

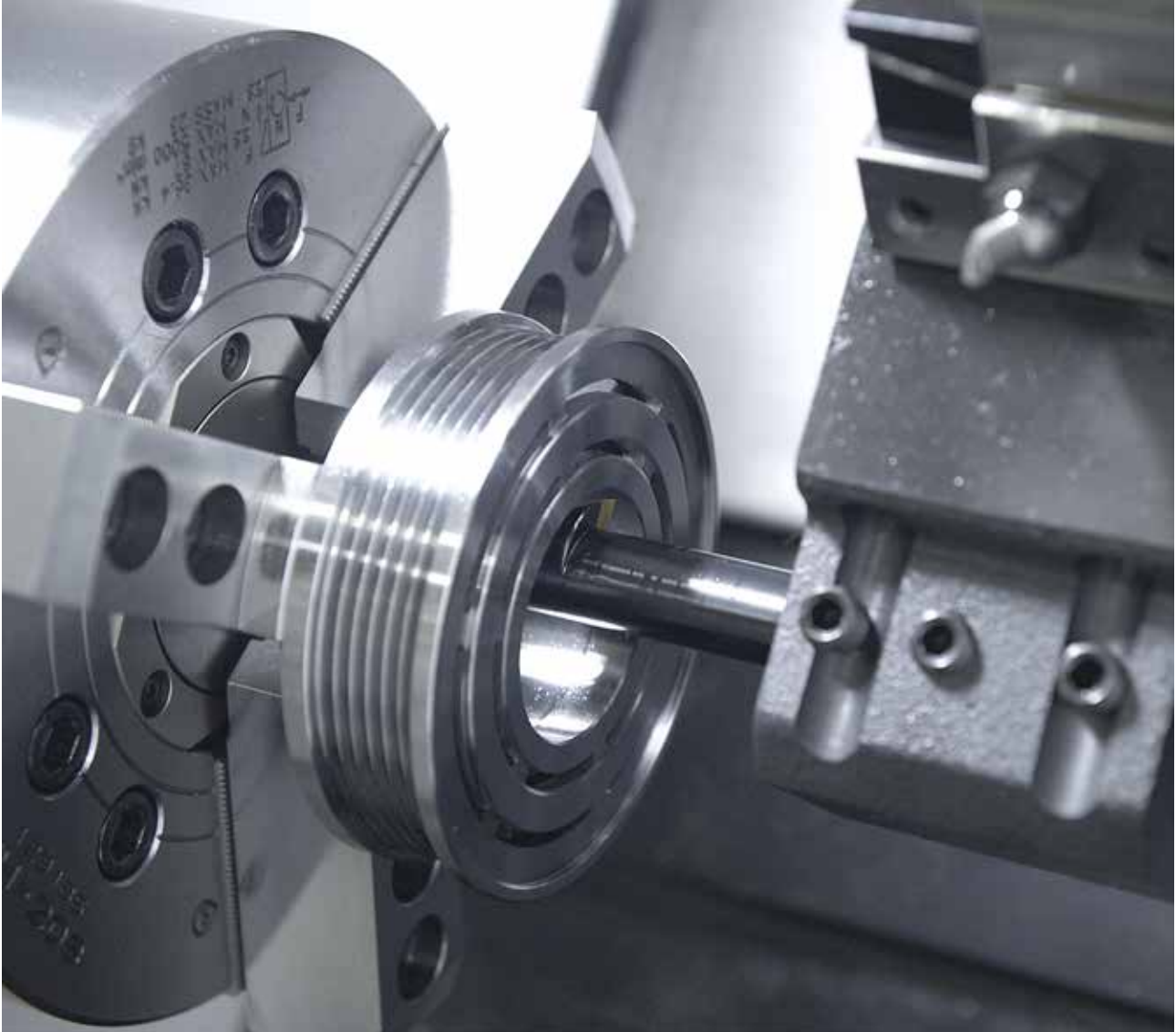
E160 Series

HYUNDAI WIA CNC Turning Center



Technical Leader

The CNC Turning Center E160 Series, designed by Hyundai WIA with years of expertise and the latest technology, maximizes productivity by enhancing both technical performance and economic efficiency.



MODEL	Chuck Size		Bed		Turret		
	6"	8"	Standard	Long	Turn Mill	10 Station	12 Station
E160A	•		•				•
E160C		•	•			•	
E160LA	•			•			•
E160LC		•		•		•	
E160LMA	•			•	•		•
E160LMC		•		•	•		•

High Speed, Rigidity and Productivity
Economical CNC Turning center for next generation.

E160 Series

- 45° slanted one-piece bed structure with high rigidity
- Stabilized unit structure to minimize thermal displacement
- Impressive rapid traverse rate: 30m/min (1,181ipm)
- The most reliable high speed servo turret : 0.1sec/step
- Environmental friendly design
- Compact design suitable for installation in restricted space
- Ergonomic design for convenient access to chuck and tool

E160MA



E160LMA

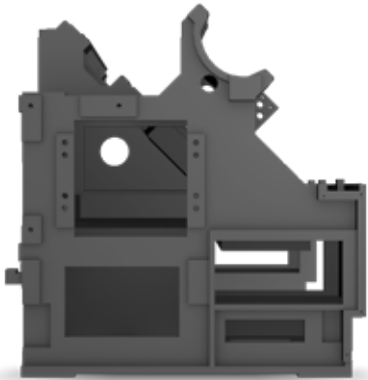


01

E160 Series

Basic Features

The Best Productivity 6 inch / 8 inch Compact CNC Turning Center



01

High Precision, High Rigidity One-piece Structure

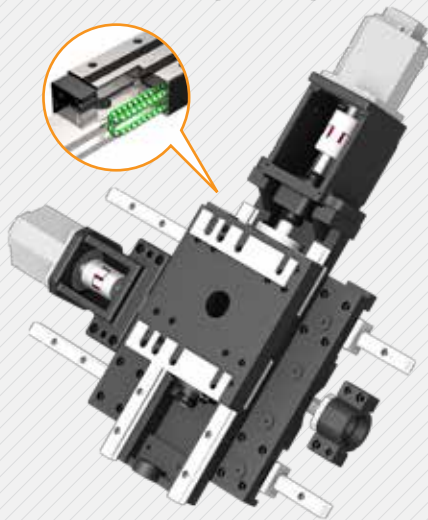
The E160 Series is designed with a 45 degree slanted bed combined with square type and tube type rib structure. This special design enhances rigidity and vibration absorbing capability, allowing powerful cutting with high precision.

LM Guideway

LM guideway with the rapid traverse rate of 30 m/min (1,181ipm) is installed on E160 Series.

LM guideway maintains high precision even after a long periods of operation.

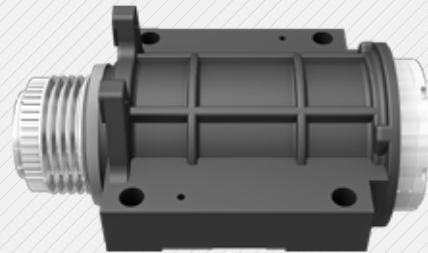
LM guideway's wide surface minimizes attrition and slipping which can occur often during machining.



02

Main Spindle

Heat produced by the main spindle is blocked by applying a symmetric one-piece base and an insulation plate. This enables maintenance of high accuracy even during a long period of machining.



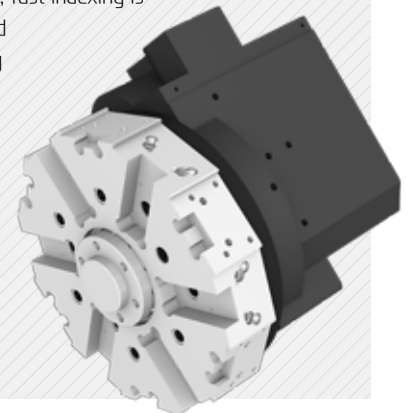
03

Ball Screw

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

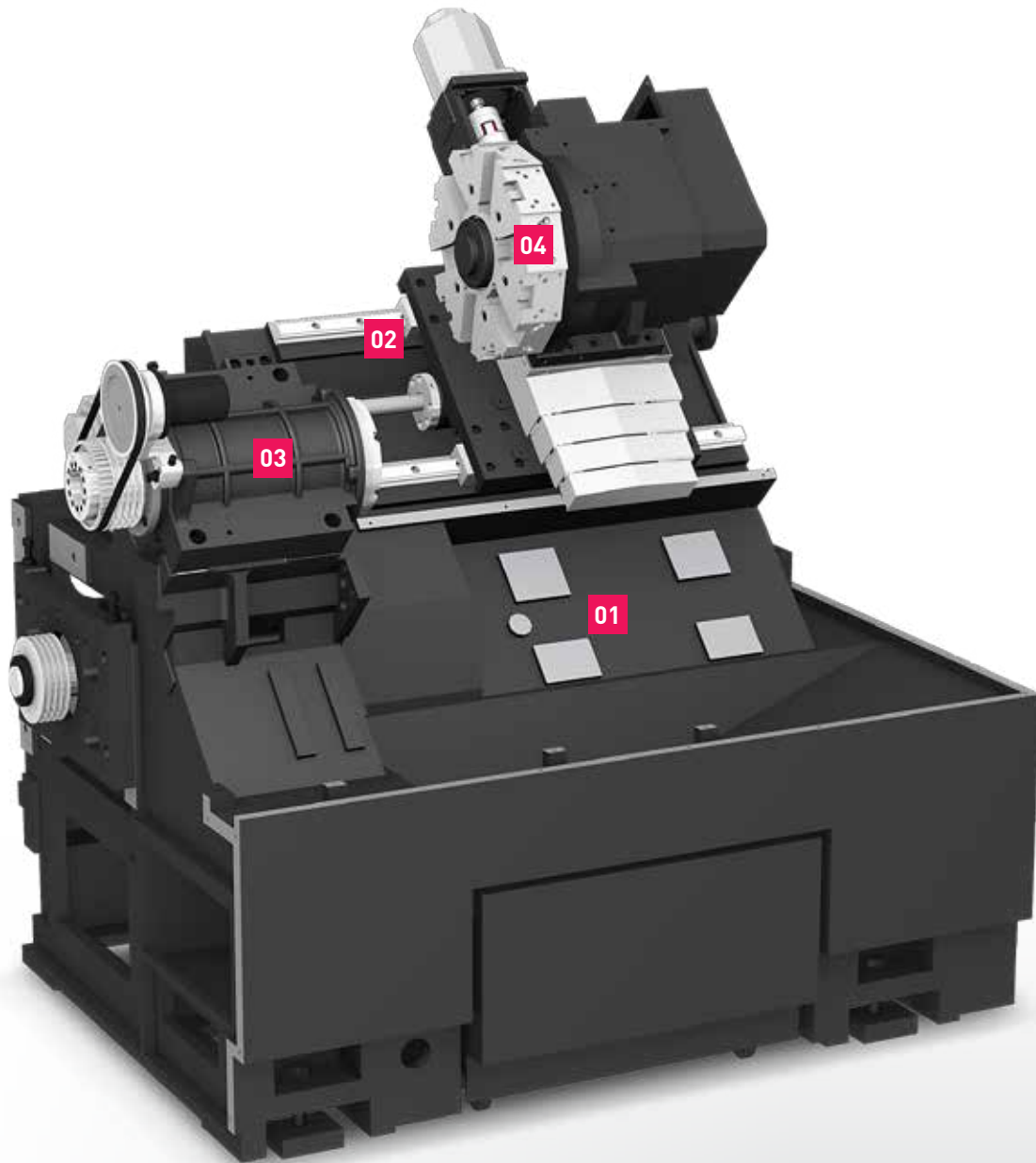
Turret

By installing a servo turret, fast indexing is possible (0.1sec/1step) and productivity is improved by reducing cycle time



04

Basic Features



Reduction of non-cutting time

- ⦿ **Rapid Traverse Rate** (X/Z-axis) : **30/30** m/min (**1,181/1,181** ipm)
- ⦿ **Slideway** : **LM GUIDE**
- ⦿ **Travel** (X/Z-axis)
E160A | E160C : **165/330** mm (**6.5"/13"**) E160LA | E160LC : **165/530** mm (**6.5"/20.9"**)
E160LMA | E160LMC : **165/460** mm (**6.5"/18.1"**)

02

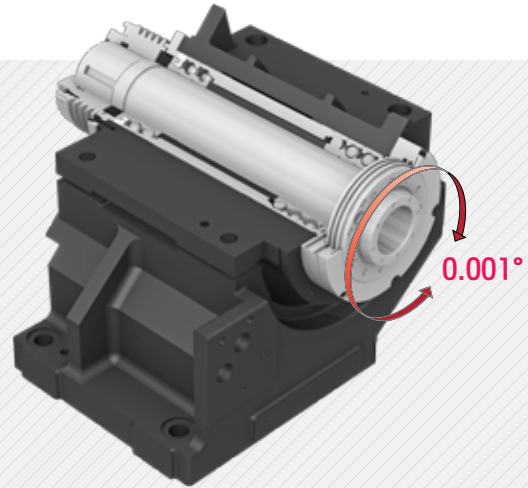
E160 Series

High Precision Spindle

Long Lasting High Accuracy & Excellent Performance
CNC Turning Center

Main Spindle

The E160 Series spindle was designed with a precise and highly rigid spindle structure by adopting a high speed angular ball bearing in the DB array. To ensure good safety in the powerful and heavy cutting, the spindle is designed with an angular bearing structure with P4 class.



C-Axis Control

When milling, drilling and tapping with live tools(VDI turret), spindle control up to 0.001 degree is possible. This allows processing of various types of products.



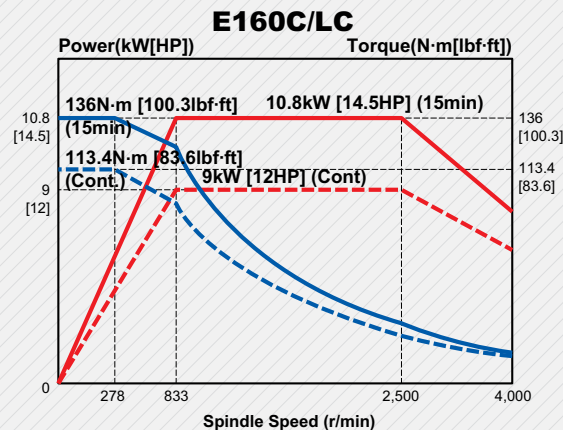
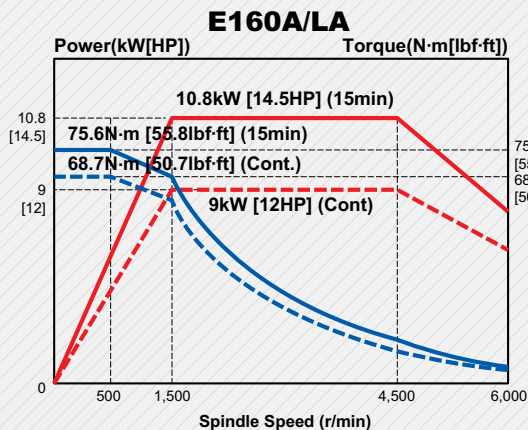
Tail Stock OPTION

Stable machining is possible with the 80mm(3.1") movable tailstock. (Long Bed : Standard)

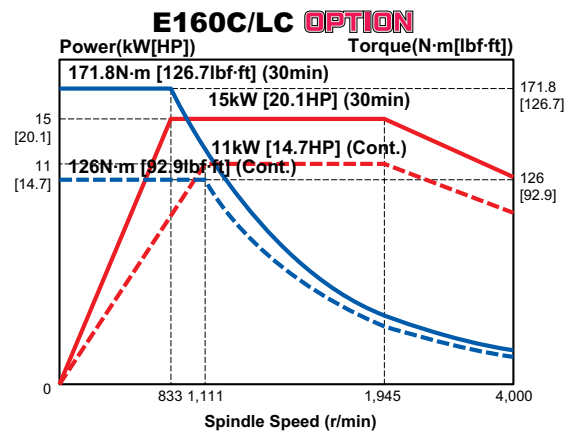
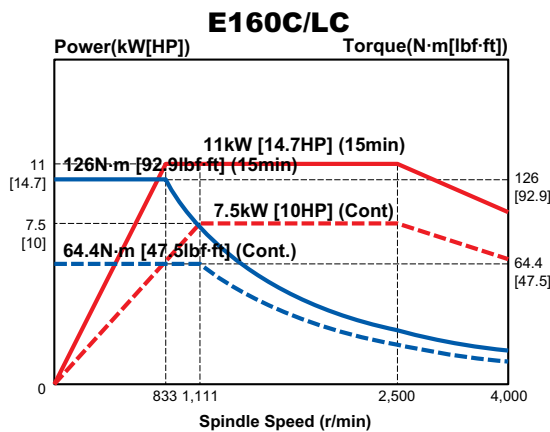
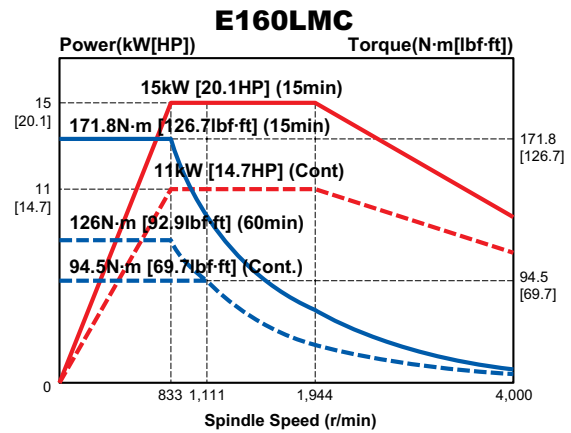
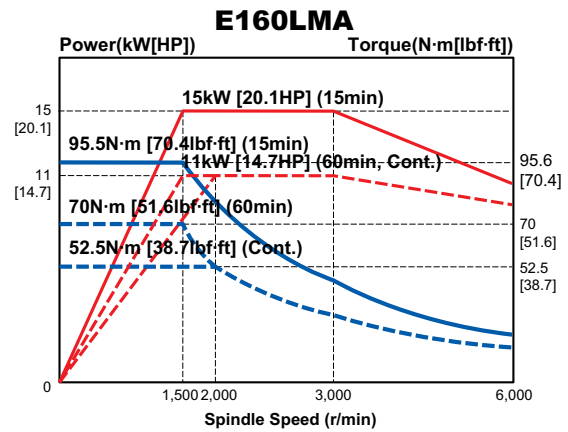
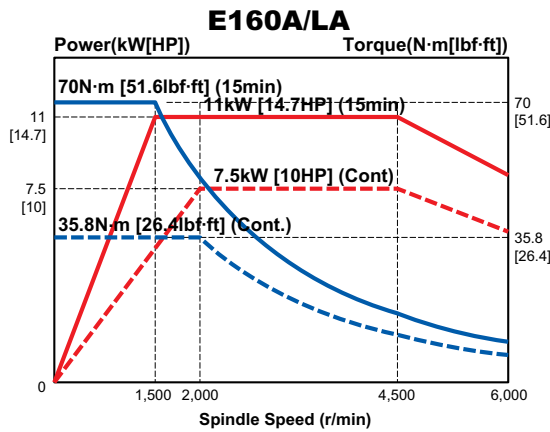
Taper : MT #4 Travel : 80 mm (3.1") Diameter : Ø55 (2.2")

HYUNDAI-ITROL SIEMENS 1PH8 Servo Motor

The 1PH8 Series is a high quality performance motor providing concentricity of 10µm and fast response time.



FANUC Spindle Motor



n3

E160 Series

Servo Turret

High speed, High Accuracy, Highly Reliable
Servo Turret



Turret

Continued accuracy of the turret indexing position is maintained by a powerful, high speed servo motor. The 3 piece coupling and non-lift method applied design prevents foreign material from getting into the turret.

Mill Turret (VDI)

By adopting 3-piece coupling, it ensures powerful clamping and turret indexing and tool rotation is done by a single motor.

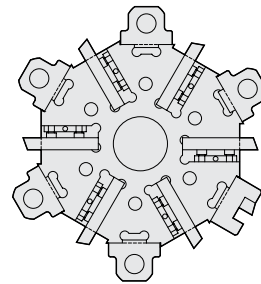
VDI method makes tool change easier and especially reduces tool change time so that it offers a great convenience.



Mill Tool Holder

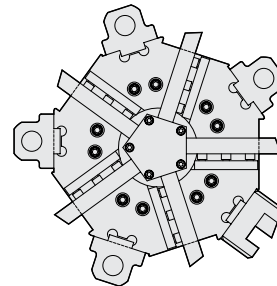
Straight Milling Head and Angular Milling Head live tools can be utilized to cut sides and inner diameters of workpieces.

Also, Drill, Tap, Endmill and many more tools can be utilized to enhance productivity and efficiency.



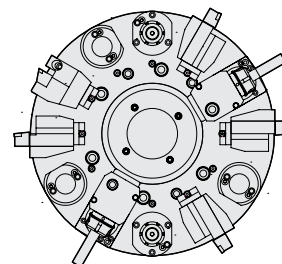
E160A | LA

- Number of Tools : **12** EA
- Tool Size (O.D/I.D)
□ **20/Ø32** (□ **0.8"/Ø1.2"**)
- Indexing Time : **0.1** sec/step



E160C | LC

- Number of Tools : **10** EA
- Tool Size (O.D/I.D)
□ **25 / Ø32** (□ **1"/Ø1.2"**)
- Indexing Time : **0.1** sec/step



E160LMA | LMC
(Mill Turret)

- Output (Max./Cont.) :
8.8 / 3 kW (**11.8 / 4** HP)
- Speed (rpm) : **4,500** r/min
- Collet Size : **Ø16 (Ø0.6") (ER25)**
- Type : **VDI 30**

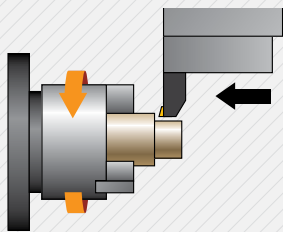
n4
E160 Series

Machining Capability

Excellent Performance, High Accuracy Cutting
CNC Turning Center



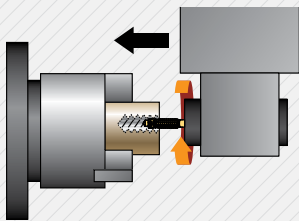
E160LMA



O.D Cutting

(Material(JIS):S45C(Carbon steel))

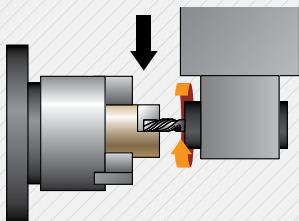
Processing diameter	Ø41 (Ø1.6")
Side cutting depth	4 mm (0.16")
Cutting speed	150 m/min (5,906 ipm)
Spindle rpm	1,165 r/min
Forwarding speed	0.3 mm/rev. (0.01"/rev.)
Chip discharge	180 cc/min



Tapping

(Material(JIS):S45C(Carbon steel))

Processing depth	15 mm (0.59")
Tap spec / pitch	M10/1.5
Cutting speed	6 m/min (236.2")
Tool rotation	200 r/min
Forwarding speed	1.5 mm/rev (Ø0.06")



End Mill

(Material(JIS):S45C(Carbon steel))

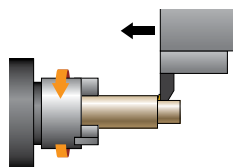
Processing depth	8 mm (0.31")
Tool Bore	Ø16 (0.63")
Cutting speed	35 m/min (1,378")
Tool rotation	700 r/min
Forwarding speed	0.05 mm/rev (0.0019")
Chip discharging amount	18 cc/min

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

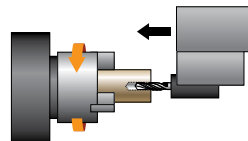
Sample Workpieces



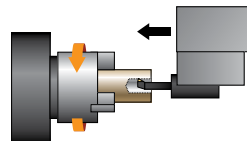
Machining Variation



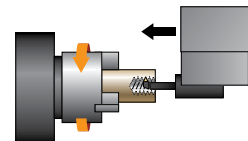
O.D Cutting



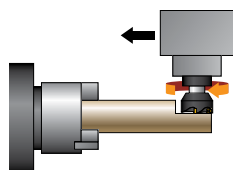
Drilling



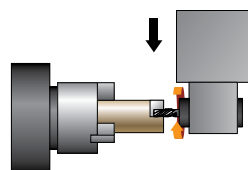
I.D Cutting



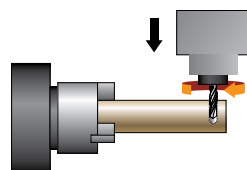
I.D Threading



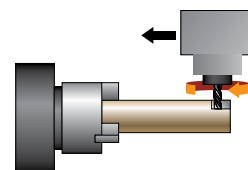
Face Cutting



End Milling



O.D Hole Drilling



Ball-End Milling

05

E160 Series

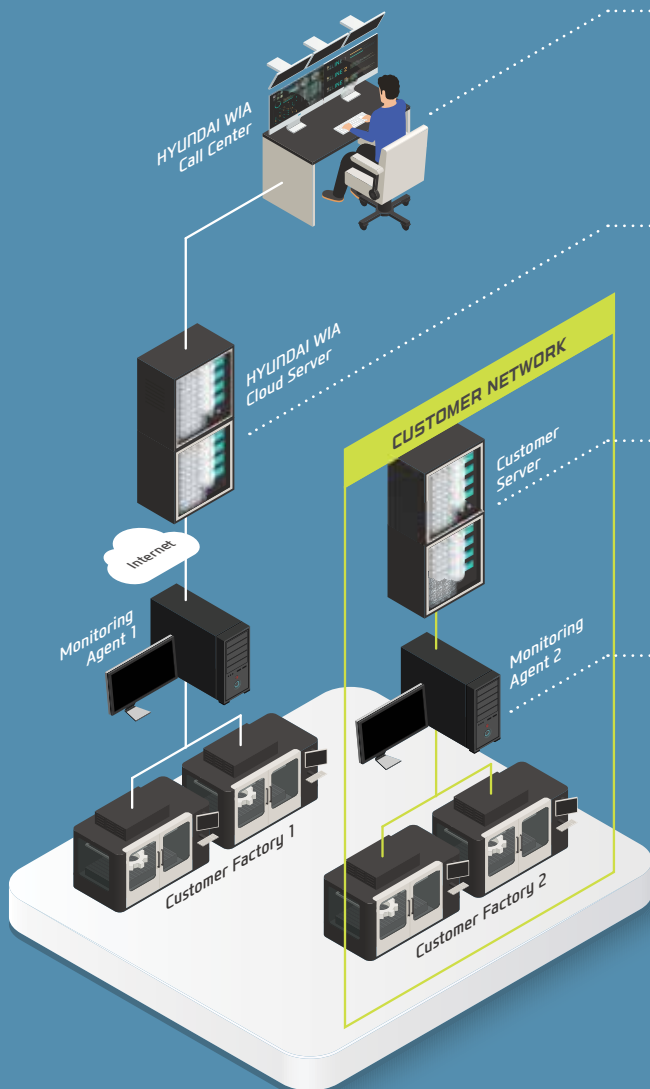
iRiS HYUNDAI WIA Smart Factory Solution

integrated Revolution of industrial Solution

iRiS is HYUNDAI WIA's Smart Factory Solution.

iRiS, HYUNDAI WIA's revolutionary smart factory solution, consists of **Smart Monitoring System** for integrated management of HYUNDAI WIA machines around the world, and the **Smart Machining System** with ease, quality control, productivity and safety of the operator in mind.

SMART MONITORING



HW-MMS Remote (Remote service based)

Hyundai Wia Call Center's remote diagnosis service provides a HMI/video diagnostic function.



HW-MMS Cloud (Cloud server based)

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



HW-MMS Edge (Customer Server Based)

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



HW-MMS Collector (Machine data collector)

A dedicated program for collecting CNC data for MES/ERP.

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.

SMART MACHINING



HW-MCG
HYUNDAI WIA
Machine Guidance

Software that offers operation, maintenance, management monitoring and various user friendly features.



HW-TDC
HYUNDAI WIA Thermal
Displacement Compensation

Software that measures the changes in the external environment as well as heat emission during processing to help reduce thermal displacement.



HW-TM
HYUNDAI WIA
Tool Monitoring

A tool monitoring software which analyzes the load of the spindle motor to determine and monitor possible damage of tools.



HW-ESS
HYUNDAI WIA
Energy Saving System

An environmental friendly software that reduces the unnecessarily wasted standby power waiting for an operation.



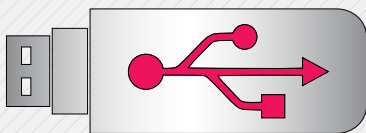
HW-DPRO
HYUNDAI WIA
Dialogue PROgram

Software to create machining program easily and quickly through interactive operation



HW-eDNC
HYUNDAI WIA ethernet
Direct Numerical Control

This software allows transmission of NC data between PC and a machine's CNC. The processing programs can be managed on the PC through the ethernet or serial communication.



USB Port

Convenience is increased when inputting and outputting program. The USB port is available in addition to the former input output methods such as CF memort card and LAN.

n6
E160 Series

HYUNDAI-iTROL

The Powerful CNC Platform for Machine Tools



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.



Energy Saving & **ECO System**



Energy Saving System

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

HYUNDAI Intelligent Control

Convenient and Easy-to-Use Machine Tool...

Hyundai WIA take operator convenience to a higher level with the new controller, HYUNDAI-iTROL. Experience the new operating environment with HYUNDAI-iTROL.



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

Dynamic servo control, highly efficient Siemens servo drive and Siemens servo motor with durability and quick response have been applied.



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.



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.



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.



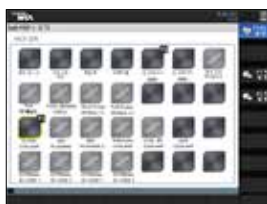
Tailstock Management

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



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 NC file or to CF card (MS Excel compatible format)



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.

Shop Turn

OPTION



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

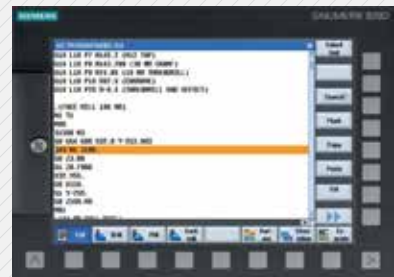
3D Simulation

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)

07

E160 Series

User Convenience



Various Devices for User Convenience

Bar Feeder System

Bar Feeder

Bar feeder system enables automation which leads to efficiency improvement.

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



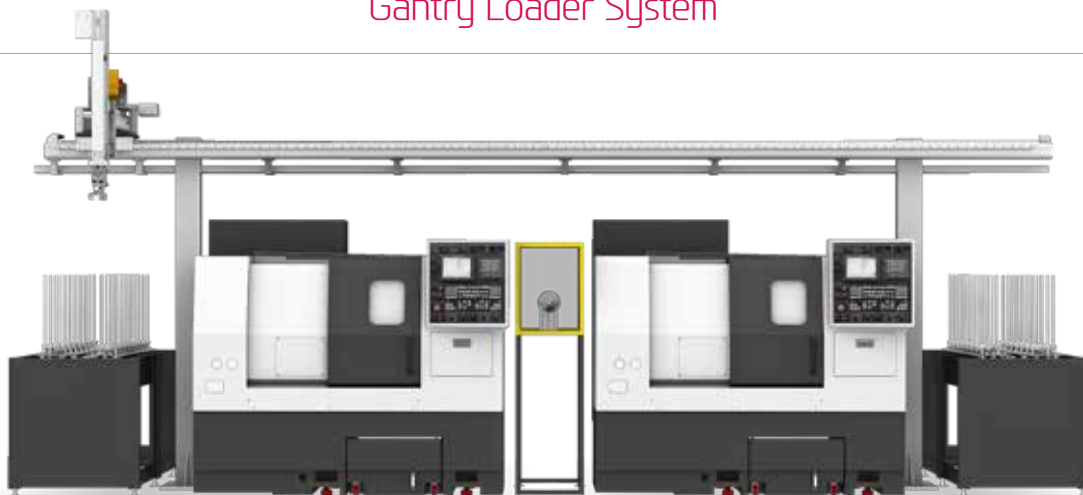
Parts Conveyor

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



Optional

Gantry Loader System



Gantry Loader Machining Process

The high speed gantry loaders and the work stocker allow the implementation of automation cells. This enables machining process flexibility and productivity enhancement.



SPECIFICATIONS

Standard & Optional

Spindle		E160A	E160C
Main Spindle	6"	●	-
Hollow Chuck 3 Jaw	8"	○	●
Main Spindle	6"	○	-
Solid Chuck 3 Jaw	8"	-	○
Standard Soft Jaw (1set)		●	●
Chuck Clamp Foot Switch		●	●
2 Steps Hyd. Pressure Device		○	○
Spindle Inside Stopper		☆	☆
5° Index		☆	☆
C-Axis (0.001")		-	-
Chuck Open/Close Confirmation Device		○ (CE:●)	○ (CE:●)
2 Steps Chuck Foot Switch		☆	☆
Turret			
Tool Holder		●	●
Mill Turret	VDI	-	-
Straight Milling Head (Axial)	Collet Type,1ea	-	-
Angular Milling Head (Radial)	Collet Type,1ea	-	-
Straight Milling Head (Axial)	Adapter Type	-	-
Angular Milling Head (Radial)	Adapter Type	-	-
Boring Sleeve		●	●
Drill Socket		●	●
U-Drill Holder		○	○
U-Drill Holder Sleeve		○	○
O.D Extension Holder	For Outside Diameter	☆	☆
Angle Head		-	-
Tail Stock & Steady Rest			
Quill Type Tail Stock		○	○
Programmable Tail Stock		-	-
Manual Type Hyd. Steady Rest		-	-
Standard Live Center (Tail Stock : Standard)		○	○
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)		☆	☆
Thru Coolant for Live Tool		-	-
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	0.4Bar (5.8 psi)	●	●
	6Bar (87 psi)	○	○
Power Coolant System (For Automation)		☆	☆
Coolant Chiller		☆	☆
Chip Disposal			
Coolant Tank	130 ℓ (34.3 gal)	●	●
	150 ℓ (39.6 gal)	○	○
Chip Conveyor (Hinge/Scraper)	Rear (Rear)	○	○
	Front (Right)	-	-
	Rear (Right)	○	○
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

Safety Device		E160A	E160C
Total Splash Guard		●	●
Chuck hydraulic pressure maintenance interlock		○ (CE:●)	○ (CE:●)
Electric Device			
Call Light	1 Color : ■	●	●
Call Light	2 Color : ■ ■	○	○
Call Light	3 Color : ■ ■ ■	○	○
Call Light & Buzzer	3 Color : ■ ■ ■ 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	20kVA	○	○
Auto Power Off		○	○
Measurement			
Q-Setter		○	○
Automatic Q-Setter		○	○
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 Pannel		☆	☆
Bar Feeder Interface		○	○
Bar Feeder (FEDEK)		☆	☆
Extra M-Code 4ea		○	○
Automation Interface		☆	☆
I/O Extension (IIN & OUT)	16 Contact	○	○
	32 Contact	○	○
Parts Catcher	Main SP.	○	○
Turret Work Pusher (For Automation)		☆	☆
Parts Conveyor		☆	☆
Semi Automation System		☆	☆
Hyd. Device			
Standard Hyd. Cylinder	Hollow	●	●
Standard Hyd. Unit	35bar (507.6 psi)/ 15 ℓ (4 gal)	●	●
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)		○	○
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.

SPECIFICATIONS

Standard & Optional

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

Spindle		E160LA	E160LC
Main Spindle	6"	●	-
Hollow Chuck 3 Jaw	8"	○	●
Main Spindle	6"	○	-
Solid Chuck 3 Jaw	8"	-	○
Standard Soft Jaw (1set)		●	●
Chuck Clamp Foot Switch		●	●
2 Steps Hyd. Pressure Device		○	○
Spindle Inside Stopper		☆	☆
5° Index		☆	☆
C-Axis (0.001°)		-	-
Chuck Open/Close Confirmation Device		○(CE:●)	○(CE:●)
2 Steps Chuck Foot Switch		☆	☆
Turret			
Tool Holder		●	●
Mill Turret	VDI	-	-
Straight Milling Head (Axial)	Collet Type,1ea	-	-
Angular Milling Head (Radial)	Collet Type,1ea	-	-
Straight Milling Head (Axial)	Adapter Type	-	-
Angular Milling Head (Radial)	Adapter Type	-	-
Boring Sleeve		●	●
Drill Socket		●	●
U-Drill Holder		○	○
U-Drill Holder Sleeve		○	○
O.D Extension Holder	For Outside Diameter	☆	☆
Angle Head		-	-
Tail Stock & Steady Rest			
Quill Type Tail Stock		●	●
Programmable Tail Stock		-	-
Manual Type Hyd. Steady Rest		-	-
Standard Live Center		●	●
High Precession 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)		☆	☆
Thru Coolant for Live Tool		-	-
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	0.4Bar (5.8 psi)	●	●
	6Bar (87 psi)	○	○
Power Coolant System (For Automation)		☆	☆
Coolant Chiller		☆	☆
Chip Disposal			
Coolant Tank	130 ℓ (34.3 gal)	●	●
	150 ℓ (39.6 gal)	○	○
Chip Conveyor (Hinge/Scraper)	Rear (Rear)	○	○
	Front (Right)	-	-
	Rear (Right)	○	○
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	☆	☆

Safety Device		E160LA	E160LC
Total Splash Guard		●	●
Chuck hydraulic pressure maintenance interlock		○(CE:●)	○(CE:●)
Electric Device			
Call Light	1 Color : ■	●	●
Call Light	2 Color : ■ ■	○	○
Call Light	3 Color : ■ ■ ■	○	○
Call Light & Buzzer	3 Color : ■ ■ ■ 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	20KVA	○	○
Auto Power Off		○	○
Measurement			
Q-Setter		○	○
Automatic Q-Setter		○	○
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)		○	○
MQL (Minimal Quantity Lubrication)		☆	☆
Fixture & Automation			
Auto Door		○	○
Auto Shutter (Only for Automatic System)		☆	☆
Sub Operation Panel		☆	☆
Bar Feeder Interface		○	○
Bar Feeder (FEDEK)		☆	☆
Extra M-Code 4ea		○	○
Automation Interface		☆	☆
I/O Extension (IN & OUT)	16 Contact	○	○
	32 Contact	○	○
Parts Catcher	Main SP.	○	○
Turret Work Pusher (For Automation)		☆	☆
Parts Conveyor		☆	☆
Semi Automation System		☆	☆
Hyd. Device			
Standard Hyd. Cylinder	Hollow	●	●
Standard Hyd. Unit	35bar (507.6 psi)/ 15 ℓ (4 gal)	●	●
S/W			
Machine Guidance (HW-MCG)		●	●
Energy Saving System (HW-ESS)		●	●
Tool Monitoring (HW-TM)		○	○
Spindle Heat Distortion Compensation(HW-TDC)		○	○
DNIC software (HW-eDNC)		○	○
Machine Monitoring System (HW-MMS)		○	○
Conversational Program (HW-DPRO)		○	○
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.

SPECIFICATIONS

Standard & Optional

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

Spindle		E160LMA	E160LMC
Main Spindle	6"	●	-
Hollow Chuck 3 Jaw	8"	○	●
Main Spindle	6"	○	-
Solid Chuck 3 Jaw	8"	-	○
Standard Soft Jaw (1set)		●	●
Chuck Clamp Foot Switch		●	●
2 Steps Hyd. Pressure Device		○	○
Spindle Inside Stopper		☆	☆
5" Index		-	-
C-Axis (0.001")		●	●
Chuck Open/Close Confirmation Device		○ (CE:●)	○ (CE:●)
2 Steps Chuck Foot Switch		☆	☆
Turret			
Tool Holder		●	●
Mill Turret	VDI	●	●
Straight Milling Head (Axial)	Collet Type,1ea	●	●
Angular Milling Head (Radial)	Collet Type,1ea	●	●
Straight Milling Head (Axial)	Adapter Type	-	-
Angular Milling Head (Radial)	Adapter Type	-	-
Boring Sleeve		●	●
Drill Socket		●	●
U-Drill Holder		○	○
U-Drill Holder Sleeve		○	○
O.D Extension Holder	For Outside Diameter	-	-
Angle Head		☆	☆
Tail Stock & Steady Rest			
Quill Type Tail Stock		●	●
Programmable Tail Stock		-	-
Manual Type 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)		☆	☆
Thru Coolant for Live Tool		-	-
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	0.4Bar (5.8 psi)	●	●
	6Bar (87 psi)	○	○
Power Coolant System (For Automation)		☆	☆
Coolant Chiller		☆	☆
Chip Disposal			
Coolant Tank	130 ℓ (34.3 gal)	●	●
	150 ℓ (39.6 gal)	○	○
Chip Conveyor (Hinge/Scraper)	Rear (Rear)	○	○
	Front (Right)	-	-
	Rear (Right)	○	○
Special Chip Conveyor (Drum Filter)		☆	☆
	Standard (180 ℓ [47.5 gal])	○	○
	Swing (200 ℓ [52.8 gal])	○	○
Chip Wagon	Large Swing (290 ℓ [76.6 gal])	○	○
	Large Size (330 ℓ [87.2 gal])	○	○
	Customized	☆	☆

Safety Device		E160LMA	E160LMC
Total Splash Guard		●	●
Chuck hydraulic pressure maintenance interlock		○ (CE:●)	○ (CE:●)
Electric Device			
Call Light	1 Color : ■	●	●
Call Light	2 Color : ■ ■	○	○
Call Light	3 Color : ■ ■ ■	○	○
Call Light & Buzzer	3 Color : ■ ■ ■ 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	20kVA	○	○
Auto Power Off		○	○
Measurement			
Q-Setter		○	○
Automatic Q-Setter		○	○
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 Pannel		☆	☆
Bar Feeder Interface		○	○
Bar Feeder (FEDEK)		☆	☆
Extra M-Code 4ea		○	○
Automation Interface		☆	☆
I/O Extension (IIN & OUT)	16 Contact	○	○
	32 Contact	○	○
Parts Catcher	Main SP.	○	○
Turret Work Pusher (For Automation)		☆	☆
Parts Conveyor		☆	☆
Semi Automation System		☆	☆
Hyd. Device			
Standard Hyd. Cylinder	Hollow	●	●
Standard Hyd. Unit	35bar (507.6 psi)/ 15 ℓ (4 gal)	●	●
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)		○	○
ETC			
Tool Box		●	●
Customized Color	Need Munsel No.	☆	☆
CAD & CAM		☆	☆

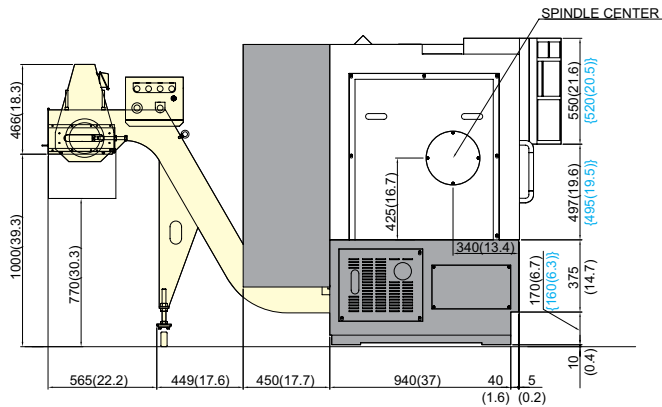
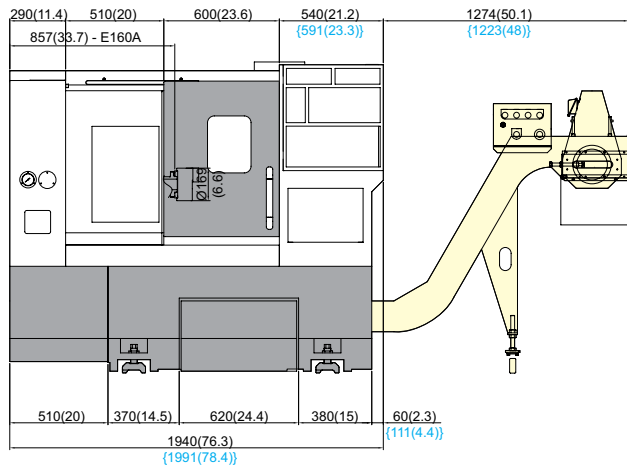
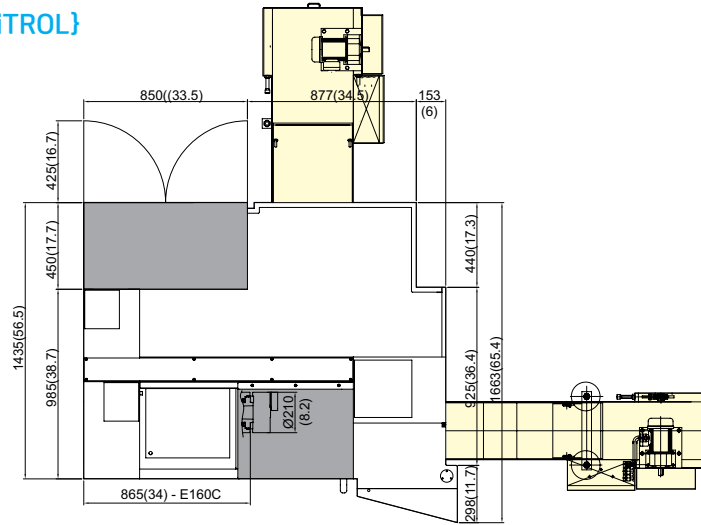
❖ 4 channel of TDC(Thermal Displacement Compensation) device is recommended, when more than 6 bar of high pressure coolant is applied, for the high quality machining.
Specifications are subject to change without notice for improvement.

SPECIFICATIONS

External Dimensions

unit : mm(in)

E160C/A {HYUNDAI-iTROL}

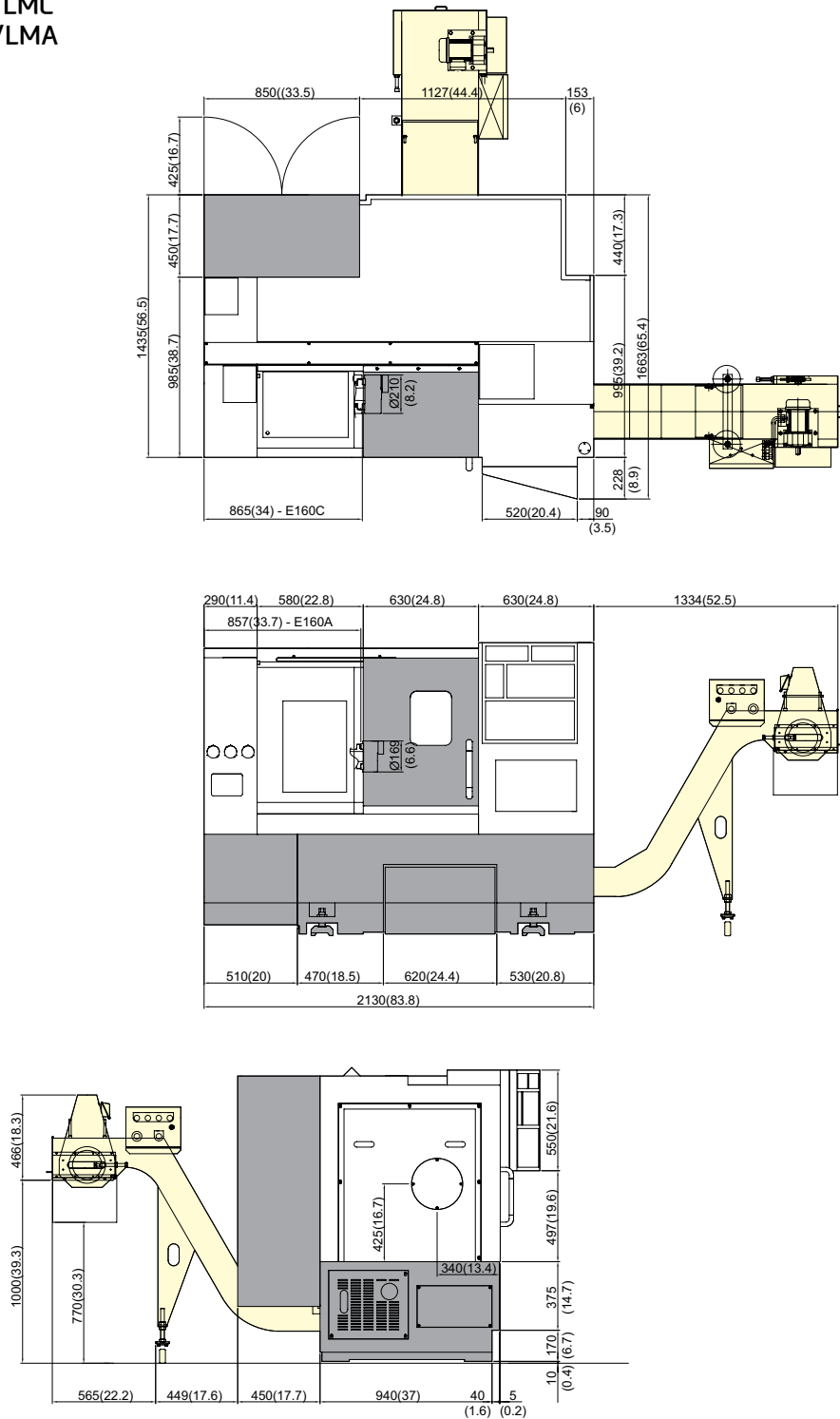


SPECIFICATIONS

External Dimensions

unit : mm(in)

E160LC/LMC
E160LA/LMA

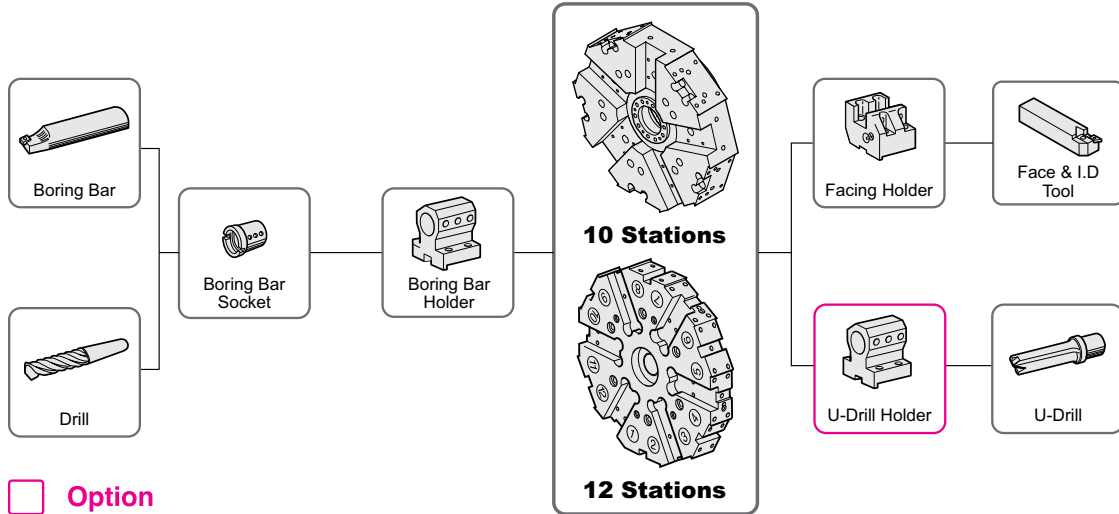


SPECIFICATIONS

Tooling System

unit : mm

E160A/LA
E160C/LC



Option

Tooling Parts Detail

ITEM			E160A		E160C		E160LA		E160LC	
			mm Unit	inch Unit	mm Unit	inch Unit	mm Unit	inch Unit	mm Unit	inch Unit
Turning Holder	O.D Holder	Right/Left	-	-	-	-	-	-	-	-
		Extension	Opt	-	-	-	-	-	-	-
	Facing Holder		1	1	1	1	1	1	1	1
Boring Holder	I.D Holder	Single	5	5	4	4	5	5	4	4
		Single : $\varnothing 40$ ($\varnothing 1\ 1/2''$)	-	-	Opt	-	Opt	-	Opt	-
	U-Drill Holder	$\varnothing 20$ ($\varnothing 3/4''$)	-	-	Opt	-	Opt	-	Opt	-
		$\varnothing 25$ ($\varnothing 1''$)	-	-	Opt	-	Opt	-	Opt	-
		$\varnothing 32$ ($\varnothing 1\ 1/4''$)	-	-	-	Opt	-	Opt	-	-
Socket	Boring	$\varnothing 8$ ($\varnothing 5/16''$)	1	1	1	1	1	1	1	1
		$\varnothing 10$ ($\varnothing 3/8''$)	1	1	1	1	1	1	1	1
		$\varnothing 12$ ($\varnothing 1/2''$)	1	1	1	1	1	1	1	1
		$\varnothing 16$ ($\varnothing 5/8''$)	1	1	1	1	1	1	1	1
		$\varnothing 20$ ($\varnothing 3/4''$)	1	1	1	1	1	1	1	1
		$\varnothing 25$ ($\varnothing 1''$)	Opt	1	Opt	1	Opt	1	Opt	1
	Drill	MT 1	1	-	1	-	1	-	1	-
ER Collet		-	-	-	-	-	-	-	-	

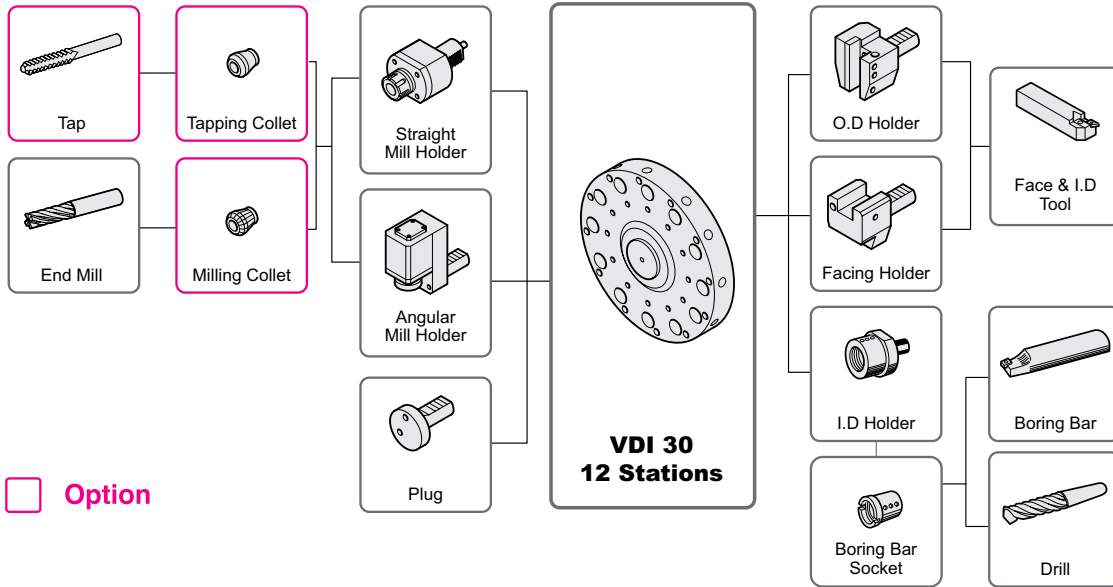
Specifications are subject to change without notice for improvement.

SPECIFICATIONS

Tooling System

unit : mm(in)

E160LMA
E160LMC



Tooling Parts Detail

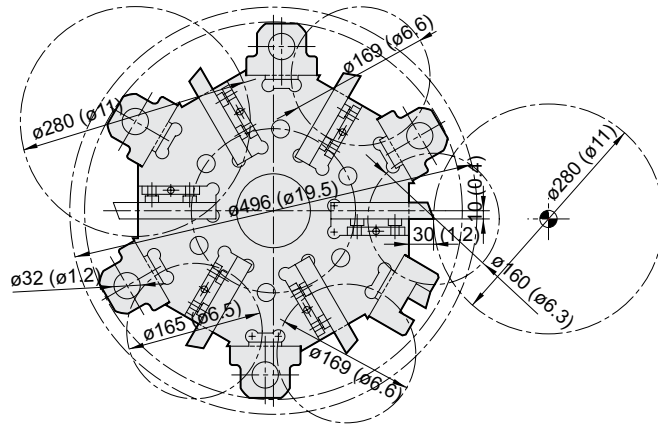
ITEM			E160LMA/LMC	
			mm Unit	inch Unit
Turning Holder	O.D Holder	Right/Left	4	4
	Facing Holder		1	1
Boring Holder	I.D Holder	Single	3	3
		Single : $\varnothing 40$ ($\varnothing 1\ 1/2''$)	-	-
	U-Drill Holder	$\varnothing 20$ ($\varnothing 3/4''$)	-	-
		$\varnothing 25$ ($\varnothing 1''$)	-	-
Driven Holder	Straight Mill Holder	Standard	1	1
	Angular Mill Holder	Standard	1	1
Socket	Boring	$\varnothing 8$ ($\varnothing 5/16''$)	1	1
		$\varnothing 10$ ($\varnothing 3/8''$)	1	1
		$\varnothing 12$ ($\varnothing 1/2''$)	1	1
		$\varnothing 16$ ($\varnothing 5/8''$)	1	1
		$\varnothing 20$ ($\varnothing 3/4''$)	1	1
	Drill	MT 1	-	-
	ER Collet		Opt	Opt

SPECIFICATIONS

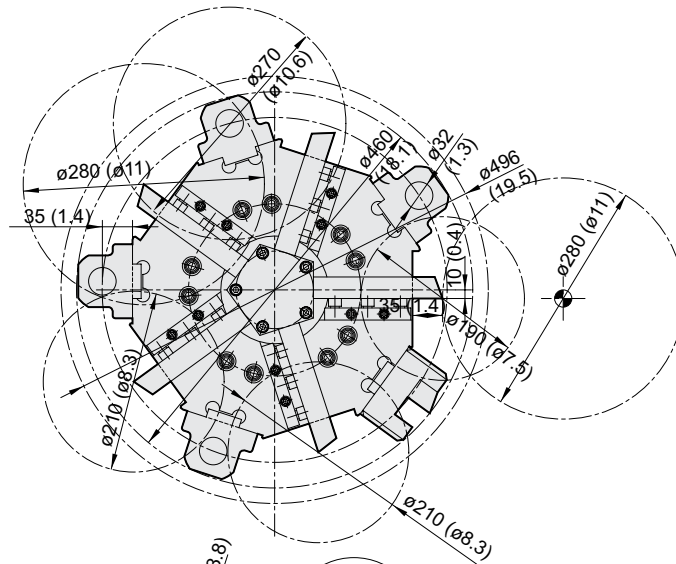
Interference

unit : mm(in)

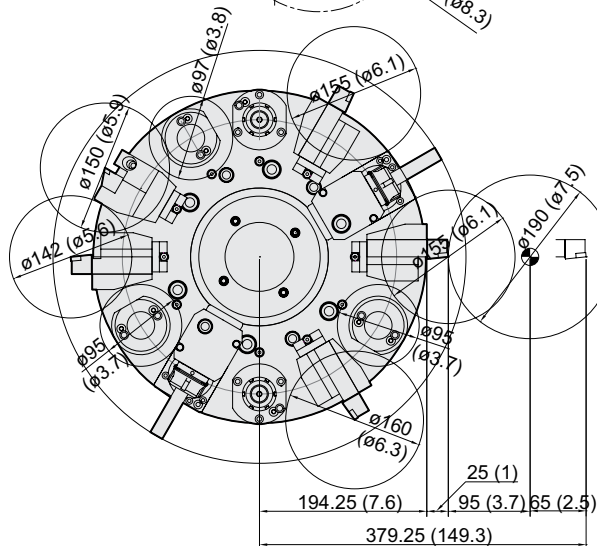
E160A/LA



E160C/LC



E160LMA/LMC



SPECIFICATIONS

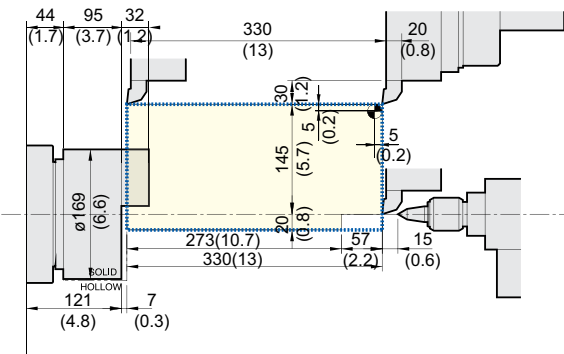
Tooling Travel Range

unit : mm(in)

With Tail Stock
 Without Tail Stock

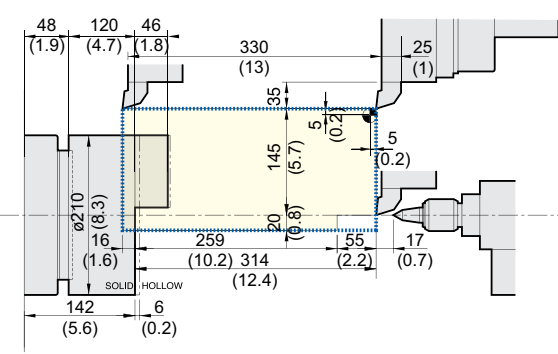
E160A

OD tool

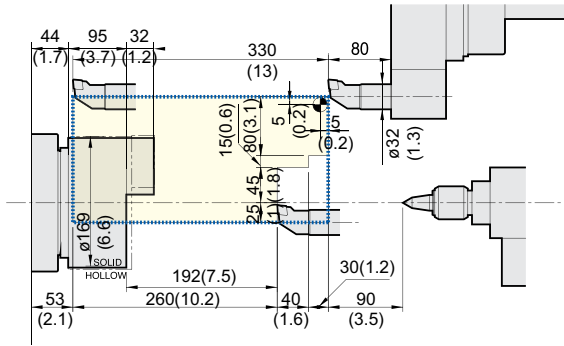


E160C

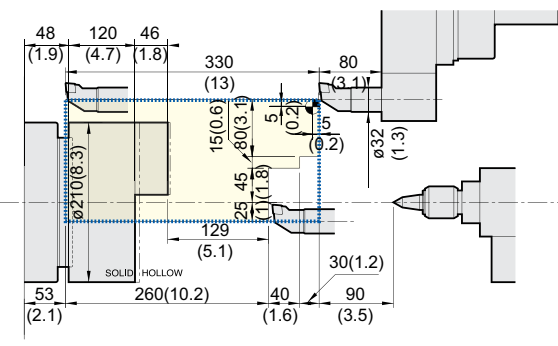
OD tool



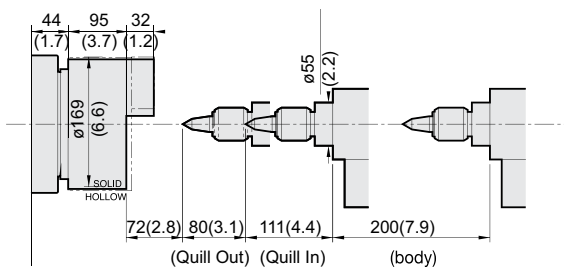
ID tool



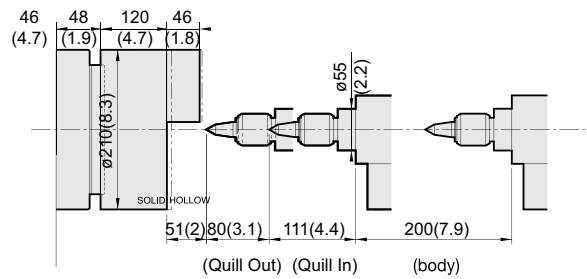
ID tool



Tail stock (Opt.)



Tail stock (Opt.)



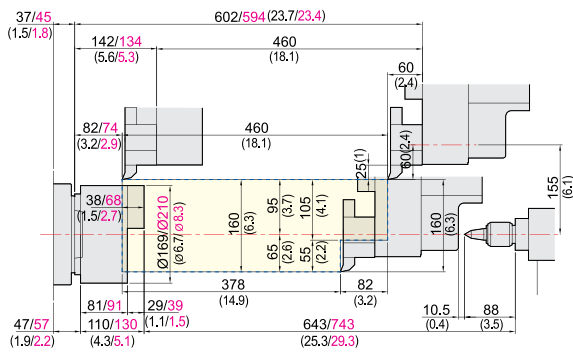
SPECIFICATIONS

Tooling Travel Range

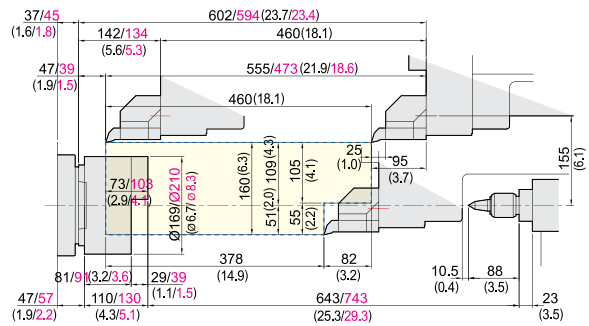
unit : mm(in)

E160LC/LMC E160LA/LMA

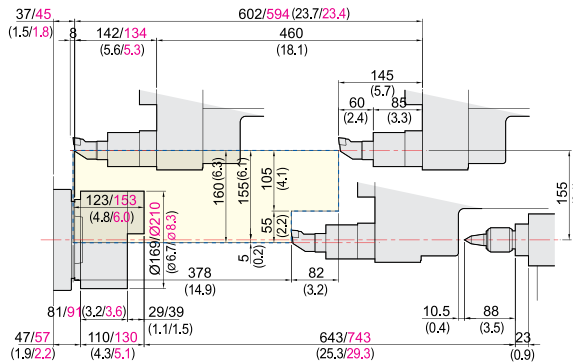
OD tool



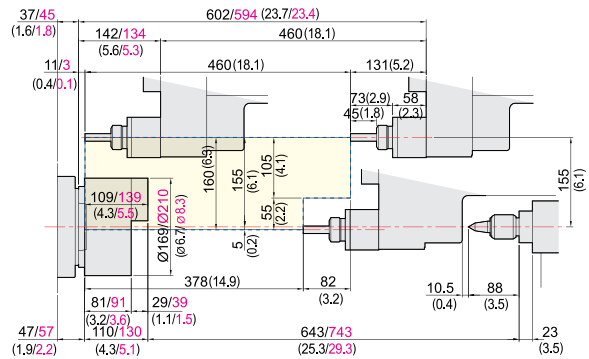
OD tool



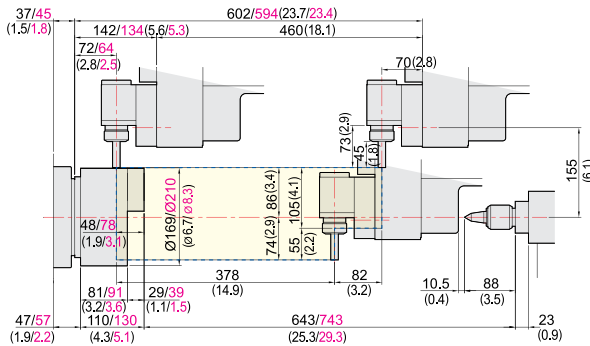
ID tool



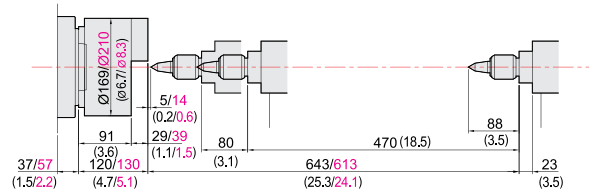
Straight milling head



Angular milling head



Tail stock (Opt.)



SPECIFICATIONS

Specifications

[] : Option

ITEM		E160A	E160LA	E160LMA	
CAPACITY	Swing Over the Bed	mm(in)	Ø480 (18.9")		
	Swing Over the Carriage	mm(in)	Ø285 (11.2")		
	Max. Turning Dia.	mm(in)	Ø280 (11")		
	Max. Turning Length	mm(in)	300 (11.8")	510 (20.1")	450 (17.7")
	Bar Capacity	mm(in)	Ø45 (1.8")		
SPINDLE	Chuck Size	inch	6"		
	Spindle Bore	mm(in)	Ø55 (2.2")		
	Spindle Speed (rpm)	r/min	6,000 [6,000]		
	Motor (Max/Cont.)	kW(HP)	11/7.5 (14.7/10) [10.8/9 (14.5/12)]		
	Torque (Max/Cont.)	N·m(lbf·ft)	70/35.8 (51.6/26.4) [75.6/68.7 (55.8/50.7)]		
	Spindle Type	-	BELT		
	Spindle Nose	-	A2-5		
	C-axis Indexing	deg	-		
FEED	Travel (X/Z/B)	mm(in)	165/330 (6.5"/13")	165/530 (6.5"/20.9")	
	Rapid Traverse Rate (X/Z)	m/min(ipm)	30/30 (1,181/1,181)		
	Slide Type	-	LM GUIDE		
TURRET	No. of Tools	EA	12		
	Tool Size	OD	□ 20 (0.8")		
		ID	Ø32 (1.2")		
	Indexing Time	sec/step	0.1		
LIVE TOOL	Motor (Max/Cont.)	kW(HP)	-	8.8/3.0 (11.8/4)	
	Milling Tool Speed (rpm)	r/min	-	4,500	
	Torque (Max/Cont.)	N·m(lbf·ft)	-	45/20 (33.2/14.8)	
	Collet Size	mm(in)	-	Ø16(0.6") ER25	
	Type	-	-	VDI30	
TAIL STOCK	Taper	-	MT4		
	Quill Dia.	mm(in)	Ø55 (2.2")		
	Quill Travel	mm(in)	80 (3.1")		
	Travel	mm(in)	200 (7.9")	470 (18.5")	
TANK CAPACITY	Coolant Tank	ℓ (gal)	130 (34.3)		
	Lubricating Tank	ℓ (gal)	1.8 (0.5)		
POWER SUPPLY	Electric Power Supply	kVA	13	16	
	Thickness of Power Cable	Sq	Over 16		
	Voltage	V/Hz	220/60 (200/50*)		
MACHINE	Floor Space (L×W)	mm(in)	1,940×1,660 (76.4"×65.4") [1,991×1,660 (78.4"×65.4")]	2,130 × 1,660 (83.9"×65.4")	
	Height	mm(in)	1,602 (63.1")		
	Weight	kg(lb)	2,400 (5,291)	2,840 (6,261)	
PC	Controller	-	HW FANUC i Series [E160A/LA : HYUNDAI-ITROL]		

*) 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.

SPECIFICATIONS

Specifications

[] : Option

ITEM		E160C	E160LC	E160LMC	
CAPACITY	Swing Over the Bed	mm(in)	Ø480 (18.9")		
	Swing Over the Carriage	mm(in)	Ø285 (11.2")		
	Max. Turning Dia.	mm(in)	Ø280 (11")		
	Max. Turning Length	mm(in)	280 (11")	510 (20.1")	450 (17.7")
	Bar Capacity	mm(in)	Ø51 (2")		
SPINDLE	Chuck Size	inch	8"		
	Spindle Bore	mm(in)	Ø62 (2.4")		
	Spindle Speed (rpm)	r/min	4,000 [4,000] [4,000]		
	Motor (Max/Cont.)	kW(HP)	11/7.5 (14.7/10) [15/11 (20.1/14.7)] [10.8/9 (14.5/12)]		
	Torque (Max/Cont.)	N·m(lbf·ft)	126/64.4 (92.9/47.5) [171.8/126 (126.7/92.9)] [136/113.4 (100.3/83.6)]		
	Spindle Type	-	BELT		
	Spindle Nose	-	A2-6		
	C-axis Indexing	deg	-	0.001°	
FEED	Travel (X/Z/B)	mm(in)	165/330 (6.5"/13")	165/530 (6.5"/20.9")	165/460 (6.5"/18.1")
	Rapid Traverse Rate (X/Z)	m/min(ipm)	30/30 (1,181/1,181)		
	Slide Type	-	LM GUIDE		
TURRET	No. of Tools	EA	10		12
	Tool Size	OD	mm(in)	□ 25 (1")	
		ID	mm(in)	Ø32 (1.2")	
	Indexing Time	sec/step	0.1		
LIVE TOOL	Motor (Max/Cont.)	kW(HP)	-	8.8/3.0 (11.8/4)	
	Milling Tool Speed (rpm)	r/min	-	4,500	
	Torque (Max/Cont.)	N·m(lbf·ft)	-	45/20 (33.2/14.8)	
	Collet Size	mm(in)	-	Ø16(0.6") ER25	
	Type	-	-	VDI30	
TAIL STOCK	Taper	-	MT4		
	Quill Dia.	mm(in)	Ø55 (2.2")		
	Quill Travel	mm(in)	80 (3.1")		
	Travel	mm(in)	200 (7.9")	470 (18.5")	
TANK CAPACITY	Coolant Tank	ℓ (gal)	130 (34.3)		
	Lubricating Tank	ℓ (gal)	1.8 (0.5)		
POWER SUPPLY	Electric Power Supply	kVA	13		16
	Thickness of Power Cable	Sq	Over 16		
	Voltage	V/Hz	220/60 (200/50*)		
MACHINE	Floor Space (L×W)	mm(in)	1,940×1,660 (76.4"×65.4") [1,991×1,660 (78.4"×65.4")]	2,130 x 1,660 (83.9"×65.4")	
	Height	mm(in)	1,602 (63.1")		
	Weight	kg(lb)	2,500 (5,511)	2,930 (6,459)	
PC	Controller	-	HW FANUC i Series [E160C/LC : HYUNDAI-ITROL]		

*) 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

HYUNDAI-iTROL (E160A/LA/C/LC)

Control & Composition		Compensation	
Number of axis/Spindles	2 axes (X, Z) / 3 axes (X, Z, C)	Backlash compensation	
Number of axis/Spindles, max.	8 axes (Axis + Spindle)	Leadscrew error compensation	
Color display	TFT 10.4" Color (800 x 600)	Measuring system error compensation	
Keyboard	QWERTY Full Keyboard	Feedforward control (Speed control)	
Part program storage	1MB, 3MB, 5MB	Safety Function	
Addition of part program on CF card		Safe torque off (STO)	
Transfer Function		Safe brake control (SBC)	
Feedrate override	0% ~ 200%	Safe stop 1 (SS1)	
Transfer value input range	± 999999999	Diagnostic Function	
Unlimited rotation of rotation axis		Alarm/Message . Alarm log	
Acc./Dec. with jerk limitation		PLC status/LAD online display	
Measuring systems 1 and 2, selectable		PLC remote connection (Ethernet)	
Travel to fixed stop		Automation Support Function	
Auto servo drive tuning		Actual velocity display	
Spindle Function		Tool life management	As time / As amount
Spindle override	0% ~ 150%	Work counter/Cycle time	Embedded
Spindle speed, max. programmable value range	1000000 ~ 0.0001	2D simulation	
Automatic gear stage selection		Manual Operation	
Spindle orientation		Manual handle/Log transfer	
Spindle speed limitation		Manual measurement of workpiece / tool offset	
Rigid tapping		Automatic tool/Workpiece measurement	
Spindle control with PLC		Automatic/Program reference approach	
Interpolation		Automatic Operation	
Linear interpolation axis, max.	4 axis	Program run as using CF card/USB	
Circle via center point and end point		Program control/modification	
Circle via interpolation point		Block search	
Helical interpolation		Reposition	
Non-uniform rational B splines		Preset (Set actual value)	
Continuous - path mode with programmable rounding clearance		Data Transmission	
Program Function		Ethernet network	
Subroutine levels, max.	7	USB memory stick & CF card	
Interrupt routines, max.	2	Convenience Function	
Number of levels for skip blocks	2	Processing setting	Coordinate system setting, Auto tool length measurement
Polar Coordinates		Processing support	Tool Monitoring, Spindle overload monitoring
Dimensions inch/metric, changeover manually or via program		Maintenance	Turret Guidance, I/O monitoring, Manual
Dynamic preprocessing memory FIFO		Management	Soft MCP, M/G code List
Look ahead	1	SMART machining	
Absolute/Incremental command	G90 / G91	Energy saving function (ECO)	
Scaling/Rotation		Machine Monitoring System (MMS Lite)	
Read/Write system variables		Language	
Block search		Standard support language	Chinese Simplified, English, Korean
Edit background			
Processing program number, max.	750	Option	
Using of CF Card, USB		Maximum skip block number	10
Basic coordinate number, max.	1	DRF offset	
Work coordinate number, max.	100	MDI program save/load	
Basic/Work coordinate programming change		Teach-In mode	
Scratching function		3D simulation	Except for working area/Collision check
Global and Local user data (GUD/LUD)		Real time simulation	
Global program user data		Shop Turn	Conversational Program
Conversational Cycle Program		Spline interpolation	
Tool Function		Program remote control in network	
Tool radius compensations		Language	Chinese Traditional, French, German, Italian, Portuguese, Spanish
Tool offset selection via T/D numbers			
Tools / Cutting edges in tool list	128 / 256, 256 / 512		
Monitoring Function			
Working area limit			
Software and Hardware limit			
Zero-speed/Clamping monitoring			
2D/3D protection zones			
Contour monitoring			

CONTROLLER

HYUNDAI WIA FANUC i Series

[] : Option

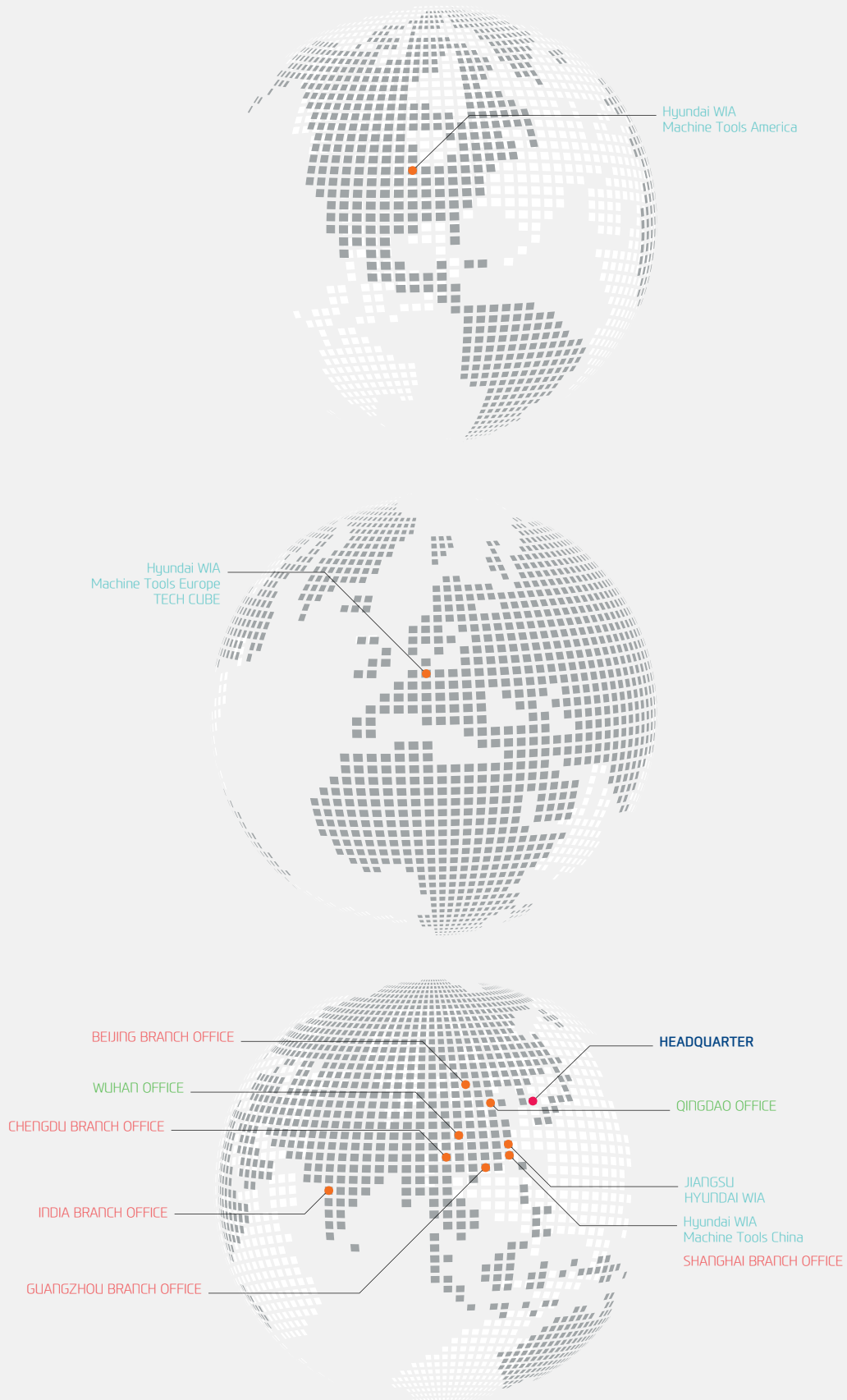
Controlled axis / Display / Accuracy Compensation	
Control axes	2 axes (X, Z) / 3 axes (X, Z, C / X, Z, B) / 4 axes (X, Z, Y, C) 5 axes (X, Z, B, C, A) / 6 axes (X, Z, Y, B, C, A)
Simultaneously controlled axes	2 axes [Max. 4 axes]
Designation of spindle axes	3 axes (1 path)
Least setting Unit	X, Z, 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	8.4 inch / 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
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%, F5%, 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	G4.1
Direct drawing dimension program	Including Chamfering / Corner R

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 4 digit, Binary output
Spindle override	0% ~ 150% (10% Unit)
Multi position spindle orientation	M 19
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	1280m (512KB)
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	
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
Part program storage size	5120m (2MB)
Polygon turning (2 Spindles)	Mill, MS, Y, SY, LF-Mill, TTMS, TTSY
Helical interpolation	
Manual Guide i	Conversational auto program
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.

GLOBAL NETWORK



GLOBAL NETWORK



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