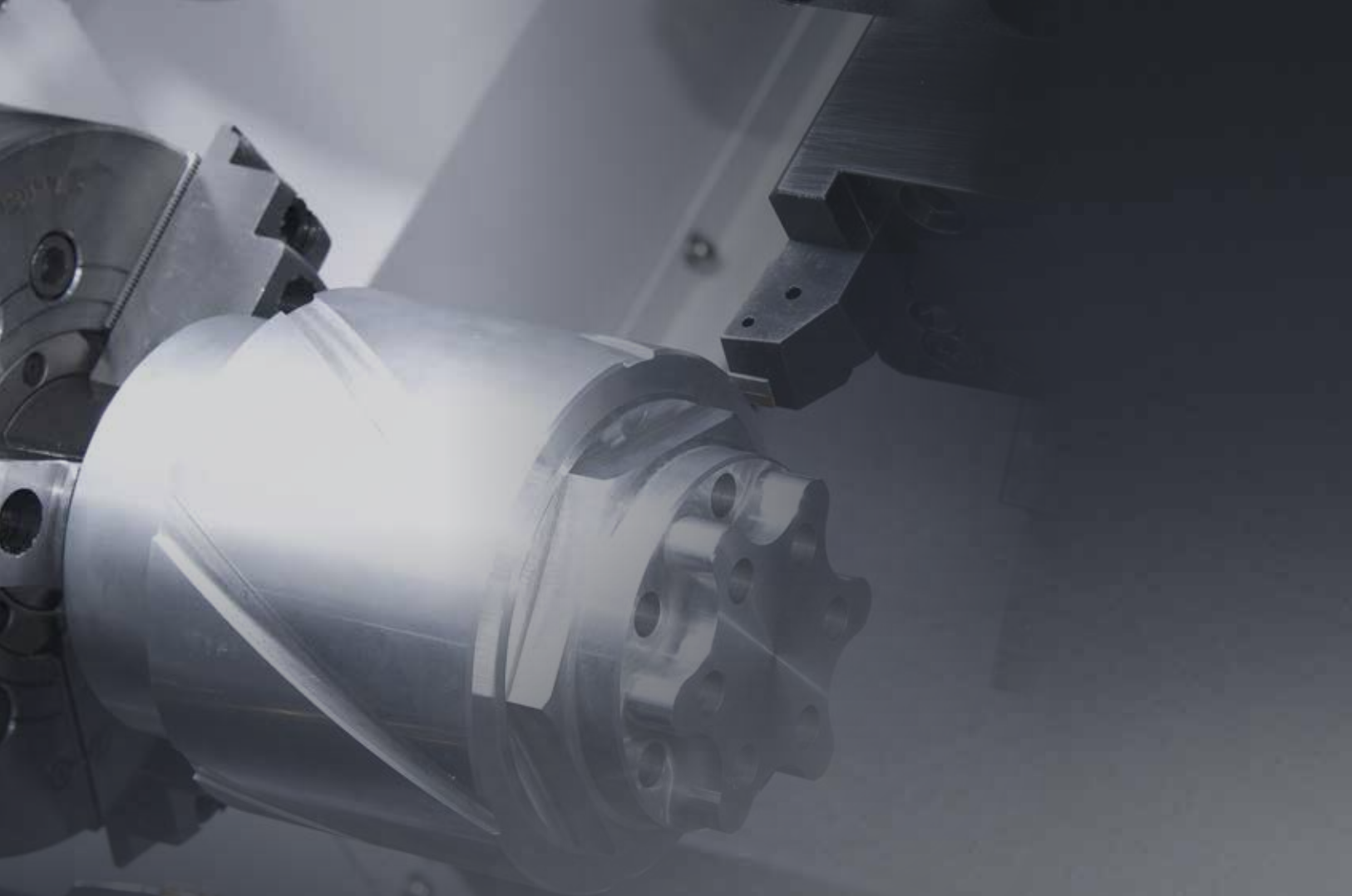


TC30 Series

TC30A/LA/MA/LMA/MSA/LMSA | TC30C/LC/MC/LMC/MSC

SG WIA CNC Turning Center



Technical Leader

TC30 series, designed by SG WIA with years of expertise and the latest technology, is a Turning Center that maximizes productivity and performance.

MODEL	Chuck Size					Bed		Turret	
	10"	12"	15"	Big Bore	Sub 8"	Standard	Long	Standard	BMT65
TC30A	●					●		●	
TC30LA	●						●	●	
TC30MA	●					●			●
TC30LMA	●						●		●
TC30MSA	●				●	●			●
TC30LMSA	●				●		●		●
TC30C		●	○	●		●		●	
TC30LC		●	○	●			●	●	
TC30MC		●	○	●		●			●
TC30LMC		●	○	●			●		●
TC30MSC		●	○	●	●	●			●

● : Standard ○ : Option

- Rigidity secured through box guideways
- Highly accurate direct link and solid one-piece structure
- Main spindle heat displacement minimized
- All gearless type spindle machines applied with mill turret.
- Integrated process realized through adoption of 8" sub spindle
- Optional big bore spindle is available (TC30C series)



01 BASIC STRUCTURE

Powerful Cutting Capability & Large Working Area CNC Turning Center

Turret

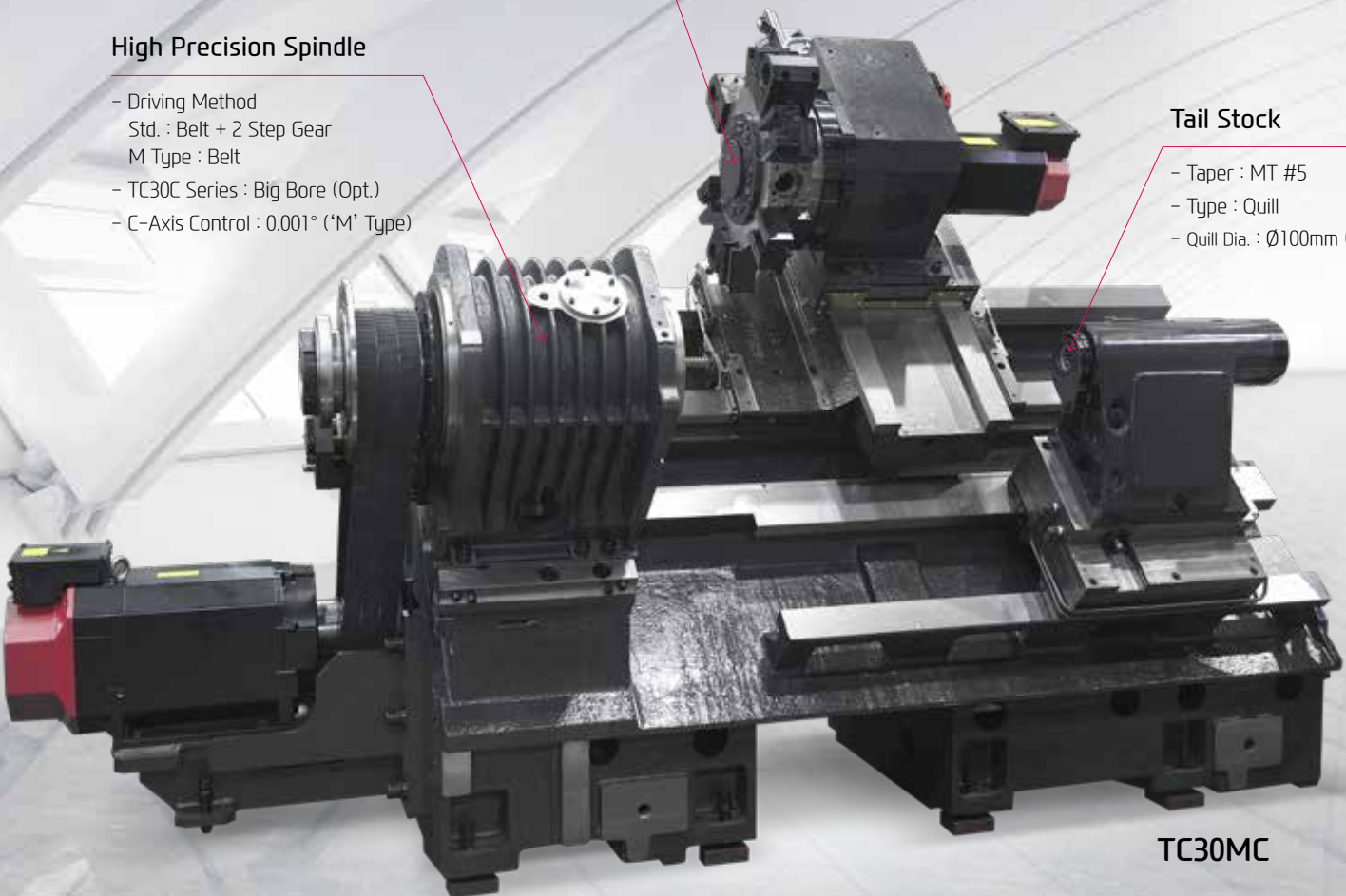
- No. of Tools : 12 EA
- Tool Size (O.D/I.D) : $\square 25/\square 50$ ($\square 1"/\square 2"$)
- Mill Turret : BMT65

High Precision Spindle

- Driving Method
Std. : Belt + 2 Step Gear
M Type : Belt
- TC30C Series : Big Bore (Opt.)
- C-Axis Control : 0.001° ('M' Type)

Tail Stock

- Taper : MT #5
- Type : Quill
- Quill Dia. : $\varnothing 100\text{mm}$ ($\varnothing 3.9"$)



TC30MC



MT#5 Tail Stock

The large (MT#5) tail stock ensures high accuracy even during heavy duty cutting. The quill can be operated by a foot pedal or a program. The quill body which is attached to the saddle, is operated manually by using the JOG button or MPG. (MT 4 Built-in Tail Stock : Option)

POWERFUL CUTTING CAPABILITY & WIDE CUTTING AREA

ALL-IN-ONE TYPE OF BED

High Precision & Rigidity, One-Piece Structure

The TC30 features a 45° slant bed design which is developed through finite element analysis (FEA) to absorb vibration and minimize thermal growth. This ensures a stabilized platform for powerful, precise cutting capabilities.



GUIDEWAY

Box Guideway

All axis of TC30 Series are designed with Box Guideways for better travel ability. Box Guideways show great performance in offsetting vibrations caused by heavy duty cutting.

Ball Screw

Large diameter ball screws with preloading prevent deformation due to heat. Also double-anchor support method improves rigidity.



Rapid Traverse Rate (X/Z/ZB) **20/24/20** m/min
(787/945/787 ipm)

Travel (X/Z/ZB)

unit : mm(in)

TC30A/MA	TC30MSA	TC30LA/LMA	TC30LMSA
290/750 (11.4"/29.5")	290/750/700 (11.4"/29.5"/27.6")	290/1,350 (11.4"/53.1")	290/1,350/1,200 (11.4"/53.1"/47.2")
TC30C/MC	TC30LC/LMC	TC30MSC	
355/750 (14"/29.5")	355/1,350 (14"/53.1")	355/750/700 (14"/29.5"/27.6")	

02 HIGH PRECISION SPINDLE

Long Lasting, High Accuracy & Excellent Performance CNC Turning Center

Spindle Specifications

[] : Option

MODEL	Spindle Speed	Motor (Max./Cont.)	Torque (Max./Cont.)	Driving Method
TC30A/LA	3,600 rpm	22/18.5 kW (30/25 HP)	739.5/622 N·m (545/458.8 lbf-ft)	Belt + 2 Step Gear
TC30C/LC	3,000 rpm [2,800 rpm (BIG BORE)]	26/22 kW (35/30 HP) [26/22 kW (35/30 HP)]	1,131/957 N·m (834.2/705.8 lbf-ft) [1,325/1,121 N·m (977.3/826.8 lbf-ft)]	
TC30MA Series	3,500 rpm	22/18.5 kW (30/25 HP)	493.4/414.9 N·m (363.9/306 lbf-ft)	Belt
TC30MC Series	3,000 rpm [2,800 rpm (BIG BORE)]	22/18.5 kW (30/25 HP) [22/18.5 kW (30/25 HP)]	787.3/465 N·m (580.7/343 lbf-ft) [787.3/465 N·m (580.7/343 lbf-ft)]	
Sub Spindle	4,000 rpm	11/7.5 kW (15/10 HP)	140.1/95.5 N·m (103.2/70.4 lbf-ft)	Belt

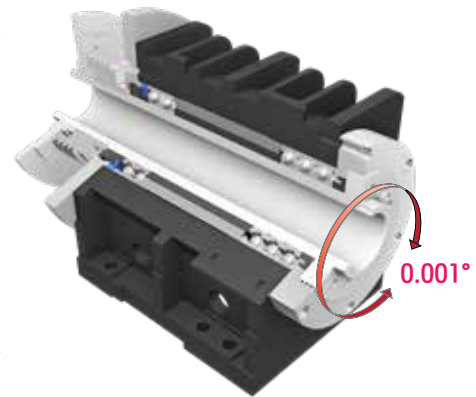
HEAVY DUTY CUTTING & HIGH ACCURACY

MAIN SPINDLE

Spindle Ideal for Heavy Cutting

The main spindle has a wide range of constant power and utilizes the same structure as high speed turning centers. It is designed to minimize thermal displacement and to maintain stable cutting Capability during high speed machining.

In particular, the enhanced processing and assembling accuracy of bearings enables the spindle unit to maintain high precision for a long time.



C-Axis Control ('M' Type)

The C axis is capable of 0.001° control when milling turret is applied. Machining capability is strengthened with turning and milling operations.

Gear Type Spindle

A two-step driving method is applied inside the main spindle as standard to non mill turret models.(TC30A/C/LA/LC) It provides powerful torque at low speeds and stable rotation at high speeds.

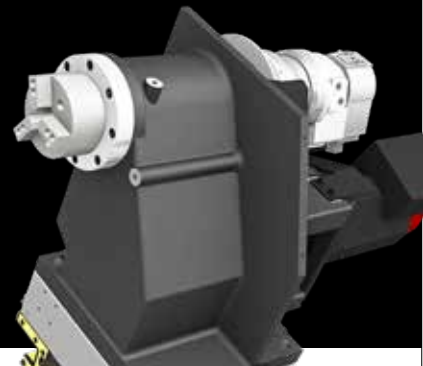
Gearless Type Spindle

Mill turret(BMT turret) equipped models are driven by the gearless method thereby reducing noise and providing outstanding surface finish.



8" SUB SPINDLE ('S' 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.



03 SERVO TURRET

High speed, High Accuracy, Highly Reliable Servo Turret

Servo Turret

No. of Tools

12^{EA}

Tool Size (O.D./I.D.)

□ 25/Ø50 mm (□ 1"/Ø2")

Indexing Time

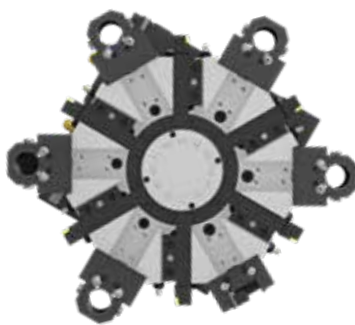
0.3^{sec}

Mill Turret

ITEM	Speed	Motor (Max./Cont)	Torque (Max./Cont)	Collet Size
BMT65	4,000 rpm	5.5/3.7 kW (7.5/5HP)	35/23.5 N·m (25.8/17.3 lbf·ft)	Ø20 (Ø3/4") /ER32

VARIOUS DRIVEN PRECISION BMT TOOL HOLDERS

TURRET



Servo Turret

The turret of TC30 series are applied with high performance AC servo motor, improving machining reliability. 3-piece coupling shows excellent performance in indexing. Powerful hydraulic tool clamping minimizes tool tip deviation caused by load.

20 Bar(290 psi) High Pressure Coolant **OPTION**

Turret is designed to utilize 20 bar (290 psi) high pressure coolant and it shows optimum performance in machining difficult-to-cut material.

BMT65 Turret

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.

STRAIGHT MILLING HEAD



ANGULAR MILLING HEAD



Mill Tool Holder

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



Special Tool

OPTION

The TC30 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.

❖ Consultation needed when ordering these options.

04 USER CONVENIENCE

Various Devices for User Friendly

BAR FEEDER SYSTEM



Bar Feeder

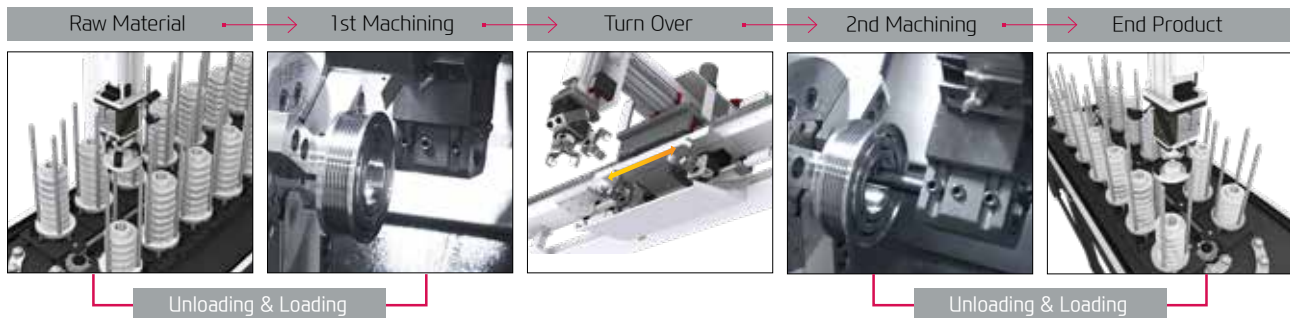
Bar feeder system enables automation which leads to efficiency improvement.

	<p>Parts Catcher</p> <p>An optional parts catcher collects finished parts without the need to open the door, adding productivity, especially when a bar feeder is attached.</p>		<p>Auto Door</p> <p>Using M-code, the doors can be automatically opened and closed which brings productivity and convenience for automation.</p>
	<p>Parts Conveyor</p> <p>The parts conveyor transfers the finished workpiece unloaded by the parts catcher for user convenience.</p>		<p>Auto Shutter</p> <p>Using auto shutter, automation system with gantry loader is possible without opening the machine's door.</p>

GANTRY LOADER SYSTEM

Gantry Loader Machining Process

The high speed gantry loaders and the work stocker allow the implementation of automation cells. This enables flexible machining process and productivity enhancement. Optimization of the installation space is also possible.



Optional

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.		
❖ 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 drum filter chip conveyor, prior consult with hyundai 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)

05 FANUC – SMART PLUS

The Compatible All-round Control



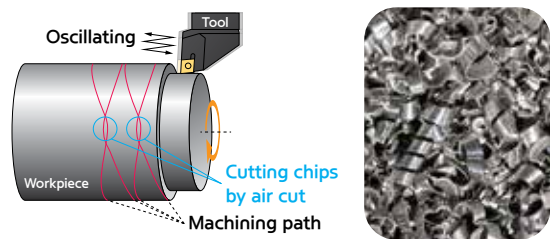
15" Touch-type Monitor as a standard



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

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

TC30 Series Standard & Optional

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

Spindle		A(LA)	MA(LMA)	MSA(LMSA)
Main Spindle	10"	●	●	●
Hollow Chuck 3 Jaw	12"	○	○	○
Main Spindle	10"	○	☆	☆
Solid Chuck 3 Jaw	12"	☆	☆	☆
Sub Spindle	8"	-	-	●
Hollow Chuck 3 Jaw	10"	-	-	-
Sub Spindle	8"	-	-	○
Solid Chuck 3 Jaw	10"	-	-	-
Standard Soft Jaw (1set)		●	●	●
Chuck Clamp Foot Switch		●	●	●
2 Steps Hyd. Pressure Device		○	○	○
Spindle Inside Stopper		☆	☆	☆
Cs-Axis (0.001")		○	●	●
Chuck Open/Close Confirmation Device		●	●	●
2 Steps Chuck Foot Switch		○	○	○
Turret				
Tool Holder		●	●	●
Mill Turret	BMT	-	●	●
Straight Milling Head	Collet Type,2ea	-	●	●
Angular Milling Head	Collet Type,2ea	-	●	●
SUB Angular Milling Head	Collet Type,1ea	-	-	●
Straight Milling Head	Adapter Type	-	○	○
Angular Milling Head	Adapter Type	-	○	○
SUB Angular Milling Head	Adapter Type	-	-	○
Boring Sleeve		●	●	●
Drill Socket		●	●	●
U-Drill Holder		○	○	○
U-Drill Holder Sleeve		○	○	○
O.D Extension Holder	For Out-Dia	○	-	-
Angle Head		-	☆	☆
Tail Stock & Steady Rest				
Quill Type Tail Stock (Foot Switch)		●	●	-
Built in Tail Stock (MT#4)		○	○	-
Programmable Tail Stock		○	○	-
Programmable Hyd. Steady Rest		○	○	- (○)
Manual Steady Rest		☆	☆	- (☆)
Standard Live Center		●	●	-
High Precision Live Center		☆	☆	-
2 Steps Tail Stock Pressure System		☆	☆	-
Quill Forward/Reverse Confirmation Device		○ (CE:●)	○ (CE:●)	-
Coolant & Air Blow				
Standard Coolant (Flozzle)		●	●	●
Chuck Coolant (Upper Chuck)		○	○	○
Gun Coolant		○	○	○
Through Spindle Coolant (Only for Special Chuck)		☆	☆	☆
Thru Coolant for Live Tool		-	☆	☆
Chuck Air Blow (Upper Chuck)		○	○	○
Sub Spindle 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	1.5Bar	●	●	●
	6Bar	○	○	○
	14.5Bar	○	○	○
	20Bar	○	○	○
Power Coolant System (For Automation)		☆	☆	☆
Coolant Chiller		☆	☆	☆
Chip Disposal				
Coolant Tank	220 ℓ (58.1 gal)	A (●)	MA (●)	MSA (●)
	270 ℓ (71.3 gal)	LA (●)	LMA (●)	LMSA (●)
Chip Conveyor (Hinge/Scraper)	Front (Rear)	○ (-)	○ (-)	-
	Front (Right)	○	○	○
Special Chip Conveyor (Drum Filter)		☆	☆	☆
Chip Wagon - Standard (180 ℓ [47.5 gal])		○	○	○
Chip Wagon - Swing (200 ℓ [52.8 gal])		○	○	○
Chip Wagon - Large Swing (290 ℓ [76.6 gal])		○	○	○
Chip Wagon - Large Size (330 ℓ [87.2 gal])		○	○	○
Chip Wagon - Customized		☆	☆	☆
Safety Device				
Total Splash Guard		●	●	●
Back Spin Torque Limiter (BST)		●	●	●
Chuck Hydraulic Pressure Maintenance Interlock		☆	☆	☆

Electric Device		A(LA)	MA(LMA)	MSA(LMSA)
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	Digital	○	○	○
Electric Circuit Breaker		○	○	○
Transformer	30KVA	○	-	-
	35KVA	-	○	○
Auto Power Off		○	○	○
Measurement				
Q-Setter		●	●	●
Automatic Q-Setter		○	○	○
Work Close Confirmation Device (Only for Special Chuck)	TACO	☆	☆	☆
	SMC	☆	☆	☆
Work Setter (RENISHAW/MARPOSS)		○	☆	☆
Linear Scale	X axis	○	○	○
	Z axis	○	○	○
Coolant Level Sensor (Only for Chip Conveyor)		☆	☆	☆
Environment				
Air Conditioner		○	○	○
Oil Mist Collector		☆	☆	☆
Oil Skimmer (Only for Chip Conveyor)		○	○	○
MQL (Minimal Quantity Lubrication)		☆	☆	☆
Fixture & Automation				
Auto Door	Standard	○	○	○
	High Speed	☆	☆	☆
Auto Shutter (Only for Automatic System)		☆	☆	☆
Sub Operation Panel		○	○	○
Bar Feeder Interface		☆	☆	☆
Bar Feeder		○	○	○
Extra M-Code 4ea		☆	☆	☆
Automation Interface		○	○	○
I/O Extension (IN & OUT)	16 Contact	○	○	○
	32 Contact	○	○	○
Parts Catcher	Main SP	-	-	○
	Sub SP	-	-	○
Sub Sp. Work Pusher (Pneumatic Type)		☆	☆	☆
Turret Work Pusher (For Automation)		☆	☆	☆
Parts Conveyor		☆	☆	☆
Hyd. Device				
Standard Hyd. Cylinder	Hollow	●	●	●
Standard Hyd. Unit	35bar/20 ℓ (5.3gal)	●	●	●
S/W				
Dialogue Program (HW-DPRO)		○	○	○
DNC software (HW-eDNC)		○	○	○
Machine Monitoring System (HW-MMS Cloud)		☆	☆	☆
Smart Guide-i : FANUC		●	● (☆)	☆
Smart S/W		☆	☆	☆
ETC				
Tool Box		●	●	●
Customized Color	Need Munsell No.	☆	☆	☆
CAD & CAM		☆	☆	☆

❖ 4 channel of TDC(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

TC30 Series Standard & Optional

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

Spindle		C(LC)	MC(LMC)	MSC
Main Spindle	12"	●	●	●
Hollow Chuck 3 Jaw	15"	○	○	○
Main Spindle	12"	☆	☆	☆
Solid Chuck 3 Jaw	15"	○	☆	☆
Sub Spindle	8"	-	-	●
Hollow Chuck 3 Jaw	10"	-	-	-
Sub Spindle	8"	-	-	☆
Solid Chuck 3 Jaw	10"	-	-	-
Standard Soft Jaw (1set)		●	●	●
Chuck Clamp Foot Switch		●	●	●
2 Steps Hyd. Pressure Device		○	○	○
Spindle Inside Stopper		☆	☆	☆
Cs-Axis (0.001°)		-	●	●
Chuck Open/Close Confirmation Device		●	●	●
2 Steps Chuck Foot Switch		○	○	○
Turret				
Tool Holder		●	●	●
Mill Turret	BMT	-	●	●
Straight Milling Head	Collet Type,2ea	-	●	●
Angular Milling Head	Collet Type,2ea	-	●	●
SUB Angular Milling Head	Collet Type,1ea	-	-	●
Straight Milling Head	Adapter Type	-	○	○
Angular Milling Head	Adapter Type	-	○	○
SUB Angular Milling Head	Adapter Type	-	-	○
Boring Sleeve		●	●	●
Drill Socket		●	●	●
U-Drill Holder		○	○	○
U-Drill Holder Sleeve		○	○	○
O.D Extension Holder	For Out-Dia	●	-	-
Angle Head		-	☆	☆
Tail Stock & Steady Rest				
Quill Type Tail Stock (Foot Switch)		●	●	-
Built in Tail Stock (MT#4)		○	○	-
Programmable Tail Stock		○	○	-
Programmable Hyd. Steady Rest		○	○	-
Manual Steady Rest		☆	☆	-
Standard Live Center		●	●	-
High Precision Live Center		☆	☆	-
2 Steps Tail Stock Pressure System		☆	☆	-
Quill Forward/Reverse Confirmation Device		○(CE:●)	○(CE:●)	-
Coolant & Air Blow				
Standard Coolant (Nozzle)		●	●	●
Chuck Coolant (Upper Chuck)		○	○	○
Gun Coolant		○	○	○
Through Spindle Coolant (Only for Special Chuck)		☆	☆	☆
Thru Coolant for Live Tool		-	☆	☆
Chuck Air Blow (Upper Chuck)		○	○	○
Sub Spindle 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	1.5Bar	●	●	●
	6Bar	○	○	○
	14.5Bar	○	○	○
	20Ba	○	○	○
Power Coolant System (For Automation)		☆	☆	☆
Coolant Chiller		☆	☆	☆
Chip Disposal				
Coolant Tank	220 ℓ (58.1 gal)	C (●)	MC (●)	●
	270 ℓ (71.3 gal)	LC (●)	LMC (●)	-
Chip Conveyor (Hinge/Scraper)	Front (Rear)	○(-)	○(-)	-
	Front (Right)	○	○	○
Special Chip Conveyor (Drum Filter)		☆	☆	☆
Chip Wagon - Standard (180 ℓ [47.5 gal])		○	○	○
Chip Wagon - Swing (200 ℓ [52.8 gal])		○	○	○
Chip Wagon - Large Swing (290 ℓ [76.6 gal])		○	○	○
Chip Wagon - Large Size (330 ℓ [87.2 gal])		○	○	○
Chip Wagon - Customized		☆	☆	☆
Safety Device				
Total Splash Guard		●	●	●
Back Spin Torque Limiter (BST)		●	●	●
Chuck Hydraulic Pressure Maintenance Interlock		☆	☆	☆

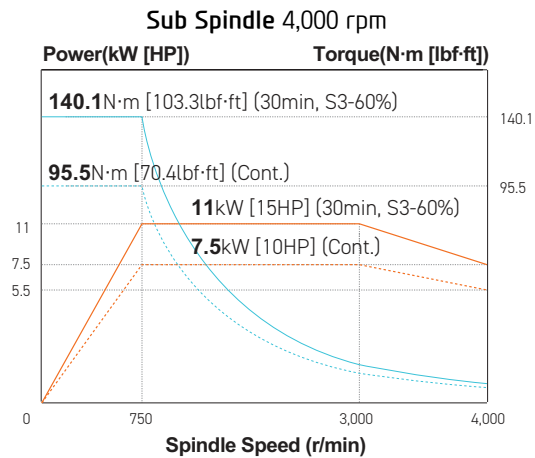
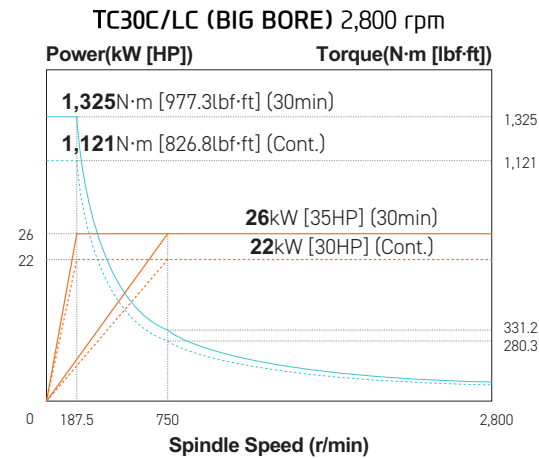
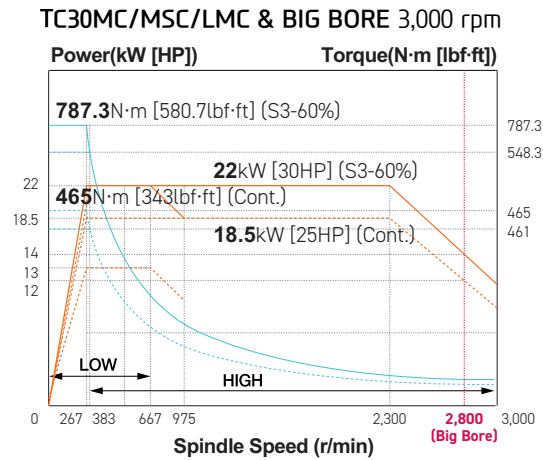
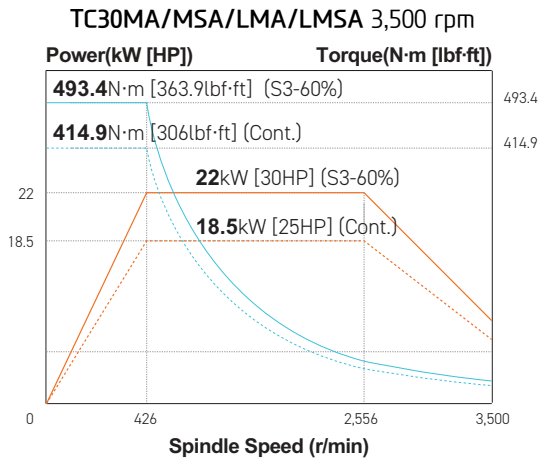
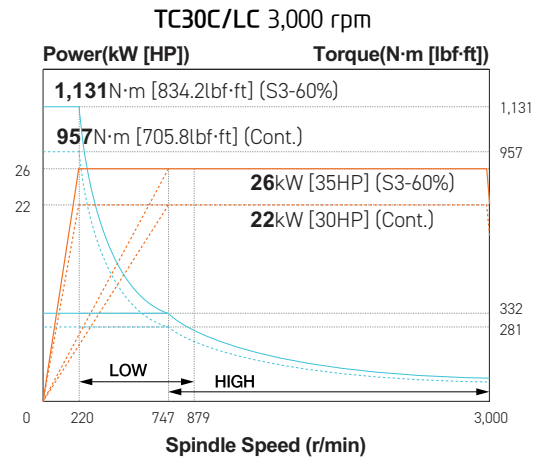
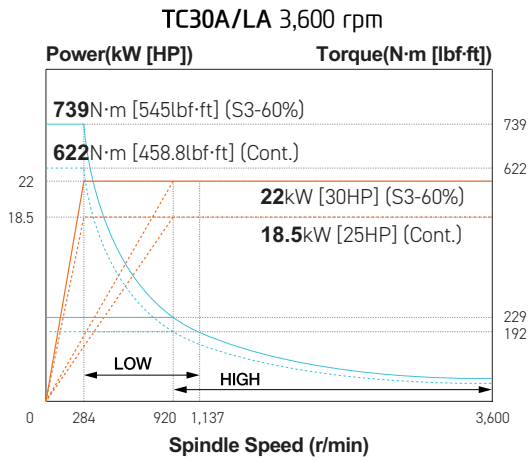
Electric Device		C(LC)	MC(LMC)	MSC
Call Light	1Color : ●	●	●	●
Call Light & Buzzer	3Color : ●●● B	○	○	○
Electric Cabinet Light		○	○	○
Remote MPG		○	○	○
Work Counter	Digital	○	○	○
Total Counter	Digital	○	○	○
Tool Counter	Digital	○	○	○
Multi Tool Counter	Digital	○	○	○
Electric Circuit Breaker		○	○	○
AVR (Auto Voltage Regulator)		☆	☆	☆
Transformer	35kVA	○	○	○
Auto Power Off		○	○	○
Measurement				
Q-Setter		●	●	●
Automatic Q-Setter		○	○	○
Work Close Confirmation Device (Only for Special Chuck)	TACO	☆	☆	☆
	SMC	☆	☆	☆
Work Setter (REnishaw/MARPOSS)		☆	☆(○)	☆
Linear Scale	X axis	○	○	○
	Z axis	○	○	○
Coolant Level Sensor (Only for Chip Conveyor)		☆	☆	☆
Environment				
Air Conditioner		○	○	○
Oil Mist Collector		☆	☆	☆
Oil Skimmer (Only for Chip Conveyor)		○	○	○
MQL (Minimal Quantity Lubrication)		☆	☆	☆
Fixture & Automation				
Auto Door	Standard	○	○	○
	High Speed	☆	☆	☆
Auto Shutter (Only for Automatic System)		☆	☆	☆
Sub Operation Panel		○	○	○
Bar Feeder Interface		☆	☆	☆
Bar Feeder		○	○	○
Extra M-Code 4ea		☆	☆	☆
Automation Interface		○	○	○
I/O Extension (IN & OUT)	16 Contact	○	○	○
	32 Contact	○	○	○
Parts Catcher	Main SP.	-	-	○
	Sub SP.	-	-	○
Sub Sp. Work Pusher (Pneumatic Type)		☆	☆	☆
Turret Work Pusher (For Automation)		☆	☆	☆
Parts Conveyor		☆	☆	☆
Hyd. Device				
Standard Hyd. Cylinder	Hollow	●	●	●
Standard Hyd. Unit	35bar/20 ℓ (5.3gal)	●	●	●
S/W				
Dialogue Program (HW-DPRO)		○	○	○
DNC software (HW-eDNC)		○	○	○
Machine Monitoring System (HW-MMS Cloud)		☆	☆	☆
Smart Guide-i : FANUC		●	☆	☆
Smart S/W		☆	☆	☆
ETC				
Tool Box		●	●	●
Customized Color	Need Munsel No.	☆	☆	☆
CAD & CAM		☆	☆	☆

❖ 4 channel of TDC(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 (FANUC)

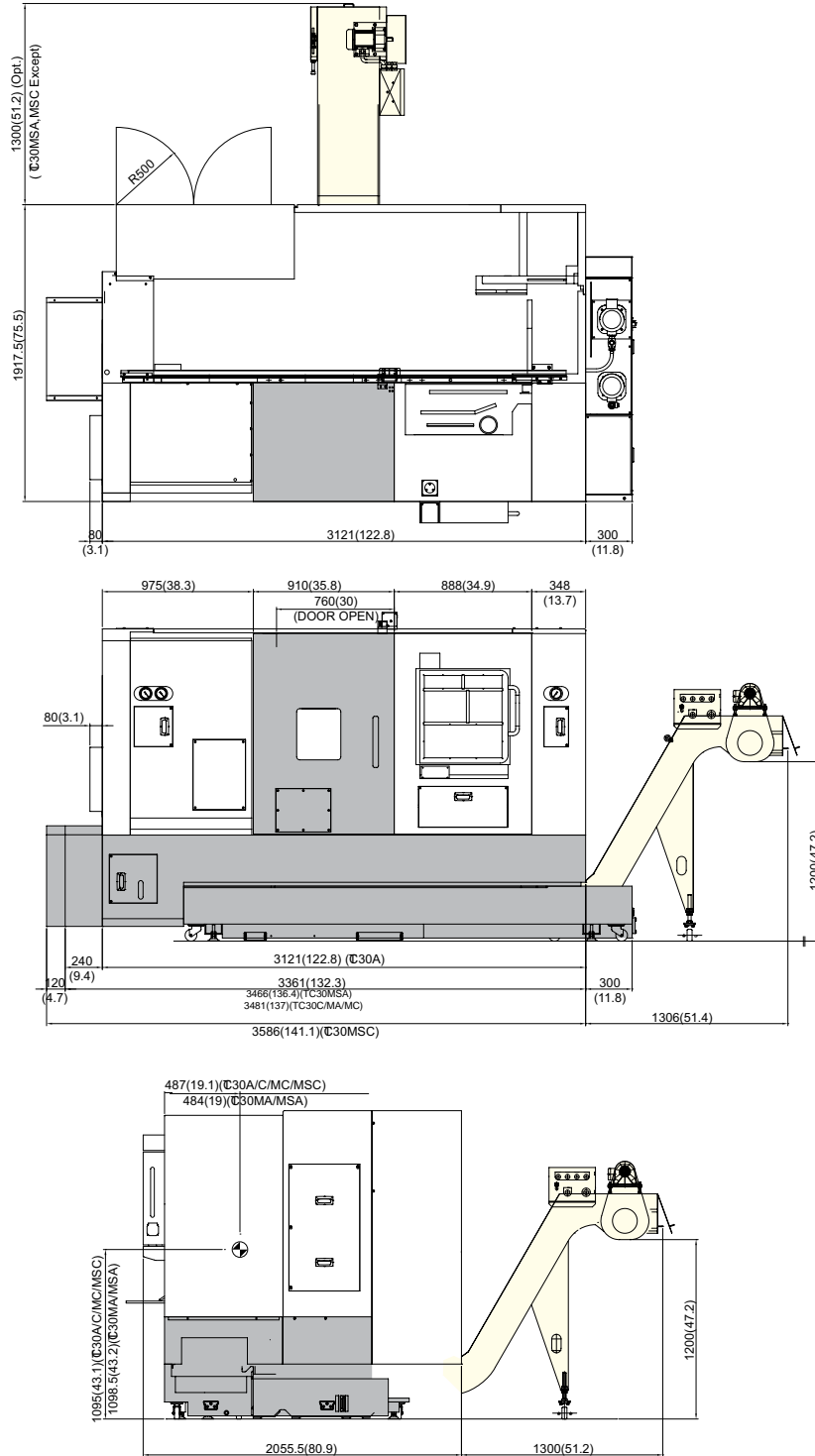


SPECIFICATIONS

External Dimensions

unit : mm(in)

TC30A/MA//MSA
TC30C/MC//MSC

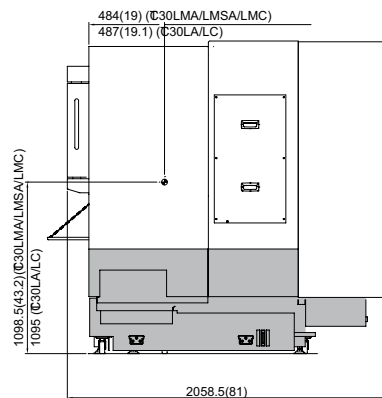
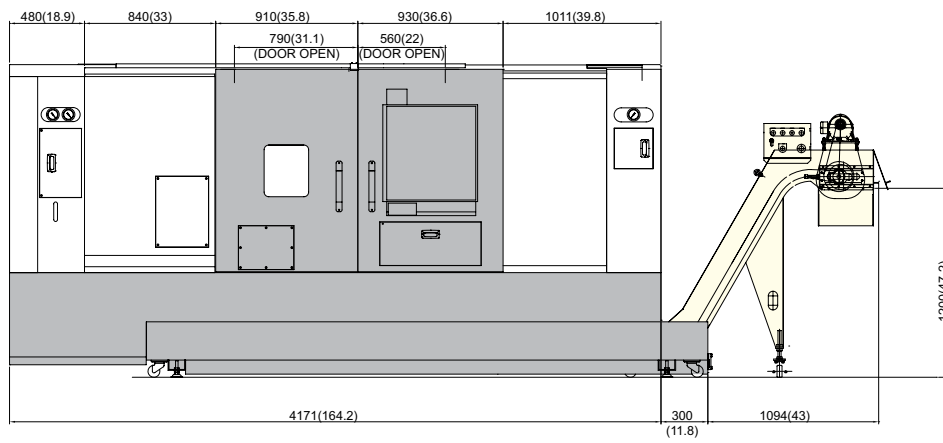
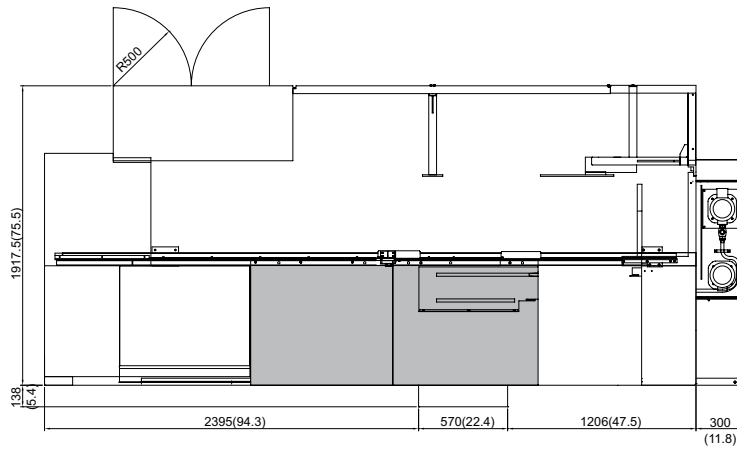


SPECIFICATIONS

External Dimensions

unit : mm(in)

TC30LA/LMA/LMSA
TC30LC/LMC/LMSC

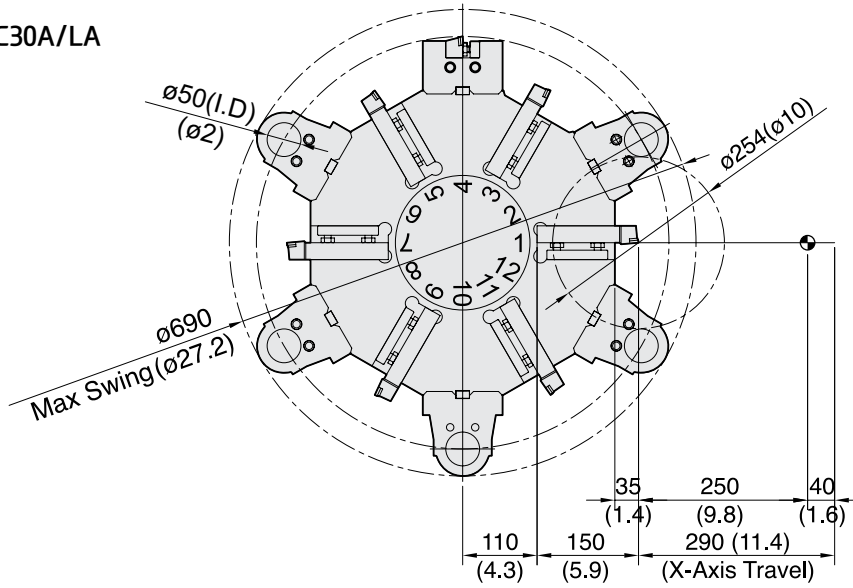


SPECIFICATIONS

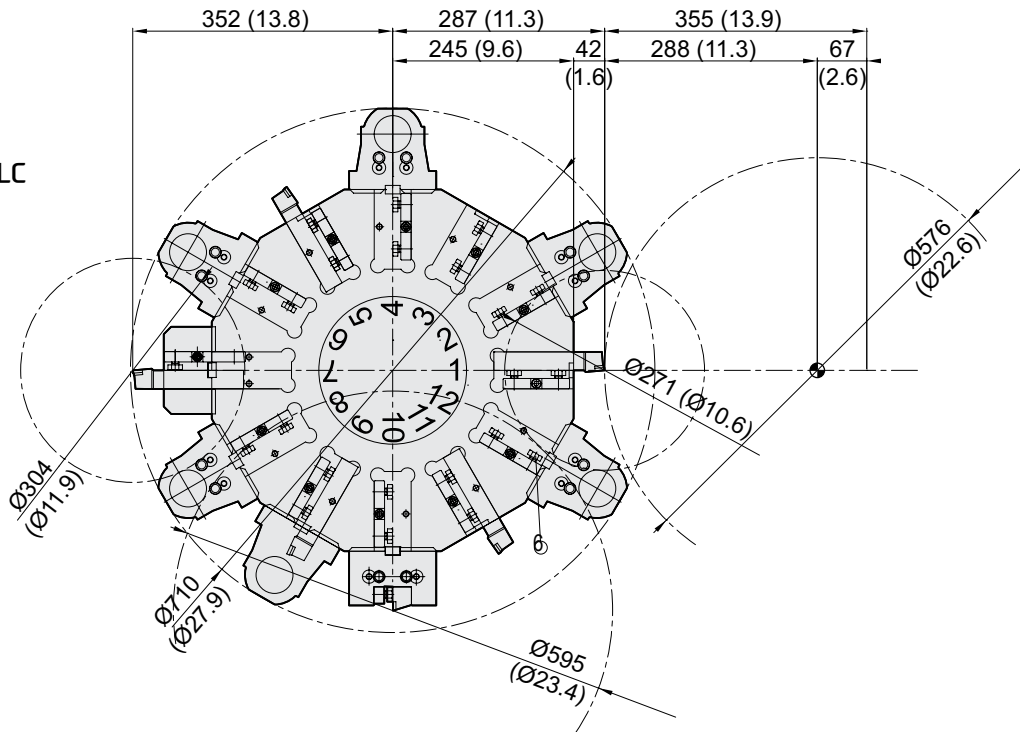
Interference

unit : mm(in)

TC30A/LA



TC30C/LC

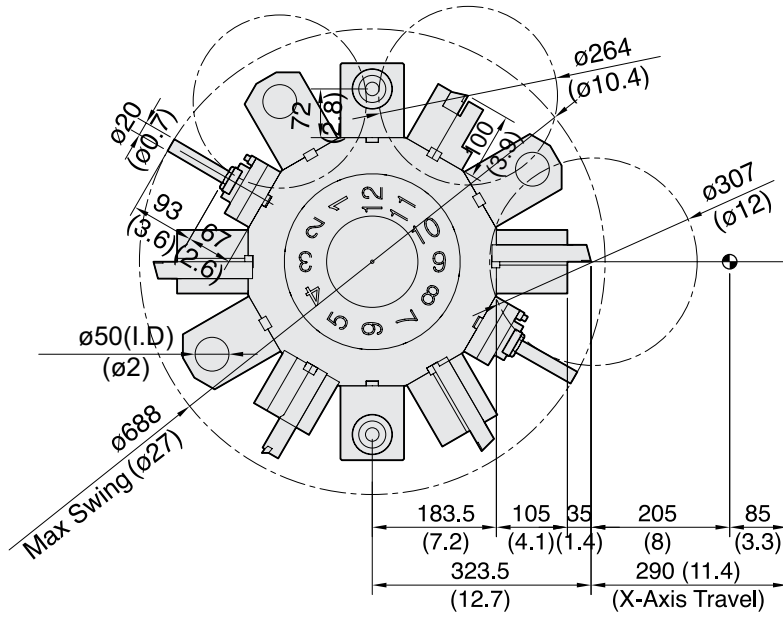


SPECIFICATIONS

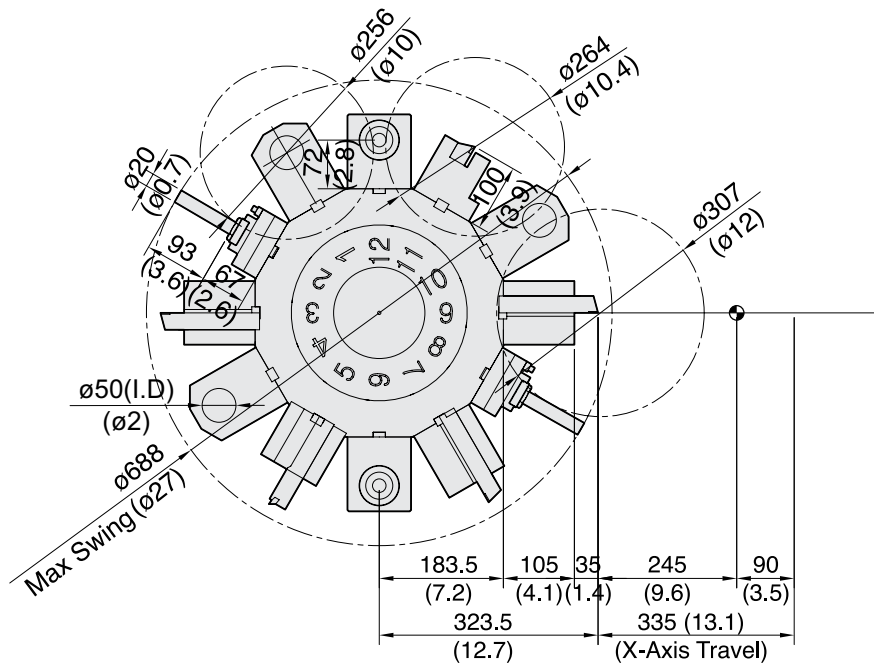
Interference

unit : mm(in)

TC30MA/LMA



TC30MC/LMC

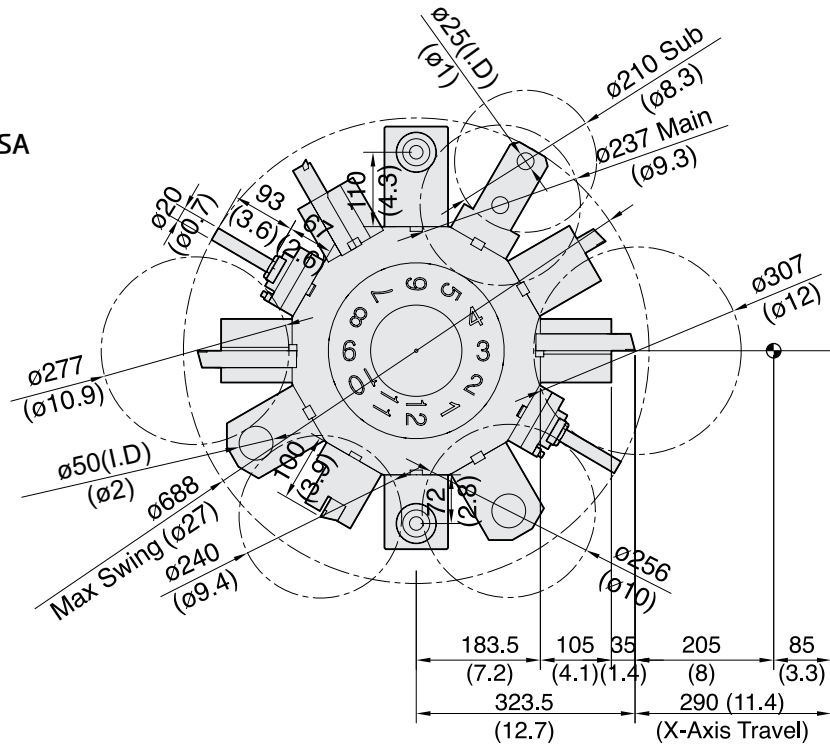


SPECIFICATIONS

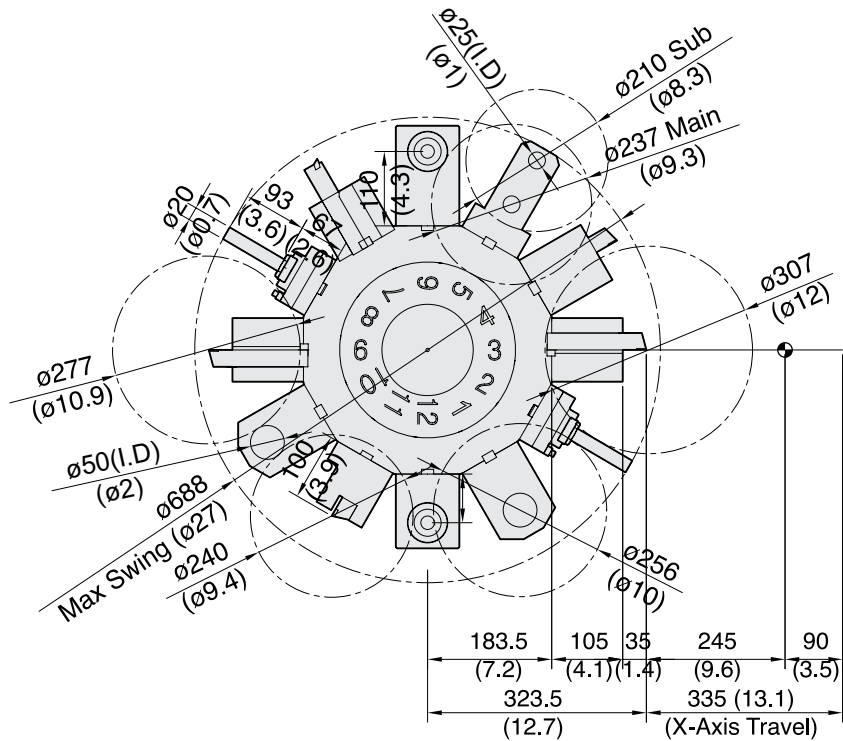
Interference

unit : mm(in)

TC30MSA/LMSA



TC30MSC

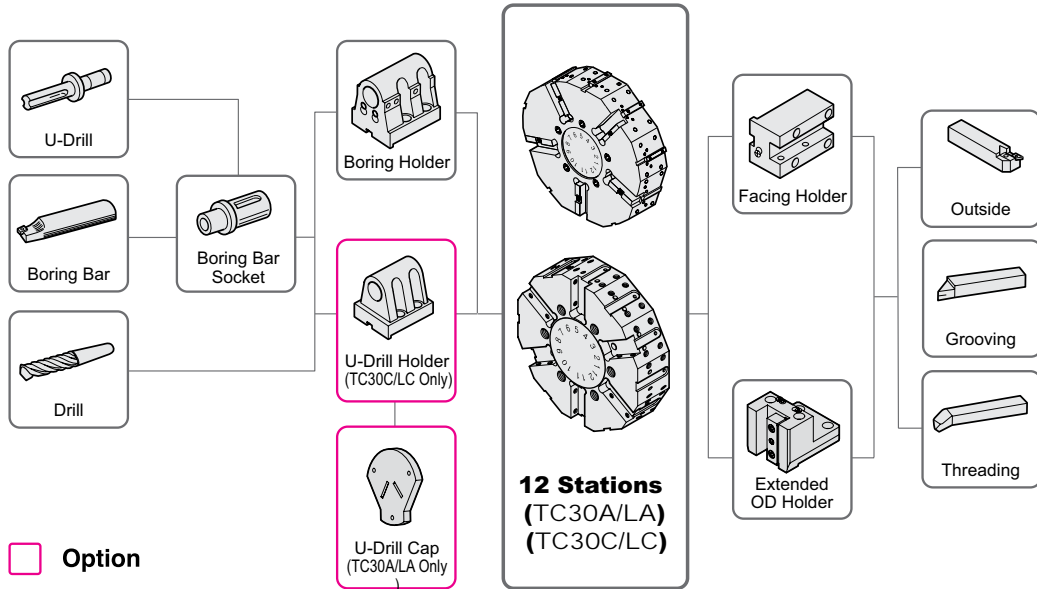


SPECIFICATIONS

Tooling System

unit : mm(in)

TC30A/LA TC30C/LC



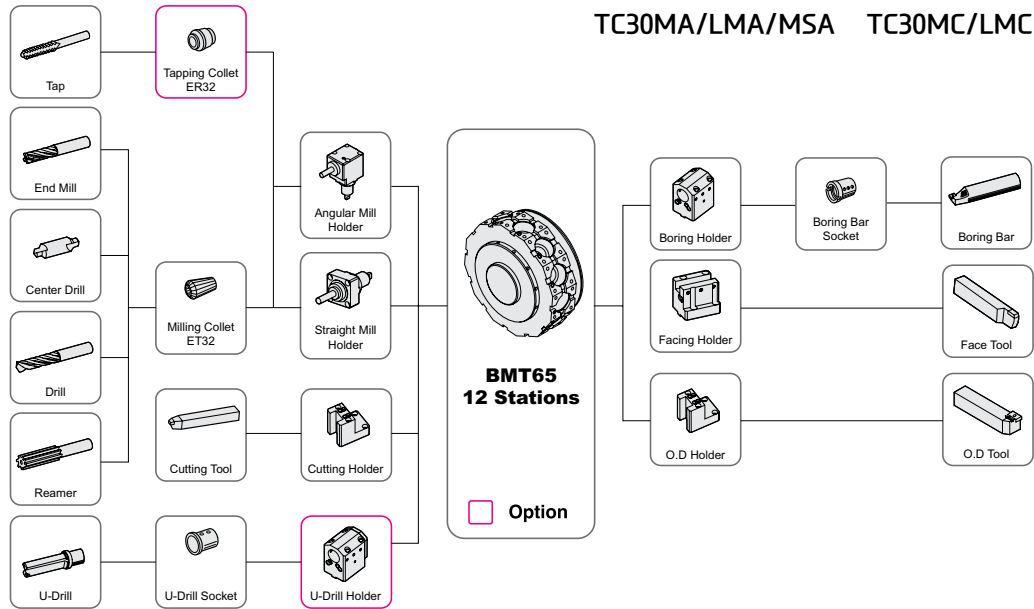
Tooling Parts Detail

ITEM			A/LA		C/LC	
			mm Unit	inch Unit	mm Unit	inch Unit
Turning Holder	O.D Holder	Right/Left	-	-	-	-
		Extension	-	-	1	1
	Facing Holder		1	1	1	1
	Cutting Holder		-	-	-	
Boring Holder	I.D Holder	Single	5	5	5	5
	U-Drill Holder	Tool Holder	Opt.	Opt.	Opt.	Opt.
		Cap	Opt.	Opt.	-	-
Driven Holder	Straight Mill Holder	Standard	-	-	-	-
	Angular Mill Holder	Standard	-	-	-	-
Socket	Boring Main	Ø16 (Ø5/8")	-	-	-	-
		Ø20 (Ø3/4")	1	1	1	1
		Ø25 (Ø1")	-	-	-	-
		Ø32 (Ø1 1/4")	1	1	1	1
		Ø40 (Ø1 1/2")	-	-	-	-
		Ø45 (Ø1 3/4")	-	-	-	-
	Boring Sub	Ø6×Ø25 (1/4")	-	-	-	-
		Ø12×Ø25 (1/2")	-	-	-	-
		Ø20×Ø25 (3/4")	-	-	-	-
		MT 2	1	1	1	1
		MT 3	1	1	1	1
		MT 4	1	1	1	1
		ER Collet		-	-	-

SPECIFICATIONS

Tooling System

unit : mm(in)



Tooling Parts Detail

ITEM			MA/MC/LMA/LMC		MSA		MSC/LMSA/LMSC		
			mm Unit	inch Unit	mm Unit	inch Unit	mm Unit	inch Unit	
Turning Holder	O.D Holder	Right/Left	4	4	1	1	1	1	
		Double	-	-	1	1	1	1	
		Sub	-	-	1	1	1	1	
	Facing Holder		1	1	1	1	1	1	
	Cutting Holder		-	-	1	1	1	1	
Boring Holder	I.D Holder	Single	3	3	2	2	2	2	
		Double	-	-	1	1	1	1	
	U-Drill Holder	Tool Holder/Cap	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	
Driven Holder	Straight Mill Holder	Standard	2	2	2	2	2	2	
	Angular Mill Holder	Standard	2	2	2	2	2	2	
		Long	-	-	-	-	1	1	
Socket	Boring Main	Ø16 (Ø5/8")	1	-	1	-	1	-	
		Ø20 (Ø3/4")	1	1	1	1	1	1	
		Ø25 (Ø1")	1	1	1	1	1	1	
		Ø32 (Ø1 1/4")	1	1	1	1	1	1	
		Ø40 (Ø1 1/2")	1	1	1	1	1	1	
		Ø45 (Ø1 3/4")	-	1	-	1	-	1	
	Boring Sub	Ø6×Ø25 (1/4")	-	-	1	1	1	1	
		Ø12×Ø25 (1/2")	-	-	1	1	1	1	
		Ø20×Ø25 (3/4")	-	-	1	1	1	1	
	Drill	MT	MT 1 × MT 2	1	1	1	1	1	1
			MT 2	1	1	1	1	1	1
			MT 3	1	1	1	1	1	1
			MT 4	1	1	1	1	1	1
	ER Collet		1 Set	1 Set	1 Set	1 Set	1 Set	1 Set	

Specifications are subject to change without notice for improvement.

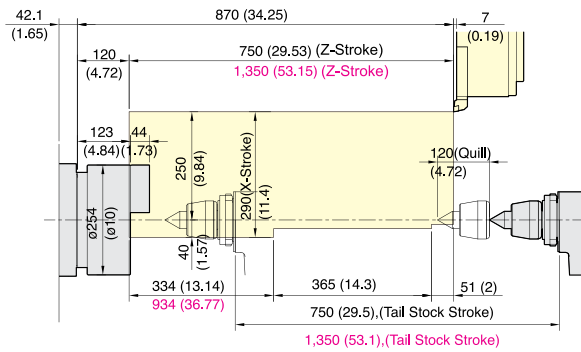
SPECIFICATIONS

Tooling Travel Range

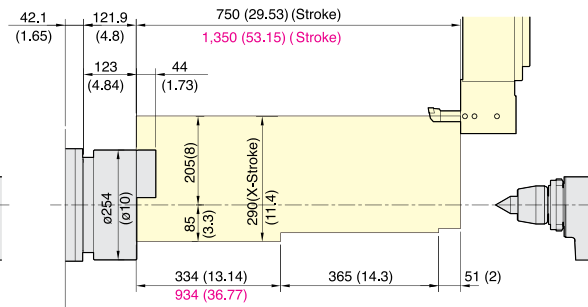
unit : mm(in)

TC30A TC30LA

OD TOOL HOLDER

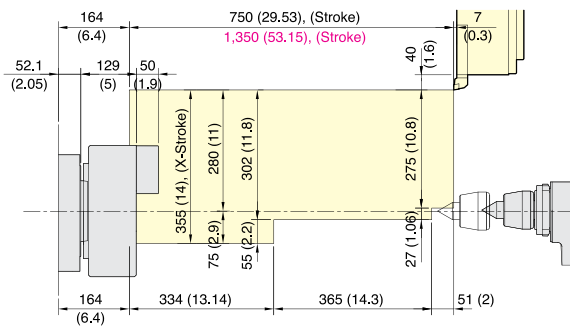


ID TOOL HOLDER

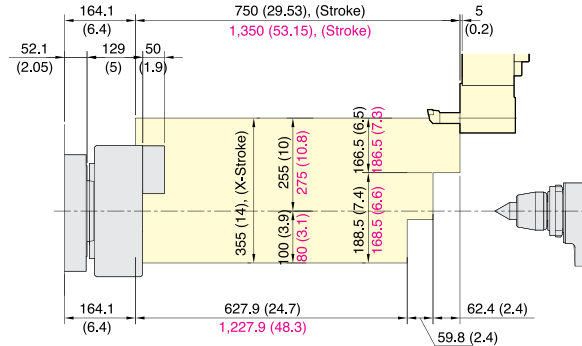


TC30C TC30LC

OD TOOL HOLDER



ID TOOL HOLDER



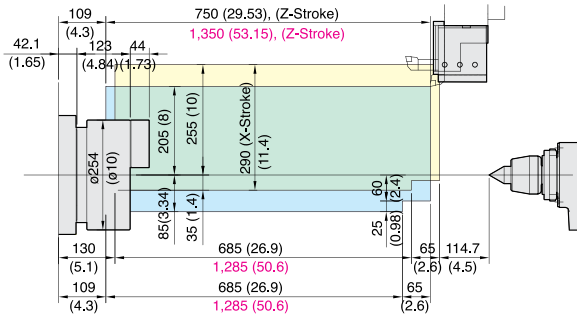
SPECIFICATIONS

Tooling Travel Range

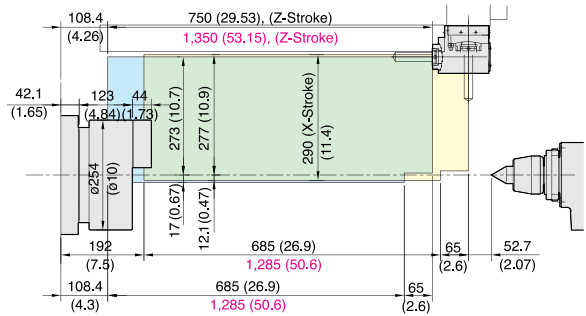
unit : mm(in)

TC30MA TC30LMA

OD/ID TOOL HOLDER

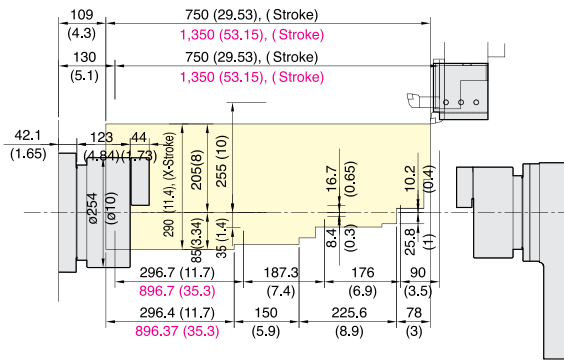


DRILL/END MILL TOOL HOLDER

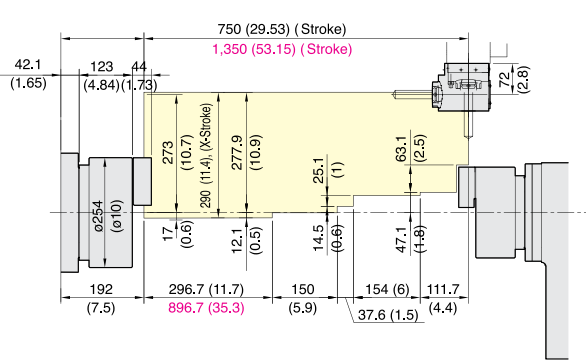


TC30MSA TC30LMSA

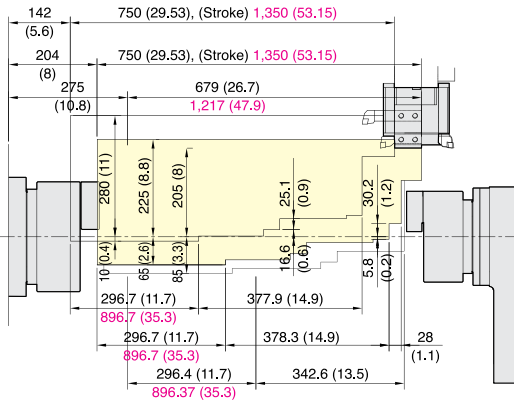
OD/ID TOOL HOLDER



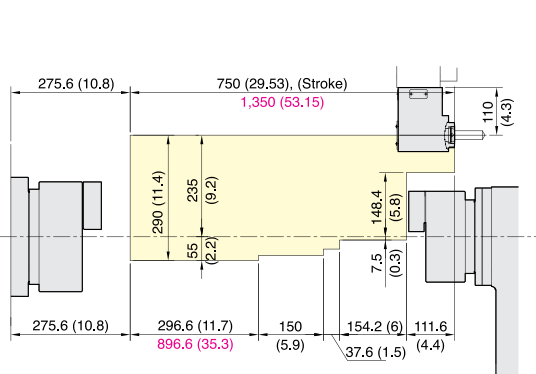
DRILL/END MILL TOOL HOLDER



DOUBLE OD/ID TOOL HOLDER



SUB MILL TOOL HOLDER



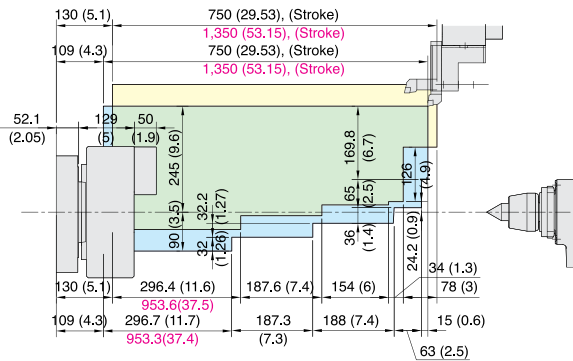
SPECIFICATIONS

Tooling Travel Range

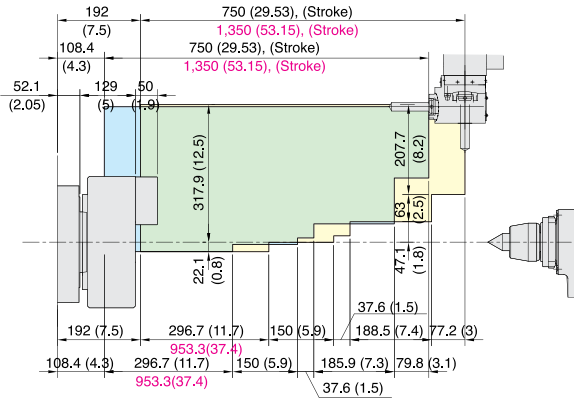
unit : mm(in)

TC30MC TC30LMC

OD/ID TOOL HOLDER

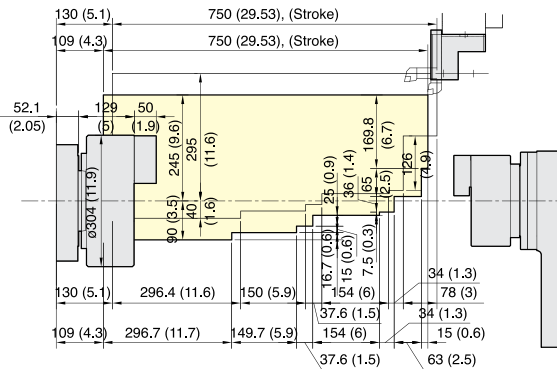


DRILL/END MILL TOOL HOLDER

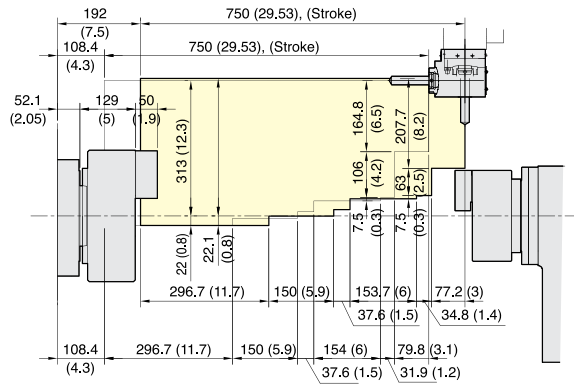


TC30MSC

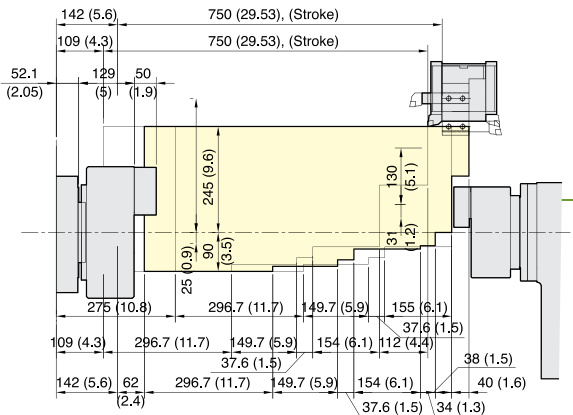
OD/ID TOOL HOLDER



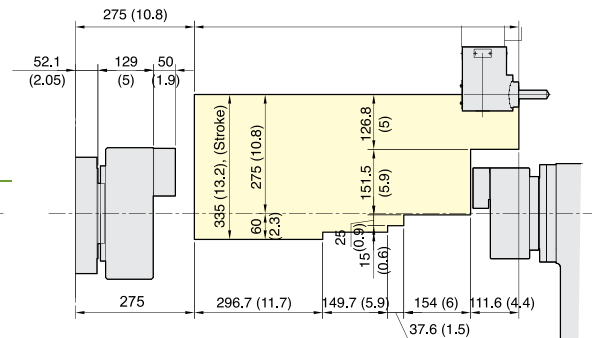
DRILL/END MILL TOOL HOLDER



DOUBLE OD/ID TOOL HOLDER



SUB MILL TOOL HOLDER



SPECIFICATIONS

Specifications

[] : Option

ITEM			TC30A	TC30MA	TC30MSA
CAPACITY	Swing Over the Bed		mm(in) $\varnothing 750$ (29.5")		
	Swing Over the Carriage		mm(in) $\varnothing 480$ (18.9")		
	Max. Turning Dia.		mm(in) $\varnothing 500$ (19.7")	mm(in) $\varnothing 410$ (16.1")	
	Max. Turning Length		mm(in) 720 (28.3")	mm(in) 680 (26.8")	
	Bar Capacity	Main	mm(in)	$\varnothing 76$ (3")	
Sub		mm(in)	-	$\varnothing 65$ (2.6")	
SPINDLE	Chuck Size	Main	inch 10"		
		Sub	-		inch 8"
	Spindle Bore	Main	mm(in) $\varnothing 90$ (3.5")	mm(in) $\varnothing 95$ (3.7")	
		Sub	mm(in)	mm(in) $\varnothing 78$ (3.1")	
	Spindle Speed (rpm)	Main	r/min 3,600 [3,500]	r/min 3,500	
		Sub	r/min	r/min 4,000	
	Motor (Max/Cont.)	Main	kW(HP) 22/18.5 (30/25) [22/18.5 (30/25)]	kW(HP) 22/18.5 (30/25)	
		Sub	kW(HP)	kW(HP) 11/7.5 (15/10)	
	Torque (Max/Cont.)	Main	N·m(lbf·ft) 739/622 (545/458.8) [783.2/652.7 (577.7/481.4)]	N·m(lbf·ft) 493.4/414.9 (363.9/306)	
		Sub	N·m(lbf·ft)	N·m(lbf·ft) 140.1/95.5	
	Spindle Type	Main	-	Belt+2Step Gear	
		Sub	-	Belt	
	Spindle Nose	Main	-	A2-8	
		Sub	-	A2-6	
C-axis Indexing	deg	-	0.001°		
FEED	Travel (X/Z/ZB)		mm(in) 290/750 (11.4"/29.5")		mm(in) 290/750/700 (11.4"/29.5"/27.5")
	Rapid Traverse Rate (X/Z/ZB)		m/min 20/24		m/min 20/24/20
	Slide Type		-		
TURRET	No. of Tools		EA 12		
	Tool Size	OD	mm(in) $\square 25$ (1")		
		ID	mm(in) $\varnothing 50$ (2")		
	Indexing Time		sec/step 0.3		
LIVE TOOL	Motor (Max/Cont.)		kW(HP) - 5.5/3.7 (7.4/4.7)		
	Milling Tool Speed (rpm)		r/min - 4,000		
	Torque (Max/Cont.)		N·m(lbf·ft) - 35/23.5 (25.8/17.3)		
	Collet Size		mm(in) - $\varnothing 20$ (0.8") - ER32		
	Type		- BMT65		
TAIL STOCK	Taper		- MT5		
	Quill Dia.		mm(in) $\varnothing 100$ (3.9")		
	Quill Travel		mm(in) 120 (4.72)		
	Travel		mm(in) 750 (29.5)		
TANK CAPACITY	Coolant Tank		l (gal) 220 (58.1)		
	Lubricating Tank		l (gal) 1.8 (0.5)		
POWER SUPPLY	Electric Power Supply		kVA 25		kVA 27
	Thickness of Power Cable		mm ² Over 25		mm ² Over 35
	Voltage		V/Hz 220/60 (200/50*)		
MACHINE	Floor Space (L×W)		mm(in) 3,200×2,002(126"×78.8")		mm(in) 3,360×2,002(132.3"×78.8")
	Height		mm(in) 1,997 (78.6")		
	Weight		kg(lb) 6,300 (13,889)		kg(lb) 6,500 (14,330)
PC	Controller		-		F i Series - Smart Plus
					FANUC 32i-B

*) Using 50Hz voltage instead of 60Hz may lower the output of motors. (excluding servo motors and inverter motors)

Prior consultation is required when applying spindle contouring control for gear driven spindle.

Specifications are subject to change without notice for improvement.

SPECIFICATIONS

Specifications

[] : Option

ITEM			TC30LA	TC30LMA	TC30LMSA	
CAPACITY	Swing Over the Bed	mm(in)	Ø750 (29.5")			
	Swing Over the Carriage	mm(in)	Ø480 (18.9")			
	Max. Turning Dia.	mm(in)	Ø500 (19.7")	Ø410 (16.1")		
	Max. Turning Length	mm(in)	1,320 (52")	1,280 (50.4")	1,250 (49.2")	
	Bar Capacity	Main	mm(in)	Ø76 (3")		
Sub		mm(in)	-	Ø65 (2.6")		
SPINDLE	Chuck Size	Main	10"			
		Sub	-	8"		
	Spindle Bore	Main	mm(in)	Ø90 (3.5")	Ø95(3.7")	
		Sub	mm(in)	-	Ø78 (3.1")	
	Spindle Speed (rpm)	Main	r/min	3,600		
		Sub	r/min	-	4,000	
	Motor (Max/Cont.)	Main	kW(HP)	22/18.5 (30/25)		
		Sub	kW(HP)	-	11/7.5 (15/10)	
	Torque (Max/Cont.)	Main	N·m(lbf·ft)	739/622 (545/458.8)		
		Sub	N·m(lbf·ft)	-	140.1/95.5	
	Spindle Type	Main	-	Belt+2Step Gear		Belt
		Sub	-	-	Belt	
	Spindle Nose	Main	-	A2-8		
Sub		-	-	A2-6		
C-axis Indexing	deg	-	0.001°			
FEED	Travel (X/Z/ZB)	mm(in)	290/1,350(11.4"/53.1")		290/1,350/1,200 (11.4"/53.1"/47.2")	
	Rapid Traverse Rate (X/Z/ZB)	m/min	20/24		20/24/20	
	Slide Type	-	BOX GUIDE			
TURRET	No. of Tools	EA	12			
	Tool Size	OD	mm(in)			
		ID	mm(in)			
	Indexing Time	sec/step	0.3			
LIVE TOOL	Motor (Max/Cont.)	kW(HP)	-	5.5/3.7 (7.4/4.7)		
	Milling Tool Speed (rpm)	r/min	-	4,000		
	Torque (Max/Cont.)	N·m(lbf·ft)	-	35/23.5 (25.8/17.3)		
	Collet Size	mm(in)	-	Ø20 (0.8") -ER32		
	Type	-	-	BMT65		
TAIL STOCK	Taper	-	MT5		-	
	Quill Dia.	mm(in)	Ø100 (3.9")		-	
	Quill Travel	mm(in)	120 (4.72)		-	
	Travel	mm(in)	1,350 (53.1)		-	
TANK CAPACITY	Coolant Tank	ℓ (gal)	270 (71.3)			
	Lubricating Tank	ℓ (gal)	1.8 (0.5)			
POWER SUPPLY	Electric Power Supply	kVA	25	27	35	
	Thickness of Power Cable	mm ²	Over 25	Over 35		
	Voltage	V/Hz	220/60 (200/50*)			
MACHINE	Floor Space (L×W)	mm(in)	4,171×2,002 (164.2"×78.6")			
	Height	mm(in)	1,997 (78.6")			
	Weight	kg(lb)	7,500 (16,535)	7,700 (16,976)	8,200 (18,078)	
PC	Controller	-	F i Series - Smart Plus	FANUC 32i-B		

*) Using 50Hz voltage instead of 60Hz may lower the output of motors. (excluding servo motors and inverter motors)

Prior consultation is required when applying spindle contouring control for gear driven spindle.

Specifications are subject to change without notice for improvement.

SPECIFICATIONS

Specifications

[] : Option

ITEM			TC30C	TC30LC	
CAPACITY	Swing Over the Bed	mm(in)	Ø750 (29.5")		
	Swing Over the Carriage	mm(in)	Ø480 (18.9")		
	Max. Turning Dia.	mm(in)	Ø560 (22")		
	Max. Turning Length	mm(in)	720 (28.3")	1,320 (52")	
	Bar Capacity	Main	mm(in)	Ø90 (3.5") [Big Bore : Ø102 (4")]	
Sub		mm(in)	-		
SPINDLE	Chuck Size	Main	inch	12" [15"] [Big Bore : 12", 15"]	
		Sub	inch	-	
	Spindle Bore	Main	mm(in)	Ø102 (4") [Big Bore : Ø115 (4.5")]	
		Sub	mm(in)	-	
	Spindle Speed (rpm)	Main	r/min	3,000 [2,800]	
		Sub	r/min	-	
	Motor (Max/Cont.)	Main	kW(HP)	26/22 (35/30) [26/22 (35/30)]	
		Sub	kW(HP)	-	
	Torque (Max/Cont.)	Main	N·m(lbf·ft)	1,131/957(834.2/705.8) [1,325/1,121(977.3/826.8)]	
		Sub	N·m(lbf·ft)	-	
	Spindle Type	Main	-	BELT+2STEP GEAR	
Sub		-	-		
Spindle Nose	Main	-	A2-8 [A2-11]		
	Sub	-	-		
C-axis Indexing	deg	-			
FEED	Travel (X/Z/ZB)	mm(in)	355/750(14"/29.5")	355/1,350(14"/53.1")	
	Rapid Traverse Rate (X/Z/ZB)	m/min	20/24		
	Slide Type	-	BOX GUIDE		
TURRET	No. of Tools	EA	12		
	Tool Size	OD	mm(in)	□25 (1")	
		ID	mm(in)	Ø50 (2")	
	Indexing Time	sec/step	0.3		
LIVE TOOL	Motor (Max/Cont.)	kW(HP)	-		
	Milling Tool Speed (rpm)	r/min	-		
	Torque (Max/Cont.)	N·m(lbf·ft)	-		
	Collet Size	mm(in)	-		
	Type	-	-		
TAIL STOCK	Taper	-	MT5		
	Quill Dia.	mm(in)	Ø100 (3.9")		
	Quill Travel	mm(in)	120 (4.7")		
	Travel	mm(in)	750 (29.5")	1,350 (53.1)	
TANK CAPACITY	Coolant Tank	ℓ (gal)	220 (58.1)	270 (71.3)	
	Lubricating Tank	ℓ (gal)	1.8 (0.5)		
POWER SUPPLY	Electric Power Supply	kVA	30		
	Thickness of Power Cable	mm ²	Over 35		
	Voltage	V/Hz	220/60 (200/50*)		
MACHINE	Floor Space (L×W)	mm(in)	3,506×2,002 (138"×78.8")	4,170×2,002 (164.2"×78.8")	
	Height	mm(in)	1,997 (78.6")		
	Weight	kg(lb)	6,400 (14,110)	7,600 (16,755)	
NC	Controller	-	FANUC i Series - Smart Plus		

*) Using 50Hz voltage instead of 60Hz may lower the output of motors. (excluding servo motors and inverter motors)

Prior consultation is required when applying spindle contouring control for gear driven spindle.

Specifications are subject to change without notice for improvement.

SPECIFICATIONS

Specifications

[] : Option

ITEM			TC30MC	TC30LMC	TC30MSC	
CAPACITY	Swing Over the Bed	mm(in)	Ø750 (29.5")			
	Swing Over the Carriage	mm(in)	Ø480 (18.9")			
	Max. Turning Dia.	mm(in)	Ø500 (19.7")			
	Max. Turning Length	mm(in)	600 (23.6")	1,260 (49.6")	600 (23.6")	
	Bar Capacity	Main	mm(in)	Ø90 (3.5") [Big Bore : Ø102 (4")]		
Sub		mm(in)	-	-	Ø65 (2.6")	
SPINDLE	Chuck Size	Main	inch	12" [15"] [Big Bore : 12", 15"]		
		Sub	inch	-	8"	
	Spindle Bore	Main	mm(in)	Ø102 (4") [Big Bore : Ø115 (4.5")]		
		Sub	mm(in)	-	-	Ø78 (3.1")
	Spindle Speed (rpm)	Main	r/min	3,000 [Big Bore : 2,800]		
		Sub	r/min	-	-	4,000
	Motor (Max/Cont.)	Main	kW(HP)	22/18.5 (30/25)[Big Bore : 22/18.5 (30/25)]		
		Sub	kW(HP)	-	-	11/7.5 (14.7/10)
	Torque (Max/Cont.)	Main	N·m(lbf·ft)	787.3/465 (580.7/343) [Big Bore : 787.3/465 (580.7/343)]		
		Sub	N·m(lbf·ft)	-	-	140/95.5
	Spindle Type	Main	-	Belt		
		Sub	-	-	-	Belt
Spindle Nose	Main	-	A2-8 [A2-11]			
	Sub	-	-	-	A2-6	
C-axis Indexing	deg	0.001°				
FEED	Travel (X/Z/ZB)	mm(in)	355/750 (14"/29.5")	355/1,350 (14"/53.1")	355/750/700 (14"/29.5"/27.6")	
	Rapid Traverse Rate (X/Z/ZB)	m/min(ipm)	20/24 (787/945)			
	Slide Type	-	BOX GUIDE			
TURRET	No. of Tools	EA	12			
	Tool Size	OD	mm(in)	□25 (1")		
		ID	mm(in)	Ø50 (2")		
Indexing Time	sec/step	0.3				
LIVE TOOL	Motor (Max/Cont.)	kW(HP)	5.5/3.7 (7.4/4.7)			
	Milling Tool Speed (rpm)	r/min	4,000			
	Torque (Max/Cont.)	N·m(lbf·ft)	35/23.5 (25.8/17.3)			
	Collet Size	mm(in)	Ø20 (0.8") - ER32			
	Type	-	BMT65			
TAIL STOCK	Taper	-	MT5		-	
	Quill Dia.	mm(in)	Ø100 (3.9")			
	Quill Travel	mm(in)	120 (4.72)			
	Travel	mm(in)	750 (29.5)	1,350 (53.1)	-	
TANK CAPACITY	Coolant Tank	ℓ (gal)	220 (58.1)	270 (71.3)	220 (58.1)	
	Lubricating Tank	ℓ (gal)	1.8 (0.5)			
POWER SUPPLY	Electric Power Supply	kVA	30		38	
	Thickness of Power Cable	mm ²	Over 35			
	Voltage	V/Hz	220/60 (200/50*)			
MACHINE	Floor Space (L×W)	mm(in)	3,480×2,002 (137"×78.8")	4,170×2,002 (164.2"×78.8")	3,586×2,002 (141.2"×78.8")	
	Height	mm(in)	1,997 (78.6")			
	Weight	kg(lb)	6,600 (14,550)	7,800 (17,196)	7,100 (15,653)	
PC	Controller	-	FANUC 32i-B			

*) Using 50Hz voltage instead of 60Hz may lower the output of motors. (excluding servo motors and inverter motors)

Prior consultation is required when applying spindle contouring control for gear driven spindle.

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	Smart Guide-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.

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CONTROLLER

FANUC 32i-B

[] : 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)
Simultaneously controlled axis	2 axis [Max. 4 axis]
Designation of spindle axis	4 axis (1 path), 6 axis (2 path Total)
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 (Rapid traverse / Cutting feed)
Position switch	
LCD / MDI	10.4 inch color LCD
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, Program check
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	
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	F1%, F25%, 50%, F100%
Override cancel	
Feed per minute	G98
Feed per revolution	G99
Look-ahead block	1 block
Program input	
Tape Code	EIA / ISO
Optional block skip	1 ea
Absolute / Incremental program	G90 / G91
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 ~ #149, #500 ~ #549
G code system	A
Programmable mirror image	G51.1, G50.1
G code preventing buffering	G41
Multiple repetitive cycles I, II	

Program input	
Canned cycle for turning	
Manual Guide i	Conversational auto program
Auxiliary function / Spindle speed function	
Auxiliary function	M 4 digit
Level-up M Code	High speed / Multi / Bypass M code
Spindle speed function	S 4 digit, Binary output
Spindle override	0% ~ 150% (10% Unit)
Multi position spindle orientation	M19
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	32 pairs
Tool nose radius compensation	G40, G41, G42
Geometry / Wear compensation	
Direct input of offset measured B	
Editing function	
Part program storage size	640m (256KB)
No. of registerable programs	500 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 20 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
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	MS, SY TTS, TTMS, TTSY
Option	
Additional optional block skip	9 ea
Fast ethernet	Needed option board
Data server	Needed option board
Protection of data at 8 levels	
Tool offset pairs	64 pairs / 99 pairs / 200 pairs
Part program storage size	1280 m (512KB) / 2560m (1MB)
Polygon turning (2 Spindles)	Mill, MS, Y, SY, LF-Mill, TTMS, TTSY
Helical interpolation	
Dynamic graphic display	
Direct drawing dimension program	Including Chamfering / Corner R

Figures in inch are converted from metric values.

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