KF Series

HYUNDAI WIA Vertical Machining Center

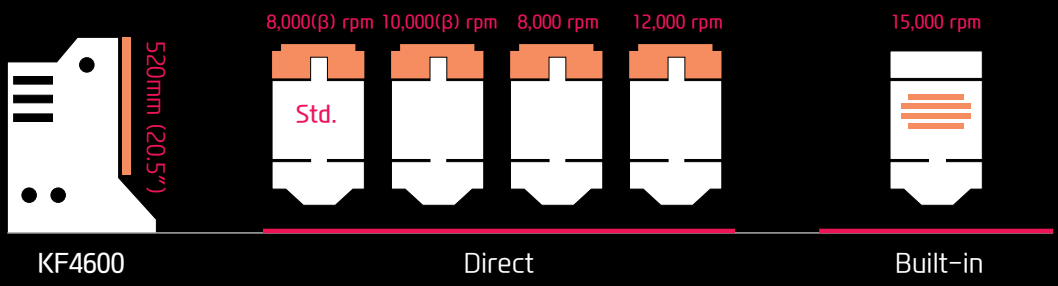
HYUNDAI WIA

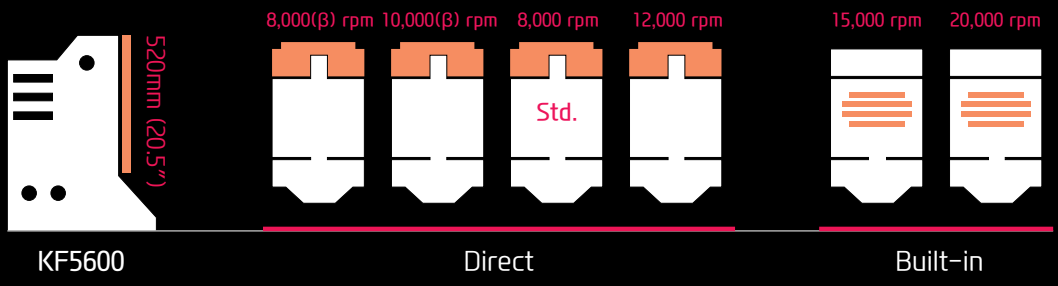
WIA VZ 6700
WIA VZ 4600
WIA VZ 5600

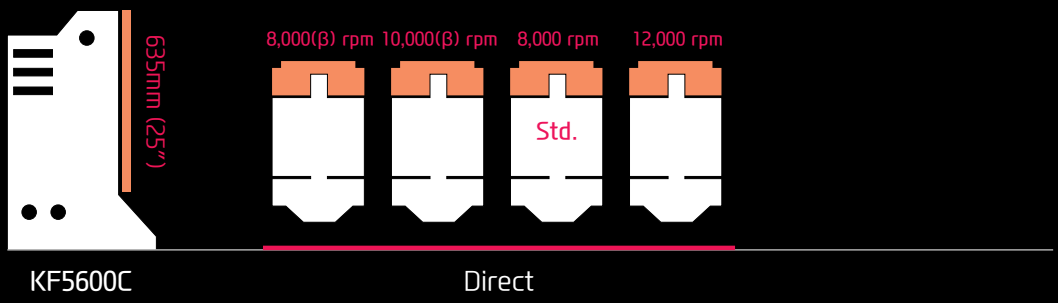
KF SERIES

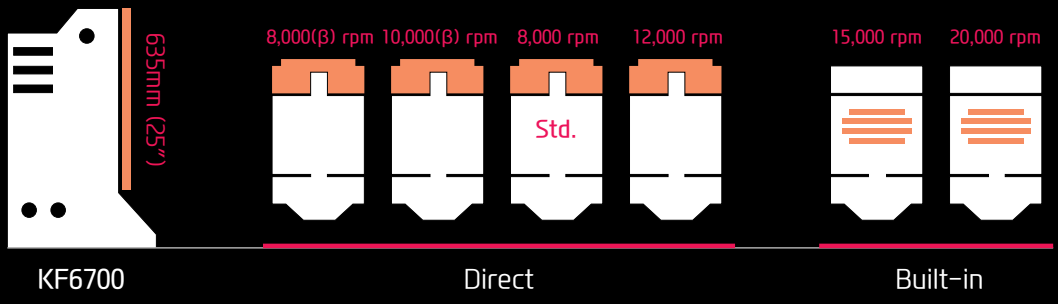
The Fastest, the Most Versatile High end Linear Machining Center

The Vertical Machining Center KF Series, designed by Hyundai WIA with years of expertise and the latest technology, maximizes productivity while maintaining rigidity and accuracy.







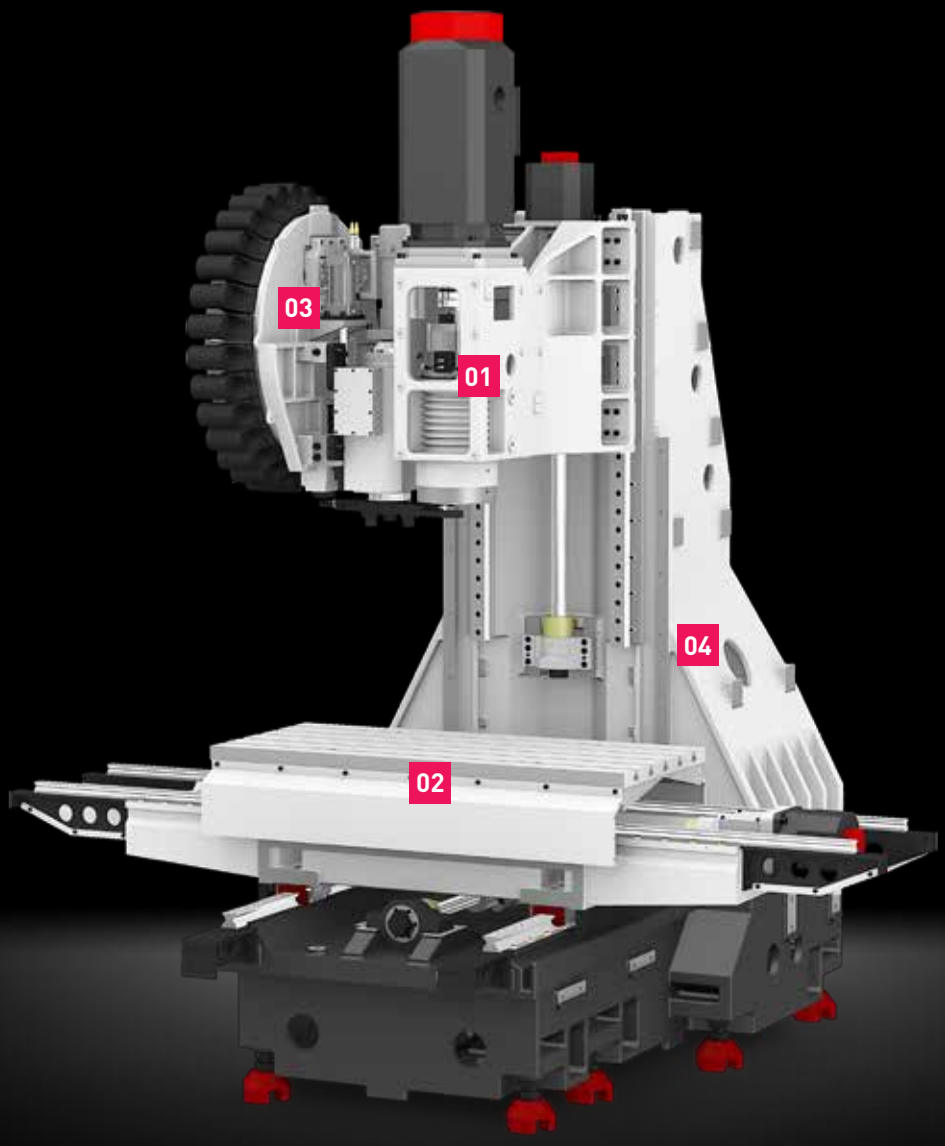


01

KF Series

KF4600

High Speed & Productivity



900/460/520	mm Travel (X/Y/Z)	36/36/36	m/min Rapid Traverse Rate (X/Y/Z)
35.4/18.1/20.5	inch Travel (X/Y/Z)	1,417/1,417/1,417	ipm Rapid Traverse Rate (X/Y/Z)

Basic Features

01

Direct Driven Spindle

By connecting the motor directly to the spindle, acc/dec. time has shortened. A wide range of machining can be done with spindle speed of up to 12,000rpm.

Built-in Spindle

The 15,000rpm built-in spindle can minimize vibration transmitted to the spindle.
It allows excellent machining performance in mold and high-precision products.

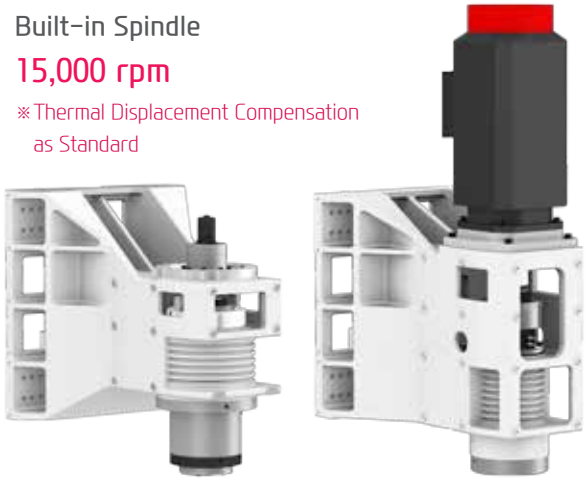
Direct Driven Spindle

8,000/10,000/12,000 rpm

Built-in Spindle

15,000 rpm

※Thermal Displacement Compensation as Standard

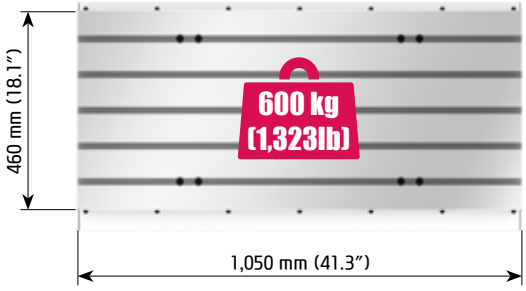


<Built-in> <Direct Driven>

02

Table

Compared to competitive machines, the KF4600 has a large working capacity to make setup easier and provide convenience to the operator.



03

ATC & 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 (C-C) :
3.2 sec

04 Optimal Structural Analysis

KF4600 is designed to have optimal structure through Hyundai WIA's unique structural analysis.
In particular, enhancement of bed and column's rigidity makes excellent performance even in heavy duty cutting.

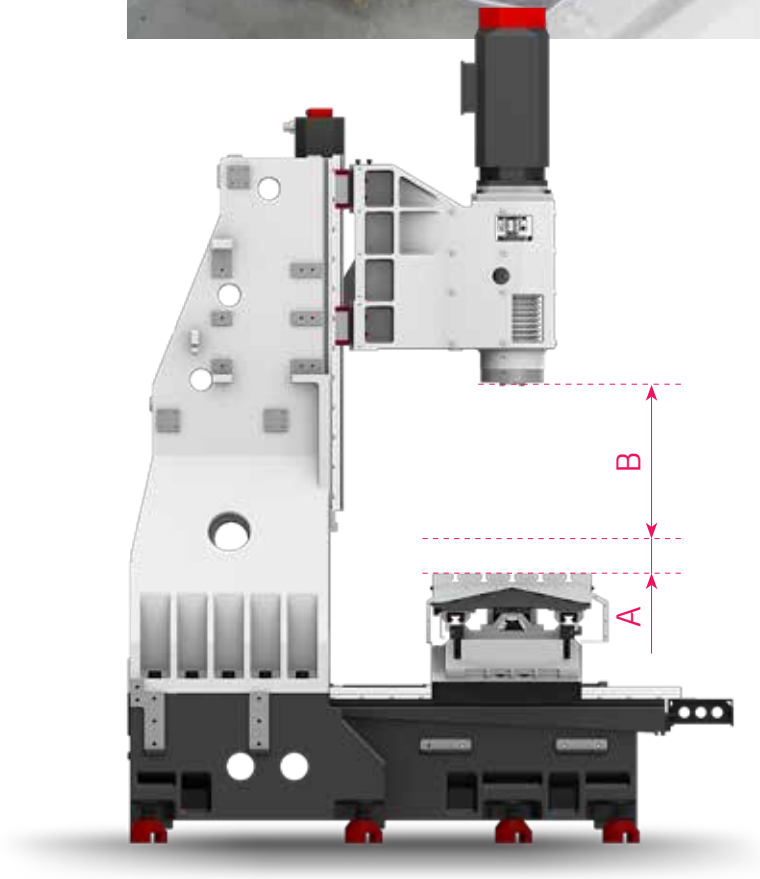
⊙ KF4600 Rigidity

X Axis : Compared to the previous model **186% UP** Y Axis : Compared to the previous model **158% UP**

Z Axis : Compared to the previous model **179% UP**

KF4600 Slideway

High-Precision & Speed Vertical Machining Center



One Piece High Column Structure (8K, 12K)

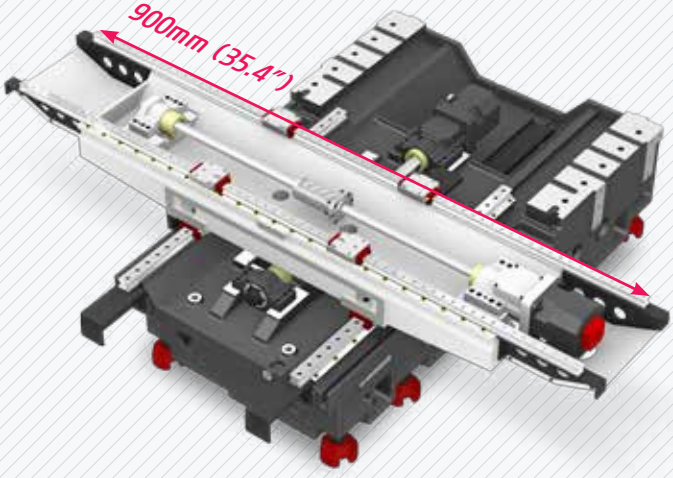
One piece high column is provided as an option up to z-axis hegiht of 200 mm (7.9").
This option helps to process bigger products such as rack housing.

KF4600 (A~B)

150~670	mm Distance from Table Surface to SP
5.9~26.4	inch Distance from Table Surface to SP

KF4600 High Column (A~B) OPTION

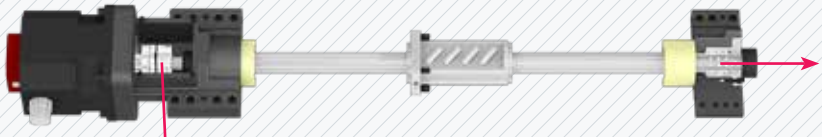
350~870	mm Distance from Table Surface to SP
13.8~34.3	inch Distance from Table Surface to SP



Expanded X-axis Design

The X-axis travel is increased to 900mm(35.4") and machining area has been enhanced.

Previous Machine (X-Axis)	800 mm (31.5")
KF4600 (X-Axis)	900 mm (35.4")



3 Row bearing + Oil Lubricated

Rigidity 147% UP

compared to previous model

Double anchored 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.

In addition, the coupling of the ballscrews and the highly reliable digital servo motors are connected by **metal plate couplings**, to reduce coupling breakage and backlash.

High-Speed Roller LM Guideway

Linear roller guideways are applied to reduce non-cutting time and bring high rigidity.

Rigidity has increased 200% compared to the Ball Bearing LM Guide

Rapid Traverse Rate (X/Y/Z) :

36/36/36 m/min (1,417/1,417/1,417 ipm)

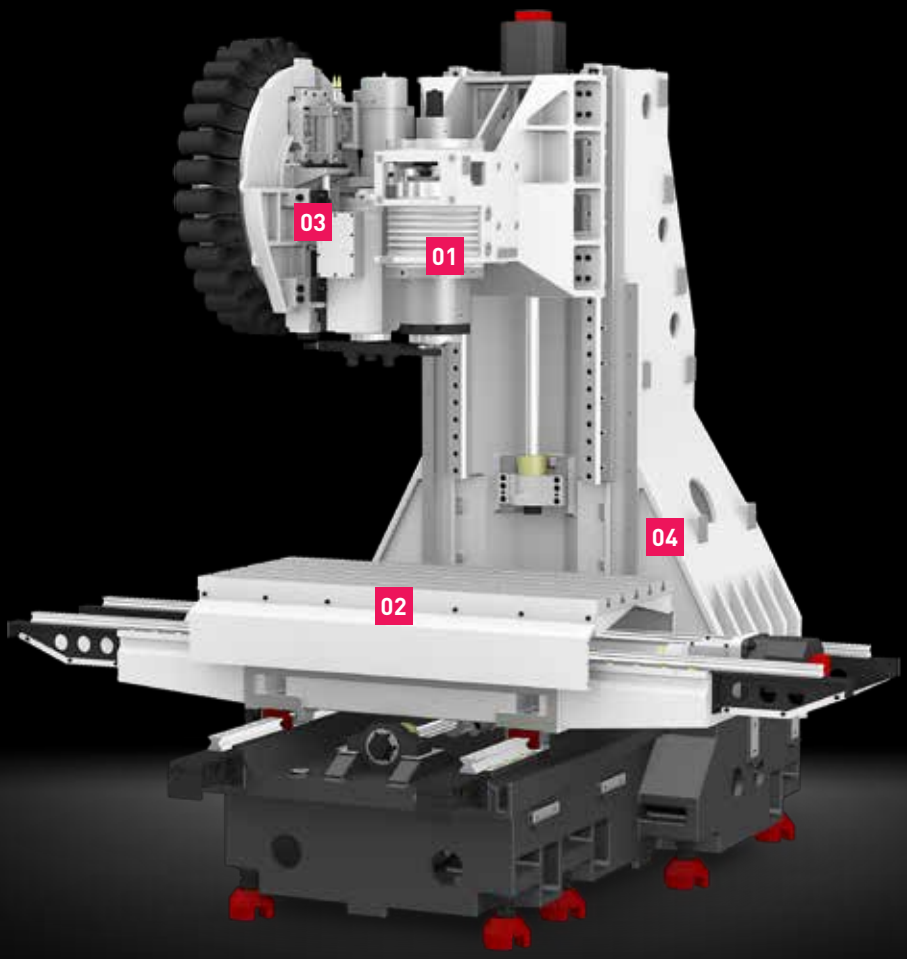
Previous Model	32 m/min (1,260 ipm)
KF4600	36 m/min (1,417 ipm)

4 m/min UP (157 ipm)

02
KF Series

KF5600

High Speed & Productivity



KF5600 (8K, 10K(β), 12K, 15K, 20K)

1,100/560/520 mm Travel (X/Y/Z)

43.3/22/20.5 inch Travel (X/Y/Z)

KF5600C (8K, 10K(β), 12K)

1,100/560/635 mm Travel (X/Y/Z)

43.3/22/25 inch Travel (X/Y/Z)

KF5600 I 5600C (8K, 12K, 15K, 20K)

40/40/36 m/min Rapid Traverse Rate (X/Y/Z)

1,575/1,575/1,417 ipm Rapid Traverse Rate (X/Y/Z)

KF5600 I 5600C (8K(β), 10K(β))

36/36/36 m/min Rapid Traverse Rate (X/Y/Z)

1,417/1,417/1,417 ipm Rapid Traverse Rate (X/Y/Z)

Basic Features

01

Direct Driven Spindle

By connecting the motor directly to the spindle, acc/dec. time has shortened. A wide range of machining can be done with spindle speed of up to 12,000rpm.

Built-in Spindle

The 15,000rpm and 20,000rpm built-in spindle can minimize vibration transmitted to the spindle.
It allows excellent machining performance in mold and high-precision products.

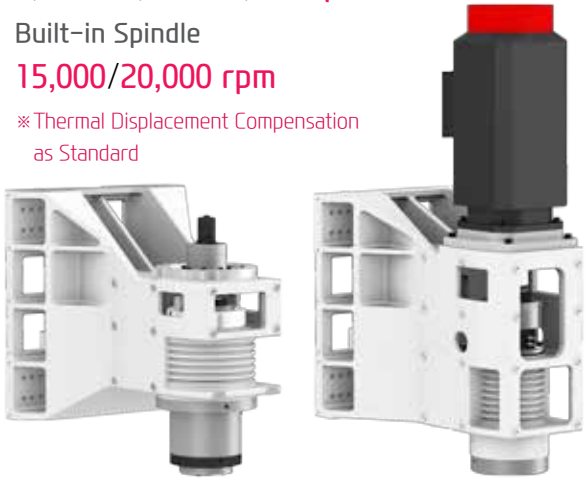
Direct Driven Spindle

8,000/10,000/12,000 rpm

Built-in Spindle

15,000/20,000 rpm

※Thermal Displacement Compensation as Standard

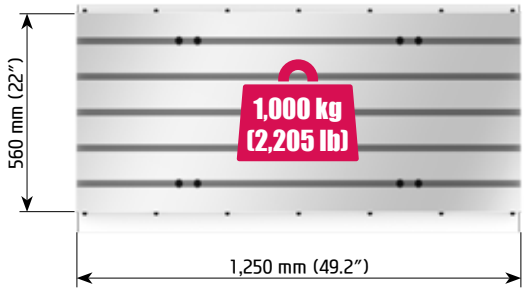


<Built-in> <Direct Driven>

02

Table

Compared to competitive machines, the KF5600 has a large working capacity to make setup easier and provide convenience to the operator.



03

ATC & 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 (C-C) :
3.2 sec

04 Optimal Structural Analysis

KF5600 is designed to have optimal structure through Hyundai WIA's unique structural analysis.
In particular, enhancement of bed and column's rigidity makes excellent performance even in heavy duty cutting.

⊙ KF5600 Rigidity

X Axis : Compared to the previous model **113% UP** Y Axis : Compared to the previous model **121% UP**

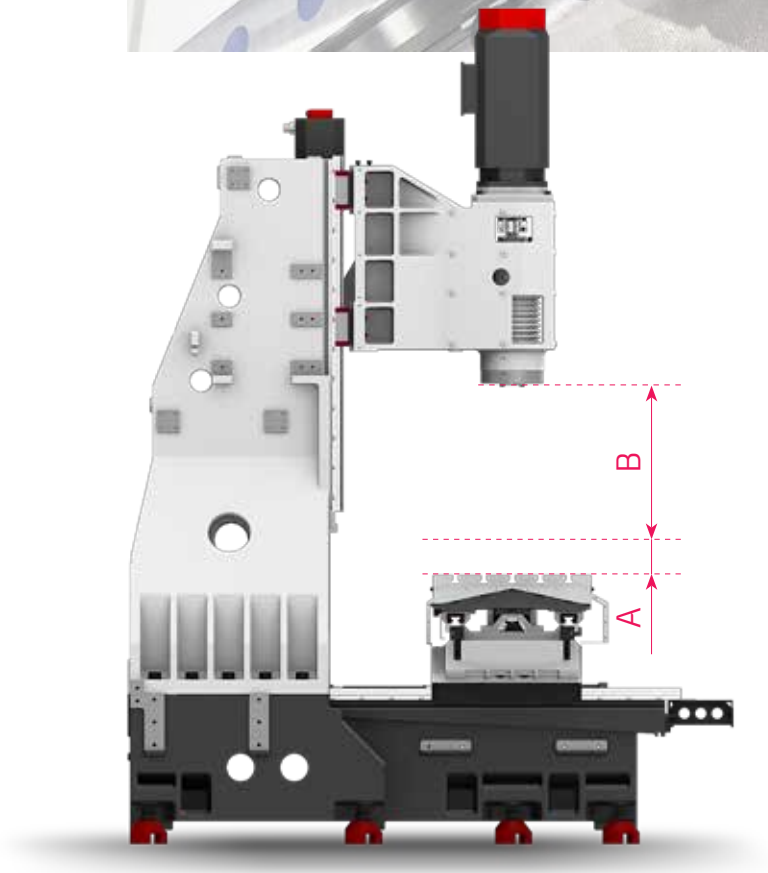
Z Axis : Compared to the previous model **129% UP**

KF5600 Slideway

High-Precision & Speed Vertical Machining Center

One Piece High Column Structure (KF5600C)

Additional 300mm(11.8") extension can be applied on the KF5600C as an option.



KF5600 (A~B)

150~670 mm
Distance from Table Surface to SP

5.9~26.4 inch
Distance from Table Surface to SP

KF5600C (A~B)

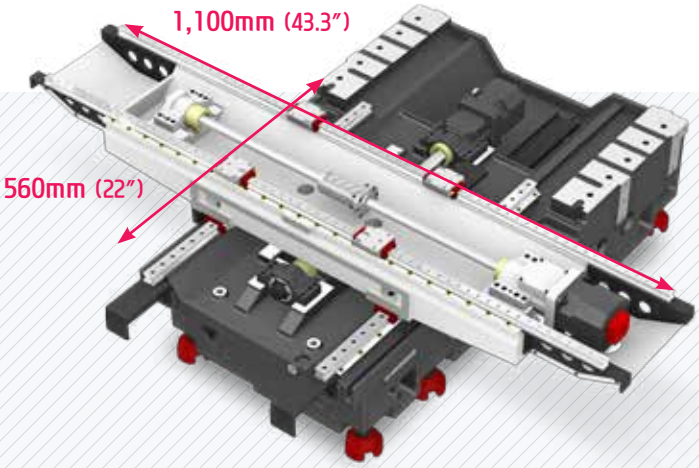
150~785 mm
Distance from Table Surface to SP

5.9~30.9 inch
Distance from Table Surface to SP

KF5600C High Column (A~B) OPTION

450~1,085 mm
Distance from Table Surface to SP

17.7~42.7 inch
Distance from Table Surface to SP

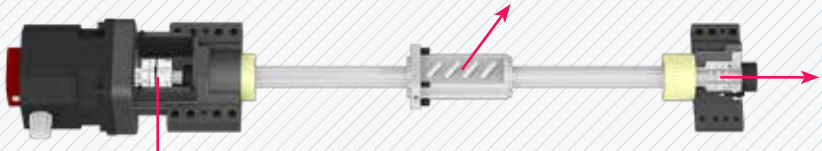


Expanded Y-axis Design

The Y-axis travel is increased to 560mm(22") and machining area has been enhanced.

Previous Machine (Y-Axis)	510 mm (20″)	
KF5600 (Y-Axis)	560 mm (22″)	50mm (2″) UP
Previous Machine (X-Axis)	1,060 mm (41.7″)	
KF5600 (X-Axis)	1,100 mm (43.3″)	40mm (1.6″) UP

Nut Cooling Ball Screw (20K) OPTION



3 Row bearing + Oil Lubricated

Rigidity 147% UP

compared to previous model

Double anchored 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.

In addition, the coupling of the ballscrews and the highly reliable digital servo motors are connected by **metal plate couplings**, to reduce coupling breakage and backlash.

High-Speed Roller LM Guideway

Linear roller guideways are applied to reduce non-cutting time and bring high rigidity. Each axis is directly connected to a highly reliable digital servo motor to provide high rigidity and minimal thermal displacement.

Rigidity has increased130% compared to the Ball Bearing LM Guide

Rapid Traverse Rate (X/Y/Z) : 40/40/36 m/min (1,575/1,575/1,417 ipm)
[10K(β) : 36/36/36 m/min (1,417/1,417/1,417 ipm)]

X/Y Axis (Std.)

Previous Machine	36 m/min (1,417 ipm)	
KF5600	40 m/min (1,575 ipm)	4 m/min UP (158 ipm)

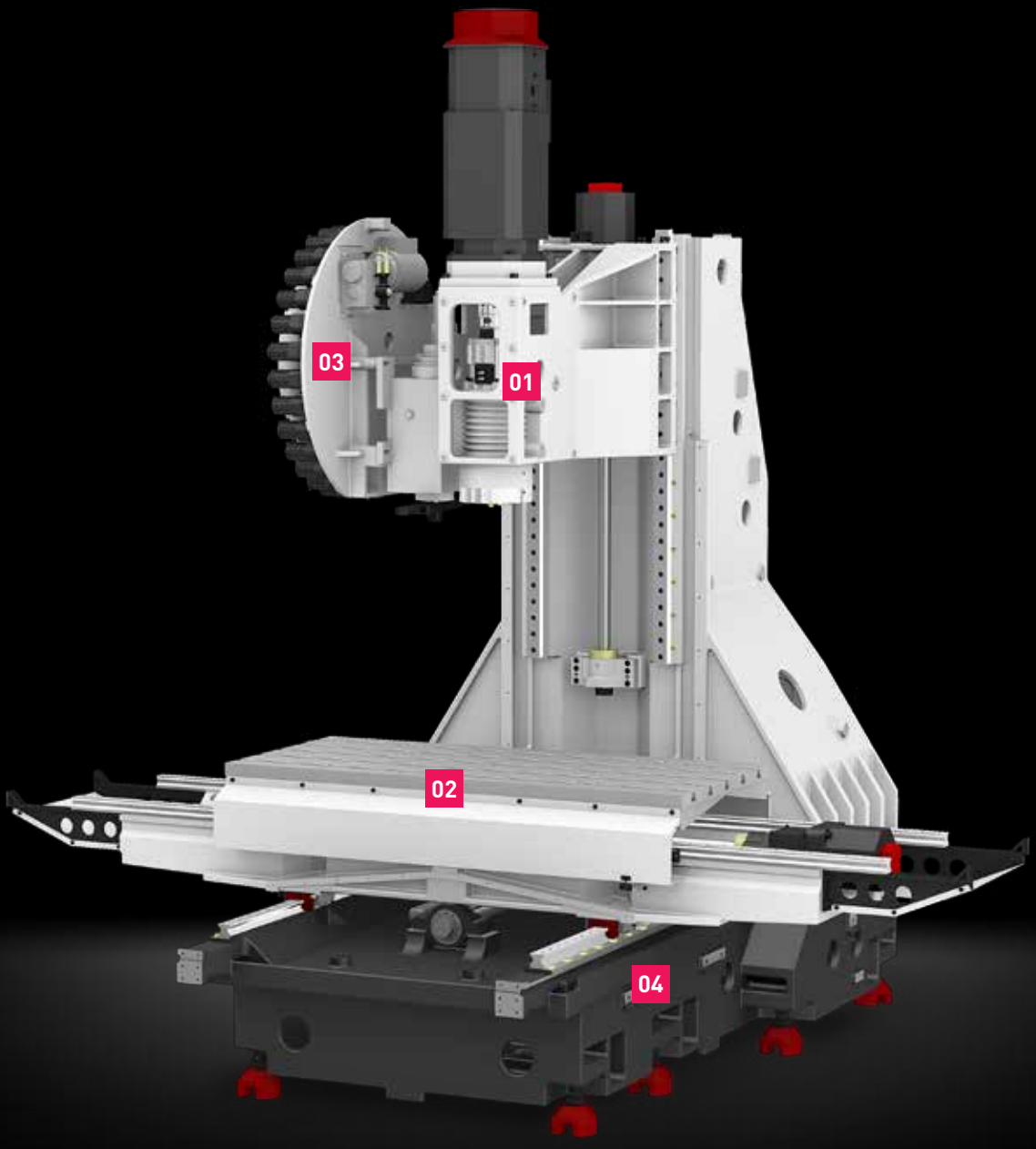
Z Axis (Std.)

Previous Machine	30 m/min (1,181 ipm)	
KF5600	36 m/min (1,417 ipm)	6 m/min UP (236 ipm)

n3 KF6700

KF Series

High Speed & Productivity



1,300/670/635 mm Travel (X/Y/Z)	36/36/30 m/min Rapid Traverse Rate (X/Y/Z)
51.2/26.4/25 inch Travel (X/Y/Z)	1,417/1,417/1,181 ipm Rapid Traverse Rate (X/Y/Z)

❖ 20000 rpm Built-in : 30/30/30 m/min (1,181/1,181/1,181 ipm)

Basic Features

01

Direct Driven Spindle

By connecting the motor directly to the spindle, acc/dec. time has shortened. A wide range of machining can be done with spindle speed of up to 12,000rpm.

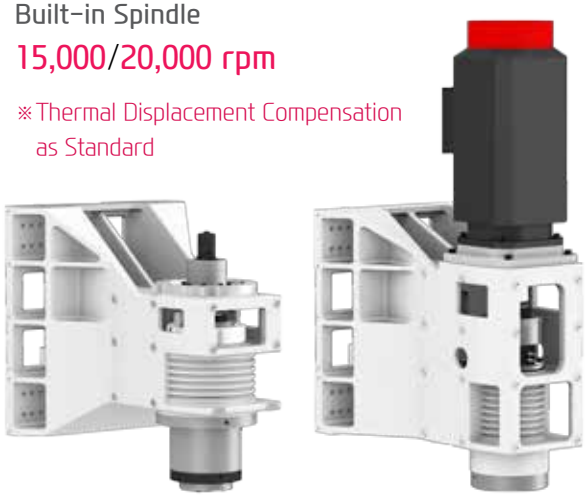
Built-in Spindle

The 15,000rpm(Opt. 20,000rpm) built-in spindle can minimize vibration transmitted to the spindle.
It allows excellent machining performance in mold and high-precision products.

Direct Driven Spindle
8,000/10,000/12,000 rpm

Built-in Spindle
15,000/20,000 rpm

※Thermal Displacement Compensation as Standard

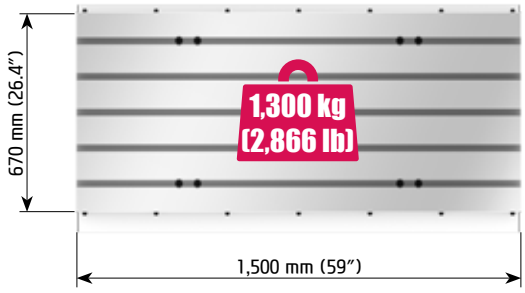


<Built-in> <Direct Driven>

02

Table

Compared to competitive machines, the KF6700 has a large working capacity to make setup easier and provide convenience to the operator.

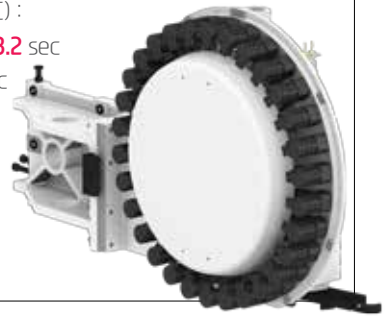


03

ATC & 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 (C-C) :
Direct Driven Spindle : 3.2 sec
Built-in Spindle : 3.3 sec



04

Optimal Structural Analysis

In order to increase the structural rigidity, KF6700 has **added rib** to the front of the bed. Static stiffness has increased compared to the base model, thus making heavy-duty cutting possible.

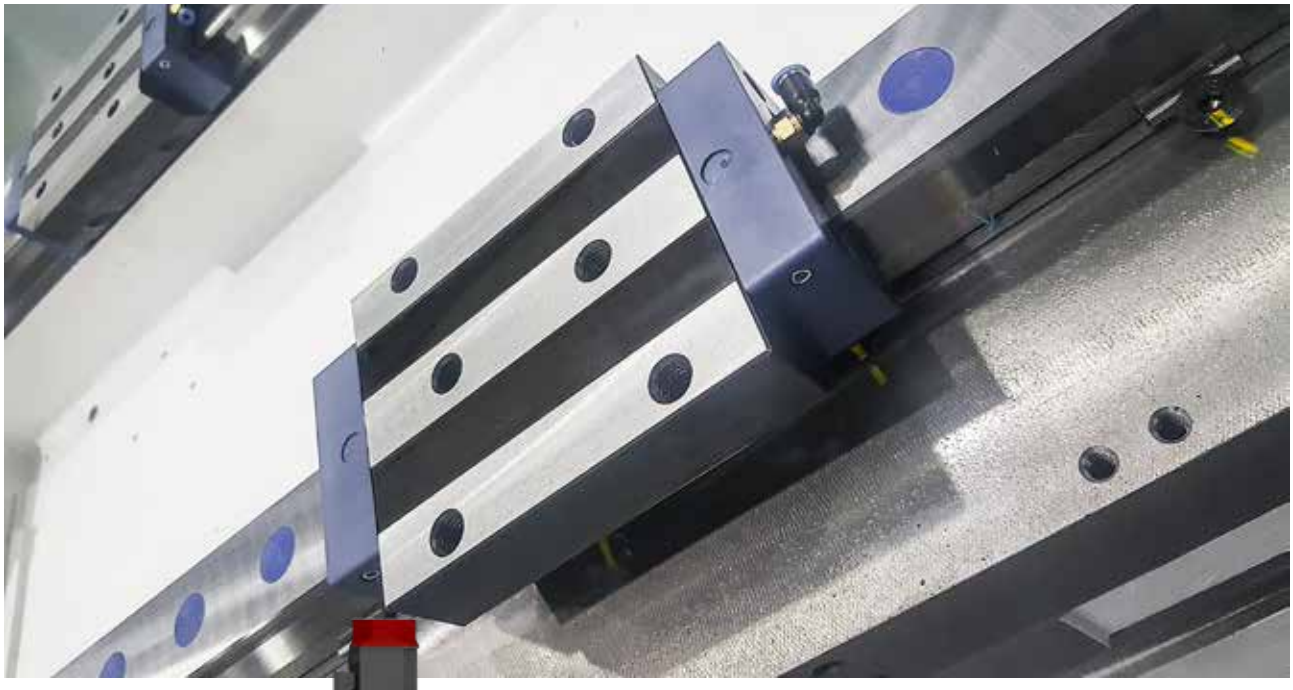
⊙ **Rigidity has increased compare to the base model of KF6700**

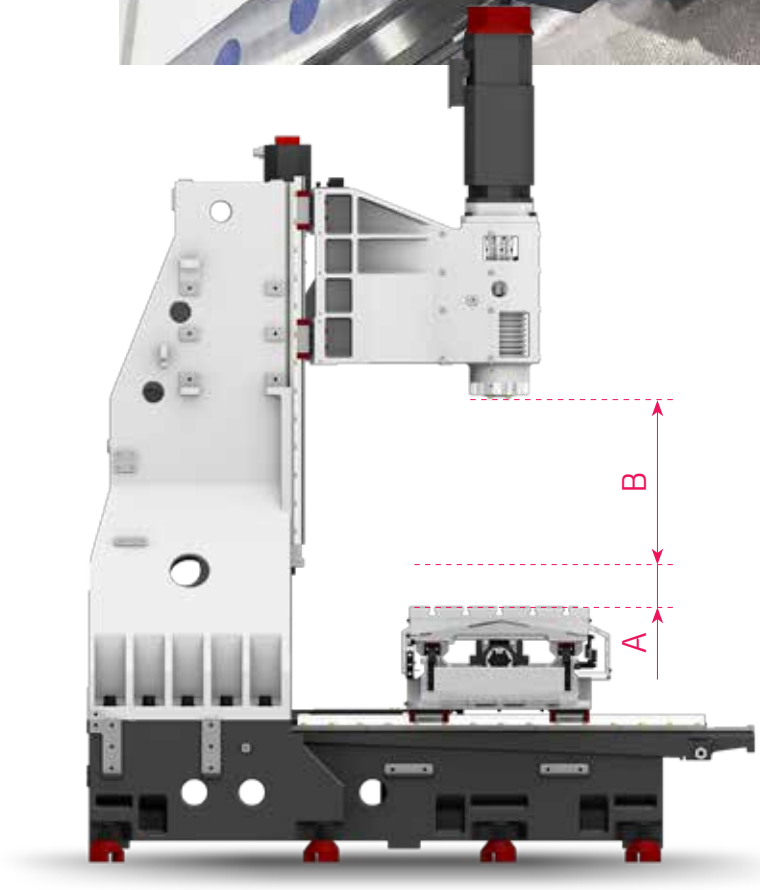
X Axis : **139% UP** X Axis : **144% UP**

Maintain optimized rigidity through reinforcement of rib structure

KF6700 Slideway

High-Precision & Speed Vertical Machining Center





One Piece High Column Structure (Direct Spindle)

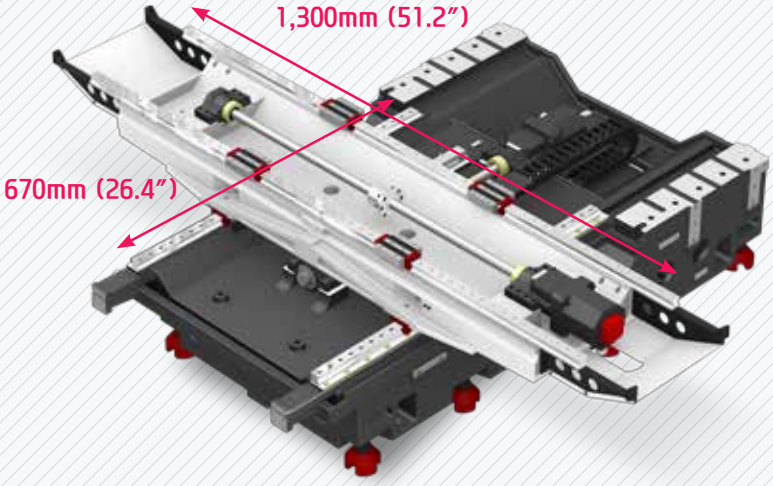
Additional 300mm(11.8") extension can be applied on the KF6700 as an option.

KF6700 (A~B)

150~785	mm Distance from Table Surface to SP
5.9~30.9	inch Distance from Table Surface to SP

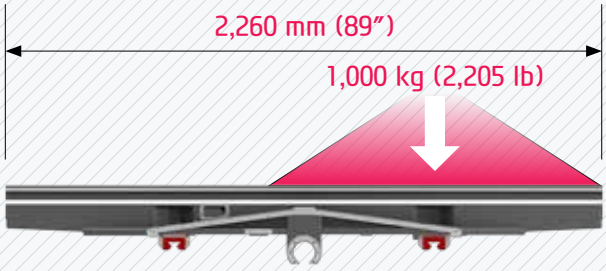
KF6700 High Column (A~B) OPTION

450~1,085	mm Distance from Table Surface to SP
17.7~42.7	inch Distance from Table Surface to SP

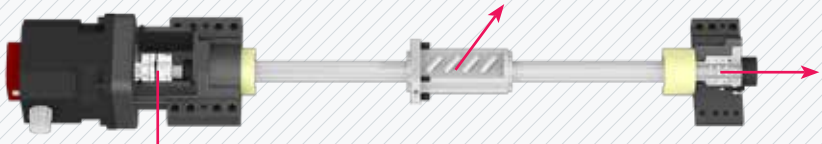


Increase of Saddle Rigidity

The KF6700 with the largest saddle among the KF series has almost same level of saddle-end displacement as the base model. This improvement leads to the high quality machining.



Nut Cooling Ball Screw (20K) OPTION



3 Row bearing + Oil Lubricated

Rigidity 147% UP

compared to previous model

Double anchored 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.

In addition, the coupling of the ballscrews and the highly reliable digital servo motors are connected by **metal plate couplings**, to reduce coupling breakage and backlash.

High-Speed Roller LM Guideway

Linear roller guideways are applied to reduce non-cutting time and bring high rigidity. Each axis is directly connected to a highly reliable digital servo motor to provide high rigidity and minimal thermal displacement.

Rigidity has increased168% compared to the Ball Bearing LM Guide

04

KF Series

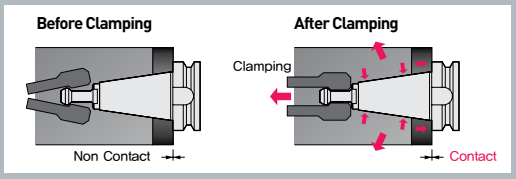
Direct Driven Spindle

Long Lasting High Accuracy & Excellent Performance

High-Performance, Direct Driven Spindle

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

To meet various user's demand, HSK type spindle is also available. (HSK-A63 : 12K)



Dual Contact Spindle

The Big Plus spindle system (BBT40) provides dual contact between the spindle face and the flange face of the tool holder. This greatly increases tool rigidity, reduces run out and adds significant productivity to machining applications.

- Tool Lock Type : Hydraulics

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
(**290** psi / **435** psi / **1,015** psi)

Spindle Cooling (12K Std.)

The spindle cooling system minimizes thermal displacement which can happen during lengthy machining operations, and offers continued accuracy based on the thermal stability.

<External cooling via head frame enhances chilling ability>

8,000(β) rpm	10,000(β) rpm	8,000 rpm	12,000 rpm
18.5 kW Max. Output	18.5 kW Max. Output	15 kW Max. Output	18.5 kW Max. Output
118 N·m Max. Torque	118 N·m Max. Torque	286 N·m Max. Torque	118 N·m Max. Torque
24.8 HP Max. Output	24.8 HP Max. Output	20.1 HP Max. Output	24.8 HP Max. Output
87 lbf·ft Max. Torque	87 lbf·ft Max. Torque	210.9 lbf·ft Max. Torque	87 lbf·ft Max. Torque

Please refer to FANUC Spindle standard page 39 detailed specification table.

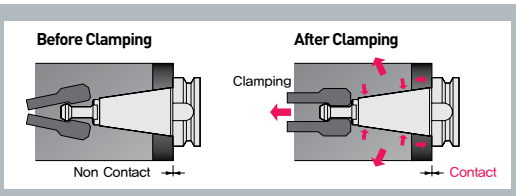
05
KF Series

Built-in Spindle

Long Lasting High Accuracy & Excellent Performance

High-Precision 20,000rpm Built-in Spindle

By using ultra precision angular ball bearings, fast acceleration and deceleration of the main spindle is achieved.
The spindle head is designed to minimize the heat displacement of main spindle, and with the use of hydraulic tool lock system, the machining stability has increased.



Dual Contact Spindle

The Big Plus spindle system (BBT40) provides dual contact between the spindle face and the flange face of the tool holder. This greatly increases tool rigidity, reduces run out and adds significant productivity to machining applications.

- Tool Lock Type : Hydraulics

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
(**290** psi / **435** psi / **1,015** psi)

HSK Tool Holder OPTION

HSK tool holder is untilized for precise positioning with less expansion in the spindle taper during high speed rotation. This ensures an excellent level of precision for die mold machining.

Spindle Cooling

The spindle cooling system minimizes thermal displacement which can happen during lengthy machining operations, and offers continued accuracy based on the thermal stability.

15,000 rpm	20,000 rpm (Mold)
25 kW Max. Output	22 kW Max. Output
167 N·m Max. Torque	98 N·m Max. Torque
33.5 HP Max. Output	29.5 HP Max. Output
123.2 lbf·ft Max. Torque	72.3 lbf·ft Max. Torque

Please refer to FANUC Spindle standard page 39 detailed specification table.

06

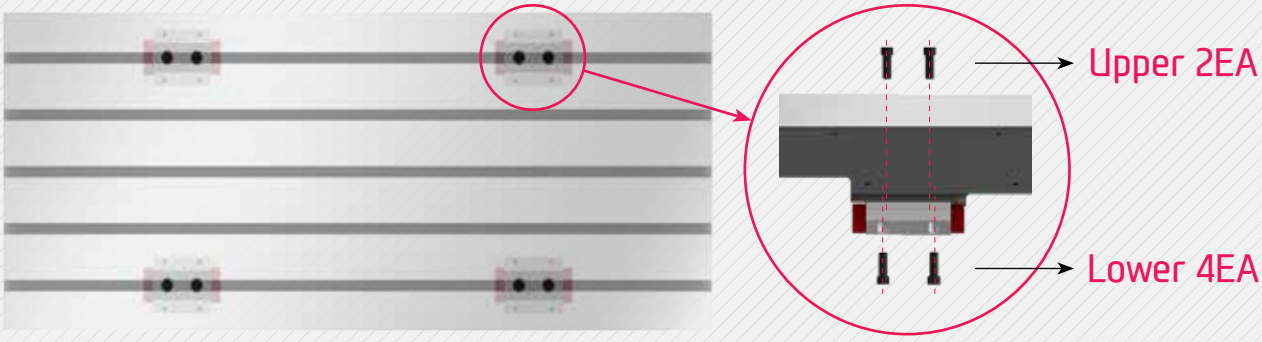
KF Series

Table

High Productivity Achieved with High Rigidity, Accuracy Machining

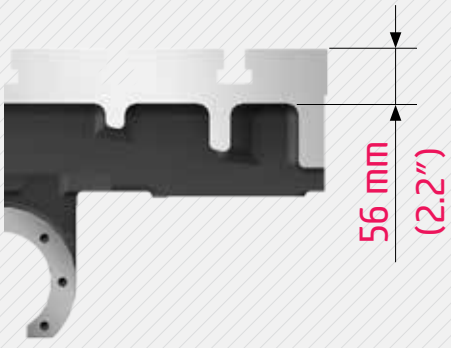
Increase of Table Rigidity

The rigidity of the table has increased by fastening the table and LM guide with 6 bolts.
(Previous model, Competitive models: 4 bolts)

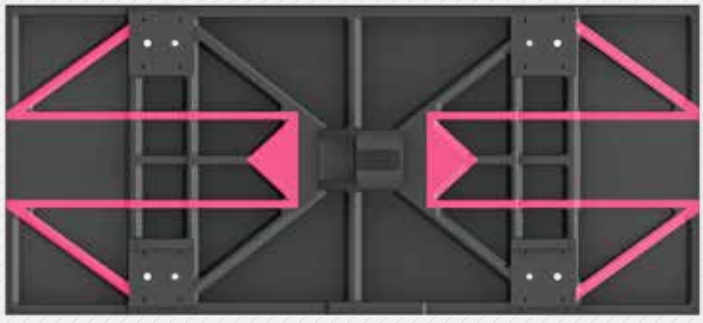


Rigidity of KF6700 Table has Increased by Structural Analysis.

The thickness of the table has been increased by 9mm(0.4″) compared to the base equipment by reinforcing the rib structure of the KF6700 table. This makes it possible to process the product under severe cutting and high load.



Strengthen Rib Structure



KF Series Table

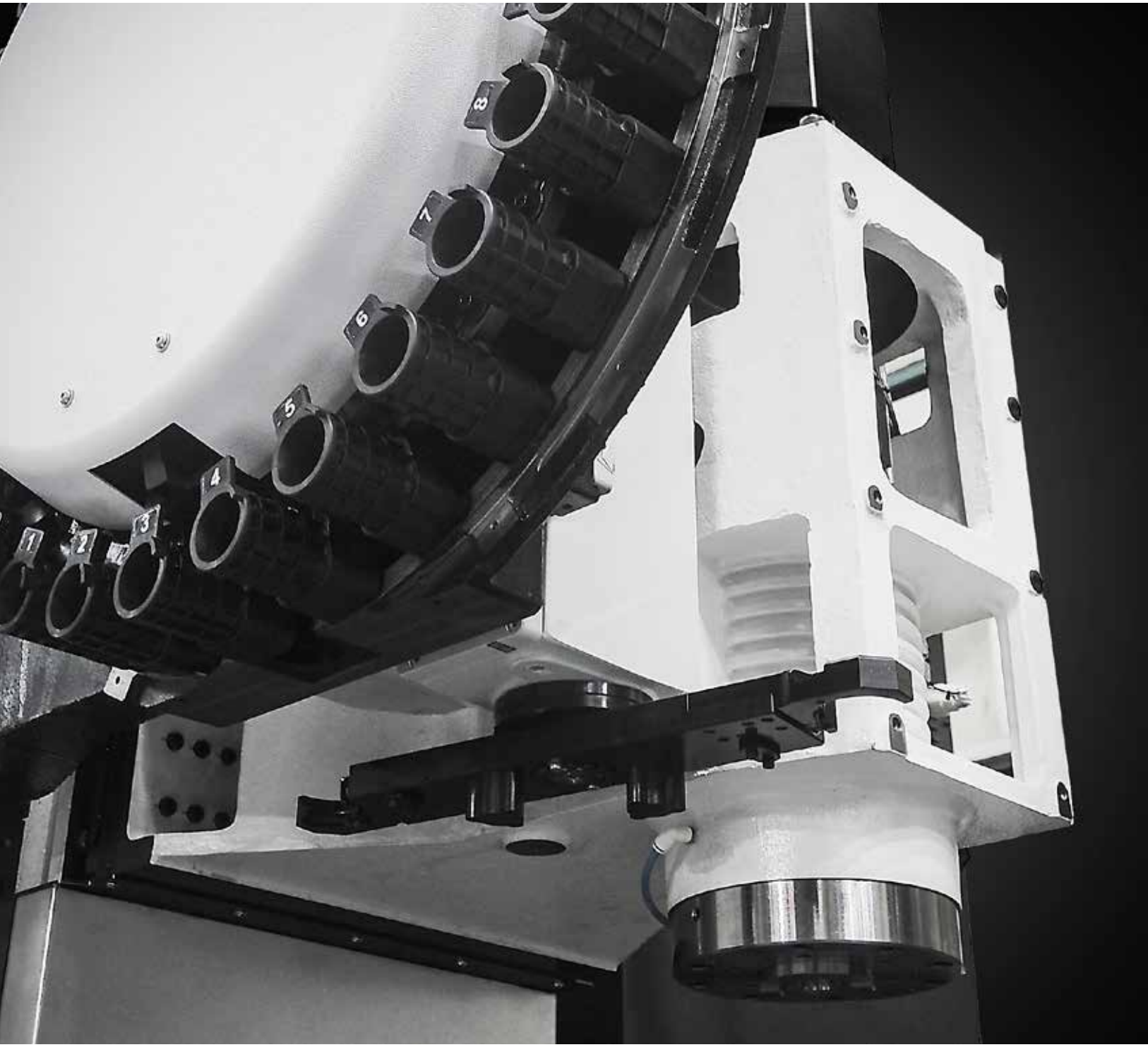
Model	KF4600	KF5600	KF6700
Table Size	1,050×460 mm (41.3″x18.1″)	1,250×560 mm (49.2″x22″)	1,500×670 mm (59″x26.4″)
Max. Load Capacity	600 kg (1,323 lb)	1,000 kg (2,205 lb)	1,300 kg (2,866 lb)

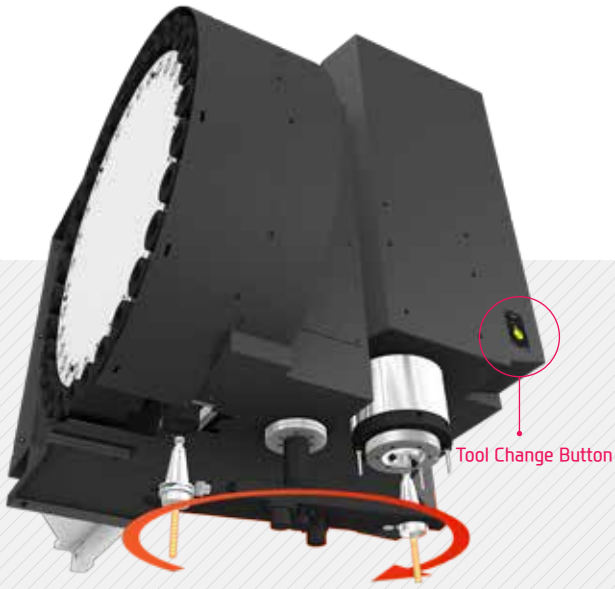
07

KF Series

ATC & Magazine

High Productivity Achieved with High Rigidity, Accuracy Machining





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.

⊙ ATC Speed Improvement

Tool to Tool Time

Previous Machine	2.6 sec
KF Series	1.4 sec

Chip to Chip Time

Previous Machine	6.6 sec
KF Series	3.2 sec

❖ KF6700 (Built-in : 3.3 sec)

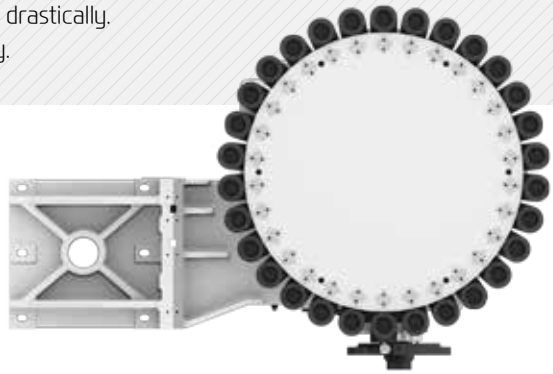
⊙ Servo ATC

Position control on the Twin Arm ATC using Servo Motors has improved drastically.
The twin arm ATC enables faster tool change and increased productivity.

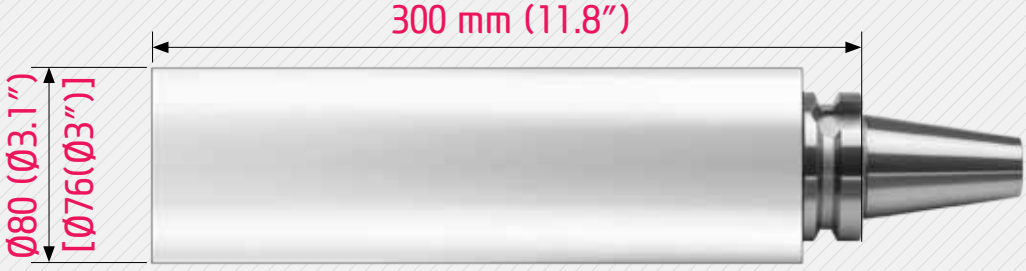
Magazine

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.

- 40 Tool Magazine : Servo Motor
- 30 Tool Magazine : Geared Motor (Opt. Servo Motor)



⊙ No. of Tools : 30 [40] EA ⊙ Tool Selection Method : Random



⊙ Tool Shank : BBT40 [HSK-A63 : 12K, 15K, 20K]
⊙ Max. Tool Weight : 8 kg (18 lb)
⊙ Max. Tool Dia. (W.T / W.O) : Ø80[Ø76]/Ø125 (Ø3.1″[Ø3″]/Ø4.9″)
⊙ Max. Tool Length : 300 mm (11.8″)

08 Smart System

KF Series

Software for Smart Operating and Machining

Faster processing and enhanced accuracy in are possible through the **HYUNDAI WIA Smart System**. The user friendly software and equipment monitoring of the Smart System maximizes productivity.

Interface Port

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

Energy Saving Function(ECO) & SMART Machining

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

Mold-related Software (Standard when selecting 20K Built-in Spindle)

HW-AFC

OPTION

HYUNDAI WIA
Adaptive Feed Control

Software that controls the feed automatically to maintain a certain working load to extend tool life as well as productivity.

HW-MCS

OPTION

HYUNDAI WIA
Machining Condition Selection

Software that automatically sets cutting and feeding parameters according to the machining types (speed, degree, quality)

Smart Factory HW-MMS (HYUNDAI WIA-Machine Monitoring System) OPTION

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.

01 Real-time monitoring of machine operation status (Cloud)
02 History and statistics of machine operation (Cloud)
03 History and statistics of alarm occurrence (Cloud)
04 History and statistics of work count (Cloud)
05 Remote diagnosis (Remote)

HW-MCG

HYUNDAI WIA
Machine Guidance

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

HW-TDC

OPTION

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-WARMUP

HYUNDAI WIA
WARMing Up

Warm-up software that measures main spindle halt and offers system warm-up time automatically.

HW-ESS

HYUNDAI WIA
Energy Saving System

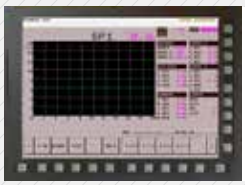
An environmental friendly software that reduces the unnecessarily wasted standby power waiting for an operation.

HW-TOM

OPTION

HYUNDAI WIA
Tool Offset Measurement

User friendly GUI software that indicates tool length, diameter, and damage (H/W excluded)



HW-TM

OPTION

HYUNDAI WIA
Tool Monitoring

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

09
KF Series

HYUNDAI-iTROL

The Powerful CNC platform for Machine Tools

HYUNDAI-iTROL

HYUNDAI Intelligent Control

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

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

Machining Process Monitoring

- Machine coordinate, work coordinate, relative coordinate and remaining distance displayed in one screen
- Intuitively view of spindle load, RPM meter, and machining progress
- More intuitive screen displaying work counter divided into 8 segments
- Easier identification of activated work coordinate and tool names
- A shortcut key added to PPU buttons

Measuring System

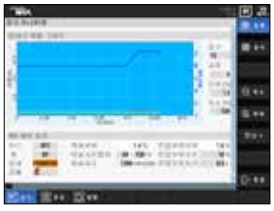
- Simplified UI by removing unnecessary screens
- Compatible with the standard Renishaw/Marposs as well as third-party TLM (the measuring program needs to be converted into TLM.SPF)
- Continuous measuring function to measure 10 tools at a time
- Tool data comparison (before and after measuring) and enhanced animation function

Coordinate System Setting

- Quicker setting of coordinate system enabled by an improved UI (using the top-left coordinate system value)
- Parameter change process has been changed to "enter all and apply later" type to prevent the worker's erroneous entry
- Pre-defined coordinate value displayed in the bottom bed image for easier identification
- A 'Spindle rotation' button added for easier spindle rotation

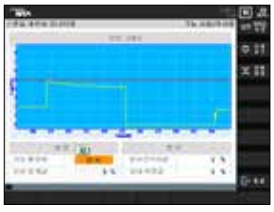
ACCU CENTER Setup

- The ACCU CENTER measuring screen that is most frequently used for work setup
- Upon selecting a position for the reference point, a guide with an image shows up, enabling you to easily set the coordinate system using the guide.



Tool Monitoring, AFC

- The same tool monitoring function as the Fanuc HW-TM + new AFC
- Automatic transfer speed control
  - Expected benefits : Tool monitoring possible even when machining molds and prototype products, etc. Shortens the cycle time and protects the machine through an active control function
  - Provides functions similar to the specialized company's product (Omative)



Spindle Monitoring

- Real-time graph display of the spindle load value and monitoring load value
- Intuitive setting of target load value using a graph view of load during machining
- Graph zoom using the 'Full Screen View' and 'View Details' buttons on the right
- The smart control (AFC) function has been migrated/integrated into the tool monitoring function

Warming-up

- The mode selection path simplified with an improved UI
- Except Tool, Spindle RPM, Time, Program, the parameters not used frequently have been moved to 'Settings' screen.
- Messages for the current progress (%) and remaining time displayed at the top of the screen

HYUNDAI-iTROL Technology

COMMUNICATION FUNCTION

Easy input/output of program is possible with the use of USB memory card, CF memory card and LAN.

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

10 HEIDENHAIN

KF Series

TNC Contouring Control with Drive System

HEIDENHAIN

The TNC 620 is compact and easy to read.

The TNC 640 is a versatile contouring control system that can control a 19-inch screen and up to 18 axes. Its flexible workshop-friendly programming functions, Heidenhain interactive programming and offline programming, allow the user to create the optimal machining environment.

USB port

The screen content

PLC function keys
for machine functions

Self-explanatory function keys
for NC programming

Screen management

Screen management

PC key type keypad

Axis-selection keys & Numeric keypad

Function keys
for programming modes, machine modes, TNC functions, management and navigation

Touchpad

Override potentiometers

HW-MCG (Machine Guidance)

NC S/W for various user conveniences such as machine control, maintenance, monitoring and etc.

Common Function

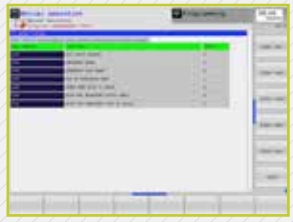
M-code List | Operation Status | Work Count | Working ratio | | I/O Monitor | Cycle Time Monitoring | Working Time | | Machine Option List | Macro Guide |

M-code List
M code search & guide function

Operation Status
Program history managing function

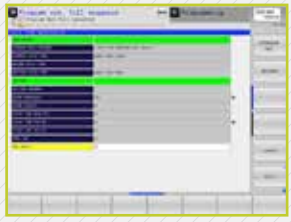
Work Count
Managing work count & lifespan

Working ratio
Power/Running/Machining/ Spindle/Alarm Time



I/O Monitor
Sensor & sol. valve status monitoring

Working Time
Particular program block analysis



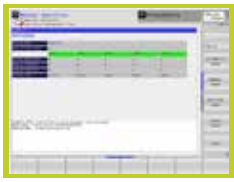
Cycle Time Monitoring
Alarm function according to C/T

Macro Guide
Macro manual for Hyundai WIA S/W

Machine Option List
Machine option list searching & setting

HW-TDC
HYUNDAI WIA Thermal Displacement Compensation

- Thermal displacement compensation designed to minimize machining deviations caused by changes in the external.
- Overcooling control when the main spindle stops.
- Direct compensation by the displacement sensor.
- Same HMI structure as FANUC/SIEMENS for operational convenience.



HW-WARMUP
HYUNDAI WIA Tool Monitoring

- Main spindle stop time check → automatic setting of warm-up time.
- Interlock disables the machining cycle if warm-up is not performed.
- Customer machining program in the warm-up auto mode.
- Automatic warm-up logic when the cycle start begins.
- Same HMI structure as FANUC/SIEMENS for operational convenience.

11

KF Series

Mold Package (20K Built-in)

Powerful Mold Package, HYUNDAI-WIA Mold All in One

HWM ALL-IN-ONE

To enhance mold machining, the " HWM ALL-IN-ONE" is provided as a standard feature for KF Series.

This ensures accurate and high quality surface finishing and contouring.

Mold Package Option (20K Built-in)

HWM ALL IN ONE		1 Package (Standard)	2 Package (Option 1)	3 Package (Option 2)	4 Package (Option 3)
AICC Ⅱ Package	200 block	●	●		
	600 block			●	
	1,000 block				●
S/W : HW-MCS, HW-AFC		●	●	●	●
Auto Power Off		●	●	●	●
Spindle Heat Distortion Compensation Device		●	●	●	●
Cutting Air Blow		●	●	●	●
Auto Tool Measuring Device		●	●	●	●
Data Server 1GB			●	●	●

CONTROLLER

- **High Speed Contouring Control (AICC Ⅱ)**
  Recognizes NC Data prior to the current processing phase
- **Development S/W**
  HW-MCS (Selectable Process Conditions)
  HW-AFC (Adapive Feed Control)
- **Automatic Power Off Device**

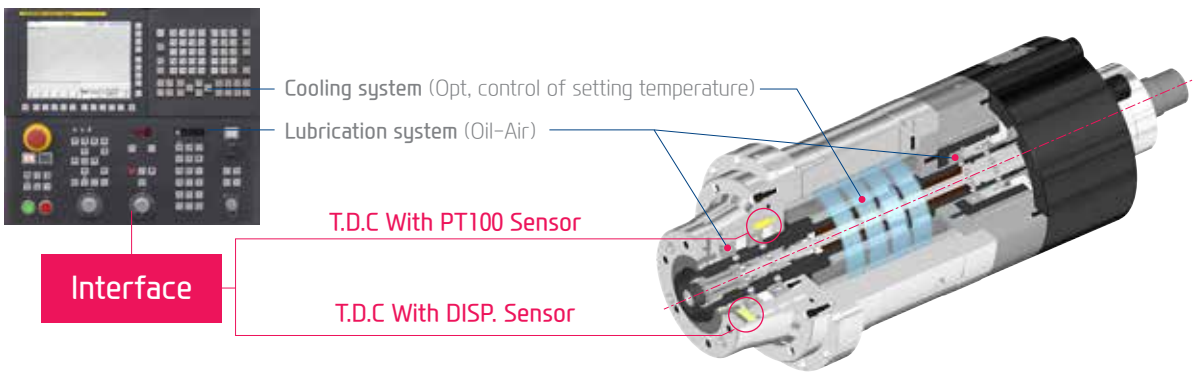
- **Main Spindle Cooling Device (8-channel)**
  Maintains temperature on the main spindle from thermal displacement. (heat sensor)

- **Cutting Air Blow**
  Cutting air blow is provided for mold machining.

- **Auto Tool Measuring Device (RENISHAW TS27R or LTS)**
  Detects and sets tool length, and attrition (Graphic User Interface included)

Thermal Displacement Compensation Device

Thermal displacement of the spindle is minimized by the use of cooling techniques.
This provides high accuracy when machining at high speed.

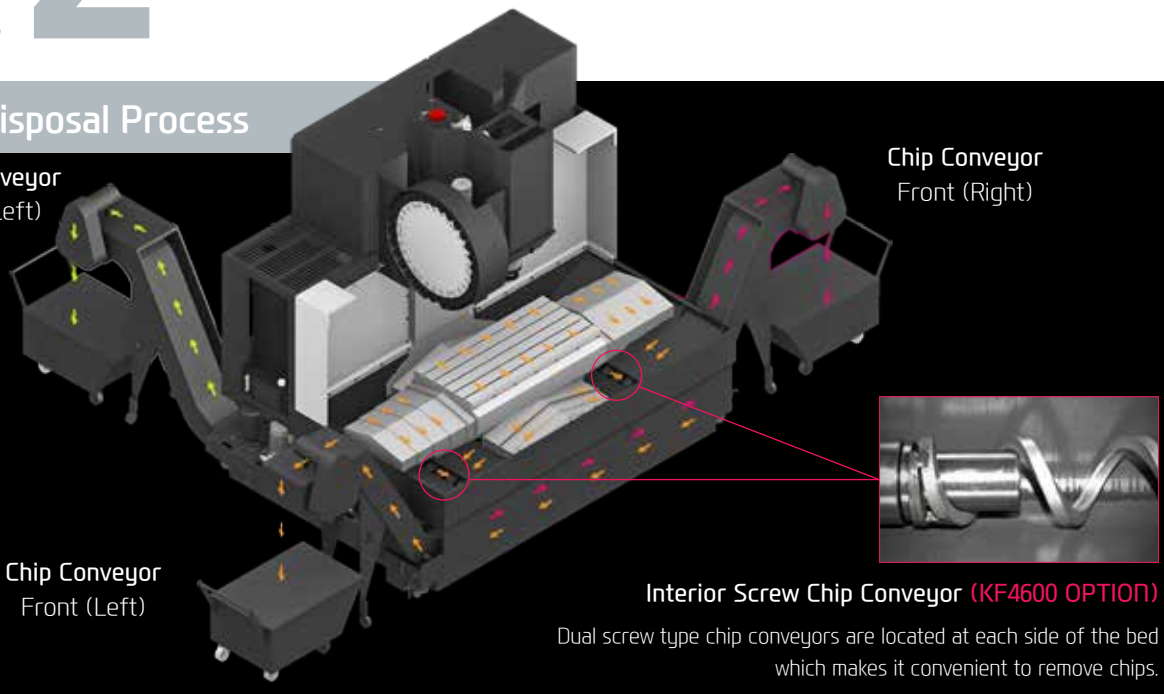


12 User Convenience

KF Series

Various Devices for User Friendly

Chip Disposal Process



Interior Screw Chip Conveyor (KF4600 OPTION)

Dual screw type chip conveyors are located at each side of the bed which makes it convenient to remove chips.

The interior screw and the chip conveyor operate at the same time and can be controlled separately at the time of prior consultation.

Coolant Unit & Chip Conveyor

Timely and effective disposal of chips will enhance productivity as well as the working environment.

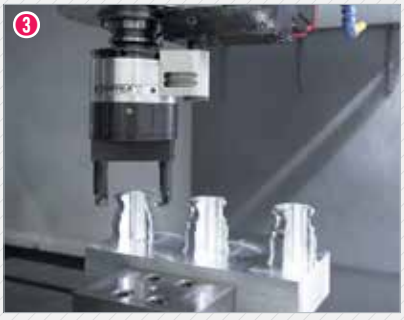
Chip Conveyor	Chip Type	Coolant Tank Type	Chip Exhaust Direction
Hinge	Chip Type : Roughing Chip, Long Chip, Chip complex Material : SS41, 45C, Cast Steel	Flood Type	Left, Right, Rear
	Chip Type : Micro Chip Material : AL	Upper Type	Left, Right
Scraper	Chip Type : Finely broken chip blown out Material : cast Iron, Nonferrous	Flood Type	Left, Right, Rear
❖ Screw	Chip Type : The lower portion of micro-chips Material : Steel, Casting	-	Left, Right
❖ Drum Filter	Chip Type : Powder, Micro Chip Material : AL	-	Left, Right, Rear

❖ When ordering a screw or drum filter chip conveyor, prior consult with hyudai wia's sales person.

Flood Type

Upper Type

Optional



❶ Linear Scale OPTION

Linear scales can be applied when highly accurate positioning is required.

❷ NC Rotary Table OPTION

Additional axis machining is possible with the installation of NCRT.

❸ U-Center OPTION

The U-Center makes external and internal diameter turning possible, allowing for a wide range of variety in products.

❹ Hydraulic Supply Unit OPTION

Instead of the standard hydraulic supply unit, an optional fixture unit can bring the pressure up to 100 bar(1,450 bar) maximizing the clamping force on the fixture.

❺ Spindle Cooling Unit (More than 12K standard) OPTION

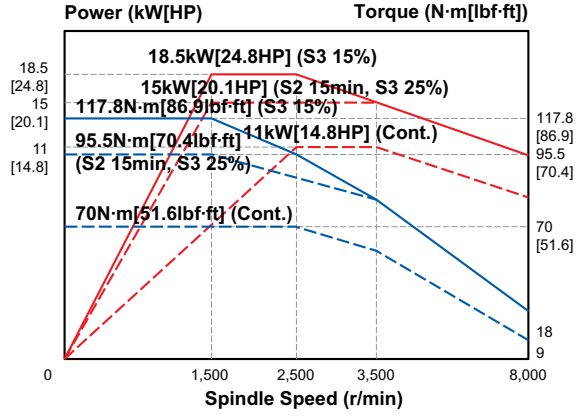
The cooling unit is installed within the side of the machine to minimize the installation area.

The application of the inverter type, ± 0.1 °, enables rapid and effective control of the spindle thermal displacement.

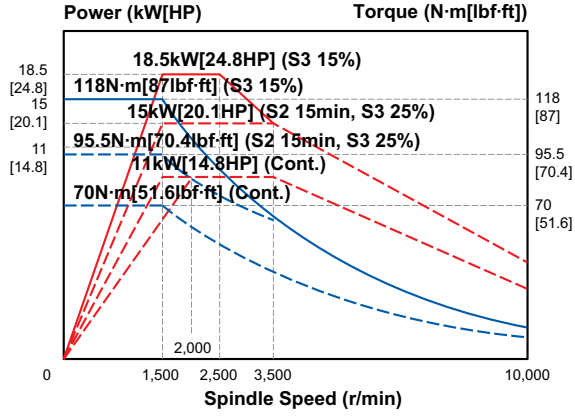
SPECIFICATIONS

FANUC Spindle Output/Torque Diagram

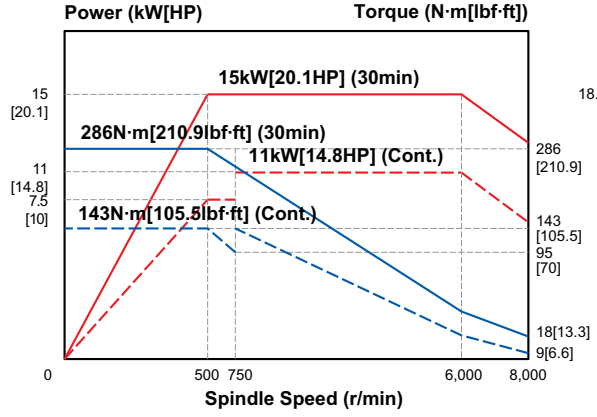
Direct 8,000rpm (β)



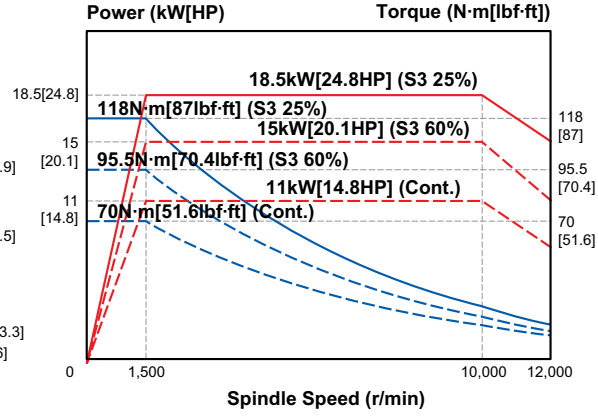
Direct 10,000(β)rpm



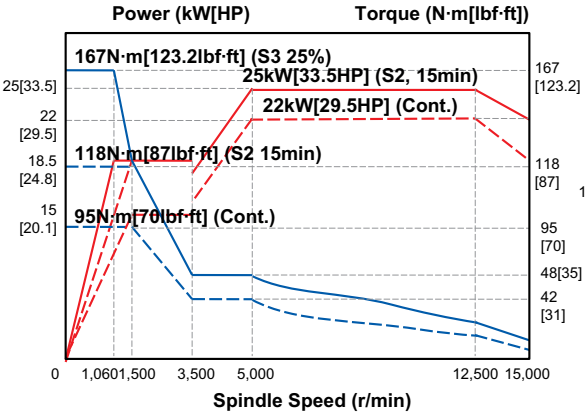
Direct 8,000rpm



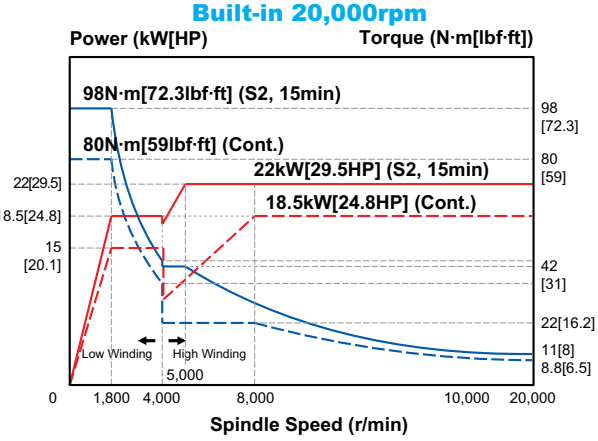
Direct 12,000rpm



Built-in 15,000rpm

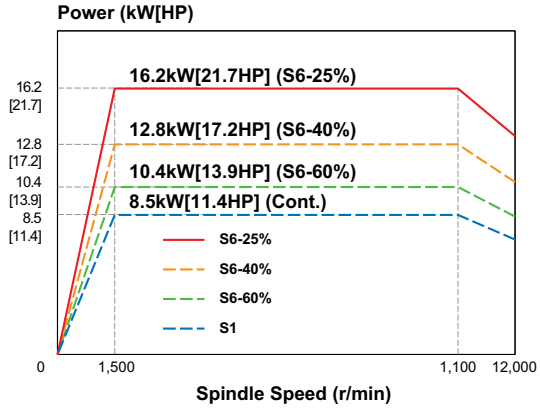


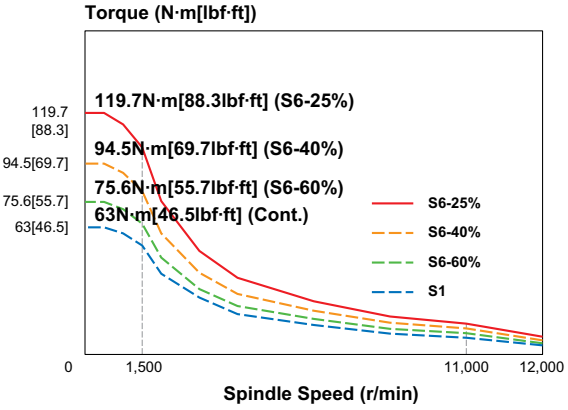
Built-in 20,000rpm



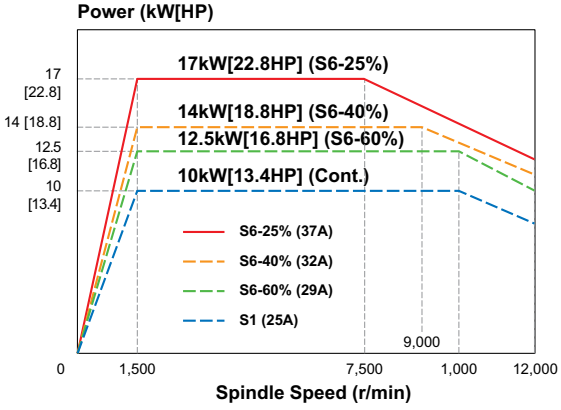
HYUNDAI-iTROL | HEIDENHAIN Spindle Output/Torque Diagram

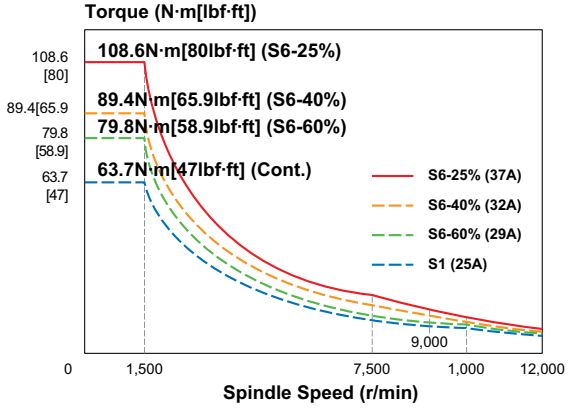
iTROL Direct 12,000rpm



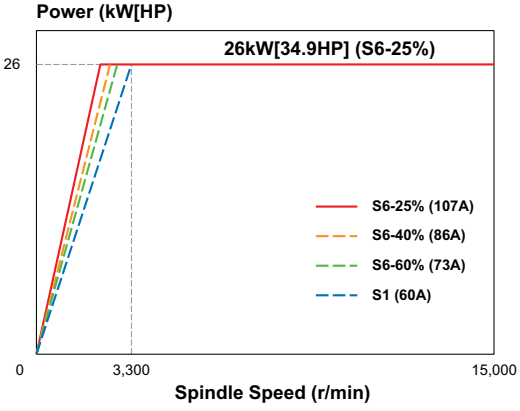


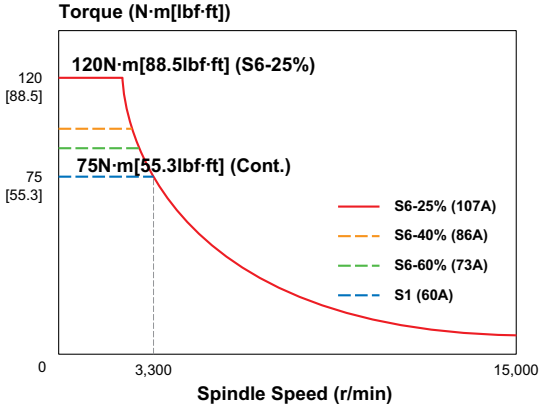
HEIDENHAIN Direct 12,000rpm





iTROL / HEIDENHAIN Built-in 15,000rpm





SPECIFICATIONS

Standard & Optional

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

Spindle		KF4600	KF6700
8,000rpm (15kW [20.1HP])	FANUC	○	●
8,000rpm (β/18.5kW [24.8HP])	FANUC	●	○
10,000rpm (β/18.5kW [24.8HP])	FANUC	○	○
12,000rpm (18.5kW [24.8HP])	FANUC	○	○
15,000rpm (25kW [33.5HP])	FANUC	○	○
20,000rpm (22kW [29.5HP])	FANUC	–	○
12,000rpm (16.2kW [21.7HP])	iTROL	○	–
15,000rpm (26kW [38.9HP])	iTROL	○	–
Spindle Cooling System	8,000rpm	○	○
	Over 12,000rpm	●	●
ATC			
ATC Extension	30	●	●
	40	○	○
Tool Shank Type	BBT40	●	●
	HSK-A63 (12K, 15K, 20K)	○	○
	CAT40/BCV40	○	○
U-Center	D'andrea	○	○
Pull Stud	45°	●	●
Table & Column			
T-Slot Table		●	●
NCRotary Table		☆	☆
High Column	200mm (7.9")	○ (15K -)	-
	300mm (11.8") -Direct Sp.)	-	○
Coolant System			
Std. Coolant (Main Spindle Nozzle)		●	●
Through Spindle Coolant	20bar (290 psi)	○	○
	30bar (435 psi), 20 ℓ (5.3 gal)	○	○
	70bar (1,015 psi), 15 ℓ (4 gal)	○	○
	70bar (1,015 psi), 30 ℓ (7.9 gal)	○	○
Top Cover		●	●
Shower Coolant		○	○
Gun Coolant		○	○
Bed Flushing Coolant		●	☆
Air Gun		○	○
Cutting Air Blow		○	○ (20K ●)
Tool Measuring Air Blow (Only for TLM)		●	●
Air Blow for Automation		☆	☆
Thru MQL Device (Without MQL)		☆	☆
Coolant Chiller (Sub Tank)		☆	☆
Power Coolant System (For Automation)		☆	☆
Chip Disposal			
Coolant Tank	400 ℓ (105.7 gal)	●	-
	590 ℓ (155.9 gal)	-	●
Interior Screw Chip Conveyor		○*	●
Flood Chip Conveyor (Hinge/Scraper)	Left	○	○
	Right	○	○
	Rear	○	○
Upper Chip Conveyor (Hinge)	Left	○	○
	Right	○	○
Screw Type Chip Conveyor	Left	☆	☆
	Right	☆	☆
Drum Filter Type Chip Conveyor	Left	☆	☆
	Right	☆	☆
	Rear	☆	☆
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	☆	☆

S/W		KF4600	KF6700
Machine Guidance (HW-MCG)		●	●
Tool Monitoring (HW-TM)		○	○
DNC Software (HW-eDNC)		○	○
Spindle Heat Distortion Compensation (HW-TDC)		○	○ (20K ●)
Spindle Warm up Function (HW-WARMUP)		●	●
Energy Saving System (HW-ESS)		●	●
Machine Monitoring System (HW-MMS)		○	○
Tool Offset Measurement (HW-TOM)		☆	☆ (20K ●)
Machining Condition Selection (HW-MCS)		☆	☆ (20K ●)
Adaptive Feed Control (HW-AFC)		☆	☆ (20K ●)
Conversational Program (HW-DPRO)		○	○
Electric Device			
Call Light	1 Color : ■	●	●
Call Light	2 Color : ■ ■	○	○
Call Light	3 Color : ■ ■ ■	○	○
Call Light & Buzzer	3 Color : ■ ■ ■ B	○	○
Electric Cabinet Light		○	○
Remote MPG		●	●
3 Axis MPG		○	○
Work Counter	Digital	○	○
Total Counter	Digital	○	○
Tool Counter	Digital	○	○
Multi Tool Counter	Digital	○	○
Electric Circuit Breaker		○	○
AVR (Auto Voltage Regulator)		☆	☆
Transformer	25kVA	○	○
Auto Power Off		○	○ (20K ●)
Back up Module for Black out		○	○
Measuring Device			
Air Zero	TACO	○	○
	SMC	○	○
Work Measuring Device		○	○
TLM (Marposs/Renishaw/Blum)	Touch	○	○ (20K ●)
	Laser	○	○
Tool Broken Detective Device		☆	☆
Linear Scale	X/Y/Z Axis	○	○
Coolant Level Sensor (Only for Chip Conveyor, Bladder Type)		☆	☆
Environment			
Air Conditioner		○	○
Oil Mist Collector		☆	☆
Oil Skimmer (Only for Chip Conveyor)		○	○
MQL (Minimal Quantity Lubrication)		☆	☆
Fixture & Automation			
Auto Door	Std.	○	○
	High Speed	☆	☆
Auto Shutter (Only for Automatic System)		○	○
Sub O/P		☆	☆
NC Rotary Table I/F	Single	○	○
	Channel	☆	☆
Control of Additional Axis	1Axis	○	○
	2Axis	☆	☆
External M Code 4ea		○	○
Automation Interface		☆	☆
I/O Extension (In & Out)	16 Contact	○	○
	32 Contact	○	○
Hyd. Device			
Std. Hyd. Unit	45bar (653 psi)	–	–
	70bar (1,015 psi)	○	○
	100bar (1,450 psi)	○	○
	Customized	☆	☆
ETC			
Tool Box		●	●
Customized Color	Need for Munsel No.	☆	☆
CAD&CAM Software		☆	☆

* KF4600 : No bed flushing coolant for interior screw conveyor option.

Specifications are subject to change without notice for improvement.

SPECIFICATIONS

Standard & Optional

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

Spindle		KF5600	KF5600C
8,000rpm (15kW [20.1HP])	FANUC	●	●
8,000rpm (β/18.5kW [24.8HP])	FANUC	○	○
10,000rpm (β/18.5kW [24.8HP])	FANUC	○	○
12,000rpm (18.5kW [24.8HP])	FANUC	○	○
15,000rpm (25kW [33.5HP])	FANUC	○	–
20,000rpm (22kW [29.5HP])	FANUC	○	–
12,000rpm (16.2kW [21.7HP])	iTROL	○	○
15,000rpm (26kW [38.9HP])	iTROL	○	–
12,000rpm (17kW [22.8HP])	HEIDENHAIN	○	○
15,000rpm (26kW [38.9HP])	HEIDENHAIN	○	–
Spindle Cooling System	8,000rpm	○	○
	Over 12,000rpm	●	●
ATC			
ATC Extension	30	●	●
	40	○	○
Tool Shank Type	BBT40	●	●
	HSK-A63 (12K, 15K, 20K)	○	○
	CAT40/BCV40	○	○
U-Center	D'andrea	○	○
Pull Stud	45°	●	●
Table & Column			
T-Slot Table		●	●
NCRotary Table		☆	☆
High Column	200mm (7.9")	–	–
	300mm (11.8") -Direct Sp.)	–	○
Coolant System			
Std. Coolant (Main Spindle Nozzle)		●	●
Through Spindle Coolant	20bar (290 psi)	○	○
	30bar (435 psi), 20 ℓ (5.3 gal)	○	○
	70bar (1,015 psi), 15 ℓ (4 gal)	○	○
	70bar (1,015 psi), 30 ℓ (7.9 gal)	○	○
Top Cover		●	●
Shower Coolant		○	○
Gun Coolant		○	○
Bed Flushing Coolant		☆	☆
Air Gun		○	○
Cutting Air Blow		○ (20K ●)	○
Tool Measuring Air Blow (Only for TLM)		●	●
Air Blow for Automation		☆	☆
Thru MQL Device (Without MQL)		☆	☆
Coolant Chiller (Sub Tank)		☆	☆
Power Coolant System (For Automation)		☆	☆
Chip Disposal			
Coolant Tank	400 ℓ (105.7 gal)	●	●
	590 ℓ (155.9 gal)	–	–
Interior Screw Chip Conveyor		●	●
Flood Chip Conveyor (Hinge/Scraper)	Left	○	○
	Right	○	○
	Rear	○	○
Upper Chip Conveyor (Hinge)	Left	○	○
	Right	○	○
Screw Type Chip Conveyor	Left	☆	☆
	Right	☆	☆
Drum Filter Type Chip Conveyor	Left	☆	☆
	Right	☆	☆
	Rear	☆	☆
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	☆	☆

S/W		KF5600	KF5600C
Machine Guidance (HW-MCG)		●	●
Tool Monitoring (HW-TM)		○	○
DNC Software (HW-eDNC)		○	○
Spindle Heat Distortion Compensation (HW-TDC)		○ (20K ●)	○
Spindle Warm up Function (HW-WARMUP)		●	●
Energy Saving System (HW-ESS)		●	●
Machine Monitoring System (HW-MMS)		○	○
Tool Offset Measurement (HW-TOM)		☆ (20K ●)	☆
Machining Condition Selection (HW-MCS)		☆ (20K ●)	☆
Adaptive Feed Control (HW-AFC)		☆ (20K ●)	☆
Conversational Program (HW-DPRO)		○	○
Electric Device			
Call Light	1 Color : ■	●	●
Call Light	2 Color : ■ ■	○	○
Call Light	3 Color : ■ ■ ■	○	○
Call Light & Buzzer	3 Color : ■ ■ ■ B	○	○
Electric Cabinet Light		○	○
Remote MPG		●	●
3 Axis MPG		○	○
Work Counter	Digital	○	○
Total Counter	Digital	○	○
Tool Counter	Digital	○	○
Multi Tool Counter	Digital	○	○
Electric Circuit Breaker		○	○
AVR (Auto Voltage Regulator)		☆	☆
Transformer	25kVA	○	○
Auto Power Off		○ (20K ●)	○
Back up Module for Black out		○	○
Measuring Device			
Air Zero	TACO	○	○
	SMC	○	○
Work Measuring Device		○	○
TLM (Marposs/Renishaw/Blum)	Touch	○ (20K ●)	○
	Laser	○	○
Tool Broken Detective Device		☆	☆
Linear Scale	X/Y/Z Axis	○	○
Coolant Level Sensor (Only for Chip Conveyor, Bladder Type)		☆	☆
Environment			
Air Conditioner		○	○
Oil Mist Collector		☆	☆
Oil Skimmer (Only for Chip Conveyor)		○	○
MQL (Minimal Quantity Lubrication)		☆	☆
Fixture & Automation			
Auto Door	Std.	○	○
	High Speed	☆	☆
Auto Shutter (Only for Automatic System)		○	○
Sub O/P		☆	☆
NC Rotary TableI/F	Single	○	○
	Channel	☆	☆
Control of Additional Axis	1Axis	○	○
	2Axis	☆	☆
External M Code 4ea		○	○
Automation Interface		☆	☆
I/O Extension (In & Out)	16 Contact	○	○
	32 Contact	○	○
Hyd. Device			
Std. Hyd. Unit	45bar (653 psi)	–	–
	70bar (1,015 psi)	○	○
	100bar (1,450 psi)	○	○
	Customized	☆	☆
ETC			
Tool Box		●	●
Customized Color	Need for Munsel No.	☆	☆
CAD&CAM Software		☆	☆

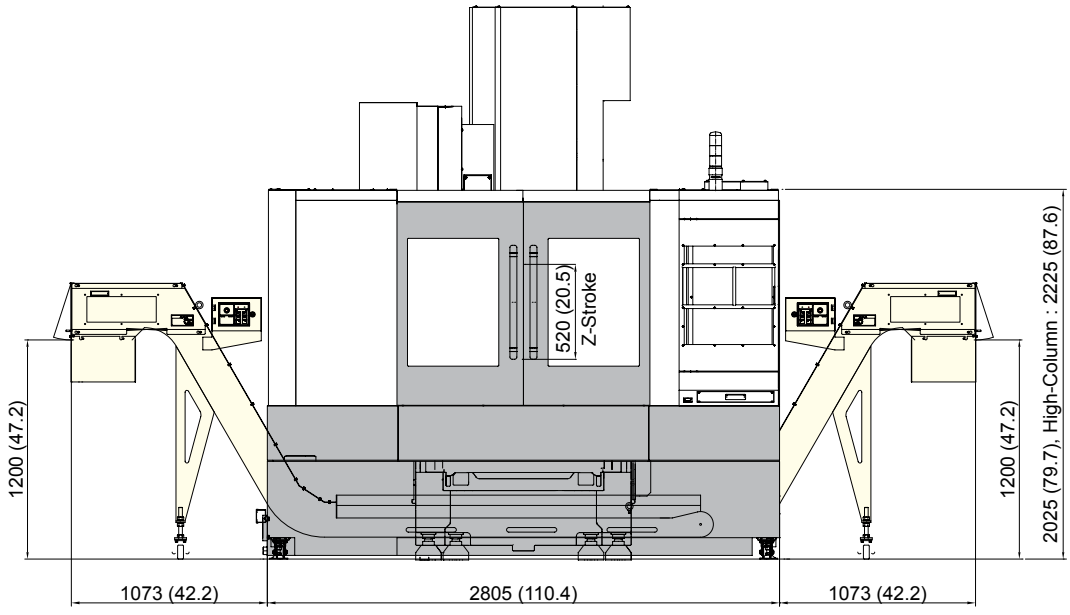
Specifications are subject to change without notice for improvement.

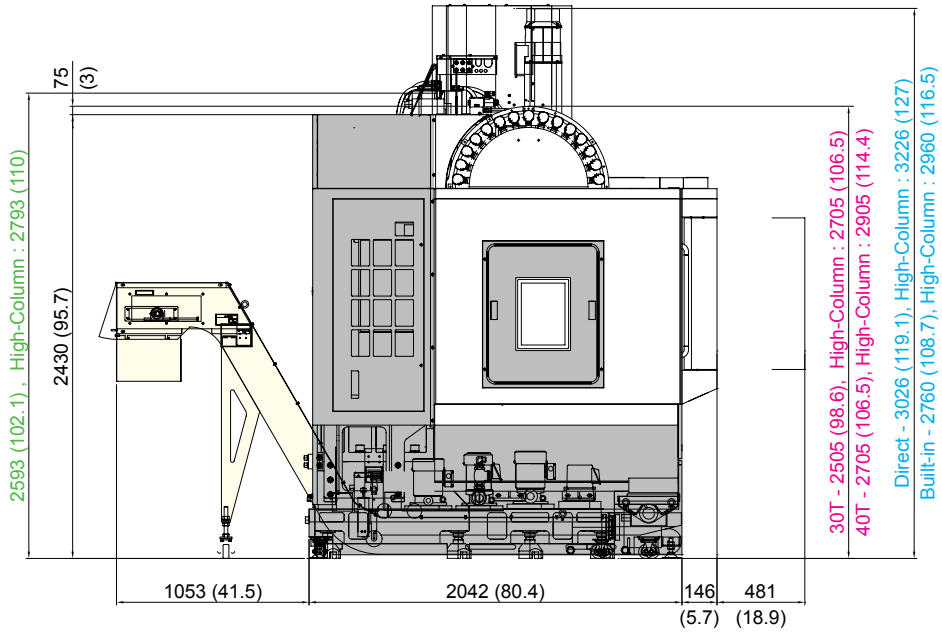
SPECIFICATIONS

External Dimensions

unit : mm(in)

KF4600



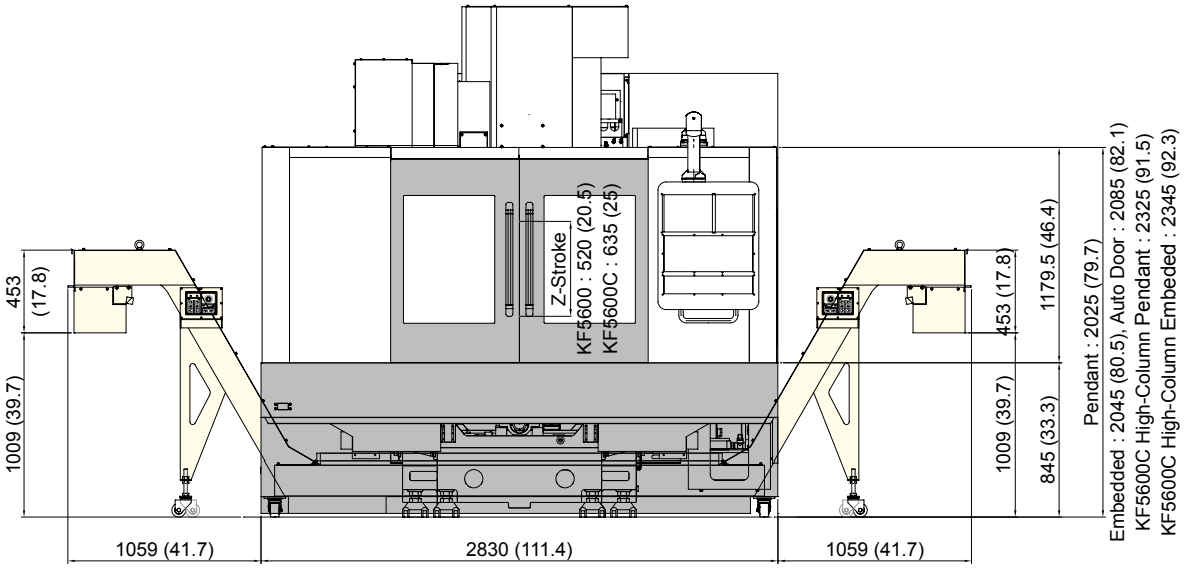


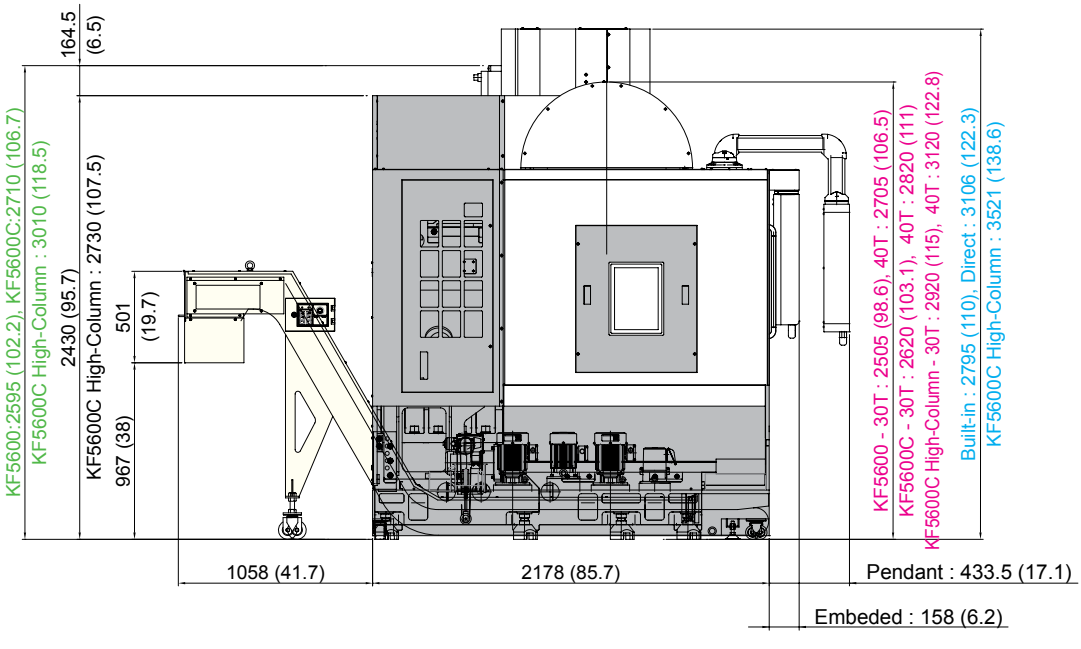
■ : Max. height | ■ : Height to ATC cover | ■ : Height to Z-axis motor

External Dimensions

unit : mm(in)

KF5600





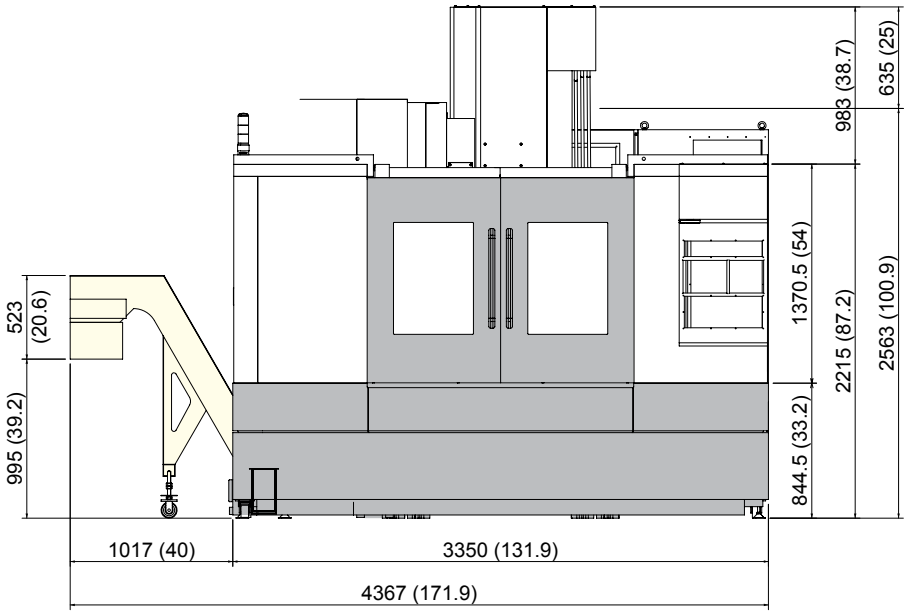
■ : Max. height | ■ : Height to ATC cover | ■ : Height to Z-axis motor

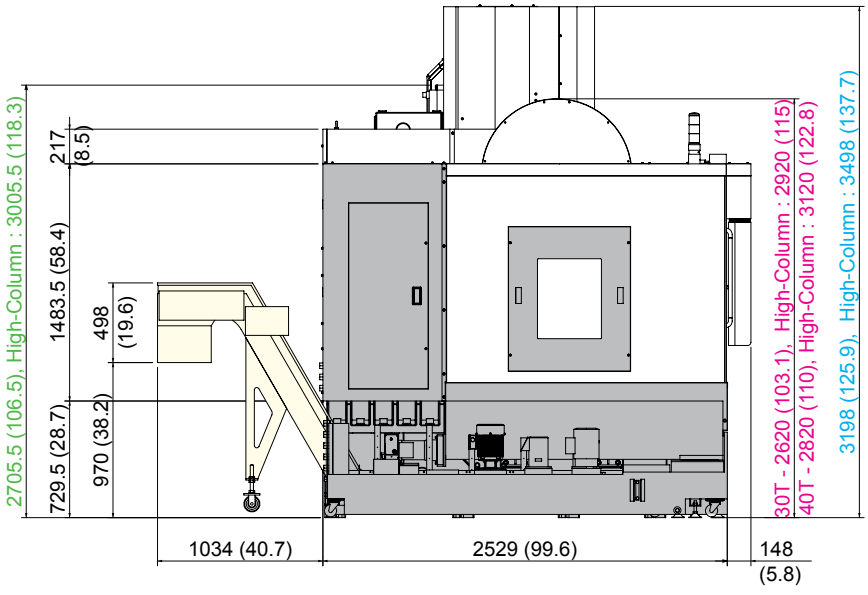
SPECIFICATIONS

External Dimensions

unit : mm(in)

KF6700



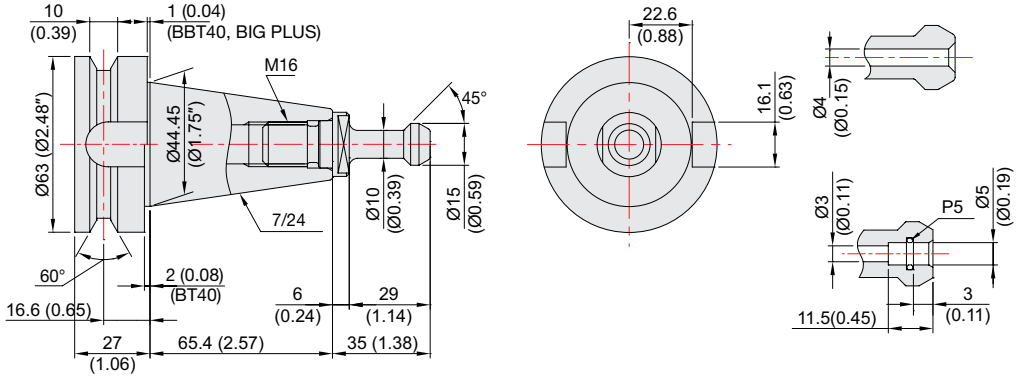


■ : Max. height | ■ : Height to ATC cover | ■ : Height to Z-axis motor

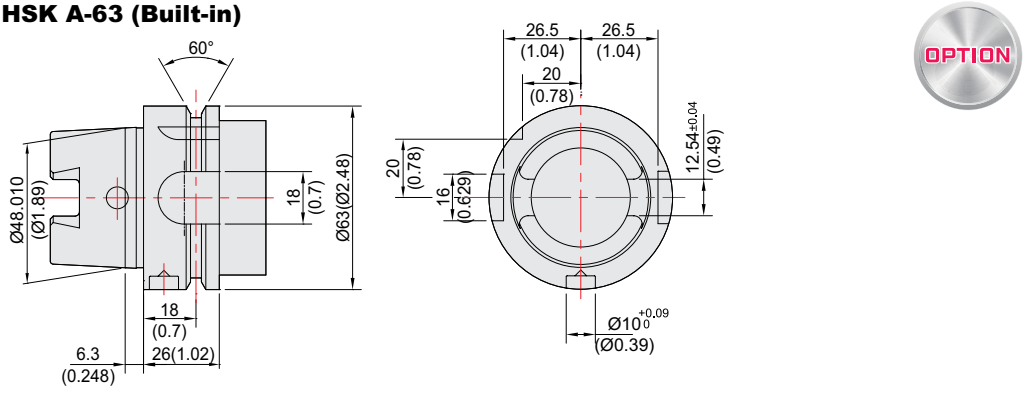
Tool Shank

unit : mm(in)

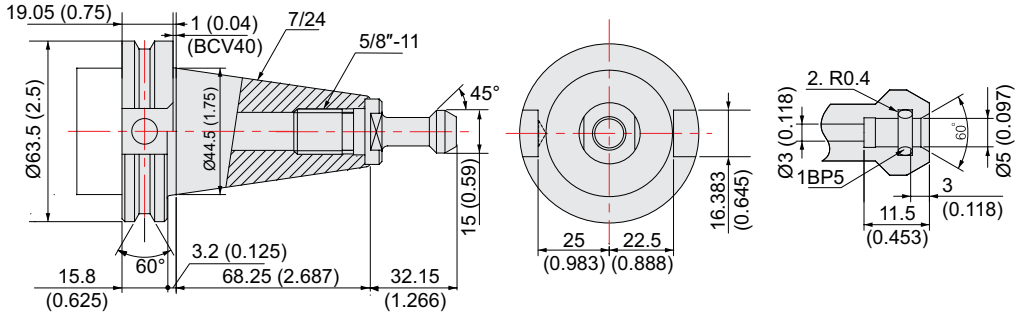
BT40/BBT40, BIG PLUS



HSK A-63 (Built-in)



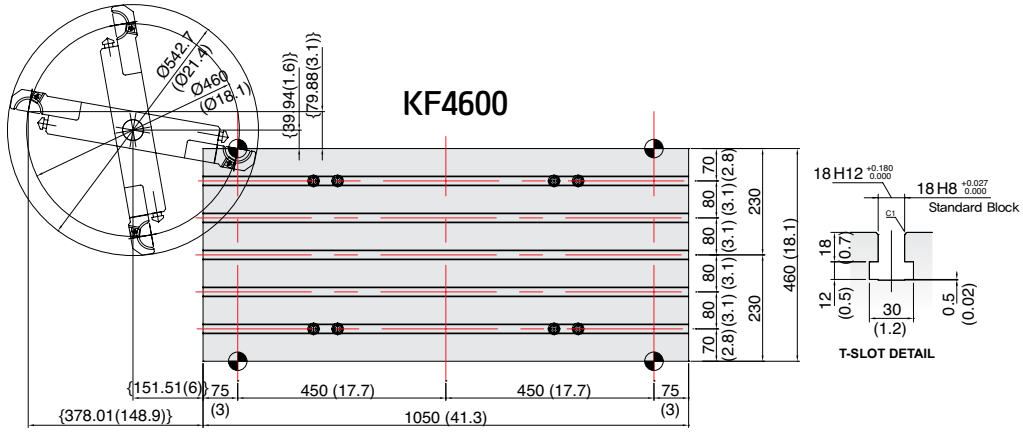
CAT40/BCV40

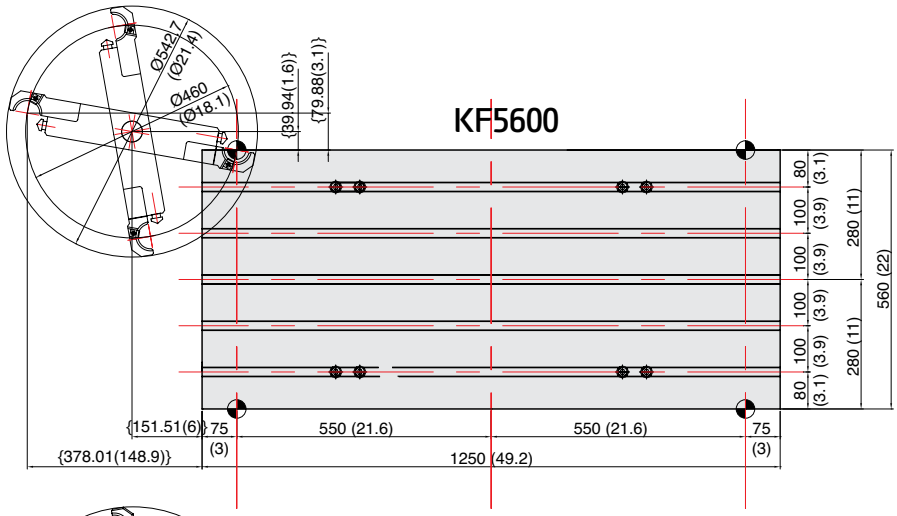


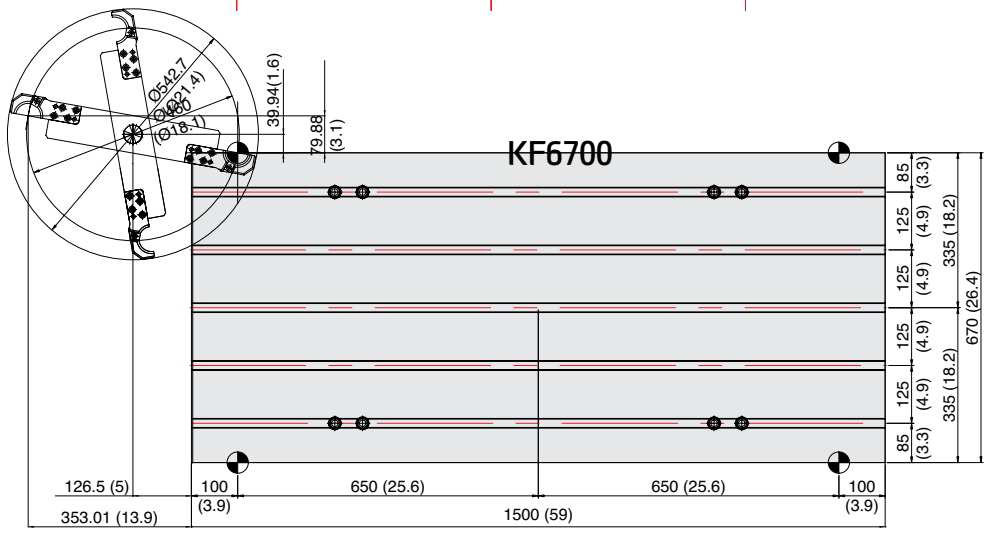
SPECIFICATIONS

Table Dimensions

unit : mm(in)







SPECIFICATIONS

Specifications

[ ] : Option

MODEL			KF4600
TABLE	Table Size (L×W)	mm(in)	1,050×460 (41.3″x18.1″)
	Maximum Load Capacity	kg(lb)	600 (1,323)
FEED	Travel (X/Y/Z)	mm(in)	900/460/520 (35.4″/18.1″/20.5″)
	Rapid Traverse Rate (X/Y/Z)	m/min	36/36/36 (1,417/ 1,417/ 1,417)
	Distance from Table Surface to SP	mm(in)	150 ~ 670 [870] (5.9″ ~ 26.4″ [34.3″]) [Built-in : 150 ~ 670(5.9″ ~ 26.4″)
	Distance from Column to SP. center	mm(in)	510 (20.1″)
	Slide Type	-	ROLLER TYPE LM GUIDE
ATC	Number of Tools	ea	30 [40]
	Tool Shank	-	BBT40 [12K, 15K : HSK-A63]
	Max. Tool Dia. (W.T / W.O)	mm(in)	Ø80 (Ø3.1″) [Ø76 (Ø3″)]/Ø125 (Ø4.9″)
	Max. Tool Length	mm(in)	300 (11.8″)
	Max. Tool Weight	kg(lb)	8 (18)
	Tool Selection Method	-	RANDOM
	Tool Change Time T-T	sec	1.4
	Tool Change Time C-C	sec	3.2
TANK CAPACITY	Coolant Tank	ℓ (gal)	400 (105.7)
	Lubricating Tank	ℓ (gal)	4 (1) [Built-in : 4+2 (1+0.5)]
	Hydraulic Tank	ℓ (gal)	15 (4)
POWER SUPPLY	Air Consumption (0.5MPa)	ℓ/min(gal)	110 (29)
	Electric Power Supply	KVA	26 [Built-in : 32]
	Thickness of Power Cable	Sq	Over 25 [Built-in : Over 35]
	Voltage	V/Hz	220/60 (200/50*)
MACHINE	Floor Space (L×W)	mm(in)	2,805×2,180 (110.4″×85.8″)
	Height	mm(in)	3,026 (119.1″) [Built-in : 2,760 (108.7″)]
	Weight	kg(lb)	6,000 (13,228)

Spindle

[ ] : Option

ITEM	**Spindle RPM** r/min	**Spindle Power Output** (Max./Cont.) kW (HP)	**Spindle Torque** (Max./Cont.) N·m (lbf·ft)	Spindle Driving Method
HW FANUC i Series	8,000 (β)	18.5/11 (24.8/14.8)	118/70 (87/51.6)	DIRECT
	[10,000 (β)]	18.5/11 (24.8/14.8)	118/70 (87/51.6)	
HW FANUC i Series [FANUC 32i-B]	[8,000]	15/11 (20.1/14.8)	286/143 (210.9/105.5)	
	[12,000]	18.5/11 (24.8/14.8)	118/70 (87/51.6)	
	[15,000]	25/22 (33.5/29.5)	167/95 (123.2/70)	BUILT-IN
HYUNDAI-iTROL	[12,000]	16.2/8.5 (21.7/11.4)	119.7/63 (88.3/46.5)	DIRECT
	[15,000]	26/26 (34.9/34.9)	120/75 (88.5/55.3)	BUILT-IN

*) Using 50Hz voltage instead of 60Hz may lower the output of motors. (excluding servo motors and inverter motors)

Specifications are subject to change without notice for improvement.

SPECIFICATIONS

Specifications

[ ] : Option

MODEL			KF5600
TABLE	Table Size (L×W)	mm(in)	1,250×560 (49.2″×22″)
	Maximum Load Capacity	kg(lb)	1,000 (2,205)
FEED	Travel (X/Y/Z)	mm(in)	1,100/560/520 (43.3″/22″/20.5″)
	Rapid Traverse Rate (X/Y/Z)	m/min	40/40/36 (1,575/1,575/1,417) [FANUC (β) Motor : 36/36/36 (1,417/1,417/1,417)]
	Distance from Table Surface to SP	mm(in)	150 ~ 670 (5.9″ ~ 26.4″)
	Distance from Column to SP. center	mm(in)	595 (23.4″)
	Slide Type	-	ROLLER TYPE LM GUIDE
ATC	Number of Tools	ea	30 [40]
	Tool Shank	-	BBT40 [12K, 15K, 20K : HSK-A63]
	Max. Tool Dia. (W.T / W.O)	mm(in)	Ø80 (Ø3.1″) [Ø76 (Ø3″)]/Ø125 (Ø4.9″)
	Max. Tool Length	mm(in)	300 (11.8″)
	Max. Tool Weight	kg(lb)	8 (18)
	Tool Selection Method	-	RANDOM
	Tool Change Time T-T	sec	1.4
	Tool Change Time C-C	sec	3.2
TANK CAPACITY	Coolant Tank	ℓ (gal)	400 (105.7)
	Lubricating Tank	ℓ (gal)	4 [Built-in : 4+2]
	Hydraulic Tank	ℓ (gal)	15 (4)
POWER SUPPLY	Air Consumption (0.5MPa)	ℓ/min(gal)	110 (29)
	Electric Power Supply	KVA	26 [Built-in : 32]
	Thickness of Power Cable	Sq	Over 25 [Built-in : Over 35]
	Voltage	V/Hz	220/60 (200/50*)
MACHINE	Floor Space (L×W)	mm(in)	2,830×2,178 (111.4″×85.7″)
	Height	mm(in)	3,106 (122.3″) [Built-in : 2,795 (110″)]
	Weight	kg(lb)	7,400 (1,6314)

Spindle

[ ] : Option

ITEM	Spindle RPM r/min	Spindle Power Output (Max./Cont.) kW (HP)	Spindle Torque (Max./Cont.) N·m (lbf·ft)	Spindle Driving Method
HW FANUC i Series	[8,000 (β)]	18.5/11 (24.8/14.8)	118/70 (87/51.6)	DIRECT
	[10,000 (β)]	18.5/11 (24.8/14.8)	118/70 (87/51.6)	
HW FANUC i Series [FANUC 32i-B]	8,000	15/11 (20.1/14.8)	286/143 (210.9/105.5)	
	[12,000]	18.5/11 (24.8/14.8)	118/70 (87/51.6)	
	[15,000]	25/22 (33.5/29.5)	167/95 (123.2/70)	BUILT-IN
FANUC 31i-B [32i-B]	[20,000]	22/18.5 (29.5/24.8)	98/80 (72.3/59)	
HYUNDAI-iTROL	[12,000]	16.2/8.5 (21.7/11.4)	119.7/63 (88.3/46.5)	DIRECT
	[15,000]	26/26 (34.9/34.9)	120/75 (88.5/55.3)	BUILT-IN
HEIDENHAIN	[12,000]	17/10 (22.8/13.4)	108.6/63.7 (8047)	DIRECT
	[15,000]	26/26 (34.9/34.9)	120/75 (88.5/55.3)	BUILT-IN

*) Using 50Hz voltage instead of 60Hz may lower the output of motors. (excluding servo motors and inverter motors)

Specifications are subject to change without notice for improvement.

SPECIFICATIONS

Specifications

[ ] : Option

MODEL			KF5600C
TABLE	Table Size (L×W)	mm(in)	1,250×560 (49.2″×22″)
	Maximum Load Capacity	kg(lb)	1,000 (2,205)
FEED	Travel (X/Y/Z)	mm(in)	1,100/560/635 (43.3″/22″/25″)
	Rapid Traverse Rate (X/Y/Z)	m/min	40/40/36 (1,575/1,575/1,417) [FANUC (β) Motor : 36/36/36 (1,417/1,417/1,417)]
	Distance from Table Surface to SP	mm(in)	150 ~ 785 (5.9″ ~ 30.9″) [450 ~ 1,085 (17.7″ ~ 42.7″)]
	Distance from Column to SP. center	mm(in)	595 (23.4″)
	Slide Type	-	ROLLER TYPE LM GUIDE
ATC	Number of Tools	ea	30 [40]
	Tool Shank	-	BBT40 [12K : HSK-A63]
	Max. Tool Dia. (W.T / W.O)	mm(in)	Ø80 (Ø3.1″) [Ø76 (Ø3″)]/Ø125 (Ø4.9″)
	Max. Tool Length	mm(in)	300 (11.8″)
	Max. Tool Weight	kg(lb)	8 (18)
	Tool Selection Method	-	RANDOM
	Tool Change Time T-T	sec	1.4
	Tool Change Time C-C	sec	3.2
TANK CAPACITY	Coolant Tank	ℓ (gal)	400 (105.7)
	Lubricating Tank	ℓ (gal)	4 (1)
	Hydraulic Tank	ℓ (gal)	15 (4)
POWER SUPPLY	Air Consumption (0.5MPa)	ℓ/min(gal)	110 (29)
	Electric Power Supply	KVA	26
	Thickness of Power Cable	Sq	Over 25
	Voltage	V/Hz	220/60 (200/50*)
MACHINE	Floor Space (L×W)	mm(in)	2,830×2,178 (111.4″×85.7″)
	Height	mm(in)	3,221 (126.8″) [3,521 (138.6″)]
	Weight	kg(lb)	7,550 (16,645)

Spindle

[ ] : Option

ITEM	Spindle RPM r/min	Spindle Power Output (Max./Cont.) kW (HP)	Spindle Torque (Max./Cont.) N·m (lbf·ft)	Spindle Driving Method
HW FANUC i Series	[8,000 (β)]	18.5/11 (24.8/14.8)	118/70 (87/51.6)	DIRECT
	[10,000 (β)]	18.5/11 (24.8/14.8)	118/70 (87/51.6)	
HW FANUC i Series [FANUC 32i-B]	8,000	15/11 (20.1/14.8)	286/143 (210.9/105.5)	
	[12,000]	18.5/11 (24.8/14.8)	118/70 (87/51.6)	
HYUNDAI-iTROL	[12,000]	16.2/8.5 (21.7/11.4)	119.7/63 (88.3/46.5)	
HEIDENHAIN	[12,000]	17/10 (22.8/13.4)	108.6/63.7 (8047)	

*) Using 50Hz voltage instead of 60Hz may lower the output of motors. (excluding servo motors and inverter motors)

Specifications are subject to change without notice for improvement.

SPECIFICATIONS

Specifications

[ ] : Option

MODEL			KF6700
TABLE	Table Size (L×W)	mm(in)	1,500×670 (59″x26.4″)
	Maximum Load Capacity	kg(lb)	1,300 (2,866)
FEED	Travel (X/Y/Z)	mm(in)	1,300/670/635 (51.2″/26.4″/25″)
	Rapid Traverse Rate (X/Y/Z)	m/min	36/36/30 (1,417/1,417/1,181) [20K : 30/30/30 (1,181/ 1,181/ 1,181)]
	Distance from Table Surface to SP	mm(in)	150 ~ 785 (5.9″ ~ 30.9″)
	Distance from Column to SP. center	mm(in)	670 (26.4″)
	Slide Type	-	ROLLER TYPE LM GUIDE
ATC	Number of Tools	ea	30 [40]
	Tool Shank	-	BBT40 [12K, 15K, 20K : HSK-A63]
	Max. Tool Dia. (W.T / W.O)	mm(in)	Ø80 [Ø76]/Ø125 (Ø3.1″[Ø3″]/Ø4.9″)
	Max. Tool Length	mm(in)	300 (11.8″)
	Max. Tool Weight	kg(lb)	8 (17.6)
	Tool Selection Method	-	RANDOM
	Tool Change Time T-T	sec	1.4
	Tool Change Time C-C	sec	3.2 [20K : 3.3]
TANK CAPACITY	Coolant Tank	ℓ (gal)	590 (155.9)
	Lubricating Tank	ℓ (gal)	4 [15K, 20K : 4+2]
	Hydraulic Tank	ℓ (gal)	15 (4)
POWER SUPPLY	Air Consumption (0.5MPa)	ℓ/min(gal)	110 (29)
	Electric Power Supply	KVA	26 [15K, 20K : 32]
	Thickness of Power Cable	Sq	Over 25 [15K, 20K : Over 35]
	Voltage	V/Hz	220/60 (200/50*)
MACHINE	Floor Space (L×W)	mm(in)	3,350×2,529 (131.9″x99.6″)
	Height	mm(in)	3,198 (125.9″)
	Weight	kg(lb)	9,500 (20,944)

Spindle

[ ] : Option

ITEM	**Spindle RPM** r/min	**Spindle Power Output** (Max./Cont.) kW (HP)	**Spindle Torque** (Max./Cont.) N·m (lbf·ft)	Spindle Driving Method
HW FANUC i Series	[8,000 (β)]	18.5/11 (24.8/14.8)	118/70 (87/51.6)	DIRECT
	[10,000 (β)]	18.5/11 (24.8/14.8)	118/70 (87/51.6)	
HW FANUC i Series [FANUC 32i-B]	8,000	15/11 (20.1/14.8)	286/143 (210.9/105.5)	
	[12,000]	18.5/11 (24.8/14.8)	118/70 (87/51.6)	
	[15,000]	25/22 (33.5/29.5)	167/95 (123.2/70)	BUILT-IN
FANUC 31i-B [32i-B]	[20,000]	22/18.5 (29.5/24.8)	98/80 (72.3/59)	

*) 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 ☆ Needed technical consultation

Controlled axis / Display / Accuracy Compensation	
Control axes	3 axes (X, Y, Z)
	4 axes (X, Y, Z, B)
Simultaneously controlled axes	3 axes [Max. 4 axes]
Least setting Unit	X, Y, Z axes : 0.001 mm (0.0001 inch)
	B axes : 1 deg [0.001] deg
Least input increment	X, Y, Z axes : 0.001 mm (0.0001 inch)
	B axes : 1 deg [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 pitch error compensation	
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, Z axe Machine lock
	Stored limit check before move
Single block	
Search function	Program Number / Sequence Number
Handle interruption	
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
Single direction positioning	G60
Thread synchronous cutting	G33
Helical interpolation	Circular + Linear 2 axes (Max.)
Feed function / Acc. & Dec. control	
Manual feed	Rapid traverse
	Jog : 0 ~ 5,000mm/min (197 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	F0% (F1%), F25%, F50%, F100%
Override cancel	
Feed per minute	G94
Feed per revolution	G95
Cylindrical interpolation	G07.1
Inverse time feed	G93
Look-ahead block	20 blocks (AI APC)
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, 48 pairs (G54.1 P1 ~ 48)
Manual absolute	Fixed ON
Programmable data input	G10
Sub program call	10 folds nested
Custom macro	#100 ~ #199, #500 ~ #999
G code system	A

Program input	
Programmable mirror image	G51.1, G50.1
G code preventing buffering	G4.1
Optional chamfering corner R	
Polar coordinate command	G15, G16
Scaling	G50, G51
Coordinate system rotation	G68, G69
Auxiliary function / Spindle speed function	
Auxiliary function	M & 4 digit
Spindle speed function	S & 5 digit , Binary output
Spindle override	0% ~ 150% (10% Unit)
Spindle orientation	M19
Retraction for rigid tapping	
FSSB high speed rigid tapping	
Tool function / Tool compensation	
Tool function	Max. T8 digit
Tool life management	
Tool offset pairs	400 pairs
Tool nose / radius compensation	G40, G41, G42
Tool length offset	G43, G44, G49
Tool offset memory C	Tool geometry and wear (Cutter and tool length)
Tool length measurement	Z axe Input C
Editing function	
Part program storage size	1280m (512KB)
No. of registerable programs	400 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

Option	
Additional optional block skip	9 ea ☆
Fast ethernet	Needed option board
Data server	Needed option board
Protection of data at 8 levels	
Additional Axis	
Manual Guide i	Conversational auto program
Manual handle feed	2/3 units
Addition of custom macro	#100 ~ #199,
	#500 ~ #999, #98000 ~ #98499
Tool management function	
Part program storage size	5120m (2MB)
No. registerable programs	Max. 1000 EA
Add. Workpiece	Max. 300 pairs (G54.1 P1 ~ P300)
AICC II	40 blocks
	200 blocks
	400 blocks ☆

Figures in inch are converted from metric values.
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CONTROLLER

FANUC 32i-B

[ ] : Option ☆ Needed technical consultation

Controlled axis / Display / Accuracy Compensation	
Control axes	3 axes (X, Y, Z) 4 axes (X, Y, Z, B)
Simultaneously controlled axes	3 axes [Max. 4 axes]
Least setting Unit	X, Y, Z axes : 0.001 mm (0.0001 inch)
	B axes : 1 deg [0.001] deg
Least input increment	X, Y, Z axes : 0.001 mm (0.0001 inch)
	B axes : 1 deg [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 pitch error compensation	
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
	Z axes Machine lock, Stroek check before move
Single block	
Search function	Program Number / Sequence Number
Interpolation functions	
Nano interpolation	
Positioning	G00
Linear interpolation	G01
Cylinderical 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 : G27
	Ref. position check : G30
Thread synchronous cutting	G33
Helical interpolation	Circular + Linear interpolation 2 axes(max.)
Feed function / Acc. & Dec. control	
Manual feed	Rapid traverse
	Jog : 0~5,000mm/min (197 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	F0% (F1%), F25%, F50%, F100%
Override cancel	
Feed per minute	G94
Feed per revolution	G95
Look-ahead block	40 Block
	200 Block (Mold)
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
Including Chamfering / Corner R	
Canned cycle	G73, G74, G76, G80 ~ G89
Coordinate rotation	G68, G69

Auxiliary function / Spindle speed function	
Auxiliary function	M & 4 digit
Level-up M Code	Multi / Bypass M code
Spindle speed command	S & 5 digit , Binary output
Spindle override	0% ~ 150% (10% Unit)
Spindle orientation	M19
FSSB high speed rigid tapping	
Tool function / Tool compensation	
Tool function	Max. T 8 digit
Tool life management	256 pairs ☆
Tool offset pairs	64 pairs
Tool nose radius compensation	G40, G41, G42
Tool nose length compensation	G43, G44, G49
Tool offset memory C	Tool length, diameter, abrasion(length, diameter)
Tool length measurement	Z axes Input C
Editing function	
Part program storage size	640m (256KB)
No. of registerable programs	500 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	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 Save	Screen saver
Processing select	Speed/ridigity setting

Option	
Additional optional block skip	9 ea ☆
Fast ethernet	Needed option board
Data server	Needed option board
Protection of data at 8 levels	
Sub Spindle control	
Polar coordinate command	G15, G16
Polar coordinate interpolation	G12.1, G13.1
Cylinderical interpolation	G07.1
One-way positioning	G60
Stored stroke check 2, 3	
Inverse-time feed	G93
Scaling	G50, G51
Manual guide i	Conversational auto program
Handle interrupt	
Manual handle feed	2/3 units
Additional custom macro variables	#100~#199, #500~#999
	#100~#199, #500~#999, #98000~#98499
Retraction for rigid tapping	
Tool management function	
Tool offset number	Max. 400 pair
Program storage capacity	512KB ~ 2MB
Program registration number	Max. 1000 ea
Additional work coordinate	48 pair (G54.1 P1 ~ P48)
AICC II	200 block
	400 block ☆

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CONTROLLER

FANUC 31i-B

[ ] : Option ☆ Needed technical consultation

Controlled axis / Display / Accuracy Compensation	
Control axes	3 axes (X, Y, Z) 4 axes (X, Y, Z, B)
Simultaneously controlled axes	3 axes [Max. 4 axes]
Least setting Unit	X, Y, Z axes : 0.001 mm (0.0001 inch)
	B axes : 1 deg [0.001] deg
Least input increment	X, Y, Z axes : 0.001 mm (0.0001 inch)
	B axes : 1 deg [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 pitch error compensation	
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
	Z axes Machine lock, Stroek check before move
Single block	
Search function	Program Number / Sequence Number
Interpolation functions	
나노보간	
위치결정	G00
직선보간	G01
원호보간	G02, G03
이그젝트 스톱모드	Single : G09, Continuous : G61
드웰	G04, 0 ~ 9999.9999 sec
스킵 기능	G31
원점 복귀	1st reference : G28
	2nd reference : G27
	Ref. position check : G30
나사절삭 동기이송	G33
헬리컬 보간	Circular + Linear interpolation 2 axes(max.)
Feed function / Acc. & Dec. control	
Manual feed	Rapid traverse
	Jog : 0~5,000mm/min (197 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	F0% (F1%), F25%, F50%, F100%
Override cancel	
Feed per minute	G94
Feed per revolution	G95
Look-ahead block	40 Block
	200 Block (Mold)
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
Including Chamfering / Corner R	
Canned cycle	G73, G74, G76, G80 ~ G89
Coordinate rotation	G68, G69

Auxiliary function / Spindle speed function	
Auxiliary function	M & 4 digit
Level-up M Code	Multi / Bypass M code
Spindle speed command	S & 5 digit , Binary output
Spindle override	0% ~ 150% (10% Unit)
Spindle orientation	M19
FSSB high speed rigid tapping	
Tool function / Tool compensation	
Tool function	Max. T 8 digit
Tool life management	256 pairs ☆
Tool offset pairs	64 pairs
Tool nose radius compensation	G40, G41, G42
Tool nose length compensation	G43, G44, G49
Tool offset memory C	Tool length, diameter, abrasion(length, diameter)
Tool length measurement	Z axes Input C
Editing function	
Part program storage size	640m (256KB)
No. of registerable programs	500 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	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 Save	Screen saver
Processing select	Speed/ridigity setting

Option	
Additional optional block skip	9 ea ☆
Fast ethernet	Needed option board
Data server	Needed option board
Protection of data at 8 levels	
Sub Spindle control	
Polar coordinate command	G15, G16
Polar coordinate interpolation	G12.1, G13.1
Cylinderical interpolation	G07.1
One-way positioning	G60
Stored stroke check 2, 3	
Inverse-time feed	G93
Scaling	G50, G51
Manual guide i	Conversational auto program
Handle interrupt	
Manual handle feed	2/3 units
Additional custom macro variables	#100~#199, #500~#999
	#100~#199, #500~#999, #98000~#98499
Retraction for rigid tapping	
Tool management function	
Tool offset number	Max. 2000 pair ☆
Program storage capacity	512KB ~ 8MB ☆
Program registration number	Max. 4000 ea ☆
Additional work coordinate	Max. 48 pair (G54.1 P1 ~ P48)
AICC II	200 block
	400 / 600 / 1000 block ☆

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CONTROLLER

HEIDENHAIN TNC620 Standard

[ ] : Option ☆ Needed technical consultation

Axes	
Control axes	3 axes (Opt. : max 5 axes)
Simultaneously controlled axes	3 axes (X,Y,Z)
Least setting Unit	0.0001 mm / 0.0001° / 0.0001 inch
	[0.00001 mm / 0.0000 ° / 0.00001 inch]
Least input increment	0.0001 mm / 0.000 °/ 0.0001 inch
	[0.00001 mm / 0.0000° / 0.00001 inch]
Display	15-inch color TFT
Progrma Memory	1.8GB
Block Processing Time	1.5 ms
Path Interplation Time	3.0 ms
Fine Interplation Time	0.2 ms [0.1ms]
Postion Control Time	0.2 ms [0.1ms]
Speed Control Time	0.2 ms [0.1ms]
Current Control Time	100 us (5000 hz Standard)
Encoder	EnDat 2.2 (Absolute)
Data interface	
Ethernet	2x1000 BASE-T
USB	USB 3.0 (4EA) / 2.0 (1EA)
RS 232C	115200 baud
Machine Function	
Block	5,000 Block
HSC filters	
Switching the traverse ranges	
Interpolation	
Linear	4축 [5축]
Circular	2축 [3축]
Spiral	
User Function	
Program input	HEIDENHAIN conversational, DIN/ISO
Position entry	Nominal position for lines and arcs in Cartesian or Polar coordinates
	Incremental or absolute dimensions
	Display and entry in mm or inch
Tool compensation	Tool radius in the working plane and tool length
Tool tables	Multiple tool tables with any number tools
Cutting data	Automatic calculation of spindle speed, cutting speed, feed per tooth & revolution
Constant contour speed	Relative to the path of the tool center
	Relative to the tool's cutting edge
Parallel operation	"Creating program with graphical support while another program is being run"
3D machining	Motion control with smoothed jerk
Contour elements	Straight line, Chamfer, Circular path,
	Circle center, Circle radius, Corner rounding,
	Tangentially connecting circular arc
Contour approach and departure	Via straight line : tangential or perpendicular
	Via circular arc
Teach-In	Actual positions can be transferred directly into the NC program
FK free contour programming	FK free contour programming in HEIDENHAIN conversational format with graphic support for workpiece drawings not dimensioned for NC
Program jumps	Subprograms and program section repeats
	Calling any program as a subprogram
Coordinate transformation	Datum shift, rotation, mirror image, scaling factor (axis-specific)
Fixed cycle	Drilling, tapping, rigid tapping
	Peak drilling, reaming, boring, centering
	Milling internal and external threads
	Clearing level and oblique surfaces
	Multioperation machining of straight and circular slots
	Multioperation machining of rectangular and circular pockets
	Cartesian and polar point patterns
	Contour train, contour pocket
	Contour slot with trochoidal milling
	OEM cycle, Engraving cycle

User Function	
Datum tables	Several datum tables for storing workpiece-related datums
Datum management	1 Table for storing reference points
Q parameters programming with variables	Mathematical functions
	Logical operations
	Calculating with parentheses
	Absolute value of a number, constant π, negation, truncation of digits
	Functions for calculation of circles
	Functions for text processing
Programming aids	Calculator
	Complete list of all current error messages
	Context-sensitive help function for error
	TNCguide : The integrated help system
	Graphic support for programming cycles
	Comment and structure blocks in NC program
Machining time	Calculation of machining time in the Test Run operating mode
	Display of the current maching time in the Program Run operating modes
Returning to the contour	Mid-program startup in any block in program, returning the tool to the calculated nominal position to continue machining
	Program interruption, contour departure and return
Programming graphics	2D pencil-trace graphics
Program-run graphics, Display modes	Graphic simulation
	Plan view /projection in 3planes /3D view
Test graphics Display modes	Graphic simulation
	Plan view /projection in 3planes /3D view
	Magnification of details
CAD viewer	Display of standard CAD data
Parallel secondary axes	Compensating movement in the secondary axes U,V,W through the principal axes X,Y,Z
	Including movements of parallel axes in the position display of the associated principal axis (sum display)
	Defining the principal and secondary axes in the NC program makes it possible to run programs on different machine configuration
Language (20 Languages)	English / German / Korean / French
	Italian / Spanish / Portuguese /
	Swedish / Danish / Finnish / Dutch
	Polish / Hungarian / Russian / Chinese
	Chinese_Trad /Slovenian / Norwegian
	Czech / Romanian / Slovak / Turkish
Python OEM process	Execute Python applications

User Function (Option)	
Touch probe cycles	Calibrating the touch probe
	Compensation of workpiece misalignment, manual or automatic
	Datum setting, manual or automatic
	Automatic tool and workpiece measurement
3D-ToolComp	Compensating form errors of tools
Display step	0.00001 mm / 0.00001° / 0.00001 inch
DXF converter	Load and convert DXF contours
CTC (Cross Talk Compensation)	Compensation of axis couplings
AVD (Active Vibration Damping)	
PAC (Position Adaptive Control)	Position-dependent adaptation of control parameters
LAC (Load Adaptive Control)	Load-dependent adaptation of control parameters
ACC (Active Chatter Control)	Active suppression of chatter
DNC communication	Communication with external PC applications over COM component

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Specifications are subject to change without notice for improvement.

CONTROLLER

HYUNDAI-iTROL

Control & Composition	
Number of axis/Spindles	3 axis (X, Y, Z)
Number of axis/Spindles, max.	6 axis (Axis + Spindle)
Color display	TFT 10.4" Color (800 x 600)
Keyboard	QWERTY Full Keyboard
Part program	1MB, 3MB, 5MB
Addition of part program on CF card	
Transfer Function	
Feedrate override	0% ~ 200%
Transfer value input range	± 999999999
Unlimited rotation of rotation axis	
Acc./Dec. with jerk limitation	
Measuring systems 1 and 2, selectable	
Travel to fixed stop	
Auto servo drive tuning	
Spindle Function	
Spindle override	0% ~ 150%
Spindle speed, max. programmable value ange	1000000 ~ 0.0001
Automatic gear stage selection	
Spindle orientation	
Spindle speed limitation	
Rigid tapping	
Interpolation	
Linear interpolation axis, max.	4 axis
Circle via center point and end point	
Circle via interpolation point	
Helical interpolation	
Non-uniform rational B splines	
Compressor for 3-axis machining	
Advanced surface	
Program Function	
Subroutine levels, max.	11
Interrupt routines, max.	4
Number of levels for skip blocks	2
Polar Coordinates	
Dimensions inch/metric,	
changeover manually or via program	
Dynamic preprocessing memory FIFO	
Look ahead	50, 100, 150
Absolute/Incremental command	G90 / G91
Scaling/Rotation	
Read/Write system variables	
Block search	
Edit background	
Processing program number, max.	750
Using of CF Card, USB	
Basic coordinate number, max.	1
Work coordinate number, max.	100
Basic/Work coordinate programming change	
Scratching function	
Global and Local user data (GUD/LUD)	
Global program user data	
Interactive cycle program	
Tool Function	
Tool radius compensations	
Tool offset selection via T/D numbers	
Tools / Cutting edges in tool list	80/160, 128/256, 256/512
Monitoring Function	
Working area limit	
Software and Hardware limit	
Zero-speed/Clamping monitoring	
2D/3D protection zones	
Contour monitoring	

Compensation	
Backlash compensation	
Leadscrew error compensation	
Measuring system error compensation	
Feedforward control (Speed control)	
Safety Function	
Safe torque off (STO)	
Safe brake control (SBC)	
Safe stop 1 (SS1)	
Diagnostic Function	
Alarm/Message , Alarm log	
PLC status/LAD online display	
PLC remote connection (Ethernet)	
Automation Support Function	
Actual velocity display	
Tool life management	As time / As amount
Work counter/Cycle time	Embedded
2D simulation	
Manual Operation	
Manual handle/Jog transfer	
Manual measurement of workpiece / tool offset	
Automatic tool/Workpiece measurement	
Automatic/Program reference approach	
Automatic Operation	
Program run as using CF card/USB	
Program control/modification	
Block search	
Reposition	
Preset (Set actual value)	
Data Transmission	
Ethernet network	
USB memory stick & CF card	
Convenience Function	
Processing setting	Coordinate setting, Auto tool length measurement
Processing support	Tool Monitoring, Spindle overload monitoring
Maintenance	Turret Guidance, I/O monitoring, Manual
Maintenance / Management	Soft MCP, Spindle warming-up M/G code list
SMART machining	
Energy saving function (ECO)	
Machine Monitoring System (MMS Lite)	
Language	
Standard support language	Chinese Simplified, English, Korean

Option	
Maximum skip block number	10
DRF offset	
MDI program save/load	
Teach-In mode	
3D simulation	Except for working area/Collision check
Real time simulation	
Shop Mill	Conversational Program
Spline interpolation	
Program remote control in network	
Language	Chinese Traditional, French, German, Italian, Portuguese, Spanish

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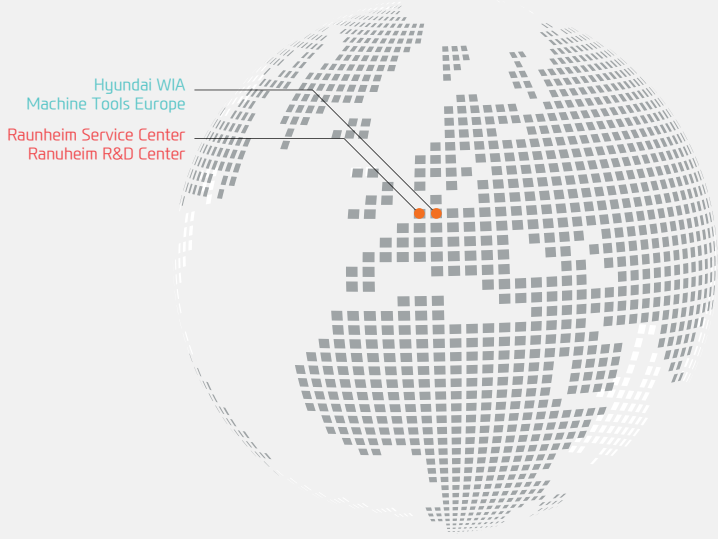
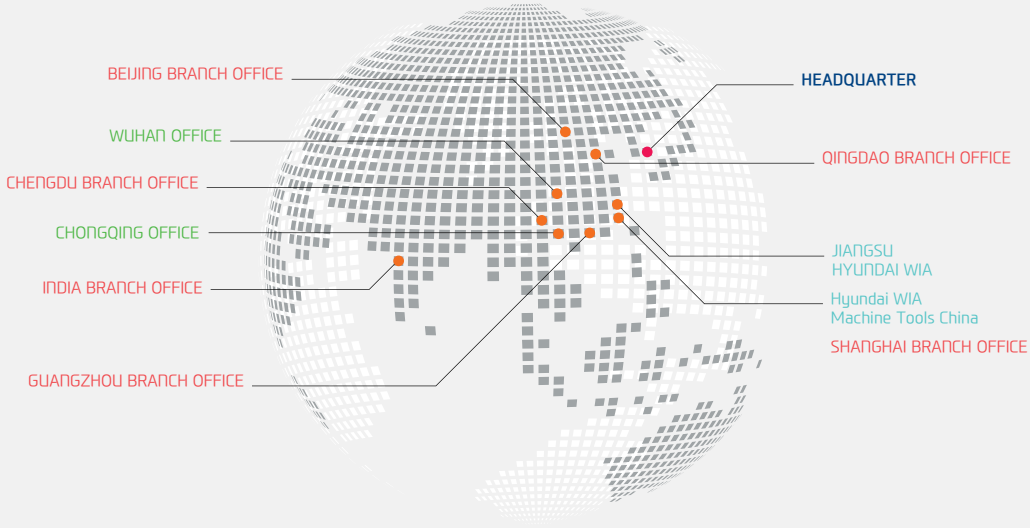
GLOBAL NETWORK





GLOBAL NETWORK

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KF5600 Movie
(Tire Wheel Mold)

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