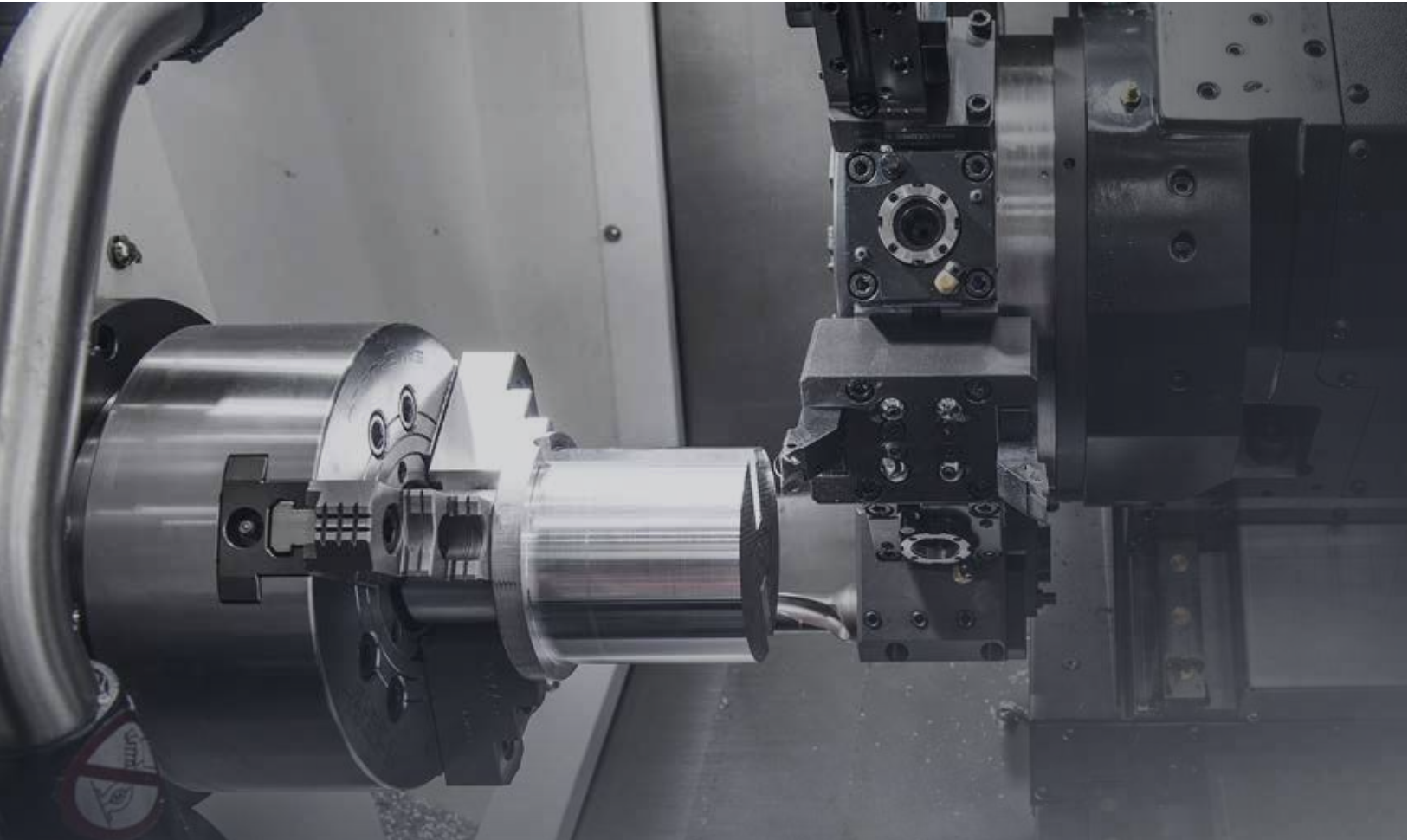


# SE 2200LSY

Versatile, High Production Y-Axis CNC Turning Center

HYUNDAI WIA Y-Axis Turning Center

[www.wardcnc.com](http://www.wardcnc.com)



[www.wardcnc.com](http://www.wardcnc.com)

# Technical Leader

The CNC Turning Center SE2200LSY, designed with HYUNDAI WIA's engineering expertise to maximize productivity by enhancing rigidity and accuracy of machining.

## SE2200LSY

[ ] : Option

Max. Turning Dia.	mm(in)	Ø300 (Ø11.8" )
Max. Turning Length	mm(in)	510 (20.1" )
Chuck Size	inch	Main : 8" Sub : 5"
Bar Capacity	mm(in)	Main : Ø65 (Ø2.6" ) Sub : Ø32 (Ø1.3" )
Spindle Speed (rpm)	r/min	Main : 4,500 Sub : 6,000
Spindle Motor (Max./Cont.)	kW(HP)	Main : 15/11 (20/15) Sub : 7.5/5.5/3.7 (10/7.4/5)
Travel (X/Y/Z/ZB)	mm(in)	210/110/560/560 (8.3"/4.3"/22"/22")
No. of Tools	EA	12 [24]

# SE 2200LSY

Excellent Machining Performance, Y-axis CNC Turning Center

- 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 BMT45P turret
- Excellent rapid traverse rate (X/Y/Z) : 30/10/36 m/min (1,181/394/1417 ipm)
- Ergonomic design for convenient access to chuck and tool

[www.wardcnc.com](http://www.wardcnc.com)

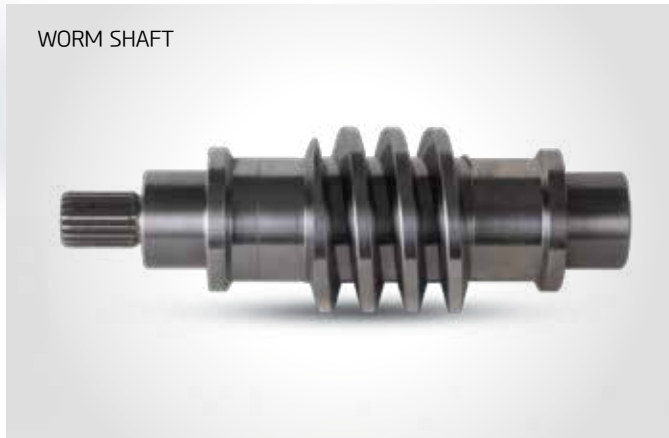


# Y-AXIS TURNING CENTER



# APPLICATIONS & PARTS

WORM SHAFT



## Reduced machining time by multi-tasking operation

SE2200LSY 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

- BMT45P (12 [24] Station)
- 6,000 r/min
- Collet Size :  $\varnothing 13$  ( $\varnothing 0.51''$ ) {ER20}

## Sub Spindle

- 5" / 6,000 r/min
- C-Axis Control :  $0.001^\circ$

## High Precision Spindle

- Integral body & heat dissipating RIB structure.
- 8" / 4,500 r/min
- C-Axis Control :  $0.001^\circ$



# 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 SE2200LSY bed slope is pitched at 30 degrees to ensure more stable machining.



Floor Space (L×W) **2,960×1,730** mm (116.5"×68.1")

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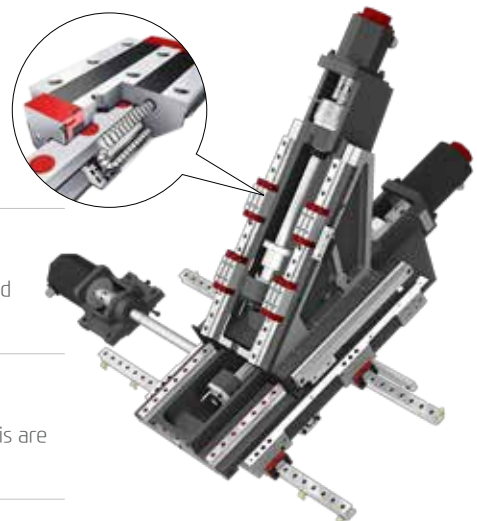
## GUIDEWAY

### High-Speed Roller LM Guideway

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

### Ball Screw

In order to eliminate thermal growth and increase accuracy, all axis are driven by high precision double anchored ballscrews.



Rapid Traverse Rate (X/Y/Z/ZB)

**30/10/36/15** m/min

(1,181/394/1,417/591 ipm)

Travel (X/Y/Z/ZB)

**210/110/560/560** mm

(8.3"/4.3"/22"/22")

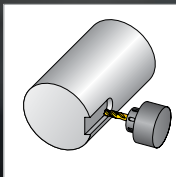
SE2200LSY

# 02 Y-AXIS FUNCTION

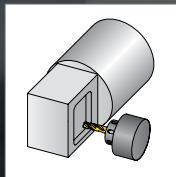
The Y-Axis Function, Cutting for Complex Shaped Work-piece

[www.wardcnc.com](http://www.wardcnc.com)

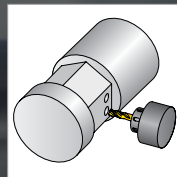
## HIGH PERFORMANCE Y-AXIS



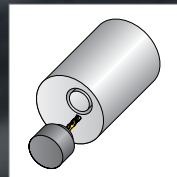
Keyway Milling



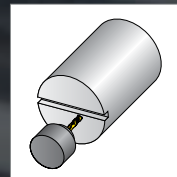
Multi-sided machining



Eccentric hole machining



X+Y axis circular interpolation



Fine Grooving





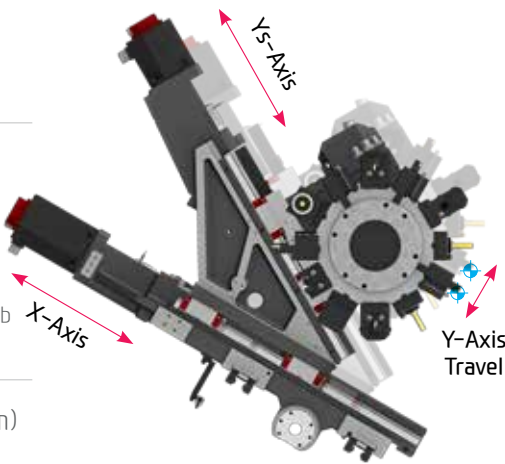
# MACHINING PROCESS WITH ONLY ONE INITIAL SETTING

## Y-AXIS

### Wedge Type Y-Axis Structure

The SE2200LSY 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 VARIATION

HYUNDAI 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.

**O.D Turning**  
(Material : S45C)

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

**End Mill**  
(Material : S45C)

Tool Dia.	Ø12 mm
Spindle rpm	750 r/min
Forwarding speed	188 mm/min
Cutting speed	29 m/min
Machining depth	14 mm

**U-Drill**  
(Material : S45C)

Tool Dia.	Ø60 mm
Spindle rpm	1,011 r/min
Forwarding speed	177 mm/min
Cutting speed	191 m/min
Chip discharging amount	500 cc/min

**Drill**  
(Material : S45C)

Tool Dia.	Ø13 mm
Spindle rpm	2,540 r/min
Forwarding speed	432 mm/min
Cutting speed	104 m/min

**Tap**  
(Material : S45C)

Tap spec.×Pitch	M14×P2.0
Spindle rpm	600 r/min
Forwarding speed	2 mm/rev
Cutting speed	23 m/min

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



SE2200LSY

# 03 HIGH PRECISION SPINDLE

Long Lasting, High Accuracy & Excellent Performance CNC Turning Center



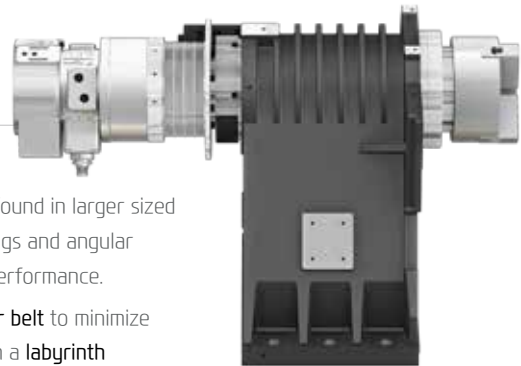
# HEAVY DUTY CUTTING & HIGH ACCURACY

## 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 SE2200LSY can be controlled to 0.001° which makes it possible to process various shapes.

4,500 rpm

**15/11** kW (20/15 HP)  
Output (15min/Cont.)

**167/92** N·m  
Torque (15min/Cont.)

## SUB SPINDLE

### 5" Sub Spindle ('SY' Type)

The Belt-type sub spindle with 5" chuck is designed to minimize thermal displacement during the continuous machining, offering the high-speed machining.

6,000 rpm

**7.5/5.5/3.7** kW (10/7.4/5 HP)  
Output (15%/15min/Cont.)

**63.6/46.7/23.6** N·m  
Torque (15%/15min/Cont.)



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SE2200LSY

# 04 BMT TURRET

High speed, High Accuracy, Highly Reliable Servo Turret

[www.wardcnc.com](http://www.wardcnc.com)



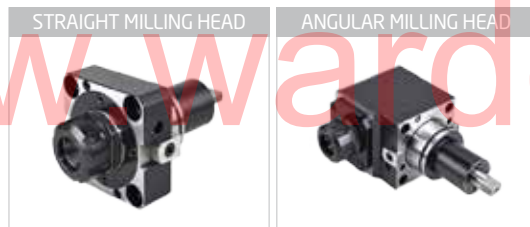
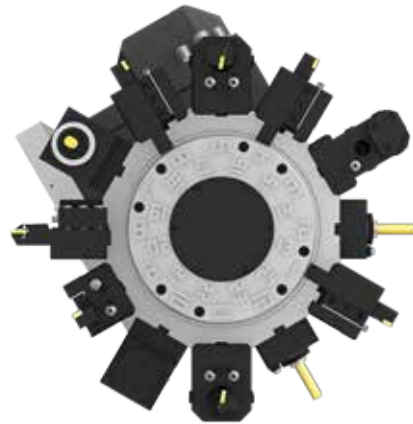
# VARIOUS DRIVEN PRECISION BMT TOOL HOLDERS

## TURRET

### Mill Turret (BMT45P)

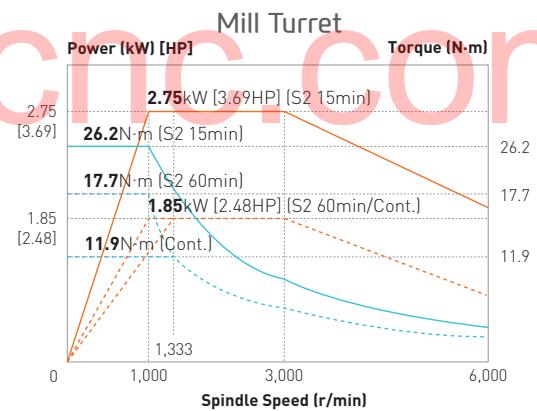
The BMT turret secures the tool with four bolts and key on the tool mounting surface of the turret, making it possible to powerfully fix the tool, ensuring high reliability in rigidity and precision.

- ⦿ Speed (rpm) : 6,000 r/min
- ⦿ Collet Size :  $\varnothing 13$  ( $\varnothing 0.51''$ ) / ER20
- ⦿ Indexing Time : 0.11 sec



### Mill Tool Holder

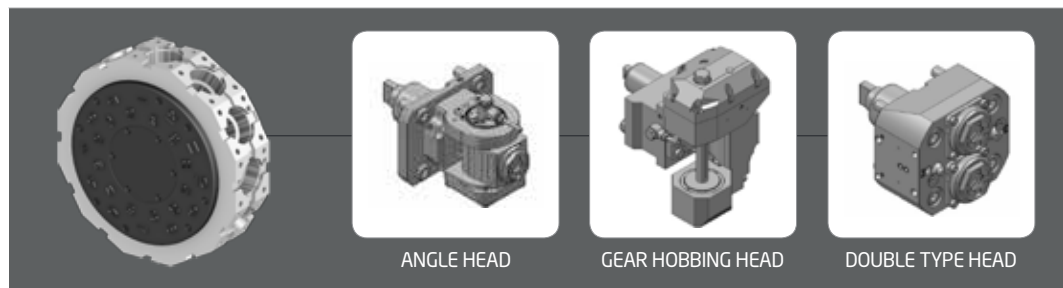
Machining capability has increased with the addition of straight milling head tool holder, which can machine workpieces from the side, and angular milling head tool holder, which can perform I.D. operations.



## SPECIAL TOOL

**OPTION**

With the Y-axis, the SE2200LSY 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.



SE2200LSY

# 05 AUTOMATION SYSTEM

Various User Friendly Devices



[www.watsons.com](http://www.watsons.com)

HYUNDAI WIA established automation system based on high-performance machines and leading-edge systems, with accumulated technology and expertise derived from manufacturing machine tools and automotive parts, and enhanced customer's productivity enormously by making effective production line.

## SEMI-AUTOMATION

### Semi-Automation System

Semi-automation is an automation system which is operated by attaching simple automation devices to a machine tool and mainly used for automation using small turning center, providing economical benefit at initial installation.



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## GANTRY AUTOMATION

### Gantry Loader System

Gantry loader transfers raw material from in-stocker to machine automatically, starting machining process. Gantry automation provides good equipment access during operation and easy work monitoring, program modification and maintenance. In addition, small installation area facilitates optimized factory layout.



## ROBOT AUTOMATION

### Robot System

With its know-how and experience, HYUNDAI WIA is globally recognized in the field of automation. Robot automation features flexible responsiveness, convenience and maintenance regardless of type for automation construction.



# 06 USER CONVENIENCE

Various Devices for User Friendly

## BAR FEEDER SYSTEM

### Bar Feeder

Bar feeder system enables automation which leads to efficiency improvement.

Long Type	: 3 m (118.1")	Short Type	: 1.5 m (59.1")
Bar Capacity	: Ø42 (1.7")	Bar Capacity	: Ø65 (2.6")



#### Parts Catcher

An optional parts catcher collects finished parts without the need to open the door, adding productivity, especially when a bar feeder is attached.

#### Parts Conveyor

The parts conveyor transfers the finished workpiece unloaded by the parts catcher for user convenience.



#### Auto Door

Using M-code, the doors can be automatically opened and closed which brings productivity and convenience for automation.

#### Auto Shutter

Using auto shutter, automation system with gantry loader is possible without opening the machine's door.

## HIGH PRECISION SYSTEM



### Automatic Q-Setter

Cutting tools are calibrated quickly and accurately with the addition of a q-setter.

Each tool tip is touched off manually using a sensor that inputs the position automatically.



### Linear Scale

Linear scales increase positioning accuracy and reduce distortion caused by thermal growth, thus ensuring a more accurate finished part



### Work Probe

Workpiece coordinate values can be set automatically using the optional spindle probe.



Optional

## CHIP DISPOSAL SOLUTION

### Chip Conveyor

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.

## COOLANT UNIT & ECO SYSTEM



Standard Coolant (Nozzle)



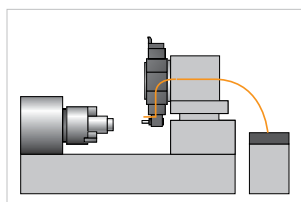
Chuck Coolant (Upper Chuck)



Chuck Air Blow (Upper Chuck)



Air Gun



MQL : Minimal Quantity Lubrication



Oil Skimmer



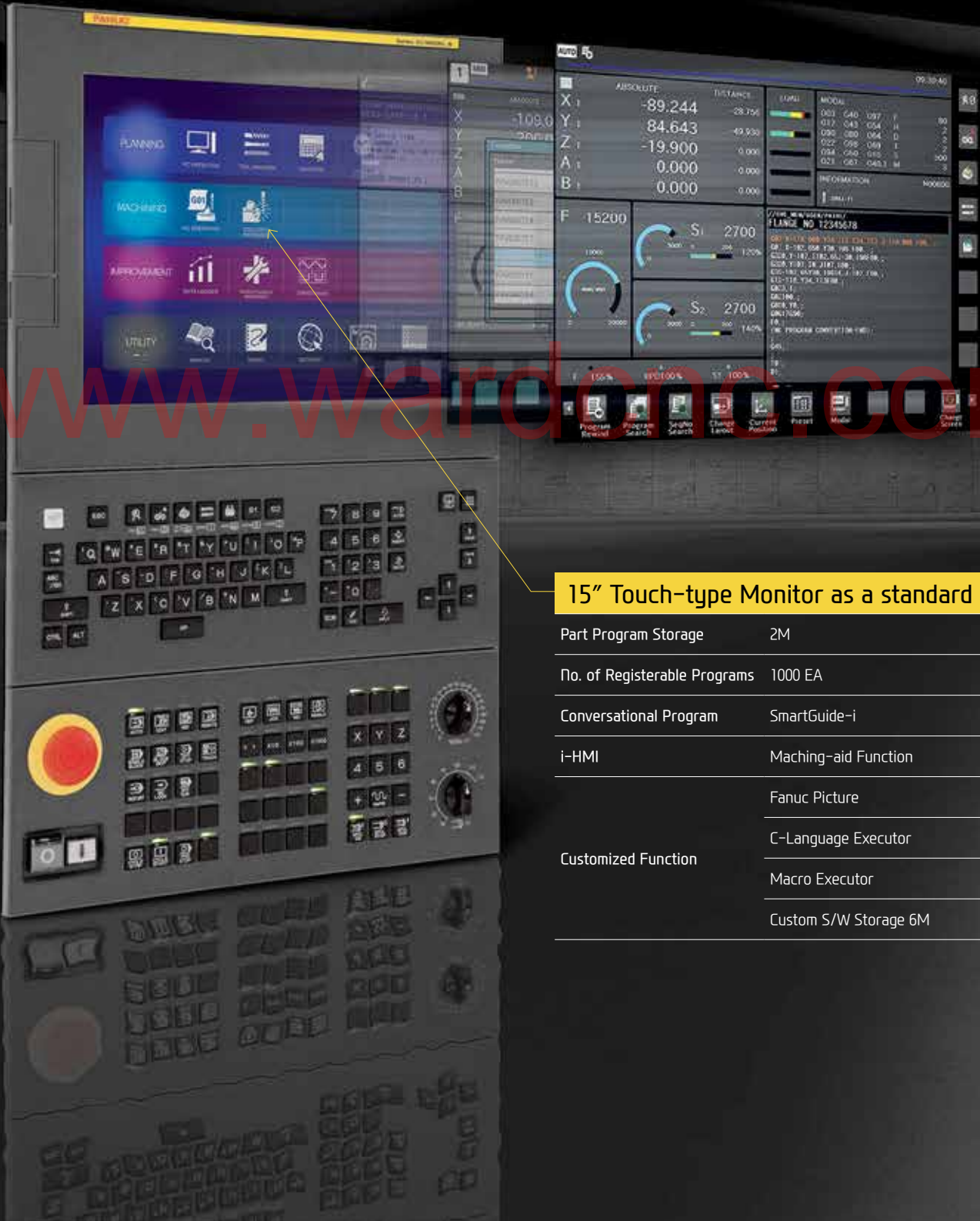
Mist Collector



Grease Lubrication Device

# 07 FANUC 0i PLUS

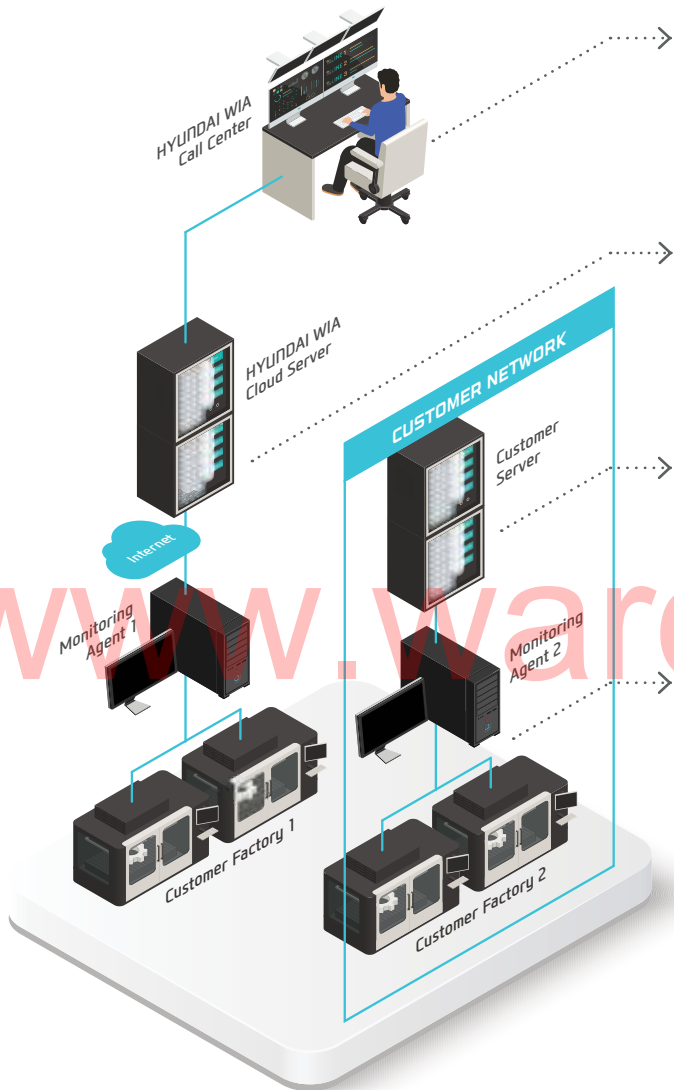
The Compatible All-round Control



## 15" Touch-type Monitor as a standard

Part Program Storage	2M
No. of Registerable Programs	1000 EA
Conversational Program	SmartGuide-i
i-HMI	Maching-aid Function
	Fanuc Picture
	C-Language Executor
Customized Function	Macro Executor
	Custom S/W Storage 6M

# SMART MONITORING



**HW-MMS Remote**  
Hyundai Wia Call Center's remote diagnosis service provides a HMI/ video diagnostic function.



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



**HW-MMS Edge**  
A customer server-based equipment monitoring system for collecting and analyzing facility operation data.



**HW-MMS Collector**  
A dedicated program for collecting CNC data for MES/ERP.

## HW-MMS

A brand new manufacturing machine by Hyundai Wia, HW-MMS is a unique software capable of monitoring the operation status of manufacturing machines in factories, a smart solution to improve manufacturing conditions of customers.

### > Remote Monitoring

- Real-time monitoring such as machining condition, alarm information, work count, etc.
- HW-MMS Cloud: monitor your machine anywhere and anytime without any burden of operating server
- HW-MMS Edge, DB interface: collected data can be linked with MES, ERP

### > Remote Diagnosis

- Integral call center assists HMI & smart phone diagnosis



# 08 HYUNDAI-iTROL

The Powerful CNC Platform for Machine Tools

## HYUNDAI INTELLIGENT CONTROL



### COMMUNICATION FUNCTION

RJ 45 Ethernet

USB 2.0

Compact Flash Card



Easy input/output of programs is possible with the use of USB memory card, CF memory card and LAN.

Combination of HYUNDAI-iTROL with Siemens servo drive and motor offers the optimum machine tool solution



#### Shop Turn

**OPTION**

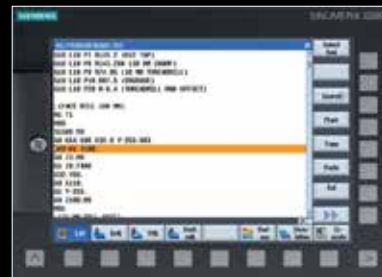
- Dialogue-type programming, simple and convenient
- Effective specifications for small quantitybatch production
- Step-by-step operation possible without knowledge of the DIN/ISO code



#### 3D Simulation

**OPTION**

- 3D confirmation of the completed processing configuration of the NC program is possible.
- Offers standards for 2D simulation.
- Possible to confirm the simulation of the NC program during processing.



#### ISO Code Programming

If the ISO Dialect (G291) is ordered, JIS-based G-code programs can be used. (Standard)



Energy Saving &  
ECO System

# CONVENIENCE FUNCTION



## ENERGY SAVING SYSTEM

You can use energy saving function (ECO) and machining optimization function (SMART) with the MCP button.



### 1. Turret Guidance

- Turret reference point setup guide screen.
- The turret reference point can be set quickly and easily with the simple touch of a button.
- Easy setting of milling tool direction enabled by a simple touch of the button in the event of a milling tool reference point error.

### 2. Tool Setting

- Easy-to-use automatic tool measurement function for the turning center.
- Rapid detection of tool's length and wear/tear.
- Can be used in conjunction with the Q-setter.

### 3. Coordinate Setting

- Workpiece coordinate setting is available for the turning center.
- Intuitive UI for enhanced convenience.
- Easy resetting with one touch of the button after shifting position.

### 4. Tailstock Management

- Intuitive UI for easy tailstock setting in the automatic/manual mode.
- History Management function for predefined settings.

### 5. Monitoring of Operating Ratio

- Intuitive display uses distinctive colors to indicate the 4 stages of alarm, cycle, setup, and inactivity.
- Displays current activated status as "Activated".
- Options to export 10-day operation history as an PC file or to CF card (MS Excel compatible format)

### 6. Soft MCP

- Displays the unused optional utility as "Option" for inactivation.
- The number of SoftMCP has been increased to 28 to respond to a variety of options.
- Usability has been enhanced by connecting/setting with F1 & F2.
- Addition of a new 'FUNCTION' button to the PPU shortcut button enables quick access to the SoftMCP function.

#### > Comfortability

- Intuitive and comfort control by simple design of UX/UI (quick problem resolution)

#### > Unique S/W function

- Various easy-functions for high-speed and -precision machining
- Provides diverse managerial index (date, process, etc.)
- Machine monitoring by remote IT solutions and alarm emailing function



# SPECIFICATIONS

## Standard & Optional

Spindle		SE2200LSY
Main Spindle	8"	●
Hollow Chuck 3 Jaw	10"	-
Main Spindle	8"	-
Solid Chuck 3 Jaw	10"	-
Sub Spindle	5"	●
Hollow Chuck 3 Jaw		-
Sub Spindle	5"	-
Solid Chuck 3 Jaw		-
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	●
	12 Tool	●
	24 Tool	○
Straight Milling Head (Axial)	Collet Type, 2ea	●
Angular Milling Head (Radial)	Collet Type, 2ea	●
Straight Milling Head (Axial)	Adapter Type	○
Angular Milling Head (Radial)	Adapter Type	○
Boring Sleeve		●
Drill Socket		○
U-Drill Holder		●
O.D Extension Holder	For Out-Dia	-
Angle Head		☆
Tail Stock & Steady Rest		
Quill Tail Stock	MT#4	-
	MT#5	-
Built-in Tail Stock		-
Programmable Tail Stock		-
Manual Hyd. Steady Rest		-
Standard Live Center		-
High Precision Live Center		-
2 Steps Tail Stock Pressure System		-
Quill Forward/Reverse Confirmation Device		-
Tail Stock Foot Switch		-
Coolant & Air Blow		
Standard Coolant (Nozzle)		●
Chuck Coolant (Upper Chuck)		○
Gun Coolant		○
Through Spindle Coolant (Only for Special Chuck)		☆
Turnmill Through Coolant		-
Chuck Air Blow (Upper Chuck)		○
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)		☆
Coolant Chiller (When selecting Sub Tank Type, Chip Conveyor)		-
Chip Disposal		
Coolant Tank	Right	●
	Rear	☆
Chip Conveyor (Hinge/Scraper)	Front (Right)	○
	Rear (Rear)	☆
Special Chip Conveyor (Drum Filter)		-
Chip Wagon	Standard (180 ℓ [47.5 gal])	○
	Swing (200 ℓ [52.8 gal])	○
	Large Swing (290 ℓ [76.6 gal])	○
	Large Size (330 ℓ [87.2 gal])	○
	Customized	☆

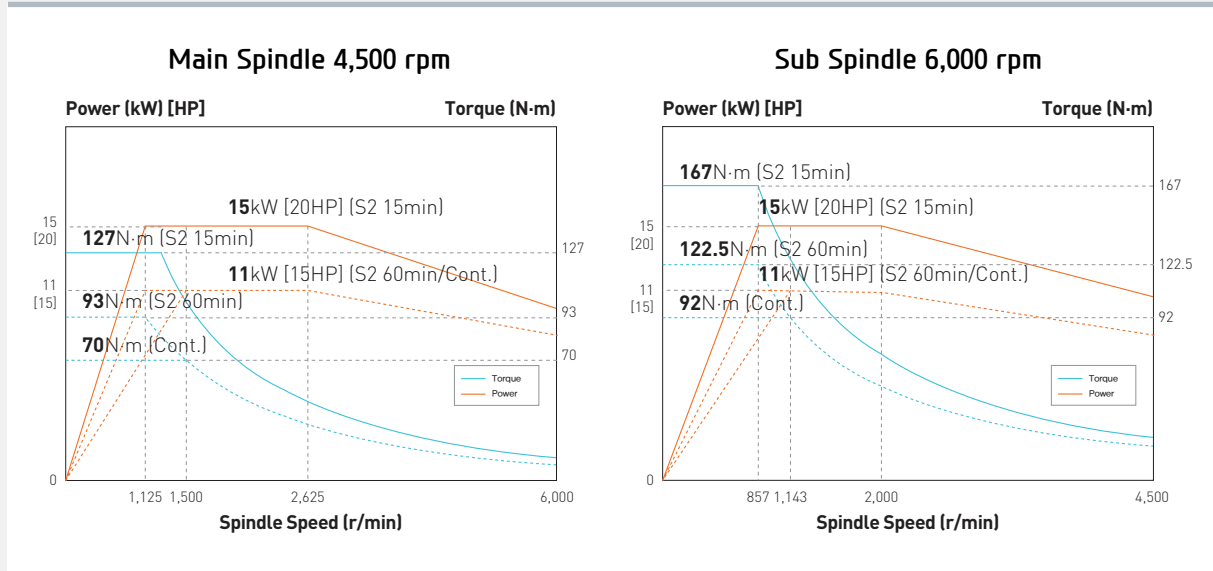
● : Standard ○ : Option ☆ : Prior Consultation - : Non Applicable

Electric Device		SE2200LSY
Call Light	1Color : ●	●
Call Light	2Color : ●	○
Call Light	3Color : ●	○
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	30KVA	○
	35KVA	-
Auto Power Off		○
Measurement		
Manual Q-Setter (Basic)		○
Manual Q-Setter (Renishaw)		○
Automatic Q-Setter (Renishaw)		○
Work Close Confirmation Device (Only for Special Chuck)	TACO SMC	○
Work Setter		○
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)		○
MLQ (Minimal Quantity Lubrication)		☆
Fixture & Automation		
Auto Door		○
Auto Shutter (Only for Automatic System)		○
Sub Operation Panel		☆
Bar Feeder Interface		○
Bar Feeder (FEDEK)		☆
Work Pusher (Spring 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 (507.6psi) / 20 ℓ (5.3gal)	●
S/W		
Machine Guidance (HW-MCG)		●
Energy Saving System (HW-ESS)		●
Tool Monitoring (HW-TM)		○
Spindle Heat Distortion Compensation(HW-TDC)		○
DNC software (HW-eDNC)		○
Machine Monitoring System (HW-MMS)		○
Conversational program (HW-DPRO)		○
8ch Thermal Displacement Compensation Device		○
ETC		
Tool Box		●
Customized Color	Need Munsel No.	☆
CAD & CAM		☆
Safety Device		
Total Splash Guard		●

❖ 8 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.

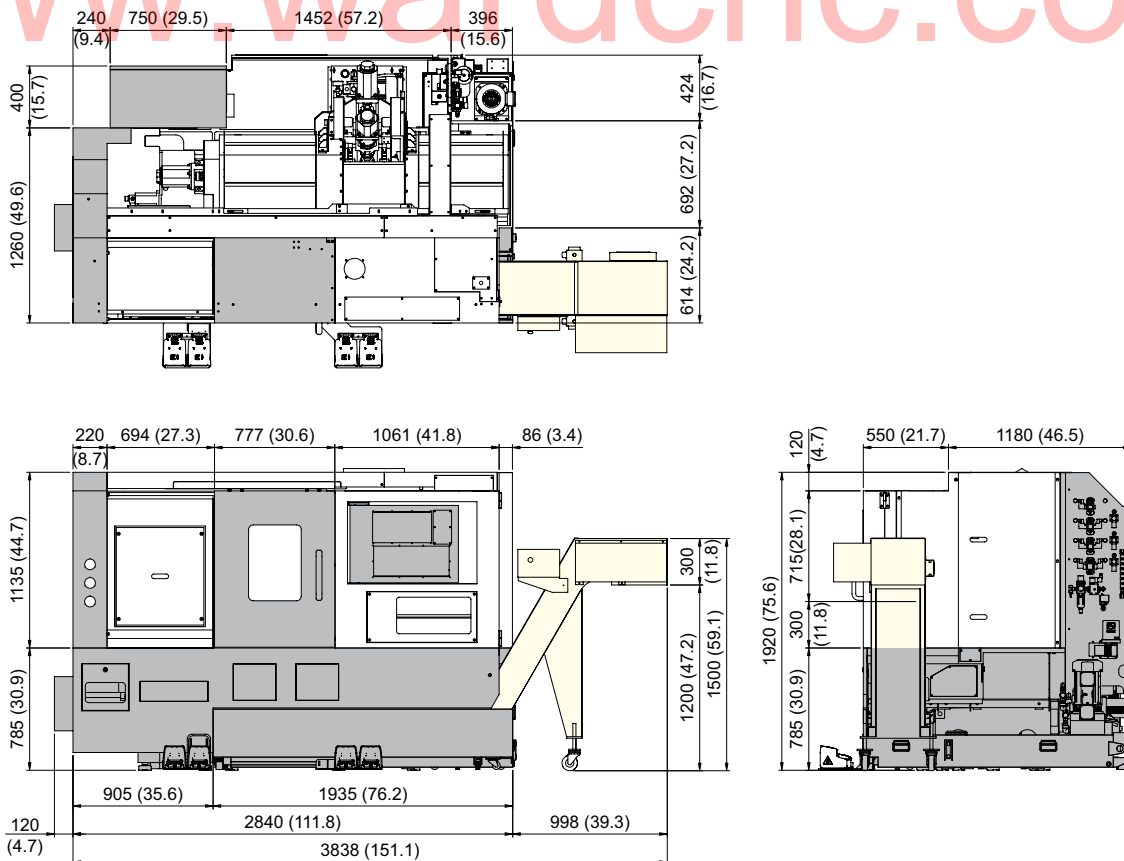
# SPECIFICATIONS

## Spindle Output/Torque Diagram



## External Dimensions

unit : mm(in)

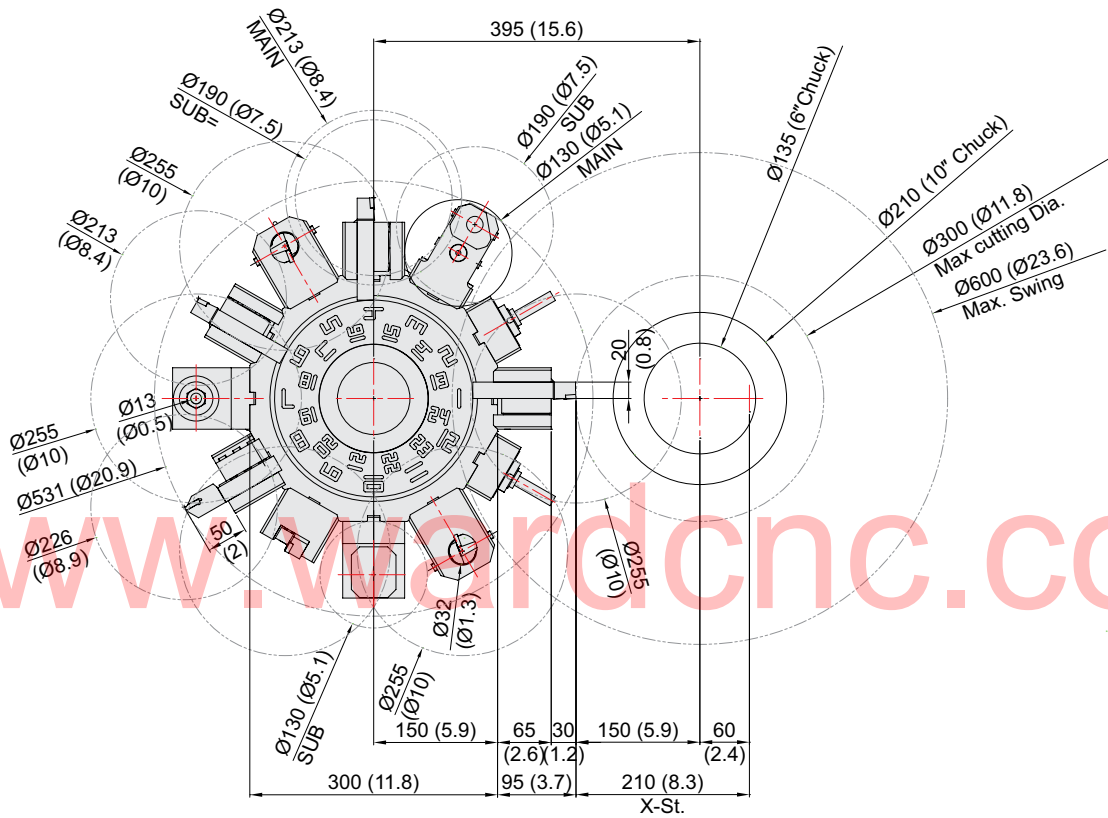


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# SPECIFICATIONS

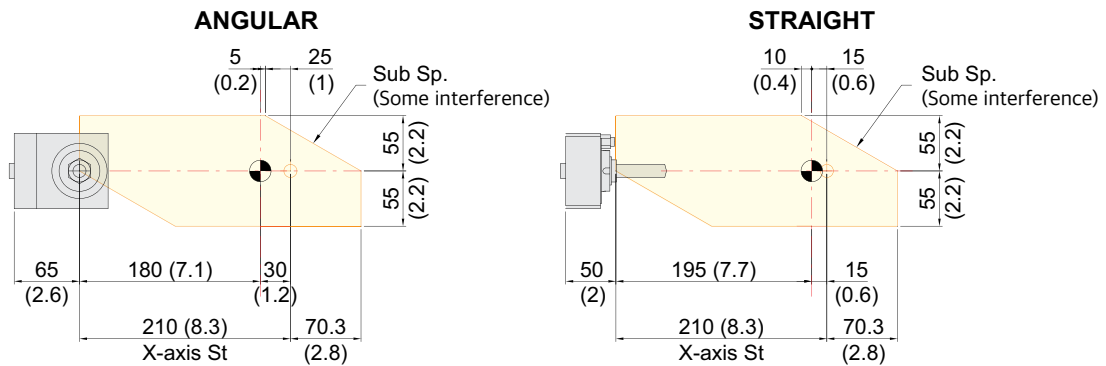
## Interference

unit : mm(in)



## Y-axis Travel Range

unit : mm(in)

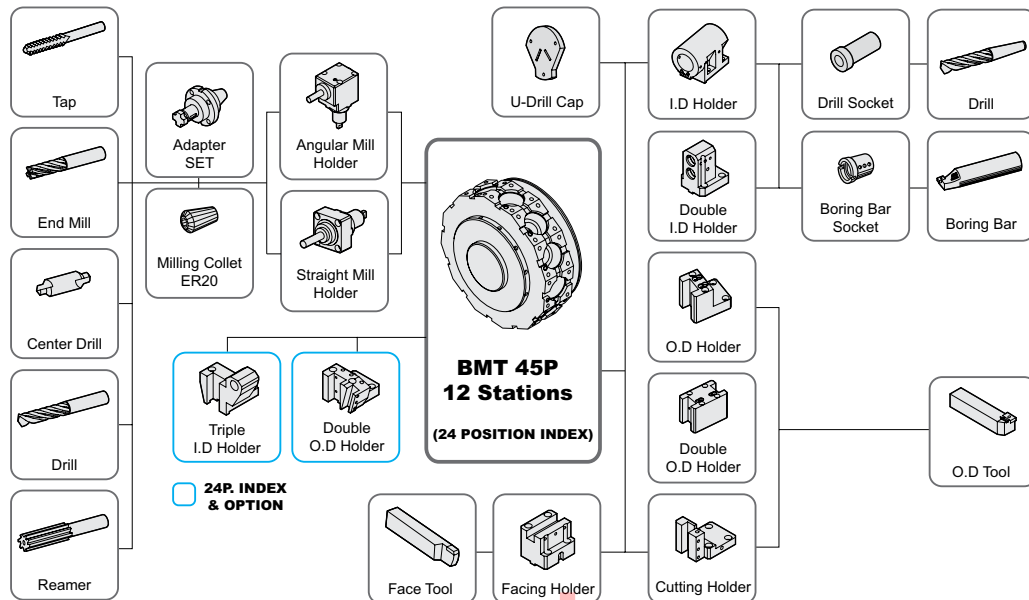




# SPECIFICATIONS

## Tooling System

unit : mm(in)



## Tooling Parts Detail

ITEM	SE2200LSY (12P)		SE2200LSY (24P : 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	2	2	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 2	-	-	-	-
		MT 3	-	-	-	-
		MT 4	-	-	-	-
		ER Collet	1 Set	1 Set	1 Set	1 Set
	Adapter Set	Opt.	Opt.	Opt.	Opt.	

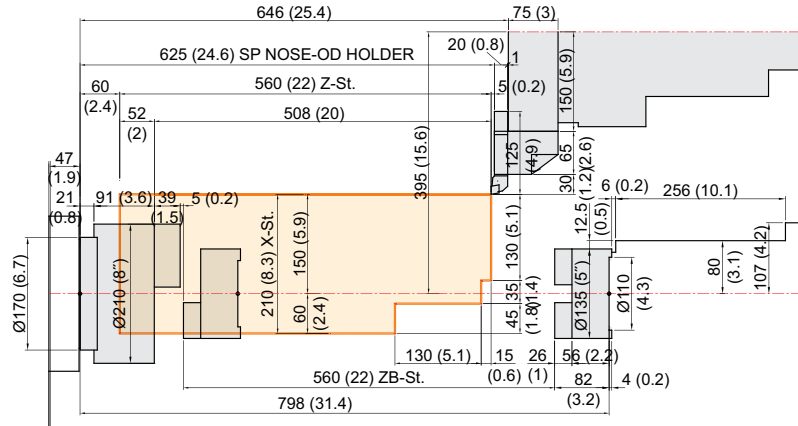
Specifications are subject to change without notice for improvement.

# SPECIFICATIONS

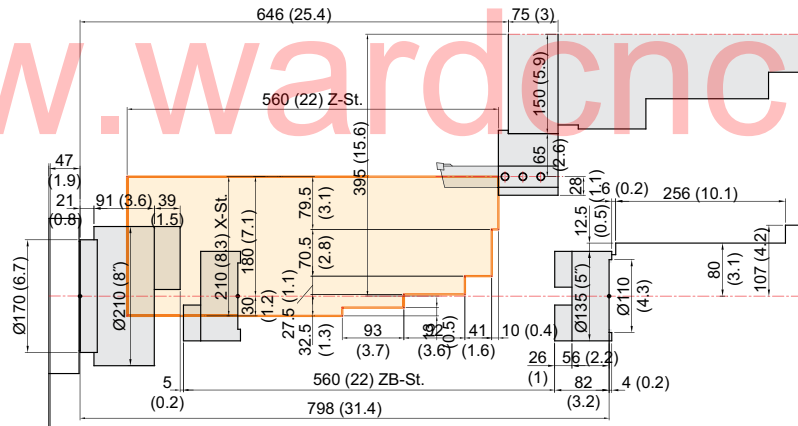
Tooling Travel Range

unit : mm(in)

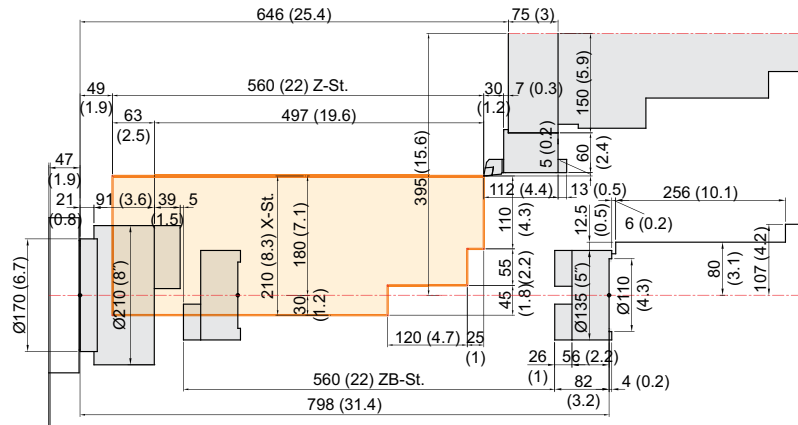
## O.D Tool Holder



## I.D Tool Holder



## Face Tool Holder



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# SPECIFICATIONS

## Specifications

[ ] : Option

ITEM			SE2200LSY	
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)	510 (20.1")	
	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)
		Sub	kW(HP)	7.5/5.5/3.7 (10/7.4/5)
	Torque (Max/Cont.)	Main	N·m	167/92
		Sub	N·m	63.6/46.7/23.6
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)	560/560 (22"/22")
	Rapid Traverse Rate	X/Y	m/min(ipm)	30/10 (1,181/394)
		Z/ZB	m/min(ipm)	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/step	0.11
Y-Axis Type		-	WEDGE TYPE	
LIVE TOOL	Milling Tool Speed (rpm)		r/min	6,000
	Motor (Max/Cont.)		kW(HP)	2.8/1.9 (3.8/2.5)
	Torque (Max/Cont.)		N·m	26.2/11.9
	Collet Size		mm(in)	Ø13 (Ø0.5") {ER20}
	Type		-	BMT45P
TANK CAPACITY	Coolant Tank		ℓ (gal)	200 (52.8)
	Lubricating Tank		ℓ (gal)	0.7 (0.2)
POWER SUPPLY	Electric Power Supply		kVA	30
	Thickness of Power Cable		Sq	Over 16
	Voltage		V/Hz	220/60 (200/50*)
MACHINE	Floor Space (L×W)		mm(in)	2,960×1,730 (116.5"×68.1")
	Height		mm(in)	1,920 (75.6")
	Weight		kg(lb)	4,200 (9,259)
CNC	Controller		-	FANUC Oi PLUS

\*) Using 50Hz voltage instead of 60Hz may lower the output of motors. (excluding servo motors and inverter motors)  
Specifications are subject to change without notice for improvement.

# CONTROLLER

## FANUC Oi PLUS

[ ] : Option

Controlled axis / Display / Accuracy Compensation	
Control axes	2 axes (X, Z) / 3 axes (X, Z, C) / 4 axes (X,Z,Y,C) 5 axes (X, Z, B, C, A) / 6 axes (X, Z, Y, B, C, A) 7 axes (X1/Z1, X2/Z2, B2, C1/C2)
Simultaneously controlled axes	2 axes [Max. 4 axes]
Designation of spindle axes	3 axes [Max. 4 axes]
Least setting Unit	X, Z, Y, B axes : 0.001 mm (0.0001 inch) C, A axes : 0.001 deg
Least input increment	X, Z, Y, B axes : 0.001 mm (0.0001 inch) C, A axes : 0.001 deg
Inch / Metric conversion	G20 / G21
High response vector control	
Interlock	All axes / Each axis
Machine lock	All axes
Backlash compensation	± 0~9999 pulses (Rapid traverse / Cutting feed)
Position switch	
LCD / MDI	15 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
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	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	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 ~ #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
Manual 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##)
FSSB 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	5120m (2MB)
No. of registerable programs	1000 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	RS 232C serial port, 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 axes)	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	200 pairs
Polygon turning (2 Spindles)	Mill, MS, Y, SY, LF-Mill, TTMS, TTSY
Optional block skip	40 ea, 200 ea (AICC II)
Dynamic graphic display	

Figures in inch are converted from metric values.

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

# 09 GLOBAL NETWORK

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# GLOBAL NETWORK



## HEADQUARTER

### Changwon Technical Center/R&D Center/Factory

153, Jeongdong-ro, Seongsan-gu, Changwon-si, Gyeongsangnam-do, Korea  
(Zip Code : 51533) TEL : +82 55 280 9114 FAX : +82 55 282 9680

### Uiwang Technical Center/R&D Center

37, Cheoldobangmulgwan-ro, Uiwang-si, Gyeonggi-do, Korea  
(Zip Code : 16082) TEL : +82 31 596 8209 FAX : +82 55 210 9804

## OVERSEAS OFFICES

### EUROPE

#### HYUNDAI WIA Machine Tools Europe / Europe R&D Center

Alexander-Fleming-Ring 57, 65428 Rüsselsheim Germany  
TEL : +49-0-6142-9256-0

#### HYUNDAI WIA Russia

Russia, 197374, St. Petersburg, Torfyanaya doroga 7,  
Business center <Gulliver-2>, Office No. 825

### ASIA

#### Beijing HYUNDAI WIA

No.9, West of Shunxi South Road, Renhe Town, Shunyi District, Beijing, China  
TEL : +86-10-6049-6373

#### Beijing Branch Office

1401, Zhonghangji Plaza B, No. 15 Ronghua South Road, BDA Dist, Daxing Dist,  
Beijing, China, 100176  
TEL : +86-10-8453-9850

#### Shandong HYUNDAI WIA

Company No.188 Shanghai Road, Rizhao City, Shandong Province, China  
TEL : +86-633-229-9021

#### Chengdu Branch Office

No.508 Room, B Block, AFC Plaza, No.88 Jiaozui Road, High-tech Zone, Chengdu,  
China  
TEL : +86-28-8666-4470

#### Jiangsu HYUNDAI WIA

Company No.6 Fenghuang Road, Fenghuang Town, Zhangjiagang City, Jiangsu  
Province, China  
TEL : +86-512-5842-2500

#### Qingdao Branch Office

Room 1207, Caifu Building, 182-6 Haier Middle Road, Qingdao, China  
TEL : +86-532-8667-9334

#### HYUNDAI WIA Machine Tools China

1-3F, Bldg6, No.1535 Hongmei Road, Xuhui District, Shanghai, China  
TEL : +86-21-6427-9885

#### India Branch Office

#4/169, 1st Floor, LOTTE BLDG, Rajiv Gandhi Salai, (OMR), Kandanchavadi, Chennai  
- 600096, Tamilnadu, India  
TEL : +91-76-0490-1618

#### HYUNDAI WIA India

48, Sur.No78-80, Kandamangalam Village, Sengadu Post, Sriperumbudur Taluk,  
Kancheepuram, Tamil Nadu-602 105, India  
TEL : +91-44-2715-9302

#### Vietnam Branch Office

Flat number 05, Service and Trade Center of Viet Huong Industrial Zone, Highway  
13, Thuan Giao, Thuan An, Binh Duong, Vietnam  
TEL : +84-3-5399-5099

### AMERICA

#### HYUNDAI WIA Machine America corp.

450 Commerce Blvd, Carlstadt, NJ 07072, USA  
TEL : +1-201-987-7298

#### HYUNDAI WIA America R&D Center

39205 Country Club Drive Suite C-9, Farmington Hills, MI 48331, USA  
TEL : +1-248-324-1057

#### HYUNDAI WIA Mexico

Carretera a Pesquería-Los Ramones KMS 13 al 15 Interior 18 Localidad "La Arena"  
Pesquería C.P.66679, Nuevo León México  
TEL : +52-1-81-1646-5208

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