LF2100/2600

HYUNDAI WIA Front Loading Turning Center

HYUNDAI WIA

Technical Leader

The Turning Center LF2100/2600 Series, designed by Hyundai WIA with years of expertise and the latest technology, is a high performance machine designed for efficiency and maximum productivity.

LF2100 Series

Swing Over the Bed	mm(in)	Ø650 (25.6″)
Max. Turning Length	mm(in)	150 (5.9″)
Chuck Size	inch	8″
Bar Capacity	mm(in)	Ø65 (2.6″)
Speed (rpm)	r/min	4,000
Motor (Max/Cont.)	kW(HP)	15/11 (20.1/14.8)
Travel(X/Z)	mm(in)	190/170 (7.5″/6.7″)
No. of Tools	EA	2×10

LF2600 Series

Swing Over the Bed	mm(in)	Ø650 (25.6″)
Max. Turning Length	mm(in)	136 (5.3″)
Chuck Size	inch	10″
Bar Capacity	mm(in)	Ø76 (3″)
Speed (rpm)	r/min	3,000
Motor (Max/Cont.)	kW(HP)	22/18.5 (29.5/24.8)
Travel(X/Z)	mm(in)	190/170 (7.5″/6.7″)
No. of Tools	EA	2×10

Twin Spindle Front Loading CNC Turning Center

LF2100/2600

- Highest spindle speed and torque in its class
- Symmetrical heat behavior headstock structure to minimize thermal displacement
- High rigidity servo turret
- Box guideway span increased for heavy duty cutting ability enhancement
- Directly coupled servo motor for X/Z-axis
- High speed gantry loader installation for cycle time reduction
- Vibration minimized through separated bed structure

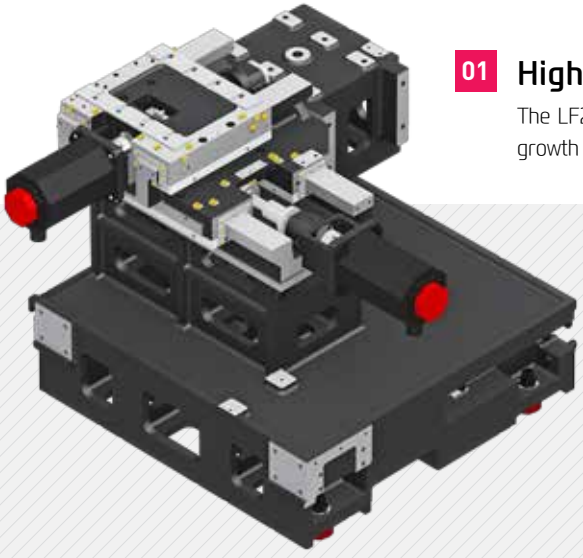
Twin Spindle Front Loading Turning Center

LF2100/2600 Series features high mobility through its compact size, making it suitable for tight spaces, and automated operations for maximizing productivity.

01 Basic Features

LF2100/2600

Optimized Layout and Design, Twin Spindle
Front Loading CNC Turning Center



01 High Precision Seperated Bed Structure

The LF2100/2600 series is designed as a seperated bed structure, minimizing thermal growth and vibration, ensuring stable cutting capability.

02

Directly Coupled Servo Motor for X/Z-axis

X/Z-axis is directly connected to a highly reliable digital servo motor to provide high rigidity and minimal thermal displacement.

Z-axis Slideway

Z-axis slideway is placed on top of the bed and X-axis is placed on top of the Z-axis. This structure minimizes sagging while the turret is moving along the Z-axis.

Increased Guideway Span

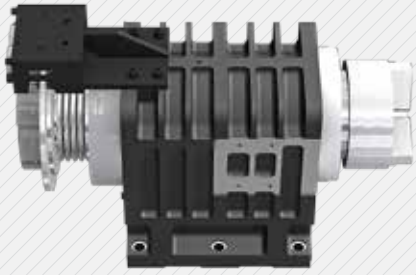
Increased guideway span allows optimal axial force, leading to stable feeding in operations.

Existing Model	280 mm (11″)
LF2100/2600	320 mm (12.6″) 14% UP

03

Main Spindle

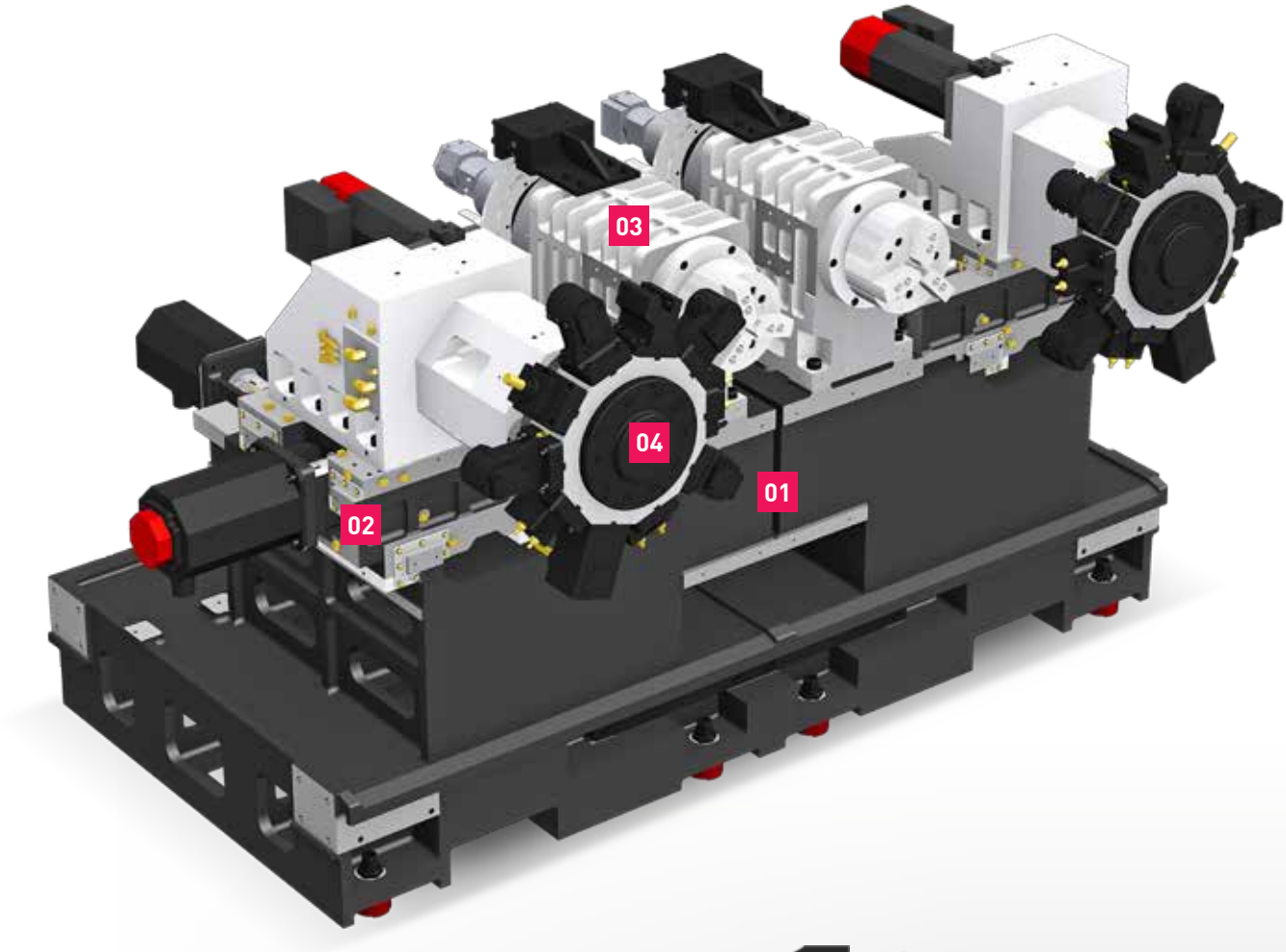
Heat produced by the main spindle is blocked by applying a symmetric one-piece base and an insulation plate. This enables maintenance of high accuracy even during a long period of machining.

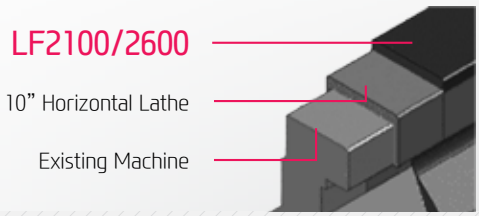


04

Mill Turret (BMT Turret)

LF2100/2600 Series is designed with a high rigidity BMT Turret enabling high performance high speed and heavy duty cutting.
Also 5.5kw(7.4HP) high power motor makes high quality cutting possible.





X/Z-axis Guideway Width

Expanded X/Z-axis guideway width increases feed stability.

30% expanded than existing model

Powerful Cutting Capability & Large Working Area

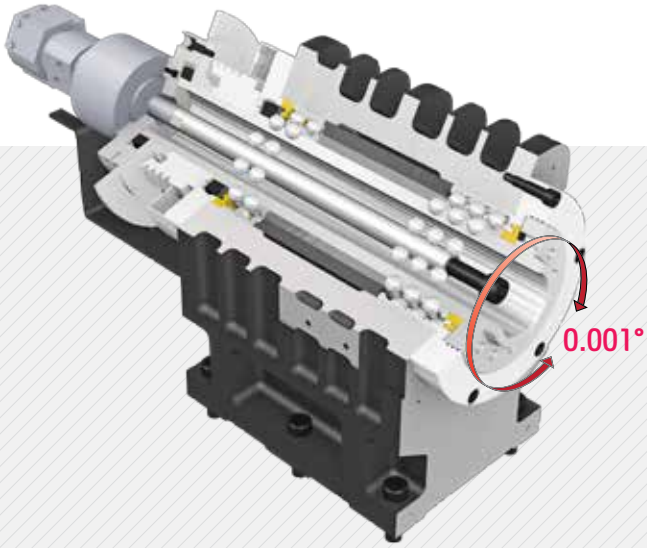
- **Spindle Output** (Max.) : LF2100 Series : 15 kW (20.1 HP) LF2600 Series : 22 kW (29.5 HP)
- **Spindle Torque** (Max.) : LF2100 Series : 286.5 N·m (211.3 lbf·ft) LF2600 Series : 493 N·m (363.6 lbf·ft)
- **Travel** (X/Z axis) : 190/170 mm (7.5"/6.7")

02

LF2100/2600

High Precision Spindle

Long Lasting High Accuracy & Excellent Performance
CNC Turning Center



Main Spindle

The spindle has the highest speed and torque in its class, which provides high performance during high speed/heavy duty cutting.

Also the spindle is designed with [Ø110 (Ø4.3")] size P4 angular contact ball bearings to minimize thermal displacement and increase accuracy.

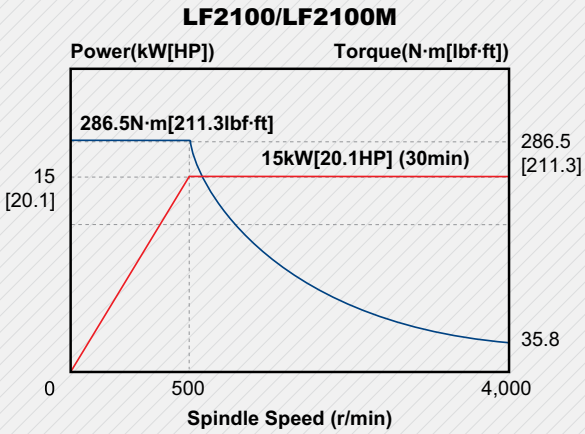
LF2100 Series : 286.5 N·m(211.3 lbf.ft)

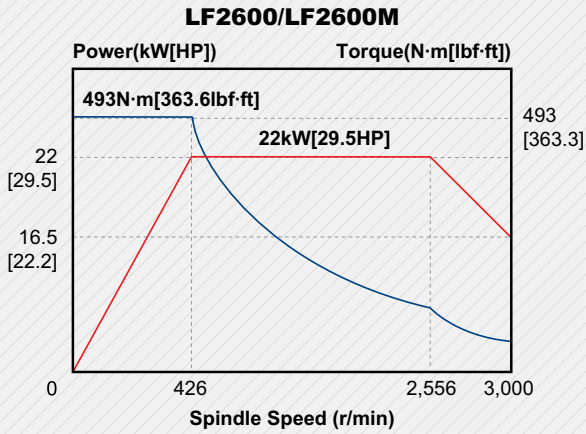
LF2600 Series : 493 N·m (363.6 lbf.ft)

C-Axis Control

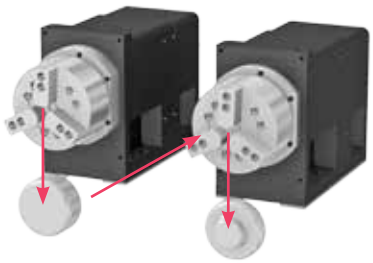
LF2100/2600M Series feature C-axis 0.001° control, enabling manufacturing of various shapes and dimensions.

Spindle Output/Torque Diagram

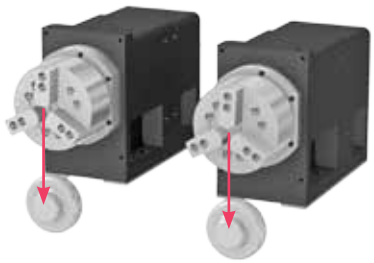




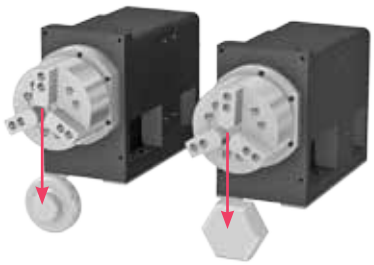
Spindle Processing Flow



Parts requiring secondary operations are transferred from Z1 spindle to Z2 spindle



Same parts can be processed simultaneously by utilizing both spindles of Z1/Z2-axis with same parts.



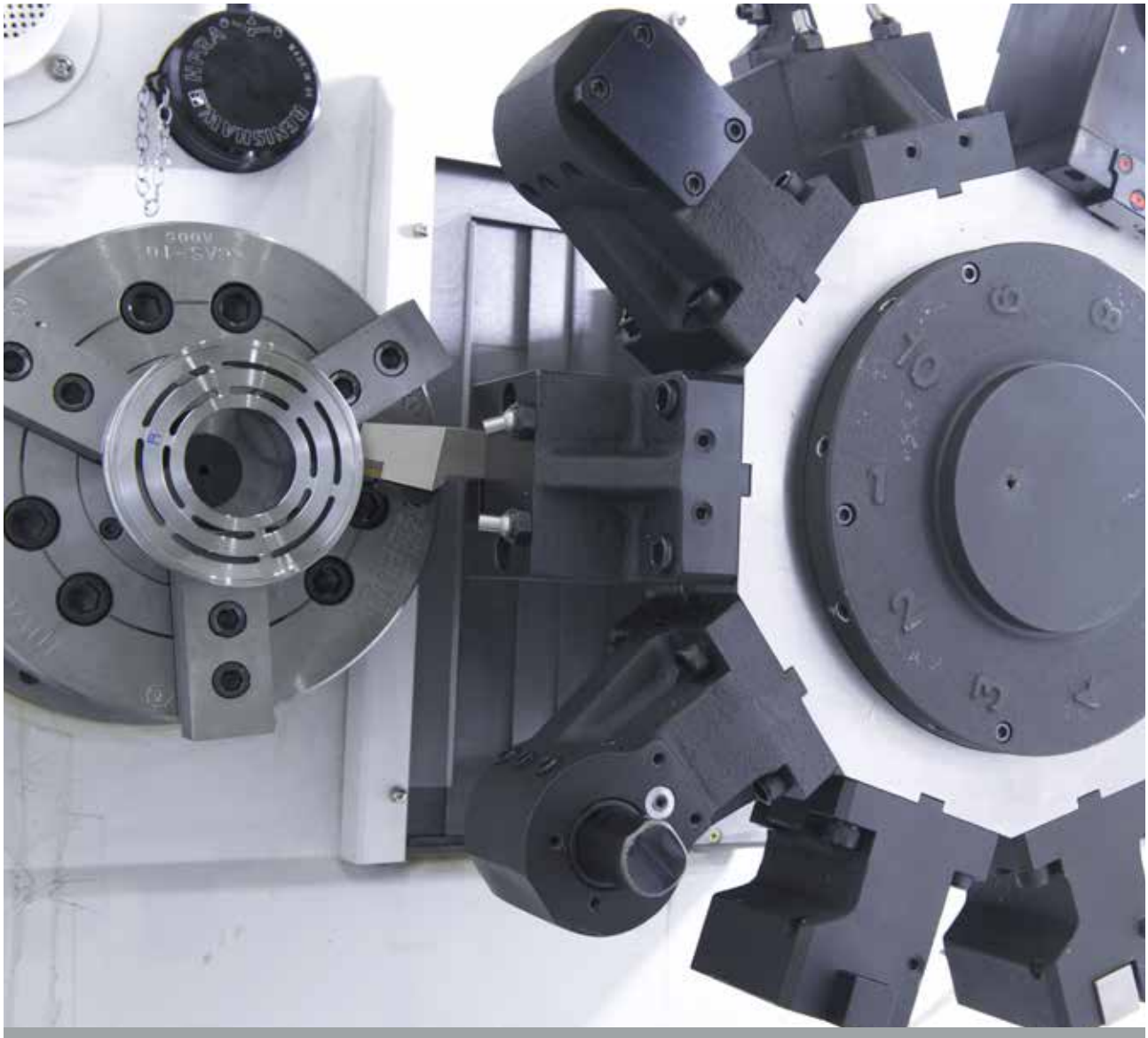
Different parts can be processed simultaneously by utilizing both spindles of Z1/Z2-axis with various parts.

03

LF2100/2600

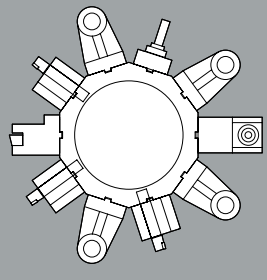
Servo Turret

High speed, High Accuracy, Highly Reliable
Servo Turret



Turret

LF2100/2600 Series is designed with high performance AC servo motors to enhance process reliability. Especially, 3-piece couplings enable accurate indexing. Also, powerful hydraulic tool clamping minimizes tool tip deviation caused by the load of tools, leading to excellent performance even during heavy duty operations.



- Number of Tool : 2×10 EA
- Tool Size (O.D/I.D)
  □ 25/Ø40 (□ 1″/Ø1.6″)
- Indexing Time : 0.2 sec/step

Mill Turret (BMT)

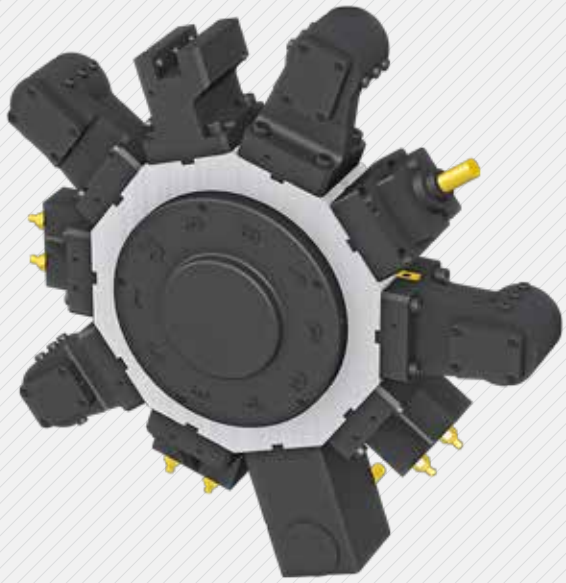
The width of the turret disk is increased to 100mm(3.9″). Also the fastening bolt size is enlarged from M10 bolts to M12 bolts in order to strengthen the clamping force of holders.

Mill Tool Holder

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

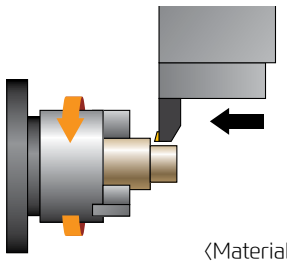
A wide variety of additional tool holders for drilling and tapping can further enhance machining operations.

Straight Milling Head	Angular Milling Head



- Turret Indexing Time :
  0.2 sec/step (Fastest in its class)

Machining Capability



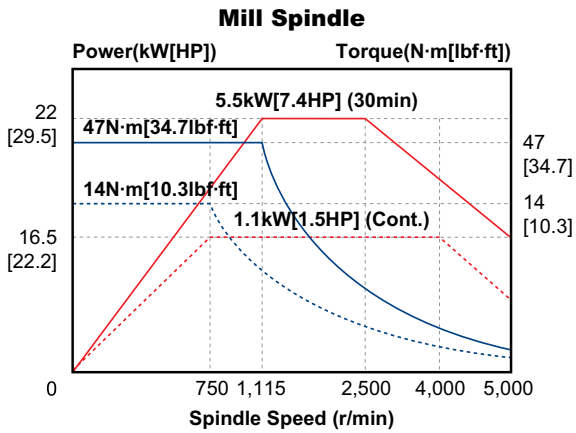
LF2100M/2SP

Cutting (O.D)

〈Material〈JIS〉:S45C(Carbon steel〉

Processing diameter	Ø86 (Ø3.38″)
Side cutting depth	6 mm (0.24″)
Cutting speed	150 m/min (5,905 ipm)
Spindle Speed	646 rpm
Forwarding speed	0.5 mm/rev (0.0019″/rev)
Chip discharge	450 cc/min

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



- Output (Max.) : 5.5 kW (7.4 HP)
- Speed (rpm) : 5,000 r/min
- Collet size : Ø16 (Ø0.6″) (ER25)
- Live Tool Type : BMT55P

04

LF2100/2600

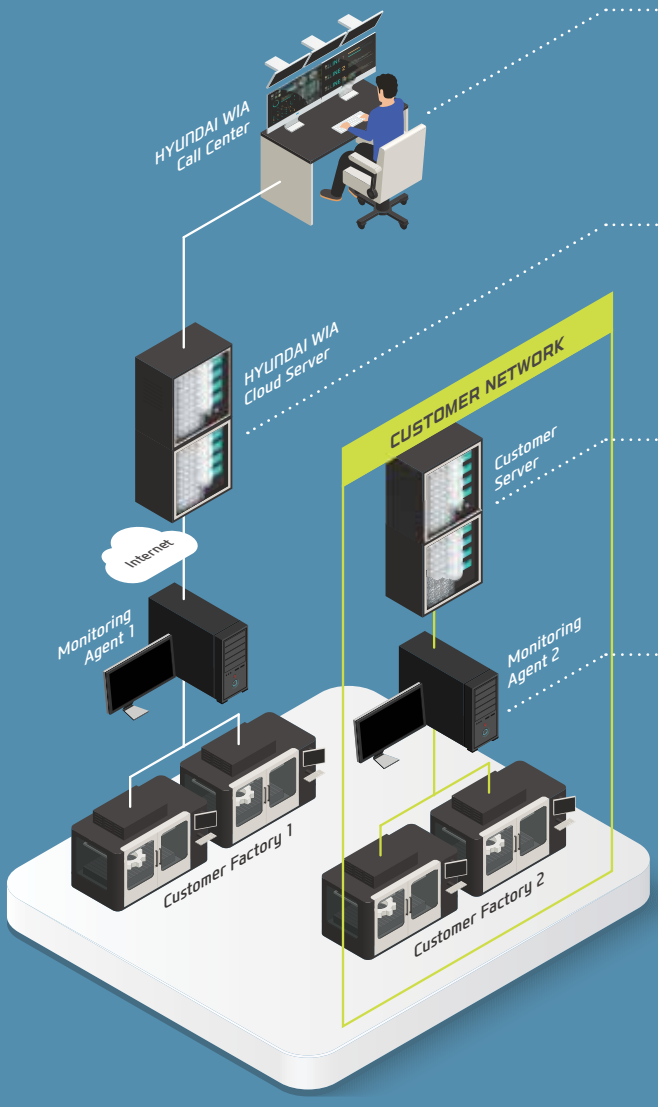
iRiS HYUNDAI WIA Smart Factory Solution

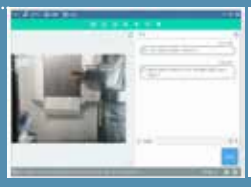
integrated Revolution of industrial Solution

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-eDNC

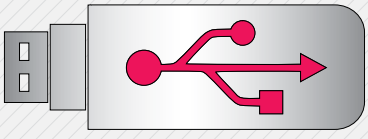
HYUNDAI WIA ethernet
Direct Numerical Control

This software allows transmition 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.

HW-GLM

HYUNDAI WIA
Gantry Loader Manager

Set the position coordinates and the loader driver support features such as easy and convenient way to provide the user operating the loader to be used to support the software



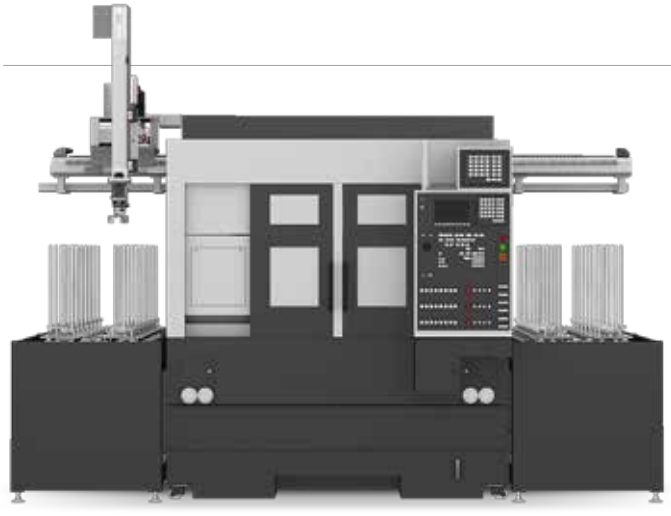
USB Port

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.

05 Automation System

LF2100/2600

Various Devices for User Convenience

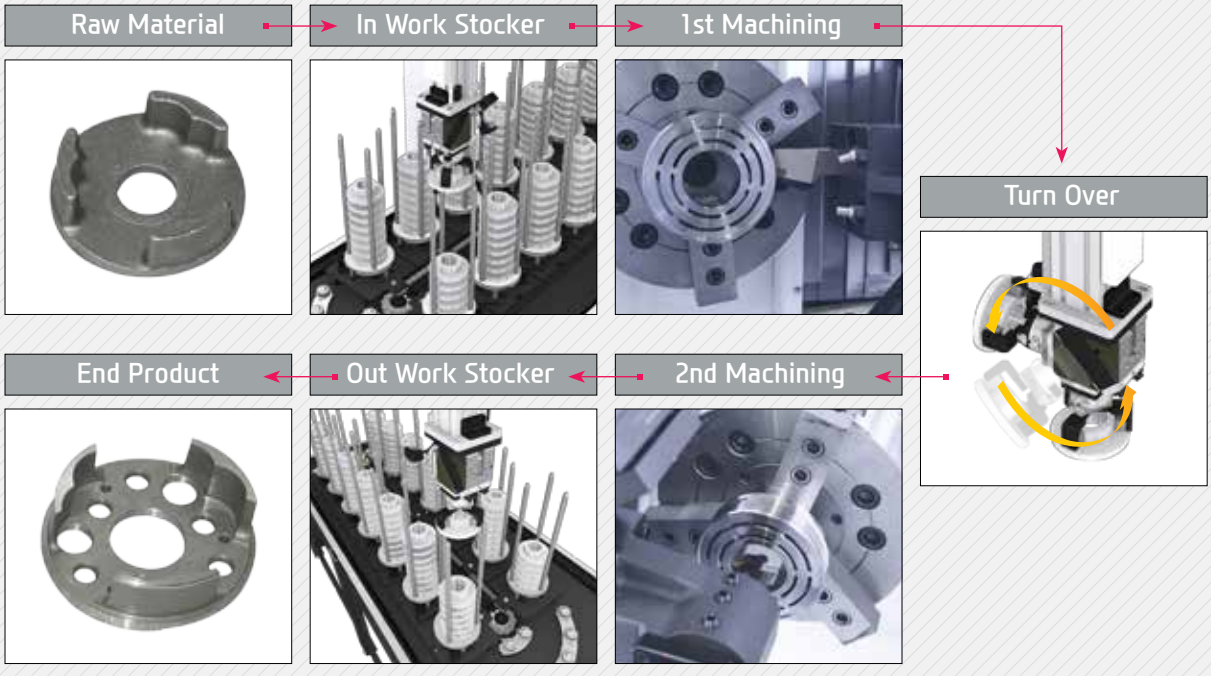


Gantry Loader System

- Gantry Loader Work Weight : 6 kg (13.2 lb)
- Gantry Loader Work Size : Ø180x120 mm (Ø7.1"x4.7")
- Gantry Speed (X/Y/Z) : 150/120/60 m/min
- Stocker Max. Loader Height : 450 mm (17.7")
- Stocker Max. Loader Weight : 100 kg (220.5 lb)

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

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

Spindle		LF2100	LF2600
Main Spindle Hollow Chuck 3 Jaw	8″	○	–
	10″	☆	○
Main Spindle Solid Chuck 3 Jaw	8″	●	–
	10″	☆	●
Standard Soft Jaw (1set)		●	●
Chuck Clamp Foot Switch		●	●
2 Steps Hyd. Pressure Device		○	○
2 Steps Foot Switch		○	○
Spindle Inside Stopper		☆	☆
Chuck Open/Close Confirmation Device		○ (CE:●)	○ (CE:●)
Main Spindle 5° Index		☆	☆
C-Axis (0.001°)		M ●	M ●
Turret			
Turret		●	●
Mill Turret	BMT	M ●	M ●
Straight Mill Holder (Radial)	Collet Type,2ea	M ●	M ●
Angular Mill Holder (Axial)	Collet Type,2ea	M ●	M ●
Straight Mill Holder (Radial)	Adapter Type	M ○	M ○
Angular Mill Holder (Axial)	Adapter Type	M ○	M ○
Boring Sleeve		●	●
Drill Socket		●	●
U-Drill Holder		○	○
U-Drill Holder Sleeve		○	○
O.D Extension Holder	For Out-Dia	☆	☆
Angle Head		M ☆	M ☆
Coolant & Air Blow			
Standard Coolant (Nozzle)		●	●
Chuck Coolant (Upper Chuck)		○	●
Gun Coolant		○	○
Through Spindle Coolant (Only Hollow Cylinder & Special Chuck)		☆	☆
Thru Coolant for Live Tool		M ☆	M ☆
Chuck Air Blow (Upper Chuck)		○	○
Tail Stock Air Blow (Upper Tail Stock)		☆	☆
Turret Air Blow		☆	☆
Air Gun		○	○
Through Spindle Air Blow (Only Hollow Cylinder & Special Chuck)		☆	☆
High Pressure Coolant	1.5Bar (21.8psi)	●	●
	6Bar (87psi)	○	○
Power Coolant System (For Automation)		☆	☆
Coolant Chiller		☆	☆
Chip Disposal			
Coolant Tank	370 ℓ (97.7 gal)	●	●
Chip Conveyor (Hinge/Scraper)	Front (Rear)	○	○
	Front (Side)	–	–
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			
Total Splash Guard		●	●
Chuck hydraulic pressure maintenance interlock		○ (CE:●)	○ (CE:●)
Electric Device			
Call Light	1Color : ■	●	●
Call Light	2Color : ■ ■	○	○
Call Light	3Color : ■ ■ ■	○	○
Call Light & Buzzer	3Color : ■ ■ ■ B	○	○

Electric Device		LF2100	LF2600
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	50kVA	○	–
	70kVA	–	○
Auto Power Off		○	○
Measurement			
Q-Setter	Removable Type	○	○
Automatic Q-Setter		–	–
Work Close Confirmation Device	TACO	☆	☆
	SMC	☆	☆
Work Setter		☆	☆
Linear Scale	X Axis	○	○
	Z Axis	○	○
Coolant Level Sensor (Only for Chip Conveyor)		☆	☆
Measuring System	For Automation	☆	☆
Environment			
Air Conditioner		○	○
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)		–	–
Extra M-Code 4ea		○	○
Automation Interface		☆	☆
I/O Extension (IN & OUT)	16 Contact	○	○
	32 Contact	○	○
Turret Work Pusher (For Automation)		☆	☆
GANTRY Automation System		☆	☆
Turn Over Device		☆	☆
In Stocker (Rotary)	8/10/12/14 Pos	☆	☆
OUT Stocker (Rotary)	8/10/12/14 Pos	☆	☆
NG Chute		☆	☆
Hyd. Device			
Standard Hyd. Cylinder	Solid	●	●
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)		☆	☆
Load Master (HW-GLM : FANUC)		○	○
ETC			
Tool Box		●	●
Customized Color	Need Munsel No.	☆	☆
CAD & CAM		☆	☆

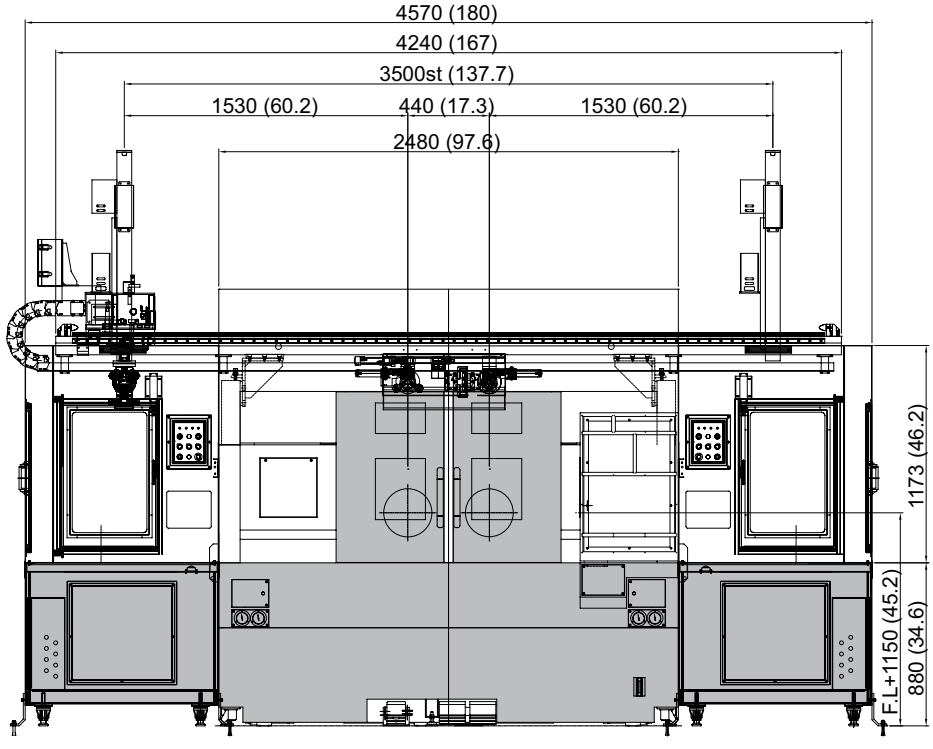
❖ 4 channel of TDC(Thermal Displacement Compensation) device is recommended, when more than 6 bar of high pressure coolant is applied, for the high quality machining.

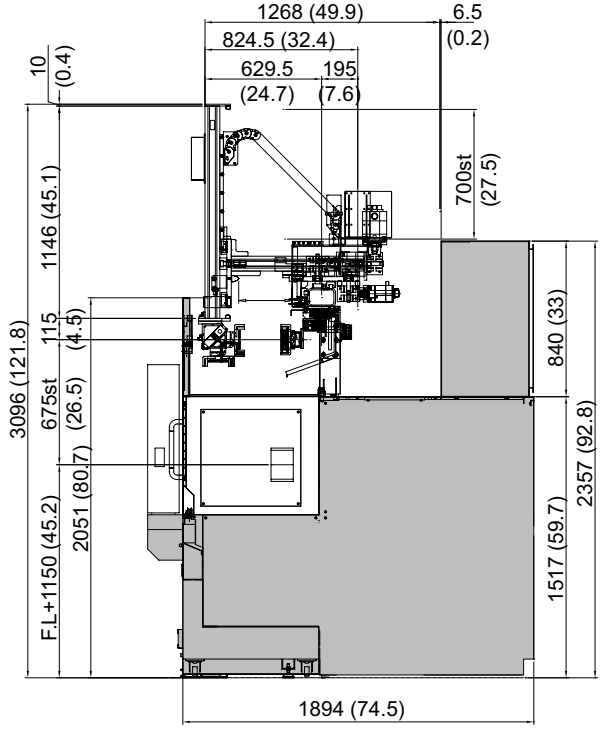
Specifications are subject to change without notice for improvement.

SPECIFICATIONS

External Dimensions

unit : mm(in)

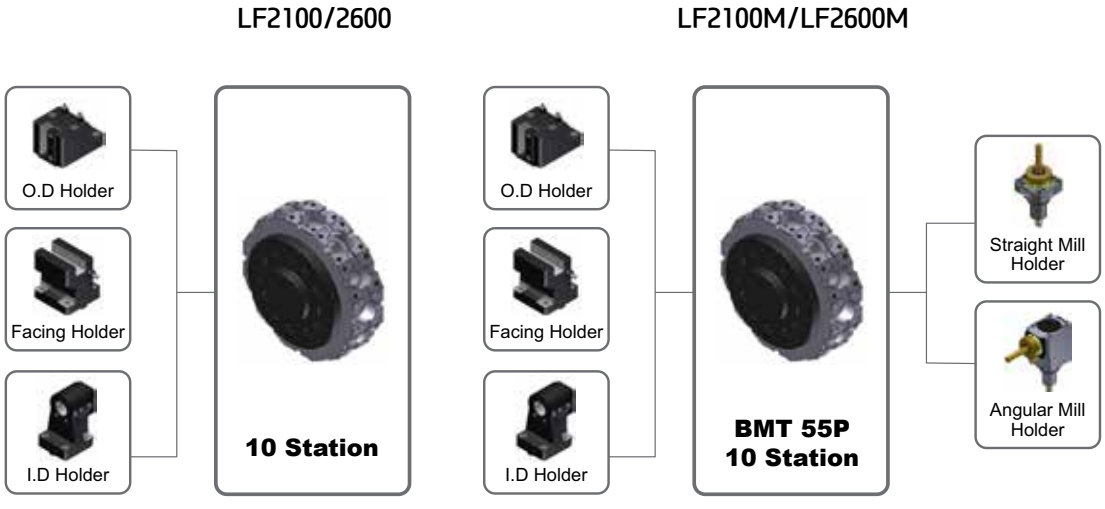




SPECIFICATIONS

Tooling System

unit : mm(in)



Tooling Parts Detail

ITEM			LF2100/2600		LF2100/2600M	
			mm Unit	inch Unit	mm Unit	inch Unit
Turning Holder	O.D Holder	Right/Left	8	8	6	6
	Facing Holder		2	2	2	2
Boring Holder	I.D Holder	Single	10	10	8	8
Driven Holder	Straight Mill Holder	Standard	-	-	2	2
	Angular Mill Holder	Standard	-	-	2	2
Socket	Boring	Ø10 (Ø3/8")	2	2	2	2
		Ø12 (Ø1/2")	2	2	2	2
		Ø16 (Ø5/8")	2	2	2	2
		Ø20 (Ø3/4")	2	2	2	2
		Ø25 (Ø1")	2	2	2	2
		Ø32 (Ø1 1/4")	2	2	2	2
	Drill	MT 1 × MT 2	2	2	2	2
		MT 2	2	2	2	2
	ER Collet		-	-	2 Set	2 Set

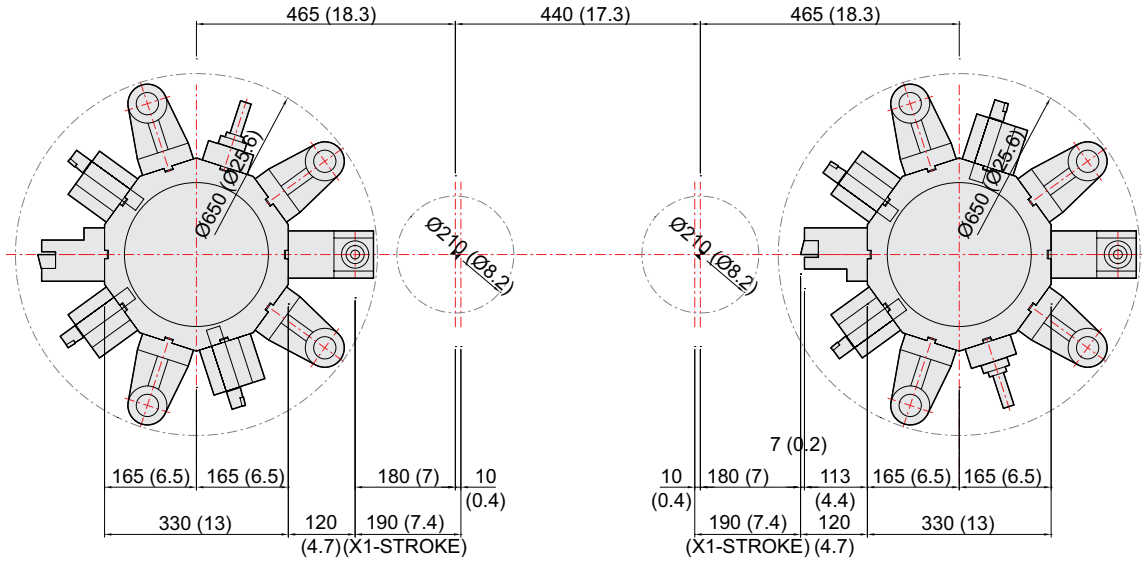
Specifications are subject to change without notice for improvement.

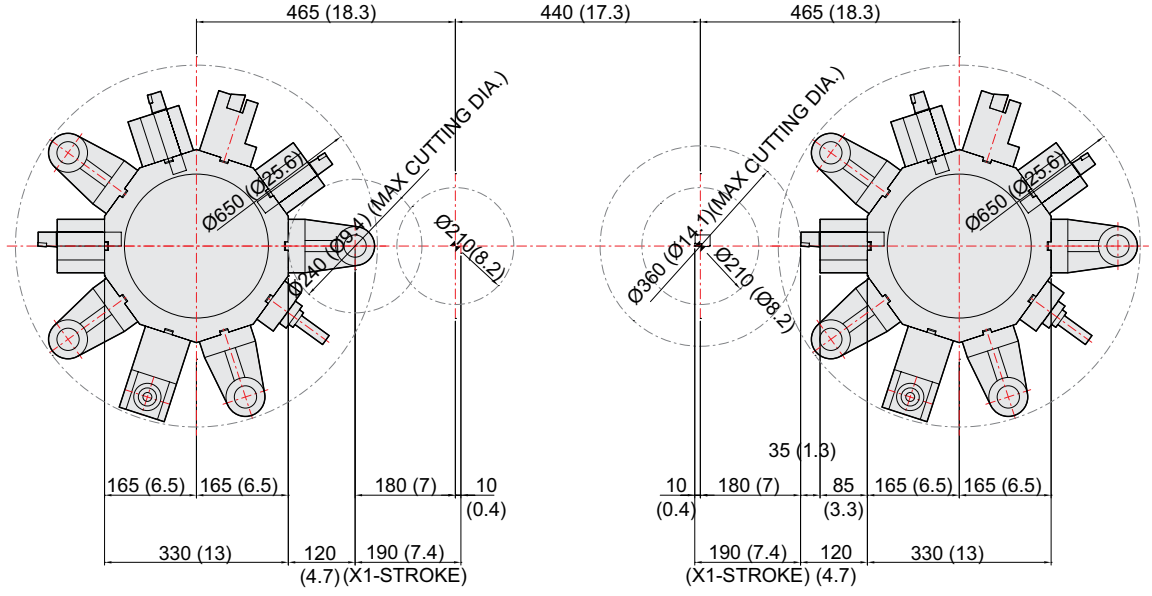
SPECIFICATIONS

Interference

unit : mm(in)

LF2100M/2SP

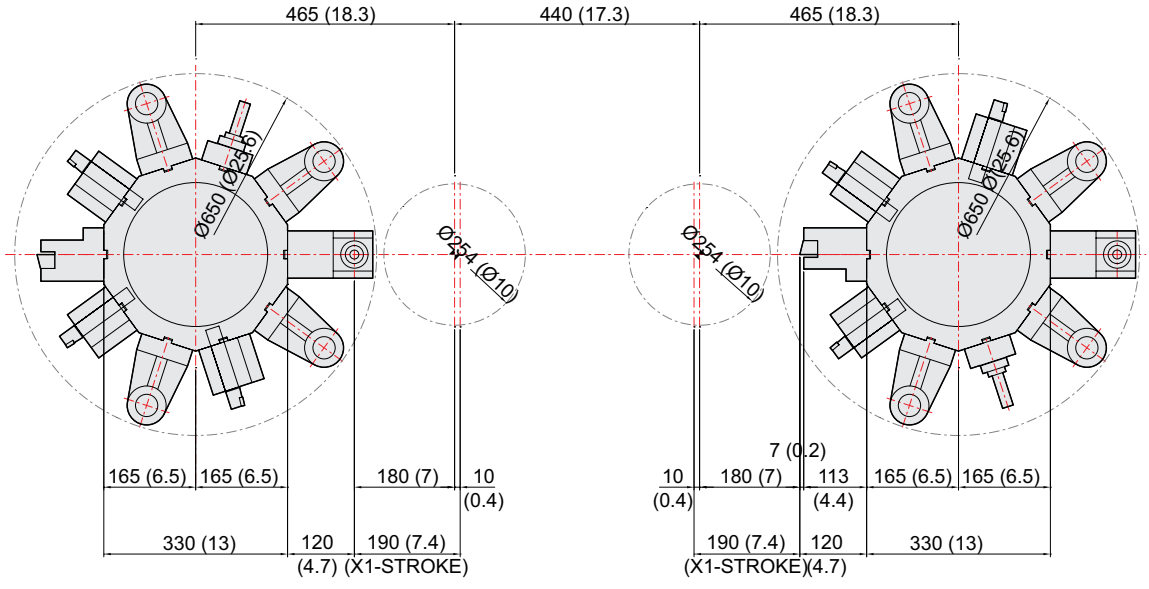


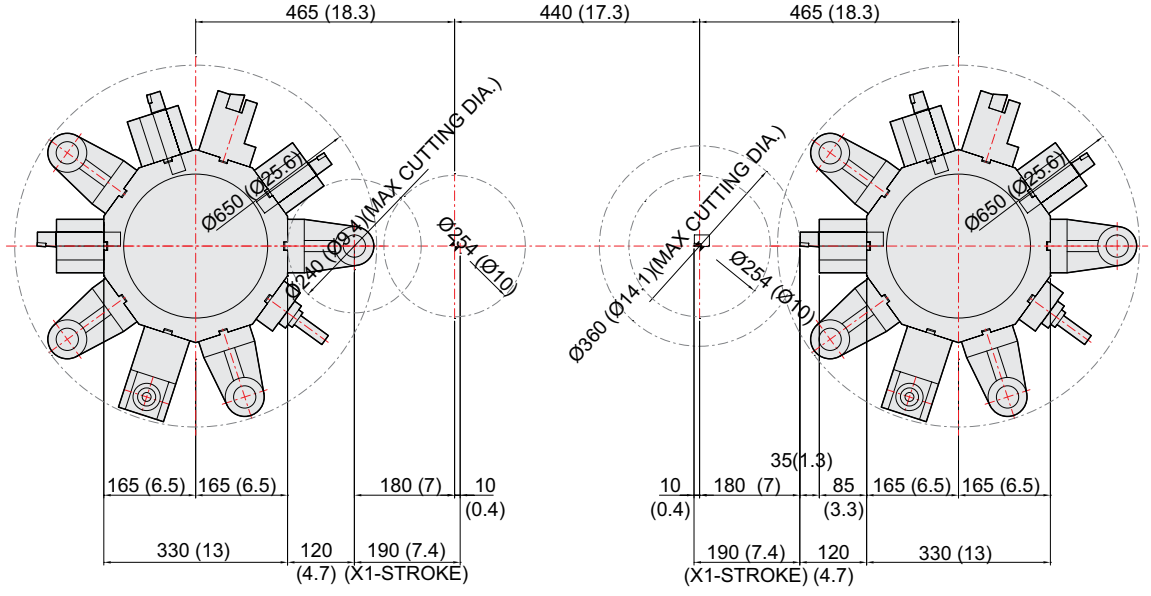


Interference

unit : mm(in)

LF2600M/2SP



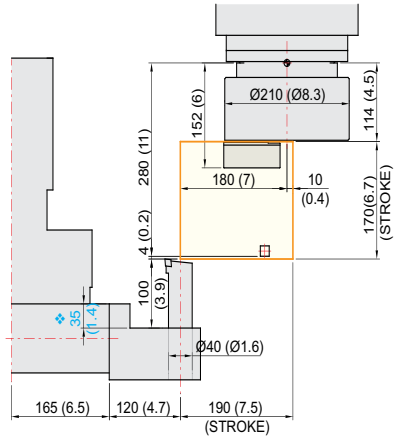


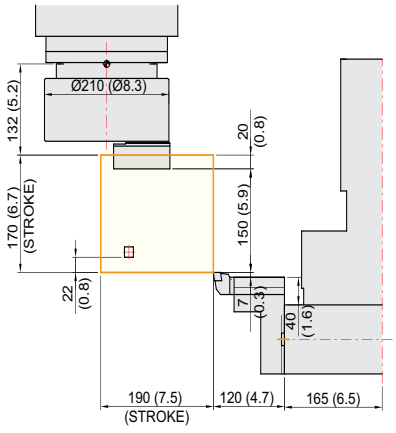
SPECIFICATIONS

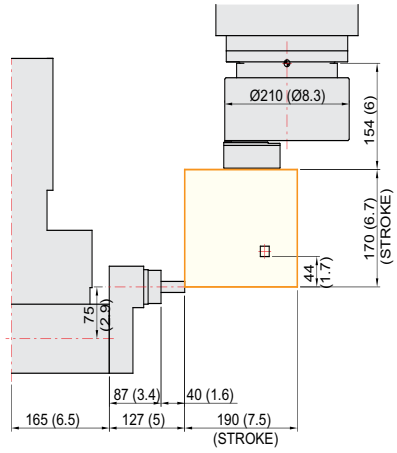
Tooling Travel Range

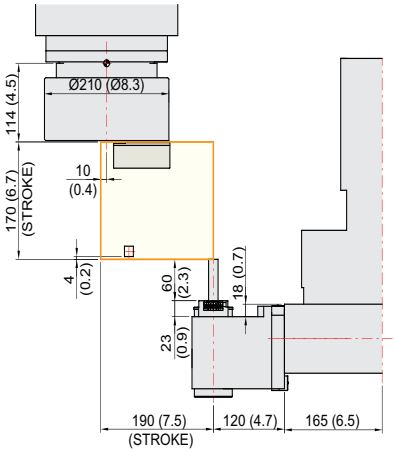
unit : mm(in)

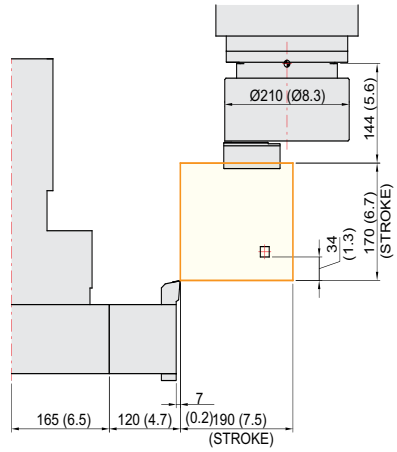
LF2100 Series











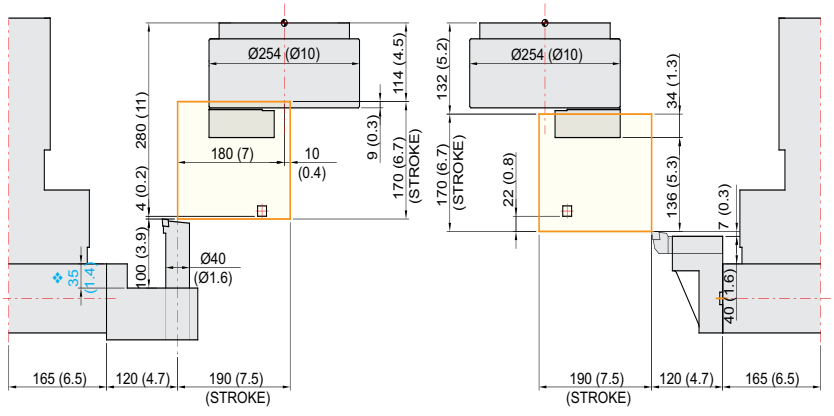
❖ This Holder can be inverted to change offset of 35mm (1.4").

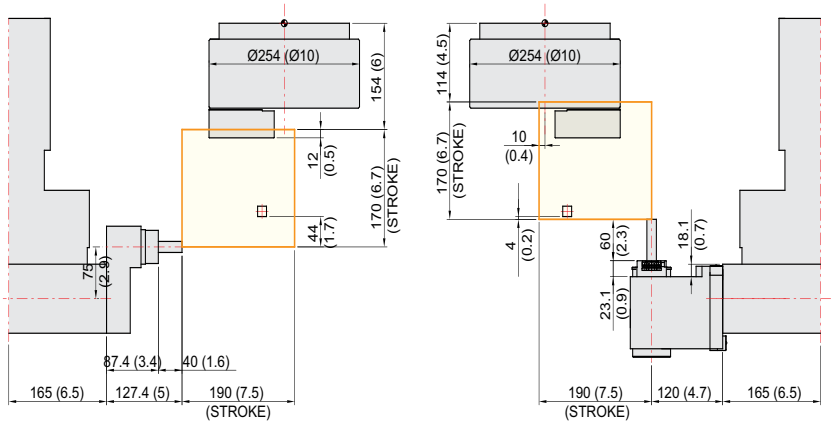
SPECIFICATIONS

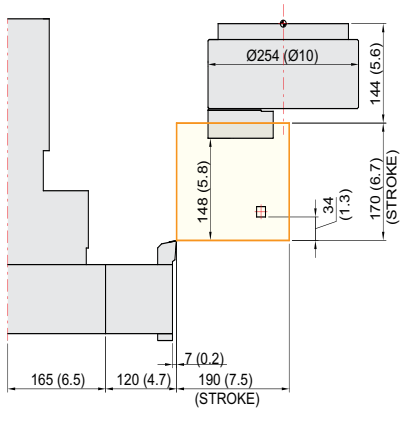
Tooling Travel Range

unit : mm(in)

LF2600 Series







❖ This Holder can be inverted to change offset of 35mm (1.4").

SPECIFICATIONS

Specifications

[ ] : Option

ITEM				LF2100/2SP	LF2100M/2SP	LF2600/2SP	LF2600M/2SP
CAPACITY	Swing Over the Bed		mm(in)	Ø650 (25.6″)			
	Max. Turning Dia.		mm(in)	Ø360 (14.2″)			
	Max. Turning Length		mm(in)	150 (5.9″)		136 (5.3″)	
	Bar Capacity		mm(in)	Ø65 (2.6″)		Ø76 (3″)	
SPINDLE	Chuck Size		inch	8″		10″	
	Spindle Bore		mm(in)	Ø78 (3.1″)		Ø95 (3.7″)	
	Spindle Speed (rpm)		r/min	4,000		3,000	
	Motor (Max/Cont.)		kW(HP)	15/11 (20.1/14.8)		22/18.5 (29.5/24.8)	
	Torque (Max)		N·m(lbf·ft)	286.5 (211.3)		493 (363.6)	
	Spindle Type		-	BELT			
	Spindle Nose		-	A2-6		A2-8	
	C-axis Indexing		deg	-	0.001°	-	0.001°
FEED	Travel (X/Z)		mm(in)	190/170 (7.5″/6.7″)			
	Rapid Traverse Rate (X/Z)		m/min(ipm)	24/24 (945/945)			
	Slide Type		-	BOX GUIDE			
TURRET	No. of Tools		EA	2×10			
	Tool Size	OD	mm(in)	□ 25 (1″)			
		ID	mm(in)	Ø40 (1.6″)			
	Indexing Time		sec/step	0.2			
LIVE TOOL	Motor (Max/Cont.)		kW(HP)	-	5.5/1.1 (7.4/1.5)	-	5.5/1.1 (7.4/1.5)
	Milling Tool Speed (rpm)		r/min	-	5,000	-	5,000
	Torque (Max/Cont.)		N·m(lbf·ft)	-	47 (34.6)	-	47 (34.6)
	Collet Size		mm(in)	-	Ø16 (0.6″)(ER25)	-	Ø16 (0.6″)(ER25)
	Type		-	-	BMT55P	-	BMT55P
TAIL STOCK	Taper		-	-			
	Quill Dia.		mm(in)	-			
	Quill Travel		mm(in)	-			
	Travel		mm(in)	-			
TANK CAPACITY	Coolant Tank		ℓ (gal)	370 (97.7)			
	Lubricating Tank		ℓ (gal)	4 (1.1)			
POWER SUPPLY	Electric Power Supply		kVA	46		59	
	Thickness of Power Cable		Sq	Over 50			
	Voltage		V/Hz	220/60 (200/50*)			
MACHINE	Floor Space (L×W)		mm(in)	2,480 x 2,084 (97.6″ x 82″)			
	Height		mm(in)	2,360 (92.9″)			
	Weight		kg(lb)	7,000 (15,432)		7,300 (16,093)	
NC	Controller		-	FANUC 31i-B [HYUNDAI WIA FANUC i Series]			

*) 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 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	M19
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.

CONTROLLER

FANUC 31i-B

[ ] : Option

Controlled axis / Display / Accuracy Compensation	
Control axes	4 axes (X, Z, Y, C) / 6 axes (X, Z, Y, B, C, A)
	7 axes (X1/Z1, X2/Z2, B2, C1/C2)
	8 axes (X1/Z1, X2/Z2, Y1, B2, C1/C2)
Simultaneously controlled axes	2 axes [Max. 4 axes]
Designation of spindle axes	4 axes (1 path), 6 axes (2 path Total)
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	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, Program check
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%, 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
Multiple repetitive cycles Ⅰ, Ⅱ	

Program input	
Canned cycle for turning	
Manual Guide i	Conversational auto program
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	M19
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	64 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	
Additional optional block skip	9 ea
Fast ethernet	Needed option board
Data server	Needed option board
Protection of data at 8 levels	
Tool offset pairs	99 pairs / 200 pairs
Part program storage size	2560m (1MB) / 5120m (2MB)
Polygon turning (2 Spindles)	Mill, MS, Y, SY, LF-Mill, TTMS, TTS
Helical interpolation	
Dynamic graphic display	
Direct drawing dimension program	Including Chamfering / Corner R

Figures in inch are converted from metric values.
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GLOBAL NETWORK

HEADQUARTER

Changwon Technical Center / R&D Center / Factory

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

Uiwang Technical Center / R&D Center

37, Cheoldobangmulgwan-ro, Uiwang-si, Gyeonggi-do,
Korea (Zip Code : 16082)
TEL : +82 31 596 8213 Fax : +82 55 210 9804

OVERSEAS OFFICES

HYUNDAI WIA
Machine Tools America

450 Commerce Blvd. Carlstadt, NJ 07072
TEL : +1 630 625 5600

HYUNDAI WIA
Machine Tools Europe
TECH CUBE

Alexander-Fleming-Ring 57, 65428
Rüsselsheim Germany
TEL: +49 6142 9256 0
FAX: +49 6142 9256 100

India Branch Office

#4/169, Rajiv Gandhi Salai, (OMR),
Kandanchavadi, Chennai-600 096,
Tamilnadu, India
TEL: +91-44-3290-1719

Jiangsu HYUNDAI WIA

Company No.6 Fenghuang Road,
Fenghuang Town, Zhangjjagang City,
Jiangsu province, China
TEL : +86 512 5672 6808
FAX : +86 512 5671 6960

Hyundai WIA Machine Tools China
Shanghai Branch Office

2-3F, Bldg6, No.1535 Hongmei Road,
Xuhui District, Shanghai, China
TEL : +86 021 6427 9885
FAX : +86 021 6427 9890

Beijing Branch Office

Floor 14, Zhonghangji Plaza B, No.15
Ronghua South Road, BDA Dist., Daxing
Dist., Beijing, China 100176
TEL : +86 010 8453 9850
FAX : +86 010 8453 9853

Guangzhou Branch Office

Room 311, Unit 1-3, POLY TAL TU WUN,
Hanxi Avenue, Panyu District,
Guangzhou, China
TEL : +86 020 8550 6595
FAX : +86 020 8550 6597

Chengdu Branch Office

NO.508 Room, B Block, AFC Plaza, NO.88
Jiaozi Road, High-tech Zone, Chengdu,
China
TEL : +86 028 8665 2985
FAX : +86 028 8665 2985

Qingdao Office

Room 1207, Cai Fu Building, 182-6 Haier
Middle Road, Qingdao, China
TEL : +86 0532 8667 9334
FAX : +86 0532 8667 9338

Wuhan Office

Room 302, B Tower, Nova Center,
Dongfeng Three Road, Zhuankou,
Wuhan, Hubei, China
TEL : +86 027 5952 3256
FAX : +86 027 5952 3256

LF2100M/2SP Movie 1

LF2100M/2SP Movie 2

LF2100M/2SP 3D Movie

HYUNDAI WIA

http://machine.hyundai-wia.com

Head Office & Factory

153, Jeongdong-ro, Seongsan-gu, Changwon-si, Gyeongsangnam-do **Tel** +82 55 280 9500

Overseas Sales Team

16F, 37, Cheoldobangmulgwan-ro, Uiwang-si, Gyeonggi-do **Tel** +82 31 596 8213

HYUNDAI WIA Machine Tools America

450 Commerce Blvd. Carlstadt, NJ 07072 **Tel** +1 (630) 625 5600

HYUNDAI WIA Machine Tools Europe TECH CUBE

Alexander-Fleming-Ring 57, 65428 Rüsselsheim Germany **Tel** +49 6142 9256 0 **Fax** +49 6142 9256 100

India Branch Office

#4/169, Rajiv Gandhi Salai, (OMR), Kandanchavadi, Chennai-600 096, Tamilnadu, India **Tel** +91 44 3290 1719

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