SMEC

NS 2100SY Series

6-8" LM GUIDE TYPE
HORIZONTAL TURNING CENTER

NS 2100SY Series

- NS 2100AY
- NS 2100ASY
- NS 2100BY
- NS 2100BSY

SMEC

Enhanced Productivity with Minimizing Non-cutting Time

- Roller-type LM guides on all axes for superb traverse speeds (30~40% more rigid than Ball-type LM)
- Wider guideway span improving stability

Wedge type Y-axis with Superb Cutting Performance

- Side milling, off-center drilling
- Wider off-center work range
- Complex shape machining with a single setup

NS 2100SY Series

NS 2100AY/ASY/BY/BSY

High speed, high productivity Roller Type LM Guide Y-axis Turning Center

- High rigidity bed and Roller Type LM Guides for all feed axes
- Super stable low-center of gravity 30° slant bed with maximized work area
- Significantly reduced non-cutting time for high efficiency machining
- High rigidity torque tubed and ribbed bed design to dampen vibration to allow high precision machining
- Symmetrically designed spindle to minimize thermal growth

Category		NS 2100AY | ASY	NS 2100BY | BSY
Swing over bed	mm(inch)	820(32.29)	820(32.29)
Max turning length	mm(inch)	520(20.48)	490(19.30)
Chuck size (Main/Sub)	inch	6" | 6"/5"	8" | 8"/5"
Spindle bore	mm(inch)	61(2.41)	76(3.00)
Main spindle speed	rpm	6,000 | 6,000	4,500 | 4,500
Sub spindle speed	rpm	- | 6,000	- | 6,000
Main spindle motor (Cont / Max)	kW(Hp)	11/18.5(14.76/24.81)	11/18.5(14.76/24.81)
Sub spindle motor (Cont / Max)	kW(Hp)	- | 7.5/11(10.06/14.76)	- | 7.5/11(10.06/14.76)
Travels (X / Y / Z / ZB)	mm(inch)	205/110(±55)/590/590 (8.08/4.34(±2.17)/23.23/23.23)	205/110(±55)/590/590 (8.08/4.34(±2.17)/23.23/23.23)
No of tool positions	EA	12[24](BMT45)	12[24](BMT45)

High rigidity, fast response sub spindle and servo tailstock

· Servo tailstock or built-in type sub-spindle available
· Spindle oil cooling standard for sub-spindle
· NC controlled servo-tailstock allows for high speed, high precision machining

User-centric options and convenience features

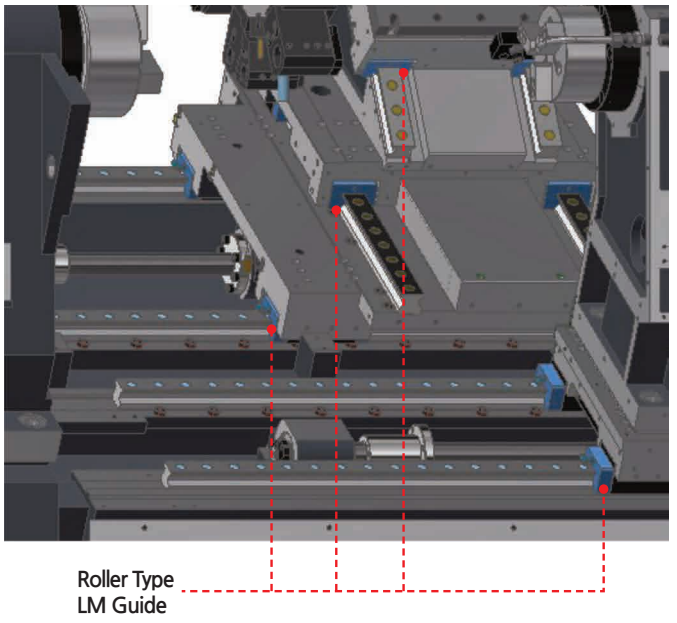
· 15" large-screen LCD standard
· SMEC HMI and Manual Guide i standard

Enhanced productivity with minimized non-cutting time

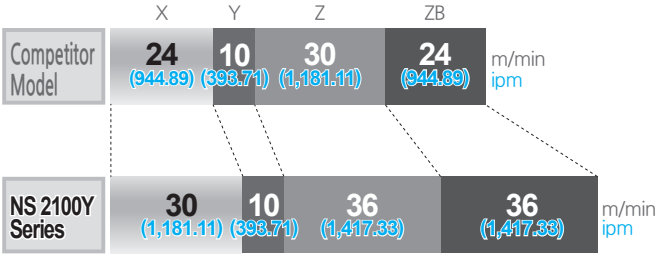
Rapid traverse (X / Y / Z / ZB)

30/10/36/36 m/min

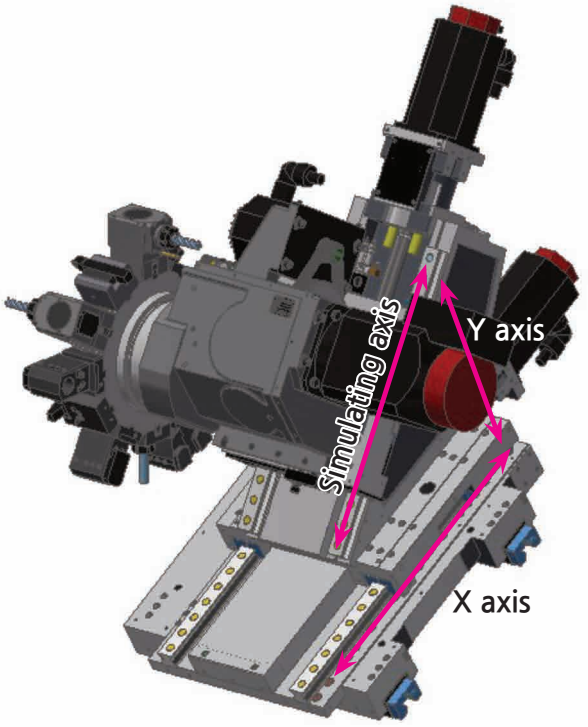
(1,181.11/393.71/1,417.33/1,417.33 ipm)



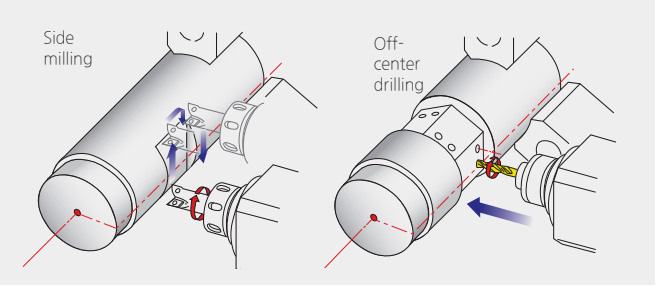
- Roller-type LM guides on all axes (30~40% more rigid than Ball-type LM)
- Wider guideway span improving stability
- Fixed pretension applied to both ends to minimize ballscrew thermal growth
- P4 class high precision angular bearings used for ballscrew support



Wedge type Y-axis with superb cutting performance



- Side milling, off-center drilling
- Wider off-center work range
- Complex shape machining with a single setup



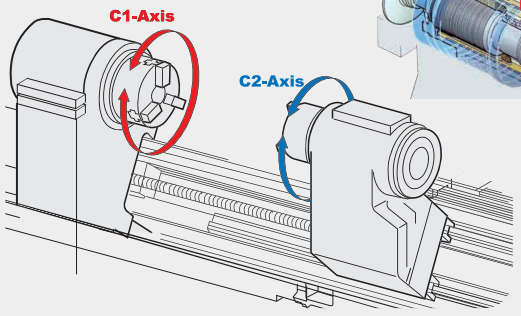
Category	Unit	NS 2100SY
No. of tool positions	ea	12(24)
Turret type		BMT45
SHANK & BORING BAR SIZE	mm(inch)	□20×20, Ø32 (□0.79×0.79, Ø1.26)
Turret indexing time (1station/full turn)	sec	0.15/1
Rotary tool speed	rpm	~6,000
Rotary tool motor power (max/cont)	kW(Hp)	5.5/3.7(7.38/4.97)
Rotary tool torque (max/cont)	N.m(lbs.ft)	35/17.7(25.82/13.06)

High precision, fast response sub-spindle and servo tailstock

Synchronized C1 and C2-axis indexing

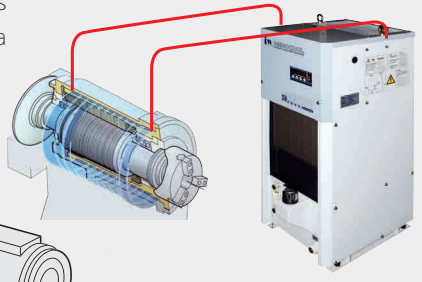
Synchronization of the main spindle (C1) and sub-spindle (C2) indexing allows for machining of a variety of complex shapes

All processes from simple turning and milling to multi-axis simultaneous machining can be completed with a single setup.



Sub-spindle oil cooling unit

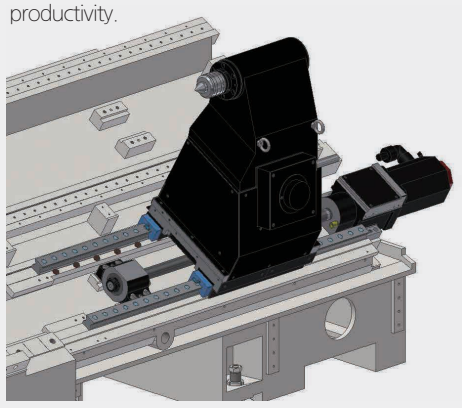
The sub-spindle is wrapped by an oil jacket cooling system to minimize thermal growth and to ensure high speed, high-accuracy machining through various machining conditions



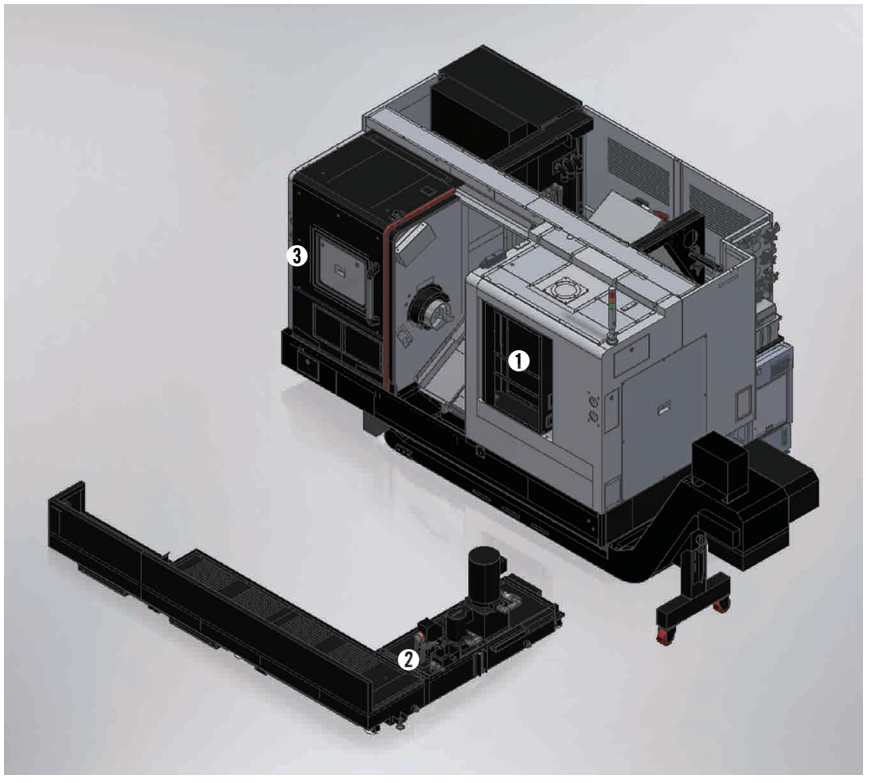
Servo (NC controlled) Tailstock

The servo tailstock supports high-speed, high precision machining where the thrust force is NC controlled.

The quill thrust force may be adjusted in accord with the workpiece's length and diameter, reducing the cycle time and increasing the productivity.



Ease of use



❶ User-centric OP Panel

The QWERTY-type keyboard and high visibility buttons and effective button placement enhances ease of use

❷ Easy coolant tank maintenance

When cleaning the coolant tank, the coolant tank may be removed while leaving the chip conveyor attached to the machine, making it easier to clean and maintain

❸ Easy hydraulic valve adjustment

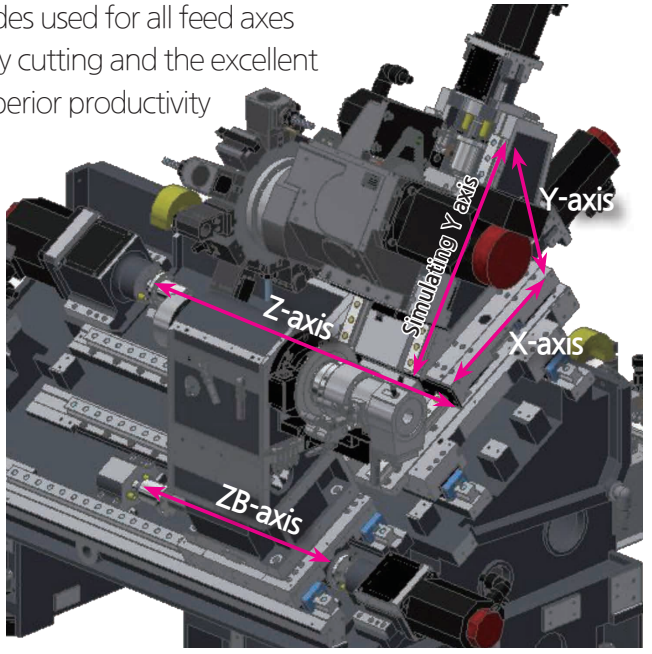
The gauge and hydraulic valves are located at a height that make it easy for the operator to adjust

NS 2100SY Series

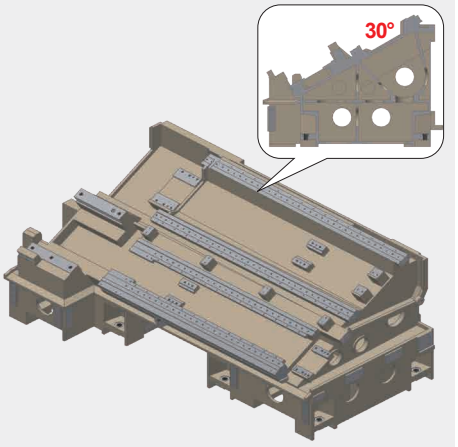
HORIZONTAL TURNING CENTER

Machine Design

Roller type LM Guides used for all feed axes supports heavy duty cutting and the excellent rigidity provides superior productivity



Model	Main chuck size	Travel [mm(inch)]				Rapid traverse [m/min(ipm)]			
		X-axis	Y-axis	Z-axis	ZB-axis	X-axis	Y-axis	Z-axis	ZB-axis
NS 2100AY/ASY	6"	205 (8.08)	110(±55) (4.34±2.17)	590 (23.23)	590 (23.23)	30 (1,181.11)	10 (393.71)	36 (1,417.33)	36 (1,417.33)
NS 2100BY/BSY	8"	205 (8.08)	110(±55) (4.34±2.17)	590 (23.23)	590 (23.23)	30 (1,181.11)	10 (393.71)	36 (1,417.33)	36 (1,417.33)

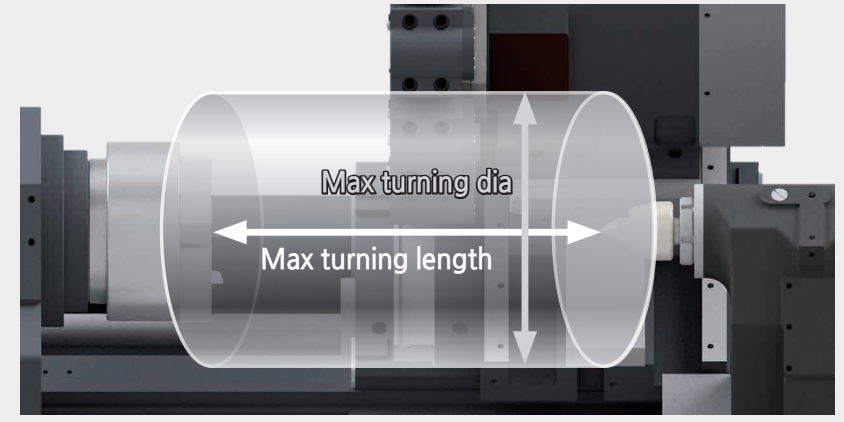


30° slant bed provides excellent stability during heavy duty cutting

The 30° slant bed with high-torque tubing and ribbed structure provide superb rigidity against twisting and bending, dampening vibration during heavy duty cutting for high precision machining

The use of a slant bed allows for easier access to the workpiece and excellent chip discharge

Work Range



Model	Unit	Working bar dia	Max turning dia	Max turning length
NS 2100AY/ASY	mm(inch)	Ø51(2.01)	Ø378(14.89)	521(20.52)
NS 2100BY/BSY	mm(inch)	Ø67(2.64)	Ø378(14.89)	489(19.26)

Providing a large work envelope, ensuring cost effective productivity

NS 2100AY/ASY

Max turning dia/length

Ø378/521mm

(14.89/20.52 inch)

NS 2100BY/BSY

Max turning dia/length

Ø378/489mm

(14.89/19.26 inch)

Spindle

The high power motor allows both high precision and high torque machining, improving operator productivity.

NS 2100ASY

Max spindle speed : 6,000rpm

Power (cont/max)

11/18.5kW(14.76/24.81 Hp)

Torque (cont/max)

70/157.3N·m
(51.63/116.02 lbs.ft)

NS 2100BSY

Max spindle speed : 4,500rpm

Power (cont/max)

11/18.5kW(14.76/24.81 Hp)

Torque (cont/max)

93.4/209.8N·m
(68.9/154.75 lbs.ft)

NS 2100ASY/BSY_Sub Spindle

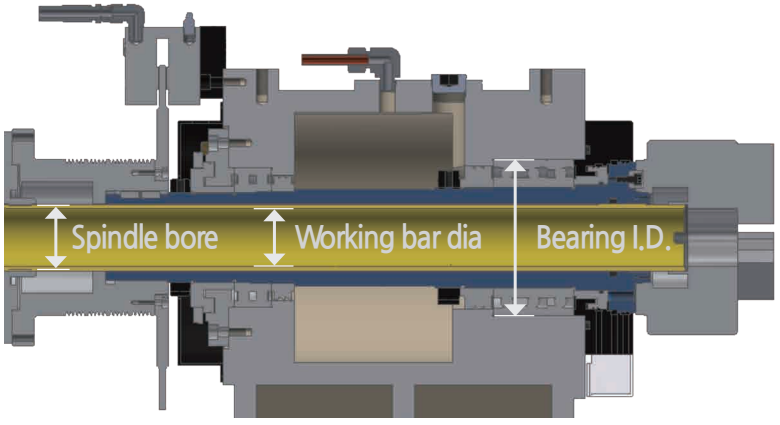
Max spindle speed : 6,000rpm

Power (cont/max)

7.5/11kW(10.06/14.76 Hp)

Torque (cont/max)

23.9/40.4N·m
(17.63/29.80 lbs.ft)



Category	Unit	NS 2100AY/ASY	NS 2100BY/BSY
Spindle bore	mm(inch)	Ø61(2.41)	Ø76(3.00)
Working bar dia	mm(inch)	Ø51(2.01)	Ø67(2.64)
Spindle nose	ASA	A2-5	A2-6
Bearing I.D. [FRONT]	mm(inch)	Ø90(3.55)	Ø110(4.34)

The high precision Double Row of Cylindrical Roller Bearings and Angular Ball Bearings on the front end of the spindle and the Double Row of Cylindrical Roller Bearings on the back end of the spindle ensure high precision, high speed machining performance

Turret

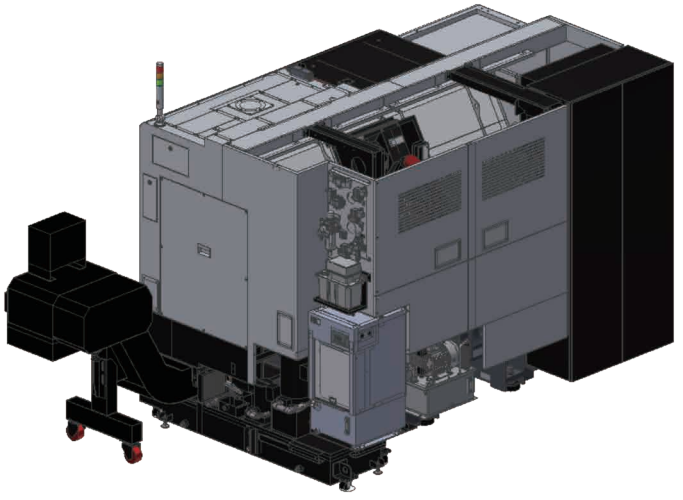
BMT milling turret

This 12 station (BMT45) turret with the largest in class curvic coupling and power hydraulic clamping force is capable of accepting a rotary tool in every tool position and allows a variety of machining operations with a single set-up
The best in class BMT45 tool holders ensures high rigidity, high precision machining and with non-stop turret indexing in either direction minimizes the turret index time down to 0.15 seconds per station.

Turret indexing time : **0.15sec**

No. of tool positions :
12ea (□20×20, Ø32)
(□0.79"×0.79", Ø1.26")

Coolant System



Tank capacity : **250ℓ**

Coolant pump (STD) : **4.5bar(1.1kW)**

Coolant pump (OPT) :

7, 10, 14.5, 20bar-60Hz (Submerged)

30~70bar-60Hz (Independent)

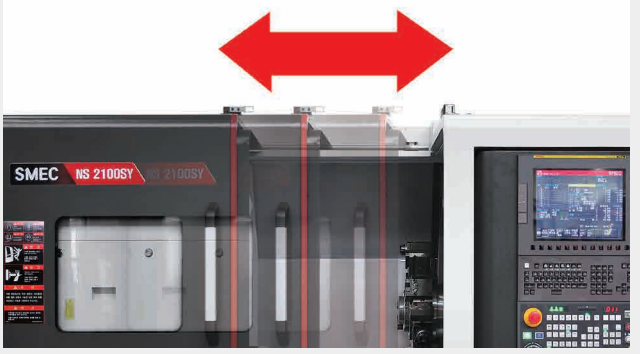
Accessories[Optional]

Spindle chiller

For long-term high-speed continuous operation, a spindle oil chiller may be installed to circulate chilled oil around the spindle bearings to prevent thermal growth in the spindle and ensure high precision machining.

Autodoor

Used to quickly open/close the operator door via program to increase productivity in an automation line.

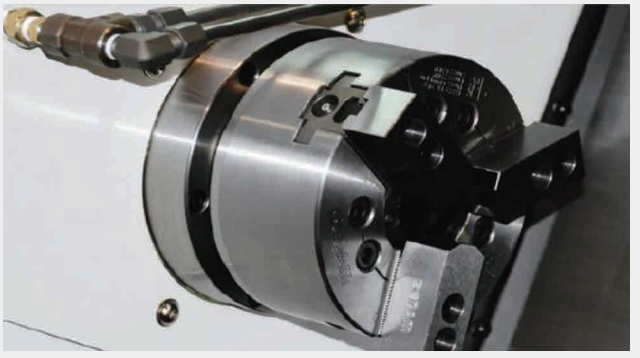


Tool presetter

Used for setting of tools and for quick and accurate tool length compensation for worn tools.

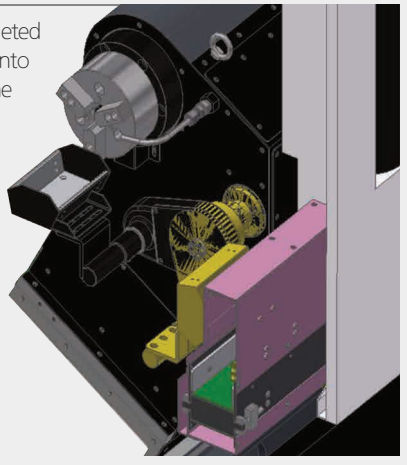
Air blow

Used to automatically remove chips from the chuck after machining and used for safe loading of the chuck in an automated line.



Part catcher & conveyor

Used to receive the completed part and discharge them into a container attached to the exterior of the machine.



Chip conveyor

Used to discharge chips created during machining

NS 2100SY Series

HORIZONTAL TURNING CENTER

SMEC FANUC i series

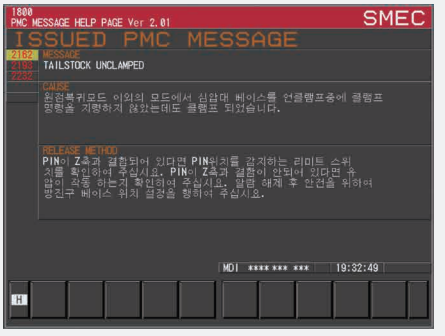
- 15'' LCD color display
- Part program size 2MB
- Conversational programming, Manual Guide i
- Part program size 2MB
- SMEC Custom S/W

SMEC Custom S/W displayed using MDI's S1 button or OP Panel's CUSTOM button

◀ **CUSTOM** : Provide operator convenience and improve productivity using the support function for tool management and additional device setting.

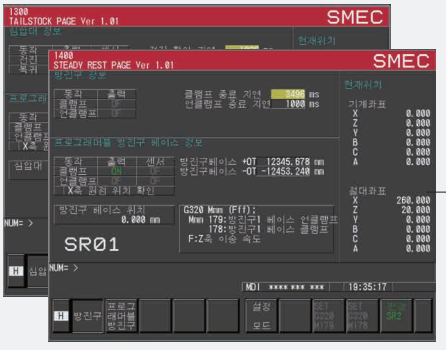
M/G-Code check function

Allows the operator to directly read the M/G-Code on the machine for easy application programming



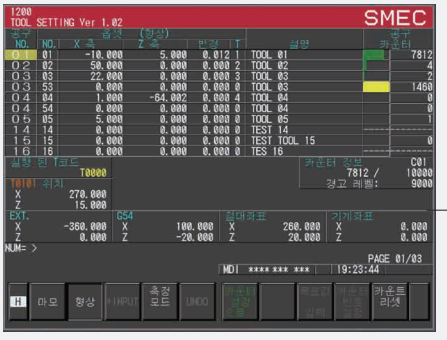
PMC alarm check function

When a PMC alarm occurs, the cause and countermeasures are described in detail, making operation and maintenance more convenient



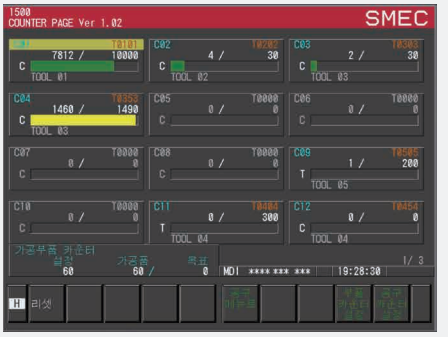
Easy tailstock setting

Easily configure a variety of functions such as travel limiting, origin setting and signal check



Display only the necessary tools and offsets and check the configured counter at the same time

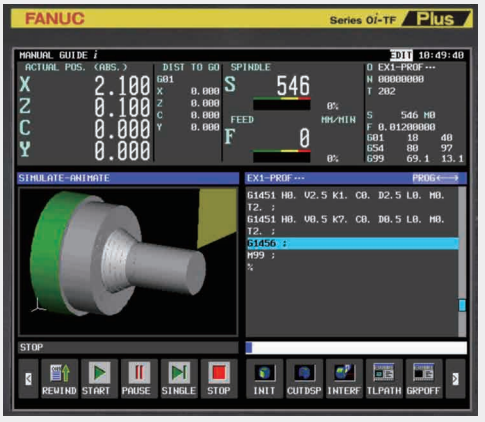
Tool information and setting management mode



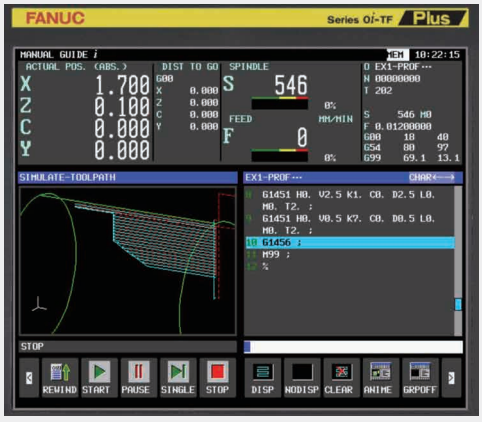
Counter for each T-Code

Manual Guide i (STD)

SMEC's Manual Guide i system enables advanced part program creation and more efficient and faster machining with conversational programming



Check cutting result using cutting simulation



Check cutting path using cutting simulation

Easy program creation and editing

Program creation using advanced part program editing and extensive cutting cycles

Advanced cutting capabilities

Check cutting status such as cutting cycle name and tool icon during the cutting process

Check program using cutting simulations

Program pre-check using realistic cutting simulation

Measurement

Feedback of cutting results and tool offset values after cutting

Effective cutting setup

Tool and cutting condition offset data setup based on measurement cycle

IoT Solution (OPT)

NC-Gate
Basic Platform

IoT-Gate
Expansion Platform

NC-Gate / IoT-Gate

The NC-Gate / IoT-Gate that was developed in-house with our ICT technology is a universal gateway that not only interworks with our machine tools, but machine tools from other manufacturers, robots, automation equipment, and analog / digital sensors as a network device capable of bi-directional communication.

Supported drivers : Fanuc / Mitsubishi / Siemens NC, Modbus TCP, DeviceNet, Profibus, Ethernet, AI/DI/DO

KPI (Key Performance Indexes)

Provides key performance indicators and displays target achievement

· Indicators : achievement rate, productivity, process defect rate, equipment and factory usage, quality defect rate, lead time, and average cycle time

OEE (Overall Equipment Effectiveness)

Provides figures and graphs of overall equipment effectiveness

· Availability, performance, quality, etc.

Realtime Monitoring

Provides operation status and alarm information in case of problems in the production line

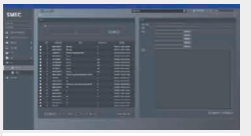
· Provides information about the operation status, speed, production alarms, etc. of each machine

Remote Control/ Management

Remote control and operation

· Emergency stop switch, program editing, etc.

Remote A/S



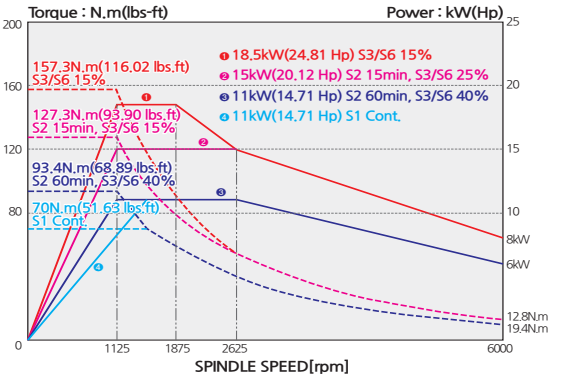
Problem diagnosis via remote control

· Provide remote diagnosis services to users via the IIoT solution

Power-Torque Diagram

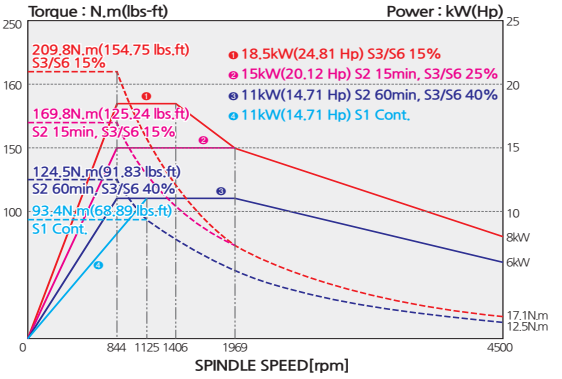
NS 2100AY/ASY

Max speed
6,000rpm
Power (cont/Max.)
11/18.5kW(14.76/24.81 Hp)
Torque (cont/Max.)
70/157.3N·m
(51.63/116.02 lbs-ft)



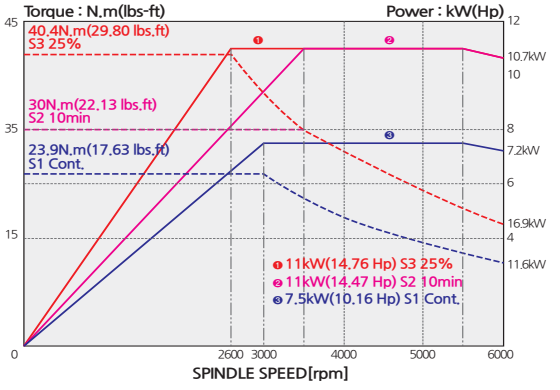
NS 2100BY/BSY

Max speed
4,500rpm
Power (cont/Max.)
11/18.5kW(14.76/24.81 Hp)
Torque (cont/Max.)
93.4/209.8N·m
(68.89/154.75 lbs-ft)



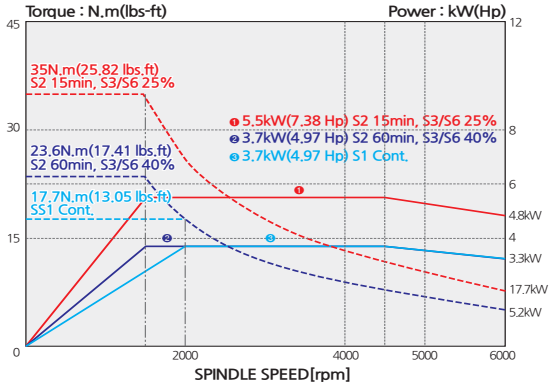
NS 2100Y Series_SUB Spindle

Max speed
6,000rpm
Power (cont/Max.)
7.5/11kW(10.06/14.76 Hp)
Torque (cont/Max.)
23.9/40.4N·m
(17.63/29.80 lbs-ft)



NS 2100Y Series_MILL Motor

Max speed
6,000rpm
Power (cont/Max.)
3.7/5.5kW(4.97/7.38 Hp)
Torque (cont/Max.)
17.7/35N·m
(13.06/25.82lbs-ft)

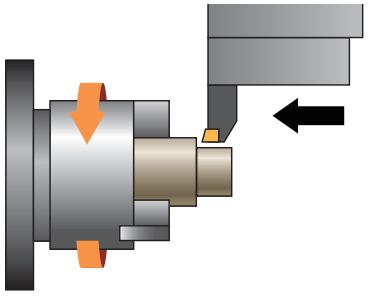


Cutting Performance

Test conditions : NS 2100ASY(6")

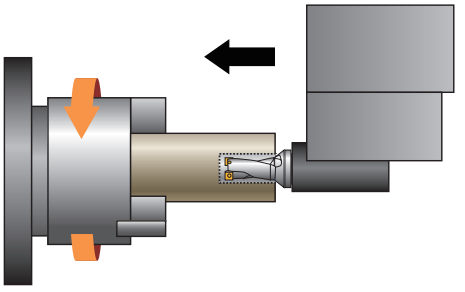
◆ O.D Cutting

Cutting dia.	mm(inch)	Ø81(3.19)
Cutting depth	mm(inch)	4(0.16)
Cutting speed	m/min(ipm)	286(1,125.99)
Spindle speed	rpm	1,125
Feedrate	mm/rev(inch/rev)	0.38(0.015)
Chip removal rate	cc/min(oz/min)	435(14.71)



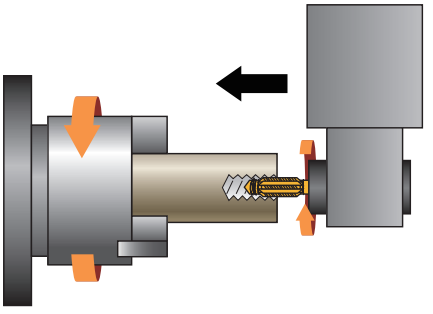
◆ U-Drill Cutting

U-drill dia.	mm(inch)	35.5(1.40)
Cutting speed	m/min(ipm)	125(4,921.26)
Spindle speed	rpm	1,125
Feedrate	mm/rev(inch/rev)	0.18(0.008)
Chip removal rate	cc/min(oz/min)	200(6.77)



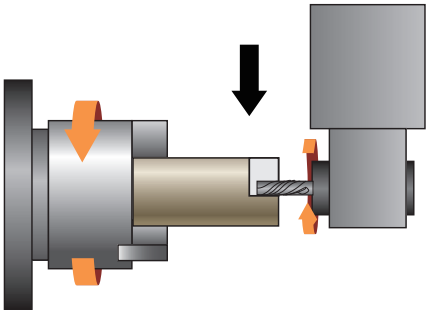
◆ Tap

		Cutting fluid	Tapping fluid
Tap size	mm	M12×1.75	M18×2.5
Cutting depth	mm(inch)	20(0.79)	35(1.38)
Cutting speed	m/min(ipm)	15(590.56)	18(708.67)
Spindle speed	rpm	398	318
Feedrate	mm/rev(inch/rev)	1.75(0.069)	2.5(0.099)



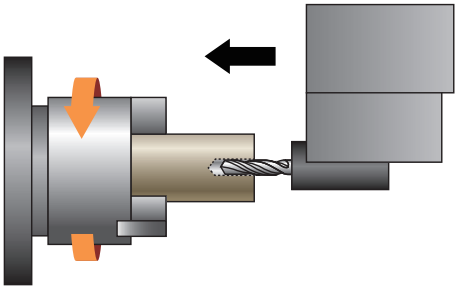
◆ Endmill

Endmill dia.	mm(inch)	Ø16(0.63)
Cutting depth	mm(inch)	6(0.24)
Cutting speed	m/min(ipm)	76(2,992.13)
Spindle speed	rpm	1,512
Feedrate	mm/min(ipm)	151(5.95)
Chip removal rate	cc/min(oz/min)	15(0.51)



◆ Drill

Drill dia.	mm(inch)	Ø16(0.63)
Cutting depth	mm(inch)	32(1.26)
Cutting speed	m/min(ipm)	120(4,724.41)
Spindle speed	rpm	2,387
Feedrate	mm/min(ipm)	239(9.41)
Chip removal rate	cc/min(oz/min)	48(1.63)

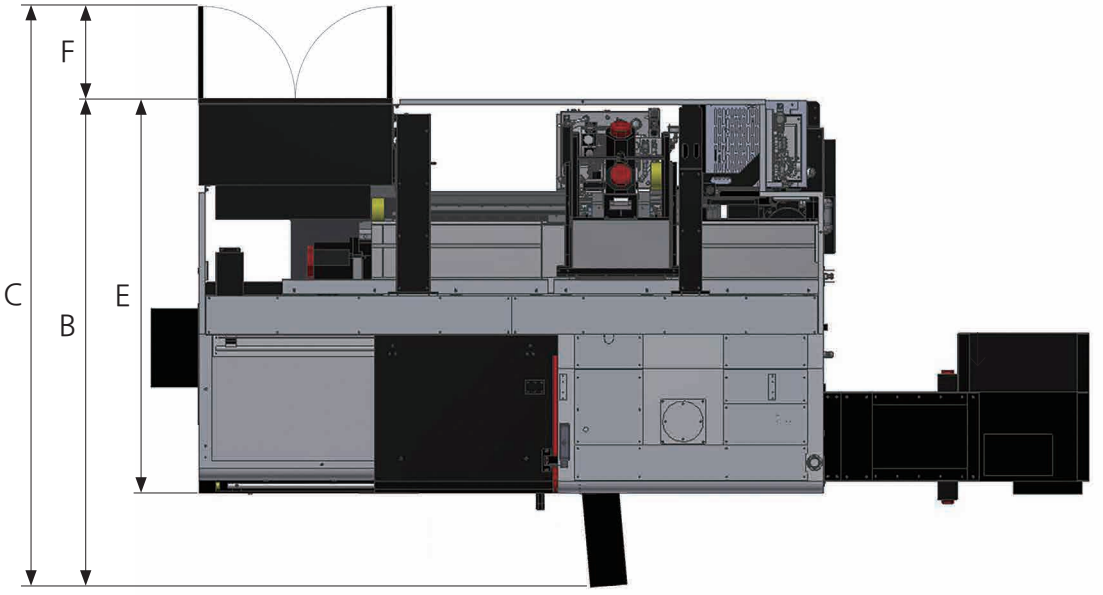


※ The above data is based on internal testing. Values may change depending on cutting conditions.

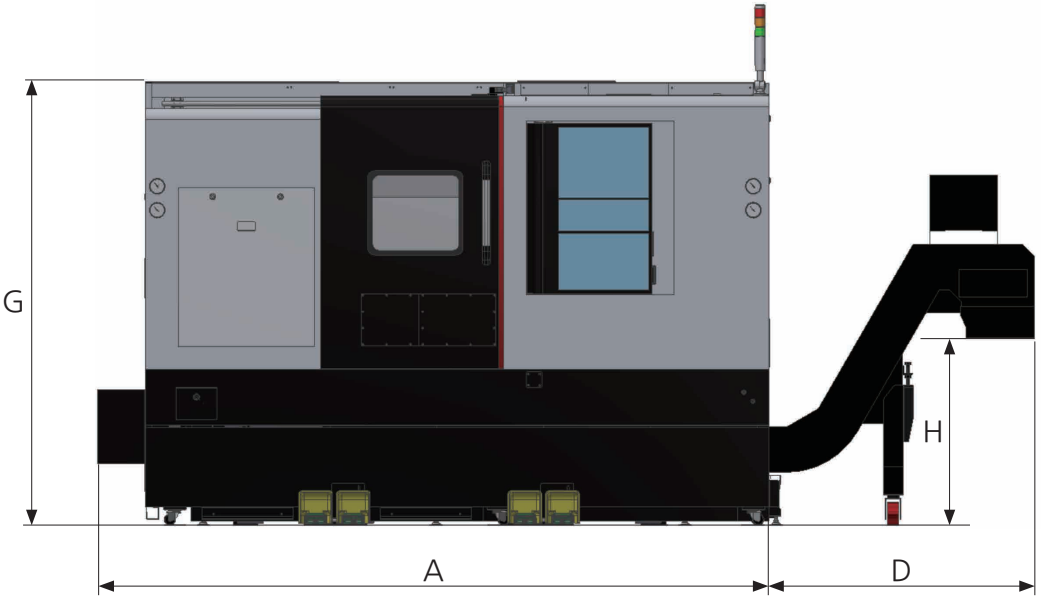
Machine Dimensions

Unit : mm(inch)

Top view



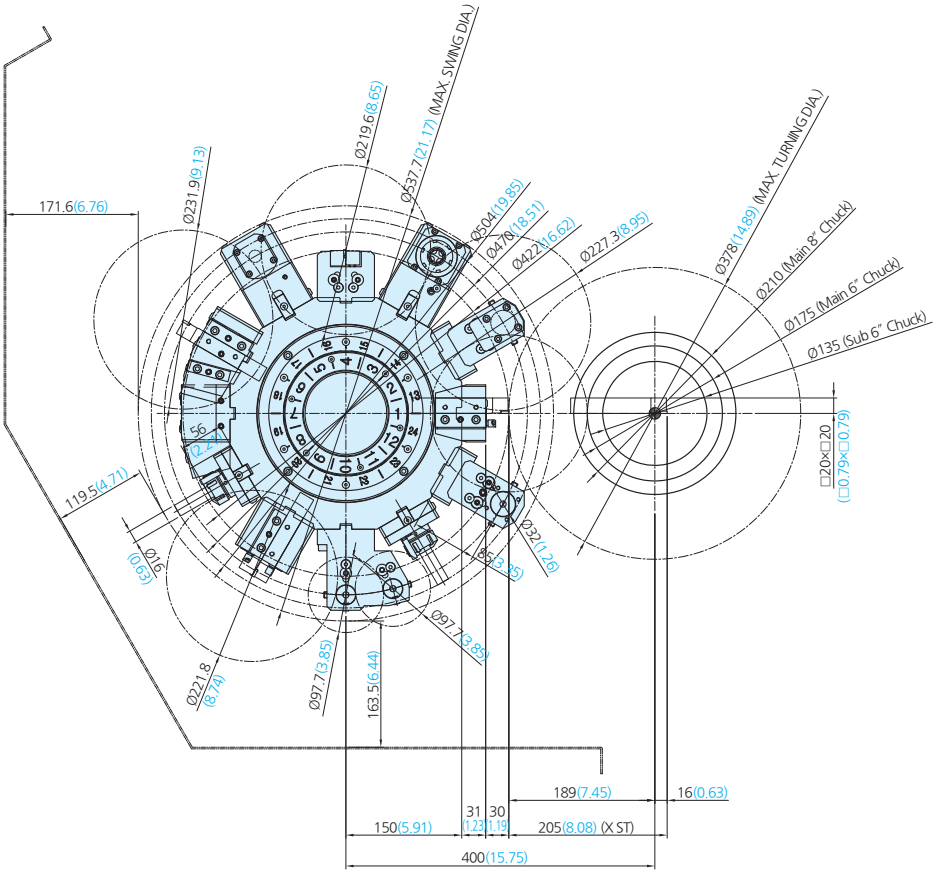
Front view

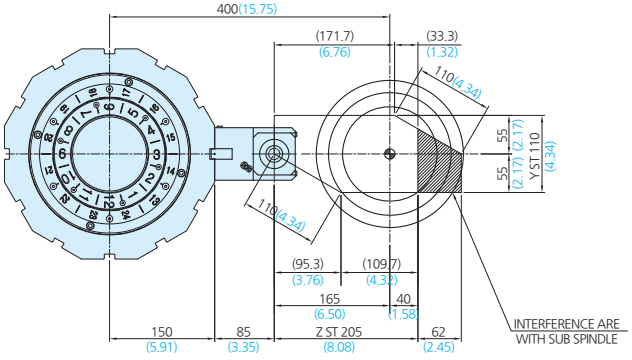


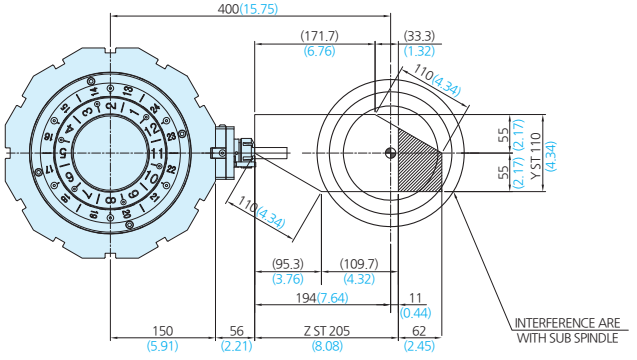
Model	A (Machine front)	B	C	D	E (Machine side)	F	G (Machine height)	H
NS 2100SY Series	2,955 (116.34)	2,144 (84.41)	2,549 (100.36)	1,165 (45.87)	1,730 (68.12)	405 (15.95)	1,950 (76.78)	813 (32.01)

Turret Interference

Unit : mm(inch)



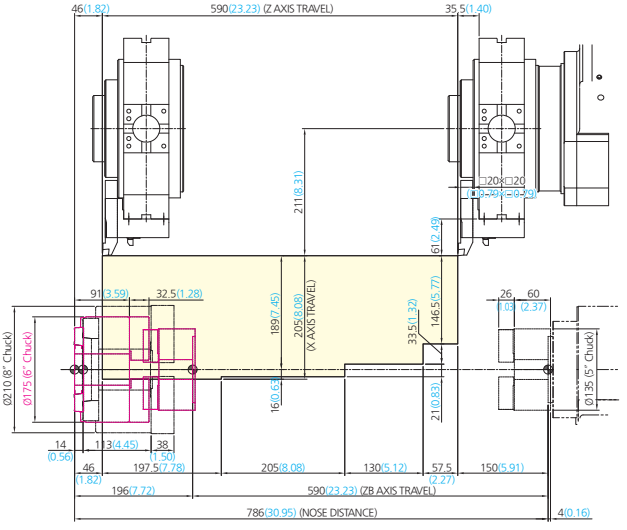




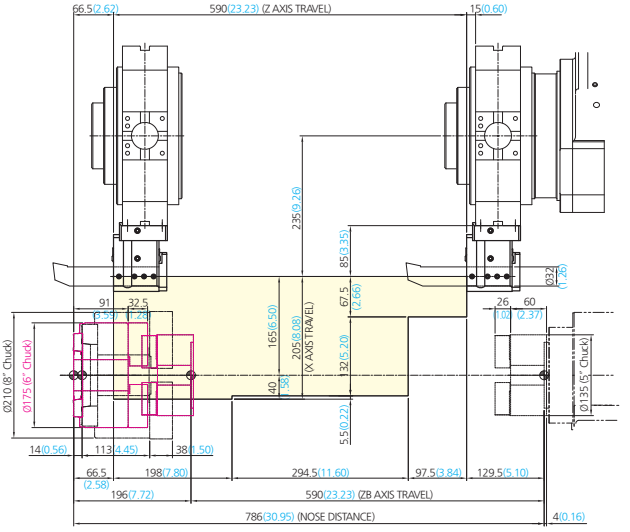
Work Range

Unit : mm(inch)

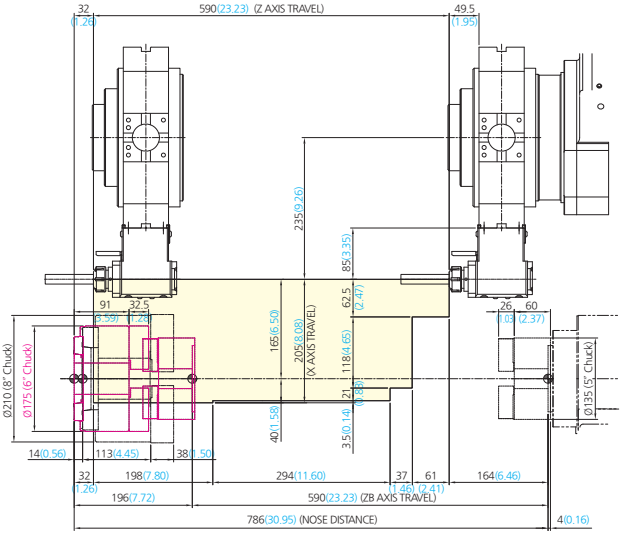
O.D TOOL HOLDER (MAIN)



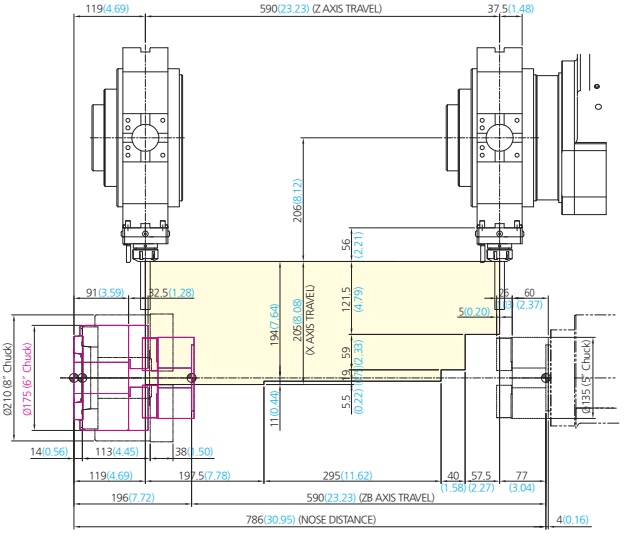
U-DRILL HOLDER (MAIN)



RADIAL HOLDER (MAIN)

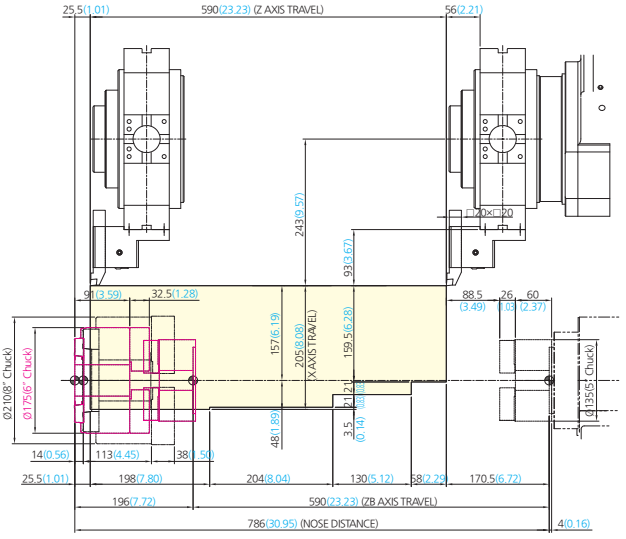


AXIAL HOLDER (MAIN)

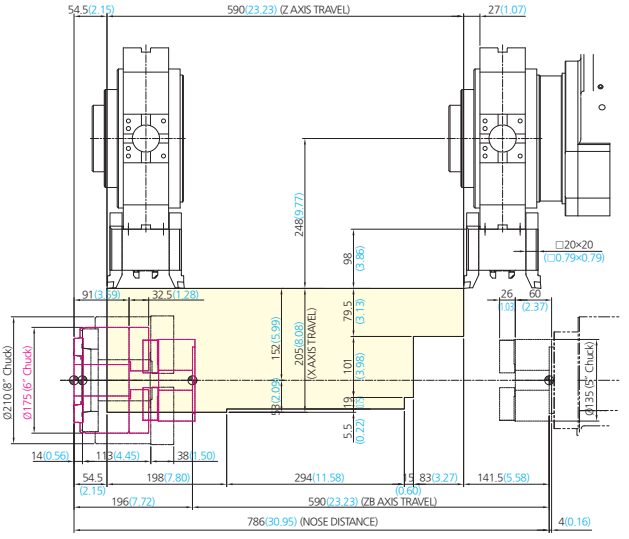


Unit : mm(inch)

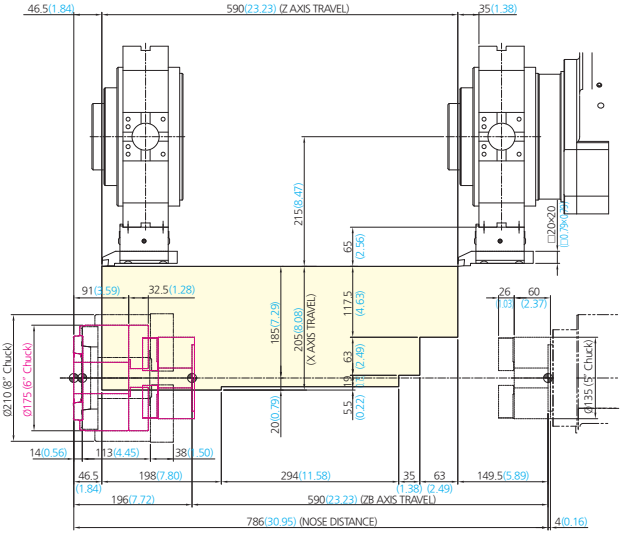
DOUBLE O.D HOLDER_FRONT (MAIN)



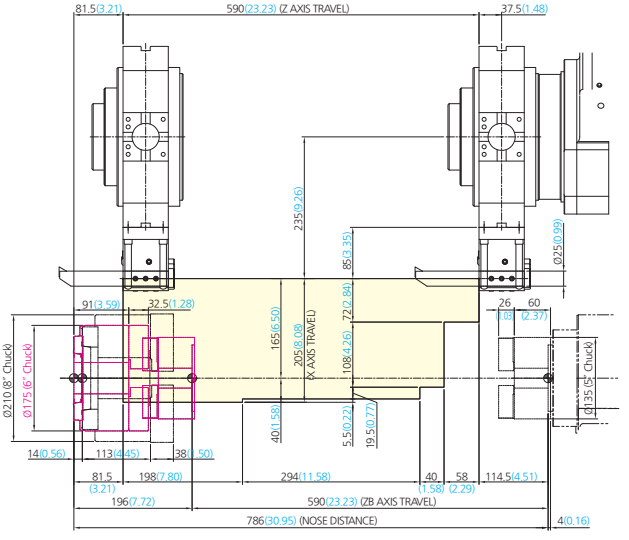
DOUBLE O.D HOLDER_BOTH SIDE (MAIN)



FACE HOLDER (MAIN)



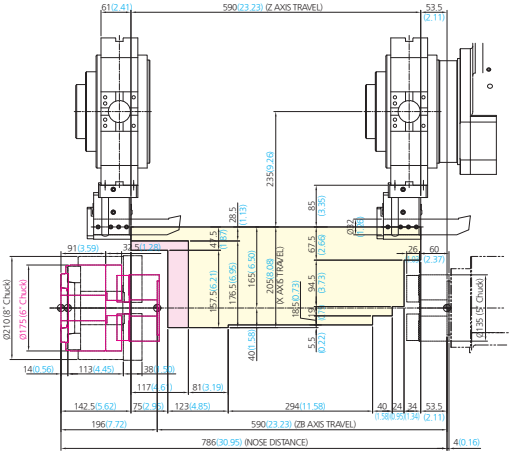
DOUBLE U-DRILL HOLDER (MAIN)



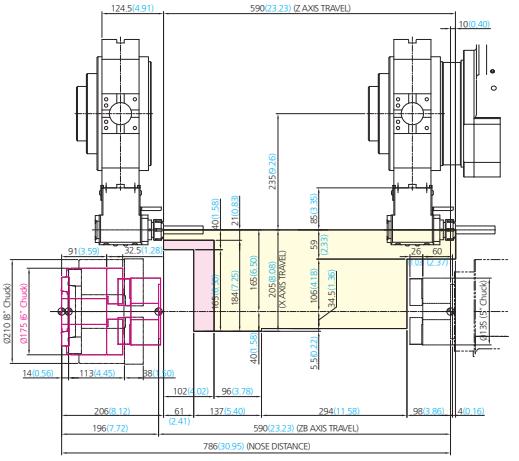
Work Range

Unit : mm(inch)

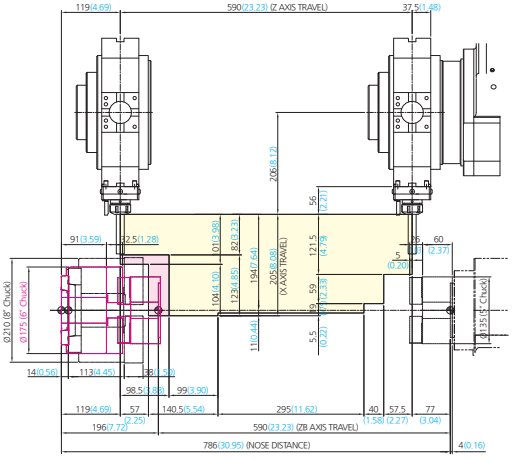
U-DRILL HOLDER (SUB)



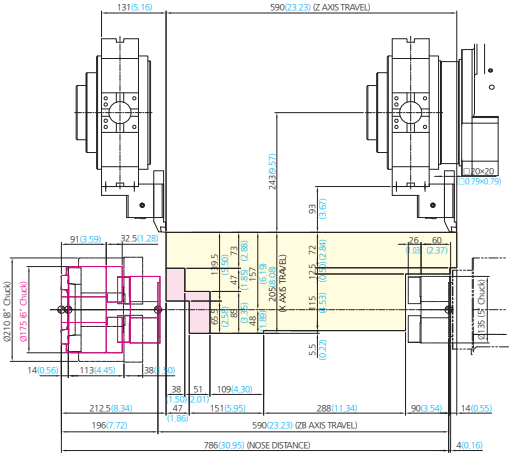
RADIAL HOLDER (SUB)



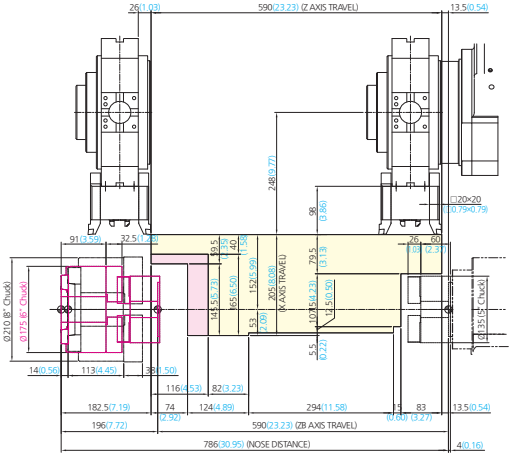
AXIAL HOLDER (SUB)



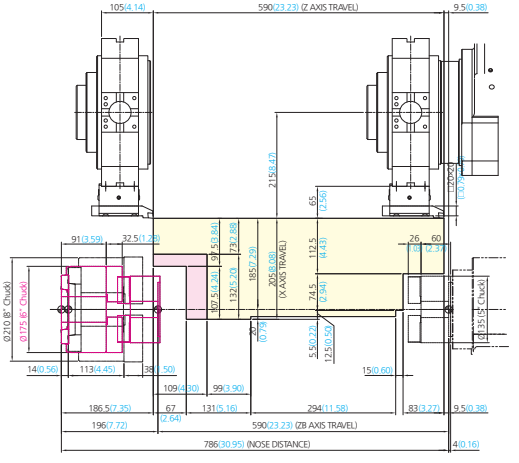
DOUBLE O.D HOLDER_FRONT (SUB)



DOUBLE O.D HOLDER_BOTH (SUB)

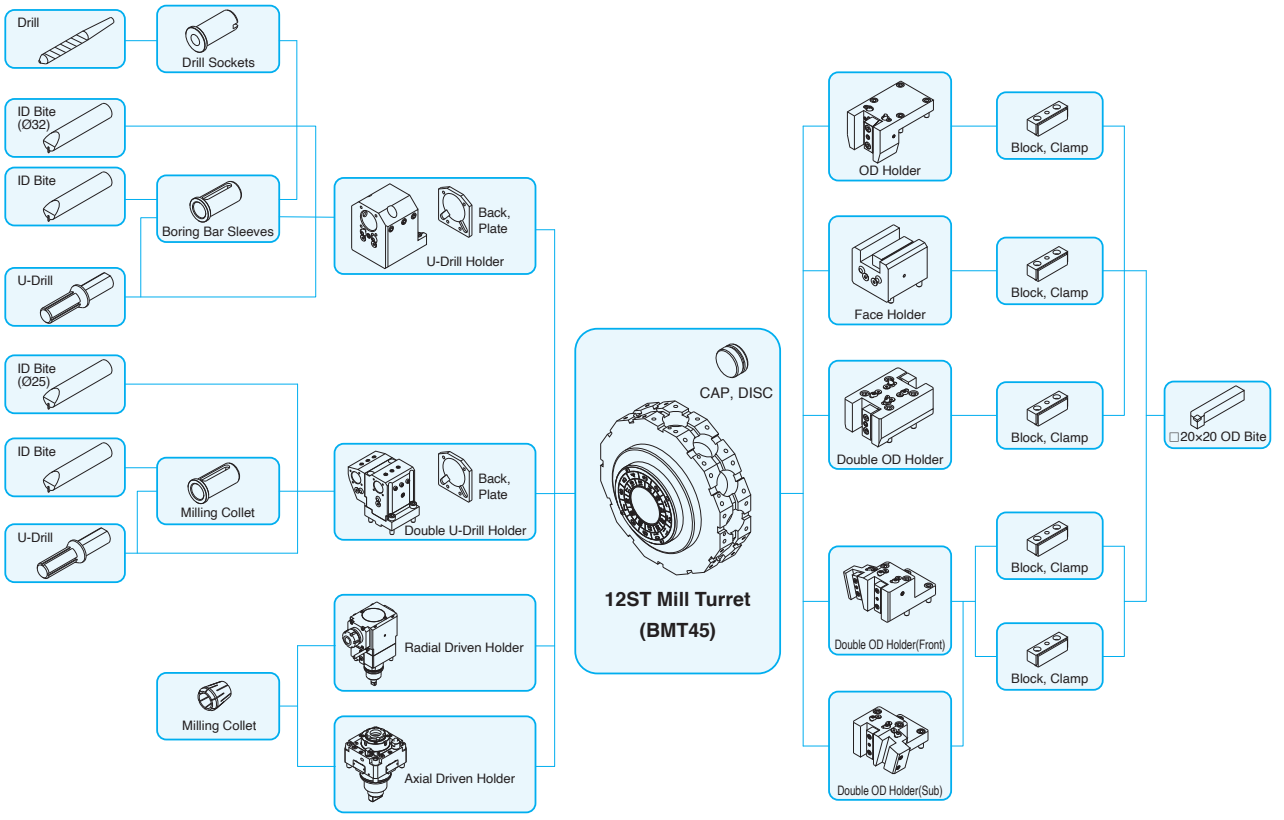


FACE HOLDER (SUB)



Tooling System

Unit : mm(inch)



Standard Tooling

Item / Description			6 inch	8 inch
Static Holder	Bite Plate		-	-
	OD Holder		1	1
	OD Holder	Double	1	1
	OD Holder	Double(Front)	1	1
	OD Holder	Double(Sub)	1	1
	Face Holder		1	1
Boring Holder	ID Holder		2	2
	U-Drill Holder	Double	1	1
Milling Holder	Axial Milling Holder		2	2
	Radial Milling Holder		2	2
Socket	Boring	Ø8(Ø5/16")	1	1
		Ø10(Ø3/8")	1	1
		Ø12(Ø1/2")	1	1
		Ø16(Ø5/8")	1	1
		Ø20(Ø3/4")	1	1
		Ø25(Ø1")	1	1
	Drilling	MT1	1	1
		MT2	1	1
	ER Collet		1	1

NS 2100SY Series

HORIZONTAL TURNING CENTER

Standard / Optional

● : Standard ○ : Optional △ : To be discussed X : N/A

Category			NS 2100Y	NS 2100SY
Spindle	3 jaw open-center chuck		●	●
	3 jaw closed-center chuck		X	X
	Soft jaw (3set)		●	●
	Hard jaw (1set)		○	○
	Chuck clamp footswitch		●	●
	Dual pressure chucking		○	○
	C-axis control (0.001°)		●	●
	Chuck clamp confirmation		●	●
	Chuck dual footswitch		○	○
Turret	Tool holder		●	●
	Rotary holder type	BMT	●	●
	Rotary holder (axial)	Collet-type, 2EA	●	●
	Rotary holder (radial)	Collet-type, 2EA	●	●
	Rotary holder (axial)	Adapter-type	X	X
	Rotary holder (radial)	Adapter-type	X	X
	Boring bar sleeve (same as U-drill holder sleeve)		●	●
	Drill socket		●	●
	U-drill holder		●	●
Tailstock	NC(Servo Motor) tailstock		●	X
	Live center (standard with tailstock)		●	X
	High precision live center		X	X
	Dual pressure tailstock		X	X
	Quill forward/reverse confirmation		X	X
	Tailstock footswitch		X	X
Coolant & Air Blow	Standard coolant (nozzle)		○	○
	Chuck coolant		○	○
	Coolant gun		○	○
	TSC for chuck (for special coolant)		△	△
	TSC for sub-spindle (with work ejector)		X	○
	Bed flushing		○	○
	Air blower		○	○
	Rotary tool holder TSC		○	○
	Tailstock air blower		○	X
	Turret tool air blower		△	△
	Air gun		○	○
	Through spindle air blower (for special chuck)		△	△
	Through sub-spindle air blower (with work ejector)		X	○
	Coolant pump	4.5Bar	●	●
		7Bar	○	○
		10Bar	○	○
		14.5Bar	○	○
		20Bar	○	○
	Power coolant system (for automation solutions)		△	△
	Coolant chiller		○	○

Category			NS 2100Y	NS 2100SY
Chip Disposal	Coolant tank	250L	●	●
	Chip conveyor (Hinge/ Screper)	Right-side	●	●
		Rear	△	△
	Special chip conveyor (Drum Filter)		△	△
	Chip bucket	Fixed 380L	○	○
Safety Features	Door interlock		●	●
	Backspin torque limiter(BST)		○	○
	Torque limiter		○	○
	Full splash guard		●	●
	Chuck hyd. pressure interlock		△	△
Electrical	3 step patrol lamp and buzzer		●	●
	Lamp for electrical cabinet		○	○
	Remote MPG		○	○
	Work counter	Digital	○	○
	Total counter	Digital	○	○
	Tool counter	Digital	○	○
	Multi counter	6EA	○	○
		9EA	○	○
	Grounded circuit breaker		○	○
	AVR(Auto Voltage Regulator)		○	○
	Transformer		○	○
	Auto Power Off		○	○
Measurement	Tool Presetter	Manual	○	○
	Tool Presetter	Auto	○	○
	Air zero measuring device (for special chuck)	TACO	△	△
		SMC	△	△
	Linear scale	X-axis	○	○
		Y-axis	○	○
		Z-axis	○	○
	Coolant level gauge (requires chip conveyor)		○	○
Environmental	Air conditioner for electrical cabinet		○	○
	Dehumidifier		△	△
	Oil mist collector		○	○
	Oil skimmer		○	○
	MQL(Minimal Quantity Lubrication)		△	△
Automation	Auto door		○	○
	Auto shutter (for automation solution)		△	△
	Sub controller		△	△
	Barfeeder interface		○	○
	Additional M-codes (4 pairs)		○	○
	Automation interface		○	○
	I/O expansion (including both IN and OUT)	16 contacts	○	○
		32 contacts	○	○
	Parts catcher		○	○
	Part conveyor (requires part catcher)		X	○
Hydraulic Supply	Standard hydraulic cylinder	Open-center	○	○
	Standard hydraulic unit	35Bar	○	○

※ For detailed information, please contact your local SMEC dealer.

Machine Specifications

Category			NS 2100Y	
			A type	B type
Chuck	Chuck size	inch	6"	8"
Capacity	Swing over bed	mm(inch)	820(32.29)	820(32.29)
	Swing over cross-slide	mm(inch)	540(21.26)	540(21.26)
	Max turning diameter	mm(inch)	378(14.89)	378(14.89)
	Max turning length	mm(inch)	521.3(20.53)	489(19.26)
	Working bar diameter	mm(inch)	51(2.01)	67(2.64)
Spindle	Spindle speed	rpm	6,000	4,500
	Spindle nose	ASA	A2-5	A2-6
	Draw tube ID	mm(inch)	52(2.05)	68(2.68)
	Spindle bore	mm(inch)	61(2.41)	76(3.00)
	Spindle motor (cont/max)	kW(Hp)	11/18.5(14.76/24.81)	11/18.5(14.76/24.81)
	Sub-spindle motor (cont/max)	kW(Hp)	-	-
Travels	X-axis stroke	mm(inch)	205(8.08)	205(8.08)
	Y-axis stroke	mm(inch)	110<±55>(4.34<±2.17>)	110<±55>(4.34<±2.17>)
	Z-axis stroke	mm(inch)	590(23.23)	590(23.23)
	ZB-axis stroke	mm(inch)	590(23.23)	590(23.23)
	X-axis rapid traverse	m/min(ipm)	30(1,181.11)	30(1,181.11)
	Y-axis rapid traverse	m/min(ipm)	10(393.71)	10(393.71)
	Z-axis rapid traverse	m/min(ipm)	36(1,417.33)	36(1,417.33)
	ZB-axis rapid traverse	m/min(ipm)	36(1,417.33)	36(1,417.33)
Turret	No of tool positions	ea	12[24] (BMT45)	12[24] (BMT45)
	OD tool size	mm(inch)	20(0.79)	20(0.79)
	Boring bar diameter	mm(inch)	32(1.26)	32(1.26)
	Indexing time	sec	0.15	0.15
	Rotary tool speed	rpm	6,000	6,000
	Rotary tool motor (cont/max)	kW(Hp)	3.7/5.5(4.97/7.38)	3.7/5.5(4.97/7.38)
Tailstock	Quill diameter	mm(inch)	65(2.56)	65(2.56)
	Quill stroke	mm(inch)	590(23.23)	590(23.23)
	Quill taper	MT	MT#4(LIVE CENTER)	MT#4(LIVE CENTER)
Machine	Size (with SIDE chip conveyor) L×W×H	mm(inch)	2,955(4,121) × 1,730 × 1,950(116.34(162.25) × 68.12 × 76.78)	
	Weight	kgkW(lb)	4,200(9,259.42)	4,210(9,281.47)
	Coolant tank capacity	LiterkW(gal)	250(66.05)	250(66.05)
Electric power supply		kVA/V	31/220	31/220
Controller			FANUC 0i-TF+	

※ Design and specifications are subject to change without notice.

NS 2100SY Series

HORIZONTAL TURNING CENTER

Machine Specifications

Category			NS 2100SY	
			A type	B type
Chuck	Chuck size	inch	6"/5"	8"/5"
Capacity	Swing over bed	mm(inch)	820(32.29)	820(32.29)
	Swing over cross-slide	mm(inch)	540(21.26)	540(21.26)
	Max turning diameter	mm(inch)	378(14.89)	378(14.89)
	Max turning length	mm(inch)	521.3(20.53)	489(19.26)
	Working bar diameter	mm(inch)	51(2.01)	67(2.64)
Spindle	Spindle speed (Main/Sub)	rpm	6,000/6,000	4,500/6,000
	Spindle nose (Main/Sub)	ASA	A2-5/Flat Φ110	A2-6/Flat Φ110
	Draw tube ID (Main/Sub)	mm(inch)	52/36(2.05/1.42)	68/36(2.68/1.42)
	Spindle bore (Main/Sub)	mm(inch)	61/43(2.41/1.70)	76/43(3.00/1.70)
	Spindle motor (cont/max)	kW(Hp)	11/18.5(14.76/24.81)	11/18.5(14.76/24.81)
	Sub-spindle motor (cont/max)	kW(Hp)	7.5/11(10.06/14.76)	7.5/11(10.06/14.76)
Travels	X-axis stroke	mm(inch)	205(8.08)	205(8.08)
	Y-axis stroke	mm(inch)	110<±55>(4.34<±2.17>)	110<±55>(4.34<±2.17>)
	Z-axis stroke	mm(inch)	590(23.23)	590(23.23)
	ZB-axis stroke	mm(inch)	590(23.23)	590(23.23)
	X-axis rapid traverse	m/min(ipm)	30(1,181.11)	30(1,181.11)
	Y-axis rapid traverse	m/min(ipm)	10(393.71)	10(393.71)
	Z-axis rapid traverse	m/min(ipm)	36(1,417.33)	36(1,417.33)
	ZB-axis rapid traverse	m/min(ipm)	36(1,417.33)	36(1,417.33)
Turret	No of tool positions	ea	12[24] (BMT45)	12[24] (BMT45)
	OD tool size	mm(inch)	20(0.79)	20(0.79)
	Boring bar diameter	mm(inch)	32(1.26)	32(1.26)
	Indexing time	sec	0.15	0.15
	Rotary tool speed	rpm	6,000	6,000
	Rotary tool motor (cont/max)	kW(Hp)	3.7/5.5(4.97/7.38)	3.7/5.5(4.97/7.38)
Tailstock	Quill diameter	mm(inch)	-	-
	Quill stroke	mm(inch)	-	-
	Quill taper	MT	-	-
Machine	Size (with SIDE chip conveyor) LxWxH	mm(inch)	2,955(4,121) × 1,730 × 1,950(116.34(162.25) × 68.12 × 76.78)	
	Weight	kgkW(lb)	4,500(9,920.81)	4,510(9,942.85)
	Coolant tank capacity	LiterkW(gal)	250(66.05)	250(66.05)
Electric power supply		kVA/V	31/220	31/220
Controller			FANUC 0i-TF+	

※ Design and specifications are subject to change without notice.

NC Specification / FANUC

● : Standard ○ : Optional ( ) : Option X : N/A

Category		0*i*-TF+
Controlled axis	Controlled axes	X, Z, Y, B, C, A
	Max. simultaneosly controlled axes	4
	Least command increment	0.001mm / 0.0001"
	Built-in stroke limit	Soft overtravel 1, 2, 3, 4
	Machine lock	●
Operation functions	Pulse handle feed	X1, X10, X100
	Dry run	●
	Single block	●
	Feedrate per minute	G94
	Feedrate per revolution	G95
	DNC operation	Ethernet, CF card
	Thread cutting pause	○
Interpolation functions	Linear interpolation	G01
	Circular interpolation	G02, G03
	Dwell	G04
	Cylindrical interpolation	G70.1
	Skip	G31
	Nano smoothing	X
	Polar coordinate interpolation	●
	Reference position (zero) return	G28
	Reference position (zero) return check	G27
	2nd/3rd/4th reference position return	G30
	Variable lead thread cutting	●
	Thread Repair	●
Feed function	Rapid traverse rate override	F0, 25%, 50%, 100%
	Feedrate override	0~200%
	Jog Override	●
	AI look ahead	X
	AI contour control II	○ (200 block)
Spindle function	Spindle orientation	●
	Rigid tapping	M29
	Spindle override	S0 ~ 150%
	Arbitrary speed threading	○
Tool functions	Tool number command	T4-Digt Tool number
	Tool nose radius compensation	G40 ~ G42
	Tool offset pairs	128-pairs
	Tool geometry / wear offset	●
	Tool length compensation	●
	Tool life management	●
	Tool path graphic display	●

Category		0*i*-TF+
Program input	Absolute/incremental programming	G90/G91
	Multiple repetitive cycle	●
	Multiple repetitive cycle II	●
	Canned cycles	●
	Drilling canned cycle	●
	Decimal point input	●
	Inch/metric conversion	G20 / G21
	Program restart	●
	Sub program call	●
	Max programmable value	±99999.999mm/± 9999.9999"
	M function	3 digit
	Custom macro	●
	Addition of custom macro common variables	#100~#199, #500~#999
	Direct drawing dimension programming	●
	Programmable data input	G10
	Tape code	ISO / EIA
	Optional block skip	●
	Workpiece coordinate system	G52 ~ G59
	Addition of workpiece coordinate system	X
Interface function	Embedded ethemet	●
	Fast ethernet	X
Setting and display	Alarm & Operator histor display	●
	Run hour and parts count display	●
	Loadmeter display	●
	Self-diagnosis function	●
	Extended part program editing	●
	Machining condition selecting function	○
	Machining quality level adjustment	X
	Display screen	15" color LCD
	Multi-language display	25 language
Data input/ output	Fast data server	X
	RS232C interface	●
	Memory card input / output	●
	USB memory input / output	●
Editing operation	Part program storage size	512Kbyte(2Mbyte)
	Number of registerable programs	400(1,000) EA
	Manual guide 0i	○
	Manual guide i	●

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