HYUNDAI
MOTOR GROUP

HYUNDAI WIA MACHINE TOOL



KF3500/5A

High Precision 5-axis Vertical Machining Center

EXPERIENCE THE NEW TECHNOLOGY

YouTube HYUNDAI WIA MT
www.youtube.com/HYUNDAIWIAMT

HYUNDAI WIA

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HYUNDAI WIA Machine Tools
Global Links

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KF3500/5A

HIGHLIGHT



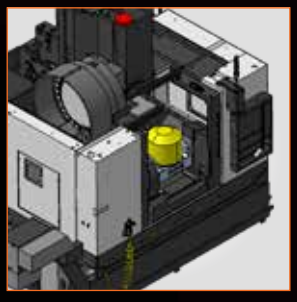
High-performance 5-axis Table

› A/C axis high rigidity roller gear cam drive method applied
› Vastly superior in power delivery efficiency and strength compared to worm gear of other companies
› Rapid traverse rate of A axis 30rpm and C axis 40rpm



High-speed Structure to Improve Productivity

› High-speed 12,000rpm spindle (Opt. 15,000/20,000rpm)
› high-speed tool change time (C-C) 3.4 sec
› High-speed roller type LM guide in all axes



Machining Convenience

› Convenient work loading through crane with top cover featuring open structure
› Compact design suitable for installation in restricted space (6.5㎡)
› Applying the latest controller of FANUC 0i PLUS

KF 3500/5A

Technical Leader

ATC & Magazine

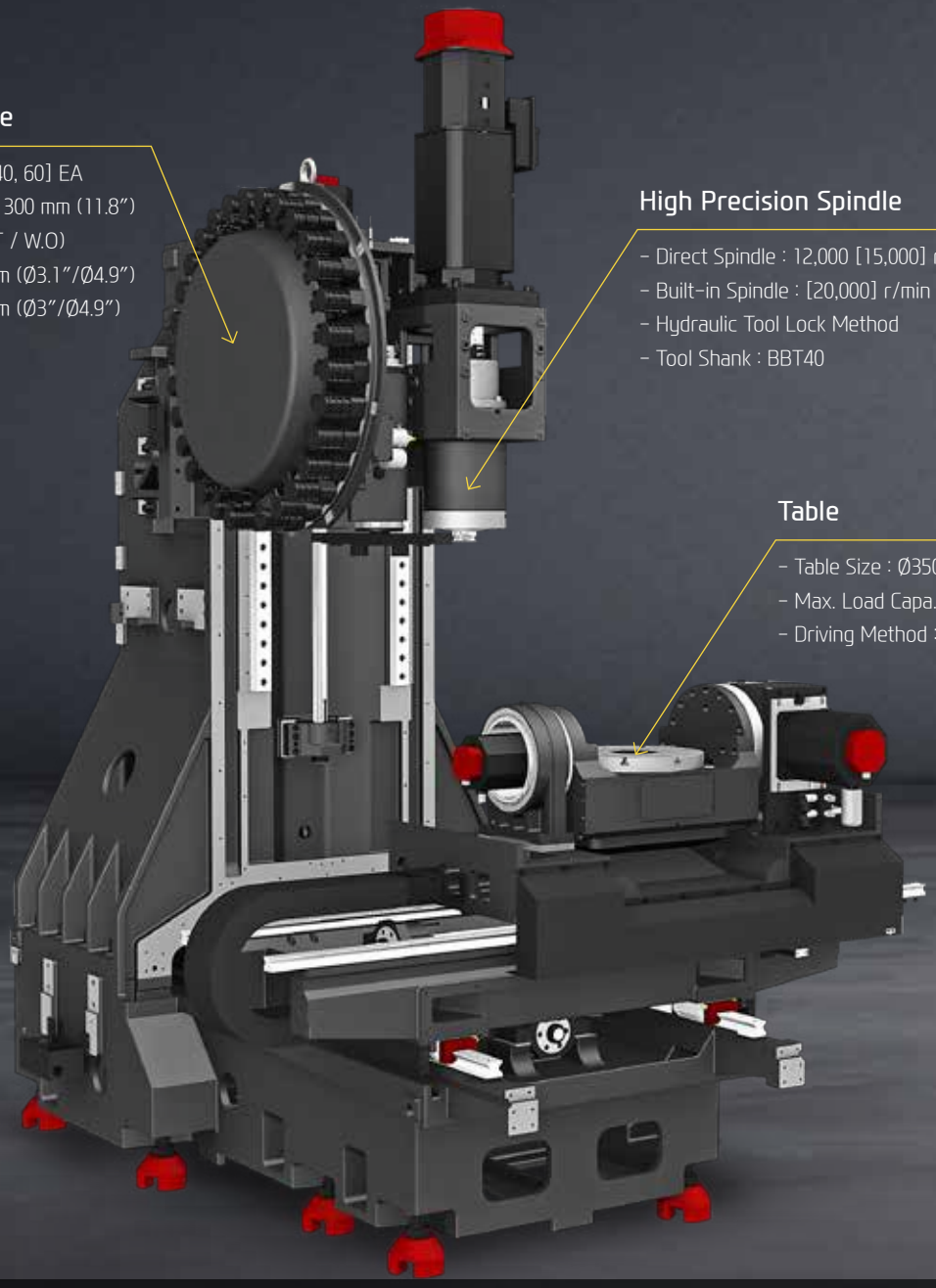
- No. of Tools : 30 [40, 60] EA
- Max. Tool Length : 300 mm (11.8")
- Max. Tool Dia. (W.T / W.O)
  30T : Ø80/Ø125 mm (Ø3.1"/Ø4.9")
  40T : Ø76/Ø125 mm (Ø3"/Ø4.9")

High Precision Spindle

- Direct Spindle : 12,000 [15,000] r/min
- Built-in Spindle : [20,000] r/min
- Hydraulic Tool Lock Method
- Tool Shank : BBT40

Table

- Table Size : Ø350 mm (Ø13.8")
- Max. Load Capa. : 250 kg (551 lb)
- Driving Method : Roller Gear Cam



Best Performance in the Class & Vertical Machining Center for 5-axis Machining

KF3500/5A developed with application of accumulative know-how and new technology of Hyundai Wia is a next-generation machining center featuring optimal performance in complex form machining.

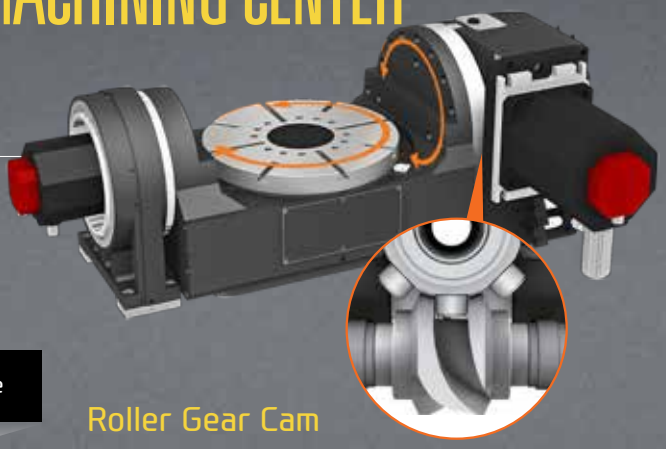
STATE-OF-THE-ART MECHANISM DESIGN, HIGH-PRECISION STRUCTURE

5 AXIS PROCESSING VERTICAL MACHINING CENTER

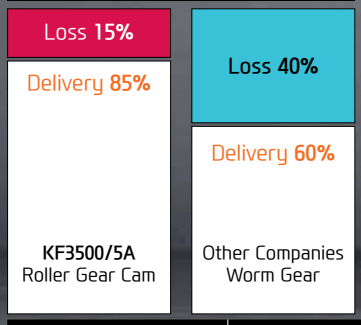
EXCELLENT MACHINING PERFORMANCE

5-axis Tilting Rotary Table

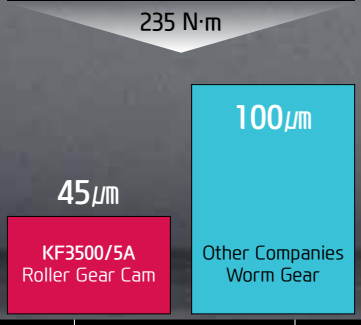
The 5-axis tilting rotary table allows users to produce a wide range of complicated work pieces. The 'C' axis has full 360° rotation and the 'A' axis has 150° rotation.



Torque Delivery Efficiency
(Based on 200 N·m)



Displacement upon pressure



Roller Gear Cam

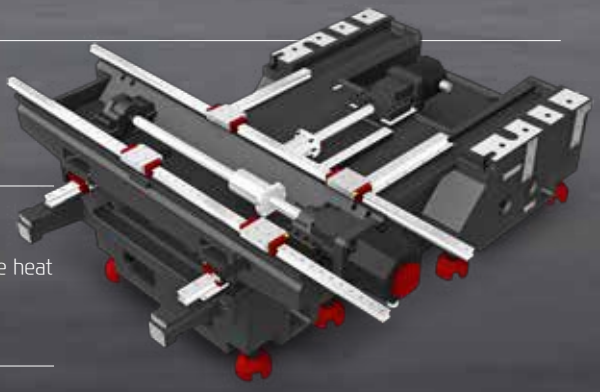
KF3500/5A developed with application of accumulative know-how and new technology of Hyundai Wia is a next-generation machining center featuring optimal performance in complex form machining.
Also, it has superb precision and durability while also being excellent for five-axis machining with less power loss even at high-speed rotation (Superior power delivery efficiency and strength compared to worm gear table of other companies)

Table Size	Max. Load Capacity	Slope Angle	Rotation Angle	Min. Indexing Angle	Driving Method
Ø350 mm (Ø13.8″)	250 kg (551 lb)	+30° ~ −120°	360°	0.001°	Roller Gear Cam

GUIDE WAY

High-Speed Roller LM Guideway

By applying an roller LM guide structure with high speed and rigidity, a rapid traverse rate of 36m/min is achieved based on the X/Y axis.



Ball Screw

The pretensioned ball screw minimizes the expansion and contraction according to the heat and further reinforces the rigidity by the double anchor support method.
<3 Row bearing / Z-axis ball screw : + Oil + Air Lubricated>

Rapid Traverse Rate (X/Y/Z) (A/C)

36/36/30 m/min 30/40 r/min

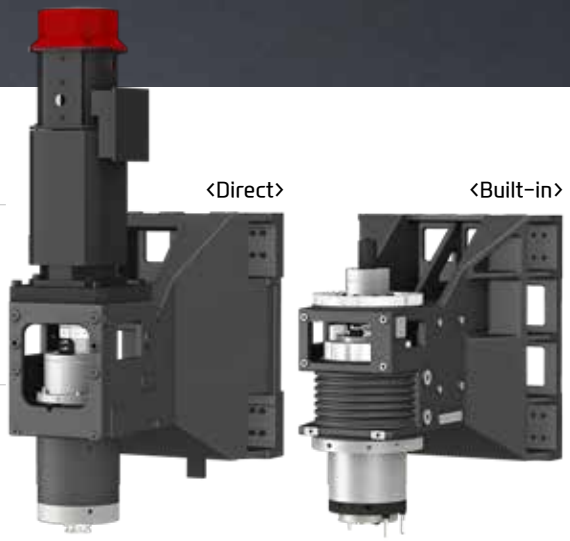
Travel (X/Y/Z)

600/655/500 mm (23.6″/25.8″/19.7″)

❖ Very outstanding A/C axis rotation speed with application of roller gear cam

HIGH PRECISION SPINDLE & HIGH SPEED TOOL CHANGE SYSTEM

SPINDLE



Direct Driven Spindle

The directly coupled spindle at a maximum revolution of 12,000rpm [Opt. 15,000rpm], allows high-speed processing. Additionally, the large diameter and the thickness of the spindle add to the stability of the machine.

Built-in Spindle OPTION

The built-in spindle minimizes spindle vibration, enabling outstanding performance in a high-precision cutting environment such as complex shaped work-piece.

Through Spindle Coolant OPTION

Through Spindle Coolant is exceedingly useful when drilling deep holes. It helps increase the lifetime of the tool, while decreasing cycle time.

20 bar / 30 bar / 70 bar



Spindle Speed (rpm)	Power (Max./Cont.)	Torque (Max./Cont.)	Driving Method
12,000 r/min	18.5/11 kW W (25/15 HP)	118/52.5 N·m (87/38.7 lbf·ft)	Direct
[15,000 r/min]	[18.5/11 kW W (25/15 HP)]	[118/52.5 N·m (87/38.7 lbf·ft)]	
[20,000 r/min]	[22/18.5 kW (29.5/25 HP)]	[98/80 N·m (72.3/59 lbf·ft)]	Built-in

[ ] : Option

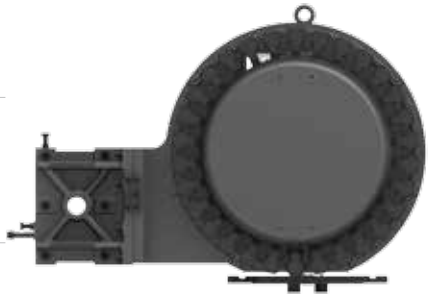
ATC & MAGAZINE

High Speed ATC

Position control through twin arm ATC on servo motors has been improved drastically.
In addition, tool exchanging has become easier, reducing specific cutting time tremendously.

Magazine

The tool magazine holds 30 tools as standard and 40 tools as an option. Due to the wider selection of tools and the random tool selection method, tool change time has improved.

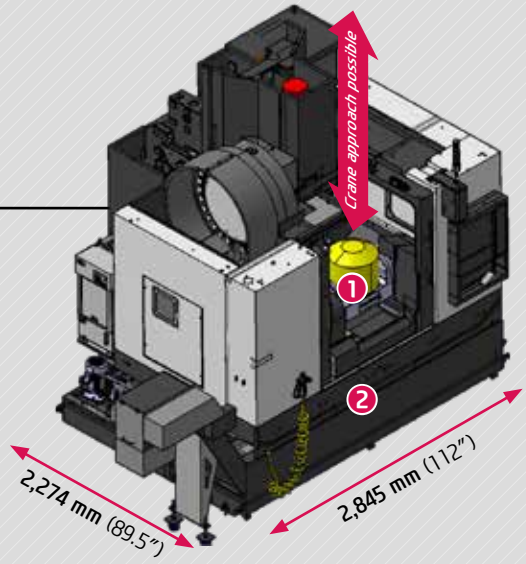


Tool Change Time (Chip to Chip)	3.4 sec

no. of Tools	Tool Shank	Max. Tool Weight	Max. Tool length	Max. Tool dia. (W.T/W.O)
30 [40, 60] EA	BBT40	8 kg (18 lb)	300 mm (11.8")	30T/60T : Ø80/Ø125 mm (Ø3.1"/ Ø4.9") [40T : Ø76/Ø125 mm (Ø3"/ Ø4.9")]

OPTIMAL PROCESSING SYSTEM FOR USERS

Machining Convenience



❶ Convenient Work Loading

Crane can approach to the table when the door is open, and it features superior material access space and maintainability with expansion of door opening/closing gap to 1,000 mm (39.4").

❷ Optimization of Installation Area

Installation is convenient even in small spaces with compact size of 6.5m² and it improves space efficiency for the factory of customers.

Standard & Optional

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

Spindle		KF3500/5A
12,000rpm (18.5kW)	Direct	●
12,000rpm (18.5kW)	Direct	○
20,000rpm (22kW)	Built-in	○
Spindle Cooling System		●
ATC		
ATC Extension	30	●
	40	○
	60	○
Tool Shank Type	BBT40	●
	BCV40	○
U-Center	D'andrea	–
Pull Stud	45°	●
Table & Column		
T-Slot Table		●
NC Rotary Table		●
High Column	300mm (11.8")	–
쿨런트장치		
Std. Coolant (Main Spindle Nozzle)		●
Through Spindle Coolant	20bar	○
	30bar, 20ℓ (5.3 gal)	○
	70bar, 15ℓ (4 gal)	○
	70bar, 30ℓ (7.9 gal)	○
Top Cover		●
Shower Coolant		○
Gun Coolant		○
Bed Flushing Coolant		○
Air Gun		○
Cutting Air Blow		○
Tool Measuring Air Blow (Only for TLM)		○
Chip Disposal		
Coolant Tank	365ℓ (96.4 gal)	●
Interior Screw Chip Conveyor		●
Upper Chip Conveyor (Hinge)	Left	○
	right	○
Screw Type Chip Conveyor	Left	☆
	right	☆
Drum Filter Type Chip Conveyor	Left	☆
	right	☆
	rear	☆
Chip Wagon	Standard (180ℓ)	○
	Swing (200ℓ)	○
	Large Swing (290ℓ)	○
	Large Size (330ℓ)	○
	Customized	☆
Controller		
FANUC 0i – SMART PLUS		●

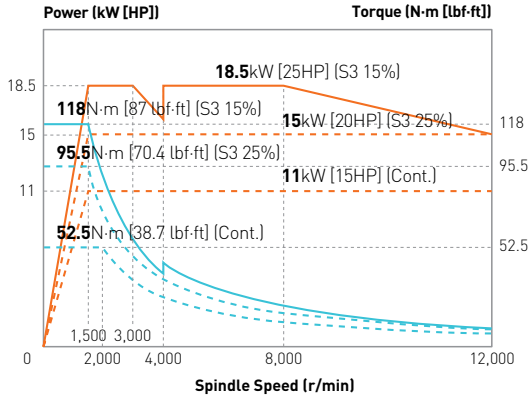
Electric Device		KF3500/5A
Call Light	1 Color : ■	●
Call Light & Buzzer	3 Color : ■ ■ ■ B	○
Electric Cabinet Light		○
Remote MPG		●
3 Axis MPG		○
Work Counter	Digital	○
Total Counter	Digital	○
Tool Counter	Digital	○
Multi Tool Counter	Digital	○
Electric Circuit Breaker		○
Transformer	30kVA	○
Auto Power Off		●
Back up Module for Black out		○
Measuring Device		
Air Zero	TACO	○
	SMC	○
Work Measuring Device		○
TLM	TLM	○
	Laser	○
Tool Broken Detective Device		☆
Linear Scale	X/Y/Z Axis	○
Rotary Scale	A/C축	○
Coolant Level Sensor (Bladder Type)		☆
Environment		
Air Conditioner		○
Oil Mist Collector		☆
Oil Skimmer (Only for Chip Conveyor)		○
MQL (Minimal Quantity Lubrication)		☆
Fixture & Automation		
Auto Door		○
Auto Shutter (Only for Automatic System)		–
Sub O/P		☆
NC rotary TableI/F	Single	○
	Channel	☆
Control of Additional Axis	1 Axis	○
	2 Axis	☆
External M Code 4EA		○
Automation Interface		☆
I/O Extension (In & Out)	16 Contact	○
	32 Contact	○
Hyd. Device		
Hyd. Unit for Fixture	45bar	–
	70bar	○
	100bar	○
	Customized	☆

❖ Specifications are subject to change without notice for improvement.

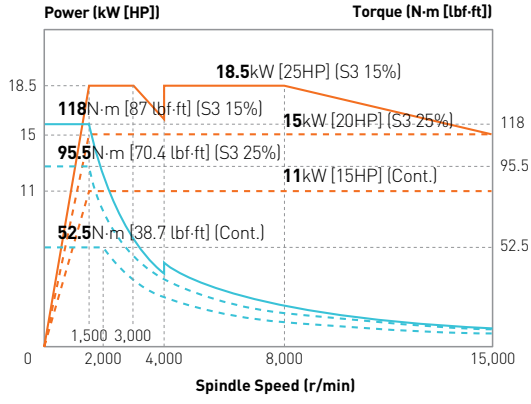
SPECIFICATIONS

Spindle Output/Torque Diagram

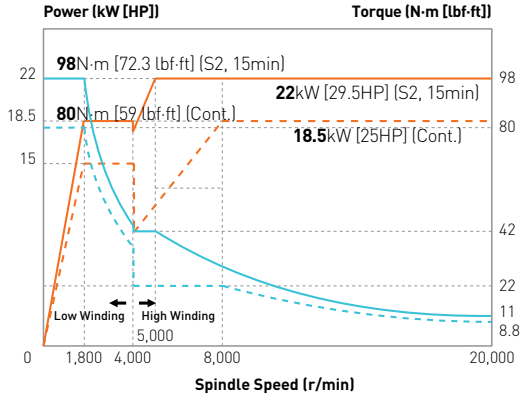
Direct 12,000rpm



Direct 15,000rpm

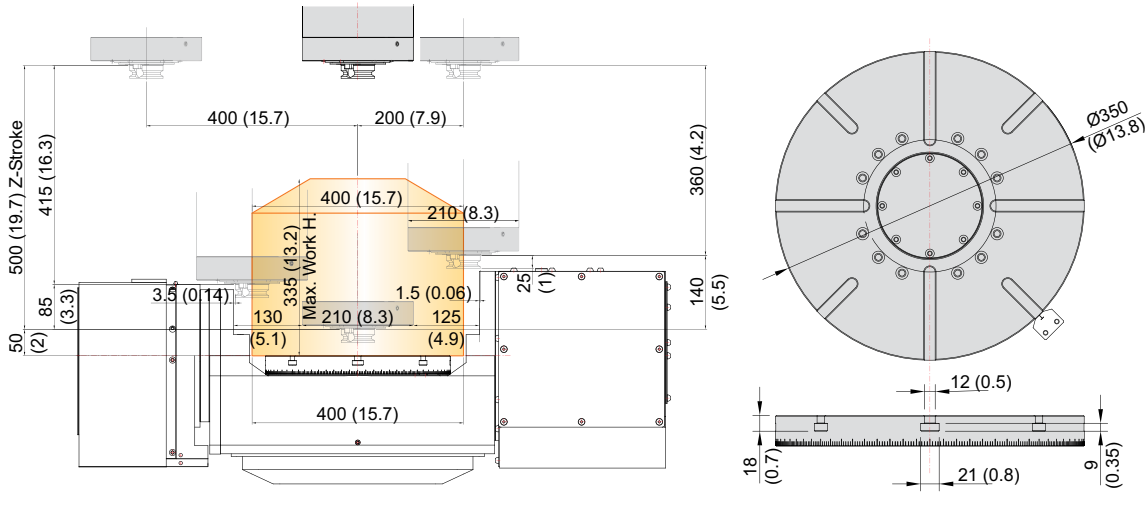


Built-in 20,000rpm



Work Interference & Table Dimensions

unit : mm(in)



SPECIFICATIONS

Specifications

[ ] : Option

ITEM				KF3500/5A
TABLE	Table Size (L×W)		mm(in)	Ø350 (Ø13.8″)
	Max. Working Size (L×H)		mm(in)	Ø400×355 (Ø15.7″×14″)
	Max. Load Capacity		kg(lb)	250 (551) – Max. Inertia : 2.09 kg·m²
	Table Driving Method		-	Roller Gear Cam
SPINDLE	Spindle Taper		-	BBT40
	Spindle Speed (rpm)		r/min	12,000 [15,000] [20,000]
	Spindle Power (Max./Cont.)		kW(HP)	18.5/11 (25/15) [18.5/11 (25/15)] [22/18.5 (29.5/25)]
	Spindle Torque (Max./Cont.)		N·m(lbf·ft)	118/52.5 (87/38.7) [118/52.5 (87/38.7)] [98/80 (72.3/59)]
	Spindle Driving Method		-	Direct [Direct] [Built-in]
FEED	Travel	X/Y/Z	mm	600/655/500 (23.6″/25.8″/19.7″)
		A/C	deg	+30° ~ -120°/360°
	Rapid Traverse Rate	X/Y/Z	m/min(ipm)	36/36/30 (1,417/1,417/1,181)
		A/C	r/min	30/40
	Slide Type		-	Roller Guide
ATC	Tool Shank		-	BBT40
	Number of Tools		ea	30 [40, 60]
	Max. Tool Dia. (W.T/W.O)		mm(in)	Ø80/Ø125 (Ø3.1″/Ø4.9″) [Ø76/Ø125 (Ø3″/Ø4.9″)]
	Max. Tool Length		mm(in)	Ø80 : 270 (10.6″)/Ø125 : 210 (8.3″)
	Max. Tool Weight		kg(lb)	8 (17.6)
	Tool Selection Method		-	Random
	Tool Change Time (C-C)		sec	3.4
MACHINE	Floor Space (L×W)		mm(in)	2,845×2,274 (112″×89.5″)
	Height		mm(in)	3,020 (118.9″)
	Weight		kg(lb)	8,000 (17,637)
CNC	Controller		-	HYUNDAI WIA FANUC i Series – SMART PLUS

Specifications are subject to change without notice for improvement.

External Dimensions

unit : mm(in)

