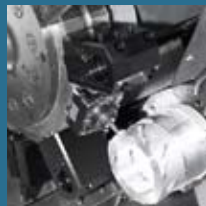




CNC Turning Center
L150/210 Series

Process Concentration Type of Next Generation CNC Turning Center



Basic Structure

- Bed & Guide Way
- Main Spindle & Sub Spindle
- Tail Stock



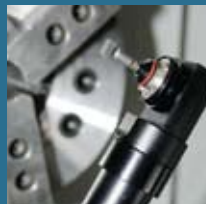
Turret

- VDI Turret
- Mill Tool Holders
- Machining



Easy to Operate

- HYUNDAI WIA Fanuc i Series
- Software



Option & Convenience

- Option
- Chip Conveyor
- Automatic System

High Productivity, Versatile & Integrated Lathe

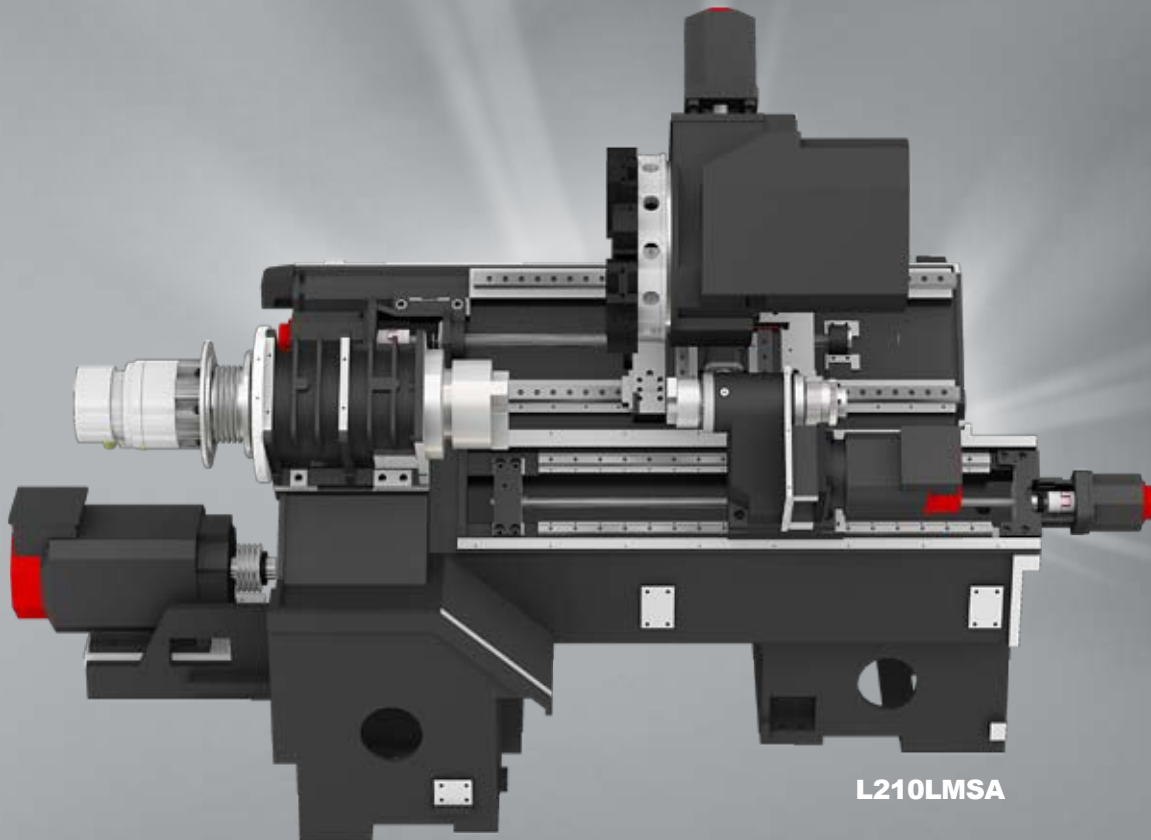
L150/210 Series

- High Speed, High Accuracy
- High Rigidity, ensures Long Tool Life and Machining Accuracy
- Integrated Operation
- Easy Control
- Convenient Operation

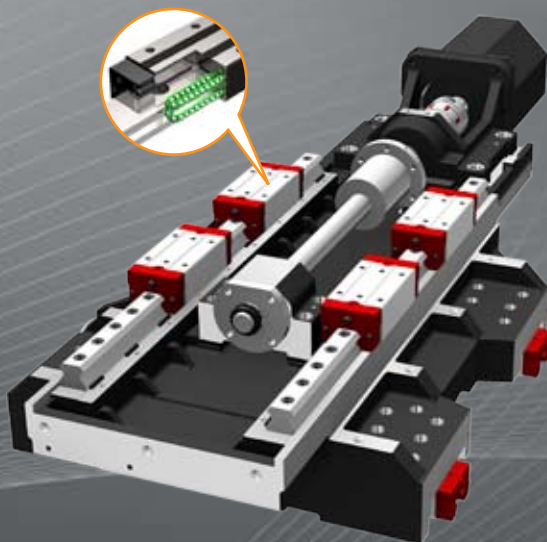


BASIC STRUCTURE

The Best Productivity Popular 6 inch / 8 inch CNC Lathe

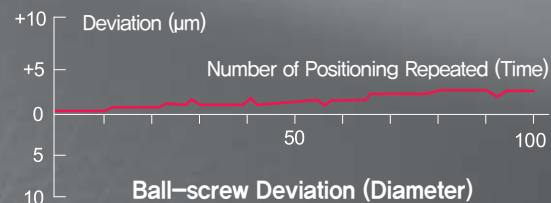


L210LMSA



Pre-tensioned & Double Anchored Ball Screw

Each axes are designed with a large diameter ball-screw, fixed by double anchors on both ends to provide high rigidity and minimize thermal distortion.



Type of Direct Connection of Servo Motor

By direct connecting ball screw to servo motor with disc coupling attached the change of forwarding accuracy due to weight of forwarding axis is optimized, which ensures stable processing.

High Speed LM Guide Adopted

All axes of L150/210 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.

Spindle

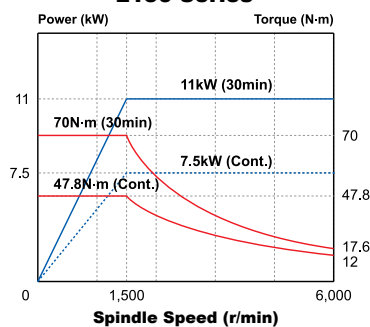
Main Spindle

Main spindle of L150/210 Series increases the machining and assembling for bearing outer assembly is designed to maintain security of spindle unit for a long time.

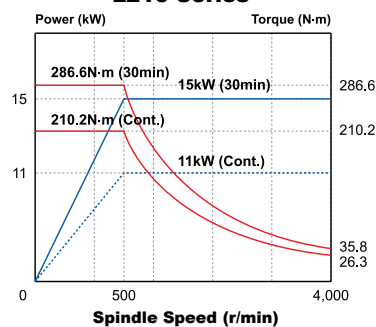
In addition, stable machining is allowed with constant control of main speed by AC spindle motor.



L150 Series

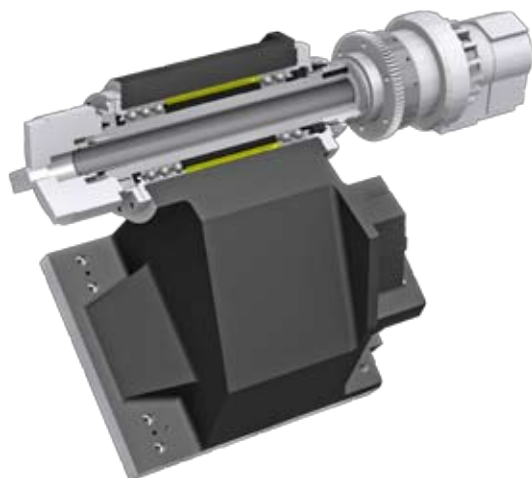


L210 Series

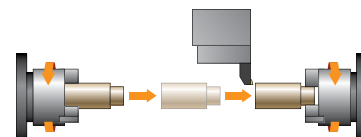
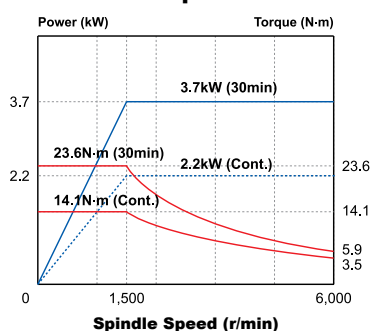


Sub Spindle

"S" Type of L150/210 Series is capable of the secondary processing using sub-spindle, which expand its processing span.



Sub Spindle



Easy Work Coordinate Setting

Work coordinate is automatically set by just input the cut off depth on control panel as a parameter after slightly cutting the work surface.

Main Spindle Specification

ITEM	L150A/LA	L150LSA/LMA/LMSA	L210A/LA	L210LSA/LMA/LMSA
Chuck Size	inch	6"	8"	
Spindle Bore	mm(in)	Ø53 (2.1")	Ø78 (3.1")	
Spindle Speed (rpm)	r/min	6,000	4,000 [5,000]	
Output (Max./Cont.)	kW(HP)	11 / 7.5 (15 / 10)	15 / 11 (20 / 15)	
Torque (Max./Cont.)	N·m	70 / 47.8	286.6 / 210.2	
Spindle Type	-	BELT	BELT	
Spindle Nose	-	A2-5	A2-6	
C-axis Indexing	deg	-	360° (0.001°)	360° (0.001°)

Sub Spindle Specification

ITEM	L150/210 Series
Chuck Size	inch
Spindle Bore	mm(in)
Spindle Speed (rpm)	r/min
Output (Max./Cont.)	kW(HP)
Torque (Max./Cont.)	N·m
Spindle Type	-
Spindle Nose	-

C-axis Control Function



C axis with BZ-Sensor attached performs 0.001°(Command) split angle and position control with 100 r/min, which is capable of high value added contour control using rotating tools.

Tail Stock



Through the use of the button in the control panel or the M-Code of NC program, it is easy to set the position of tail stock.

ITEM	L150/210 Series
Taper	-
Quill Dia.	mm
Travel	mm



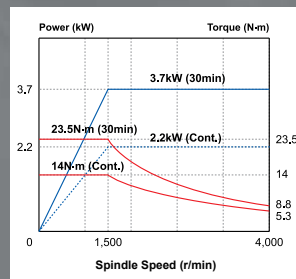
TURRET

A dodecagonal turret driven by high speed, powerful servo motor and a high performance positioning system maintains high precision with a precise index structure and ensures more higher reliability, powerful cutting by adopting 3piece curvic coupling and powerful clamping.

VDI Turret

VDI turret adapted in the L150/210 series, uses a engaging method with only one bolt in the tool's serration, provides user's convenience.

Mill Spindle Torque & Output



Turret

ITEM		L150A/LA/LSA	L150LMA/LMSA	L210A/LA/LSA	L210LMA/LMSA
Number of Tool		12EA	12EA	12EA	12EA
Tool Size	OD	□ 25mm (1")	□ 25mm (1")	□ 25mm (1")	□ 25mm (1")
	ID	Ø32mm (1.3")	Ø32mm (1.3")	Ø40mm (1.6")	Ø40mm (1.6")
Indexing Time		0.2sec/step	0.3sec/step	0.2sec/step	0.3sec/step

Mill Turret

Output (Max./Cont.)	—	3.7/2.2kW (5/3HP)	—	3.7/2.2kW (5/3HP)
Speed (rpm)	—	4,000r/min	—	4,000r/min
Torque (Max./Cont.)	—	23.5/14N·m	—	23.5/14N·m
Collet size	—	Ø20mm (0.79") ER32	—	Ø20mm (0.79") ER32
Type	—	VDI40	—	VDI40

Mill Tool Holder

The rotating tools holder may use ER COLLET and adopter. When using adopter both faces can be fixed, which provides good hardness and accuracy and facilitates exchange of tools.

Straight Milling Head



Angular Milling Head



U-Drill



Drill



Endmil



Face Cutter



Endmill



Tap



Drill



Tap

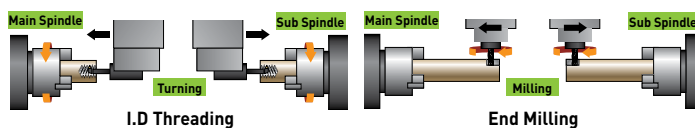
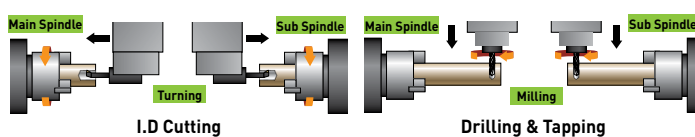
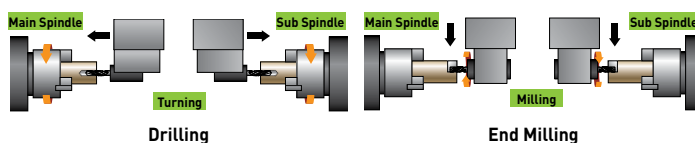
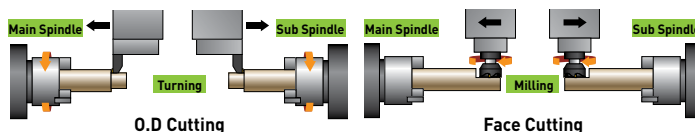


Collet&Cap



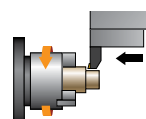
Machining

Machining Variation



Machining Ability

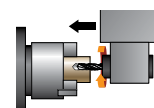
L210A



Cutting (O.D)

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

Processing diameter	Ø280 mm
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

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

Work diameter	Ø70 mm
Drill diameter	Ø40 mm
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

Sample Workpiece



Programming system for creating CNC programs easily.

Easy to Operate

HYUNDAI WIA's smart system is capable of more rapid program setting and readily maintaining, and is optimal to the productivity of machine.



M-Code List 



Calculator 



Product Guide 



HW-PGi F

Programming Guide i for Fanuc System



Realistic 3D solid animation

Programing is simulated



Example of easy programming

Readily programing with interactive type, without code



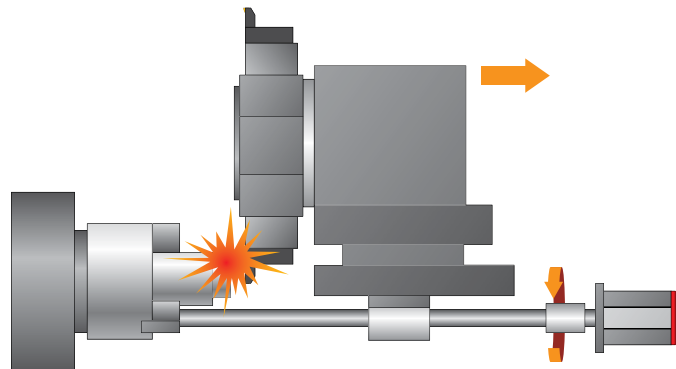
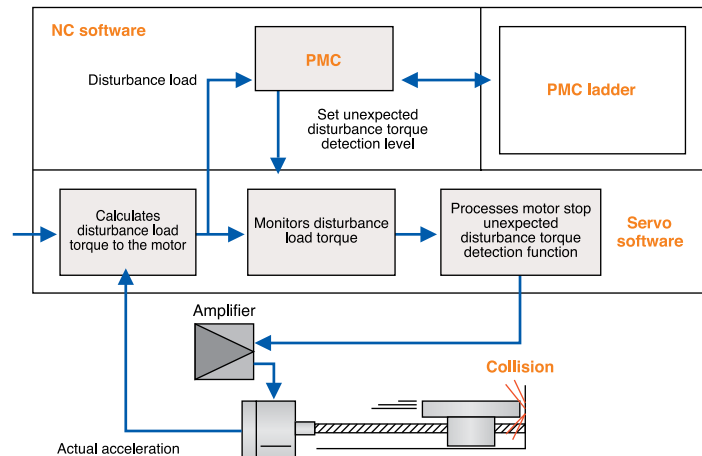
Engraving Cycle

If characters are entered as C axis control, when the character is only entered without separate program is programmed automatically.

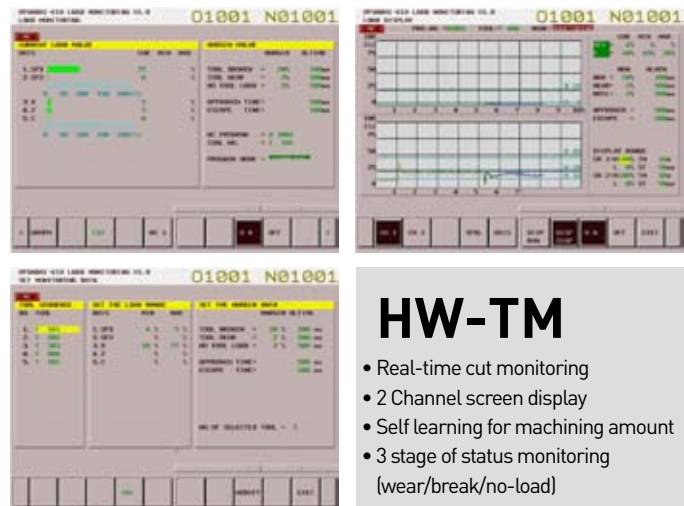
HW-TL : Torque Limiter

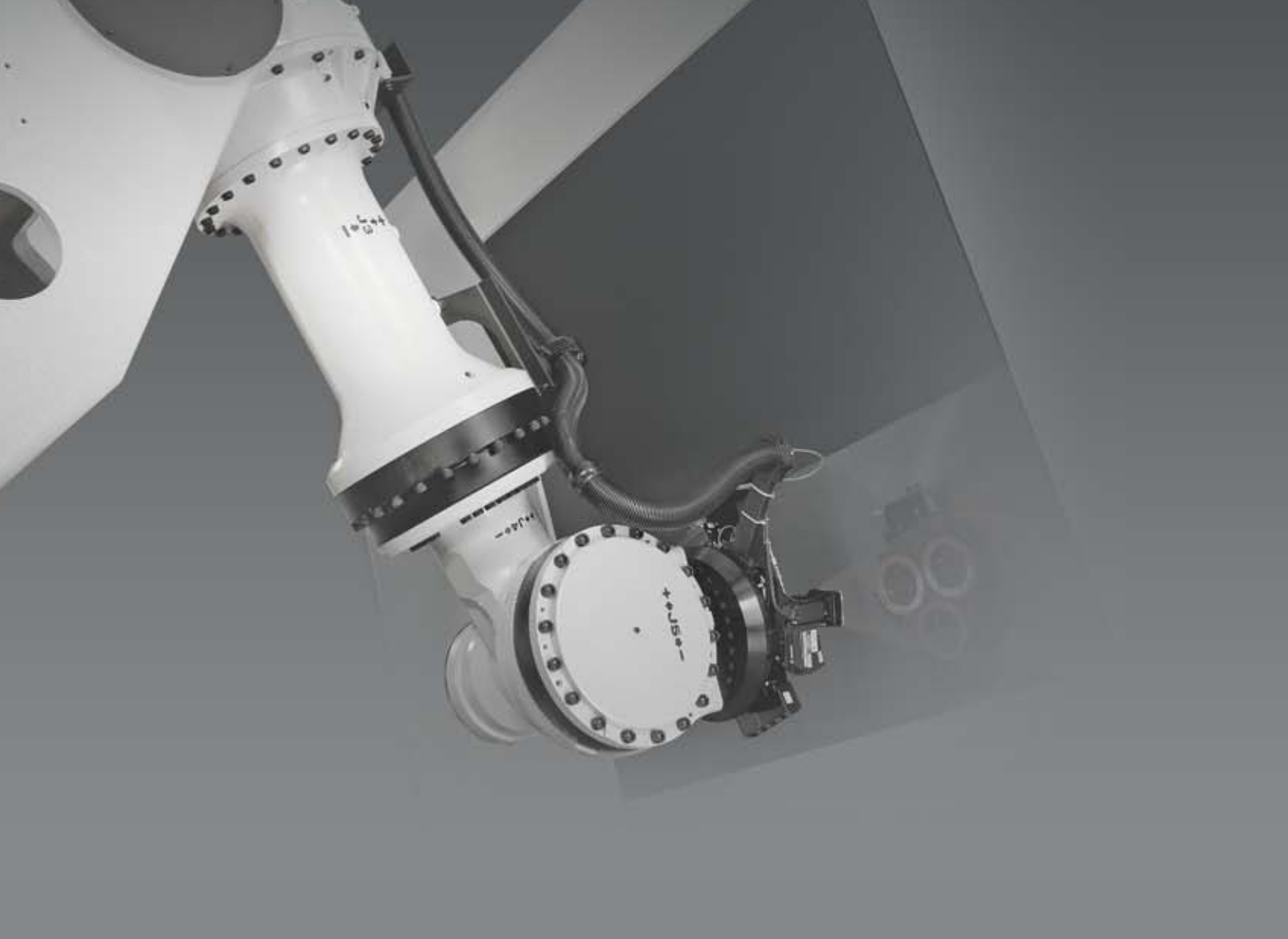
If the turrets or tools are impacted, the axis is retreated by sensing contact load amount on the machine, and cause the machine's damage to minimize.

Torque Limiter Diagram



HW-TM : Tool Monitoring System





Option & Convenience

Bar Feeder

When processing rod material it implements unmanned automation improving processing efficiency.

Long Type	3m (118.1")
Max load processing capa.	Ø42mm (1.7")
Shot Type	1.5m (59.1")
Max load processing capa.	Ø65mm (2.6")



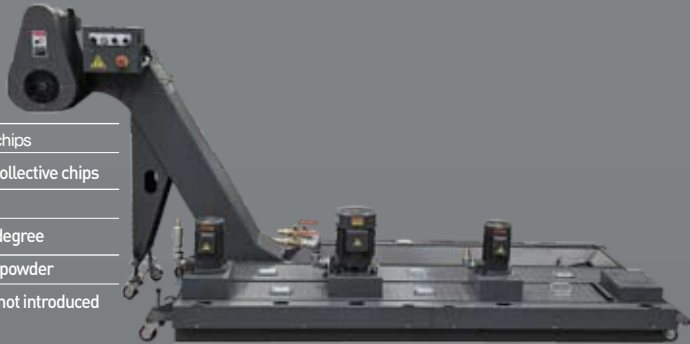
Parts Catcher

It is a device that automatically collects cut material after processing rod material or single product after processing without opening door out of the machine, which ensures working convenience.



Chip Conveyor

Hinge Belt Type	Material	SS41, 45C, Steel casting	Chip	Roughly cut chips Synthetic chips
	Show highly efficiency when treating lots of chips synthetic chip treatment, collective chips			
Scraper Type	Material	SS41, 45C, Steel casting	Chip	Chips shortly cut and out
	Facilitate to treat chip shortly cut and out, facilitate to forward chips with 90 degree			
Drum Filter Type	Material	AL, casting, non-metal	Chip	Chips in low density and fine powder
	Have advantage in precision when processing aluminum because chips are not introduced to coolant nozzle			



Automatic Operation Support

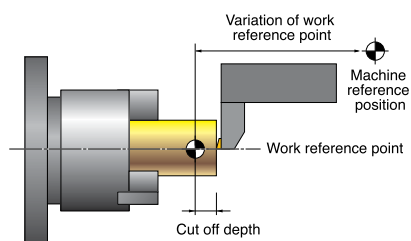
Q-Setter



By touching manually the tip of tool edge against the sensor, the worker can calibrate the tool quickly and accurately.

So test cutting, measuring, calculation and calibration input are not needed. Even novice worker can calibrate within 30 seconds.

Easy Work Coordinate Setting

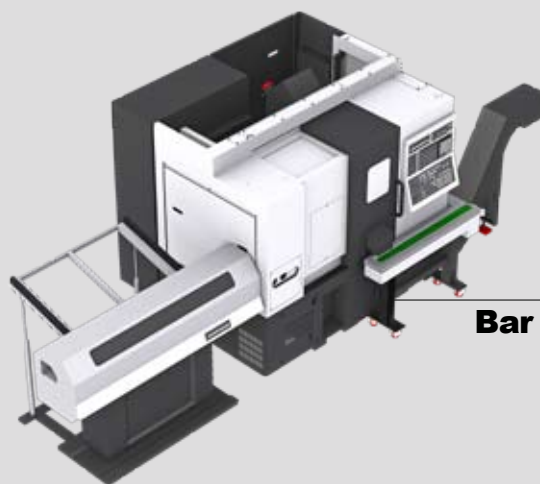


After lightly cutting section of material to be processed, cutting amount is input to control panel as a parameter and the material coordinate system is automatically set. The coordinate system can be set within 30 seconds without measuring and calculation.

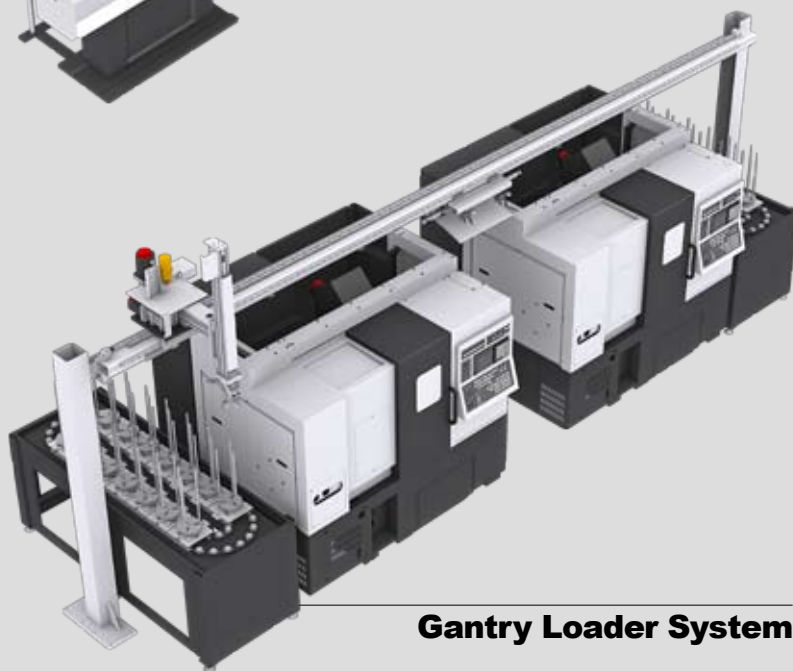
Linear Scale



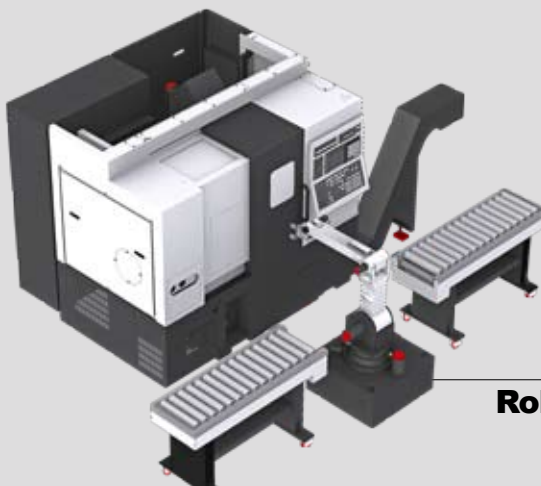
The linear scale can achieve highly accurate positioning and be highly tolerable against thermal deformation, which processes more accurate product.



Bar Feeder System



Gantry Loader System



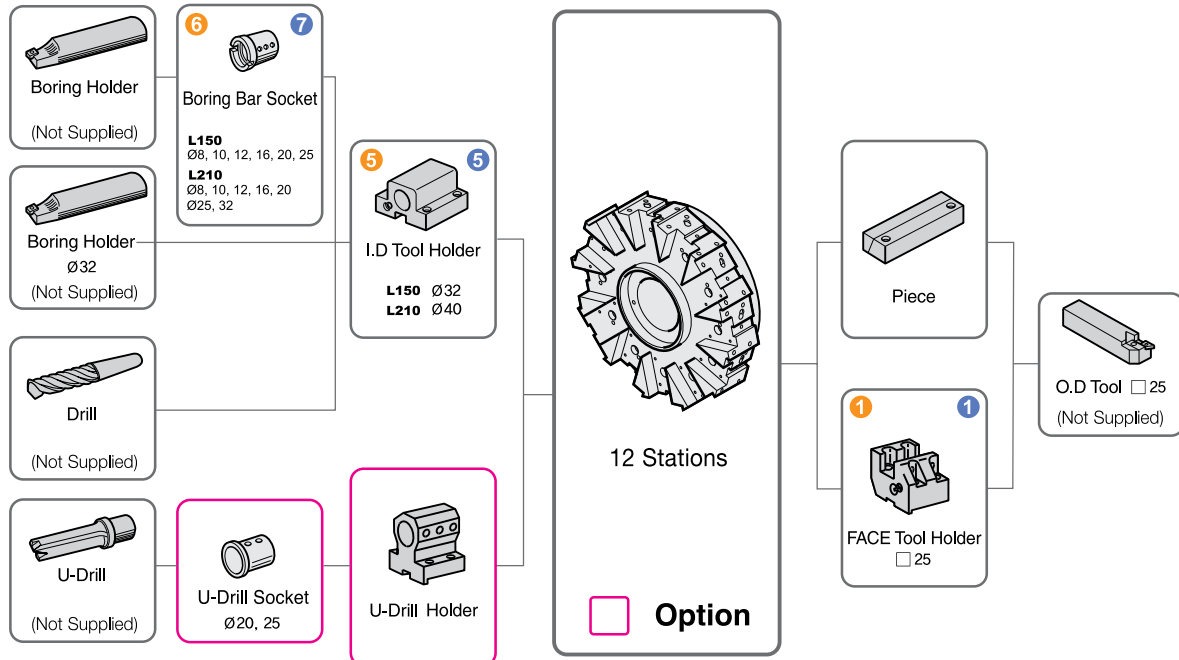
Robot System

Specifications

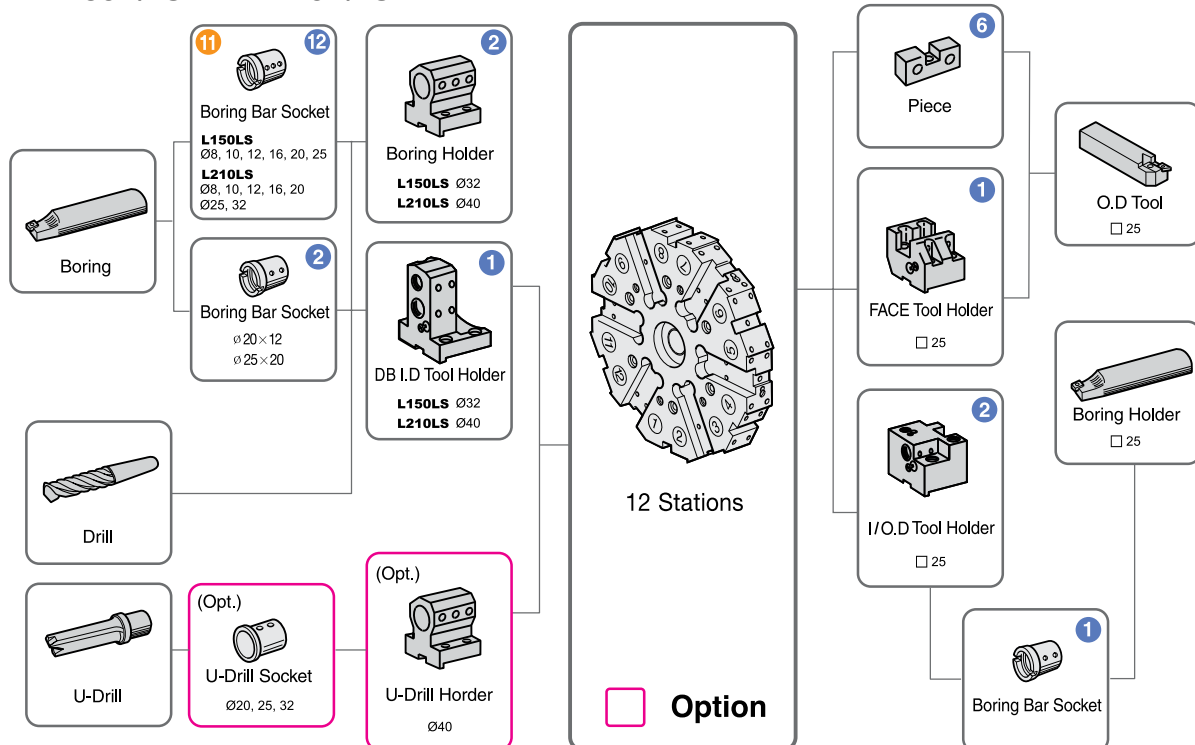
unit : mm

Tooling System

● L150A/LA ● L210A/LA



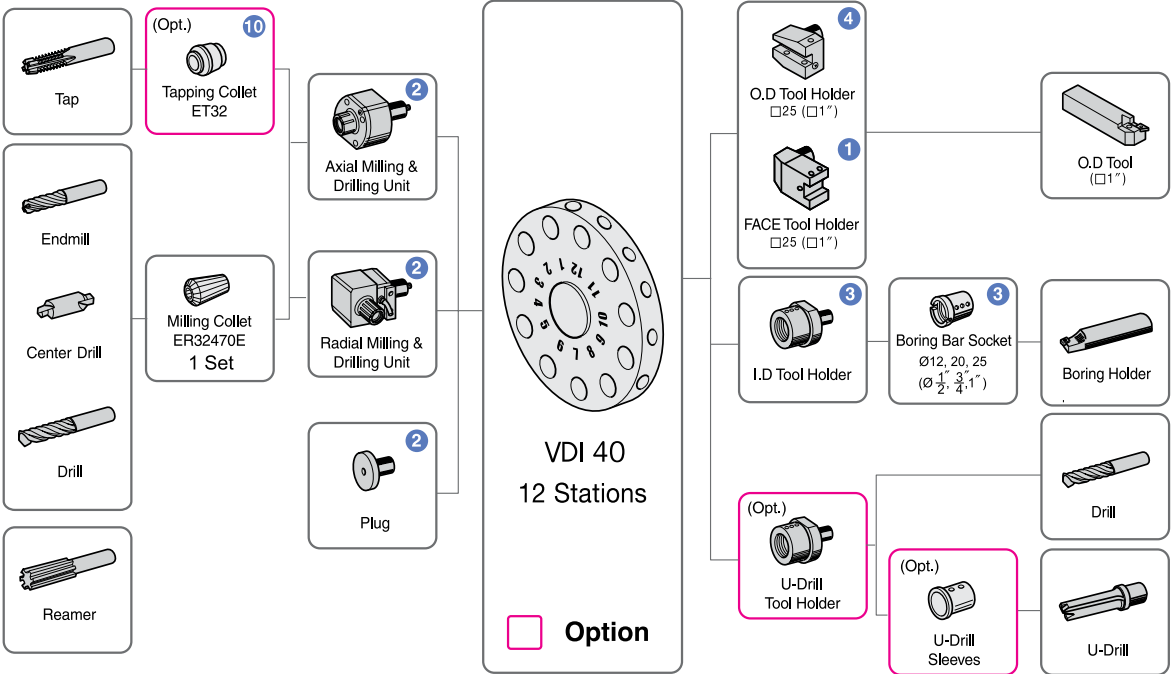
● L150A/LSA ● L210A/LSA



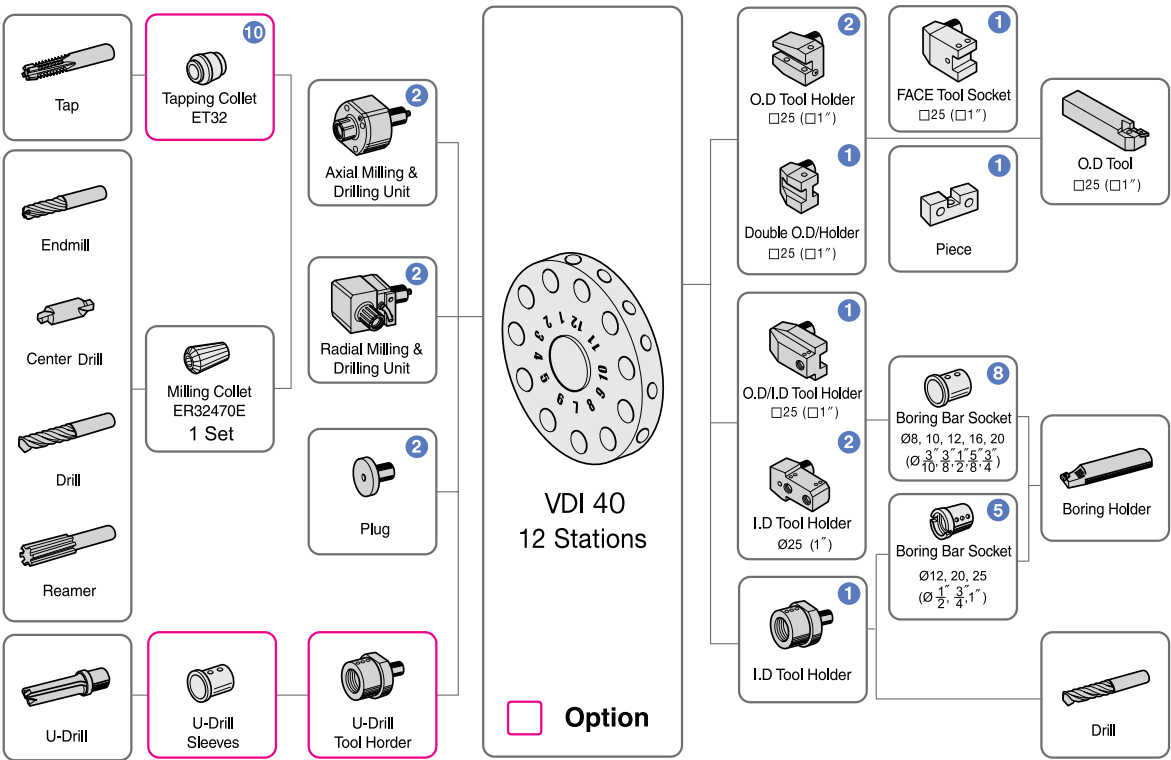
unit : mm

Tooling System

● **L150LMA** ● **L210LMA**



● **L150LMSA** ● **L210LMSA**



unit : mm(in)

Technical drawing of a mechanical assembly, likely a pump or motor component, showing dimensions in inches (top) and millimeters (bottom). The drawing includes a central yellow-shaded component and several surrounding parts, including a large grey component on the right and a smaller grey component on the left. Dimensions are provided for various parts and overall assembly sizes.

Dimensions (Inches / Millimeters):

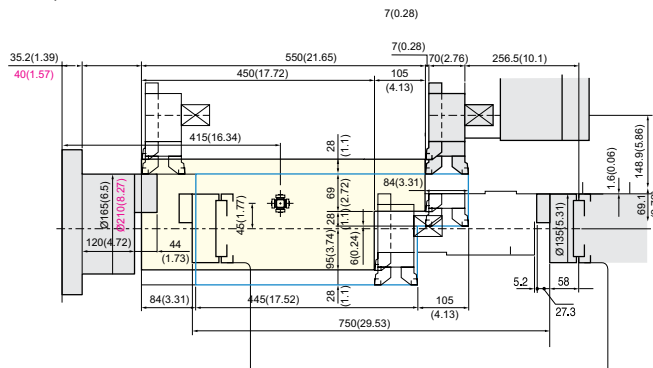
- Overall width: 35.2 (1.39) / 40 (1.57)
- Overall height: 125 (4.92)
- Top mounting flange: 550 (21.65)
- Top mounting flange: 65 (2.56)
- Top mounting flange: 175 (6.89)
- Top mounting flange: 415 (16.34)
- Top mounting flange: 6 (0.24)
- Top mounting flange: 30 (1.18)
- Top mounting flange: 60 (2.36)
- Top mounting flange: 44 (1.73)
- Top mounting flange: 46 (1.77)
- Top mounting flange: 100 (3.94)
- Top mounting flange: 100 (3.94)
- Top mounting flange: 4 (0.16)
- Top mounting flange: 43 (1.69)
- Top mounting flange: 46 (1.81)
- Top mounting flange: 171.9 (6.77)
- Top mounting flange: 108.3 (4.26)
- Top mounting flange: 215 (8.46)
- Top mounting flange: 450 (17.72)
- Top mounting flange: 700 (27.56)
- Top mounting flange: 120 (4.72)
- Top mounting flange: 44 (1.73)

unit : mm(in)

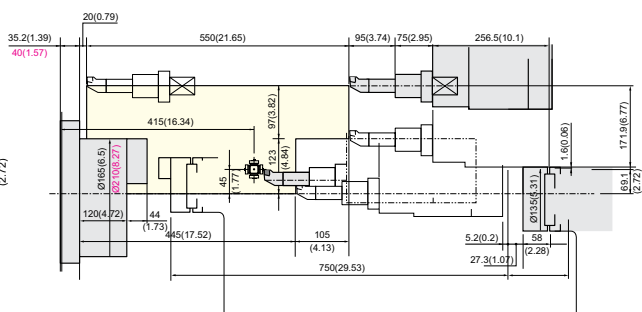
Tooling Travel Range

L150LMSA **L210LMSA**

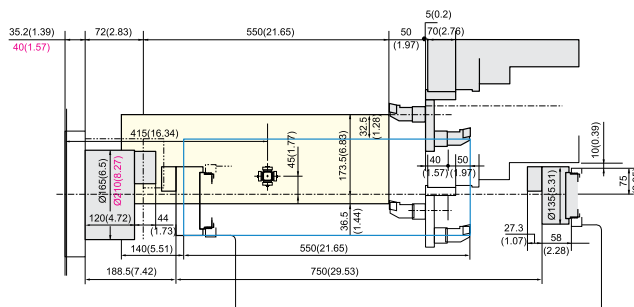
O.D, Double O.D Holder



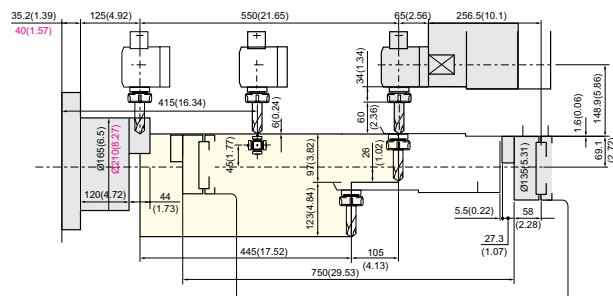
I.D Tool Holder



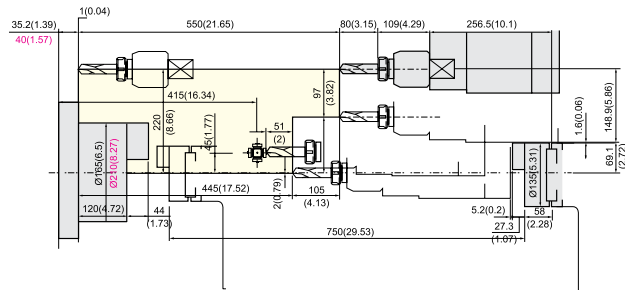
Double I.D Holder



Angular Milling Head



Straight Milling Head

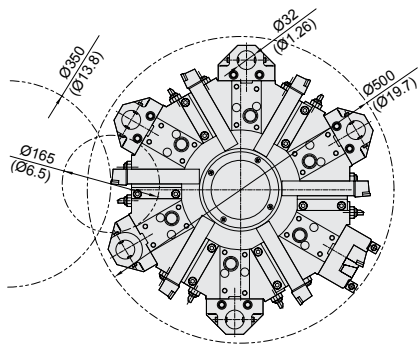


Specifications

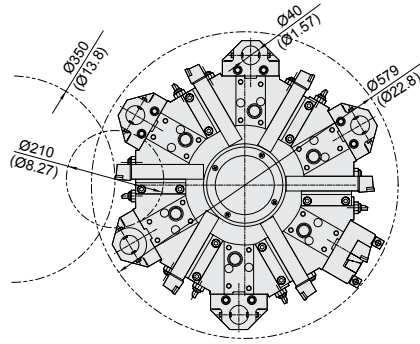
unit : mm(in)

Interference

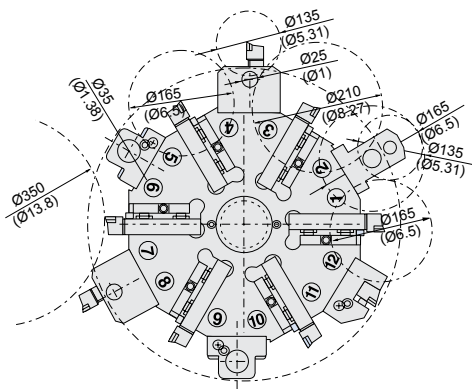
L150A/LA



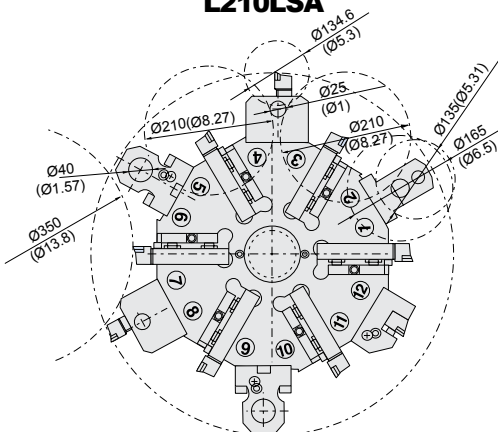
L210A/LA



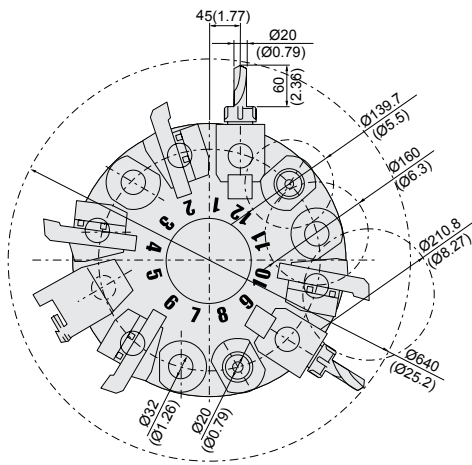
L150LSA



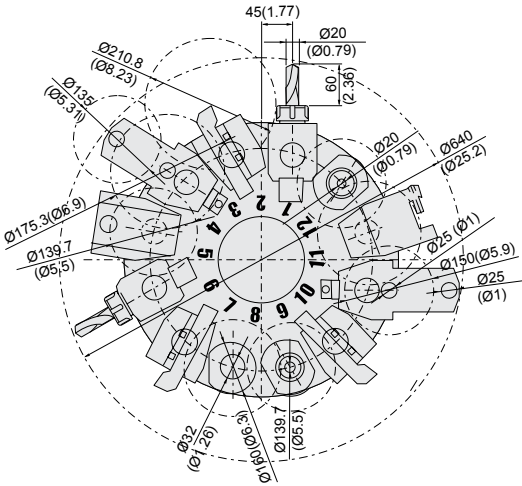
L210LSA



L150LMA L210LMA



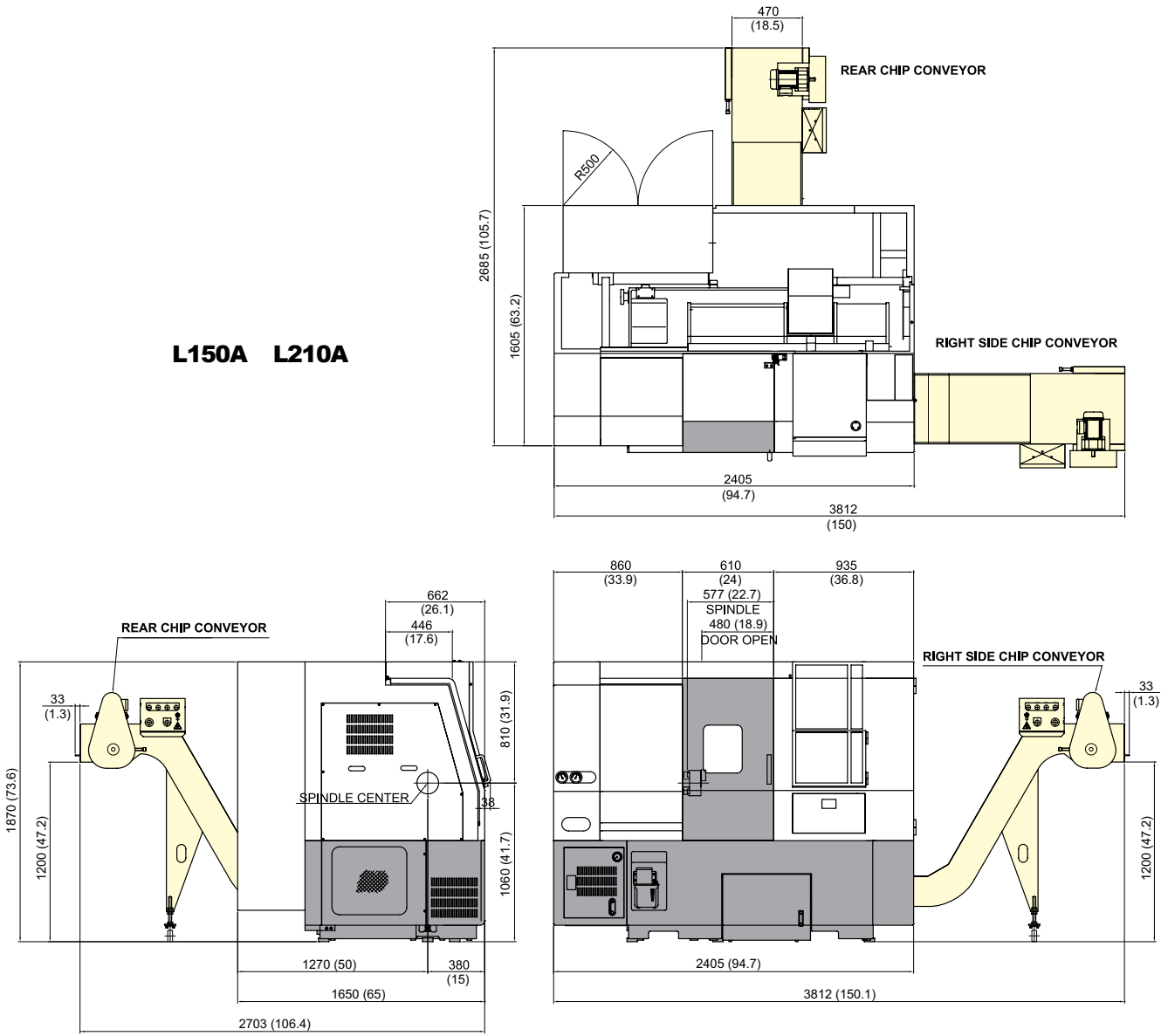
L150LMSA L210LMSA



unit : mm

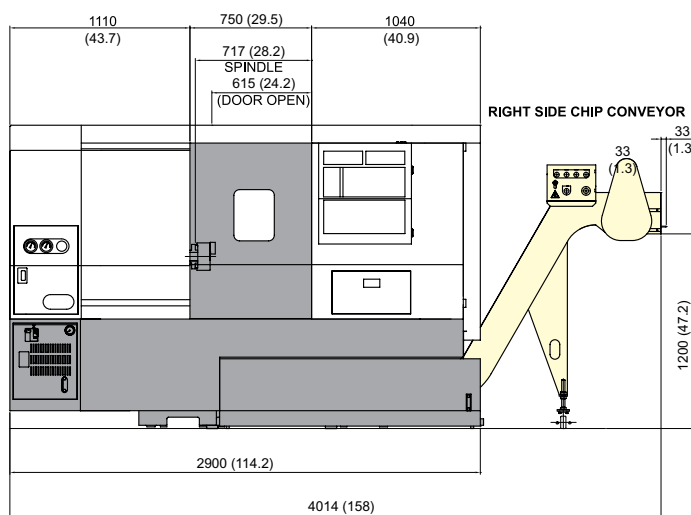
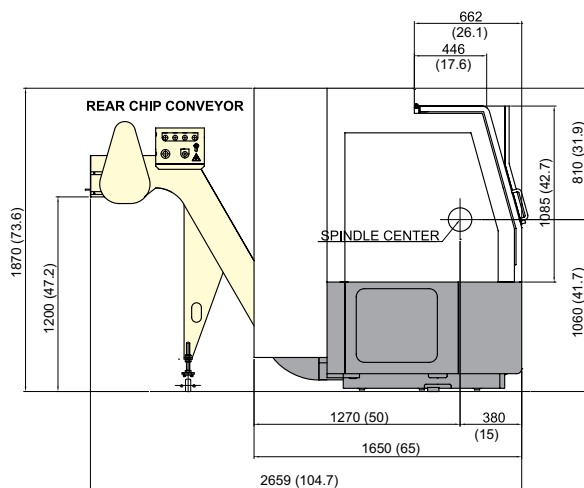
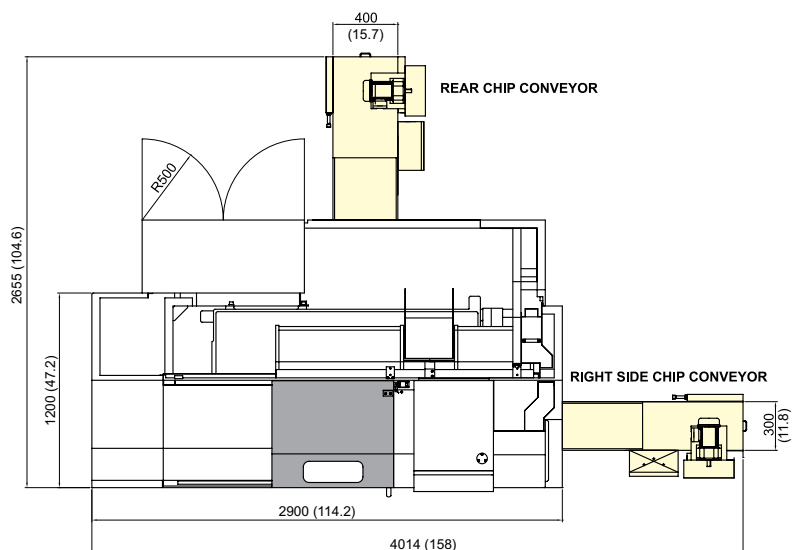
External Dimensions

L150A L210A



unit : mm(in)

L150LA/LSA/LMA/LMSA
L210LA/LSA/LMA/LMSA



Specifications

ITEM				L150A	L150LA	L150LSA	L150LMA	L150LMSA
CAPACITY	Swing Over the Bed		mm(in)	ø 550 (21.7")				
	Swing Over the Carriage		mm(in)	ø 350 (13.8")				
	Max. Turning Dia.		mm(in)	ø 350 (13.8")			ø 255 (10")	
	Max. Turning Length		mm(in)	410 (16.1")	530 (20.9")			
	Bar Capacity	Main	mm(in)	ø 45 (1.8")				
Sub		mm(in)	—		ø 33 (1.3")	—	ø 33 (1.3")	
SPINDLE	Chuck Size	Main	mm(in)	ø 165 (6.5")				
		Sub	mm(in)	—		ø 135 (5.3")	—	ø 135 (5.3")
	Spindle Bore	Main	mm(in)	ø 53 (2.1")				
		Sub	mm(in)	—		ø 43 (1.7")	—	ø 43 (1.7")
	Spindle Speed (rpm)	Main	r/min	6,000				
		Sub	r/min	—		6,000	—	6,000
	Motor (Max/Cont.)	Main	kW(HP)	11/7.5 (15/10)				
		Sub	kW(HP)	—		3.7/2.2 (5/3)	—	3.7/2.2 (5/3)
	Torque (Max/Cont.)	Main	N.m	70/47.8				
		Sub	N.m	—		23.6/14.1	—	23.6/14.1
	Spindle Type	Main		BELT				
		Sub		—		BELT	—	BELT
	Spindle Nose	Main		A2-5				
		Sub	mm(in)	—		FLAT ø 110 (4.3")	—	FLAT ø 110 (4.3")
	C-axis Indexing			deg	—		360 ° (0.001 °)	
FEED	Travel (X/Z/B)		mm(in)	210/430 (8.3"/16.9")	210/550 (8.3"/21.7")	210/550/750 (8.3"/21.7"/29.5")	220/550 (8.7"/21.7")	220/550/750 (8.7"/21.7"/29.5")
	Rapid Travel (X/Z/B)		m/min	36/36		36/36/30	36/36	36/36/30
	Slide Type		—	LM GUIDE				
TURRET	No. of Tool		EA	12				
	Tool Size	OD	mm(in)	□ 25×25 (1"×1")				
		ID	mm(in)	ø 32 (1.3")				
Indexing Time			sec/step	0.2		0.3		
LIVE TOOL	Motor (Max/Cont.)		kW(HP)	—			3.7/2.2 (5/3)	
	Milling Tool Speed (rpm)		r/min	—			4,000	
	Touque (Max/Cont.)		N.m	—			23.5 / 14	
	Collet Size		mm(in)	—			ø 20 (0.8") ER32	
	Type		—	—			VDI40	
TAIL STOCK	Taper		—	MT4		—	MT4	—
	Quill Dia.		mm(in)	ø 56 (2.2")		—	ø 56 (2.2")	—
	Quill Travel		mm(in)	—				
	Travel		mm(in)	400 (15.7")	520 (20.5")	—	720 (28.3")	—
TANK CAPACITY	Coolant Tank		ℓ (gal)	135 (35.7)	185 (48.9)	230 (60.8)		
	Lubricating Tank		ℓ (gal)	1.8				
POWER SUPPLY	Electric Power Supply		kVA	25		30		
	Thickness of Power Cable		Sq	OVER 16		OVER 25		
	Voltage		V/Hz	220/60 (200/50)				
MACHINE	Floor Space (L×W)		mm(in)	2,405×1,650 (94.7"×65")	2,900x1,650 (114.2"×65")			
	Height		mm(in)	1,870 (73.6")				
	Weight		kg(lb)	4,000 (8,818)	4,100 (9,039)	4,300 (9,480)	4,200 (9,259)	4,300 (9,480)
NC	Controller		—	HYUNDAI WIA FANUC i Series [FANUC 32i-A] [SIEMENS 828D]				

❖ Specifications are subject to change for improvement without notice.

[] : Option

Specifications

Specifications

ITEM				L210A	L210LA	L210LSA	L210LMA	L210LMSA	L210C	
CAPACITY	Swing Over the Bed		mm(in)	ø 550 (21.7")						
	Swing Over the Carriage		mm(in)	ø 350 (13.8")						
	Max. Turning Dia.		mm(in)	ø 350 (13.8")			ø 255 (10")		ø 350 (13.8")	
	Max. Turning Length		mm(in)	410 (16.1")	530 (20.9")				400 (15.7")	
	Bar Capacity	Main	mm(in)	ø 65 (2.6")					ø 80 (3.15")	
		Sub	mm(in)	—		ø 33 (1.3")	—	ø 33 (1.3")	—	
SPINDLE	Chuck Size	Main	mm(in)	ø 210 (8")					ø 254 (10")	
		Sub	mm(in)	—		ø 135 (5.3")	—	ø 135 (5.3")	—	
	Spindle Bore	Main	mm(in)	ø 78 (3.07")					ø 95 (3.74")	
		Sub	mm(in)	—		ø 43 (1.7")	—	ø 43 (1.7")	—	
	Spindle Speed (rpm)	Main	r/min	4,000 [5,000]					3,000	
		Sub	r/min	—		6,000	—	6,000	—	
	Motor (Max/Cont.)	Main	kW(HP)	15/11 (20/15)					—	
		Sub	kW(HP)	—		3.7/2.2 (5/3)	—	3.7/2.2 (5/3)	—	
	Torque (Max/Cont.)	Main	N,m	286.6/210.2					—	
		Sub	N,m	—		23.6/14.1	—	23.6/14.1	—	
	Spindle Type	Main		BELT						—
		Sub		—		BELT	—	BELT	—	
	Spindle Nose	Main		A2-6					A2-8	
		Sub		—		FLAT ø 110	—	FLAT ø 110	—	
	C-axis Indexing			deg	—		360 ° (0.001 °)			—
	FEED	Travel (X/Z/B)		mm(in)	210/430 (8.3"/16.9")	210/550 (8.3")(21.7")	210/550/750 (8.3"/21.7"/29.5")	220/550 (8.7")(21.7")	220/550/750 (8.7"/21.7"/29.5")	210/430 (8.3")(16.9")
Rapid Travel (X/Z/B)		m/min	36/36		36/36/30	36/36	36/36/30	36/36		
Slide Type		—	LM GUIDE							
TURRET	No. of Tool		EA	12						
	Tool Size	OD	mm(in)	□ 25×25 (1"×1")						
		ID	mm(in)	ø 40 (1.6")						
	Indexing Time			sec/step	0.2			0.3	0.2	
LIVE TOOL	Motor (Max/Cont.)		kW(HP)	—			3.7/2.2 (5/3)		—	
	Milling Tool Speed (rpm)		r/min	—			4,000		—	
	Touque (Max/Cont.)		N,m	—			23.6/14.1	23.5/14	—	
	Collet Size		mm(in)	—			Ø20 (0.8") ER32		—	
	Type		—	—			VDI 40		—	
TAIL STOCK	Taper		—	MT4		—	MT4	—	MT4	
	Quill Dia.		mm(in)	ø 56 (2.2")		—	ø 56 (2.2")	—	ø 56 (2.2")	
	Quill Travel		mm(in)	—						
	Travel		mm(in)	400 (15.7")	520 (20.5")	—	720 (28.3")	—	400 (15.7")	
TANK CAPACITY	Coolant Tank		ℓ (gal)	135 (35.7)	185 (48.9)	230 (60.8)			135 (35.7)	
	Lubricating Tank		ℓ (gal)	1.8 (0.48)						
POWER SUPPLY	Electric Power Supply		kVA	25		30			25	
	Thickness of Power Cable		Sq	OVER 16		OVER 25			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 (114.2"×65")				2,405×1,650 (94.7"×65")	
	Height		mm(in)	1,870 (73.6")						
	Weight		kg(lb)	4,100 (9,039)	4,200 (9,259)	4,300 (9,480)		4,400 (9,700)	4,200 (9,259)	
NC	Controller		—	HYUNDAI WIA FANUC i Series [FANUC 32i-A] [SIEMENS 828D]						

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[] : Option

Standard & Optional

L150 Series

Spindle & Chuck		A(LA)	LMA	LSA	LMSA
Main Spindle Hollow Chuck 3 Jaw	6"	●	●	●	●
	8"	○	○	○	○
Main Spindle Solid Chuck 3 Jaw	6"	○	○	○	○
	8"	○	○	○	○
Sub Spindle Hollow Chuck 3 Jaw	5"	—	—	●	●
	6"	—	—	X	X
Sub Spindle Solid Chuck 3 Jaw	5"	—	—	○	○
	6"	—	—	X	X
Standard Soft Jaw(1set)		●	●	●	●
Chuck Clamp Foot Switch		●	●	●	●
2 Steps Hyd. Pressure Device		○	○	○	○
Spindle Inside Stopper		○	○	○	○
Sub Spindle 5" Index		—	—	○	○
Main Spindle 5" Index		○	—	○	—
Cs-Axis(0.001")		○	●	○	●
Chuck Open/Close Confirmation Device		○	○	○	○
2 Steps Chuck Foot Switch		☆	☆	☆	☆
Sub Spindle Foot Switch		—	—	☆	☆
Turret					
Tool Holder		●	●	●	●
Mill Turret	Axial	●	●	●	●
	Collet Type,2ea	—	●	—	●
Angular Milling Head(Radial)	Collet Type,2ea	—	●	—	●
	Adapter Type	—	○	—	○
Angular Milling Head(Radial)	Adapter Type	—	○	—	○
	Boring Sleeve	●	●	●	●
Drill Socket		●	●	●	●
U-Drill Holder		○	○	○	○
U-Drill Holder Sleeve		○	○	○	○
O.D Extension Holder	For Out-Dia	☆	—	☆	—
	Swivel Head	—	☆	—	☆
Tail Stock & Steady Rest					
Semi Programmable Tail Stock		●	●	X	X
Quill Type Tail Stock		○	○	X	X
Programmable Tail Stock		X	X	X	X
Manual Type Hyd. Steady Rest	Only for Quill Type Tail Stock	○	○	X	X
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		○	○	○	○
Spindle Thru Coolant(Only for Special Chuck)		☆	☆	☆	☆
Thru Coolant for Live Tool		X	X	X	X
Chuck Air Blow(Upper Chuck)		○	○	○	○
Sub Spindle 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		☆	☆	☆	☆
Chip Disposal					
Coolant Tank	135 ℓ	●	—	—	—
	185 ℓ	L●	—	●	—
	230 ℓ	—	●	—	●
Chip Conveyor(Hinge/Scraper)	Front(Right)	○	○	○	○
	Rear(Rear)	○	○	○	○
Special Chip Conveyor(Drum Filter)		☆	☆	☆	☆
Chip Box	Standard(180 ℓ)	○	○	○	○
	Swing(200 ℓ)	○	○	○	○
	Large Size(330 ℓ)	○	○	○	○
	Customized	☆	☆	☆	☆

❖ The specifications as above will only serve as a reference.

● : Standard ○ : Option ☆ : Prior Consultation X : Non Application — : Impossible

Safety Device		A(LA)	LMA	LSA	LMSA
Door Inter-Lock		●	●	●	●
Total Splash Guard		●	●	●	●
Chuck Pressure Failure Detector		○	○	○	○
Back Spin Torque Limiter (BST)		●	●	●	●
Torque Limiter		☆	☆	☆	☆
Electric Device					
Call Light	1 Color : ■	●	●	●	●
	3 Color : ■ ■ ■	○	○	○	○
Call Light & Buzzer	3 Color : ■ ■ ■ B	○	○	○	○
Electric Cabinet Light		○	○	○	○
Remote MPG		X	X	X	X
Spindle Load Meter (LED Type)	FANUC	○	○	○	○
	SIEMENS	X	X	X	X
Spindle RPM Meter (LED Type)	FANUC	○	○	○	○
	SIEMENS	X	X	X	X
Work Counter		Digital	○	○	○
Total Counter		Digital	○	○	○
Tool Counter		Digital	○	○	○
Multi Tool Counter	6ea	○	○	○	○
	9ea	○	○	○	○
Electric Circuit Breaker		○	○	○	○
AVR(Auto Voltage Regulator)		☆	☆	☆	☆
Transformer & Cable	25kVA	○	○	—	—
	30kVA	—	—	○	○
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	X	X	X	X
	Z Axis	☆	☆	☆	☆
Coolant Level Sensor (Only for Chip Conveyor)		☆	☆	☆	☆
Environment					
Air Conditioner		○	○	○	○
Dehumidifier		○	○	○	○
Oil Mist Collector		○	○	○	○
Oil Skimmer (Only for Chip Conveyor)		☆	☆	☆	☆
MQL(Minimal Quantity Lubrication)		☆	☆	☆	☆
Fixture & Automation					
Auto Door	Standard	○	○	○	○
	High Speed	○	○	○	○
Auto Shutter (Only for Automatic System)		☆	☆	☆	☆
Sub Operation Pannel		☆	☆	☆	☆
Bar Feeder Interface		○	○	○	○
Bar Feeder(FEDEX)		☆	☆	☆	☆
Sub Spindle Work Ejector (Air Unit)		—	—	○	○
Extra M-Code 4ea		○	○	○	○
Automation Interface		☆	☆	☆	☆
I/O Extension (IN & OUT)	16Contact	○	○	○	○
	32Contact	○	○	○	○
	Main SP.	○	○	○	○
Parts Catcher	Sub Axis	—	—	○	○
Sub Spindle Work Pusher(Spring Type)		—	—	○	○
Turret Work Pusher (For Automation)		☆	☆	☆	☆
Parts Conveyor		☆	☆	☆	☆
Semi Automation System		☆	☆	☆	☆
Hyd. Device					
Standard Hyd. Cylinder	Hollow	●	●	●	●
	35bar/15 ℓ	●	●	●	●
Software					
Machine Guidance		☆	☆	☆	☆
HWTM (Tool Monitoring System)		☆	☆	☆	☆
DNC Software		○	○	○	○
Dialogue Program		☆	☆	☆	☆
ETC					
Tool Box		●	●	●	●
Customized Color	Need Munsell No.	☆	☆	☆	☆
CAD & CAM		☆	☆	☆	☆

Standard & Optional

L210 Series

Spindle & Chuck		A(LA)	LMA	LSA	LMSA
Main Spindle Hollow Chuck 3 Jaw	8"	●	●	●	●
	10"	○	○	○	○
	8"	○	○	○	○
Main Spindle Solid Chuck 3 Jaw	10"	○	○	○	○
	5"	—	—	●	●
Sub Spindle Hollow Chuck 3 Jaw	6"	—	—	X	X
	5"	—	—	○	○
Sub Spindle Solid Chuck 3 Jaw	6"	—	—	X	X
		●	●	●	●
Standard Soft Jaw(1set)		●	●	●	●
Chuck Clamp Foot Switch		●	●	●	●
2 Steps Hyd. Pressure Device		○	○	○	○
Spindle Inside Stopper		○	○	○	○
Sub Spindle 5" Index		—	—	○	○
Main Spindle 5" Index		○	—	○	—
Cs-Axis(0.001")		○	●	○	●
Chuck Open/Close Confirmation Device		○	○	○	○
2 Steps Chuck Foot Switch		☆	☆	☆	☆
Sub Spindle Foot Switch		—	—	☆	☆
Turret					
Tool Holder		●	●	●	●
Mill Turret	Axial	●	●	●	●
		—	●	—	●
Straight Milling Head(Axial)		—	●	—	●
Angular Milling Head(Radial)		—	●	—	●
Straight Milling Head(Axial)		—	○	—	○
Angular Milling Head(Radial)		—	○	—	○
Boring Sleeve		●	●	●	●
Drill Socket		●	●	●	●
U-Drill Holder		○	○	○	○
U-Drill Holder Sleeve		○	○	○	○
O.D Extension Holder	For Out-Dia	☆	—	☆	—
Swivel Head		—	☆	—	☆
Tail Stock & Steady Rest					
Semi Programmable Tail Stock		●	●	X	X
Quill Type Tail Stock		○	○	X	X
Programmable Tail Stock		X	X	X	X
Manual Type Hyd. Steady Rest	Only for Quill Type Tail Stock	○	○	X	X
		●	●	—	—
Standard Live Center		●	●	—	—
High Precesion 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		○	○	○	○
Spindle Thru Coolant(Only for Special Chuck)		☆	☆	☆	☆
Thru Coolant for Live Tool		X	X	X	X
Chuck Air Blow(Upper Chuck)		○	○	○	○
Sub Spindle 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		☆	☆	☆	☆
Chip Disposal					
Coolant Tank	135 ℓ	—	—	●	—
	185 ℓ	L●	—	—	—
	230 ℓ	●	●	—	●
Chip Conveyor(Hinge/Scraper)	Front(Right)	○	○	○	○
	Rear(Rear)	○	○	○	○
Special Chip Conveyor(DRUM FILTER)		☆	☆	☆	☆
Chip Box	Standard(180 ℓ)	○	○	○	○
	Swing(200 ℓ)	○	○	○	○
	Large Size(330 ℓ)	○	○	○	○
	Customized	☆	☆	☆	☆

❖ The specifications as above will only serve as a reference.

● : Standard ○ : Option ☆ : Prior Consultation X : Non Application — : Impossible

Safety Device		A(LA)	LMA	LSA	LMSA
Door Inter-Lock		●	●	●	●
Total Splash Guard		●	●	●	●
Chuck Pressure Failure Detector		○	○	○	○
Back Spin Torque Limiter (BST)		●	●	●	●
Torque Limiter		☆	☆	☆	☆
Electric Device					
Call Light	1 Color : ●	●	●	●	●
	3 Color : ●●●	○	○	○	○
Call Light & Buzzer	3 Color : ●●●B	○	○	○	○
		○	○	○	○
Electric Cabinet Light		○	○	○	○
Remote MPG		X	X	X	X
Spindle Load Meter (LED Type)	FANUC	○	○	○	○
	SIEMENS	X	X	X	X
Spindle RPM Meter (LED Type)	FANUC	○	○	○	○
	SIEMENS	X	X	X	X
Work Counter		○	○	○	○
Total Counter		○	○	○	○
Tool Counter		○	○	○	○
Multi Tool Counter	6ea	○	○	○	○
	9ea	○	○	○	○
Electric Circult Breaker		○	○	○	○
AVR(Auto Voltage Regulator)		☆	☆	☆	☆
Transformer & Cable	25kVA	○	○	—	—
	30kVA	—	—	○	○
Auto Power Off		○	○	○	○
Measurement					
Q-Setter		●	●	●	●
Automatic Q-Setter		○	○	○	○
Work Close Confirmation Device	TACO	○	○	○	○
	SMC	○	○	○	○
(Only for Special Chuck)		☆	☆	☆	☆
Work Setter		☆	☆	☆	☆
Linear Scale	X Axis	X	X	X	X
	Z Axis	☆	☆	☆	☆
Coolant Level Sensor (Only for Chip Conveyor)		☆	☆	☆	☆
Environment					
Air Conditioner		○	○	○	○
Dehumidifier		○	○	○	○
Oil Mist Collector		○	○	○	○
Oil Skimmer (Only for Chip Conveyor)		☆	☆	☆	☆
MQL(Minimal Quantity Lubrication)		☆	☆	☆	☆
Fixture & Automation					
Auto Door	Standard	○	○	○	○
	High Speed	○	○	○	○
Auto Shutter (Only for Automatic System)		☆	☆	☆	☆
Sub Operation Pannel		☆	☆	☆	☆
Bar Feeder Interface		○	○	○	○
Bar Feeder(FEDEK)		☆	☆	☆	☆
Sub Spindle Work Ejector (Air Unit)		—	—	○	○
Extra M-Code 4ea		○	○	○	○
Automation Interface		☆	☆	☆	☆
I/O Extension (IN & OUT)	16Contact	○	○	○	○
	32Contact	○	○	○	○
Parts Catcher	Main SP.	○	○	○	○
	Sub Axis	—	—	○	○
Sub Spindle Work Pusher(Spring Type)		—	—	○	○
Turret Work Pusher (For Automation)		☆	☆	☆	☆
Parts Conveyor		☆	☆	☆	☆
Semi Automation System		☆	☆	☆	☆
Hyd. Device					
Standard Hyd. Cylinder	Hollow	●	●	●	●
	35bar/15 ℓ	●	●	●	●
Standard Hyd. Unit					
Software					
Machine Guidance		☆	☆	☆	☆
HWTM (Tool Monitoring System)		☆	☆	☆	☆
DNC Software		○	○	○	○
Dialogue Program		☆	☆	☆	☆
ETC					
Tool Box		●	●	●	●
Customized Color	Need Munsel No.	☆	☆	☆	☆
		☆	☆	☆	☆
CAD & CAM		☆	☆	☆	☆

Controller

HYUNDAI WIA FANUC i Series

Control function / Screen display

Control axis number	Max, 4 axes
	X, Z axis
	X, Z, C axis (M type)
	X, Z, B, C axis (MS type)
Simultaneous control axis number	2 axis/straight, arc interpolation (Max, 4 axes)
Spindle axis number *	2 axis
Min. input unit	X, Z, B axis : 0.001mm (0.0001")
	C axis : 0.001 deg.
Min. increment	X, Z, B axis : 0.001mm (0.0001")
	C axis : 0.001 deg.
High speed HRV control	
PMC control	
Inch/metric conversion	G20 / G21
Interlock	Each axis / All axis
Machinelock	Full axis
Emergency stop	
Stroke check 1	Over-travel
Stroke check 2	
Stroke check 3	
Follow up	
Sub off	
Backlash compensation	+/- 0-9999 Pulse
Position switch	
Fault load detection	Back spin torque limiter (BST)
High resolution transfer control	
(HRM) LCD / MDI	8.4" Color LCD
Handling	
Auto handling (memory)	
MDI handling	
Search function	Sequence, Program
Program re-start	
Preventive function for mis-handling	
Buffer registration	Dry run, Program check
Program check function	
Single block	
Feed function	
Manual jog feed	Rapid transfer, Jog, Handle
Feed command	x1, x10, x100
Feed override	Direct command for F code feed
Jog override	0-200% (10% units)
Rapid transfer override	0-2,000 mm/min [79 ipm]
Override release	F1, F5, F25 / F50, F100%
Override release	
Transfer/minute, transfer/rpm	

Program input and interpolation function

Nano interpolation	Positioning / Straight / Arc (G00 / G01 / G02 / G03)
Dwell function	G04, 0-9999.9999 sec
Threading retract	
Variable lead threading	
Multiple threading	
Continuous threading	
Threading, synchronous cutting	
Return of first zero point	G28, Manual
Return check of zero point	G27
Return of second, third, fourth zero point	G30
Program stop/over	M00, M01 / M02, M30
Tape code	EIA / ISO
Optional block skip	1 EA
Max. program enter unit	+/- 9999.9999"
Program number	O4 digit number
Absolute, incremental programming	
Decimal number entering	
Plain selection	G17, G18, G19
Work coordinate selection	G52 to G59
Work coordinate preset	G50.3
Manual absolute	"ON" Fixed
Drawing dimension direct input programming	Included chamfering / Corner R
G code system	A
Programmable data input	G10
Sub program call	10 Steps
Custom macro B	
Custom macro variable addition	#100 to #199, #500 to #999
Multiple repetitive cycles	
Multiple repetitive cycles II	
Lathe fixed cycle	

Sub / Main spindle function

M-Code function	
M-Code function lock	M4 digit number
Lock sp. speed command	
Main sp. constant control	S + 4 digit number, binary number output G96, G97
Spindle speed override	50% ~ 150% (10% unit)
Spindle speed override	
Rigid tapping	

Tool function / Tool compensation

Tool function	T2 + 2
Tool offset quantity	64 pairs

Tool function / Tool compensation

Tool offset	
Tool nose radius compensation	G40, G41, G42
Configuration/wear compensation	
Tool life management	
Direct input of measuring tool compensation B	
Data input, output and editing function	
Input/output interface	RS232C
Memory card input and output	
Embedded Ethernet	100Mbps
Program storing capacity	512 Kbyte
Program registration quantity	400 EA
Memory lock	
Background edit	
Additional expandable edit	NC program copy, move, change

Screen, diagnosis and setting function

Self diagnosis function	
Historic screen	Alarm and handling screen
Help function	
Outside message	
Operation time/counter display	
Actual sp. speed, T code display	
Actual machining feed rate display	
Handling monitor screen	Rod meter light
Graphic screen	
Spindle/servo setting screen	
Languages	Selection of random 5 EA
LCD screen save	Screen saver
Auto data backup	

Function according with machine specification

Cs contouring function	MILL type
Stored pitch error compensation	MILL type
Pole coordinate command	MILL type
Cylinder interpolation	MILL type
Drill fixed cycle	MILL type
Sp. positioning expandable	MILL type, Sub spindle type
Main sp. synchronization control	Sub spindle type
Torque control	Sub spindle type

Option

High speed Ethernet	100 Mbps (Option board is required)
Optional block skip	9 EA
G code system	B / C
Polygon turning	
Dynamic graphic display	
8 level data protection function	
Manual guide i	Interactive program (10.4" Color LCD)
Tool load monitoring function	HWTM (embedded Fanuc type)

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Controller

FANUC 32i-A

Axis control / Display unit	
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)
Simultaneous controllable axes	X, Z, B, C axes (MS type machine)
	2axes / Linear and circular (Max, 4axes)
Least input increment	X, Z, Y, B axes : 0,001 mm (0,0001")
	C axis : 0,001 deg
Least command increment	X, Z, Y, B axes : 0,001 mm (0,0001")
	C axis : 0,001 deg
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)
(HRM) control	
LCD / MDI	10,4" Color LCD
Operation	
Automatic operation (memory)	
MDI operation	
Search function	Sequence, program
Program restart	
Wrong operation prevention	
Buffer register	
Program check function	Dry run, program check
Single block	
Feed functions	
Manual jog feed	Rapid, jog, handle
Manual handle feedrate	x1, x10, x100
Feed command	F code feedrate direct command
Feedrate override	0-200 % (10% units)
Jog override	0-2,000 mm/min/79 ipm]
Rapid traverse override	F1, F5, F25/F50, F100%
Override cancel	
Feed per minute / rotation	
Program input & interpolation functions	
Nano interpolation	Positioning / Linear / Circular (G00 / G01 / G02, G03)
Dwell	G04, 0-9999,9999 sec

Program input & interpolation functions	
Thread retract	
Variable lead threading	
1st reference point return	G28, manual
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	04 digits
Absolute and incremental programming	
Decimal point input	
Plane selection	G17, G18, G19
Work coordinate system selection	G52 to G59
Manual absolute	"ON" Fixed
Direct drawing dimension programming	Included chamfering / Corner R
G code system	A
Programmable data input	G10
Sub program call	10 folds nested
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	
Manual guide I	Conversational programming
Auxiliary / Spindle speed functions	
Miscellaneous function	M4 digits
Miscellaneous function lock	
Spindle speed command	S4 digits, binary output
Constant surface speed control	
Spindle speed override	50% to 150% (10% units)
Spindle orientation	
Rigid tapping	
Tool function / Tool compensation	
Tool function	T2 + 2
Tool offset pairs	64 pairs
Tool offset	
Tool nose radius compensation	G40, G41, G42
Geometry / Wear compensation	
Direct input of measured tool compensation value B	
Tool life management	
Data in/output & editing functions	
Reader / Puncher interface	RS232C
Memory card input/output	

Data in/output & editing functions	
Embedded ethernet	100 Mbps
Part program storage length	256 Kbyte
Number of registrable programs expansion	Max, 500 programs
Memory lock	
Background editing	
Extended part program edition	Copy, move, change of NC program
Display, diagnosis & setting functions	
Self-diagnosis function	
History display	Alarm & operation display
Help function	
External message	
Run hour / Parts count display	
Display of actual spindle speed and T code	
Actual cutting feedrate display	
Operating monitor screen	Load meter, etc
Graphic display	
Spindle / Servo setting screen	
Selection of 5 optional language	
Erase CRT screen display	Screen saver
Automatic data backup	
Functions according to machine specification	
Cs contouring control	Turn mill
Stored pitch error compensation	Turn mill
Polar coordinate interpolation	Turn mill
Cylindrical interpolation	Turn mill
Canned cycles for drilling	Turn mill
spindle orientation expansion	Turn mill, Sub spindle
Spindle synchronous control	Sub spindle
Torque control	Sub spindle
Y axis offset	Y type machine
Angular axis control	Y type machine
	(Except LY Series)
Options	
Fast ethernet	100 Mbps (Option board is required)
Optional block skip	9 ea
3rd & 4th reference point return	
G code system	B / C
Part program storage length	512 Kbyte
Polygon turning	
Helical interpolation	
Dynamic graphic display	
Protection of data at 8 levels	
Tool Monitoring function	HWTM (Built-in Fanuc type)

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SIEMENS 828D

Control	
Max. configuration of axes	5 axes
Max. configuration of axes and sp.	6 axes (axes + spindle)
Least Command/Input	0,0001mm / 0,00001inch
Feed Function	
Feedrate Override	0 – 120%
Rapid Traverse Override	F1, 5, 25/50, 100%
Acceleration with jerk limitation	
Programmable acceleration	
Follow-up mode	
Measuring system 1 and 2, selectable	
Separate path feed for corners and chamfers	
Travel to fixed stop	
Spindle Functions	
Spindle Override	50% – 120%
Spindle Orientation	
Spindle Speed Limitation	
Rigid Tapping	
Interpolations	
Linear interpolation axes	Max 4 axes
Circle via center point and end point	
Circle via interpolation point	
Helical interpolation	
Universal interpolator NURBS	
(non-uniform rational B splines)	
Advanced Surface	
Compressor for 3-axis machining	
Tool Function	
Tool Nose R Comp./Tool Radius Comp.	
Zero Offset (G54, G55, G56, G57, G58, G59)	
Programmable Zero Offset	
3D Tool Radius Compensation	
Tool management	
Display	
CRT / MDI	TFT 10,4" Color
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	2D
Dry Run	
Simulation	

Diagnosis Function	
Alarm Display	
Spindle Load/rpm Meter	
PLC status/LAD display	
Programming Function	
Part Program Storage Length	5MB
Program Name	23 digits
Subroutine Call	7Level
Absolute/incremental Command	G90 – G91
Scaling, ROT	
Inch / Metric Conversion	
Conversational Cycle Program	
Block Search with / without Calculation	
Variable Program (Macro)	
Read / Write System Variable	
BackGround Editing	M – Code
Miscellaneous Functions	
Label Skip	M00, M01, M02, M30
Program Stop / End	
Lookahead, Jerk Limitation	AICC
Feed & forward control	
ISO Dialect Interpreter (G291)	
Maximum number of tools/cuttings	128/256
Number of levels for skip blocks 1	
Protection Function	
Emergency Stop	Soft Limit
Over Travel	
Contour Monitoring	
Program Protection	
Automation Support Fun.	
Actual Speed Display(Monitor)	Time, Parts
Tool Life Management	Internal
Work Count Function	
Language Function	
Two Language switchable	Chinese Traditional, Czech, Danish, Dutch,
	Finnish, Hungarian, Japanese, Korean, Polish,
	Russian, Swedish, Portuguese, Turkish
Data Transfer	
RS 232C I/F	
Ethernet	Max 4
USB Memory Stick & CF Card	
Option	
DRF offset	
Load and save of MDI	
Teach-in	
Number of levels for skip blocks 8	
Simulation in 3-D display	
ShopMill	
TRACYL	
TRANSMIT	

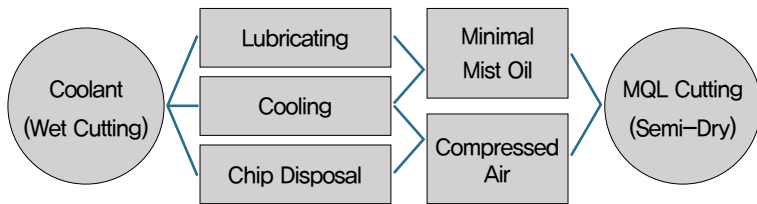
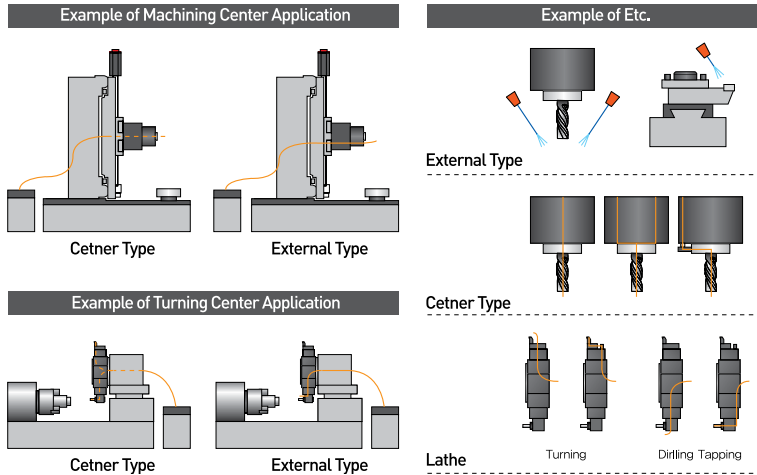
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ENERGY SAVING & ECO FRIENDLY

All machine tools of HYUNDAI WIA are
designed to consider environmental safety and energy saving
Minimum practice enabling coexistence of humankind and machines...
HYUNDAI WIA will lead for this



MQL : Minimal Quantity Lubrication



MQL is an eco-friendly product responding to Kyoto Protocol, and capable of processing with small coolant (2~20CC/H).

The use of MQL has not introduce condensation and generate dust powder even in processing with extra high speed.

It also penetrates up to the tip of tools, which reduces heat generation and makes excellent lubrication. [Tools life and cutting speed are increased more than 1.5 to 3 times]

ECO System

Oil Skimmer

It is a device recovering lubricant mixed in coolant, which extends coolant life and provides comfortable working environment and operating cost saving.

Mist Collector

Mist of fine particles (1~10 μ m) generated from processing will contaminate working area and ambient air, and if inhaled to human body, cause occupational disease, and also reduction of machines life and productivity.

The collector catches and removes this mist to make comfortable and fresh working environment.



Energy Saving

Auto Power Off



When processing products needed long hours such as PPL or MOLD,

power supply is automatically shut off by programmed setting, which reduces power consumption.

[Automatic Power Off Display]

When the machine is not operated longer than set time, a SCREEN-SAVER is activated and saves power consumption.

Power Consumption Monitor



Accumulated power consumption of servo motor is displayed on OP screen, thru which you can determine real time power consumption.

Economy Lubrication System



The use of oil saving coolant supplier provides lubricant only when the forwarding axis is moving, which saves 30% of lubricant consumption compared to existing system.