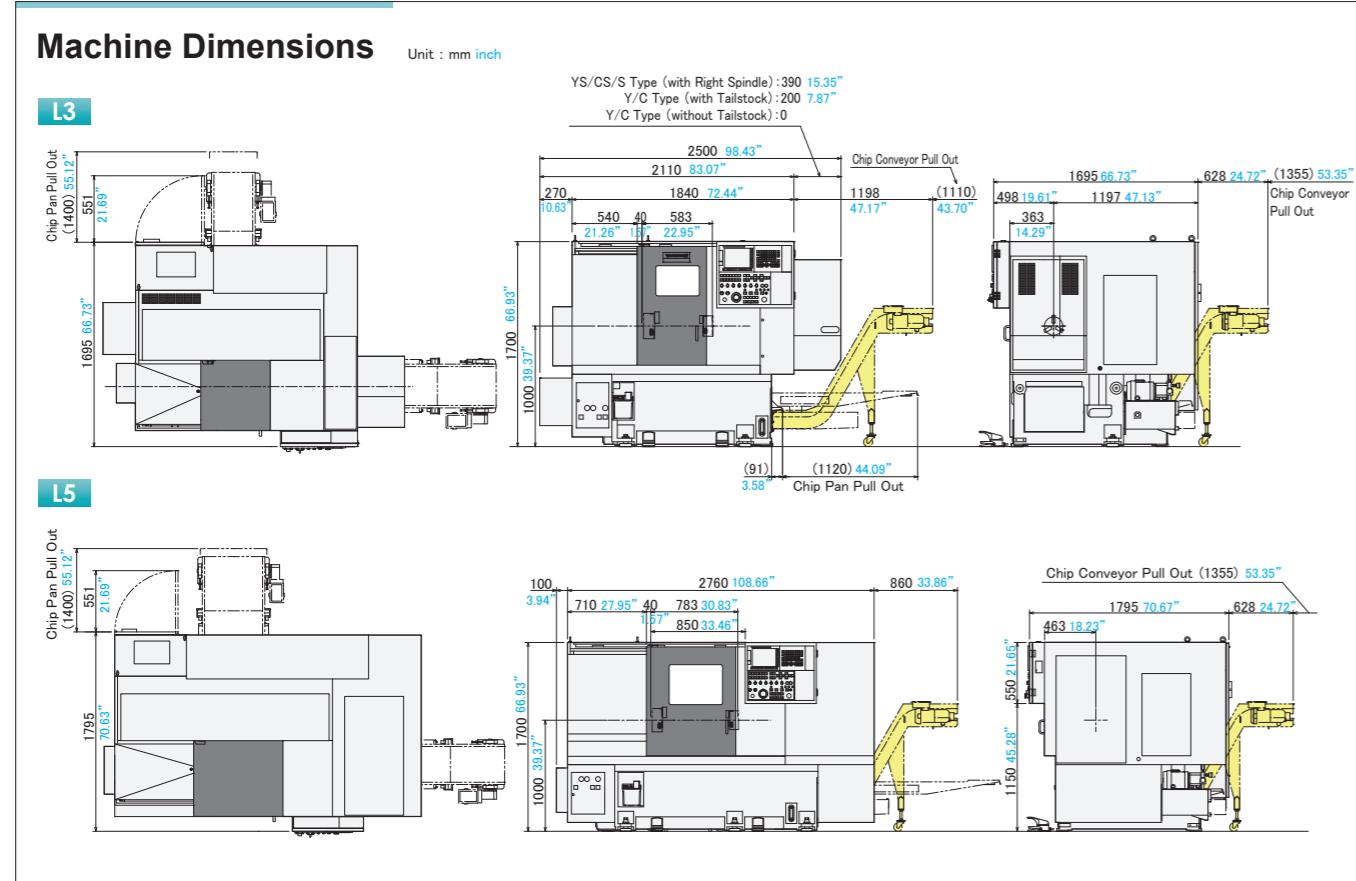




Photo is TCY-200YSL5 "TiwaP-1 Type".

- Chuck Size**
8in
- Max. Turning Dia.**
 $\phi 220\text{mm}$ 8.46"
- Max. Turning Length**
L3 254mm 10"
L5 454mm 17.87"
- Bar Capacity**
 $\phi 51\text{mm}$ 2.01"



8in

Max. Turning Dia.
 $\phi 220\text{mm}$ 8.46"Max. Turning Length
L3 254mm 10"
L5 454mm 17.87"Bar Capacity
 $\phi 51\text{mm}$ 2.01"

Spindle

This FANUC driven high performance spindle, with an inner bearing diameter of 100mm offers excellent rigid support for the combined heavy duty milling and turning forces found when processing a variety of components the spindle has a maximum turning diameter of 220mm dia and a bar capacity of 51mm

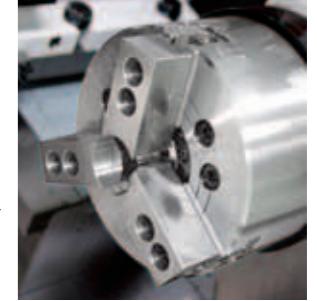


8" Left Spindle

Main (A2-6)
Spindle Motor
7.5/5.5kW
Optional : 11/7.5kW
Spindle Speed
3200min⁻¹
Optional : 5000min⁻¹

6" Right Spindle

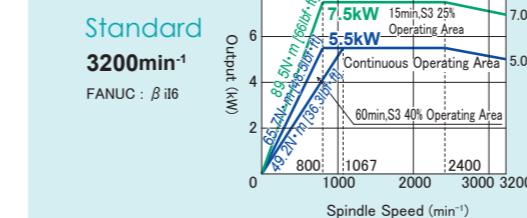
Sub ($\phi 140$ Flat)
Spindle Motor
3.7/2.2kW
Spindle Speed
4000min⁻¹
Optional : 6000min⁻¹



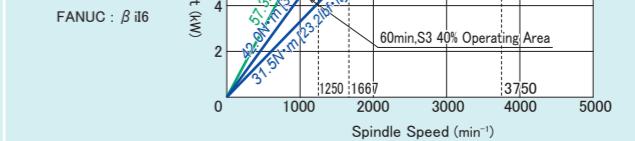
The right spindle on YS/CS models is furnished with Cs control to carry out the combined machining processing of the component back face.

Left Spindle

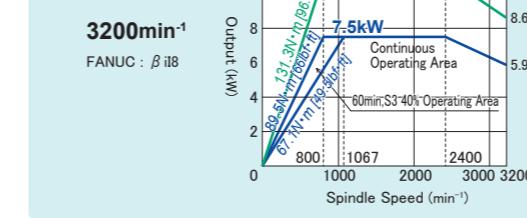
7.5/5.5kW 10/7.3HP



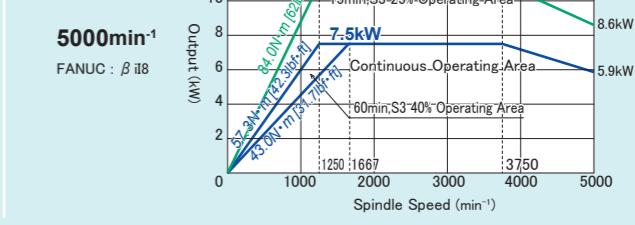
5000min⁻¹



11/7.5kW 14.7/10HP

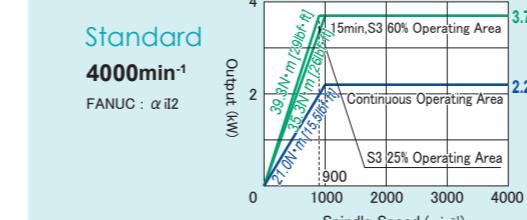


5000min⁻¹

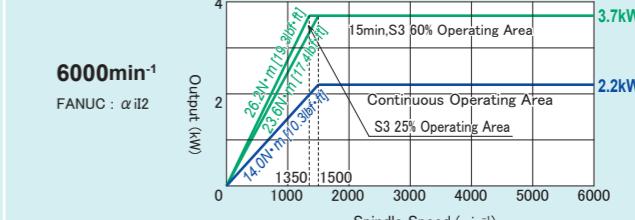


Right Spindle

3.7/2.2kW 4.9/2.9HP



6000min⁻¹



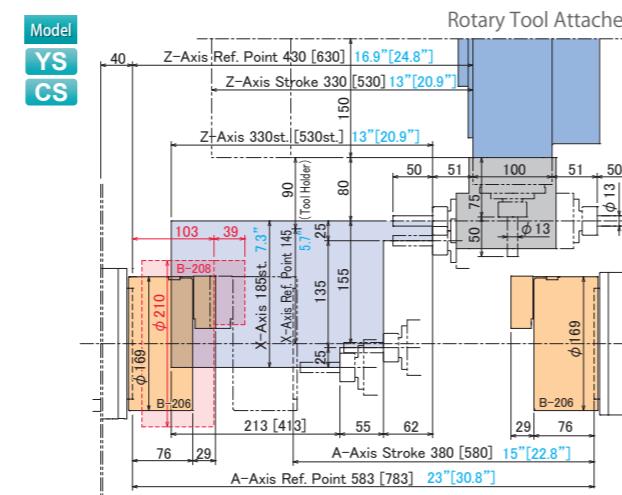
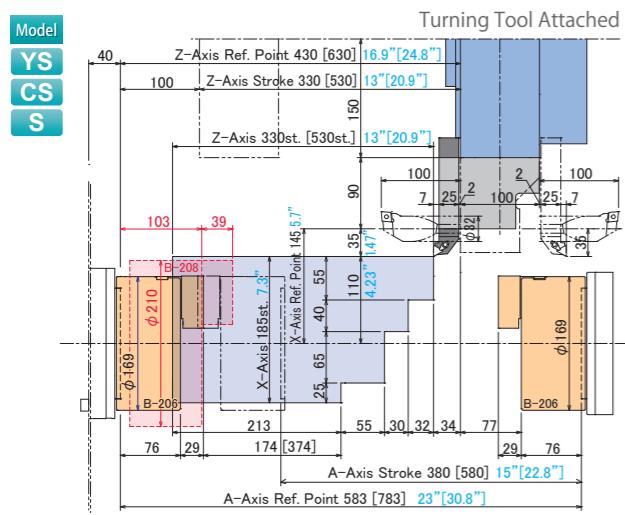
TCY-160/TCY-200

Travel Range

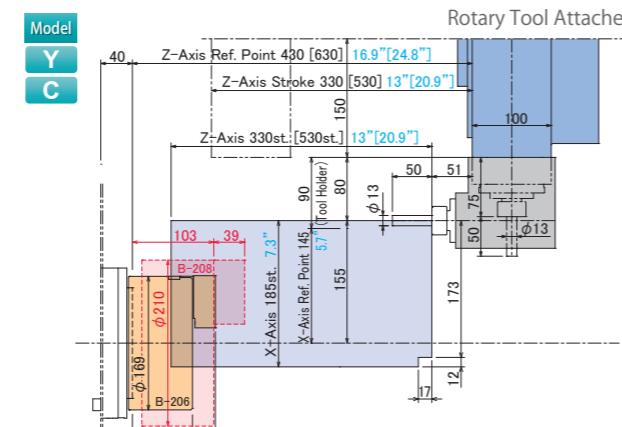
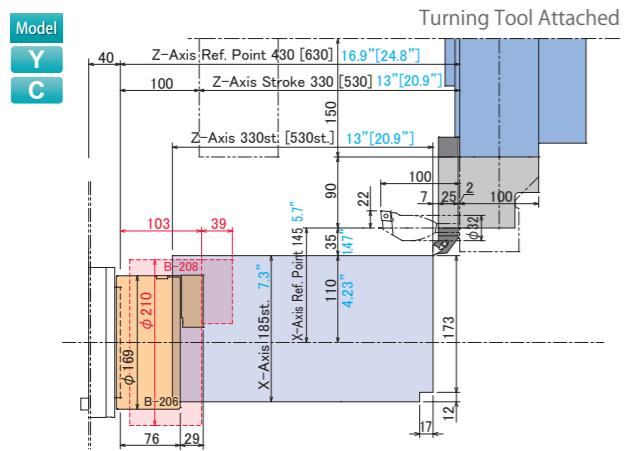
Unit : mm inch

[] dimension are L5. Left Spindle : TCY-160, Right Spindle : TCY-200

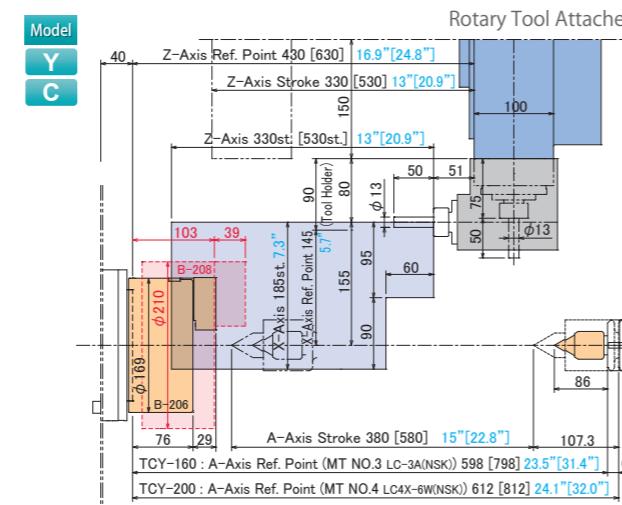
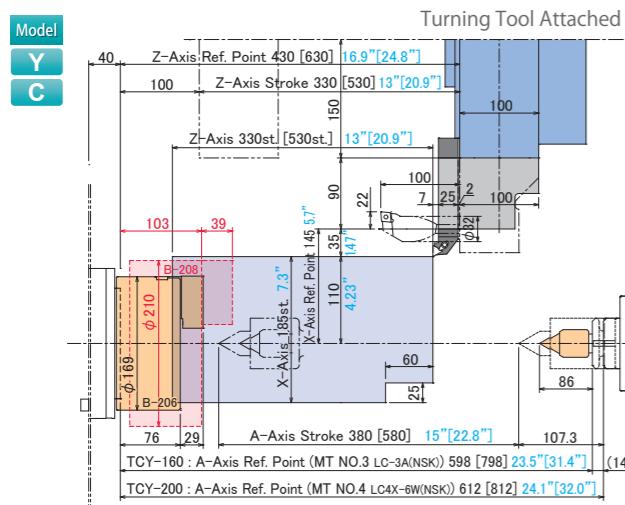
with Right Spindle



without Right Spindle, Tailstock



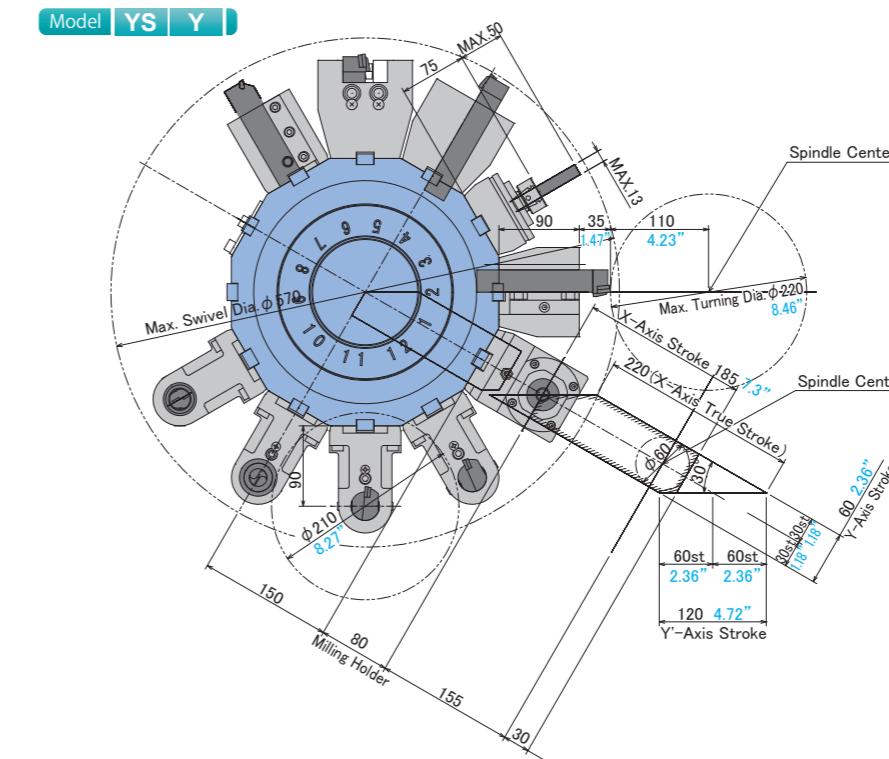
with Tailstock



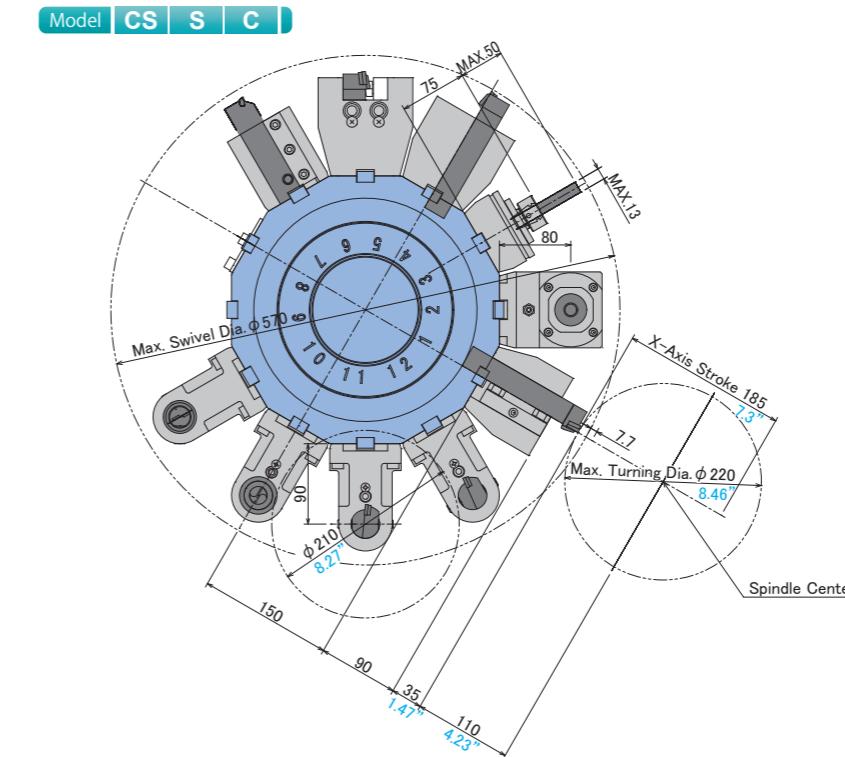
Interference

Unit : mm inch

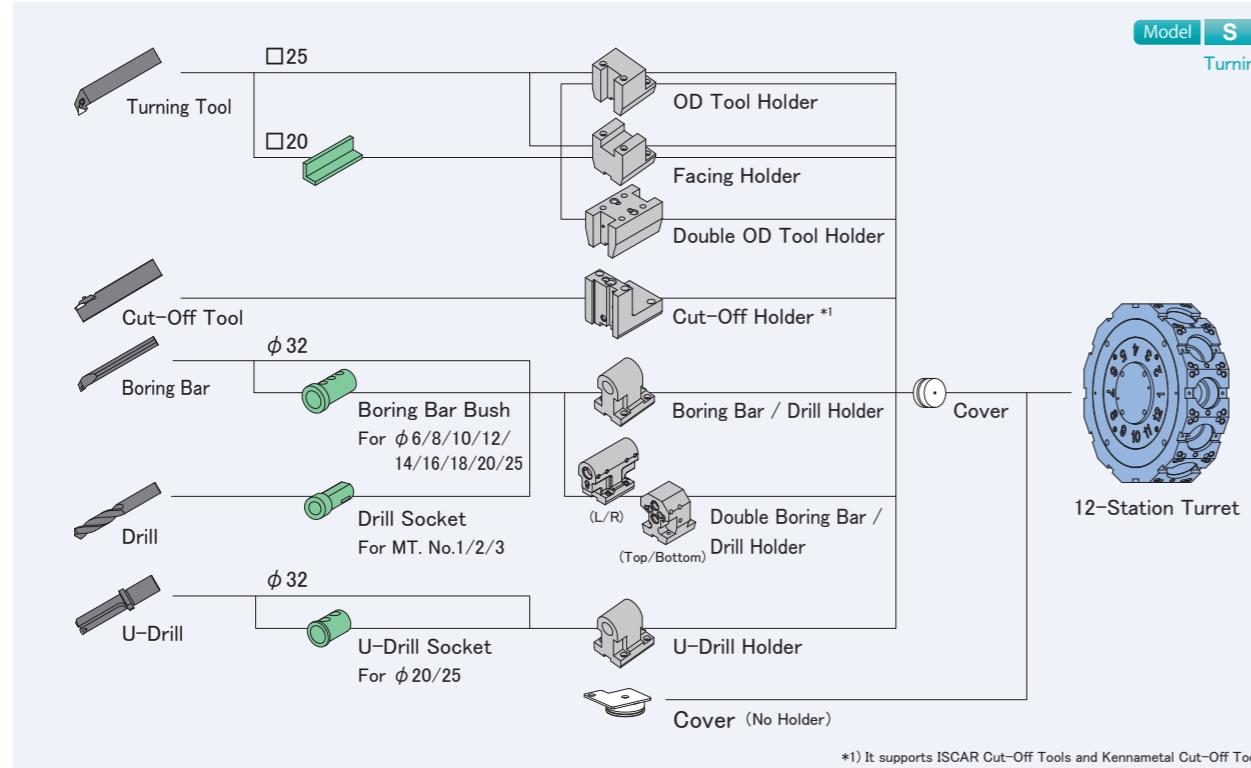
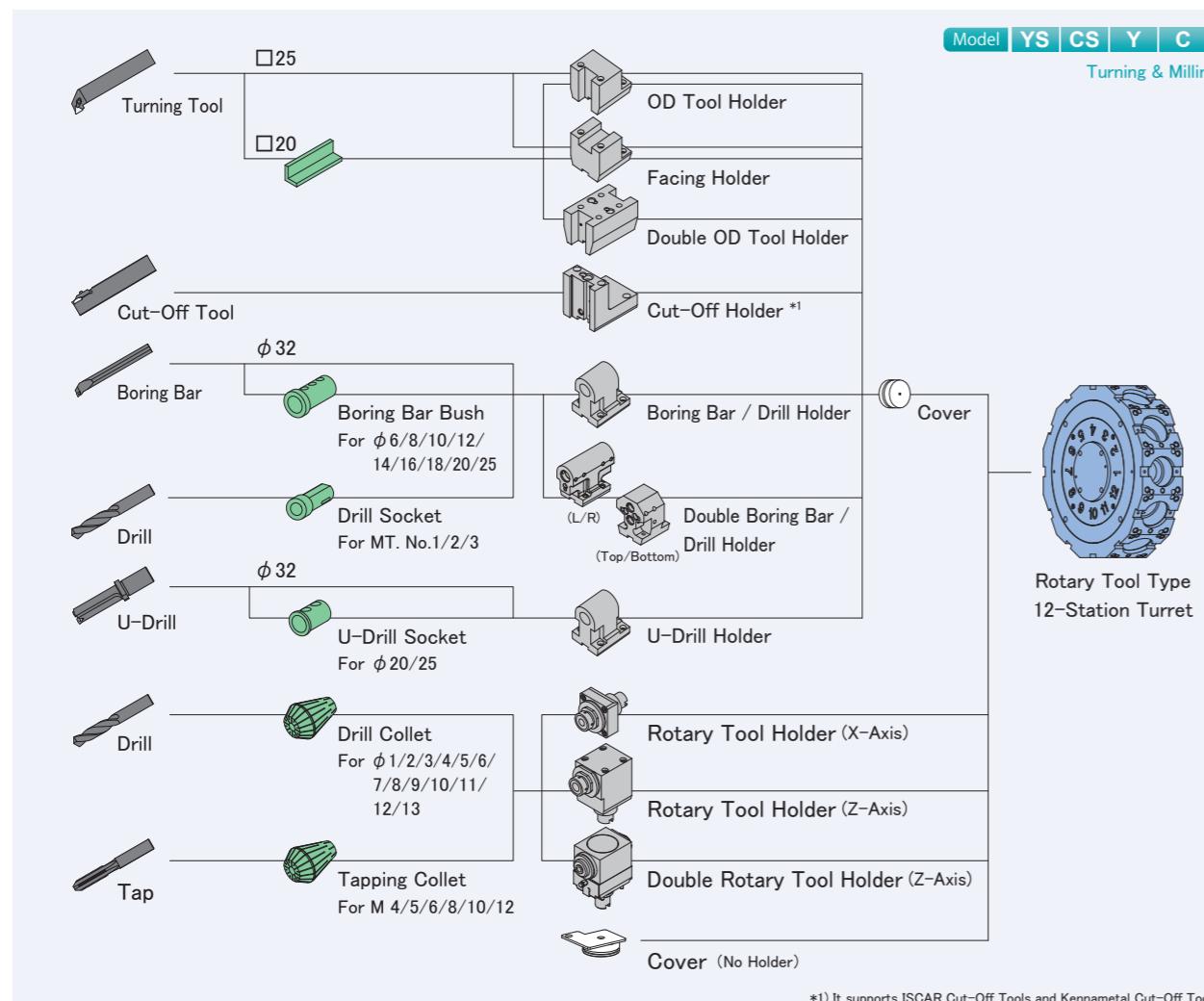
with Y-Axis



without Y-Axis



Tooling System



Automation

The optimum automated production system is easily achievable by using TAKISAWA's technical expertise, gained over many years developing gantry loaded machining solutions from a single gantry loaded cell to multiple units linked in a line for full turnkey solutions of billeted or casting parts for the gantry loaded systems there are three main types available A, B, and C. These consist of one gantry work feeder delivering raw material components to, and finished machined components from the machining platform back for loading into the work stocker type a and b one have work stocker located to the left or right of the machine.

In the case of the C type one work feeder has a work stocker located either side of the machine to facilitate the extended unmanned working hours available.

In process gauging systems and also quality checking can be programmed in to select samples for quality auditing delivered to a chute whilst the machine is running by programm for example every 20 parts.

■ Loader Specification

■ Loader Specification		TCY-160	TCY-200	
Target Workpiece	Outside Diameter		0.7kg Type	3kg Type
	Length	mm	60	45/60
	Weight	kg	0.7	3
Running Speed	Vertical	m/min ⁻¹	150	150
	Longitudinal	m/min ⁻¹	150	180

*) Target workpiece dimensions may vary depending on the chuck specifications and workpiece shape. Please contact our sales representatives for details.

■ Work Feeder Specifications

■ Work Feeder Specifications		TCY-160	TCY-200	
			0.7kg Type	3kg Type
Number of Pallets		14	14	16
Loading Capacity (Per Pallet)	kg	25	25	40
Maximum Height	mm	450	450	450

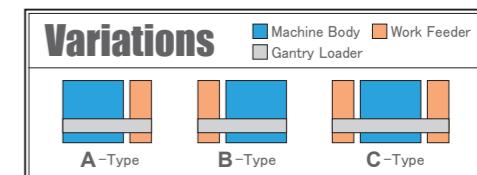


Photo is "TCY-160SGL3 A Type".



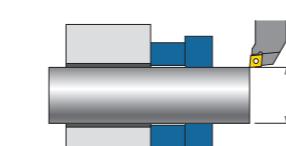
■ Machine Dimensions Un

The technical drawing illustrates the front view of the TCY-200G A Type (3kg Type) L3 machine, highlighting its main components and overall dimensions. The front view shows the bed, tooling, and a large vertical column assembly. The side view provides a detailed look at the internal structure, including the motor and gear assembly, with a dimension of 1842 mm indicated. Key dimensions include:

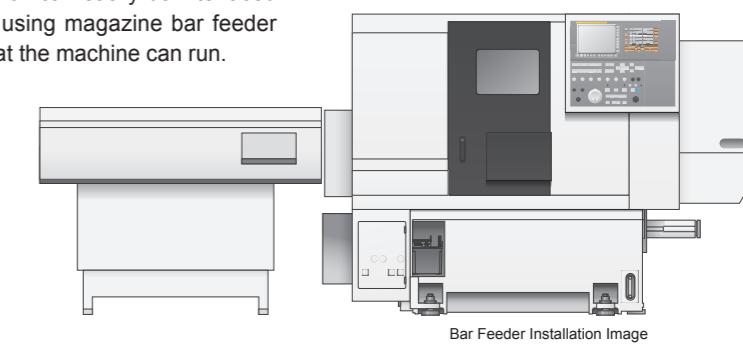
- Front View Dimensions:**
 - Total width: 1842 mm (72.02")
 - Column height: 3155 mm (123.91")
 - Bed length: 438 mm (17.24")
 - Bed thickness: 707 mm (27.83")
 - Base height: 163 mm (6.42")
- Side View Dimensions:**
 - Total height: 168 mm (6.61")
 - Total width: 2987 mm (117.60")
 - Control panel height: 2164 mm (85.20")
 - Control panel depth: 2327 mm (91.61")
 - Overall height: 1000 mm (39.37")
- Other:**
 - A circular dimension of R561 is shown near the top left.
 - A note indicates a tolerance of ±0.01" for the 3155 mm dimension.

■ Bar Feeder Automation

The bar capacities of TCY-160 42mm and TCY-200 51mm can be fully utilized by using various bar feeder manufacturers products which can easily be interfaced into the machine control this can be enhanced by using magazine bar feeder equipment which will extend the unmanned hours that the machine can run.



	TCY-160	TCY-200
Bar Capacity	42	51



Bar Feeder Installation Image

■ Machine Composition

	TCY-160YS (Standard Model)	TCY-160CS	TCY-160S	TCY-160Y	TCY-160C
Items	Right Spindle Stock	●	●	●	-
	Tailstock	-	-	○	○
	Y-Axis	●	-	●	-
	C-Axis (Left)	●	●	-	●
	C-Axis (Right)	●	●	-	-
	Milling	●	●	-	●

● : Standard ○ : Optional - : None

■ Machine Specifications

	TCY-160YS	TCY-160CS	TCY-160S	TCY-160Y	TCY-160C
Capability · Capacity	Max. Swing mm inch		340 13.39"		
	Max. Turning Diameter mm inch		220 8.46"		
	Max. Turning Length *1 mm inch	L3 : 291 11.46"	L5 : 491 19.33"		
	Spindle Nose to Nose Maximum Distance mm inch	L3 : 583 23"	L5 : 783 30.83"	-	
	Bar Capacity (Left Spindle) mm inch		42 1.65"		
	Bar Capacity (Right Spindle) mm inch	42 1.65"		-	
Travel	X-Axis Travel (Turret) mm inch		185 7.3"		
	Z-Axis Travel (Turret) mm inch	L3 : 330 13"	L5 : 530 20.9"		
	Y-Axis Travel (Turret) mm inch	±30 1.18"	-	±30 1.18"	-
	A-Axis Travel (Right Spindle Stock) mm inch	L3 : 380 15"	L5 : 580 22.8"		
Left Spindle (6")	Maximum Speed min⁻¹	4000 6000			
	Minimum Indexing Angle deg	0.001		0.001	
	Type of Spindle Nose (Nom, Code)	φ140 Flat			
	Spindle-Through Hole Diameter mm inch	53 2.09"			
Right Spindle (6")	Bearing Inside Diameter mm inch	90 3.54"			
	Maximum Speed min⁻¹	4000 6000			
	Minimum Indexing Angle deg	0.001		-	
	Type of Spindle Nose (Nom, Code)	φ140 Flat		-	
Turret	Spindle-Through Hole Diameter mm inch	53 2.09"		-	
	Bearing Inside Diameter mm inch	90 3.54"		-	
	Number of Turrets	1			
	Type of Turret	12-Station Drum Turret, All-Holder Type			
Rotary Tool	Number of Tools	12			
	Height of Square Tool Shank mm inch	25 1"			
	Diameter of Boring Bar Shank mm inch	32 1.25"			
	Number of Rotary Tools	12		12	
Feedrate	Maximum Speed min⁻¹	6000	-	6000	
	Tool Shank Maximum Diameter mm inch	φ13 0.51", M8	-	φ13 0.51", M8	
	Tool Spindle Taper Hole (Type, Number)	AR20	-	AR20	
	Bearing Inside Diameter of Tool Spindle mm inch	30 1.8"	-	30 1.8"	
Tailstock	Rapid Traverse (Turret) m/min ipm	X:20 / Z:24 / Y:10 X:787.40" / Z:944.88" / Y:393.70"	X:20 / Z:24 X:787.40" / Z:944.88"	X:20 / Z:24 / Y:10 X:787.40" / Z:944.88" / Y:393.70"	X:20 / Z:24
	Rapid Traverse (Right Spindle Stock/Tailstock) m/min ipm	A : 20 787.40"			
	Rapid Traverse (Left & Right Spindle Stock) min⁻¹	C : 100 (L/R)	-	C : 100 (L)	
	Jog Feedrate m/min ipm	X, Z, Y, A : 0 ~ 1260 49.61"	X, Z, A : 0 ~ 1260 49.61"	X, Z, Y, A : 0 ~ 1260 49.61"	X, Z, A : 0 ~ 1260 49.61"
Motor	Travel of Tailstock mm inch	-		L3 : 380 15" L5 : 580 22.8"	
	Type of Taper Hole in Quill	-		MT3	
	Spindle Motor for Left Spindle (15 min/cont.) kW HP	5.5/3.7 7.5/5.5 7.3/4.9 10/7.3			
	Spindle Motor for Right Spindle (15 min/cont.) kW HP	3.7/2.2 4.9/2.9		-	
Power Sources Required	Rotary Tool Spindle Motor (5 min/15 min/cont.) kW HP	3.7/2.2/1.5 4.9/2.9/2.0	-	3.7/2.2/1.5 4.9/2.9/2.0	
	Axis Feed Motor kW HP	X, Y, A, T:1.2 / Z:1.4 X, Y, A, T:1.6 / Z:1.9	X, A, T:1.2 / Z:1.4 X, A, T:1.6 / Z:1.9	X, Y, A, T:1.2 / Z:1.4 X, A, T:1.6 / Z:1.9	X, A, T:1.2 / Z:1.4 X, A, T:1.6 / Z:1.9
	Hydraulic Pump Motor kW HP	0.75 1.0			
	Coolant Pump Motor kW HP	0.25 0.3			
Tank Capacity	Electric Power (NC Unit : 0i-TD) kVA	11 13	13 16	10 12	
	Air Pressure Source MPa, L/min¹		0.4, 100		
Machine Size	Hydraulic Unit Tank L gal	19 5.02			
	Lubricant Tank L gal	1.8 0.48			
Machine Weight	Coolant Tank L gal	L3 : 200 52.8 L5 : 250 66			
	Machine Height mm inch	1700 66.93"			
	Height From Floor to Spindle Centerline mm inch	1000 39.37"			
	Floor Space Required mm inch	L3 : 2400×1695 94.49"×66.73" L5 : 2760×1795 108.66"×70.67"	L3 : 2010×1695 79.13"×66.73" L5 : 2760×1795 108.66"×70.67"		
Machine Weight	Machine Weight kg lbs	L3 : 3500 7700 L5 : 4100 9020			

Red is Optional.

*1) Dimensions are B-206(KITAGAWA)

*2) It is dimensions at the time of the tailstock wearing.

■ Machine Composition

	TCY-200YS (Standard Model)	TCY-200CS	TCY-200S	TCY-200Y	TCY-200C
Items	Right Spindle Stock	●	●	-	-
	Tailstock	-	-	○	○
	Y-Axis	●	-	-	-
	C-Axis (Left)	●	●	-	●
	C-Axis (Right)	●	●	-	-
	Milling	●	●	-	●

● : Standard ○ : Optional - : None

■ Machine Specifications

	TCY-200YS	TCY-200CS	TCY-200S	TCY-200Y	TCY-200C
Items	Right Spindle Stock	●	●	-	-
	Tailstock	-	-	○	○
	Y-Axis	●	-	-	-
	C-Axis (Left)	●	●	-	●
	C-Axis (Right)	●	●	-	-
	Milling	●	●	-	●

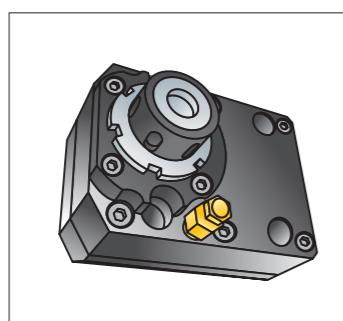
Red is Optional.

*1) Dimensions are B-208(KITAGAWA)

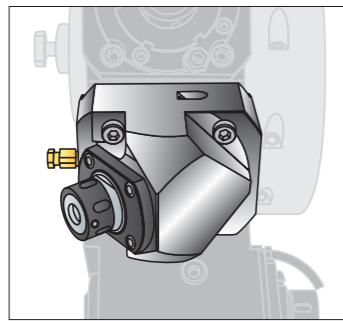
*2) It is dimensions at the time of the tailstock wearing.

■ Machine Specifications and Accessories

Items	YS (Std.)	CS	S	Y	C
Right Spindle Stock (Sub Spindle)	●	●	●	-	-
Tailstock (NC Servo Type)	-	-	-	○	○
Y-Axis	●	-	-	●	-
Left C-Axis	●	●	-	●	●
Right C-Axis	●	●	-	-	-
Milling	●	●	-	●	●
Sware Wash Away	●	●	●	●	●
Chuck Footswitch (Left Spindle)	●	●	●	●	●
Chuck Footswitch (Right Spindle)	●	●	●	-	-
Chuck Airblow (Right Spindle)	●	●	●	-	-
Oil-Water Separator (Box Type)	●	●	●	●	●
Chuck Open/Close M-Function	●	●	●	●	●
Disk Brake (Left Spindle)	●	●	-	●	●
Disk Brake (Right Spindle)	●	●	-	-	-
Safety Window (Polycarbonate + Tempered Glass)	●	●	●	●	●
Door Interlock + Lamp	●	●	●	●	●
Chuck OT	●	●	●	●	●
Left Spindle	●	●	●	●	●
Hollow					
· TCY-160	SS1246				
Cylinder for					
Hydraulic Chuck (with Check Valve)	●	●	●	-	-
· TCY-160	SS1246				
· TCY-200	SS1452				
Coolant Pump (250W)	●	●	●	●	●
Lighting Apparatus	●	●	●	●	●
Working Tool Set	●	●	●	●	●
Instruction Manual	●	●	●	●	●



[Optional] Offset Rotary Tool Holder(X-Axis)



[Optional] 45° Angle Milling Holder

Items	YS (Std.)	CS	S	Y	C
Hydraulic Chuck	O	O	O	O	O
Soft Jaws	O	O	O	O	O
Collet Chuck (Standstill Type)	O	O	O	O	O
Collet	O	O	O	O	O
Hydraulic Main Pressure Check	O	O	O	O	O
Pneumatic Main Pressure Check	O	O	O	O	O
Footswitch with a Locking Mechanism	O	O	O	O	O
Seating Control	O	O	O	O	O
Spindle Outside Airblow	O	O	O	O	O
Spindle Through Airblow	O	O	O	O	O
Spindle Above Coolant	O	O	O	O	O
Spindle Through Coolant	O	O	O	O	O
OD Tool Holder	O	O	O	O	O
Facing Holder	O	O	O	O	O
Double OD Tool Holder	O	O	O	-	-
Cut-Off Holder *1	O	O	O	O	O
Spacer (Stopper for □20 Holder)	O	O	O	O	O
Boring Bar / Drill Holder	O	O	O	O	O
Double Boring Bar / Drill Holder (Top/Bottom)	O	O	O	O	O
Double Boring Bar / Drill Holder (L/R)	O	O	O	-	-
U-Drill Holder	O	O	O	O	O
Boring Bar Bush	O	O	O	O	O
Drill Socket	O	O	O	O	O
U-Drill Socket	O	O	O	O	O
Rotary Tool Holder (X-Axis)	O	O	-	O	O
Rotary Tool Holder (Z-Axis)	O	O	-	O	O
Double Rotary Tool Holder (Z-Axis)	O	O	-	-	-
35° Angle Rotary Tool Holder	O	O	-	O	O
45° Angle Rotary Tool Holder	O	O	-	O	O
Angle Adjusting Type Rotary Tool Holder	O	O	-	O	O
Gear Hobbing Holder	O	O	-	O	O
Milling Collet	O	O	O	O	O
Tool Setter (Manual Type) *2	O	O	O	O	O
Tool Setter (Removable Type)	O	O	O	O	O
RAKU-RAKU Monitor 3	O	O	O	O	O
Total Counter	O	O	O	O	O
Preset Counter (with M-Function)	O	O	O	O	O
Multi Tool Counter (with M-Function)	O	O	O	O	O
Rotary Beacon Light (1-Color)	O	O	O	O	O
Signal Tower Light (1-Color / Lighting)	O	O	O	O	O
Signal Tower Light (3-Color / Lighting)	O	O	O	O	O
Auto Power-Off System	O	O	O	O	O
Circuit Breaker	O	O	O	O	O
Lighting Apparatus (10W)	O	O	O	O	O
100V Outlet (Single Socket)	O	O	O	O	O
Air Conditioner in Control Panel	O	O	O	O	O
Chip Conveyor (Side Discharge)	O	O	O	O	O
Chip Conveyor (Rear Discharge)	O	O	O	O	O
Chip Conveyor Interface	O	O	O	O	O
Chip Bucket	O	O	O	O	O
Auto Door	O	O	O	O	O
Coolant Pump (520W)	O	O	O	O	O
Gantry Loader System	O	O	O	O	O
Robot Interface	O	O	O	O	O
Bar Feeder System	O	O	O	O	O
Bar Feeder Interface (Left Spindle)	O	O	O	O	O
Parts Catcher (Left Spindle)	O	O	O	O	O
Parts Catcher (Right Spindle)	O	O	O	-	-
Integrated Parts Un-loader (for L5)	O	O	O	-	-
User Special Color	O	O	O	O	O

● : Standard O : Optional - : None

*1) It supports ISCAR Cut-Off Tools and Kennametal Cut-Off Tools.

*2) The tool setter (manual rotation type) is applicable only to the tools for the left spindle.

Network

The TAKISAWA Technology and Network Services the World.

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

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Niigata Office TEL : 0258-25-4450 FAX : 0258-22-7680

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Perfect Dialogue Program Processor

Takisawa Original Software

TiwaP-I

TiwaP-I is
Takisawa Original Software
Which is Easy for

"Input"

Easy Programming by Dialogue Conversation

TiwaP-I 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

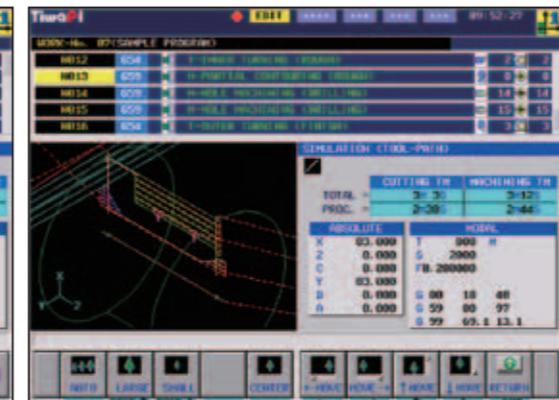
The arrangement of machining spindles and processes is automatically recognized to execute the spindle control and C-axis zero point return operation efficiently.

**Stored Number
of Program** 99

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

Machining Simulation

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



Knowledge of G-codes is not required to make programs.

Anybody can make the Program easily.

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

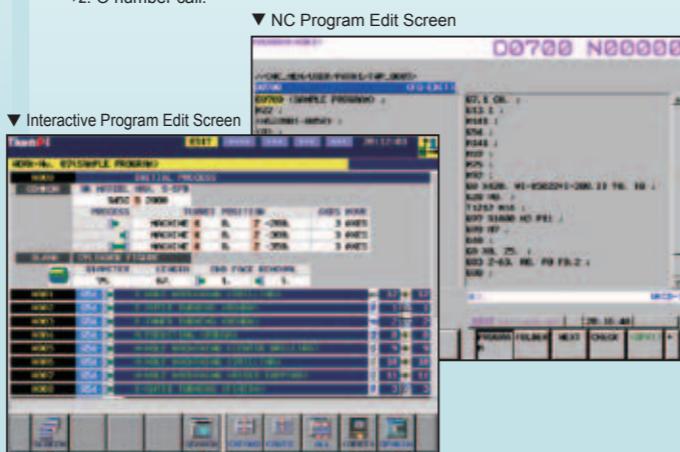


Further, **TiwaP-I** enables the interactive program to perform machining in cooperation with an NC program*1.

- ① NC program*1 can be called (set) in the interactive (TiwaP-I) program.
- ② NC program*2 converted into NC statements by interactive operation (TiwaP-I) 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.



Feature of **TiwaP-I**

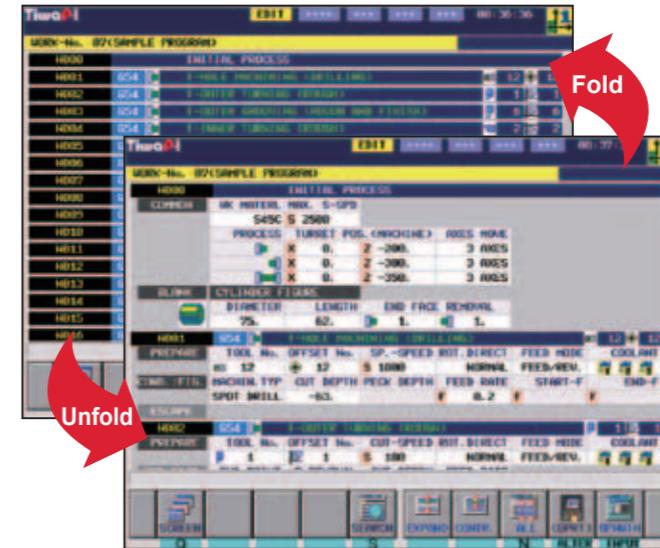
Easy to See

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.



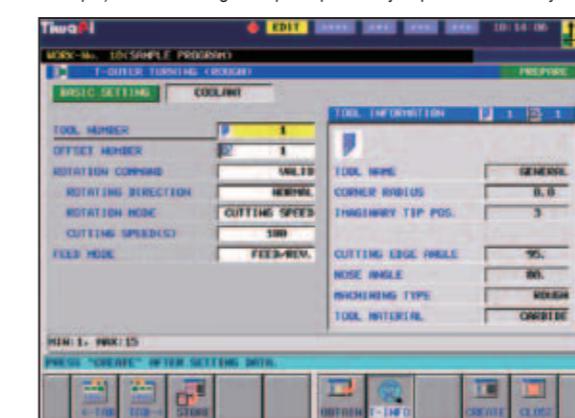
▲ [Elaborate Process display function]
All processing data can be checked and seen on the screen.

Speed Up

When inserting a new processing data through interactivity, there is much 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

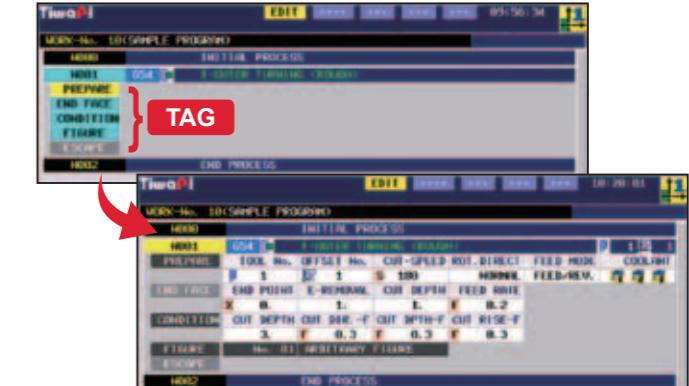
During preparing Program, "Reliable Guide Function" provides support

► "Reliable Guide Function"

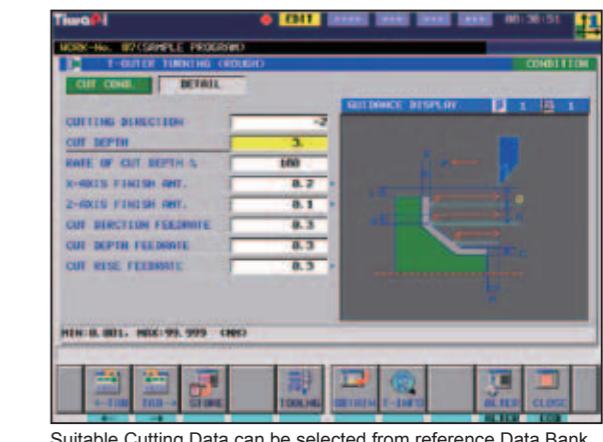
The tag will be arranged in the optimum order automatically by interacting with the machine and selecting the required program.

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.

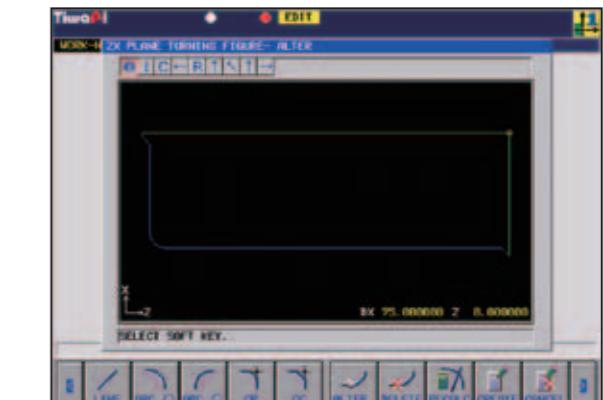
▼ By "Reliable Guide Function" Process Tag will be made automatically



▲ 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.

TCY-Series

NC Unit Specifications

FANUC : 32i-B, 0i-TD

※ Please contact our sales persons for further information.

Composition

[NC Unit]

Model	Standard Type	Tiwap-1 Type	Optional Type
YS	FANUC 32i-B 8.4" Color LCD Horizontal Soft Keys		
CS		FANUC 32i-B 10.4" Color LCD Vertical/Horizontal Soft Keys with Tiwap-1	FANUC 0i-TD *22 8.4" Color LCD/MDI Horizontal Soft Keys
S			
Y	FANUC 0i-TD 8.4" Color LCD/MDI Horizontal Soft Keys		
C			

Specifications·Contents	YS	CS	S	Y	C
-------------------------	----	----	---	---	---

[Control Axes]

Number of Control Axes	6	5	3	4	3
Simultaneous Number of Control Axes	4	4	3	4	3

[Operation Panel]

Data Input/Output (PC Card, RS-232C)	●
--------------------------------------	---

[Software]

Tiwap-1	Tiwap-1 Type Standard
RAKU-RAKU Monitor 3	○
Measurement Monitor 3	◎
[Safety Devices]	
Front Door Interlock	●
Front Door Locking Mechanism	○
Safety Relay	●
Control Panel Breaker with Tripper	○

Main Function List

Specifications·Contents	32i-B	0i-TD			
	YS, CS	Y, C	S	Y, C	S*22
[Controlled Axes]					
Least Input Increment *1	●	●	●	●	●
Max. Programmable Dimension (± 999999.999)	●	●	●	●	●
Cs Contouring Control	●	●	-	●	-
Increment System C *2	○	○	○	○	○
Inch/Metric Conversion	○	○	○	●	●
Interlock	●	●	●	●	●
Machine Lock *3	○	○	○	○	○
Emergency Stop	●	●	●	●	●
Stored Stroke Check 1	●	●	●	●	●
Stored Stroke Check 2, 3 *5	○	○	○	○	○
Stored Limit Check Before Move	○	○	○	○	○
Chuck and Tail Stock Barrier *5	○	○	○	○	○
Mirror Image (Each Axis)	▲	▲	▲	▲	▲
Chamfering ON/OFF	●	●	●	●	●
Unexpected Disturbance Torque Detection Function *6	○	○	○	○	○
Position Switch	◎	◎	◎	◎	◎
[Operation]					
Automatic Operation (Memory)	●	●	●	●	●
MDI Operation	●	●	●	●	●
DNC Operation *7	○	○	○	○	○
DNC Operation with Memory Card *7 *8	○	○	○	○	○
Program Number Search	●	●	●	●	●
Sequence Number Search	●	●	●	●	●
Sequence Number Comparison and Stop	○	○	○	●	●
Wrong Operation Prevention	▲	▲	▲	▲	▲
Buffer Register	●	●	●	●	●
Dry Run	●	●	●	●	●
Single Block	●	●	●	●	●
Manual Continuous Feed (JOG)	●	●	●	●	●
Manual Reference Position Return	●	●	●	●	●
Reference Position Setting without DOG	●	●	●	●	●
Manual Handle Feed, 1 Unit	●	●	●	●	●
Handle interruption	○	○	○	○	○
Jog and Handle Simultaneous Mode	▲	▲	▲	▲	▲

Specifications·Contents	32i-B	0i-TD			
	YS, CS	Y, C	S	Y, C	S*22
[Interpolation Functions]					
Nano Interpolation	●	●	●	●	●
Positioning (G00)	●	●	●	●	●
Exact Stop Mode (G61)	●	●	●	●	●
Tapping Mode (G63)	●	●	●	●	●
Cutting Mode (G64)	●	●	●	●	●
Exact Stop (G09)	●	●	●	●	●
Linear Interpolation (G01)	●	●	●	●	●
Circular Interpolation (G02/03)	●	●	●	●	●
Dwell (G04)	●	●	●	●	●
Polar Coordinate Interpolation	●	●	-	●	-
Cylindrical Interpolation	●	●	-	●	-
Helical Interpolation	○	○	-	○	-
Thread Cutting, Synchronous Cutting	●	●	●	●	●
Multi Threading	●	●	●	●	●
Continuous Threading	●	●	●	●	●
Variable Lead Thread Cutting	○	○	○	●	●
Circular Thread Cutting	○	○	○	-	-
Polygon Machining with Two Spindles	○	○	-	▲	-
Skip (G31)	○	○	○	○	○
Torque Limit Skip	●	○	●	○	●
Reference Position Return (G28)	●	●	●	●	●
Reference Position return Check (G27)	●	●	●	●	●
2nd Reference Position Return (G30)	●	●	●	●	●
3rd, 4th Reference Position Return	○	○	○	○	○
[Tool Functions / Tool Compensation]					
Tool Function (T2+2 Digits)	●	●	●	●	●
Tool Offset Pairs 32-pairs	●	●	●	-	-
Tool Offset Pairs 64-pairs	○	○	○	●	●
Tool Offset Pairs 99-pairs	○	○	○	○	○
Tool Offset Pairs 128-pairs	-	-	-	○ *15	○ *15
Tool Offset Pairs 200-pairs	○	○	○	○ *15	○ *15
Tool Offset Pairs 400-pairs	○	○	○	-	-
Tool Geometry Size Data, 100 Pieces	Tiwap	Tiwap	Tiwap	-	-
Tool Geometry Size Data, 300 Pieces	○	○	○	-	-
Tool Offset	●	●	●	●	●
Y-Axis Offset	YS	Y	-	Y	-
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 *16	○	○	○	○	○
Tool Life Management *17	○	○	○	●	●
Tool Offset Memory Switching Function	●	-	●	-	-
[Accuracy Offset Functions]					
Backlash Compensation	▲	▲	▲	▲	▲
Backlash Compensation for Each Rapid Traverse and Cutting Feed	▲	▲	▲	▲	▲
Smooth Backlash Compensation	▲	▲	▲	○	○
[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)	○	○	○	○	○
Program Number 04 Digits	●	●	●	●	●
Program File Name 32 Characters	●	●	●	-	-
Sequence Number N5 Digits	-	-	-	●	●
Sequence Number N8 Digits	●	●	●	-	-
Absolute/Incremental Programming	●	●	●	●	●
Decimal Point Programming/Pocket Calculator Type Decimal Point Programming	●	●	●	●	●
Diameter/Radius Programming	●	●	●	●	●
Rotary Axis Designation	●	●	●	●	●
Rotary Axis Rollover	●	●	●	●	●
Coordinate System Setting (G50) *9	●	●	●	●	●
Automatic Coordinate System Setting *10	○	●	○	●	○
Workpiece Coordinate System (G54-G59)	●	○	●	▲	●
Workpiece Coordinate System Preset	●	○	●	▲	●
Direct Drawing Dimension Programming *11	○	○	○	▲	●
G-Code System A	●	●	●	●	●
G-Code System B/C *9	○	○	○	▲	●
Chamfering/Corner R *12	●	●	●	●	●
Programmable Data Input	●	●	●	●	●
Sub Program Call (10 Levels)	●	●	●	●	●
Custom Macro	●	●	●	●	●
Additional Custom Macro Common Variables	○	○	○	●	●
Canned Cycle	●				

TCY-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.



ISO 9001 Certified
JQA-2010
(Head Office)



(Head Office)

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