

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

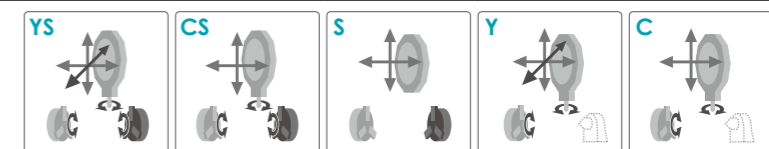


- || Highly efficient latest technology servo motors reducing power consumption.
- || Automatic worklight off function used only when operator intervention is required.
- || Control panel cooling system designed for power saving by utilising the natural heat dissipation.
- || With the coolant pump only running when required for use in program unnecessary 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

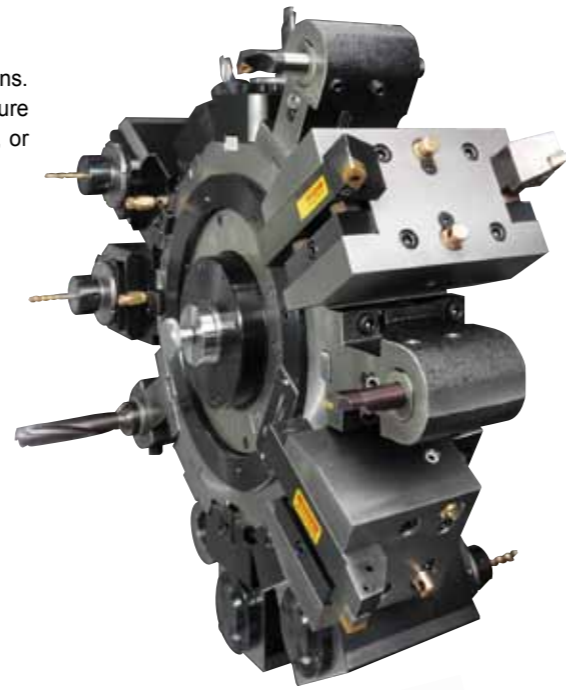


\*1) NC Servo Tailstock

## Powerful High Performance Milling Turret

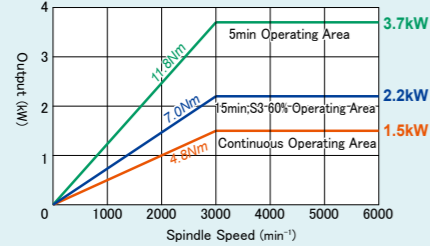
The 12 station turret allows for the milling holders to be mounted in all stations. Each holder is clamped and rigidly bolted in position on the turret to ensure the effective processing of the component by using either milling, drilling, or turning tools.

Rotary Tool Spindle Speed **6000min<sup>-1</sup>**  
 Height of Square Tool Shank...25mm  
 Diameter of Boring Bar Shank...32mm  
 Tool Spindle Taper Hole...AR20  
 Max. Tool Shank Diameter...13mm



**3.7/2.2/1.5kW**

**6000min<sup>-1</sup>**  
FANUC: α11

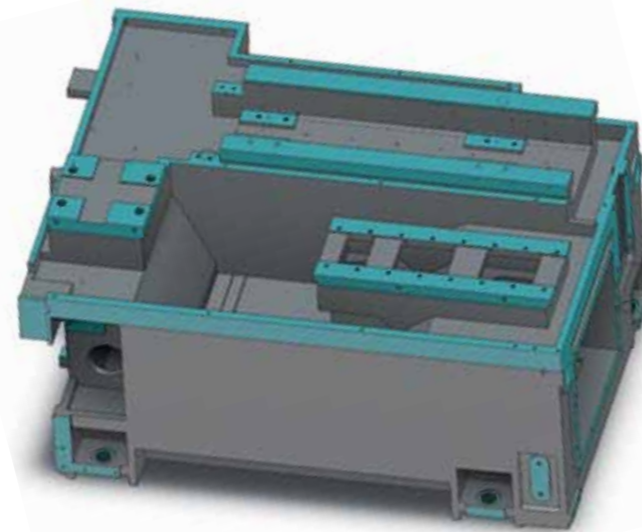
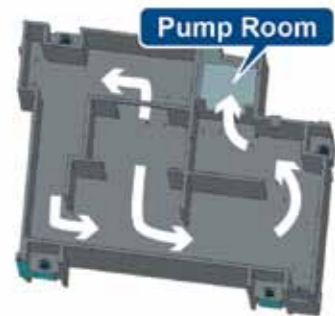


## Thermal Balance

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

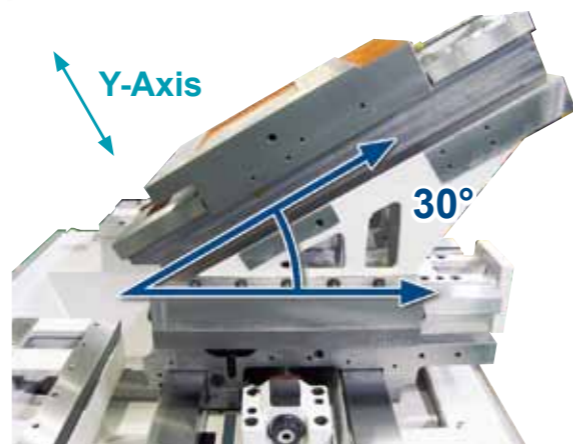
Coolant Tank

**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**  
**L5 580mm**

Quill Taper  
**TCY-160 MT.3**  
**TCY-200 MT.4**

Thrust  
**1.0kN ~ 4.0kN\***

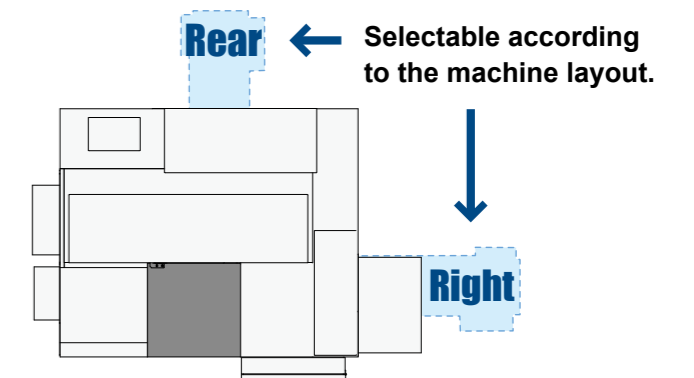
\*) Thrust shows a setting range. Actually, it must be adjusted according to the workpiece.



Example of installing Tailstock (TCY-200Y)

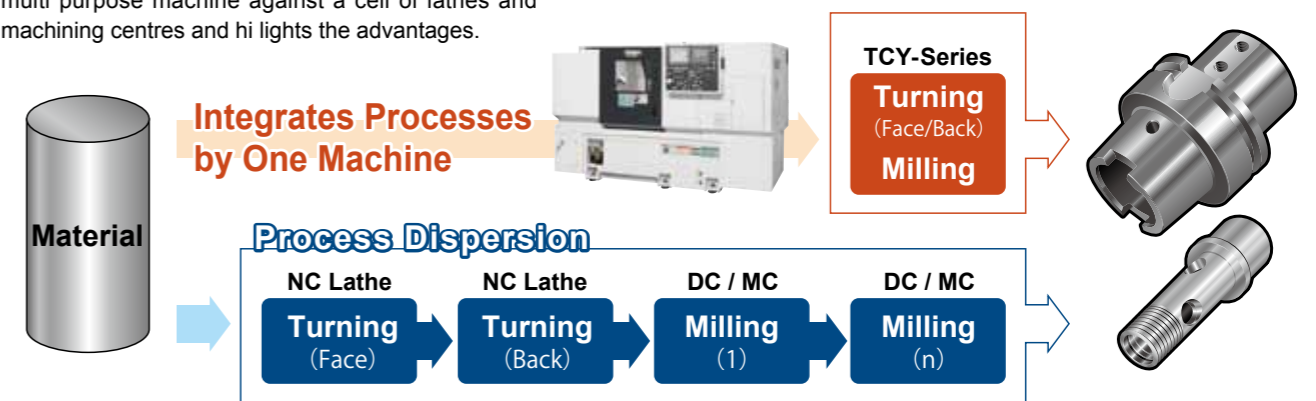
## Chip Conveyor

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.







- 1 Shortened Lead Time
- 2 Reduced Equipment Machines
- 3 Effective Use of Floor Space

**Contribution to Cost Reduction**

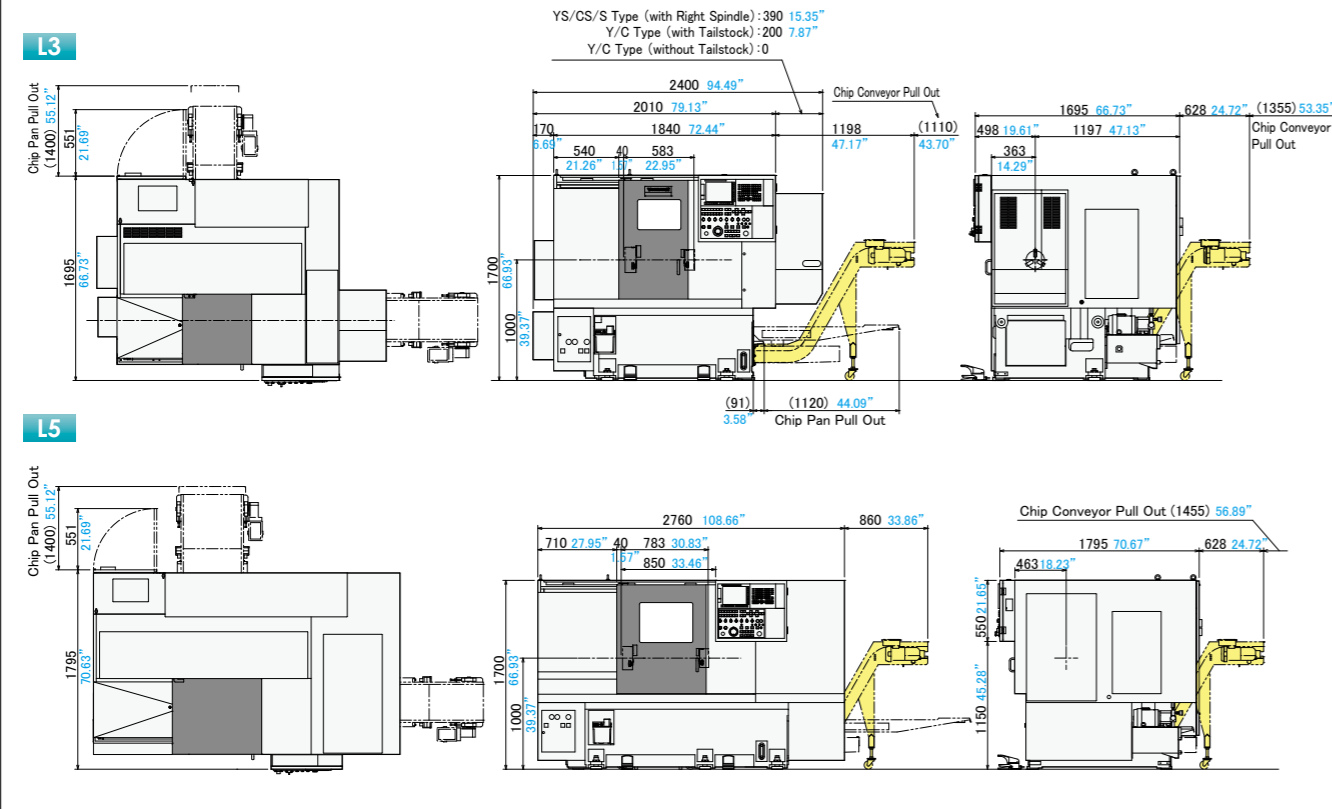


Photo is TCY-160YSL3 "TiwaP-1 Type".

-  **Chuck Size**  
6in
-  **Max. Turning Dia.**  
φ 220mm 8.46"
-  **Max. Turning Length**  
L3 291mm 11.46"  
L5 491mm 19.33"
-  **Bar Capacity**  
φ 42mm 1.65"

## 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<sup>-1</sup>**  
Optional : 6000min<sup>-1</sup>

### 6" Right Spindle

Sub ( φ140 Flat)

Spindle Motor  
**3.7/2.2kW**

Spindle Speed  
**4000min<sup>-1</sup>**  
Optional : 6000min<sup>-1</sup>

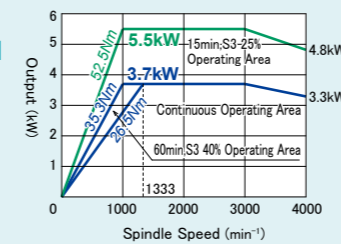


The right spindle on YS/CS models is furnished with Cs control to carry out the combined machining processing of the component back face.

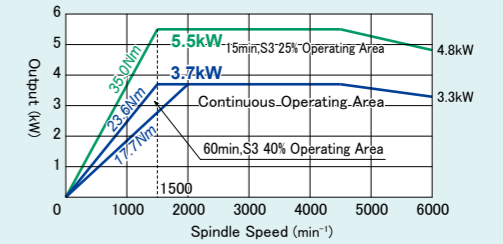
## Left Spindle

### 5.5/3.7kW

Standard  
**4000min<sup>-1</sup>**  
FANUC : β i13

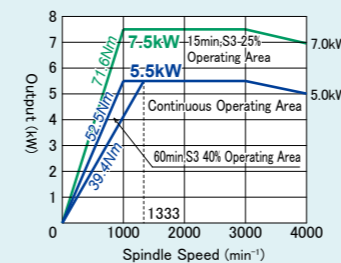


**6000min<sup>-1</sup>**  
FANUC : β i13

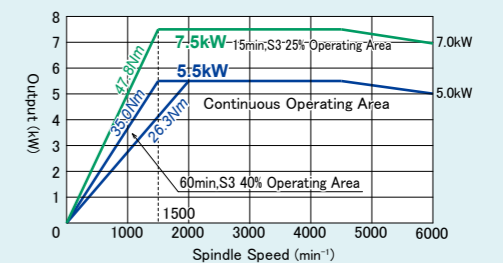


### 7.5/5.7kW

**4000min<sup>-1</sup>**  
FANUC : β i16



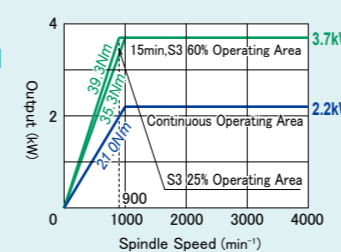
**6000min<sup>-1</sup>**  
FANUC : β i16



## Right Spindle

### 3.7/2.2kW

Standard  
**4000min<sup>-1</sup>**  
FANUC : α i12



**6000min<sup>-1</sup>**  
FANUC : α i12

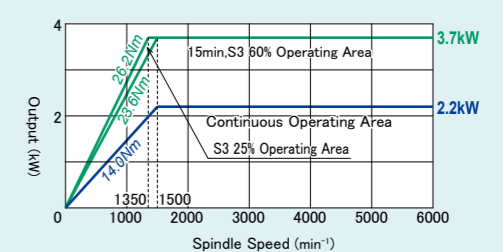




Photo is TCY-200YSL5 "TiwaP-1 Type".

**Chuck Size**

8in

**Max. Turning Dia.**

φ 220mm 8.46"

**Max. Turning Length**

L3 254mm 10"

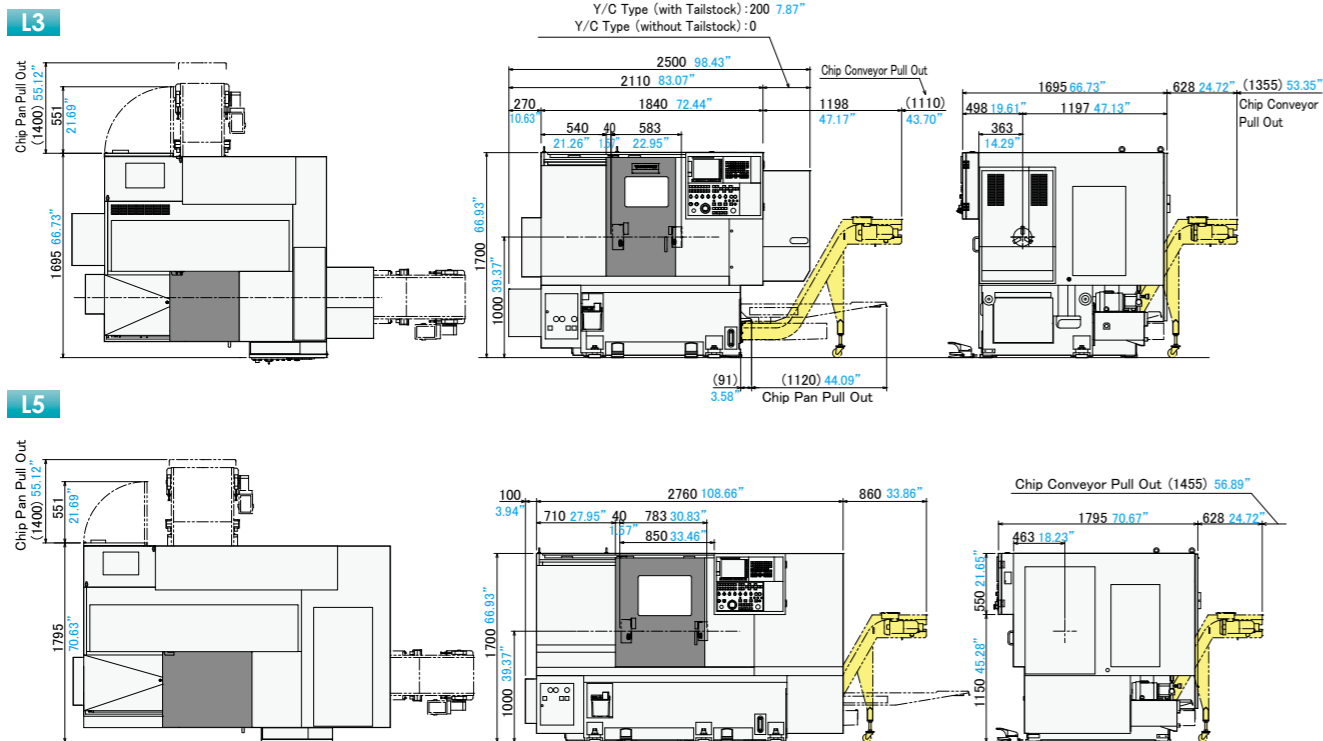
L5 454mm 17.87"

**Bar Capacity**

φ 51mm 2.01"

## Machine Dimensions

Unit : mm inch



## 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<sup>-1</sup>**

Optional : 5000min<sup>-1</sup>

**6" Right Spindle**  
Sub (φ140 Flat)

Spindle Motor

**3.7/2.2kW**

Spindle Speed

**4000min<sup>-1</sup>**

Optional : 6000min<sup>-1</sup>



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

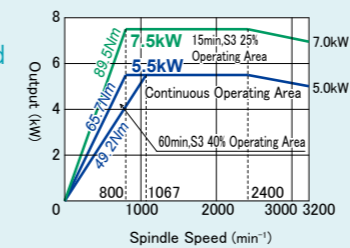
### Left Spindle

#### 7.5/5.5kW

Standard

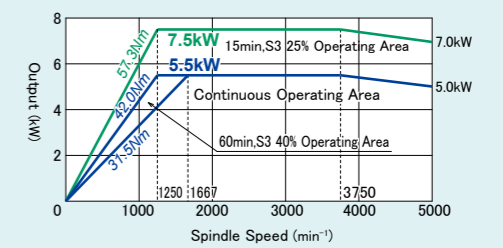
**3200min<sup>-1</sup>**

FANUC : β i16



**5000min<sup>-1</sup>**

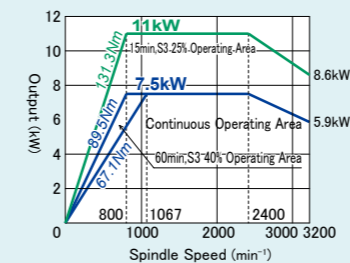
FANUC : β i16



#### 11/7.5kW

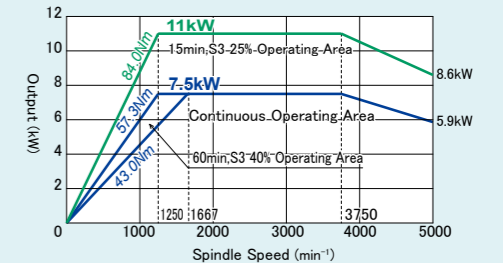
**3200min<sup>-1</sup>**

FANUC : β i18



**5000min<sup>-1</sup>**

FANUC : β i18



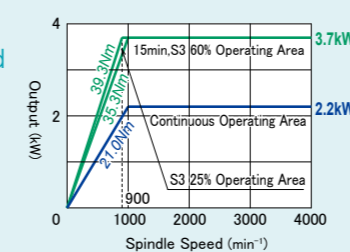
### Right Spindle

#### 3.7/2.2kW

Standard

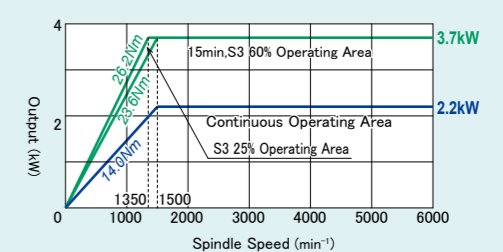
**4000min<sup>-1</sup>**

FANUC : α i12



**6000min<sup>-1</sup>**

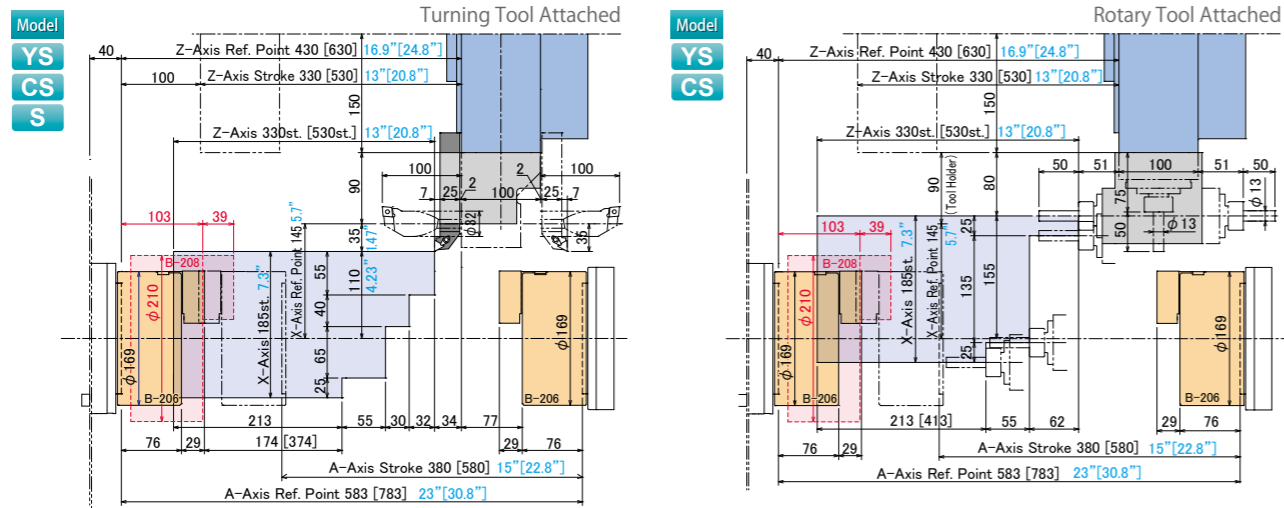
FANUC : α i12



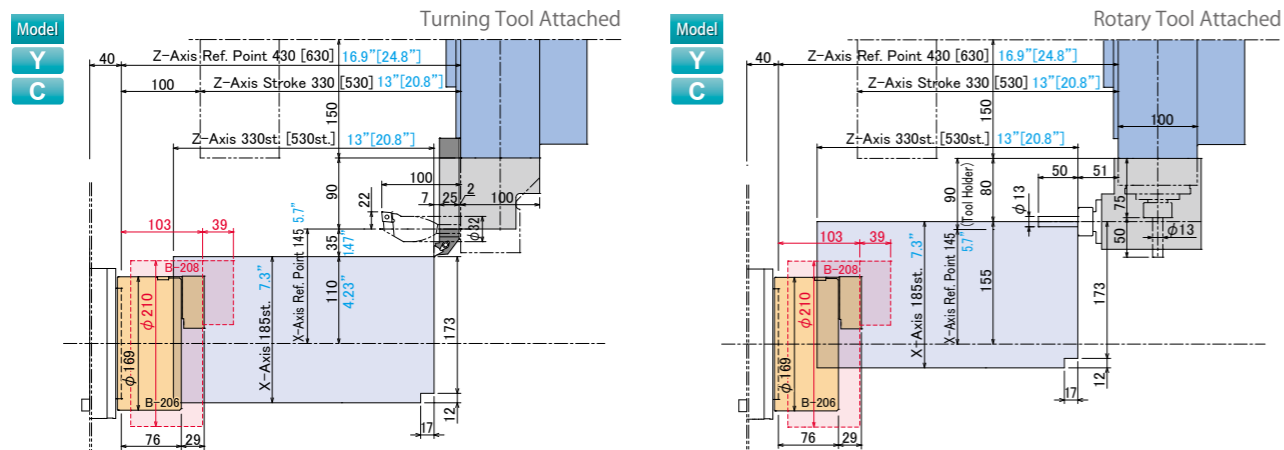
## Travel Range Unit : mm inch

[ ] dimension are L5. Left Spindle...B206 : TCY-160, B-208 : TCY-200

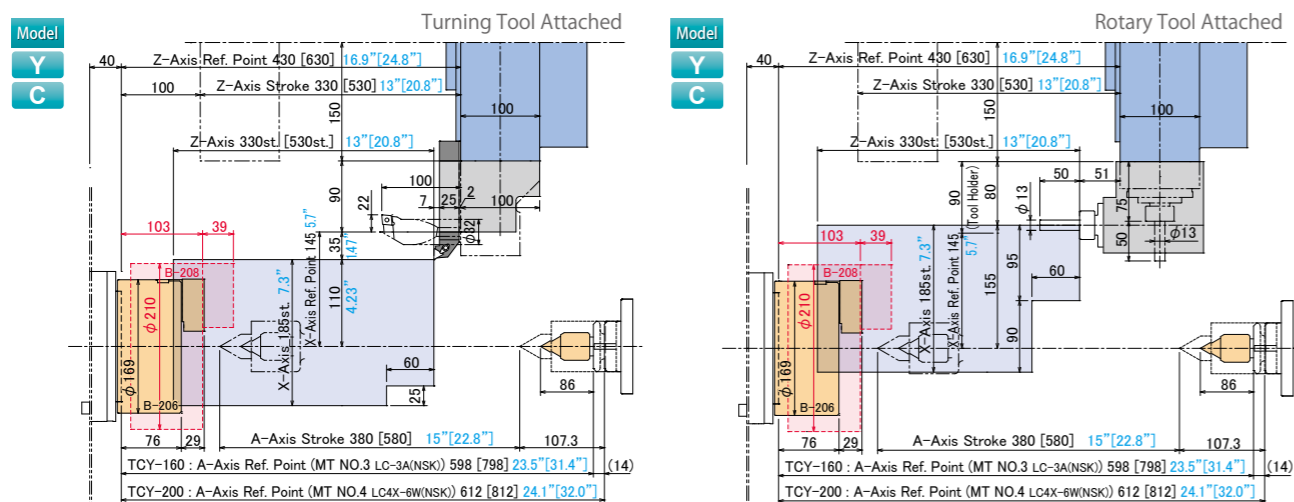
### with Right Spindle



### without Right Spindle, Tailstock

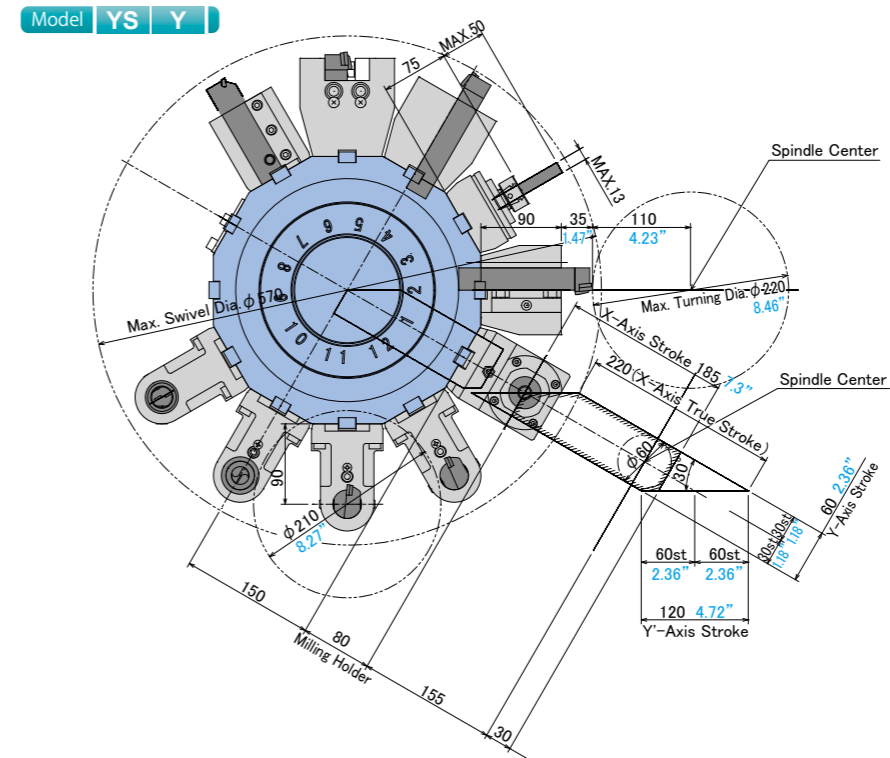


### with Tailstock

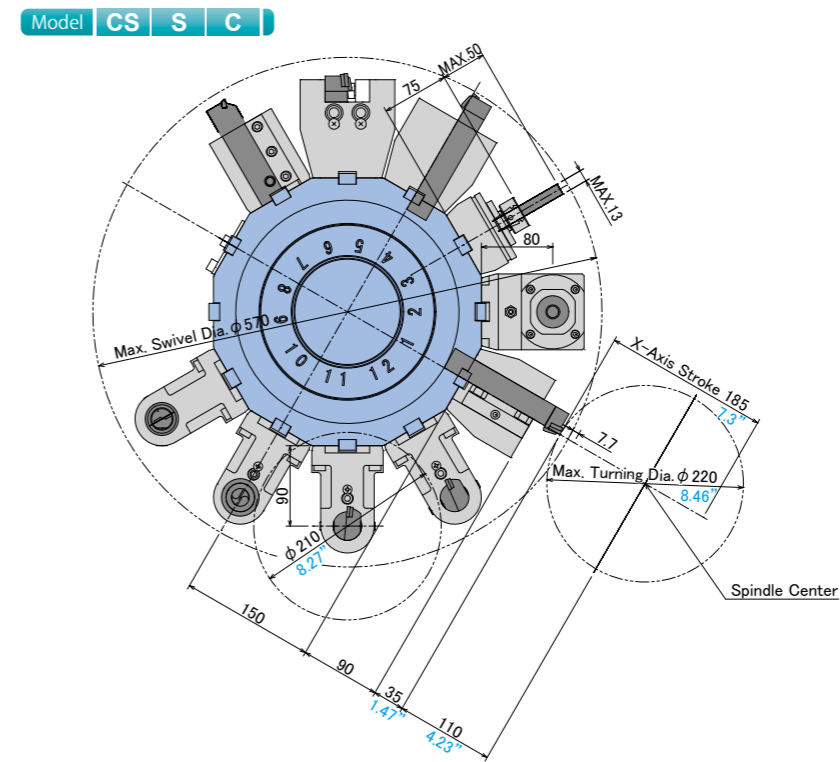


## Interference Unit : mm inch

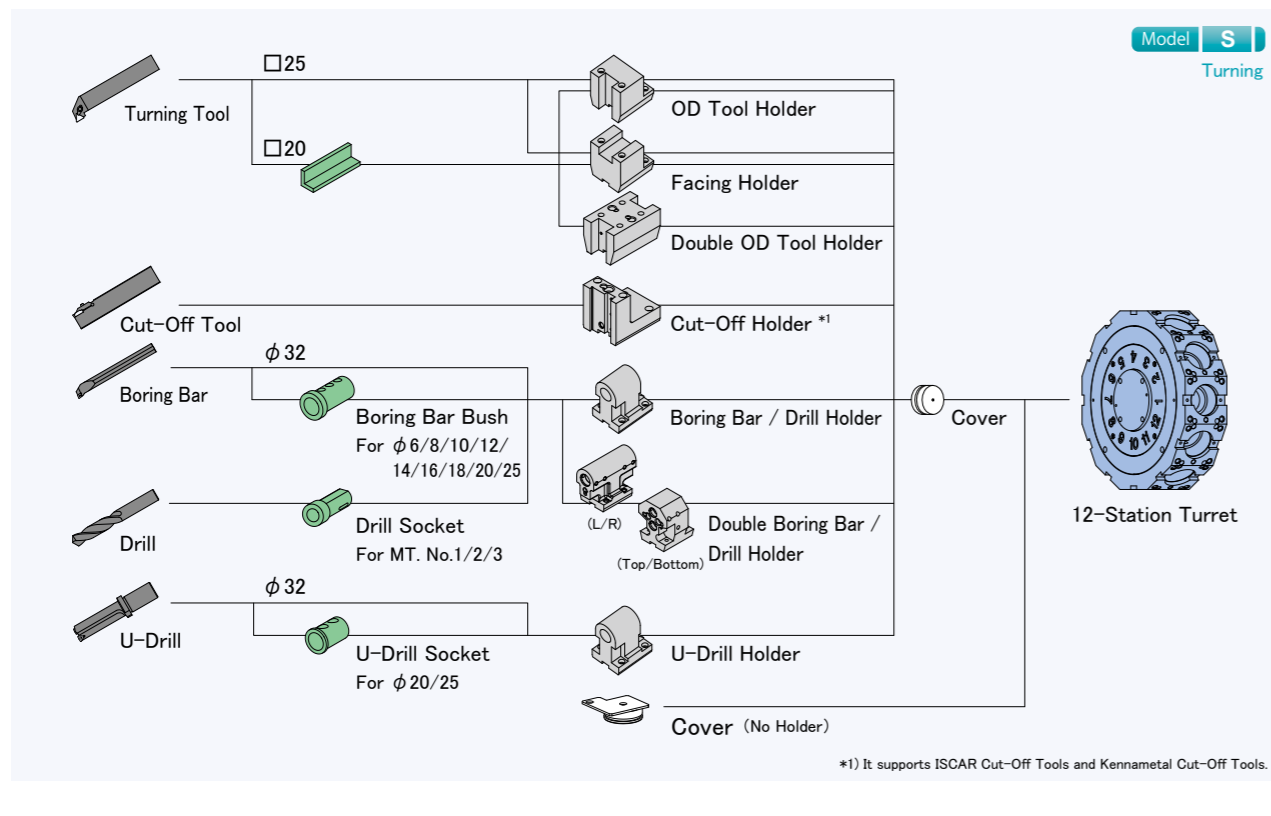
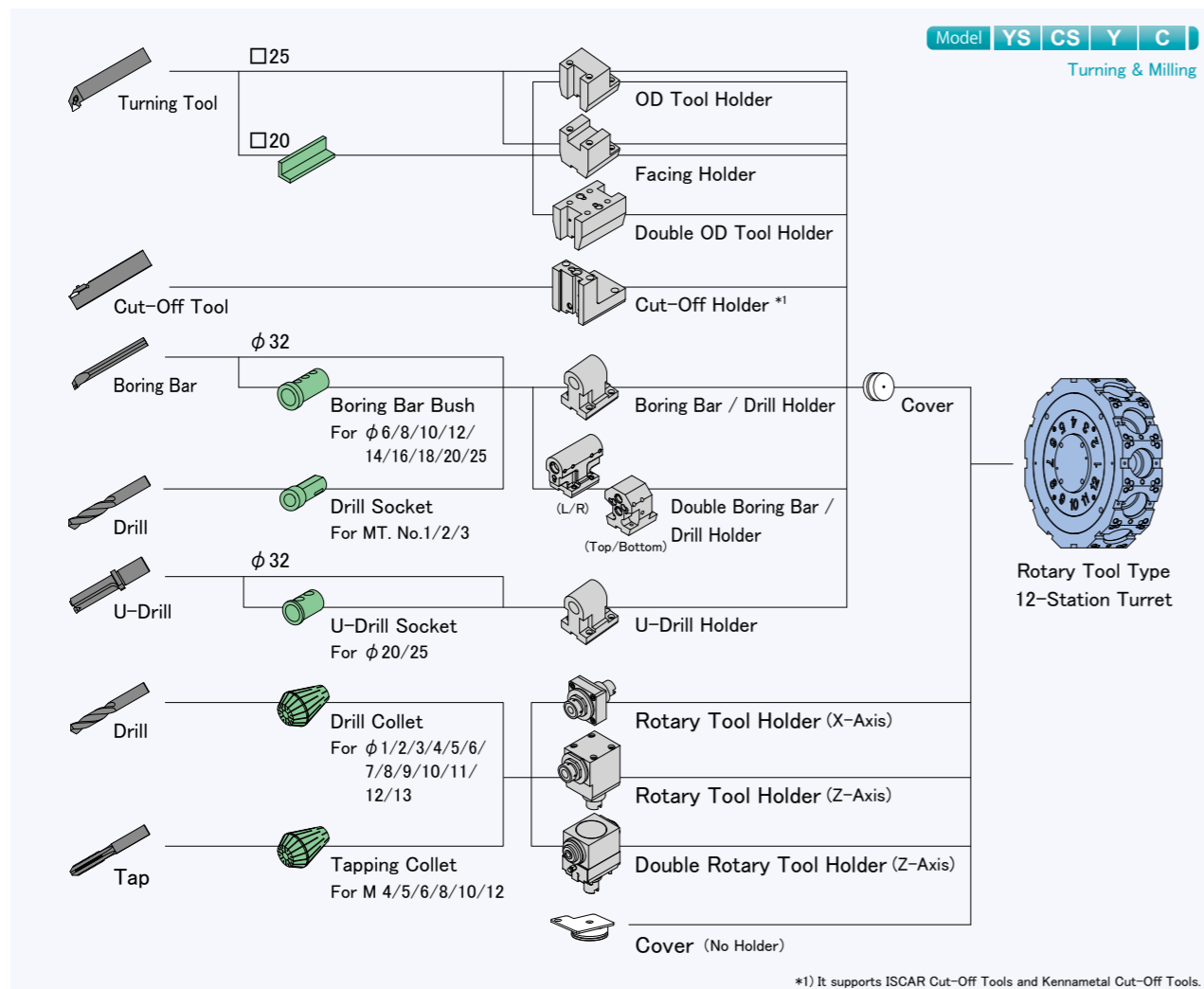
### with Y-Axis



### 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 program for example every 20 parts.

### Loader Specification

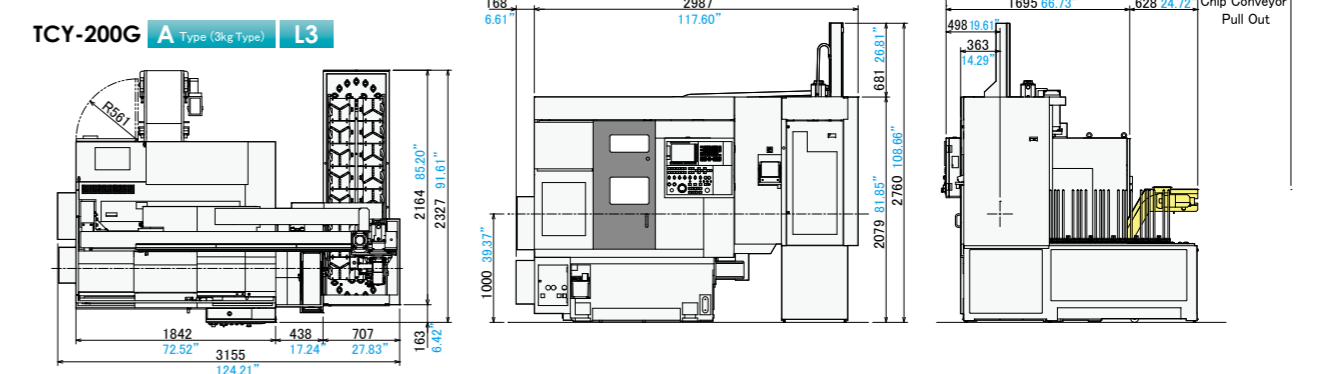
			TCY-200		
			0.7kg Type	3kg Type	
Target Workpiece	Outside Diameter	mm	100	100	160
	Length	mm	60	45/60	50/100
	Weight	kg	0.7	0.7	3
Running Speed	Vertical	m/min <sup>-1</sup>	150	150	150
	Longitudinal	m/min <sup>-1</sup>	150	150	180

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

### Work Feeder Specifications

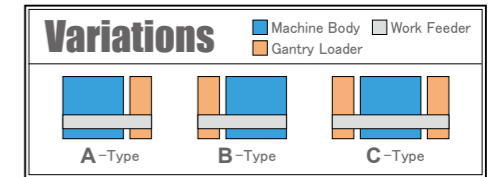
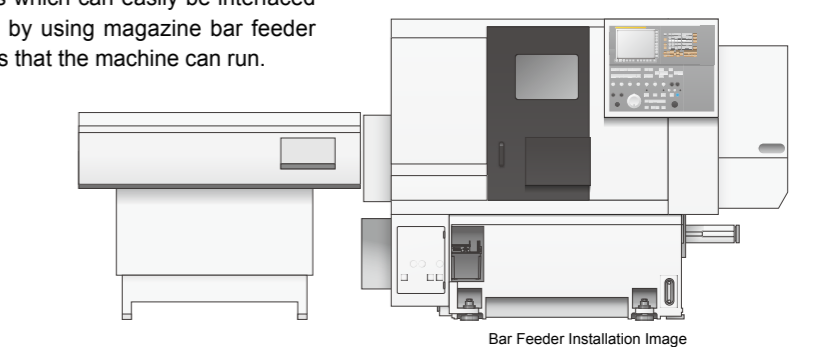
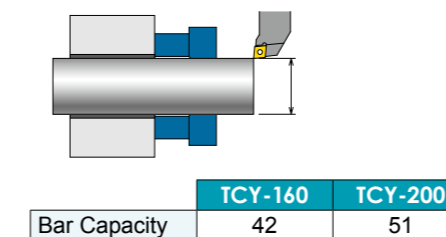
			TCY-200		
			0.7kg Type	3kg Type	
Number of Pallets			14	14	16
Loading Capacity (Per Pallet)	kg		25	25	40
Maximum Height	mm		450	450	450

### Machine Dimensions



### 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.





## 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	340 13.39"				
	Max. Turning Diameter	220 8.46"				
	Max. Turning Length *1	L3 : 291 11.46" L5 : 491 9.33"				
	Spindle Nose to Nose Maximum Distance	L3 : 583 23" L5 : 783 30.83"				-
	Bar Capacity (Left Spindle)	42 1.65"				-
	Bar Capacity (Right Spindle)	42 1.65"				-
Travel	X-Axis Travel (Turret)	185 7.3"				
	Z-Axis Travel (Turret)	L3 : 330 13" L5 : 530 20.8"				
	Y-Axis Travel (Turret)	±30 1.18"	-		±30 1.18"	-
	A-Axis Travel (Right Spindle Stock)	L3 : 380 15" L5 : 580 22.8"				
Left Spindle (6")	Maximum Speed	4000 6000				
	Minimum Indexing Angle	0.001				0.001
	Type of Spindle Nose (Nom, Code)	φ140 Flat				
	Spindle-Through Hole Diameter	53 2.09"				
	Bearing Inside Diameter	90 3.54"				
Right Spindle (6")	Maximum Speed	4000 6000				-
	Minimum Indexing Angle	0.001				-
	Type of Spindle Nose (Nom, Code)	φ140 Flat				-
	Spindle-Through Hole Diameter	53 2.09"				-
	Bearing Inside Diameter	90 3.54"				-
Turret	Number of Turrets	1				
	Type of Turret	12-Station Drum Turret, All-Holder Type				
	Number of Tools	12				
	Height of Square Tool Shank	25 1"				
	Diameter of Boring Bar Shank	32 1.25"				
Rotary Tool	Number of Rotary Tools	12				
	Maximum Speed	6000				
	Tool Shank Maximum Diameter	φ13 0.51", M8				φ13 0.51", M8
	Tool Spindle Taper Hole (Type, Number)	AR20				AR20
	Bearing Inside Diameter of Tool Spindle	30 1.8"				30 1.8"
Feedrate	Rapid Traverse (Turret)	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 X:787.40" / Z:944.88"
	Rapid Traverse (Right Spindle Stock/Tailstock)	A : 20 787.40"				
	Rapid Traverse (Left & Right Spindle Stock)	C : 100 (L/R)				C : 100 (L)
	Jog Feedrate	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"
Tailstock	Travel of Tailstock	L3 : 380 15" L5 : 580 22.8"				
	Type of Taper Hole in Quill	-				MT3
Motor	Spindle Motor for Left Spindle (15 min/cont.)	5.5/3.7 7.5/5.5 7.3/4.9 10/7.3				
	Spindle Motor for Right Spindle (15 min/cont.)	3.7/2.2 4.9/2.9				-
	Rotary Tool Spindle Motor (5 min/15 min/cont.)	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	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, Y, 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	0.75 1.0				
Power Sources Required	Coolant Pump Motor	0.25 0.3				
	Electric Power	13.4 16.0				
Tank Capacity	Air Pressure Source	MPa, L/min <sup>-1</sup> 0.4, 100				
	Hydraulic Unit Tank	L gal 19 5.02				
	Lubricant Tank	L gal 1.8 0.48				
Machine Size	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	L3 : 2400×1695 94.49"×66.73" L5 : 2760×1795 108.66"×70.67"		L3 : 2010×1695 79.13"×66.73" 2210×1695 *2 87.01"×66.73" L5 : 2760×1795 108.66"×70.67"		
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
Capability - Capacity	Max. Swing	340 13.39"				
	Max. Turning Diameter	220 8.46"				
	Max. Turning Length *1	L3 : 254 10.0" L5 : 454 17.87"				
	Spindle Nose to Nose Maximum Distance	L3 : 583 23" L5 : 783 30.83"				-
	Bar Capacity (Left Spindle)	51 2.01"				-
	Bar Capacity (Right Spindle)	42 1.65"				-
Travel	X-Axis Travel (Turret)	185 7.3"				
	Z-Axis Travel (Turret)	L3 : 330 13" L5 : 530 20.8"				
	Y-Axis Travel (Turret)	±30 1.18"	-		±30 1.18"	-
	A-Axis Travel (Right Spindle Stock)	L3 : 380 15" L5 : 580 22.8"				
Left Spindle (8")	Maximum Speed	3200 5000				
	Minimum Indexing Angle	0.001				0.001
	Type of Spindle Nose (Nom, Code)	A2-6				
	Spindle-Through Hole Diameter	63 2.48"				
	Bearing Inside Diameter	100 3.94"				
Right Spindle (6")	Maximum Speed	4000 6000				-
	Minimum Indexing Angle	0.001				-
	Type of Spindle Nose (Nom, Code)	φ140 Flat				-
	Spindle-Through Hole Diameter	53 2.09"				-
	Bearing Inside Diameter	90 3.54"				-
Turret	Number of Turrets	1				
	Type of Turret	12-Station Drum Turret, All-Holder Type				
	Number of Tools	12				
	Height of Square Tool Shank	25 1"				
	Diameter of Boring Bar Shank	32 1.25"				
Rotary Tool	Number of Rotary Tools	12				
	Maximum Speed	6000				
	Tool Shank Maximum Diameter	φ13 0.51", M8				φ13 0.51", M8
	Tool Spindle Taper Hole (Type, Number)	AR20				AR20
	Bearing Inside Diameter of Tool Spindle	30 1.8"				30 1.8"
Feedrate	Rapid Traverse (Turret)	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 X:787.40" / Z:944.88"
	Rapid Traverse (Right Spindle Stock/Tailstock)	A : 20 787.40"				
	Rapid Traverse (Left & Right Spindle Stock)	C : 100 (L/R)				C : 100 (L)
	Jog Feedrate	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"
Tailstock	Travel of Tailstock	L3 : 380 15" L5 : 580 22.8"				
	Type of Taper Hole in Quill	-				MT4
Motor	Spindle Motor for Left Spindle (15 min/cont.)	7.5/5.5 11/7.5 10/7.3 14.7/10				
	Spindle Motor for Right Spindle (15 min/cont.)	3.7/2.2 4.9/2.9				-
	Rotary Tool Spindle Motor (5 min/15 min/cont.)	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	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, Y, 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	0.75 1.0				
Power Sources Required	Coolant Pump Motor	0.25 0.3				
	Electric Power	16.0 18.0				
Tank Capacity	Air Pressure Source	MPa, L/min <sup>-1</sup> 0.4, 100				
	Hydraulic Unit Tank	L gal 19 5.02				
	Lubricant Tank	L gal 1.8 0.48				
Machine Size	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	L3 : 2500×1695 98.43"×66.73" L5 : 2860×1795 112.60"×70.67"		L3 : 2110×1695 83.07"×66.73" 2310×1695 *2 90.94"×66.73" L5 : 2860×1795 112.60"×70.67"		
Machine Weight	kg lbs L3 : 3500 7700 L5 : 4100 9020					

Red is Optional.

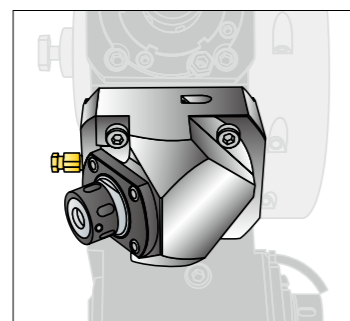
\*1) Dimensions are B-208(KITAGAWA)

\*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	●	●	●	●
	Right Spindle	●	●	-	-
	TCY-160	SS1246	-	-	-
	TCY-200	SS1452	-	-	-
	TCY-160	SS1246	-	-	-
	TCY-200	SS1246	-	-	-
Coolant Pump (250W)	●	●	●	●	●
Lighting Apparatus	●	●	●	●	●
Working Tool Set	●	●	●	●	●
Instruction Manual	●	●	●	●	●

Items	YS (Std.)	CS	S	Y	C
Hollow Cylinder for Hydraulic Chuck (with Check Valve)	●	●	●	-	-
	TCY-160	SS1246	-	-	-
	TCY-200	SS1246	-	-	-



[Optional] 45° Angle Milling Holder

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

● : Standard ○ : 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.

## Overseas Network



### Sales Department Overseas Sales Section

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Nagano Office	TEL : 0263-53-5866 FAX : 0263-53-5870
Hamamatsu Office	TEL : 053-439-0131 FAX : 053-439-0141



# TiwaP-1

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

Anybody can make the Program easily.

## 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.



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

- ① NC program<sup>1</sup> can be called (set) in the interactive (TiwaP-1) program.
- ② NC program<sup>2</sup> 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 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.

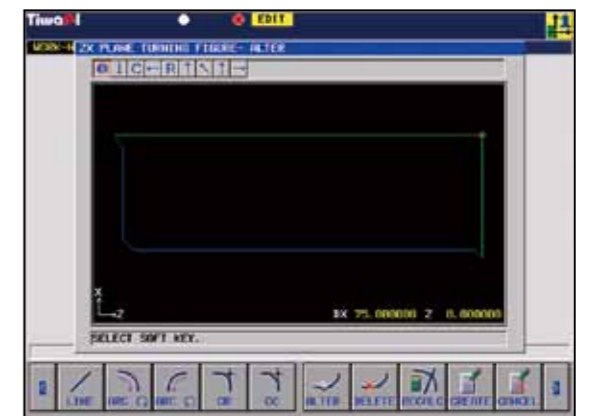
- ▼ By "Reliable Guide Function" Process Tag will be made automatically



- ▲ 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

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**ISO9001 Certified  
JQA-2010**

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.

NC511E1111FN2000B

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