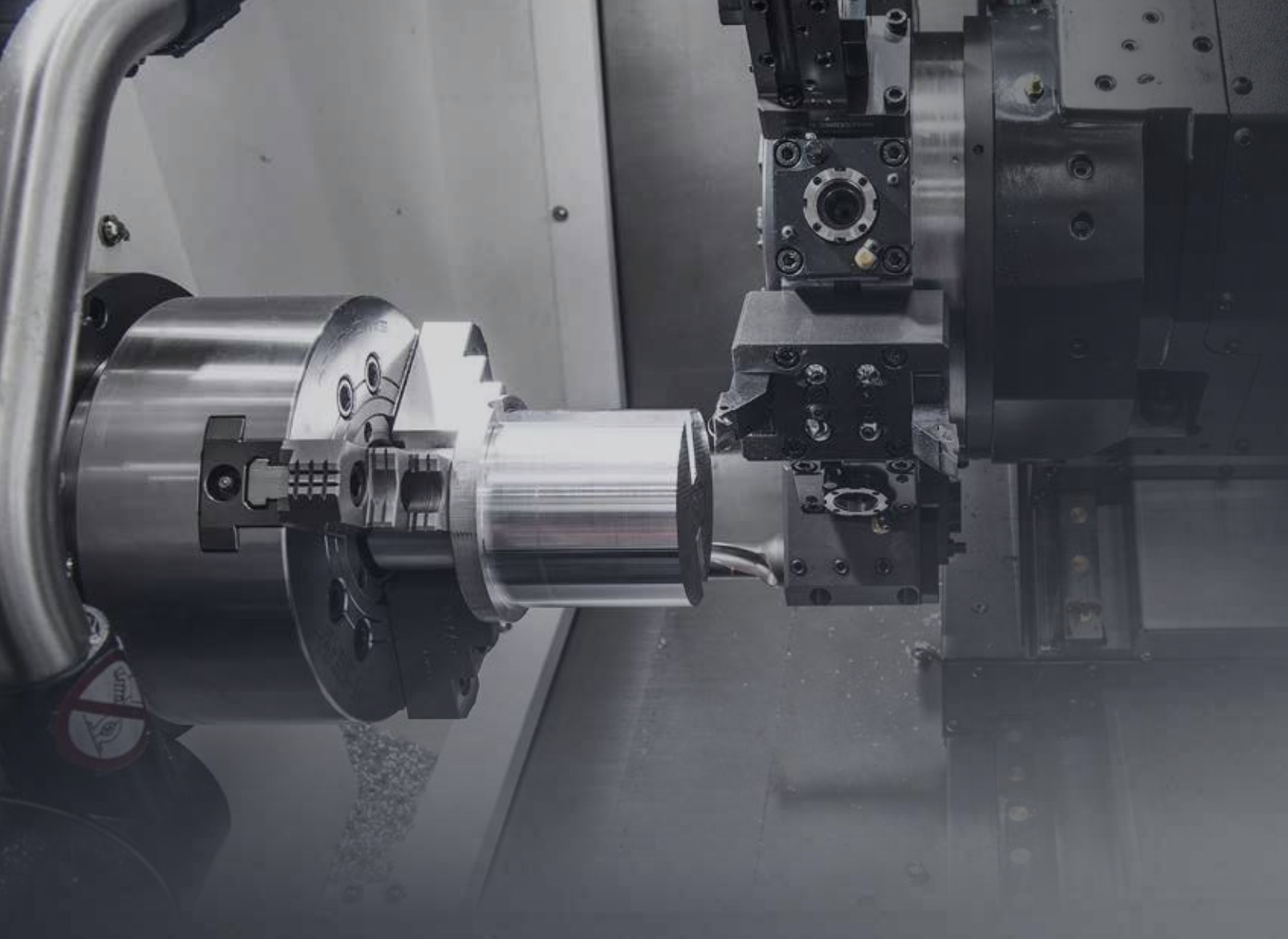


TC-Y Series

TC22YA/LYA/LSYA | TC22Y/LY/LSY

SG WIA Middle/Small Type Y-Axis Turning Center



Technical Leader

The CNC Turning Center T C YSeries, designed with SG WIA's engineering expertise to maximize productivity by enhancing rigidity and accuracy of machining.

ITEM	Main Chuck		Sub Chuck	Bed (Z-Axis Travel)		Mill Turret	Tail Stock
	6"	8"	5"	340mm (26.8")	560mm (32.7")	BMT45	MT#4
TC22YA	●			●		●	○
TC22LYA	●				●	●	●
TC22LSYA	●		●		●	●	
TC22Y		●		●		●	○
TC22LY		●			●	●	●
TC22LSY		●	●		●	●	

● : Standard ○ : Option

- 30° slanted one-piece bed structure with high rigidity
- Stabilized unit structure to minimize thermal displacement
- Integrated processing through synchronized control of Main/Sub spindle
- Multi-tasking operation with wedge type Y-axis BMT45 turret
- Excellent rapid traverse rate (X/Y/Z) : 30/10/36 m/min (1,181/394/1,417 ipm)
- Ergonomic design for convenient access to chuck and tool



Y-AXIS TURNING CENTER



APPLICATIONS & PARTS

WORM SHAFT



Reduced machining time by multi-tasking operation

TC-Y Series with Y-axis makes it possible to work high-valued product with integrated processing using sub spindle and various rotary tools in short time.

WHEEL HUB



COOLING ADAPTER



HUB SHAFT



DRIVE GEAR



01 BASIC STRUCTURE

Which Can Cover All Machining Process with Only One Initial Setting

Mill Turret

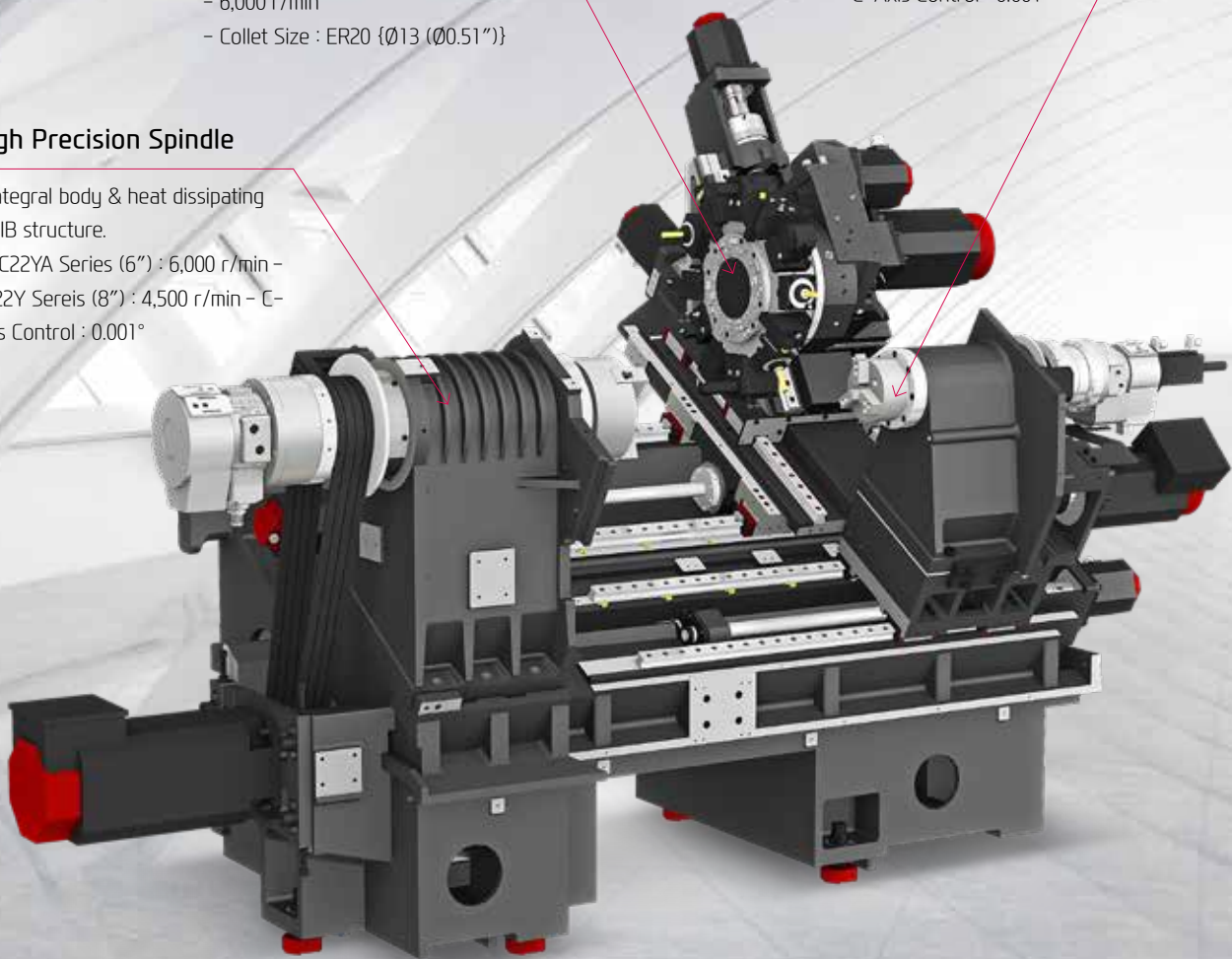
- BMT45 (12 [24] Station)
- 6,000 r/min
- Collet Size : ER20 { $\varnothing 13$ ($\varnothing 0.51$ ")}

Sub Spindle

- 5" / 6,000 r/min
- C-Axis Control : 0.001°

High Precision Spindle

- Integral body & heat dissipating RIB structure.
- TC22YA Series (6") : 6,000 r/min -
- TC22Y Series (8") : 4,500 r/min - C-Axis Control : 0.001°



Automatic Grease Supply Unit

Automatic grease lubrication system, which does not require frequent refill, is applied as standard to improve user convenience and cost efficiency.

REDUCTION OF NON-CUTTING TIME BY FAST RAPID SPEED

ALL-IN-ONE TYPE OF BED

Optimal Structural Analysis

Structural analysis was applied to the design of the machine to increase the tool post body and reduce the machine's height so as to maintain the bed's dynamic rigidity even during high-speed machining.

In addition, the TC-Y Series bed slope is pitched at 30 degrees to ensure more stable machining.



Floor Space (L×W)

TC22YA	TC22Y	TC22LYA/LSYA/LY/LSY
2,210×1,730 mm (87"×68.1")	2,280×1,730 mm (89.8"×68.1")	2,960×1,730 mm (116.5"×68.1")

GUIDEWAY

High-Speed Roller LM Guideway

Linear roller guideways are applied to reduce non-cutting time and bring high rigidity.

Rapid Traverse Rate (X/Y/Z)

30/10/36 m/min (1,181/394/1,417 ipm)

Travel (X/Y/Z)

TC22YA/Y

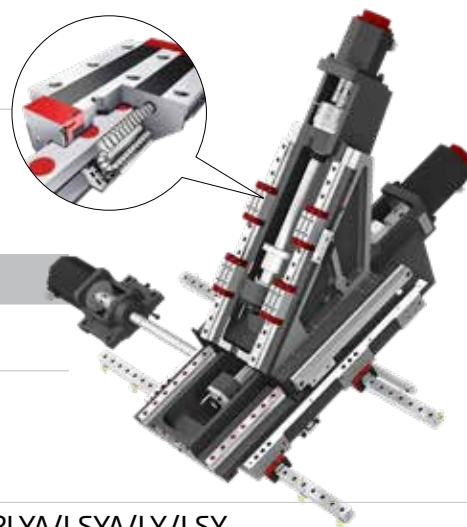
210/110/340 mm

(8.3"/4.3"/13.4")

TC22LYA/LSYA/LY/LSY

210/110/560 mm

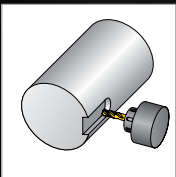
(8.3"/4.3"/22")



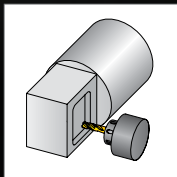
02 Y-AXIS FUNCTION

The Y-Axis Function, Cutting for Complex Shaped Work-piece

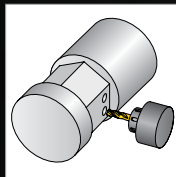
HIGH PERFORMANCE Y-AXIS



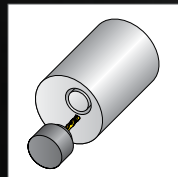
Keyway Milling



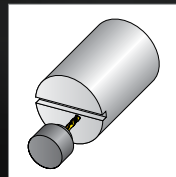
Multi-sided machining



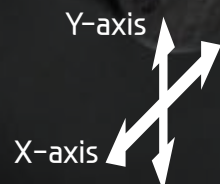
Eccentric hole machining



X+Y axis circular interpolation



Fine Grooving



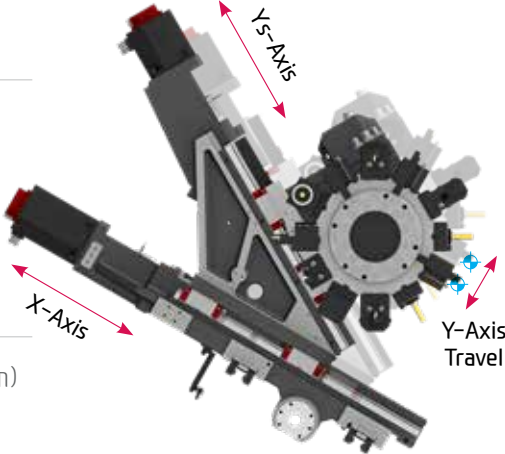
MACHINING PROCESS WITH ONLY ONE INITIAL SETTING

Y-AXIS

Wedge Type Y-Axis Structure

The TC-Y Series is designed with a wedge type Y-axis that is transferred by the simultaneous operation of the Ys-axis and the X-axis.

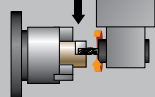
In addition, excellent rigidity makes it possible to perform superb quality when machining a high-accuracy machining.

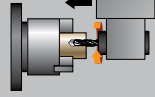


- ⦿ Y-axis Rapid Traverse Rate : 10 m/min (394 ipm)
- ⦿ Y-axis Travel : 110 {±55} mm (4.3")

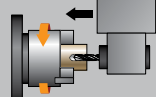
MACHINING CAPABILITY

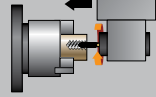
HYUNDAUI WIA is doing its best to get the world-top class quality, productivity and technology for meeting the global customers' needs through its full R&D investment.

 End Mill (Material : SM45C)	
Tool Dia.	Ø12 mm
Spindle rpm	750 r/min
Forwarding speed	188 mm/min
Cutting speed	29 m/min
Machining depth	14 mm

 Drill (Material : SM45C)	
Tool Dia.	Ø13 mm
Spindle rpm	2,540 r/min
Forwarding speed	432 mm/min
Cutting speed	104 m/min

 O.D Turning (Material : SM45C)	
Machining Dia.	Ø88 mm
Machining depth	4 mm
Spindle rpm	856 r/min
Cutting speed	215 m/min
Forwarding speed	0.5 mm/rev
Chip discharging amount	430 cc/min

 U-Drill (Material : SM45C)	
Tool Dia.	Ø60 mm
Spindle rpm	1,011 r/min
Forwarding speed	0.175 mm/rev
Cutting speed	191 m/min
Chip discharging amount	500 cc/min

 Tap (Material : SM45C)	
Tap spec. x Pitch	M14 x P2.0
Spindle rpm	600 r/min
Forwarding speed	2 mm/min
Cutting speed	23 m/min

❖ The above result might be different by types of processing circumstances.

03 HIGH PRECISION SPINDLE

Long Lasting, High Accuracy & Excellent Performance CNC Turning Center

Spindle Specifications

[] : Option

ITEM	Spindle Speed	Motor (Max./Cont.)	Torque (Max.)	Driving Method
6" Spindle	6,000 rpm (FANUC)	15/11 kW (20/15 HP)	127 N·m (93.7 lbf·ft)	Belt
8" Spindle	4,500 rpm (FANUC)	15/11 kW (20/15 HP)	167 N·m (123.2 lbf·ft)	
	[4,500 rpm (SIEMENS)]	[12.2/9 kW (16.4/12 HP)]	[136.5 N·m (100.7 lbf·ft)]	
Sub Spindle	6,000 rpm (FANUC)	7.5/3.7 kW (10/5 HP)	63.6 N·m (46.9 lbf·ft)	
	[6,000 rpm (SIEMENS)]	[7.4/4.9 kW (9.9/6.6 HP)]	[47 N·m (34.7 lbf·ft)]	

HEAVY DUTY CUTTING & HIGH ACCURACY

MAIN SPINDLE

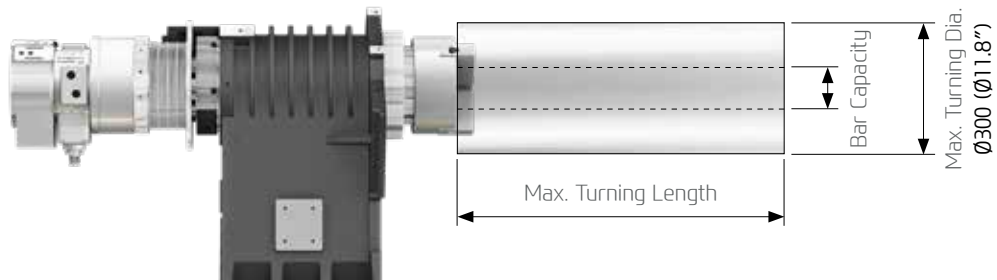
Spindle for Heavy Cutting

The main spindle is designed with the same structure often found in larger sized machines. The combination of double cylindrical roller bearings and angular contact ball bearings leads to excellent heavy duty cutting performance.

Also, machining performance is enhanced by **applying ribstar belt** to minimize noise and belt slipping problems. The spindle is designed with a **labyrinth structure** to minimize possible bearing damage from coolant and to improve machining stability.

C-Axis Control

C-axis of TC-Y Series can be controlled to 0.001° which makes it possible to process various shapes.



Max. Turning Length	Standard Bed	Long Type Bed	Bar Capacity
6 inch Spindle	309 mm (12.2")	529 mm (20.8")	Ø51 mm (Ø2")
8 inch Spindle	288 mm (11.3")	508 mm (20")	Ø65 mm (Ø2.6")

SUB SPINDLE ('SY' Type)

The Belt-type sub spindle is designed to minimize thermal displacement during the continuous machining, offering from the heavy-duty cutting to the high-speed machining. When the main spindle cutting is completed, the sub spindle rotation is synchronized with the main spindle allowing the workpiece to be transferred to the sub spindle, and machining can begin on the back side of the workpiece.



TC-Y SERIES

04 BMT TURRET

High speed, High Accuracy, Highly Reliable Servo Turret



VARIOUS DRIVEN PRECISION BMT TOOL HOLDERS

TURRET

Mill Turret (BMT45)

The BMT turret secures the tool with four bolts and key on the tool mounting surface of the turret, making it possible to powerfully fix the tool, ensuring high reliability in rigidity and precision.

- ⦿ Speed (rpm) : 6,000 r/min
- ⦿ Collet Size : ER20 / Ø13 (Ø0.51")
- ⦿ Indexing Time : 0.15 sec



STRAIGHT MILLING HEAD



ANGULAR MILLING HEAD



Mill Tool Holder

Machining capability has increased with the addition of straight milling head tool holder.

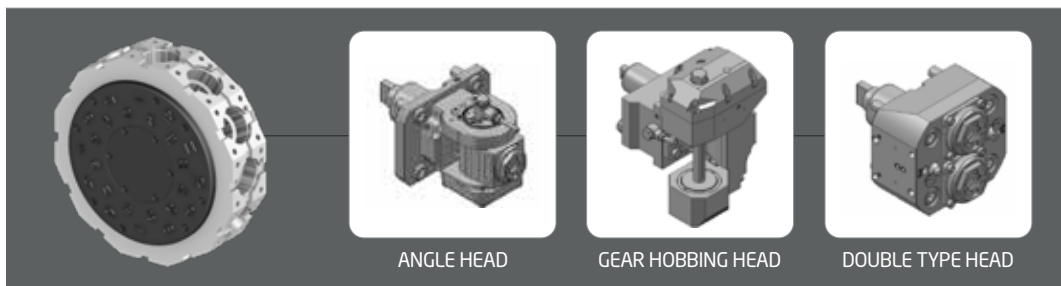
Increased Rotating Tools

Straight and angular milling haed 1ea > 2ea, respectively

SPECIAL TOOL

OPTION

With the Y-axis, the TC-Y Series can process high value-added products using a variety of rotating tools. In particular, there is a multi-holder for attaching a variety of tools to one holder, and an eccentric rotary tool for handling eccentric parts without additional axis travel, which can realize integration of process with one machine.



ANGLE HEAD

GEAR HOBBING HEAD

DOUBLE TYPE HEAD

❖ Consultation needed when ordering these options.

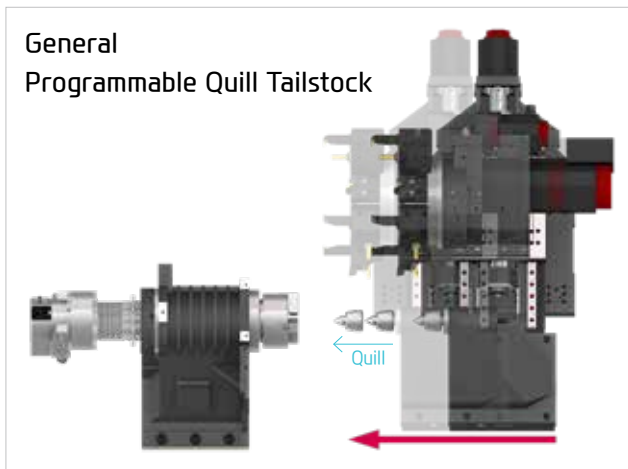
05 USER CONVENIENCE

Various Devices for User Friendly

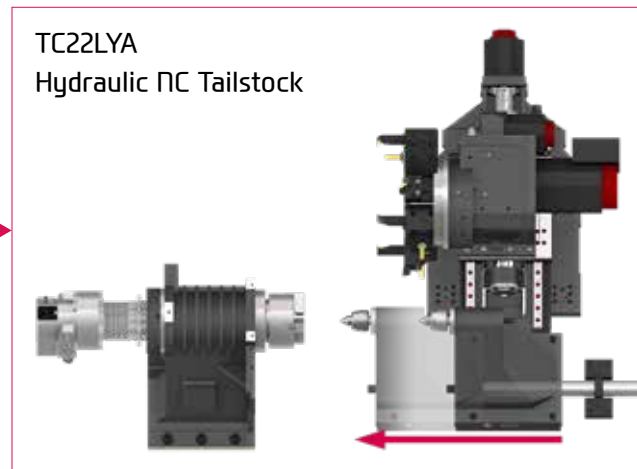
HYDRAULIC NC TAILSTOCK

Hydraulic NC Tailstock with Position Control (Long Type Std. / Standard Type Opt.)

The hydraulic NC tailstock applied to the SE series enables independent transfer through a program independently of the turret movement and it simultaneously achieved "Improvement of user convenience" and "Reduction of cycle time".



- > A structure that moves by fixing the tailstock to the turret
- > After fixing the tailstock, the quill operated by hydraulic pressure advances to stabilize the material
- > Automation configuration error due to interference with turret during configuration of automation

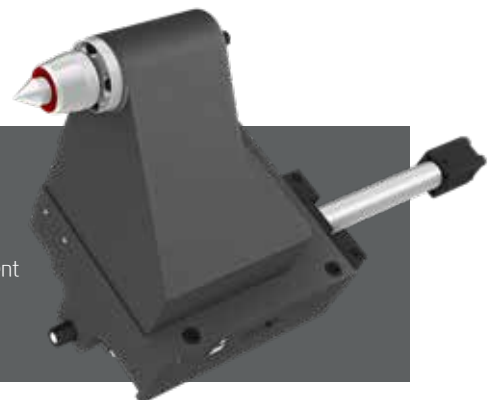


- > Structure in which the tailstock moves independently from the turret (position control : 0.1mm)
- > Stabilization of tailstock body hydraulic pressure
- > Turret moves independently while the tailstock moves to reduce machining setup time
- > TC22LYA standard (MT#4 live center application)



HW-TMS (TAILSTOCK OPERATION)

This software is capable of manipulation and data management of tailstock operations through intuitive GUI.



CHIP DISPOSAL SOLUTION



Timely and effective disposal of chips will enhance productivity as well as the working environment.

Hinge	Chip Type : Roughing Chip, Long Chip, Chip complex	Material : SS41, 45C, Cast Steel	Front-Right Direction
	Highly efficient when disposing a lot of chips. Capable of handling stringy chips..		
Scraper	Chip Type : Finely broken chip blown out	Material : cast Iron, Nonferrous	
	Convenient for shortly cut chips.		
❖ Screw	Chip Type : The lower portion of micro-chips	Material : Steel, Casting	
	Compresses and ejects chips to reduce chip Trouble.		
❖ Drum Filter	Chip Type : Powder, Micro Chip	Material : AL	
	Advantageous in precision, as the chips do not flow in to the coolant nozzle.		

❖ When ordering a screw or drum filter chip conveyor, prior consult with hyudai wia's sales person.

HIGH PRECISION SYSTEM & COOLANT UNIT



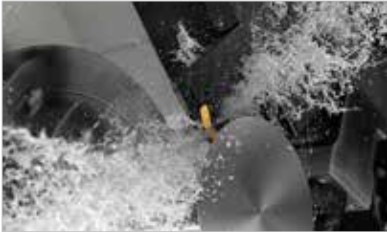
Automatic Q-Setter



Linear Scale



Work Probe



Standard Coolant (Nozzle)



Chuck Coolant (Upper Chuck)



Chuck Air Blow (Upper Chuck)

06 FANUC – SMART PLUS

The Compatible All-round Control



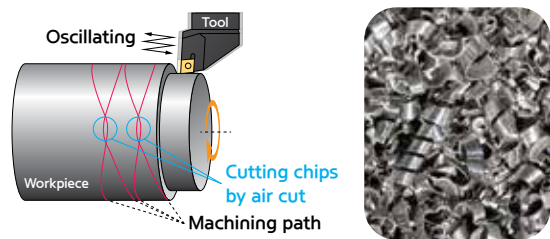
15" Touch-type Monitor as a standard



Smart Machine Control	Fast Cycle Time Technology
Conversational Program	Fine Surface Technology
i-HMI	Smart Servo Control Technology
Part Program Storage	SmartGuide-i
No. of Registerable Programs	Machining-aid Function
	5120M (2MB)
	1000 EA

Servo Learning Oscillation Function for ChipBreaking **OPTION**

- Machining Method : he tool cuts the workpiece moving in a zigzag pattern. (Oscillating) → Air cut section occurs → Long chips break
- Advantage : Increase tool life, Enhance surface finishing, Improve chip disposal
- Machine : All turning centers with FANUC controller (Option)



(Developed special screen page for servo learning oscillation function / Even when this function is applied, the cycle time remains same.)

MMS (Machine Monitoring System)



MMS Cloud

A cloud server-based equipment monitoring system for collecting and analyzing facility operation data.

Manufacturing big data solution with design, manufacturing, and intelligence technology of SG-WIA
(Big data collection/Analysis/Visualization)

SMART CNC (FANUC SMART PLUS)



1. Dialogue Program (Smart Guide-i)

This software offers the maximum user convenience through dialogue manipulation from setup to processing. This includes writing processing programs and simulation checks.

2. LAUNCHER

This software offers shortcuts for quick access to specialized features and frequently used features.

SPECIFICATIONS

Standard & Optional

Spindle		TC22YA	TC22LYA	TC22LSYA
Main Spindle	6"	●	●	●
Hollow Chuck 3 Jaw	8"	-	-	-
Main Spindle	6"	○	○	○
Solid Chuck 3 Jaw	8"	-	-	-
Sub Spindle	5"	-	-	●
Hollow Chuck 3 Jaw	6"	-	-	○
Sub Spindle	5"	-	-	○
Solid Chuck 3 Jaw	5"	-	-	○
Standard Soft Jaw (1set)		●	●	●
Chuck Clamp Foot Switch		●	●	●
2 Steps Hyd. Pressure Device		○	○	○
Spindle Inside Stopper		☆	☆	☆
Main Spindle Cs-axis (0.001")		●	●	●
Sub Spindle Cs-axis (0.001")		-	-	●
Chuck Open/Close Confirmation Device		●	●	●
2 Steps Chuck Foot Switch		○	○	○
Sub Chuck Foot Switch		-	-	●
Turret				
Tool Holder		●	●	●
Mill Turret	BMT45	●	●	●
	BMT55	○	○	○
	12 Tool	●	●	●
	24 Tool	○	○	○
Straight Milling Head	Collet Type, 2ea	●	●	●
Angular Milling Head	Collet Type, 2ea	●	●	●
Straight Milling Head	Adapter Type	○	○	○
Angular Milling Head	Adapter Type	○	○	○
Boring Sleeve (U-drill Holder/Sleeve : Public Use)		●	●	●
Drill Socket		○	○	○
U-Drill Holder/Cap		●	●	●
Angle Head		☆	☆	☆
Adapter Set		○	○	○
Tail Stock & Steady Rest				
Hydraulic NC Tail Stock (Std. Live Center)		○	●	-
Quill Type Tail Stock		○	○	-
High Precision Live Center		☆	☆	-
Tail Stock Foot Switch		○	○	-
Coolant & Air Blow				
Standard Coolant (Nozzle)		●	●	●
Chuck Coolant (Upper Chuck)		○	○	○
Gun Coolant		○	○	○
Through Spindle Coolant (Only for Special Chuck)		☆	☆	☆
Bed Flushing Coolant (Only for Rear Collant Tank)		○	○	○
Turnmill Through Coolant		○	○	○
Chuck Air Blow (Upper Chuck)		○	○	○
Sub Chuck Air Blow		-	-	○
Tail Stock Air Blow (Upper Tail Stock)		○	○	-
Turret Air Blow		☆	☆	☆
Air Gun		○	○	○
Through Spindle Air Blow (Only for Special Chuck)		-	-	-
High Pressure Coolant	0.5Bar	●	●	●
	6Bar	○	○	○
	20Bar	○	○	○
	70Bar	○	○	○
Power Coolant System (For Automation)		☆	☆	☆
Chip Disposal				
Coolant Tank	Front(150ℓ [39.6 gal])	●	-	-
	Front(200ℓ [52.8 gal])	-	●	●
	Rear(150ℓ [39.6 gal])	○	○	○
Chip Conveyor (Hinge/Scraper/Screw)	Front (Right)	○	○	○
	Rear (Rear)	○	○	○
Special Chip Conveyor (Drum Filter)		-	-	-
Chip Wagon	Standard (180ℓ [47.5 gal])	○	○	○
	Swing (200ℓ [52.8 gal])	○	○	○
	Large Size (330ℓ [87.2 gal])	○	○	○
	Customized	☆	☆	☆
ETC				
Tool Box		●	●	●
Customized Color	Need Munsell No.	☆	☆	☆
CAD & CAM		☆	☆	☆

● : Standard ○ : Option ☆ : Prior Consultation - : Non Applicable

Electric Device		TC22YA	TC22LYA	TC22LSYA
Call Light	1Color : ●	●	●	●
Call Light & Buzzer	3Color : ● ● ● B	○	○	○
Electric Cabinet Light		○	○	○
Remote MPG		○	○	○
Work Counter	Digital	○	○	○
Total Counter	Digital	○	○	○
Tool Counter	Digital	○	○	○
Multi Tool Counter	6ea	○	○	○
	9ea	○	○	○
Electric Circuit Breaker	FANUC	○	○	○
	SIEMENS	-	-	-
AVR (Auto Voltage Regulator)		☆	☆	☆
Transformer	25kVA	○	○	-
	30kVA	-	-	○
Auto Power Off		○	○	○
Measurement				
Q-Setter		○	○	○
Automatic Q-Setter		○	○	○
Work Close Confirmation Device (Only for Special Chuck)	TACO	○	○	○
	SMC	○	○	○
Work Setter		☆	☆	☆
Linear Scale	X/Z/Y axis	○	○	○
Coolant Level Sensor (Only for Chip Conveyor)		☆	☆	☆
Environment				
Air Conditioner	FANUC	○	○	○
	SIEMENS	-	-	-
Dehumidifier		○	○	○
Oil Mist Collector		☆	☆	☆
Oil Skimmer (Only for Chip Conveyor)		○	○	○
MQL (Minimal Quantity Lubrication)		☆	☆	☆
Fixture & Automation				
Auto Door		○	○	○
Auto Shutter (Only for Automatic System)		○	○	○
Sub Operation Pannel		☆	☆	☆
Bar Feeder Interface		○	○	○
Bar Feeder		☆	☆	☆
Sub Spindle Work Pusher (Spring Type)		-	-	○
Sub Spindle Work Ejector (Pneumatic Type)		-	-	○
Extra M-Code 4ea		○	○	○
Automation Interface		☆	☆	☆
I/O Extension (IN & OUT)	16 Contact	○	○	○
	32 Contact	○	○	○
Parts Catcher	Main SP.	○	○	○
	Sub SP.	-	-	○
Turret Work Pusher (For Automation)		☆	☆	☆
Parts Conveyor (Required Main Parts Catcher)		○	○	○
Semi Automation System		☆	☆	☆
Hyd. Device				
Standard Hyd. Cylinder	Hollow	●	●	●
Standard Hyd. Unit {35bar (507.6 psi)}	15ℓ (4gal)	●	●	-
	20ℓ (5.3gal)	-	-	●
S/W				
Dialogue Program (HW-DPRO) : FANUC		○	○	○
DNC software (HW-eDNC)		○	○	○
Machine Monitoring System (HW-MMS Cloud)		☆	☆	☆
Smart Guide-i : FANUC		●	●	●
Smart S/W		☆	☆	☆
Safety Device				
Total Splash Guard		●	●	●
Back Spin Torque Limiter (BST)		●	●	●
Chuck Hydraulic Pressure Maintenance Interlock		☆	☆	☆

❖ Thermal Displacement Compensation device is recommended, when more than 6 bar of high pressure coolant is applied, for the high quality machining.

Specifications are subject to change without notice for improvement. / Please refer to the S/W catalog (IRIS) for details by S/W product.

SPECIFICATIONS

Standard & Optional

● : Standard ○ : Option ☆ : Prior Consultation - : Non Applicable

Spindle		TC22Y	TC22LY	TC22LSY
Main Spindle	6"	-	-	-
Hollow Chuck 3 Jaw	8"	●	●	●
Main Spindle	6"	-	-	-
Solid Chuck 3 Jaw	8"	○	○	○
Sub Spindle	5"	-	-	●
Hollow Chuck 3 Jaw	6"	-	-	○
Sub Spindle	5"	-	-	○
Solid Chuck 3 Jaw	5"	-	-	○
Standard Soft Jaw (1set)		●	●	●
Chuck Clamp Foot Switch		●	●	●
2 Steps Hyd. Pressure Device		○	○	○
Spindle Inside Stopper		☆	☆	☆
Main Spindle Cs-axis (0.001")		●	●	●
Sub Spindle Cs-axis (0.001")		-	-	●
Chuck Open/Close Confirmation Device		●	●	●
2 Steps Chuck Foot Switch		○	○	○
Sub Chuck Foot Switch		-	-	●
Turret				
Tool Holder		●	●	●
Mill Turret	BMT45	●	●	●
	BMT55	●	●	●
	12 Tool	●	●	●
	24 Tool	○	○	○
Straight Milling Head	Collet Type, 2ea	●	●	●
Angular Milling Head	Collet Type, 2ea	●	●	●
Straight Milling Head	Adapter Type	○	○	○
Angular Milling Head	Adapter Type	○	○	○
Boring Sleeve (U-drill Holder/Sleeve : Public Use)		●	●	●
Drill Socket		○	○	○
U-Drill Holder/Cap		●	●	●
Angle Head		☆	☆	☆
Adapter Set		○	○	○
Tail Stock & Steady Rest				
Hydraulic NC Tail Stock (Std. Live Center)		○	●	-
Quill Type Tail Stock		○	○	-
High Precision Live Center		☆	☆	-
Tail Stock Foot Switch		○	○	-
Coolant & Air Blow				
Standard Coolant (Nozzle)		●	●	●
Chuck Coolant (Upper Chuck)		○	○	○
Gun Coolant		○	○	○
Through Spindle Coolant (Only for Special Chuck)		☆	☆	☆
Bed Flushing Coolant (Only for Rear Collant Tank)		○	○	○
Turnmill Through Coolant		○	○	○
Chuck Air Blow (Upper Chuck)		○	○	○
Sub Chuck Air Blow		-	-	-
Tail Stock Air Blow (Upper Tail Stock)		○	○	-
Turret Air Blow		☆	☆	☆
Air Gun		○	○	○
Through Spindle Air Blow (Only for Special Chuck)		-	-	-
High Pressure Coolant	0.5Bar	●	●	●
	6Bar	○	○	○
	20Bar	○	○	○
	70Bar	○	○	○
Power Coolant System (For Automation)		☆	☆	☆
Chip Disposal				
Coolant Tank	Front(150 ℓ [39.6 gal])	●	-	-
	Front(200 ℓ [52.8 gal])	-	●	●
	Rear(150 ℓ [39.6 gal])	○	○	○
Chip Conveyor (Hinge/Scraper/Screw)	Front (Right)	○	○	○
	Rear (Rear)	○	○	○
Special Chip Conveyor (Drum Filter)		-	-	-
Chip Wagon	Standard (180 ℓ [47.5 gal])	○	○	○
	Swing (200 ℓ [52.8 gal])	○	○	○
	Large Size (330 ℓ [87.2 gal])	○	○	○
	Customized	☆	☆	☆
ETC				
Tool Box		●	●	●
Customized Color	Need Munsel No.	☆	☆	☆
CAD & CAM		☆	☆	☆

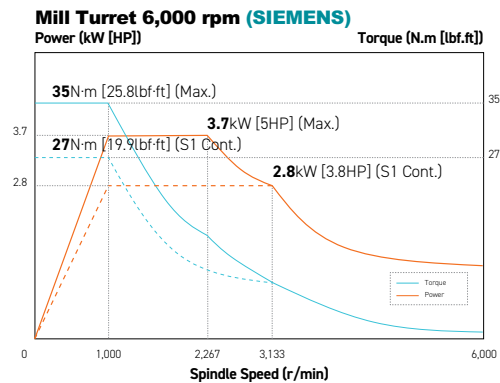
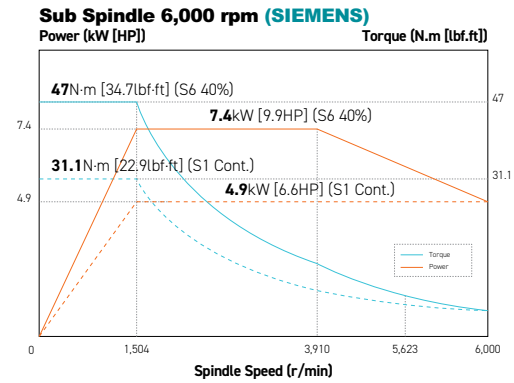
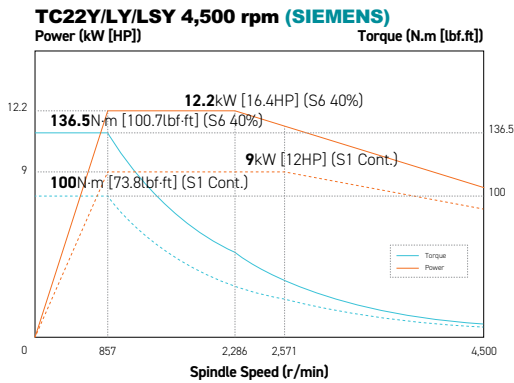
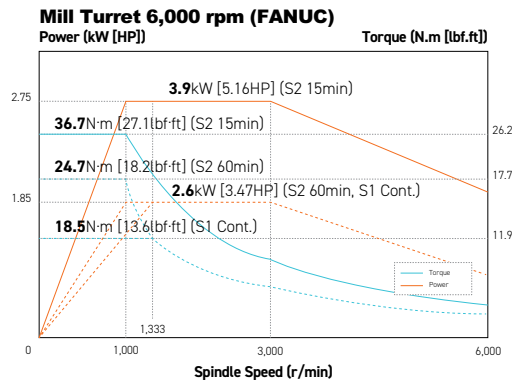
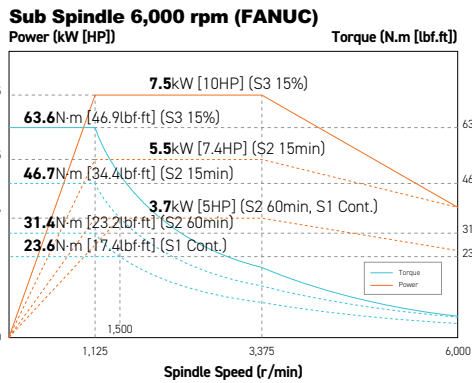
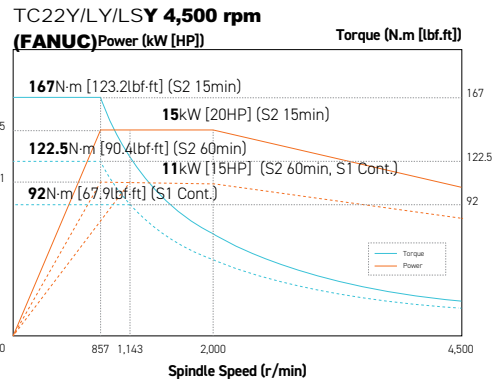
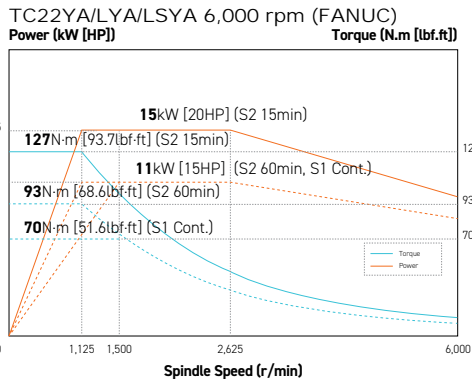
Electric Device		TC22Y	TC22LY	TC22LSY
Call Light	1Color : ●	●	●	●
Call Light & Buzzer	3Color : ●●●B	○	○	○
Electric Cabinet Light		○	○	○
Remote MPG		○	○	○
Work Counter	Digital	○	○	○
Total Counter	Digital	○	○	○
Tool Counter	Digital	○	○	○
Multi Tool Counter	6ea	○	○	○
	9ea	○	○	○
Electric Circuit Breaker	FANUC	○	○	○
	SIEMENS	-	-	-
AVR (Auto Voltage Regulator)		☆	☆	☆
Transformer	25kVA	○	○	-
	30kVA	-	-	○
Auto Power Off		○	○	○
Measurement				
Q-Setter		○	○	○
Automatic Q-Setter		○	○	○
Work Close Confirmation Device (Only for Special Chuck)	TACO	○	○	○
	SMC	○	○	○
Work Setter		☆	☆	☆
Linear Scale	X/Z/Y axis	○	○	○
Coolant Level Sensor (Only for Chip Conveyor)		☆	☆	☆
Environment				
Air Conditioner	FANUC	○	○	○
	SIEMENS	○	○	●
Dehumidifier		○	○	○
Oil Mist Collector		☆	☆	☆
Oil Skimmer (Only for Chip Conveyor)		○	○	○
MQL (Minimal Quantity Lubrication)		☆	☆	☆
Fixture & Automation				
Auto Door		○	○	○
Auto Shutter (Only for Automatic System)		○	○	○
Sub Operation Pannel		☆	☆	☆
Bar Feeder Interface		○	○	○
Bar Feeder		☆	☆	☆
Sub Spindle Work Pusher (Spring Type)		-	-	○
Sub Spindle Work Ejector (Pneumatic Type)		-	-	○
Extra M-Code 4ea		○	○	○
Automation Interface		☆	☆	☆
I/O Extension (IN & OUT)	16 Contact	○	○	○
	32 Contact	○	○	○
Parts Catcher	Main SP.	○	○	○
	Sub SP.	-	-	○
Turret Work Pusher (For Automation)		☆	☆	☆
Parts Conveyor (Required Main Parts Catcher)		○	○	○
Semi Automation System		☆	☆	☆
Hyd. Device				
Standard Hyd. Cylinder	Hollow	●	●	●
Standard Hyd. Unit (35bar (507.6 psi))	15 ℓ (4gal)	●	●	-
	20 ℓ (5.3gal)	-	-	●
S/W				
Dialogue Program (HW-DPRO) : FANUC		○	○	○
DFIC software (HW-eDFIC)		○	○	○
Machine Monitoring System (HW-MMS Cloud)		☆	☆	☆
Smart Guide-i : FANUC		●	●	●
Smart S/W		☆	☆	☆
Safety Device				
Total Splash Guard		●	●	●
Back Spin Torque Limiter (BST)		●	●	●
Chuck Hydraulic Pressure Maintenance Interlock		☆	☆	☆

❖ Thermal Displacement Compensation device is recommended, when more than 6 bar of high pressure coolant is applied, for the high quality machining.

Specifications are subject to change without notice for improvement. / Please refer to the S/W catalog (IRIS) for details by S/W product.

SPECIFICATIONS

Spindle Output/Torque Diagram

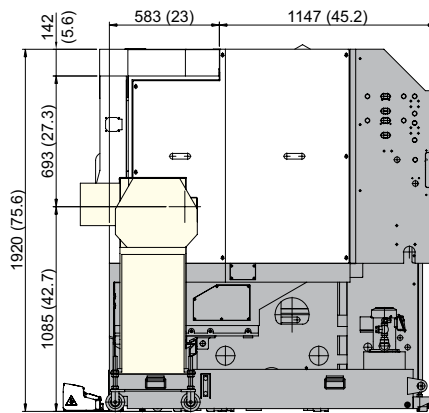
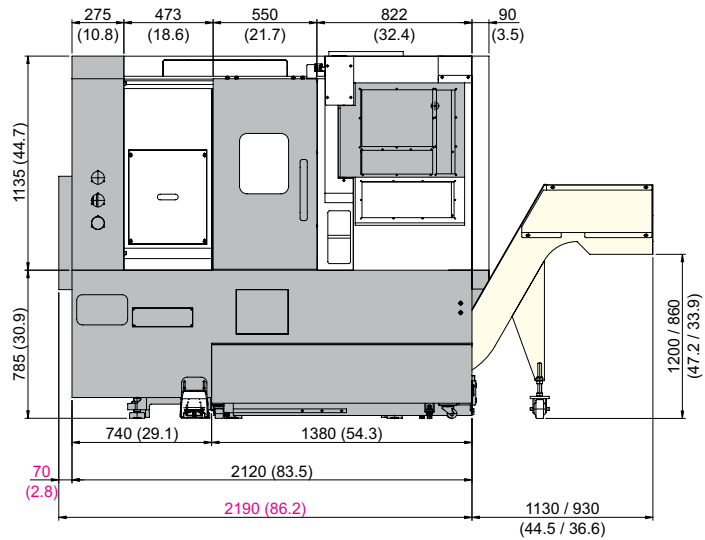
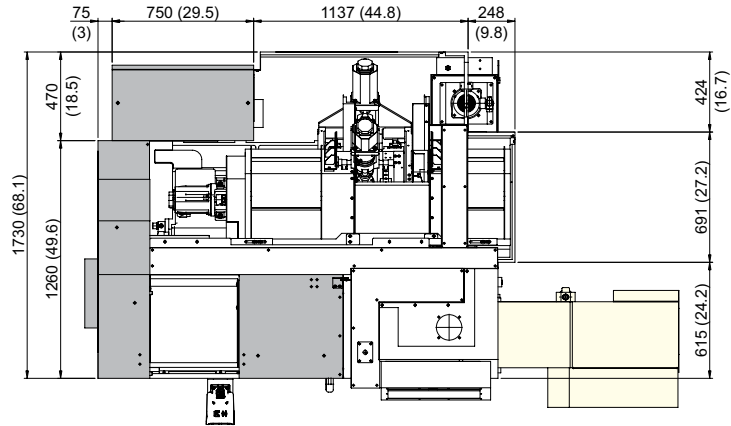


SPECIFICATIONS

External Dimensions

unit : mm(in)

TC22YA
TC22Y

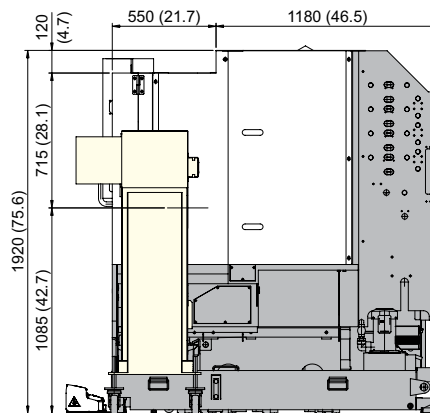
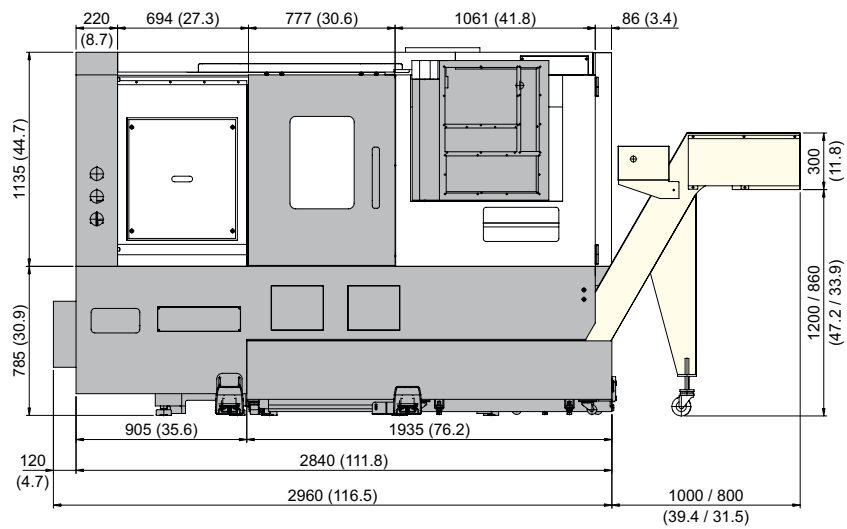
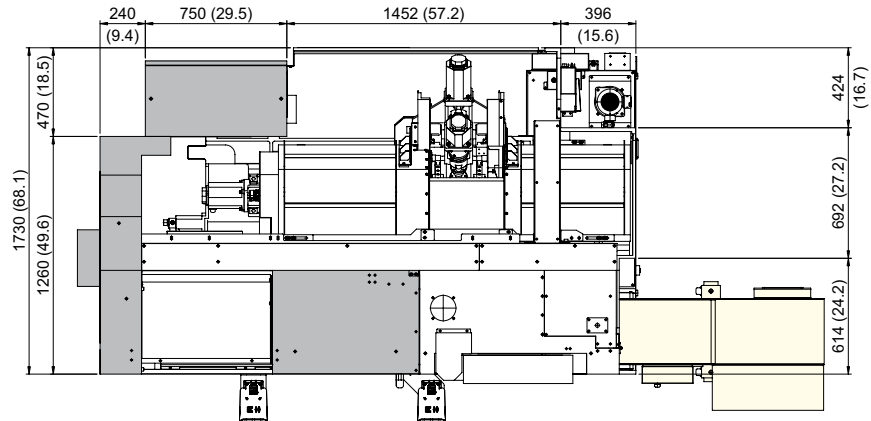


SPECIFICATIONS

External Dimensions

unit : mm(in)

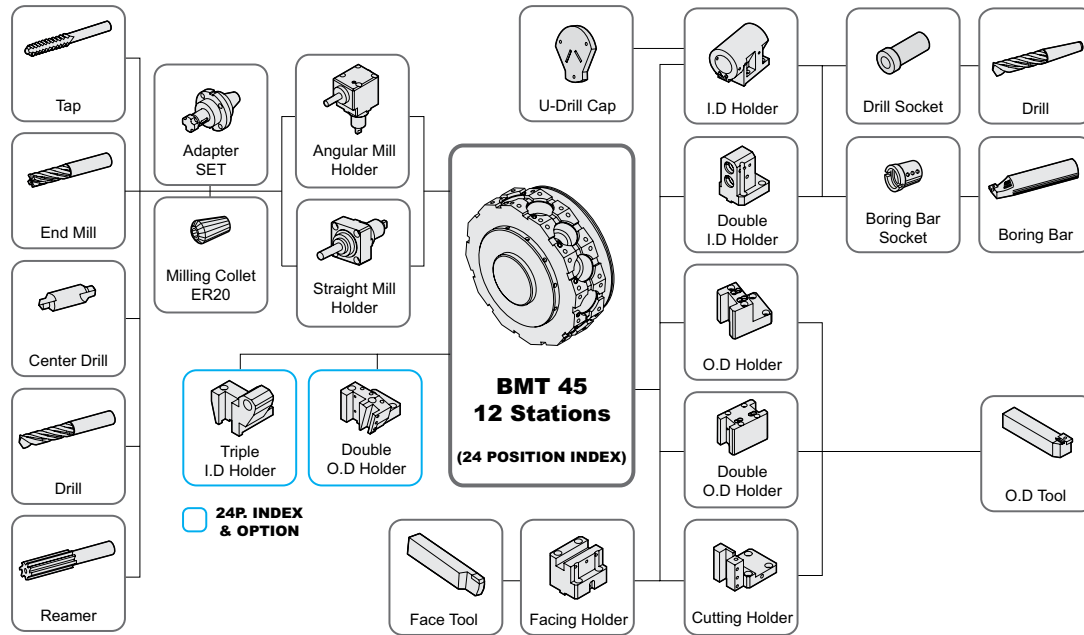
TC22LYA/LSYA
TC22LY/LSY



SPECIFICATIONS

Tooling System

unit : mm(in)



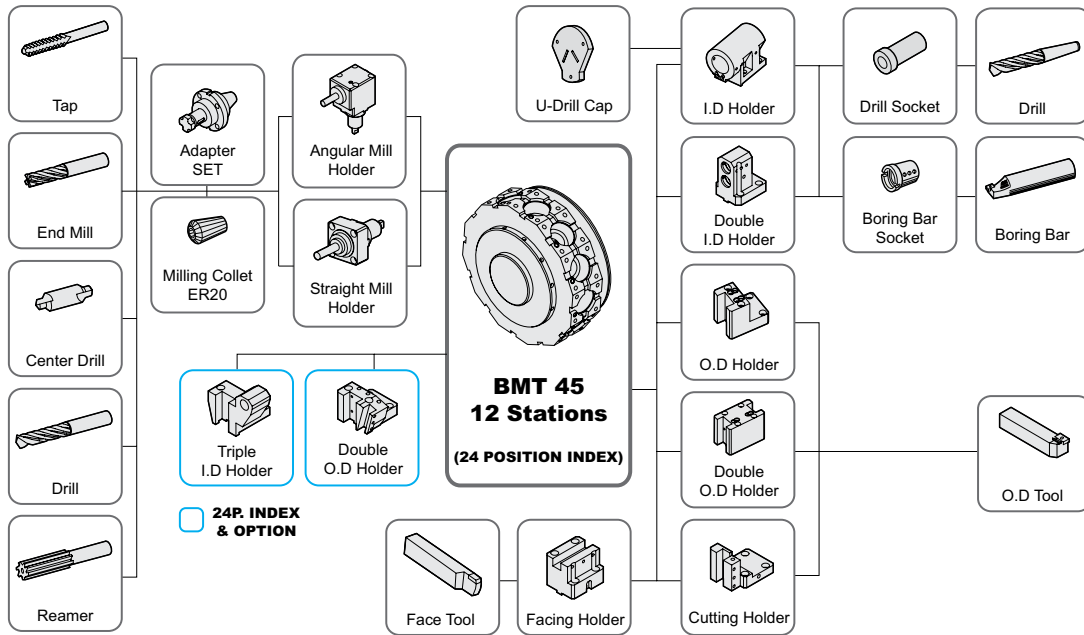
TC22YA/LYA | TC22Y/LY Tooling Parts Detail

ITEM			12 Position		24 Position : Opt.	
			mm Unit	inch Unit	mm Unit	inch Unit
Turning Holder	O.D Holder	Right/Left	3	3	2	2
		Double	-	-	-	-
		Double (24P. Main)	-	-	1	1
		Double (24P. Sub)	-	-	-	-
	Facing Holder		1	1	1	1
	Cutting Holder		1	1	1	1
Boring Holder	I.D Holder	Single	2	2	1	1
		Double	-	-	-	-
		Triple	-	-	1	1
	U-Drill Holder	Cap	1	1	1	1
Driven Holder	Straight Mill Holder	Standard	2	2	2	2
	Angular Mill Holder	Standard	2	2	2	2
Socket	Boring	Ø10 (Ø3/8")	1	1	1	1
		Ø12 (Ø1/2")	1	1	1	1
		Ø16 (Ø5/8")	1	1	1	1
		Ø20 (Ø3/4")	1	1	1	1
		Ø25 (Ø1")	1	1	1	1
	Sub Boring	Ø8 (5/16")	-	-	-	-
		Ø10 (Ø3/8")	-	-	-	-
		Ø12 (1/2")	-	-	-	-
		Ø16 (5/8")	-	-	-	-
	Drill	MT 1	Opt.	Opt.	Opt.	Opt.
		MT 2	Opt.	Opt.	Opt.	Opt.
		ER Collet	1 Set	1 Set	1 Set	1 Set
		Adapter Set	Opt.	Opt.	Opt.	Opt.

SPECIFICATIONS

Tooling System

unit : mm(in)



TC22LSYA | TC22LSY Tooling Parts Detail

ITEM			12 Position		24 Position : Opt.	
			mm Unit	inch Unit	mm Unit	inch Unit
Turning Holder	O.D Holder	Right/Left	2	2	-	-
		Double	1	1	1	1
		Double (24P, Main)	-	-	1	1
		Double (24P, Sub)	-	-	1	1
	Facing Holder	1	1	1	1	
Cutting Holder	1	1	1	1		
Boring Holder	I.D Holder	Single	1	1	-	-
		Double	1	1	1	1
		Triple	-	-	1	1
U-Drill Holder	Cap	1	1	1	1	
Driven Holder	Straight Mill Holder	Standard	2	2	2	2
	Angular Mill Holder	Standard	2	2	2	2
Socket	Boring	Ø10 (Ø3/8")	1	1	1	1
		Ø12 (Ø1/2")	1	1	1	1
		Ø16 (Ø5/8")	1	1	1	1
		Ø20 (Ø3/4")	1	1	1	1
		Ø25 (Ø1")	1	1	1	1
	Sub Boring	Ø8 (5/16")	1	1	1	1
		Ø10 (Ø3/8")	1	1	1	1
		Ø12 (1/2")	1	1	1	1
		Ø16 (5/8")	1	1	1	1
	Drill	MT 1	Opt.	Opt.	Opt.	Opt.
		MT 2	Opt.	Opt.	Opt.	Opt.
	ER Collet		1 Set	1 Set	1 Set	1 Set
	Adapter Set		Opt.	Opt.	Opt.	Opt.

Specifications are subject to change without notice for improvement.

SG WIA
MACHINE TOOL

TC-Y Series
Y-Axis Turning Center

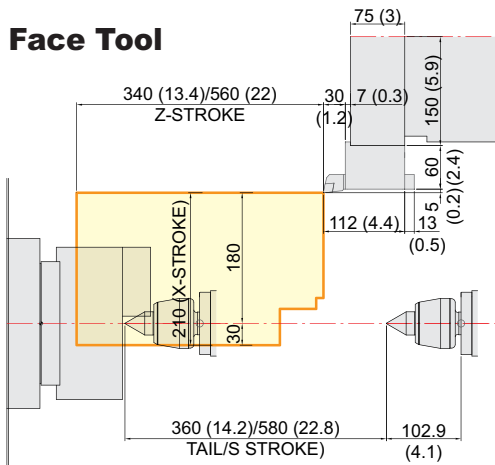
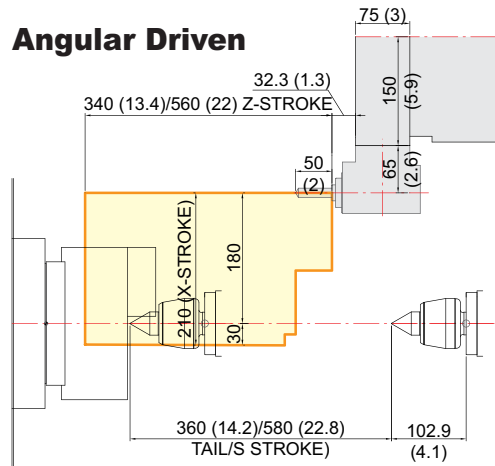
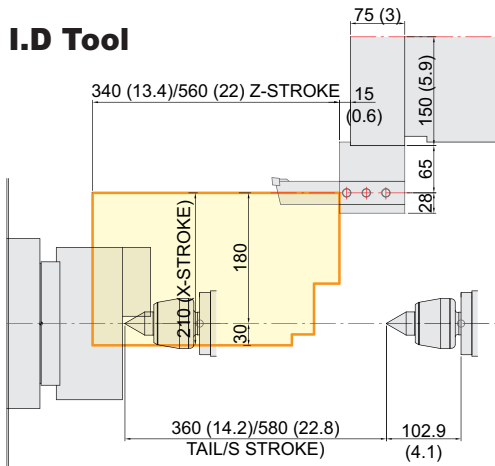
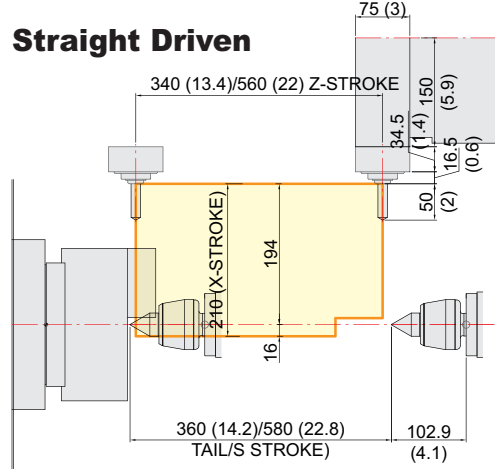
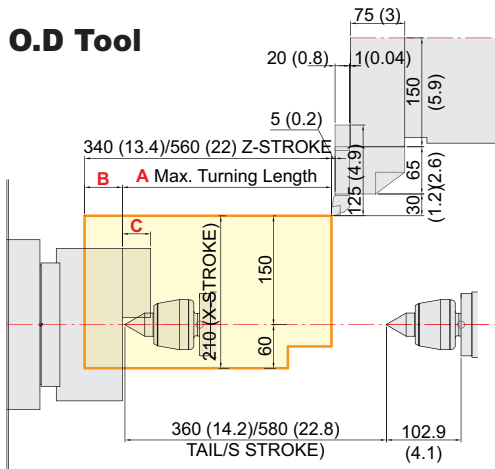
24
+
25

CREATING VALUE
IN SEAMLESS MOBILITY

SPECIFICATIONS

Tooling Travel Range (TC22YA/LYA | TC22Y/LY)

unit : mm(in)

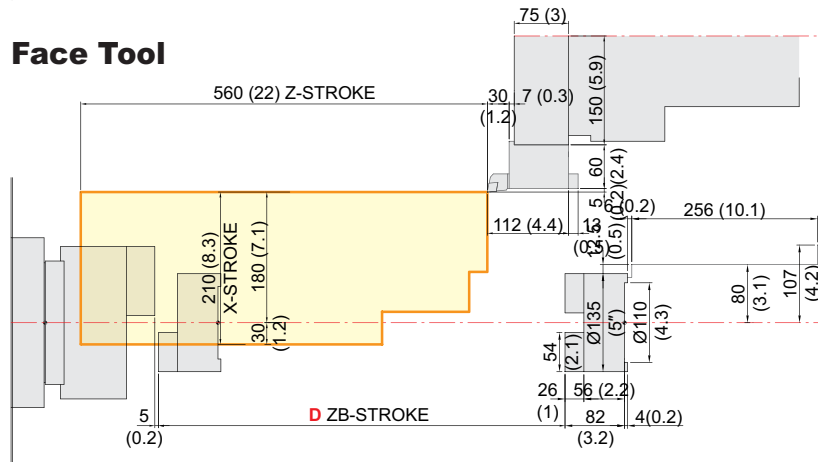
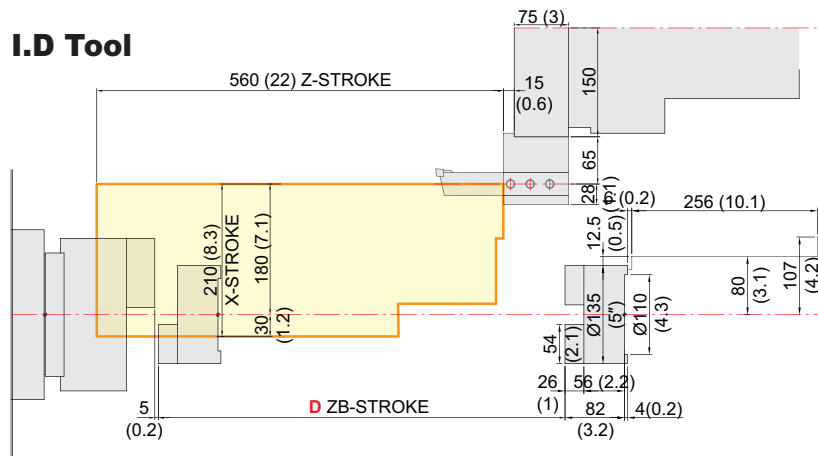
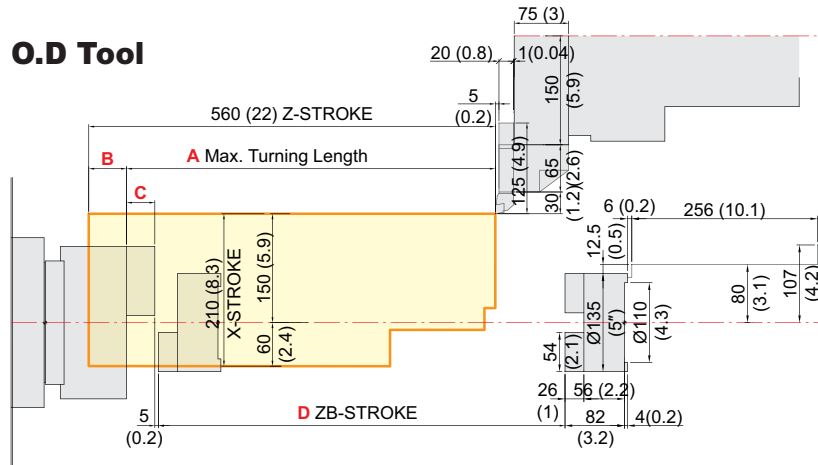


ITEM	A	B	C
TC22YA	309 (12.2)	31 (1.2)	32.5 (1.3)
TC22LYA	529 (20.8)		
TC22Y	288 (11.3)	52 (2)	39 (1.5)
TC22LY	508 (20)		

SPECIFICATIONS

Tooling Travel Range (TC22LSYA | TC22LSY)

unit : mm(in)

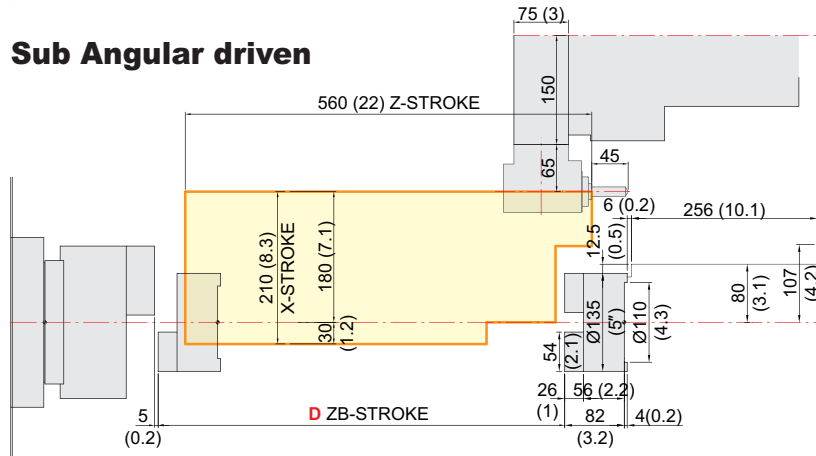
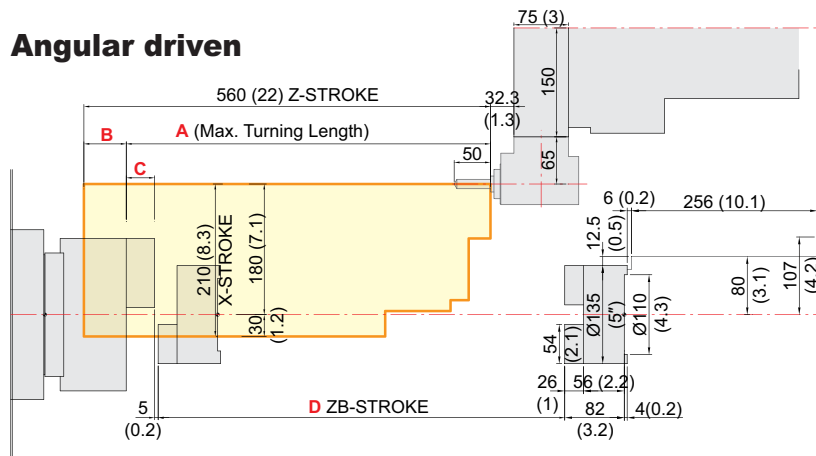
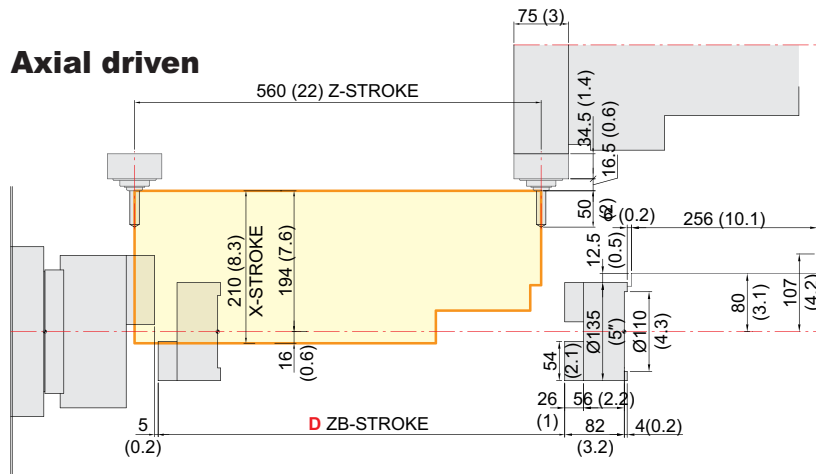


ITEM	A	B	C	D
TC22LSYA	529 (20.8)	31 (1.2)	32.5 (1.3)	599.3 (23.6)
TC22LSY	508 (20)	52 (2)	39 (1.5)	560 (22) [SIEMENS: 530 (20.9)]

SPECIFICATIONS

Tooling Travel Range (TC22LSYA | TC22LSY)

unit : mm(in)



ITEM	A	B	C	D
TC22LSYA	529 (20.8)	31 (1.2)	32.5 (1.3)	599.3 (23.6)
TC22LSY	508 (20)	52 (2)	39 (1.5)	560 (22) [SIEMENS : 530 (20.9)]

SPECIFICATIONS

Specifications

[] : Option

ITEM			TC22YA	TC22LYA	TC22LSYA	
CAPACITY	Swing Over the Bed	mm(in)	Ø600 (Ø23.6")			
	Swing Over the Carriage	mm(in)	Ø600 (Ø23.6")			
	Max. Turning Dia.	mm(in)	Ø300 (Ø11.8")			
	Max. Turning Length	mm(in)	309 (12.2")	529 (20.8")		
	Bar Capacity	Main	mm(in)	Ø51 (Ø2")		
Sub		mm(in)	-	Ø32 (Ø1.3")		
SPINDLE	Chuck Size	Main	6"			
		Sub	-	5"		
	Spindle Bore	Main	mm(in)	Ø60 (Ø2.4")		
		Sub	mm(in)	-	Ø42 (Ø1.7")	
	Spindle Speed (rpm)	Main	r/min	6,000		
		Sub	r/min	-	6,000	
	Motor (Max./Cont.)	Main	kW(HP)	15/11 (20/15)		
		Sub	kW(HP)	-	7.5/3.7 (10/5)	
	Max. Torque	Main	N-m(lbfft)	127 (93.7)		
		Sub	N-m(lbfft)	-	63.6 (46.9)	
	Spindle Type	Main	-	BELT		
		Sub	-	-	BELT	
Spindle Nose	Main	-	A2-5			
	Sub	mm(in)	-	FLAT TYPE		
C-axis Indexing	deg	0.001°				
FEED	Travel	X/Y	210/110 {±55} (8.3"/4.3" {±2.2"})			
		Z/ZB	340 (13.4")	560 (22")	560/599.3 (22"/23.6")	
	Rapid Traverse Rate	X/Y	30/10 (1,181/394)			
		Z/ZB	36 (1,417)	36/15 (1,417/591)		
Slide Type	-	ROLLER LM GUIDE				
TURRET	No. of Tools	ea	12 [24]			
	Tool Size	O.D	□ 20 (□ 3/4")			
		I.D	Ø32 (Ø1 1/4")			
	Indexing Time	sec	0.15			
Y-Axis Type	-	WEDGE TYPE				
LIVE TOOL	Milling Tool Speed (rpm)	r/min	6,000			
	Motor (Max./Cont.)	kW(HP)	3.9/2.6 (5.2/3.5)			
	Torque (Max./Cont.)	N-m(lbfft)	36.7/18.5 (27.1/13.6)			
	Collet Size	mm(in)	ER20 / Ø13 (Ø0.5")			
	Type	-	BMT45			
TAIL STOCK	Taper	-	MT#4			
	Dia.	mm(in)	Ø56 (Ø2.2")			
	Travel	mm(in)	360 (14.2")	580 (22.8")	-	
TANK CAPACITY	Coolant Tank	ℓ(gal)	150 (39.6)	200 (52.8)		
	Lubricating Tank	ℓ(gal)	0.7 (0.2)			
POWER SUPPLY	Electric Power Supply	kVA	18		23	
	Thickness of Power Cable	mm ²	Over 16			
	Voltage	V/Hz	220V, 50/60Hz			
MACHINE	Floor Space (L×W)	mm(in)	2,210×1,730 (87"×63.4")	2,960×1,730 (116.5"×68.1")		
	Height	mm(in)	1,920 (75.6")			
	Weight	kg(lb)	3,700 (8,157)	4,100 (9,039)	4,200 (9,259)	
CNC	Controller	-	FANUC i Series - Smart Plus			

Specifications are subject to change without notice for improvement.

SG WIA
MACHINE TOOL

TC-Y Series
Y-Axis Turning Center

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+
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CREATING VALUE
IN SEAMLESS MOBILITY

SPECIFICATIONS

Specifications

[] : Option

ITEM			TC22Y	TC22LY	TC22LSY	
CAPACITY	Swing Over the Bed	mm(in)	Ø600 (Ø23.6")			
	Swing Over the Carriage	mm(in)	Ø600 (Ø23.6")			
	Max. Turning Dia.	mm(in)	Ø300 (Ø11.8")			
	Max. Turning Length	mm(in)	288 (11.3")	508 (20")		
	Bar Capacity	Main	mm(in)	Ø65 (Ø2.6")		
Sub		mm(in)	-	Ø32 (Ø1.3")		
SPINDLE	Chuck Size	Main	inch	8"		
		Sub	inch	-	5"	
	Spindle Bore	Main	mm(in)	Ø75 (Ø3")		
		Sub	mm(in)	-	Ø42 (Ø1.7")	
	Spindle Speed (rpm)	Main	r/min	4,500		
		Sub	r/min	-	6,000	
	Motor (Max./Cont.)	Main	kW(HP)	15/11 (20/15) [12.2/9 (16.4/12)]		
		Sub	kW(HP)	-	7.5/3.7 (10/5) [7.4/4.9 (93.9/6.6)]	
	Max. Torque	Main	N·m(lb·ft)	167 (123.2) [136.5 (100.7)]		
		Sub	N·m(lb·ft)	-	63.6 (46.9) [47 (34.7)]	
	Spindle Type	Main	-	BELT		
		Sub	-	-	BELT	
Spindle Nose	Main	-	A2-6			
	Sub	mm(in)	-	FLAT TYPE		
C-axis Indexing	deg	0.001°				
FEED	Travel	X/Y	mm(in)	210/110 {±55} (8.3"/4.3" {±2.2"})		
		Z/ZB	mm(in)	340 (13.4")	560 (22")	560/560 [530] (22"/22" [20.9])
	Rapid Traverse Rate	X/Y	m/min(ipm)	30/10 (1,181/394)		
		Z/ZB	m/min(ipm)	36 (1,417)		36/15 (1,417/591)
Slide Type	-	ROLLER LM GUIDE				
TURRET	No. of Tools	ea	12 [24]			
	Tool Size	O.D	mm(in)	□20 (□ 3/4")		
		I.D	mm(in)	Ø32 (Ø1 1/4")		
	Indexing Time	sec	0.15			
Y-Axis Type	-	WEDGE TYPE				
LIVE TOOL	Milling Tool Speed (rpm)	r/min	6,000			
	Motor (Max./Cont.)	kW(HP)	3.9/2.6 (5.2/3.5) [3.7/2.8 (5/3.8)]			
	Torque (Max./Cont.)	N·m(lb·ft)	36.7/18.5 (27.1/13.6) [35/27 (25.8/19.9)]			
	Collet Size	mm(in)	ER20 / Ø13 (Ø0.5")			
	Type	-	BMT45			
TAIL STOCK	Taper	-	MT#4		-	
	Dia.	mm(in)	Ø56 (Ø2.2")			
	Travel	mm(in)	360 (14.2")	580 (22.8")	-	
TANK CAPACITY	Coolant Tank	ℓ(gal)	150 (39.6)	200 (52.8)		
	Lubricating Tank	ℓ(gal)	0.7 (0.2)			
POWER SUPPLY	Electric Power Supply	kVA	18		23	
	Thickness of Power Cable	mm ²	Over 16			
	Voltage	V/Hz	220V, 50/60Hz			
MACHINE	Floor Space (L×W)	mm(in)	2,280×1,730 (89.8"×68.1")	2,960×1,730 (116.5"×68.1")		
	Height	mm(in)	1,920 (75.6")			
	Weight	kg(lb)	3,800 (8,378)	4,200 (9,259)	4,300 (9,480)	
CNC	Controller	-	FANUC i Series – Smart Plus [SIEMENS 828D]			

Specifications are subject to change without notice for improvement.

CONTROLLER

FANUC i Series – Smart Plus

[] : Option

Controlled axis / Display / Accuracy Compensation	
Control axis	2 axis (X, Z) / 3 axis (X, Z, C) / 4 axis (X, Z, Y, C) 5 axis (X, Z, B, C, A) / 6 axis (X, Z, Y, B, C, A) 7 axis (X1/Z1, X2/Z2, B2, C1/C2)
Simultaneously controlled axis	2 axis [Max. 4 axis]
Designation of spindle axis	3 axis [Max. 4 axis]
Least setting Unit	X, Z, Y, B axis : 0.001 mm (0.0001 inch) C, A axis : 0.001 deg
Least input increment	X, Z, Y, B axis : 0.001 mm (0.0001 inch) C, A axis : 0.001 deg
Inch / Metric conversion	G20 / G21
High response vector control	
Interlock	All axis / Each axis
Machine lock	All axis
Backlash compensation	± 0~9999 pulses (exc. Rapid traverse / Cutting feed)
Position switch	
LCD / MDI	15 inch LCD unit (with Touch Panel)
Feedback	Absolute motor feedback
Stored stroke check 1	Over travel
Stored stroke check 2, 3	
PMC axis control	
Operation	
Automatic operation (Memory)	
MDI operation	
DNC operation	Needed DNC software / CF card
Program restart	
Wrong operation prevention	
Program check function	Dry run
Single block	
Search function	Program Number / Sequence Number
Interpolation functions	
Nano interpolation	
Positioning	G00
Linear interpolation	G01
Circular interpolation	G02, G03
Exact stop mode	Single : G09, Continuous : G61
Dwell	G04, 0 ~ 9999.9999 sec
Skip	G31
Reference position return	1st reference : G28, 2nd reference : G30 Ref. position check : G27
Thread synchronous cutting	G33
Thread cutting retract	
Variable lead thread cutting	
Multi / Continuous threading	
Feed function / Acc. & Dec. control	
Manual feed	Rapid traverse Jog : 0~2,000 mm/min (79 ipm) Manual handle : x1, x10, x100 pulses Reference position return
Cutting Feed command	Direct input F code
Feedrate override	0 ~ 200% (10% Unit)
Rapid traverse override	1%, F25%, 50%, 100%
Override cancel	
Feed per minute	G98
Feed per revolution	G99
Look-ahead block	1 block
Program input	
Tape Code	EIA / ISO
Optional block skip	9 ea
Program stop / end	M00, M01 / M02, M30
Maximum command unit	± 999,999.999 mm (± 99,999.9999 inch)
Plane selection	X-Y : G17 / Z-X : G18 / Y-Z : G19
Workpiece coordinate system	G52, G53, 6 pairs (G54 ~ G59)
Manual absolute	Fixed ON
Programmable data input	G10
Sub program call	10 folds nested
Custom macro	#100 ~ #199, #500 ~ #999
G code system	A, B/C
Programmable mirror image	G51.1, G50.1
G code preventing buffering	G4.1
Direct drawing dimension program	Including Chamfering / Corner R
Conversational Program	SmartGuide-i

Program input	
Multiple repetitive cycles	I, II
Canned cycle for turning	
Auxiliary function / Spindle speed function	
Auxiliary function	M & 4 digit
Level-up M Code	High speed / Multi / Bypass M code
Spindle speed function	S & 5 digit, Binary output
Spindle override	0% ~ 150% (10% Unit)
Multi position spindle orientation	M19 (S##)
Rigid tapping	
Constant surface speed control	G96, G97
Tool function / Tool compensation	
Tool function	T & 2 digit + Offset 2 digit
Tool life management	
Tool offset pairs	128 pairs
Tool nose radius compensation	G40, G41, G42
Geometry / Wear compensation	
Direct input of offset measured B	
Editing function	
Part program storage size	5,120m (2MB)
No. of registerable programs	1,000 ea
Program protect	
Background editing	
Extended part program editing	Copy, move and change of NC program
Memory card program edit	
Data input / output & Interface	
I/O interface	CF card, USB memory Embedded Ethernet interface
Screen hard copy	
External message	
External key input	
External workpiece number search	
Automatic data backup	
Setting, display and diagnosis	
Self-diagnosis function	
History display & Operation	Alarm & Operator message & Operation
Run hour / Parts count display	
Maintenance information	
Actual cutting feedrate display	
Display of spindle speed / T code	
Graphic display	
Operating monitor screen	Spindle / Servo load etc.
Power consumption monitoring	Spindle & Servo
Spindle / Servo setting screen	
Multi language display	Support 24 languages
Display language switching	Selection of 5 optional Languages
LCD Screen Saver	Screen saver
Unexpected disturbance torque	BST (Back spin torque limit)
Function for machine type	
Cs contour control (C & A axis)	Mill, MS, Y, SY, LF-Mill, TTMS, TTSY
Polar coordinate interpolation	Mill, MS, Y, SY, LF-Mill, TTMS, TTSY
Cylindrical interpolation	Mill, MS, Y, SY, LF-Mill, TTMS, TTSY
Polygon turning (2 Spindles)	Mill, MS, Y, SY, LF-Mill, TTMS, TTSY
Canned cycle for drilling	Mill, MS, Y, SY, LF-Mill, TTMS, TTSY
Spindle orientation expansion	MS, SY, TTS, TTMS, TTSY
Spindle synchronous control	MS, SY, TTS, TTMS, TTSY
Torque control	MS, SY, TTS, TTMS, TTSY
Y axis offset	Y, SY, TTSY
Arbitrary angular control	Y, SY, TTSY
Composite / Superimposed control	MS, SY, TTS, TTMS, TTSY
Balance cutting	TTS, TTMS, TTSY
Option	
Fast ethernet	Needed option board
Data server	Needed option board
Protection of data at 8 levels	
Tool offset pairs	200 pairs
Helical interpolation	
Optional block skip	40 ea, 200 ea (AICC II)

Figures in inch are converted from metric values.

The FANUC controller specifications are subject to change based on the policy of company CNC supplying.

CONTROLLER

SIEMENS 828D

[] : Option ☆ Needed technical consultation

Controlled axis / Display / Accuracy Compensation	
Control axis	2 axis (X, Z) – Std.
	3 axis (X, Z, C) – Mill
	4 axis (X, Z, Y, C) – Y
	5 axis (X, Z, B, C, A) – MS
	6 axis (X, Z, Y, B, C, A) – SY
	Max. 4 axis
Simultaneously controlled axis	Max. 4 axis
Least setting Unit	X, Z, Y, B axis : 0.001 mm (0.0001 inch)
	C, A axis : 1 deg [0.001] deg
Least input increment	X, Z, Y, B axis : 0.001 mm (0.0001 inch)
	C, A axis : 1 deg [0.001] deg
Inch / Metric changeover	G70 (inch) / G71 (metric)
Interlock	All axis / Each axis
Backlash compensation	
Pitch error compensation	Leadscrew pitch error compensation
LCD / MDI	15 inch color LCD (With Touch panel)
Keyboard	QWERTY full keyboard
Stored stroke check	Over travel
Operation	
Automatic operation	
MDI operation	
Program restart	
Program check function	Dry run / Program check / Machine lock
Single block	
Block search	Block search
Reposition	
Working area limit	Working area limitations
Interpolation functions	
Positioning	G00
Linear interpolation	G01
Circular interpolation	Circular interpolation CW (G02)
	Circular interpolation CCW (G03)
Exact position stop	Single block exact stop (G09)
	Exact stop G60 (G601, G602, G603)
Dwell	Dwell (G04)
Reference position return	Return to reference point
	Return to 2nd reference point
Helical interpolation	
Thread synchronous cutting	
Thread cutting retract	
Spline interpolation	Non-uniform rational B splines
Feed function / Acc. & Dec. control	
Manual feed	Rapid traverse
	Jog
	Manual handle
	Reference position return
Cutting feed command	Direct input F code
Feedrate override	0 ~ 200% (10% Unit)
Rapid traverse override	1%, 25%, 50%, 100%
Feed per minute	G94
Feed per revolution	G95
Look-ahead block	1 block
Program input	
ISO support	G291(ISO)/G290
	(ISO G Code system-A)
Optional block skip	2
Program stop / end	M00, M01 / M02, M30
Maximum command unit	± 999,999.999 mm, ± 99,999.9999 inch
Plane selection	X-Y : G17, X-Z : G18, Y-Z : G19
	G54 ~ G57, G505~G549
	G500 (Basic frame – setable zero offset)
Workpiece coordinate system	G53 (Work offset non modal)
	G153 (basic frame non modal)
Sub program call	11 folds nested
G code preventing buffering	STOPRE
Turning cycle	Turning programing (Cycle 93, 94, 95, 97)
User cycle	
3D simulation	
Real time simulation	
Shop Turn	Machining step programming for turning

Auxiliary function / Spindle speed function	
Auxiliary function	M Code 4 digit
Spindle speed function	S Code 5 digit
Spindle override	0% ~ 150% (10% Unit)
Spindle orientation	SPOS
Rigid tapping	
Automatic mode interchange	Spindle / Axis mode
Constant surface speed control	G96, G97
Spindle speed limitation	LIMS
Tool function / Tool compensation	
Tool function	Tool number & Tool name
Tool life management	Tool : T + Offset : D
Tools in tool list	128 ea : Std.
	256 ea : Mill
	768 ea : Y, MS, SY
Cutting Edges in tool list	256 ea : Std.
	512 ea : Mill
	1,536 ea : Y, MS, SY
Tool nose radius compensation	ISO (G40, G41, G42)
Geometry / Wear compensation	
Measurement of tool length	
Tool management function	
Editing function	
Part program storage size	3MB – Std.
	5MB – Mill
	10MB – Y, MS, SY
No. of registerable programs	750 ea
External Storage devices	Local network, Server, USB, Flash drive
Background editing	
Extended part program editing	Copy, move and change of NC program
Memory card program edit	
Data input / output & Interface	
I/O interface	CF card interface (ONLY 10.4")
	USB memory interface
	Embedded Ethernet memory interface
Screenshot	
Setting, display and diagnosis	
Self-diagnosis function	
History display & Operation	Alarm & Operator message & Operation
Run hour / Parts count display	
Maintenance information	
Actual cutting feedrate display	
Display of spindle speed / T code	
Graphic display	
Operating monitor screen	Spindle / Servo load etc.
Multi language display	Support 9 languages
	Chinese (Simplified/Traditional), English, French, German, Italian, Korean, Portuguese, Spanish
	[☆ Support 22 languages : Inquiry need]
LCD Screen Saver	Screen saver & Motion sensing
Function for machine type	
Cs contour control (C & A axis)	Mill, MS, Y, SY model
Polar coordinate interpolation	Mill, MS, Y, SY model
Cylindrical interpolation	Mill, MS, Y, SY model
Canned cycle for drilling	Mill, MS, Y, SY model
[Polygon turning (CP-Basic)]	Mill, MS, Y, SY model
[Hobbing / Skybing (CP-Comfort)]	Mill, MS, Y, SY model
Spindle synchronous control	MS, SY model
Servo tailstock function	MS, SY model
Option	
Additional optional block skip	10
Contour handwheel	