

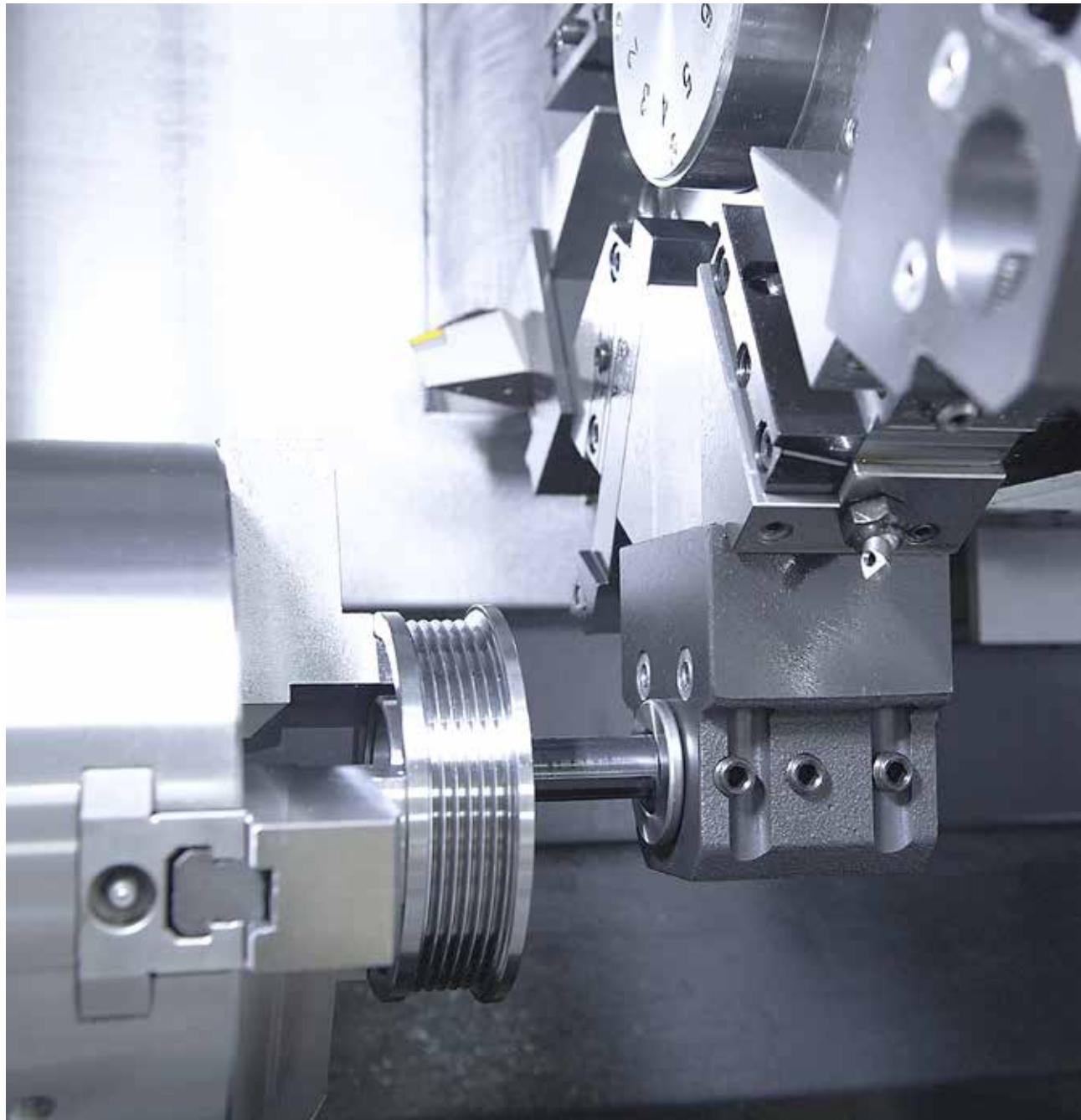
# L210 Series

HYUNDAI WIA CNC Turning Center



# Technical Leader

The CNC Turning Center Series, developed by Hyundai Wia, a Korean manufacturer of traditional machine tools, on the strength of its accumulated knowhow and state-of-the-art technology, is designed to maximize productivity by taking into account the need for high speed, sturdiness and accuracy.



ITEM	Spindle		Bed		Turret
	8"	10"	Standard	Long	Servo
L210A	●		●		●
L210LA	●			●	●
L210C		●	●		●

High Speed, High Rigidity and High Productivity  
- The next generation affordable CNC Lathe

# L210 Series

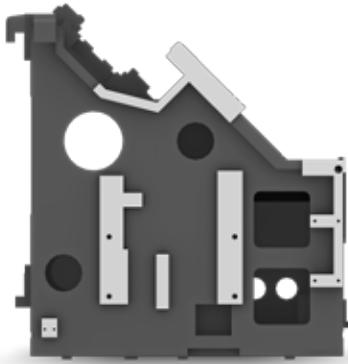
- 45° slanted one-piece high rigidity bed structure
- Least heat distortion, the most stabilized unit structure
- Able to extend, and high productive machine structure
- Unbeatable rapid travel speed : 36m/min
- The most reliable high speed servo turret is adopted: 0.2sec/step
- Compact design, able to install within a narrow space.
- Ergonomic design allows convenient access to chuck and tool





# Basic Features

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



01

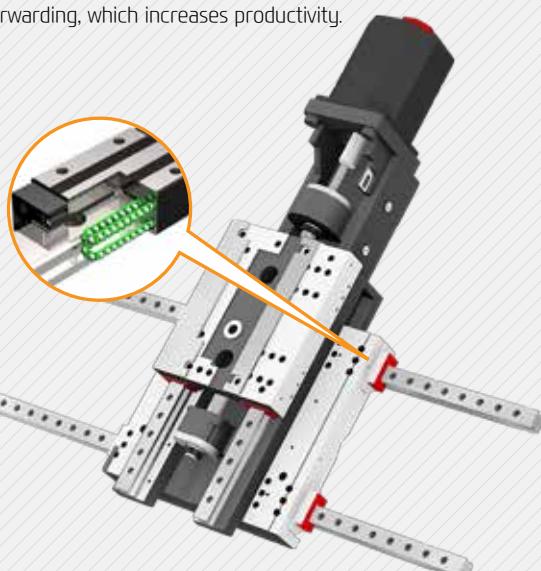
## High precision, High Rigidity All in One Structure

A 45 degree slope type bed is combined with square type and tube type rib structure, which maintains a high rigidity. As absorption capability for vibration is good, powerful cutting and high precision maintaining is allowed.

### Guideway

All axis of L210 Series have LM Guide installed, which has better speed and responsiveness.

This reduces non-cutting time and achieves 36m/min of quick forwarding, which increases productivity.



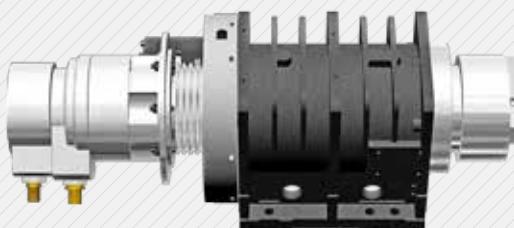
### Ball Screw

The Ball screw is fixed by a double anchor type, which places it in parallel with guide way and achieves a stable forwarding. Importantly, a ball screw with larger diameter is adopted and prepressure is applied, which improves thermal deformation and hardness.

02

### Main Spindle

The main spindle is designed in such a way that heat is blocked by the integrated base in bilateral symmetry and the insulating panel, making it possible to maintain a high degree of accuracy even during a long period of operation.

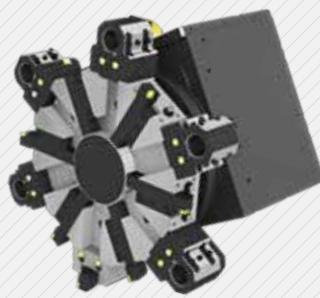


03

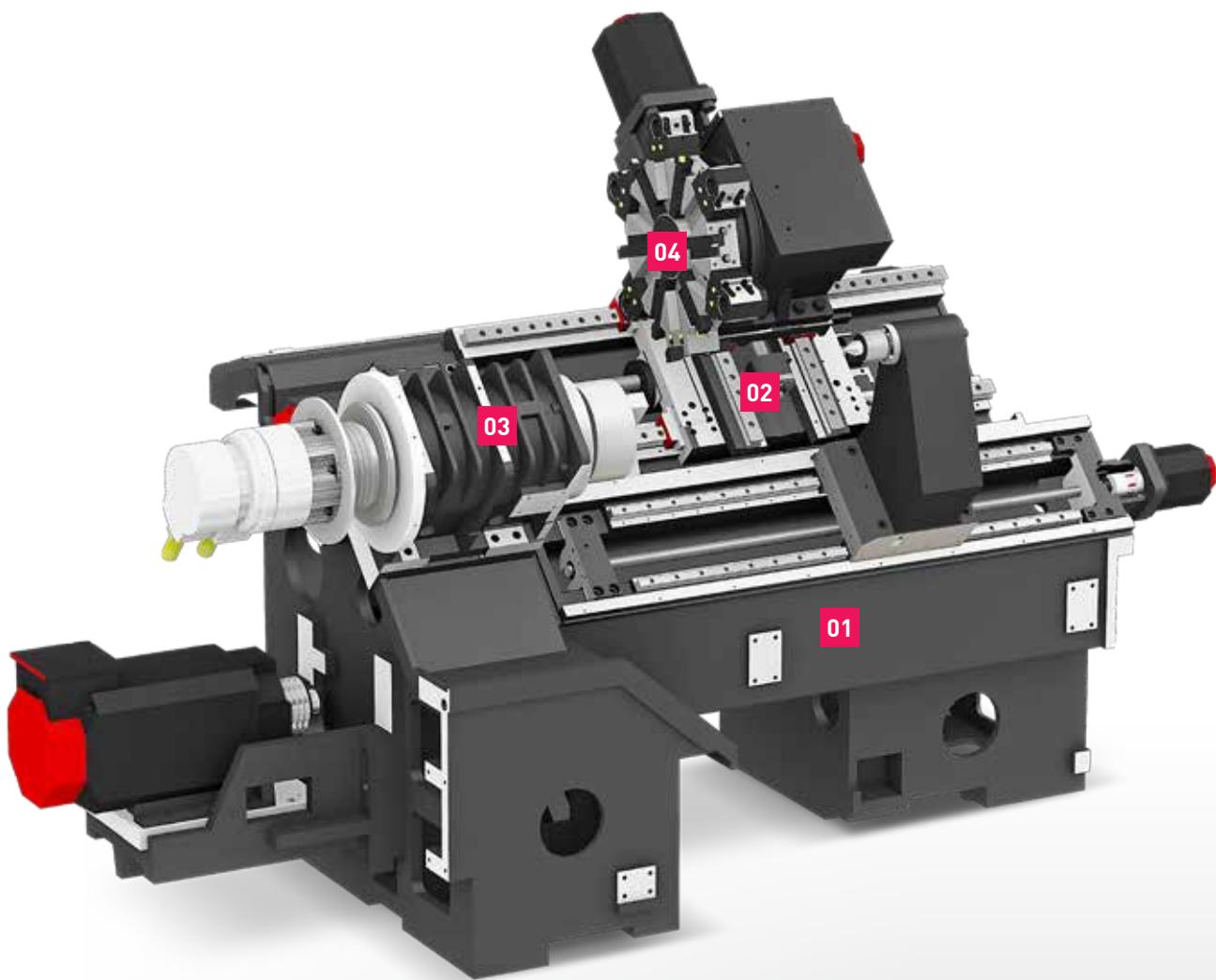
04

### Turret

With installing high speed servo turret, tool split speed is increased (0.12sec/1step) and its cycle time is reduced, which improves productivity.



## Basic Structure



HYUNDAI WIA  
MACHINE TOOL

L210 SERIES  
CNC Turning Center

04  
+  
05

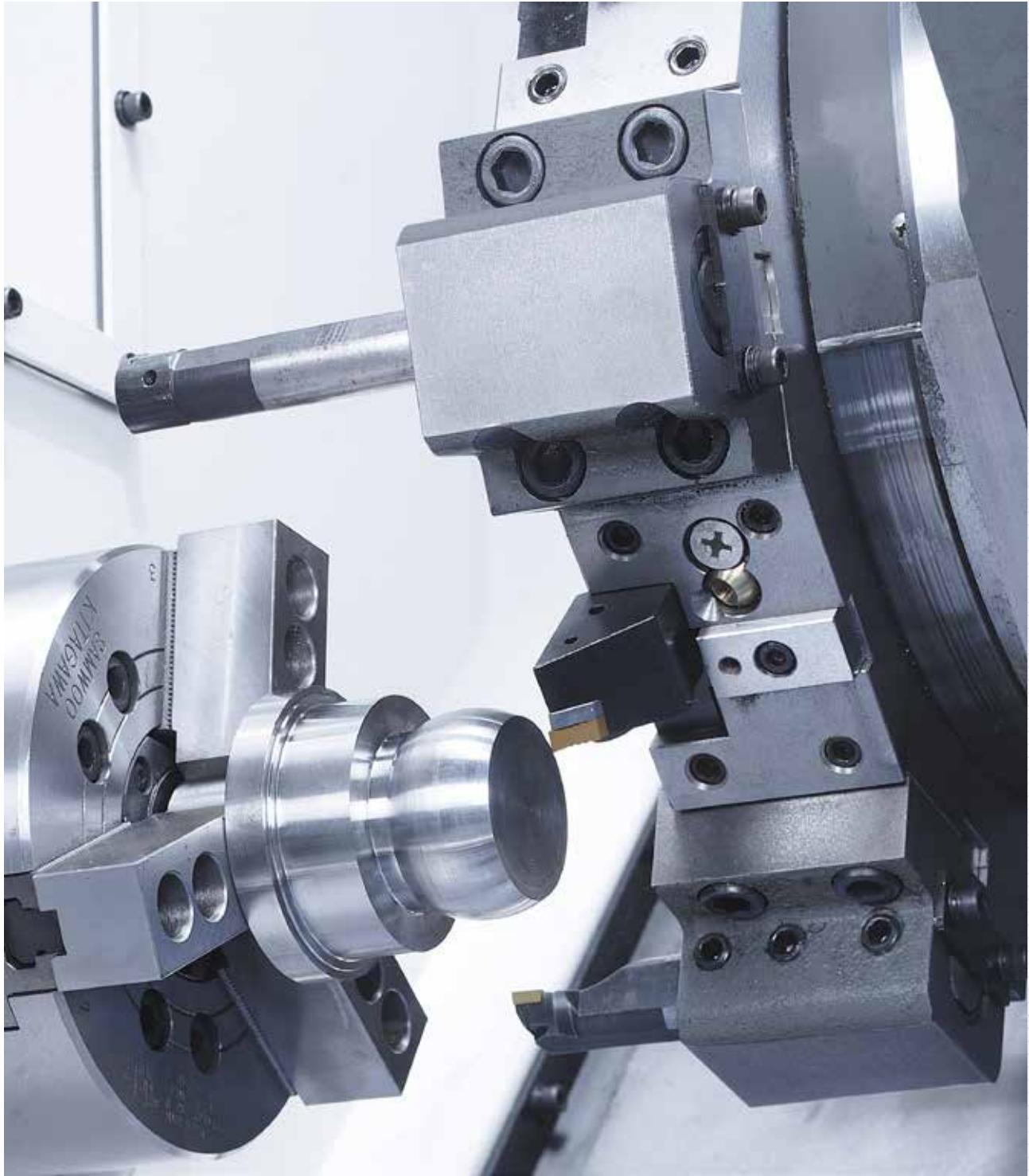
## Reduction of non-cutting time by fast rapid speed

- **Rapid Travel** (X/Z axis) : **36/36** m/min
- **Travel** (X/Z axis)    L210A/C : **210/430** mm (8.3"/17")    L210LA : **210/550** mm (8.3"/21.7")

**n2**  
L210 Series

# High-Precision Spindle

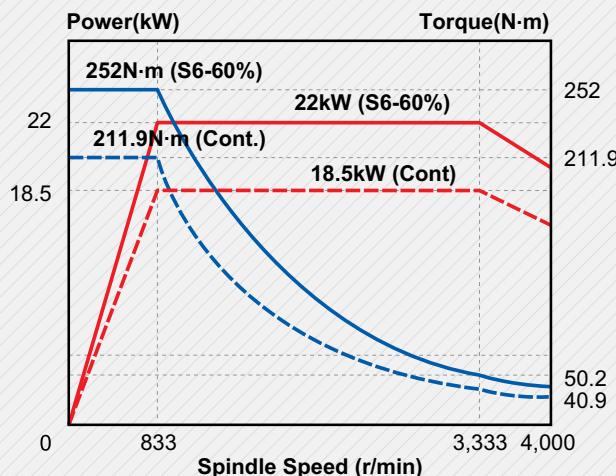
Long Lasting High Accuracy & Excellent Performance  
CNC Turning Center



## Spindle



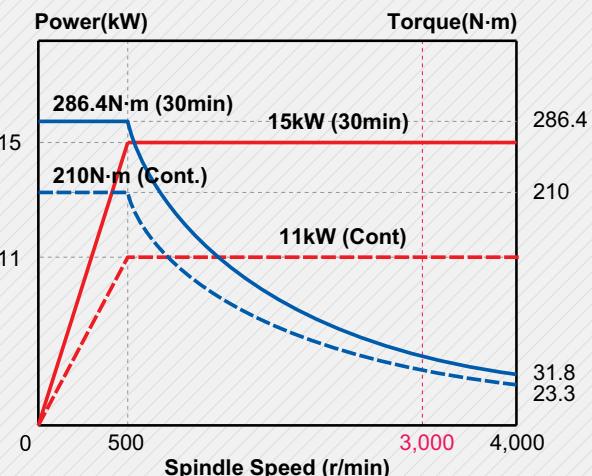
L210A/LA (SIEMENS)



## Main Spindle

The spindle has wide span of nominal production and the same axis structure as that of a high precision lathe, which is designed to minimize thermal deformation and make high precision cutting even with high speed and repeated cutting. By enlarging the spindle diameter and thickness its hardness is increased. Especially, its design adopting high precision angular ball bearing reduces noise and increases accuracy.

L210A/LA/C (FANUC)



## Tail Stock

심압대 부착시 보다 안정적으로 우수한 품질의 제품가공이 가능합니다.

Taper : MT#4 Quill Dia : Ø56

Travel : L210A-400 mm (15.7"),  
L210LA-520 mm (20.5")



# 03

L210 Series

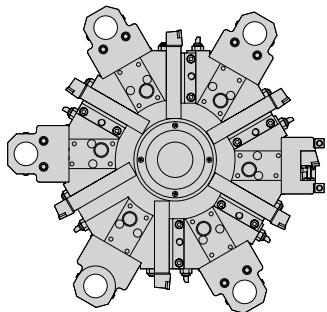
## Servo Turret

High speed, High Accuracy, Highly Reliable  
Servo Turret



### Turret

The L210 Series has a high performance AC servo motor and 3-piece coupling attached which enhances its process reliability. Powerful tool clamping using hydraulics minimizes tool tip deviation due to load, which displays excellent performance during heavy duty cutting.



#### L210A | LA

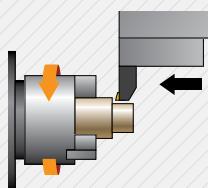
- Number of Tools : **12 EA**
- Tool Size (O.D) :  
**□ 25 ( □ 1" )**
- Tool Size (I.D) :  
**Ø32 mm (Ø1.3")**
- Indexing Time :  
**0.12 sec/step**

#### L210AC

- Number of Tools : **12 EA**
- Tool Size (O.D) :  
**□ 25 ( □ 1" )**
- Tool Size (I.D) :  
**Ø40 mm (Ø1.6")**
- Indexing Time :  
**0.12 sec/step**

## Machining Capability

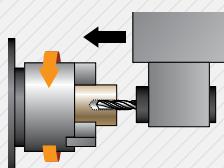
L210A



### Cutting (O.D.)

Turning &lt;Material(JIS):S45C(Carbon steel)&gt;

Processing diameter	$\varnothing 280$
Side cutting depth	12 mm
Cutting speed	110 m/min
Spindle rpm	280 r/min
Forwarding speed	0.45 mm/rev
Chip discharge	594 cc/min



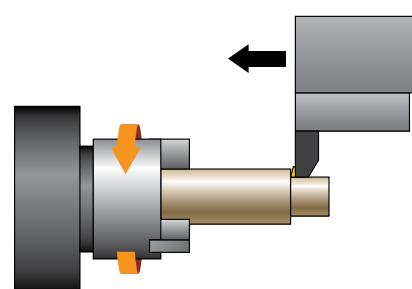
### U-Drilling

Drilling &lt;Material(JIS):S45C(Carbon steel)&gt;

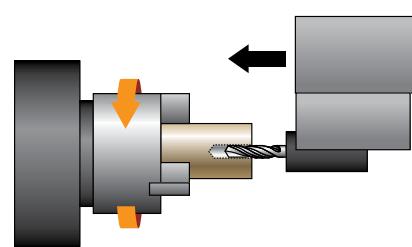
Processing depth	$\varnothing 70$
Drill diameter	$\varnothing 40$
Cutting speed	140 m/min
Spindle rpm	895 r/min
Forwarding speed	0.4 mm/rev
Chip discharge	469 cc/min

❖ The above result might be different by types of processing circumstance

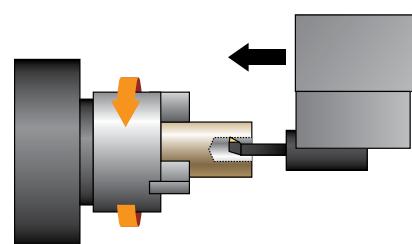
## Machining Variation



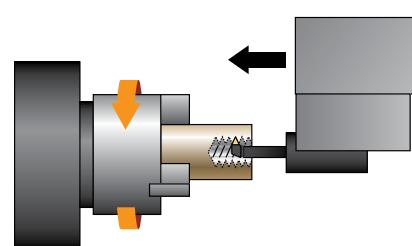
O.D Cutting



Drilling



I.D Cutting



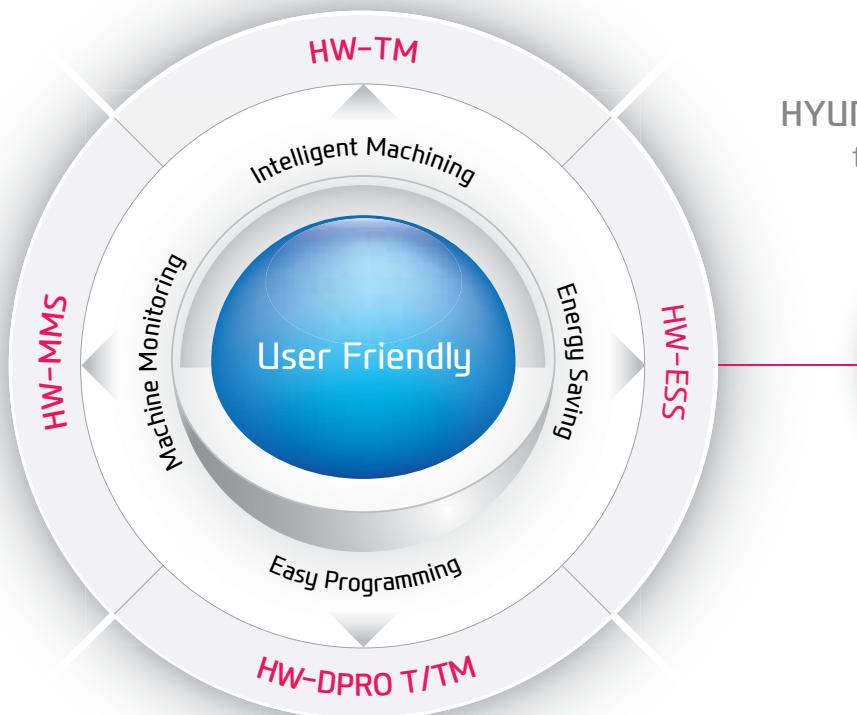
I.D Threading

**04**  
L210 Series

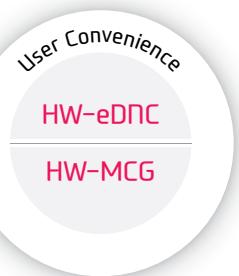
# Smart System



Software for Smart Operating  
and Machining



**HYUNDAI WIA Smart System**  
for CNC Turning Center



## HW-PGi F (HYUNDAI WIA Programming Guide i for Fanuc System)



**Realistic 3D solid animation**

Programming simulation



**Example of easy programming**

Easy programming interactively  
without code



**Engraving Cycle**

Programming with only entering text by  
controlling C-axis



## HW-eDNC

HYUNDAI WIA ethernet  
Direct Numerical Control

This software transmits and receives the CNC of processing equipment, the processing program and the NC data on a PC through the internet or serial communications, while managing the processing program of the CNC memory.



## HW-MCG

HYUNDAI WIA  
Machine Guidance

NC loading type software offering user-convenience functions like operating equipment, maintenance and monitoring of managing equipment



(FANUC)

## HW-TM

HYUNDAI WIA  
Tool Monitoring

This is an equipment-monitoring software which checks the overload, attrition and possible damage of equipment by analyzing the spindles and the output load of the feed shaft generated during a processing operation.

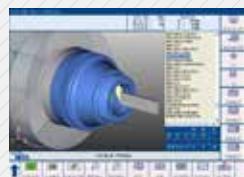


(FANUC)

## HW-ESS

HYUNDAI WIA  
Energy Saving System

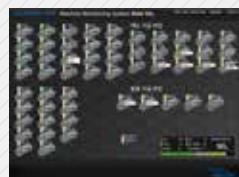
This is an environment-friendly power reduction software reducing the standby power unnecessarily wasted in the equipment waiting for a processing operation.



## HW-DPRO T/TM

HYUNDAI WIA Dialogue  
PROgram Turn/TurnMill

Using a dialogue method, this software makes it easy to work out a program for a lathe processing operation with complicated configurations. (Can be installed on a PC.)

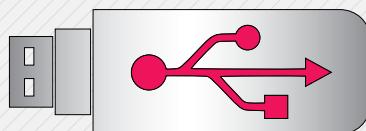


## HW-MMS

HYUNDAI WIA  
Machine Monitoring System

This software is for remote control monitoring of equipment status (mobile, PC.)

It checks and manages the state of multiple pieces of equipment and the progress of processing on a real time basis.



## USB Port

Convenience is increased when inputting and outputting program. Because it is now capable of using USB port in addition to current way like CF memory card or LAN

# SIEMENS

## DIFFERENTIATED CAPABILITIES, INTEGRATED ENGINEERING PERFECTLY INTERLINKED

SIEMENS 828D is a latest model CNC that is capable of installing a maximum of 6 spindles. It is designed for horizontal/vertical all-purpose equipment.

Through a 80-bit control, it makes possible reduction of processing time and enhancement of productivity. It supports the preparation of a variety of programs and setup functions. It is easy to handle.

### SIEMENS Technology

#### Shop Turn

- 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

**OPTION**

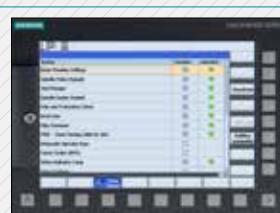
#### 3D Simulation

- 3D confirmation (an option) 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.

**OPTION**

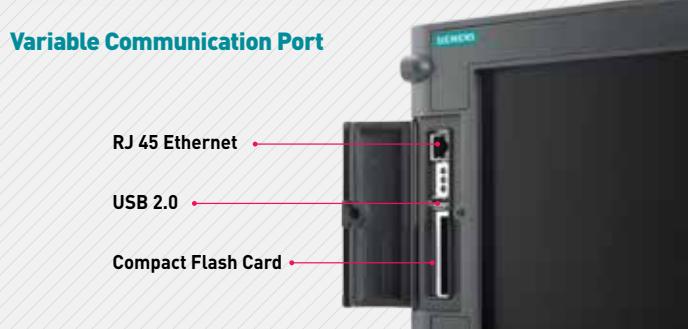
#### Easy Extend

- Easy to install/uninstall an option (Ex. : barfeeder and chip conveyor, etc.)
- Possible to install in one motion without revision of individual perimeters.
- A spate list is unnecessary as option items are indicated with letters.



### SIEMENS Communication Function

#### Variable Communication Port



RJ 45 Ethernet

USB 2.0

Compact Flash Card

Easy input/output of a program is possible as a USB memory card, a CF memory card and LAN can all be used.



#### ISO Code Programming

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

**SIEMENS Convenience Function****Easy Tool Measuring**

- Easy calculation (automatic and manual) of the offset values of the installed equipment
- Automatic input of the measured offset values of equipment into the equipment list

**Work Offset Measuring**

- Supports the function of work offset calculation
- Automatic application of the measured work offset value as the activated work offset

**Real Time PLC Monitoring**

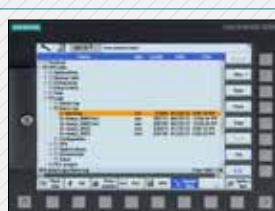
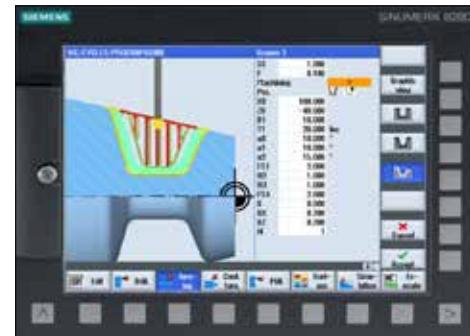
- Real time monitoring of PLC programs is possible. Supports the “search” and “cross reference” functions.
- Real time verification of NC variables and PLC interface
- Input/change of the values of variables

**Block Searching**

- Program can be re-started from a particular location without editing the processing program.
- Provides safety to the user.

**Alarm Log**

- A maximum of 500 alarms can be stored.
- The entire alarm log can be stored as a data file in the NC
- The overall alarm history can be checked through the alarm log.

**SIEMENS Easy Programming****Program Guide****Simple Program, High Productivity**

- Use of cycle program minimizes program capacity.
- When cycle variables are input, graphic images are provided.
- Tool path and simulation of completed cycle program are available.
- Various configurations can be processed using cycles.

**Engraving Cycle****Simple Letter Processing is Possible.**

- Letters can be processed on products by establishing a plane and inputting letters.
- Letter size/angle/location/direction can be designated.
- Capital and small letters of English can be processed.

**n5**  
L210 Series

# Automation System



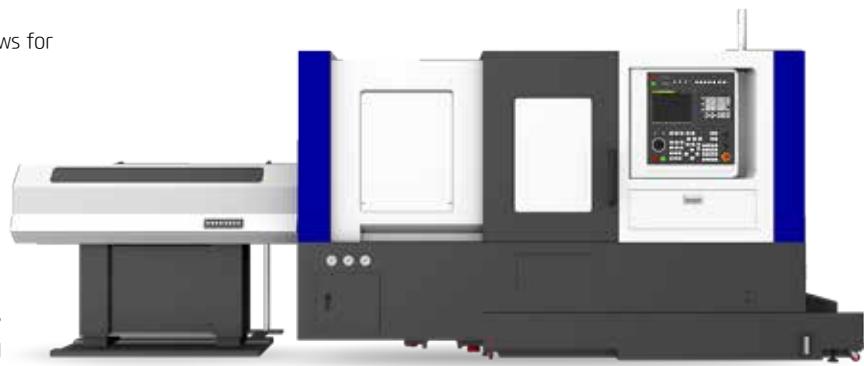
Various Devices for User Friendly

## Bar Feeder System

### Bar Feeder

When machining from bar stock, a bar feeder allows for improved efficiency and unattended machining

Long Type	3m (118.1")
Max load processing capa.	Ø42 (1.7")
Short Type 1.5m	(59.1")
Max load processing capa.	Ø65 (2.6")



### Work Conveyor

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



**Gantry Loader System****Gantry Loader Machining Process**

Construction of high speed gantry loaders is possible as well as the construction of flexible automation cells by a work stocker. Optimization of the installation space is also possible. In particular, excellent machining effect is achieved during continuous machining of both sides of the same or different work



# SPECIFICATIONS

## L210A Series Standard & Optional

Spindle		L210A	L210LA	L210C
Main Spindle	8"	●	●	-
Hollow Chuck 3 Jaw	10"	-	-	●
Main Spindle	8"	○	○	○
Solid Chuck 3 Jaw	10"	○	○	○
Standard Soft Jaw (1set)		●	●	●
Chuck Clamp Foot Switch		●	●	●
2 Steps Hyd. Pressure Device		○	○	○
Spindle Inside Stopper		○	○	○
Sub Spindle 5° Index		-	-	-
Spindle 5° Index		○	○	○
Cs-Axis (0.001°)		○	○	○
Chuck Open/Close Confirmation Device		●	●	●
2 Steps Chuck Foot Switch		☆	☆	☆
<b>Turret</b>				
Tool Holder		●	●	●
Mill Turret		-	-	-
Straight Milling Head (Axial)	Axial	-	-	-
Angular Milling Head (Radial)	Collet Type, ea	-	-	-
Straight Milling Head (Axial)	Collet Type, ea	-	-	-
Angular Milling Head (Radial)	Adapter Type	-	-	-
Boring Bar Sleeve	Adapter Type	●	●	●
Drill Socket		●	●	●
U-Drill Holder		○	○	○
U-Drill Holder Sleeve		○	○	○
O.D Extension Holder		☆	☆	☆
Swivel Head	For Out-Dia	-	-	-
<b>Tail Stock &amp; Steady Rest</b>				
One Touch Type Tail Stock		●	●	●
Quill Type Tail Stock		○	○	○
Programable Tail Stock		-	-	-
Manual Type Hyd. Steady Rest	Quill Tail Stock (SMW/Khan/Shinkang/Samchully)	Applied	○	○
Standard Live Center		●	●	●
High Precision Live Center		○	○	○
2 Steps Tail Stock Pressure System		○	○	○
Quill Forward/Reverse Confirmation Device		○	○	○
Tail Stock Foot Switch (Tail Stock Applied : Std)		○	○	○
<b>Coolant &amp; Air Blow</b>				
Standard Coolant (Nozzle)		●	●	●
Chuck Coolant (Upper Chuck)		○	○	○
Gun Coolant		○	○	○
Spindle Thru Coolant (Only for Special Chuck)		☆	☆	☆
Thru Coolant for Live Tool		-	-	-
Chuck Air Blow (Upper Chuck)		○	○	○
Sub Spindle Chuck Air Blow		-	-	-
Tail Stock Air Blow (Upper Tail Stock)		○	○	○
Turret Air Blow		☆	☆	☆
Air Gun		○	○	○
Spindle Thru Air Blow (Only for Special Chuck)		☆	☆	☆
High Pressure Coolant	6Bar	○	○	○
	20Bar	☆	☆	☆
Power Coolant System (For Automation)		☆	☆	☆
Coolant Chiller		☆	☆	☆
<b>Chip Disposal</b>				
Coolant Tank	135 l	-	-	-
	185 l	-	●	-
	230 l	●	-	●
Chip Conveyor (Hinge/Scraper)	Front(Right)	○	○	○
	Rear(Rear)	○	○	○
Special Chip Conveyor (Drum Filter)		☆	☆	☆
Chip Wagon	Standard (180 l)	○	○	○
	Swing (200 l)	○	○	○
	Large Size (330 l)	○	○	○
	Customized	☆	☆	☆
<b>Safety Device</b>				
Door Inter-Lock		●	●	●
Total Splash Guard		●	●	●
Chuck hydraulic pressure maintenance interlock		●	●	●
Back Spin Torque Limiter (BST : FANUC)		●	●	●
Torque Limiter		☆	☆	☆

● : Standard ○ : Option ☆ : Prior Consultation – Non Application

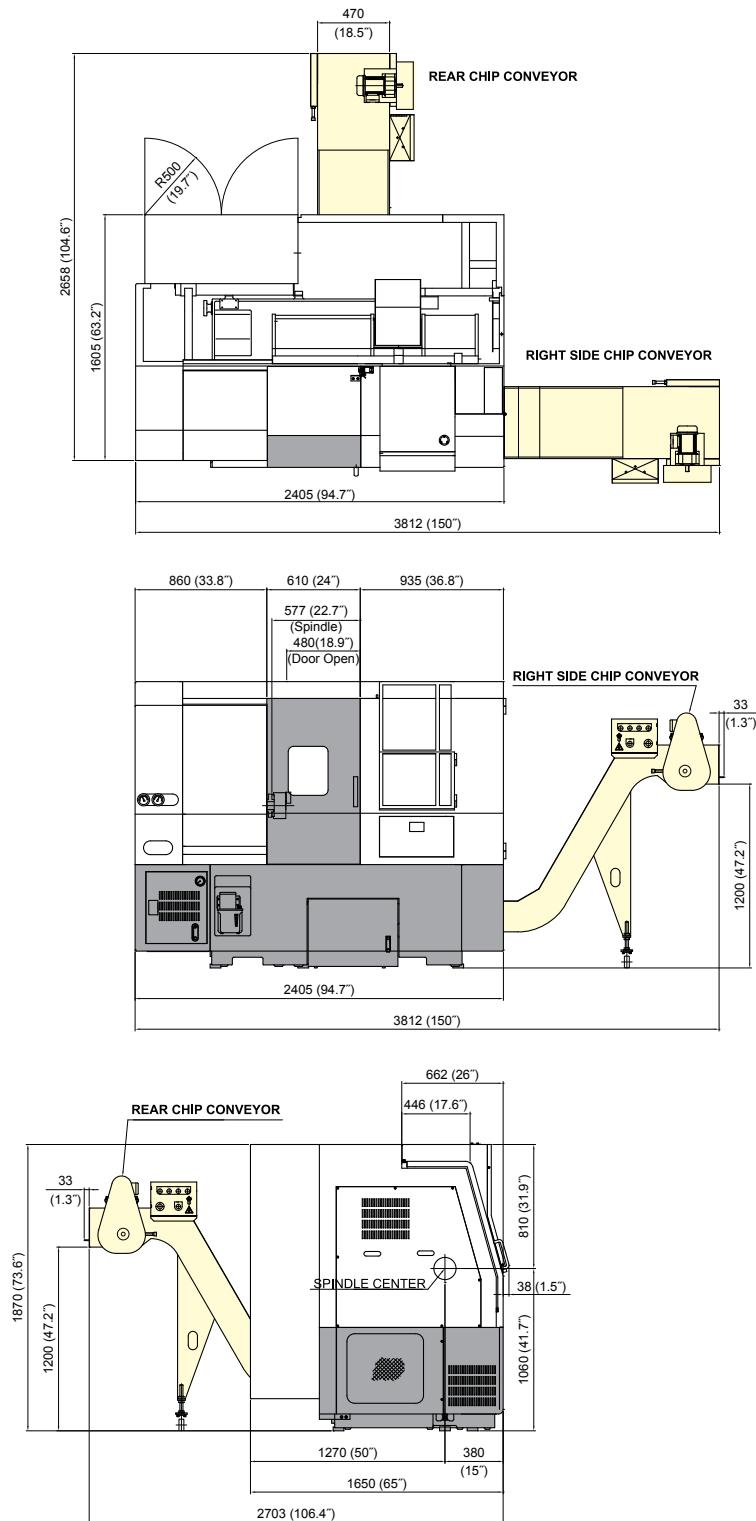
Electric Device		L210A	L210LA	L210C
Call Light	1단 : ■	●	●	●
Call Light	3단 : ■ ■ ■	○	○	○
Call Light & Buzzer	3단 : ■ ■ ■ B	○	○	○
Electric Cabinet Light		○	○	○
Spindle Load Meter	FANUC (Mounted Type) (LED Type)	○	○	○
Spindle Speed Meter	FANUC (Mounted Type) (LED Type)	●	●	●
Work Counter	Digital	●	●	●
Total Counter	Digital	○	○	○
Tool Counter	Digital	○	○	○
Multi Tool Counter	6ea 9ea	○	○	○
Electric Circuit Breaker		○	○	○
ABS Encoder	FANUC SIEMENS	● ●	● ●	-
AVR (Auto Voltage Regulator)		☆	☆	☆
Transformer	25kVA 30kVA	○	○	○
Auto Power Off		○	○	○
<b>Measurement</b>				
Q-Setter		●	●	●
Automatic Q-Setter		○	○	○
Work Close Confirmation Device	TACO (Only for Special Chuck)	○	○	○
Work Setter	SMC	○	○	○
Linear Scale	Z axis	☆	☆	☆
Coolant Level Sensor (Only for Chip Conveyor)		☆	☆	☆
<b>Environment</b>				
Air Conditioner	FANUC SIEMENS	○ ●	○ ●	○ -
Dehumidifier		○	○	○
Oil Mist Collector		○	○	○
Oil Skimmer (Only for Chip Conveyor)		☆	☆	☆
MQL (Minimal Quantity Lubrication)		☆	☆	☆
<b>Fixture &amp; Automation</b>				
Auto Door	Std. High Speed	○ ○	○ ○	○ ○
Auto Shutter (Only for Automatic System)		☆	☆	☆
Sub Operation Pannel		☆	☆	☆
Bar Feeder Interface		○	○	○
Bar Feeder (FEDEK)		☆	☆	☆
workpusher (Spring type)		-	-	-
Extra M-Code 4ea		○	○	○
Automation Interface		☆	☆	☆
I/O Extension (IN & OUT)	16Contact 32Contact	○ ○	○ ○	○ ○
Parts Catcher	MAIN Axis SUB Axis	○ -	○ -	○ -
Sub Spindle Work Pusher (Spring Type)		-	-	-
Turret Work Pusher (For Automation)		☆	☆	☆
Parts Conveyor		☆	☆	☆
Semi Automation System		☆	☆	☆
<b>Hyd. Device</b>				
Standard Hyd. Cylinder	Hollow	●	●	●
Standard Hyd. Unit	35bar/15 l	●	●	●
<b>S/W</b>				
Machine Guidance (HW-MCG : FANUC)		☆	☆	☆
Tool Monitoring (HW-TM : FANUC)		○	○	○
DNC software (HW-eDNC : FANUC)		○	○	○
Interactive Program		○	○	○
Energy Saving System (HW-ESS : FANUC)		☆	☆	☆
Machine Monitoring System (HW-MMS : FANUC)		☆	☆	☆
<b>ETC</b>				
Tool Box		●	●	●
Customized Color	Need Munsel No.	☆	☆	☆
CAD & CAM		☆	☆	☆

# SPECIFICATIONS

## External Dimensions

unit : mm(in)

L210A/C

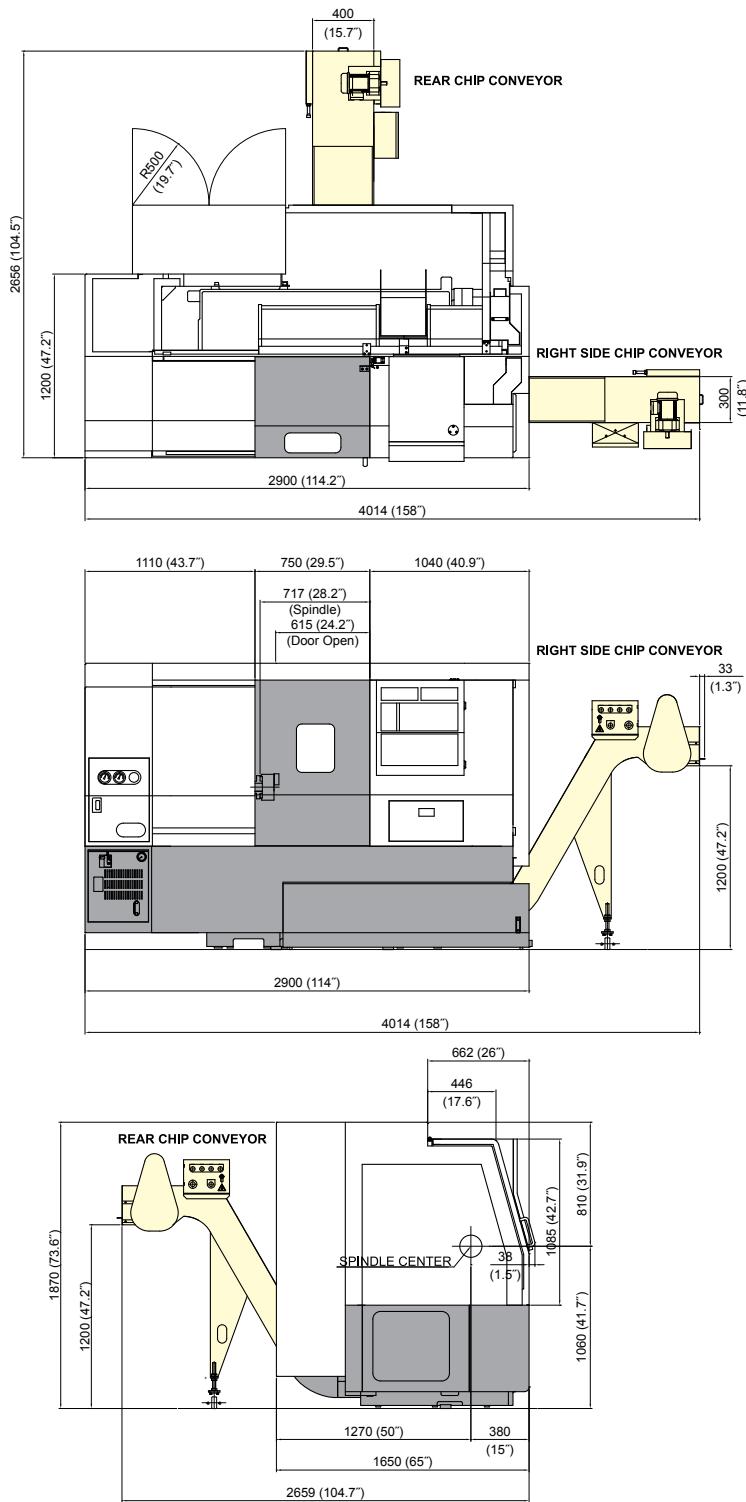


# SPECIFICATIONS

## External Dimensions

unit : mm(in)

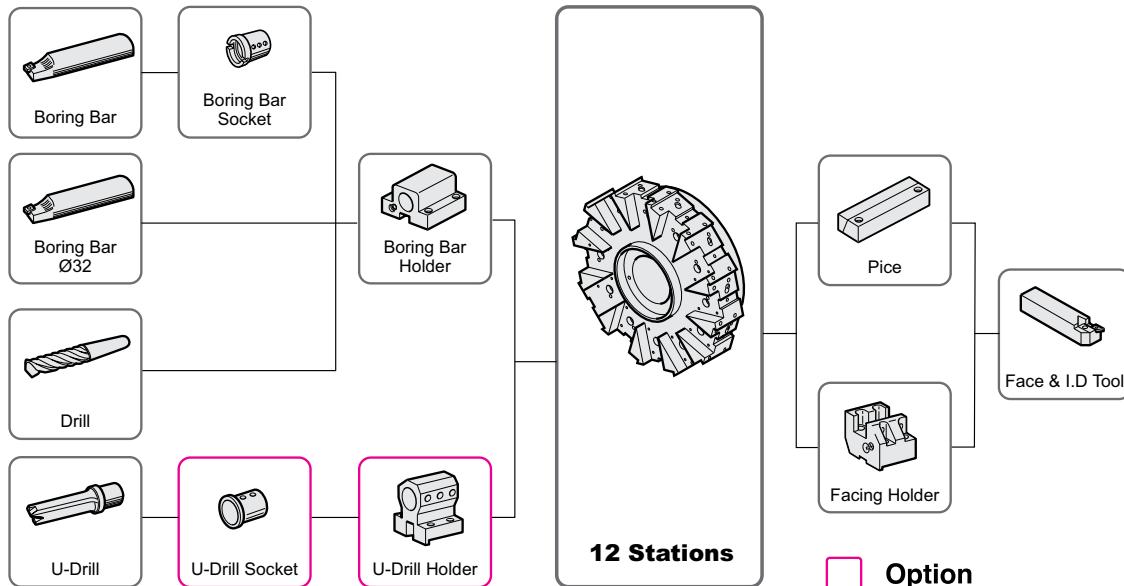
L210LA



# SPECIFICATIONS

## Tooling System

unit : mm(in)



## Tooling Parts Detail

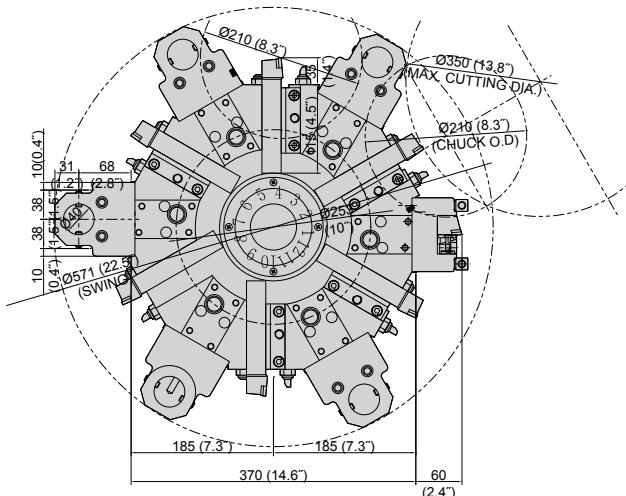
	ITEM	L210A/LA	L210C
<b>Turning Holder</b>	O.D Holder	Right/Left	-
	Facing Holder		1
<b>Boring Holder</b>	I.D Holder	Single	5
	U-Drill Holder	Ø32 Ø40	Opt -
<b>Driven Holder</b>	Straight Mill Holder	Standard	-
	Angular Mill Holder	Standard	-
<b>Socket</b>	Boring	Ø8 (5/16")	-
		Ø10 (3/8")	1
		Ø12 (1/2")	1
		Ø16 (5/8")	1
		Ø20 (3/4")	1
	Drill	MT 1 × MT 2	1
		MT 2	1
	ER Collet		-

Specifications are subject to change for improvement without notice.

# SPECIFICATIONS

## Interference

unit : mm(in)

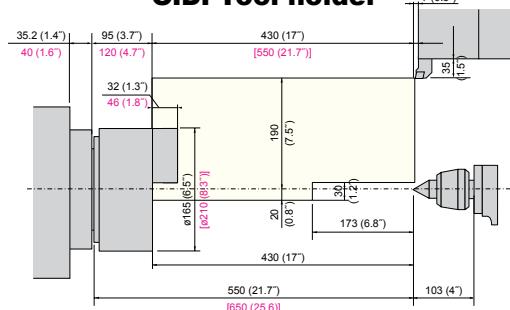


## Interference

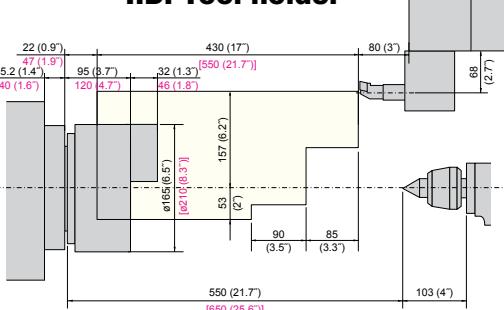
unit : mm(in)

## L210A/LA

### O.D. Tool holder

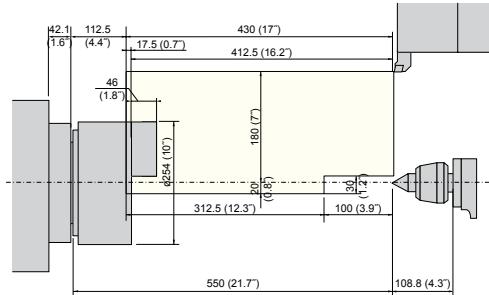


### I.D. Tool holder

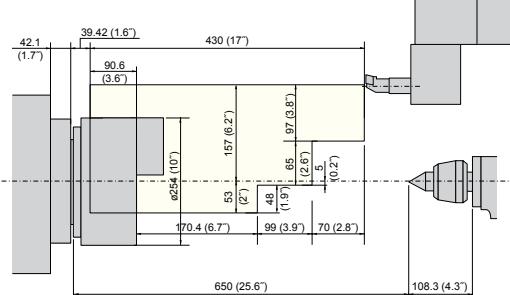


## L210C

### O.D. Tool holder



### I.D. Tool holder



# SPECIFICATIONS

## Specifications

[ ] : Option

	ITEM	L210A	L210LA	L210C
CAPACITY	Swing Over the Bed	mm(in)	Ø550 (21.7")	
	Swing Over the Carriage	mm(in)	Ø350 (13.8")	
	Max. Turning Dia.	mm(in)	Ø350 (13.8")	
	Max. Turning Length	mm(in)	410 (16.1")	530 (20.9")
	Bar Capacity	mm(in)	Ø65 (2.6")	Ø80 (3.1")
SPINDLE	Chuck Size	mm(in)	Ø169 (6.7")	Ø254 (10")
	Spindle Bore	mm(in)	Ø78 (3")	Ø95 (7.4")
	Spindle Speed (rpm)	r/min	4,000 [4,000]	3,000
	Motor (Max/Cont.)	kW(hp)	15/11(20/15) [22/18.5 (29.5/24.8)]	15/11(20/15)
	Torque (Max/Cont.)	N·m(lbf·ft)	286.4/210(211.2/154.9) [252/211.9(185.9/156.3)]	286.6/210.2(211.3/155)
	Spindle Type	-	BELT	
	Spindle Nose	-	A2-6	A2-8
FEED	C-axis Indexing	deg	-	
	Travel (X/Z/B)	mm(in)	210/430 (8.3"/17")	210/550 (8.3"/21.7")
	Rapid Travel (X/Z/B)	m/min		36/36
	Slide Type	-	LM GUIDE	
TURRET	No. of Tool	EA	12	
	Tool Size	OD	Ø 25 (1")	
		ID	Ø40 (1.6")	
	Indexing Time	sec/step	0.2	
LIVE TOOL	Motor (Max/Cont.)	kW(hp)	-	
	Milling Tool Speed (rpm)	r/min	-	
	Torque (Max/Cont.)	N·m(lbf·ft)	-	
	Collet Size	mm(in)	-	
	Type	-	-	
TAIL STOCK	Taper	-	MT4	
	Quill Dia.	mm(in)	Ø56 (2.2")	
	Quill Travel	mm(in)	-	
	Travel	mm(in)	400 (15.7")	520 (20.5")
TANK CAPACITY	Coolant Tank	l (gal)	135 (35.7)	185 (48.9)
	Lubricating Tank	l (gal)		1.8 (0.5)
POWER SUPPLY	Electric Power Supply	kVA	25	
	Thickness of Power Cable	Sq	Over 16	
	Voltage	V/Hz	220/60 (200/50)	
MACHINE	Floor Space (L×W)	mm(in)	2,405×1,650 (94.7"×65")	2,900×1,650 (114"×65")
	Height	mm(in)		1,870 (73.6")
	Weight	kg(lb)	4,100 (9,039)	4,200 (9,259)
NC	Controller	-	HW F i Series [F 32i-A] [SIEMENS 828D]	HW F i Series [F 32i-A]

Specifications are subject to change for improvement without notice.

# CONTROLLER

## SIEMENS 828D (L210A/LA)

Control function		Protection Function	
Max. configuration of Axis	3 Axis	Emergency Stop	
Max. configuration of Axis and sp.	5 Axis	Over Travel	Soft Limit & Hard O.T
Least Command/Input	0.0001mm / 0.00001inch	Contour Monitoring	
Feed function		Program Protection	
Feedrate Override	0 – 120%	<b>Automation Support Fun.</b>	
Rapid Traverse Override	F1, 5, 25/50, 100%	Actual Speed Display(Monitor)	
Acceleration with jerk limitation		Tool Life Management	(Time, Parts)
Programmable acceleration		Work Count Function	(Internal)
Follow-up mode		<b>Language Function</b>	
Measuring system 1 and 2, selectable		Chinese Traditional, Czech, Danish, Dutch, Finnish, Hungarian, Japanese, Korean, Polish, Russian, Swedish, Portuguese, Turkish	
Separate path feed for corners and chamfers		Two Language switchable	
Travel to fixed stop			
Spindle function		<b>Data Transfer</b>	
Spindle Override	50% – 120%	RS 232C I/F / Ethernet	
Spindle Orientation		USB Memory Stick & CF Card	
Spindle Speed Limitation		<b>Option</b>	
Rigid Tapping		Shop Turn	
Interpolation function		3D Simulation	
Linear interpolation Axis	Max. 4 axis	DRF offset	
Circle via center point and end point		Teach -in	
Circle via interpolation point		Number of levels for skip blocks 8	
Helical interpolation		TRACYL (Cylinder interpolation)	
Universal interpolator NURBS (non-uniform rational B splines)		TRANSMIT (Pole coordinate command)	
Continuous-path mode with programmable rounding clearance		Sister Tool	
Tool function		A,B,C SPLINE INTERPOLATION	
Tool Radius Comp.		RCS HOST (Remote Control)	
Zero Offset (G54, G55, G56, G57, G58, G59)	50 EA	Simultaneous Recording (real time monitoring)	
Programmable Zero Offset		Analysis of Internal Drive Values	
Tool management		Network Drive Management	
Display		HW-TM	
CRT / MDI	8.4" Color LCD		
SCREEN SAVER			
Manual Operation			
Manual Handle/Jog Feed			
Reposition			
Reference Approach	Ref 1, 2 Approach		
Spindle Control	Start, Stop, Rev, Jog, Ort.		
Auto Operation			
Single Block			
Feed Hold			
Optional Block Skip			
Machine Lock			
Dry Run			
Simulation	(2 dimensional)		
Diagnosis function			
Alarm Display			
Spindle Load/rpm Meter			
PLC status/LAD display			
Program function			
Part Program Storage Length	1MB		
Program Name	23 digit		
Subroutine Call	(7 level)		
Absolute/incremental Command	G90 – G91		
Scaling, ROT			
Inch / Metric Conversion			
Conversational Cycle Program	(22 Machine)		
Block Search			
Variable Program (Macro)			
Read / Write System Variable			
BackGround Editing			
Miscellaneous Functions	M – Code		
Lable Skip			
Program Stop/End	M00, M01, M02, M30		
Lookahead , Jerk LimitationFeed &forward control			
ISO Dialect Interpreter(G291) (Fanuc Program exe)			
Maximum number of tools/cuttings	80/160		
Number of levels for skip blocks	1		

Figures in inch are converted from metric values.  
Design and specifications subject to change without notice.

# CONTROLLER

## HYUNDAI WIA FANUC i Series

Axis control / Display unit		Sub / Main spindle function
Controlled Axis	Max. 4 Axis are available	M-Code function
	X, Z axis	M-Code function lock
Simultaneous controllable Axis	X, Z, C axis (M type machine)	Lock sp. speed command
	Zaxis / Linear and circular (Max. 4axis)	Main sp. constant control
Least input increment	X, Z, Y, B axis : 0.001 mm (0.0001")	Spindle speed override
	C axis : 0.001 deg	Spindle position decision
Least command increment	X, Z, Y, B axis : 0.001 mm (0.0001")	Rigid tapping
High speed HRV control	C axis : 0.001 deg	Tool function / Tool compensation
Inch / Metric conversion	G20 / G21	Tool function
Interlock	Each axis / All axis	Tool offset pairs
Machine lock	All axis	Tool offset
Emergency stop		Tool nose radius compensation
Stored stroke check 1	Over-travel	Direct input of measured tool
Stored stroke check 2		compensation value B
Stored stroke check 3		Tool life management
Follow-up		Data in/output & editing functions
Servo-off		Reader / Puncher interface
Backlash compensation	+/- 0~9999 pulses (Rapid traverse & cutting feed)	Memory card input/output
Position switch		Part program storage length
Unexpected disturbance torque detection	Back-spin torque limiter (BST)	Number of registrable programs expansion
High resolution transfer control (HRC)		Memory lock
LCD / MDI	8.4" Color LCD	Background editing
<b>Operation</b>		Extended part program edition
Automatic operation (memory)		Display, diagnosis & setting functions
MDI operation		Self-diagnosis function
Search function	Sequence, program	History display
Program restart		Help function
Wrong operation prevention		External message
Buffer register		Run hour / Parts count display
Program check function	Dry run., program check	Display of actual spindle speed and T code
Single block		Actual cutting feedrate display
<b>Feed functions</b>		Operating monitor screen
Manual jog feed	Rapid, jog, handle	Rod meter light
Manual handle feedrate	x1, x10, x100	Graphic display
Feed command	F code feedrate direct command	Spindle / Servo setting screen
Feedrate override	0~200 % (10% units)	Selection of 5 optional language
Jog override	0~2,000 mm/min[79 ipm]	LCD screen save
Rapid traverse override	F1, F5, F25/F50, F100%	Automatic data backup
Override cancel		Functions according to machine specification
Feed per minute / rotation		Cs contouring control
<b>Program input &amp; interpolation functions</b>		Stored pitch error compensation
Nano interpolation	Positioning/Linear/Circular (G00/G01/G02, G03)	Polar coordinate interpolation
Dwell	G04, 0~9999.9999 sec	Cylindrical interpolation
Thread retract		Canned cycles for drilling
Variable lead threading		Spindle orientation expansion
1st reference point return	G28, manual	Spindle synchronous control
Reference point return check	G27	
2nd reference point return	G30	
Program stop / End	M00, M01 / M02, M30	
Tape code	EIA / ISO	
Optional block skip	1 ea	
Maximum programmable dimensions	+/- 9999.9999"	
Program number	0+4 digits	
Absolute and incremental programming		
Decimal point input		
Plane selection	G17, G18, G19	
Work coordinate system selection	G52 to G59	
Manual absolute	"01" fixed	
Direct drawing dimension programming	Included chamfering / Corner R'	
G code system	A	
Programmable data input	G10	
Sub program call	10 Step	
Custom macro B		
Addition of custom macro common variable	#100 to #199, #500 to #999	
Multiple repetitive cycles		
Multiple repetitive cycles II		
Canned cycles for turning		

Figures in inch are converted from metric values.  
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# CONTROLLER

## FANUC 32i-A

Axis control / Display unit		Program input & interpolation functions	
Controlled axes	Max. 4 axes are available X, Z axes X, Z, C axes (M type machine) X, Z, Y, C axes (Y type machine) X, Z, B, C axes (MS type machine)	Multiple repetitive cycles Multiple repetitive cycles II Canned cycles for turning Manual guide i <b>Sub / Main spindle function</b> M-Code function M-Code function lock Lock sp. speed command Main sp. constant control Spindle speed override Spindle position decision Rigid tapping	
Simultaneous controllable axes	2axes / Linear and circular (Max. 4axes)	M4 digits	
Least input increment	X, Z, Y, B axes : 0.001 mm (0.0001") C axis : 0.001 deg	S4 digits, binary output	
Least command increment	X, Z, Y, B axes : 0.001 mm (0.0001") C axis : 0.001 deg	G96, G97 50% to 150% (10% units)	
High speed HRV control			
Inch / Metric conversion	G20 / G21		
Interlock	Each axis / All axes		
Machine lock	All axes		
Emergency stop			
Stored stroke check 1	Over-travel		
Stored stroke check 2			
Stored stroke check 3			
Follow-up			
Servo-off			
Backlash compensation	+/- 0~9999 pulses (Rapid traverse & cutting feed)		
Position switch			
Unexpected disturbance torque detection	Back-spin torque limiter (BST)		
High resolution transfer control (HRM)			
LCD / MDI	10.4" Color LCD		
Operation		Data in/output & editing functions	
Automatic operation (memory)		Reader / Puncher interface RS232C	
MDI operation		Memory card input/output	
Search function	Sequence, program	Part program storage length 256 Kbyte	
Program restart		Number of registrable programs expansion Max. 500 programs	
Wrong operation prevention		Memory lock	
Buffer register		Background editing	
Program check function	Dry run., program check	Extended part program edition Copy, move, change of NC program	
Single block		Display, diagnosis & setting functions	
Feed functions		Self-diagnosis function	
Manual jog feed	Rapid, jog, handle	History display Alarm & operation display	
Manual handle feedrate	x1, x10, x100	Help function	
Feed command	F code feedrate direct command	External message	
Feedrate override	0~200 % (10% units)	Run hour / Parts count display	
Jog override	0~2,000 mm/min[79 ipm]	Display of actual spindle speed and T code	
Rapid traverse override	F1, F5, F25/F50, F100%	Actual cutting feedrate display	
Override cancel		Operating monitor screen Rod meter light	
Feed per minute / rotation		Graphic display	
Program input & interpolation functions		Spindle / Servo setting screen	
Nano interpolation	Positioning / Linear / Circular (G00 / G01 / G02, G03)	Selection of 5 optional language	
Dwell	G04, 0~9999.9999 sec	Erase CRT screen display Screen saver	
Thread retract		Automatic data backup	
Variable lead threading		Functions according to machine specification	
1st reference point return	G28, manual	Cs contouring control Turn mill	
Reference point return check	G27	Stored pitch error compensation Turn mill	
2nd reference point return	G30	Polar coordinate interpolation Turn mill	
Program stop / End	M00, M01 / M02, M30	Cylindrical interpolation Turn mill	
Tape code	EIA / ISO	Canned cycles for drilling Turn mill	
Optional block skip	1 ea	spindle orientation expansion Turn mill, Sub spindle	
Maximum programmable dimensions	+/- 9999.9999"	Spindle synchronous control Sub spindle	
Program number	0+4 digits	Torque control Sub spindle	
Absolute and incremental programming		Y axis offset Y type machine	
Decimal point input		Angular axis control Y type machine	
Plane selection	G17, G18, G19	Option	
Work coordinate system selection	G52 to G59	High speed Ethernet 100 Mbps (Option board is required)	
Manual absolute	"ON" Fixed	Optional block skip 9 ea	
Direct drawing dimension programming	Included chamfering / Corner R"	3rd & 4th reference point return	
G code system	A	G code system B / C	
Programmable data input	G10	Part program storage length 512 Kbyte	
Sub program call	10 folds nested	Polygon turning	
Custom macro B		Helical interpolation	
Addition of custom macro common variable	#100 to #199, #500 to #999	Dynamic graphic display	
		Protection of data at 8 levels	

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