KF 4/5/6 Series

KF4 | KF4L | KF5 | KF5L | KF6 | KF6L | KF5/50 | KF6/50

WIA Machine Tools Vertical Machining Center

WIA MACHINE TOOLS



Technical Leader

State-of-the-art Vertical Machining Center with High-speed and large work space

The Vertical Machining Center **KF4/5/6 Series**, designed by WIA machine tools with years of expertise and the latest technology, maximizes productivity while maintaining rigidity and accuracy.

ITEM	Spindle						Tool Shank		ATC				
	Direct					Built-in	BBT40	BBT50	24 EA	30 EA	32 EA	40 EA	60 EA
	8,000	*8,000	10,000	12,000	15,000	20,000							
KF4 | KF4L	●	○	○	○	○		●			●		○	
KF5 | KF5L	●	○	○	○	○	○	●			●		○	○
KF6 | KF6L		●						●	●				
KF5/50	●	○	○	○	○	○	●			●		○	○
KF6/50		●						●	●		○		

* High-Torque Spindle

● : Standard ○ : Option

KF 4/5/6 Series

High Speed & Productivity Vertical Machining Center

- High-precision machining by improved spindle quality
- High-speed roller type LM guide in all axis
- Optional 20,000rpm built-in spindle for high quality machining (KF5/L, KF6/L)
- Enhanced chip processing capabilities by applying the upper-type conveyor
- Extended table option for long workpieces ("L" Type)
- Various motors and columns provided for customized machining
- Improved user convenience by applying the latest controller of FANUC



01 BASIC **STRUCTURE**

High Speed & Productivity Vertical Machining Center



Magazine

- BBT40
  Max. Tool Length : 300 mm (11.8″)
  Max. Tool Dia. : Ø125 (Ø4.9″)
  Max. Tool Weight : 8kg (17.6 lb)
- BBT50
  Max. Tool Length : 350 mm (13..8″)
  Max. Tool Dia. : Ø250 (Ø9.8″)
  Max. Tool Weight : 15kg (33 lb)

High Precision Spindle

- BBT40 : KF4/L, KF5/L, KF6/L
- BBT50 : KF5/50, KF6/50
- Spindle Type : Direct (20k : Built-in Opt.)

Table

ITEM	Size (X/Y) / Load Capa.
KF4	1,000x450 mm / 600kg (39.4″×17.7″ / 1,323 lb)
KF4L	1,200x450 mm / 600kg (47.2″×17.7″ / 1,323 lb)
KF5	1,300x560 mm / 1,000kg (51.2″×22″ / 2,205 lb)
KF5L	1,500x560 mm / 1,000kg (59″×22″ / 2,205 lb)
KF6	1,500×670 mm / 1,300 kg (59″×26.4″ / 2,866 lb)
KF6L	1,700×670 mm / 1,300 kg (66.9″×26.4″ / 2,866 lb)

HIGH-PRECISION, SPEED & LARGE WORKING AREA

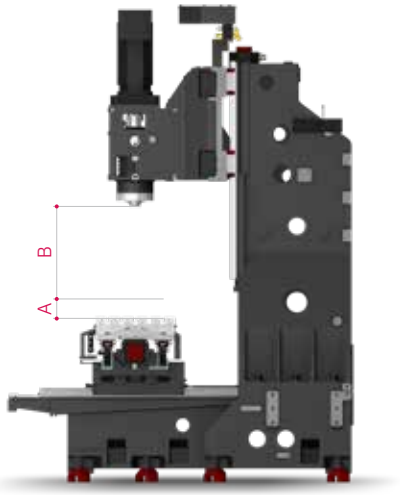
HIGH-PRECISION STRUCTURE

Optimal Structural Analysis

KF4/5/6 Series is designed to have optimal structure through WIA machine tools's unique structural analysis.
In particular, enhancement of bed and column's rigidity makes excellent performance even in heavy duty cutting.

One Piece High Column (Direct Sp.)

One piece high column is provided as an option up to z-axis hegiht.
This option helps to process bigger products such as rack housing.



Incomparably Strong Rigidity Compared to Competitor's Block-type High Column

ITEM		Travel of Z-Axis	Height of High Column	A	B
KF4 KF4L	Std. Column	**510** mm (20.1″)	-	**150** mm (5.9″)	**150**~**660** mm (5.9″~26″)
	High Column	**510** mm (20.1″)	**200** mm (7.9″)	**350** mm (13.8″)	**150**~**860** mm (5.9″~33.8″)
KF5 KF5L	Std. Column	**510** mm (20.1″)	-	**150** mm (5.9″)	**150**~**660** mm (5.9″~26″)
	Opt. 635mm	**635** mm (25″)	-	**150** mm (5.9″)	**150**~**785** mm (5.9″~30.9″)
	High Column	**635** mm (25″)	**300** mm (11.8″)	**450** mm (17.7″)	**450**~**1,085**mm (17.7″~42.7″)
KF5/50	Std. Column	**510** mm (20.1″)	-	**200** mm (7.9″)	**200**~**710** mm (7.9″~28″)
	Opt. 635mm	**635** mm (25″)	-	**200** mm (7.9″)	**200**~**835** mm (7.9″~32.9″)
	High Column	**635** mm (25″)	**300** mm (11.8″)	**500** mm (19.7″)	**500**~**1,135**mm (19.7″~44.7″)
KF6 KF6L	Std. Column	**635** mm (25″)	-	**150** mm (5.9″)	**150**~**785** mm (5.9″~30.9″)
	High Column	**635** mm (25″)	**300** mm (11.8″)	**450** mm (17.7″)	**450**~**1,085**mm (17.7″~42.7″)
KF6/50	Std. Column	**635** mm (25″)	-	**200** mm (7.9″)	**200**~**835** mm (7.9″~32.9″)
	High Column	**635** mm (25″)	**300** mm (11.8″)	**500** mm (17.7″)	**500**~**1,135**mm (19.7″~44.7″)

- High column can be applied to column with Z-axis traverse distance of 635mm(25") for KF5/5L (510mm(20.1") Standard column + 300mm(11.8") High column cannot be applied)

※ High Column : Option

02 HIGH-SPEED FEED

Highest Quality, High-speed Vertical Machining Center



Rapid Traverse Rate (X/Y/Z) [ ] : Option

KF4/4L | KF5/5L	KF6 | KF5/50 | KF6/50
36/36/30 [42/42/36] m/min (1,417/1,417/1,181 [1,654/1,654/1,417] ipm)	36/36/30 m/min (1,417/1,417/1,181 ipm)

Travel (X/Y/Z) [ ] : Option

KF4	KF4L
800/450/510 mm (31.5″/17.7″/20.1″)	1,050/450/510 mm (41.3″/17.7″/20.1″)
KF5	KF5L
1,050/560/510 [635] mm (41.3″/22″/20.1″ [25″])	1,300/560/510 [635] mm (51.2″/22″/20.1″ [25″])
KF6	KF6L
1,300/670/635 mm (51.2″/26.4″/25″)	1,500/670/635 mm (59.1″/26.4″/25″)
KF5/50	KF6/50
1,050/560/510 [635] mm (41.3″/22.0″/20.1″[25"])	1,300/670/635 mm (51.2″/26.4″/25″)

REDUCED NON-CUTTING TIME & IMPROVED FEED PRECISION

GUIDE WAY

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.

Improvement in Slide Cover

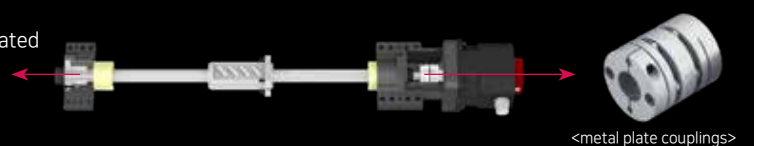
The increased slope of slide cover makes chip disposal easier and minimizes slide cover breakage.



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.

4 Row bearing + Grease Lubricated
Rigidity 30% Increase
compared to previous model



<metal plate couplings>



Automatic Grease Supply Unit

Automatic grease lubrication system, which does not require frequent refill, is applied as standard to improve user convenience and cost efficiency.

03 HIGH PRECISION **SPINDLE**

Excellent machining performance with high-precision spindle

KF4/4L | KF5/5L | KF6/6L Spindle Specifications

NC	Speed r/min	Motor (Max./Cont.)	Torque (Max./Cont.)	Type
FANUC	**8,000/10,000** rpm	**18.5/11** kW (25/15 HP)	**118/52.5** N·m (87/38.7 lbf·ft)	Direct
	8,000 rpm (KF6)	**18.5/15** kW (25/20 HP)	**118/71.6** N·m (87/52.8 lbf·ft)	
	8,000 rpm (High-torque)	**15/11** kW (20/15 HP)	**286/143** N·m (210.9/105.5 lbf·ft)	
	12,000 rpm	**18.5/11** kW (25/15 HP)	**118/52.5** N·m (87/38.7 lbf·ft)	
	15,000 rpm	**18.5/11** kW (25/15 HP)	**118/52.5** N·m (87/38.7 lbf·ft)	
	20,000 rpm	**22/18.5** kW (29.5/24.8 HP)	**98/80** N·m (72.3/59 lbf·ft)	Built-in
SIEMENS	**12,000** rpm	**16.2/8.5** kW (21.7/11.4 HP)	**119.7/63** N·m (88.3/46.5 lbf·ft)	Direct
HEIDENHAIN	**12,000** rpm	**17/10** kW (22.8/13.4 HP)	**108.6/63.7** N·m (80/47 lbf·ft)	

KF5/50 | KF6/50 Spindle Specifications

NC	Speed r/min	Motor (Max./Cont.)	Torque (Max./Cont.)	Type
FANUC	**8,000** rpm	**22/11** kW (29.5/15 HP)	**353.2/143.2** N·m (260.5/105.6 lbf·ft)	Direct

HIGH-PERFORMANCE, HIGH-PRECISION SPINDLE

SPINDLE

Direct Driven Spindle

The directly coupled spindle at a maximum revolution of 15,000rpm, allows high-speed processing. Additionally, the large diameter and the thickness of the spindle add to the stability of the machine. (KF5/50, KF6/50 : 8,000rpm)

Built-in Spindle (BBT40) OPTION

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

Spindle Cooling (Over 10,000 rpm / BT50 : Std.)

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

<Improved cooling capability with chilling through head frame>

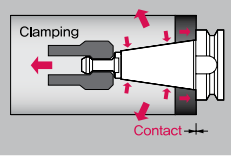
Through Spindle Coolant (20/30/70 bar) OPTION

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

The improved quality of rotary joint prevents oil leakage.

Dual Contact Spindle

The Big Plus spindle system (BBT40) provides dual contact between the spindle face and the flange face of the tool holder.





Direct Driven Spindle



Built-in Spindle



Spindle Automatic Grease Lubrication

Newly developed 20,000rpm built-in spindle with automatic grease lubrication applied as standard. Minimal amount of grease is injected automatically. Creating minimal amount of oil vapor which enhances factory environment, reduces noise pollution and saves energy.

Item	Sp. Lubrication Method	Advantages	Disadvantages
(Prior) 20k Built-In Spindle	Oil & Air	Superior Lubrication In High Speed	Oil Vapor Produced
(Now)20k Built-In Spindle	Automatic Grease	Superior Lubrication In High Speed Minimal Oil Vapor Produced	-

(EASY EXCHANGE CARTRIDGE GREASE PUMP APPLIED)

04 ATC & MAGAZINE

High Productivity Achieved with High Rigidity, Accuracy Machining



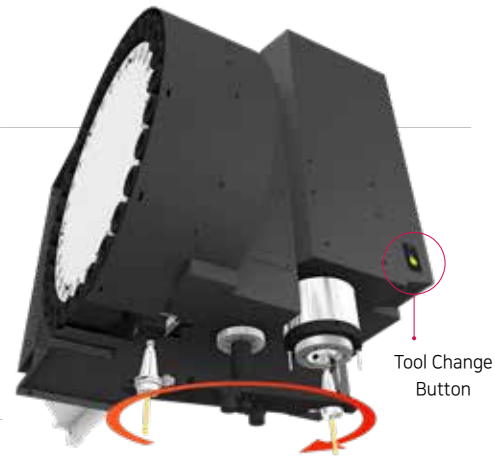
ATC & Magazine

[ ] : Option

Model	No. of Tools	Max. Tool Length	Max. Tool Dia. (W.T/W.O)	Max. Tool Weight	Tool Shank
KF4 | KF4L	30 [40] EA	300 mm (11.8″)	30T : Ø80/125 mm (Ø3.1″/Ø4.9″) [40, 60T : Ø76/125 mm (Ø3″/Ø4.9″)]	8 kg (18 lb)	BBT40 [HSK-A63]
KF5 | KF5L	30 [40, 60] EA				
KF6 | KF6L					
KF5/50	24 EA	350 mm (13.8″)	Ø125/Ø250 mm (Ø4.9″/Ø9.8″)	15 kg (33 lb)	BBT50 [HSK-A100]
KF6/50	24 [32] EA				

HIGH RIGIDITY, TOOL CHANGE SYSTEM

ATC & MAGAZINE



High Speed ATC

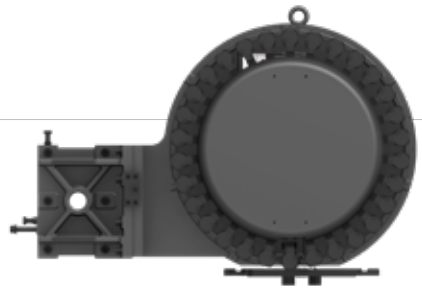
Position control through twin arm ATC on servo motors has been improved drastically. In addition, tool exchanging has become easier, reducing specific cutting time tremendously.

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

Tool Change Time (C-C)

KF4/4L : 3.0 sec KF5/5L : 3.0 sec KF6/6L : 3.2 sec

(KF5/50 | KF6/50 : 5.5 sec)

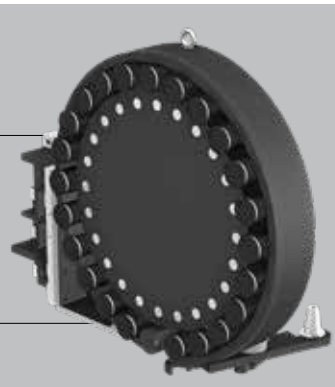


Magazine(BBT40)

The tool magazine holds **30 tools** as standard and **40, 60 tools** as an option. Due to the wider selection of tools and the random tool selection method, tool change time has improved.

[Fixed Address tool selection method : Option]

BBT50 ATC & MAGAZINE



BBT50 (KF5/50 | KF6/50)

KF5/50, KF6/50 provides a tool magazine of 24 tools as standard.

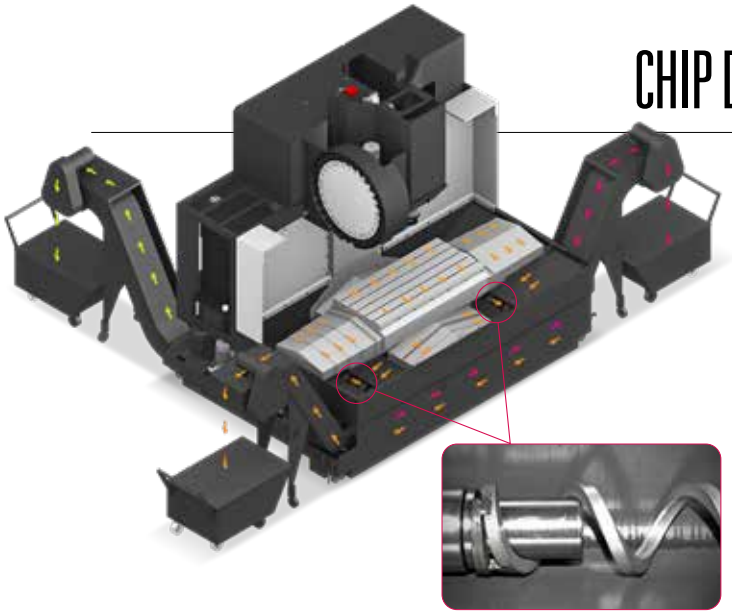
Also, ATC with high precision CAM provides fast and accurate tool change, reducing non-cutting time.

(KF6/50 : Opt. 32 EA)

05 USER CONVENIENCE

Various Devices for User Friendly

CHIP DISPOSAL SOLUTION & COOLANT UNIT





Cutting Air Blow (Opt.)



Bed Flushing Coolant (Opt.)



Gun Coolant (Opt.)



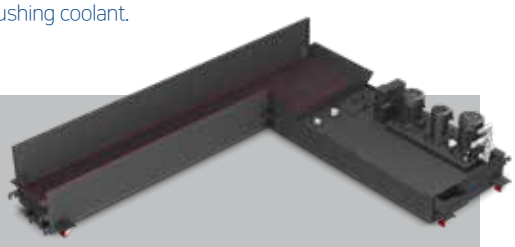
Air Gun (Opt.)

Interior Screw Chip Conveyor (Forward / Backward Rotation Function)

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.
Furthermore, chip disposal capability significantly has been improved due to optional bed-flushing coolant.

Upper-type Conveyor (Std.)

The upper type chip conveyor is applied as a standard to efficiently remove chips generated during machining. In addition, the 340 liter (KF5) of large coolant tank provides a seamless machining environment even with large amounts of coolant.



Hinge	Chip Type : Roughing Chip, Long Chip, Chip complex	Material : SS41, 45C, Cast Steel	Side/Rear Direction
	Highly efficient when disposing a lot of chips. Capable of handling stringy chips..		
Scraper	Chip Type : Finely broken chip blown out	Material : cast Iron, Nonferrous	
	Convenient for shortly cut chips.		
※ Screw	Chip Type : The lower portion of micro-chips	Material : Steel, Casting	
	Compresses and ejects chips to reduce chip Trouble.		
※ Drum Filter	Chip Type : Powder, Micro Chip	Material : AL	
	Advantageous in precision, as the chips do not flow in to the coolant nozzle.		

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

PRECISION SYSTEM & PERIPHERAL DEVICE



Linear Scale



Touch Sensor



TLM (Laser & Touch)



Oil-skimmer



Oil lubrication supply system



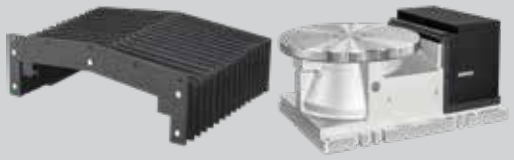
MQL (Minimal Quantity Lubrication)

SEMICONDUCTOR MACHINING SOLUTION

Optional Package	Package I (Ceramic I)	Package II (Ceramic II)	Package III (Metal)
Spindle 8,000rpm	●	●	-
Spindle 12,000rpm	-	-	●
Hydraulic Tool Lock	●	●	●
Bellows Cover (X/Y)	●	●	-
Multi-Cover (Z)	●	●	-
Ball Screw Bellows Cover	-	●	-
Table Around Cover	●	●	-
Spindle Cooling System	●	●	●
Data Server	-	-	●
40-Tool Magazine	-	-	●
TLM (RENISHAW LTS)	-	-	●
Guideway Double Wiper	●	●	●
High-Performance Feed Motor	●	●	●

※ Table Around Cover is excluded when selecting the Rotary Table.





Slide Cover & NC Rotary Table

06 FANUC - SMART PLUS

The Compatible All-round Control



15″ Touch-type Monitor as a standard

Smart Machine Control	Fast Cycle Time Technology
	Fine Surface Technology
Conversational Program	Smart Guide-i
i-HMI	Machining-aid Function
AI Contour Control	AICC-2 (200 blocks)
Smooth Tolerance Control	0.1μm command and specify tolerance
JERK Control	Diminished vibration by controlling acceleration speed
Machining Condition Selection	Designated machining level based on speed & quality
Machining Quality Control Function	Smooth Tolerance+ integrated support
Part Program Storage	5120M (2MB)
No. of Registerable Programs	1000 EA

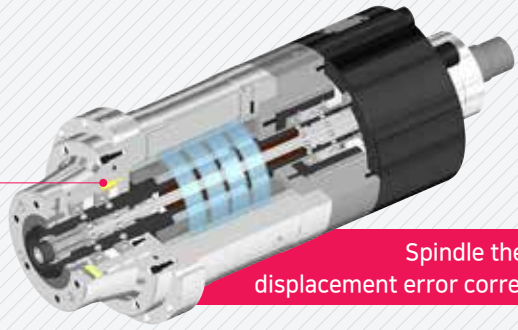
8Ch. Thermal displacement compensation OPTION





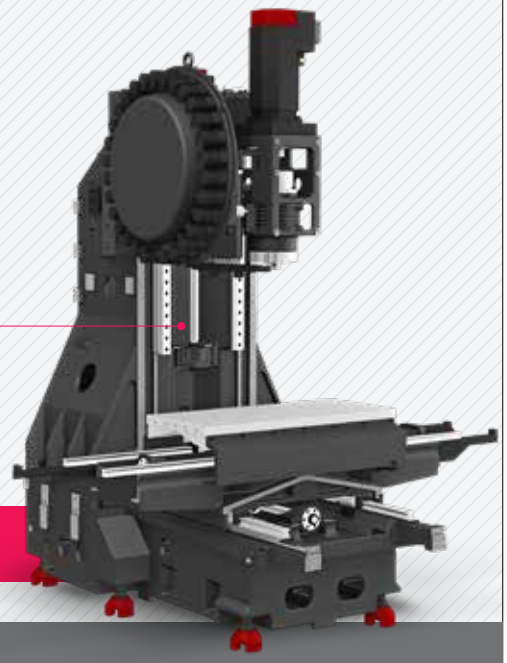
Control Software

Thermal Sensor



Spindle thermal displacement error correction

Thermal Sensor

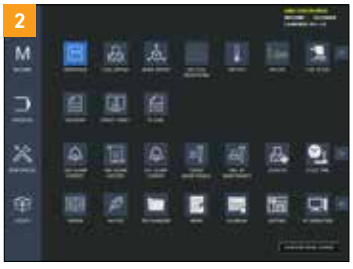


Structure thermal displacement error correction

Machine tools generate thermal displacement due to heat during machining.
WIA machine tools detect thermal changes through thermal sensors installed on the main thermal sources of the machine.
In addition, a thermal displacement compensation device that predicts the amount of thermal displacement according to the amount of thermal change and provides a command to the motor with a compensated value to maintain consistent precision is provided as an option.

SMART CNC (FANUC Smart Plus)





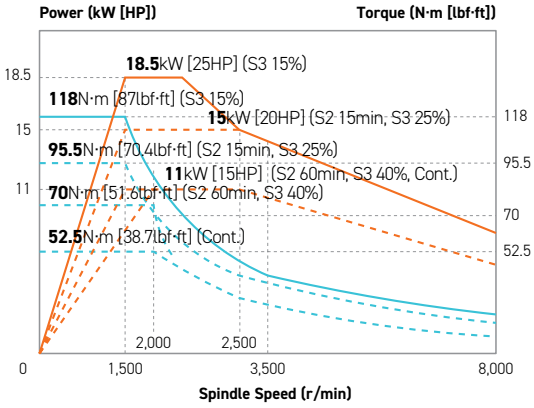
1. Dialogue Program (Smart Guide-i)
This software offers the maximum user convenience through dialogue manipulation from setup to processing. This includes writing processing programs and simulation checks.

2. LAUNCHER
This software offers shortcuts for quick access to specialized features and frequently used features.

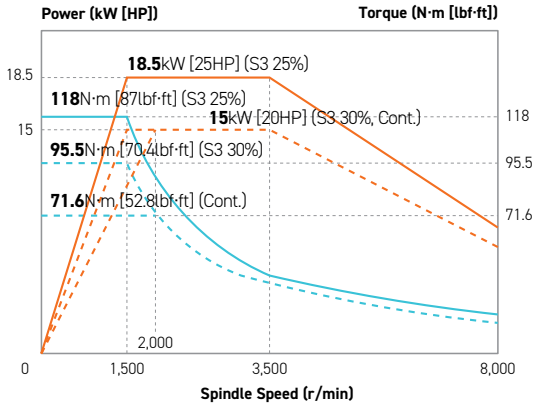
SPECIFICATIONS

Spindle Output/Torque Diagram

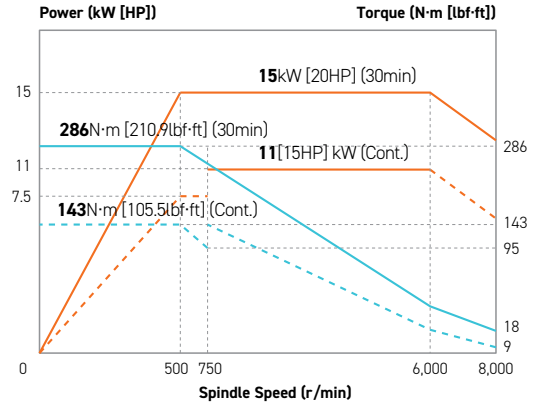
Direct 8,000rpm (KF4/4L | KF5/5L)



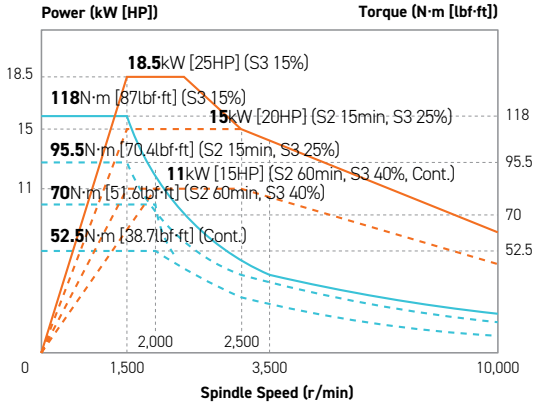
Direct 8,000rpm (KF6/6L)



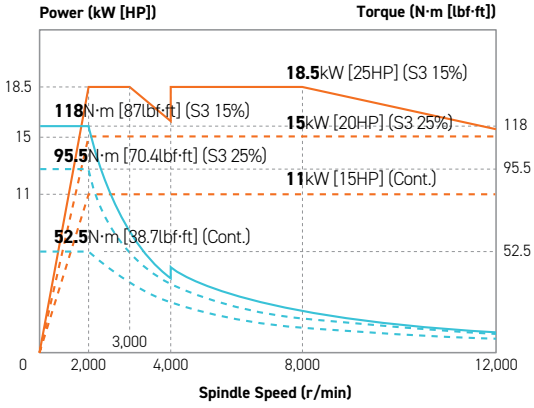
Direct 8,000rpm (High-Torque)



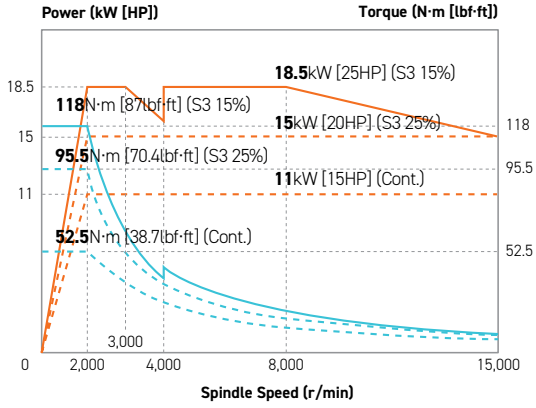
Direct 10,000rpm



Direct 12,000rpm



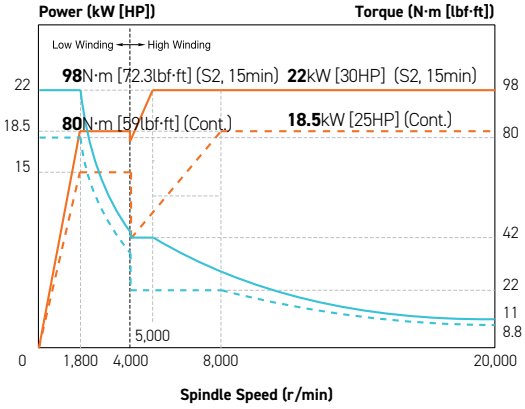
Direct 15,000rpm



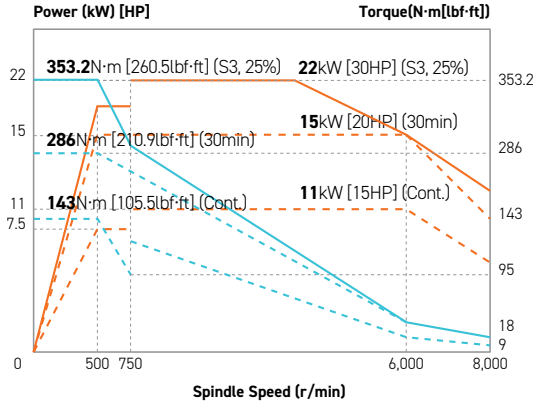
SPECIFICATIONS

Spindle Output/Torque Diagram

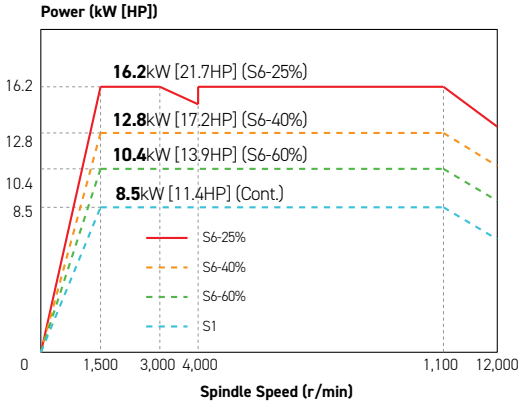
Built-in 20,000rpm

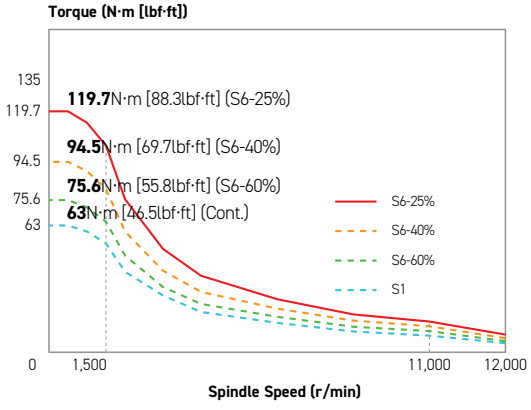


KF5/50 | KF6/50 Direct 8,000rpm

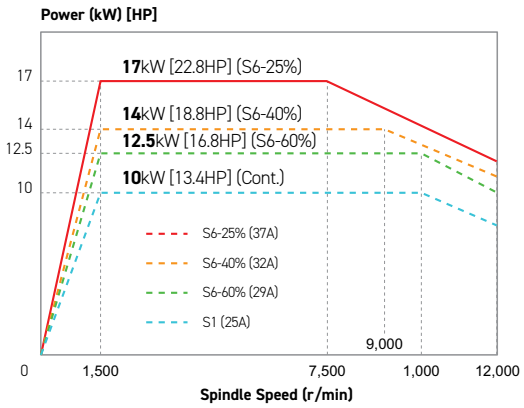


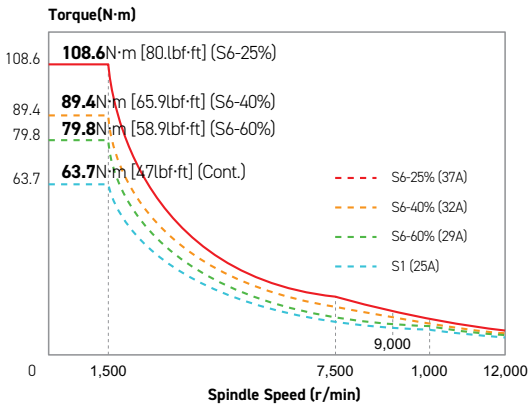
SIEMENS Direct 12,000rpm





HEIDENHAIN Direct 12,000rpm





SPECIFICATIONS

Standard & Optional (KF4/4L)

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

Spindle		KF4 | KF4L
8,000rpm	FANUC	●
8,000rpm (High-torque)	FANUC	○
10,000rpm	FANUC	○
12,000rpm	FANUC	○
15,000rpm	FANUC	○
12,000rpm	SIEMENS	○
12,000rpm	HEIDENHAIN	○
Spindle Cooling System	8,000rpm	○
	Over 10,000rpm	●
ATC		
ATC Extension	30	●
	40	○
Tool Shank Type	BBT40	●
	HSK-A63 (12K, 15K)	○
	CAT40/BCV40	○
U-Center	D'andrea	○
Pull Stud	45°	●
Table & Column		
T-Slot Table		●
3-row T-slot		●
4-row T-slot		-
5-row T-slot		○
NCRotary Table		☆
High Column	200mm (7.9")	○
	300mm (11.8")	-
Coolant System		
Std. Coolant (Main Spindle Nozzle)		●
Through Spindle Coolant	20bar (290psi)	○
	30bar, 20 ℓ (435psi, 5.3gal)	○
	70bar, 15 ℓ (1,015psi, 4gal)	○
	70bar, 30 ℓ {1,015psi, 7.9gal)	○
Top Cover		●
Shower Coolant		○
Gun Coolant		○
Bed Flushing Coolant		○
Air Gun		○
Cutting Air Blow		○
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	300 ℓ (79.3 gal)	● | -
	340 ℓ (89.8 gal)	- | ●
Interior Screw Chip Conveyor		●
Upper Chip Conveyor (Hinge)	Left	○
	Right	○
Flood Chip Conveyor (Hinge/Scraper)	Left	○
	Right	○
	Rear	○
Screw Type Chip Conveyor	Left	☆
	Right	☆
Drum Filter Type Chip Conveyor	Left	☆
	Right	☆
	Rear	☆
Chip Wagon	Standard / 180 ℓ (47.6 gal)	○
	Swing / 200 ℓ (52.8 gal)	○
	Large Swing / 290 ℓ (77.6 gal)	○
	Large Size / 330 ℓ (87.2 gal)	○
	Customized	☆
***Special Option**		
ATC Auto Shutter	30T/40T	○
ATC Full Cover	30T/40T	○
***Fine Dust Protecting Package**		
Table Around Cover	Wet Machining	○
Bellows Cover (X/Y)	Dry Machining	○
Multi Cover (Z)		○
Guide Way Double Wiper		○

Electric Device		KF4 | KF4L
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	FANUC	○
	SIEMENS, HEIDENHAIN	○
AVR (Auto Voltage Regulator)		☆
Transformer	30kVA	○
	35kVA	-
Auto Power Off		○
Back up Module for Black out		○
Measuring Device		
Air Zero	TACO	○
	SMC	○
Work Measuring Device		○
TLM (Marposs/Renishaw/Blum)	Touch	○
	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		
Hyd. Unit for Fixture	45bar (653psi)	-
	70bar (1,015psi)	○
	100bar (1,450psi)	○
	Customized	☆
S/W		
Dialogue Program (HW-DPRO)		○
DNC software (HW-eDNC)		○
Smart Guide-i : FANUC		●
Smart S/W		☆
Feed Axis		
High performance servo motor		○
Automatic Grease Supply Unit		●
Oil lubrication supply system		○
ETC		
Tool Box		●
Customized Color	Need for Munsel No.	☆
CAD&CAM Software		☆
Thermal displacement compensation		○

* Detailed options require consultation with WIA machine tools.
Specifications are subject to change without notice for improvement.

SPECIFICATIONS

Standard & Optional (KF5/5L)

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

Spindle		KF5 | KF5L
8,000rpm	FANUC	●
8,000rpm (High-torque)	FANUC	○
10,000rpm	FANUC	○
12,000rpm	FANUC	○
15,000rpm	FANUC	○
20,000rpm	FANUC	○
12,000rpm	SIEMENS	○
12,000rpm	HEIDENHAIN	○
Spindle Cooling System	8,000rpm	○
	Over 10,000rpm	●
ATC		
ATC Extension	30	●
	40	○
	60	○
Tool Shank Type	BBT40	●
	HSK-A63 (12/15K)	○
	CAT40/BCV40	○
U-Center	D'andrea	○
Pull Stud	45°	●
Table & Column		
T-Slot Table		●
3-row T-slot		-
4-row T-slot		●
5-row T-slot		○
NCRotary Table		☆
High Column	Z-Axis 635mm (25")	○
	Z-Axis 635mm + 300mm (25"+11.8)	○ (60T : -)
Coolant System		
Std. Coolant (Main Spindle Nozzle)		●
Through Spindle Coolant	20bar (290psi)	○
	30bar, 20 ℓ (435psi, 5.3gal)	○
	70bar, 15 ℓ (1,015psi, 4gal)	○
	70bar, 30 ℓ (1,015psi, 7.9gal)	○
Top Cover		●
Shower Coolant		○
Gun Coolant		○
Bed Flushing Coolant		○
Air Gun		○
Cutting Air Blow		○
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	340 ℓ (89.8 gal)	● | -
	370 ℓ (97.7 gal)	- | ●
Interior Screw Chip Conveyor		●
Upper Chip Conveyor (Hinge)	Left	○
	Right	○
Flood Chip Conveyor (Hinge/Scraper)	Left	○
	Right	○
	Rear	○
Screw Type Chip Conveyor	Left	☆
	Right	☆
Drum Filter Type Chip Conveyor	Left	☆
	Right	☆
	Rear	☆
Chip Wagon	Standard / 180 ℓ (47.6 gal)	○
	Swing / 200 ℓ (52.8 gal)	○
	Large Swing / 290 ℓ (77.6 gal)	○
	Large Size / 330 ℓ (87.2 gal)	○
	Customized	☆
***Special Option**		
ATC Auto Shutter	30T/40T/60T	○
ATC Full Cover	30T/40T/60T	○
***Fine Dust Protecting Package**		
Table Around Cover	Wet Machining	○
Bellows Cover (X/Y)	Dry Machining	○
Multi Cover (Z)		○
Guide Way Double Wiper		○

Electric Device		KF5 | KF5L
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	FANUC	○
	SIEMENS, HEIDENHAIN	○
AVR (Auto Voltage Regulator)		☆
Transformer	30kVA	○
	35kVA	-
Auto Power Off		○
Back up Module for Black out		○
Measuring Device		
Air Zero	TACO	○
	SMC	○
Work Measuring Device		○
TLM	Touch	○
(Marposs/Renishaw/Blum)	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		
Hyd. Unit for Fixture	45bar	-
	70bar	○
	100bar	○
	Customized	☆
S/W		
Dialogue Program (HW-DPRO)		○
DNC software (HW-eDNC)		○
Smart Guide-i : FANUC		●
Smart S/W		☆
Feed Axis		
High performance servo motor		○
Automatic Grease Supply Unit		●
Oil lubrication supply system		○
ETC		
Tool Box		●
Customized Color	Need for Munsel No.	☆
CAD&CAM Software		☆
Thermal displacement compensation		○

* Detailed options require consultation with WIA machine tools.
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SPECIFICATIONS

Standard & Optional (KF6/6L)

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

Spindle		KF6 | KF6L
8,000rpm	FANUC	●
8,000rpm (High-torque)	FANUC	○
10,000rpm	FANUC	○
12,000rpm	FANUC	○
15,000rpm	FANUC	○
20,000rpm	FANUC	○
12,000rpm	SIEMENS	○
12,000rpm	HEIDENHAIN	○
Spindle Cooling System	8,000rpm	○
	Over 10,000rpm	●
ATC		
ATC Extension	30	●
	40	○
	60	○
Tool Shank Type	BBT40	●
	HSK-A63 (12/15K)	○
	CAT40/BCV40	○
U-Center	D'andrea	○
Pull Stud	45°	●
Table & Column		
T-Slot Table		●
3-row T-slot		-
4-row T-slot		-
5-row T-slot		●
NCRotary Table		☆
High Column	300mm (11.8")	○
Coolant System		
Std. Coolant (Main Spindle Nozzle)		●
Through Spindle Coolant	20bar (290psi)	○
	30bar, 20 ℓ (435psi, 5.3gal)	○
	70bar, 15 ℓ (1,015psi, 4gal)	○
	70bar, 30 ℓ (1,015psi, 7.9gal)	○
Top Cover		●
Shower Coolant		○
Gun Coolant		○
Bed Flushing Coolant		○
Air Gun		○
Cutting Air Blow		○
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	370 ℓ (97.7 gal)	● | -
	390 ℓ (103 gal)	- | ●
Interior Screw Chip Conveyor		●
Upper Chip Conveyor (Hinge)	Left	○
	Right	○
Flood Chip Conveyor (Hinge/Scraper)	Left	○
	Right	○
	Rear	○
Screw Type Chip Conveyor	Left	☆
	Right	☆
Drum Filter Type Chip Conveyor	Left	☆
	Right	☆
	Rear	☆
Chip Wagon	Standard / 180 ℓ (47.6 gal)	○
	Swing / 200 ℓ (52.8 gal)	○
	Large Swing / 290 ℓ (77.6 gal)	○
	Large Size / 330 ℓ (87.2 gal)	○
	Customized	☆
***Special Option**		
ATC Auto Shutter	30T/40T/60T	○
ATC Full Cover	30T/40T/60T	○
***Fine Dust Protecting Package**		
Table Around Cover	Wet Machining	○
Bellows Cover (X/Y)	Dry Machining	○
Multi Cover (Z)		○
Guide Way Double Wiper		○

Electric Device		KF6 | KF6L
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	FANUC	○
	SIEMENS, HEIDENHAIN	○
AVR (Auto Voltage Regulator)		☆
Transformer	30kVA	○
	35kVA	-
Auto Power Off		○
Back up Module for Black out		○
Measuring Device		
Air Zero	TACO	○
	SMC	○
Work Measuring Device		○
TLM (Marposs/Renishaw/Blum)	Touch	○
	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/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		
Hyd. Unit for Fixture	45bar	-
	70bar	○
	100bar	○
	Customized	☆
S/W		
Dialogue Program (HW-DPRO)		○
DNC software (HW-eDNC)		○
Smart Guide-i : FANUC		●
Smart S/W		☆
Feed Axis		
Automatic Grease Supply Unit		●
Oil lubrication supply system		○
ETC		
Tool Box		●
Customized Color	Need for Munsel No.	☆
CAD&CAM Software		☆
Thermal displacement compensation		○

* Detailed options require consultation with WIA machine tools.
Specifications are subject to change without notice for improvement.

SPECIFICATIONS

Standard & Optional (KF5/50 | KF6/50)

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

Spindle		KF5/50	KF6/50
8,000rpm		●	
Spindle Cooling System		●	
ATC			
ATC Extension	24	●	
	32	-	○
Tool Shank Type	BBT50	●	
	HSK-A100	○	
	CAT50/BCV50	○	
U-Center	D'andrea	○	
Pull Stud	45°	●	
Table & Column			
T-Slot Table		●	
3-row T-slot		-	-
4-row T-slot		●	-
5-row T-slot		○	●
NCRotary Table		☆	
High Column	Z-Axis 635mm (25")	○	-
	Z-Axis 635mm + 300mm (25"+11.8)	o (60T : -)	o (60T : -)
Coolant System			
Std. Coolant (Main Spindle Nozzle)		●	
Through Spindle Coolant	20bar (290psi)	○	
	30bar, 20 ℓ (435psi, 5.3gal)	○	
	70bar, 15 ℓ (1,015psi, 4gal)	○	
	70bar, 30 ℓ {1,015psi, 7.9gal)	○	
Top Cover		●	
Shower Coolant		○	
Gun Coolant		○	
Bed Flushing Coolant		○	
Air Gun		○	
Cutting Air Blow		○	
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	340 ℓ (89.8 gal)	●	-
	370 ℓ (97.7 gal)	-	●
Interior Screw Chip Conveyor		●	
Upper Chip Conveyor (Hinge)	Left	○	
	Right	○	
Flood Chip Conveyor (Hinge/Scraper)	Left	-	
	Right	-	
	Rear	-	
Screw Type Chip Conveyor	Left	☆	
	Right	☆	
Drum Filter Type Chip Conveyor	Left	☆	
	Right	☆	
	Rear	☆	
Chip Wagon	Standard / 180 ℓ (47.6 gal)	○	
	Swing / 200 ℓ (52.8 gal)	○	
	Large Swing / 290 ℓ (77.6 gal)	○	
	Large Size / 330 ℓ (87.2 gal)	○	
	Customized	☆	

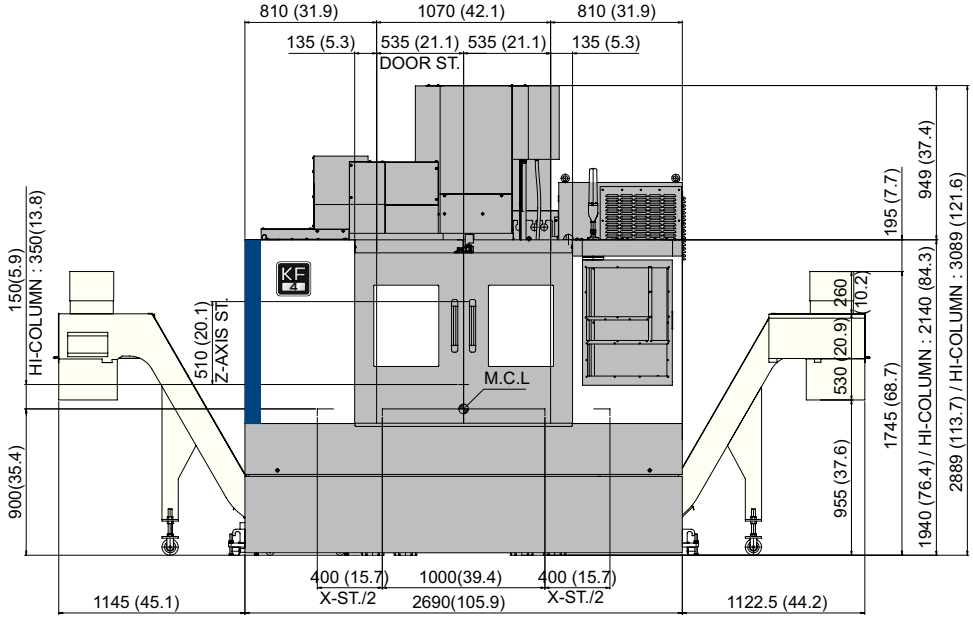
Electric Device		KF5/50	KF6/50
Call Light	1 Color : ■	●	
Call Light & Buzzer	3 Color : ■■■B	○	
Electric Cabinet Light		○	
Remote MPG		●	
3 Axis MPG		○	
Work Counter	Digital	○	
Total Counter	Digital	○	
Tool Counter	Digital	○	
Multi Tool Counter	Digital	☆	
Electric Circuit Breaker		○	
AVR (Auto Voltage Regulator)		☆	
Transformer	30kVA	○	
	35kVA	-	
Auto Power Off		○	
Back up Module for Black out		○	
Measuring Device			
Air Zero	TACO	☆	
	SMC	☆	
Work Measuring Device		○	
TLM	Touch	○	
(Marposs/Renishaw/Blum)	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			
Hyd. Unit for Fixture	45bar	-	
	70bar	○	
	100bar	○	
	Customized	☆	
S/W			
Dialogue Program (HW-DPRO)		○	
DNC software (HW-eDNC)		○	
Smart Guide-i : FANUC		●	
Smart S/W		☆	
Feed Axis			
High performance servo motor		-	
Automatic Grease Supply Unit		●	
Oil lubrication supply system		○	
ETC			
Tool Box		●	
Customized Color	Need for Munsel No.	☆	
CAD&CAM Software		☆	
Thermal displacement compensation		○	

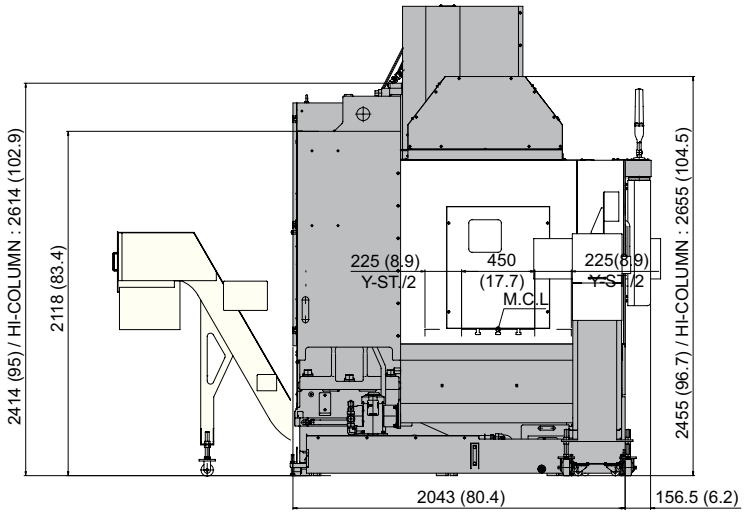
Specifications are subject to change without notice for improvement.

SPECIFICATIONS

External Dimensions (KF4)

unit : mm(in)

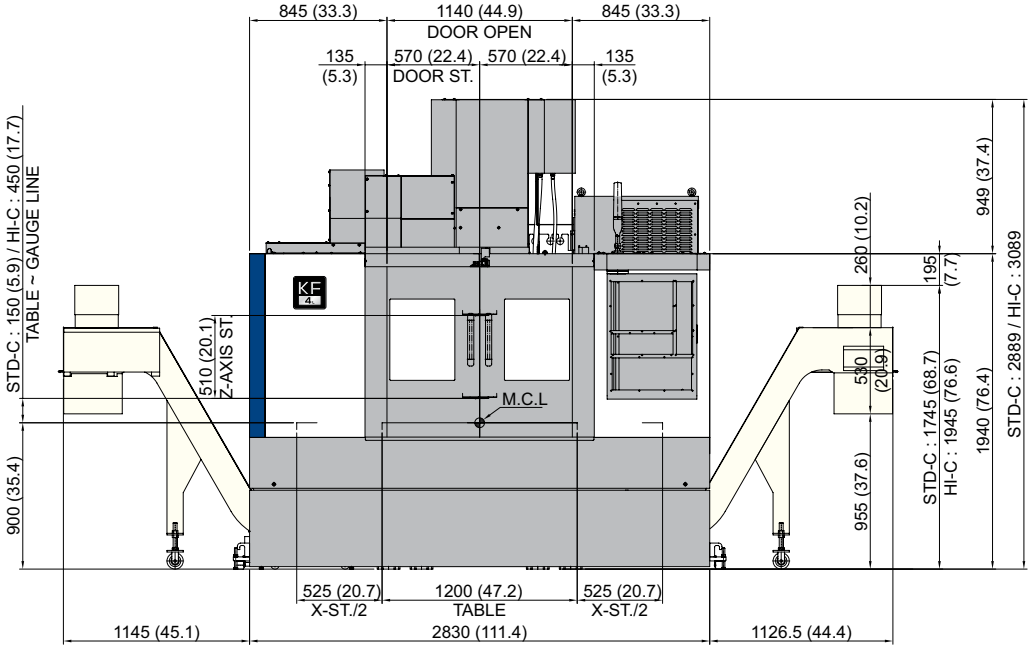


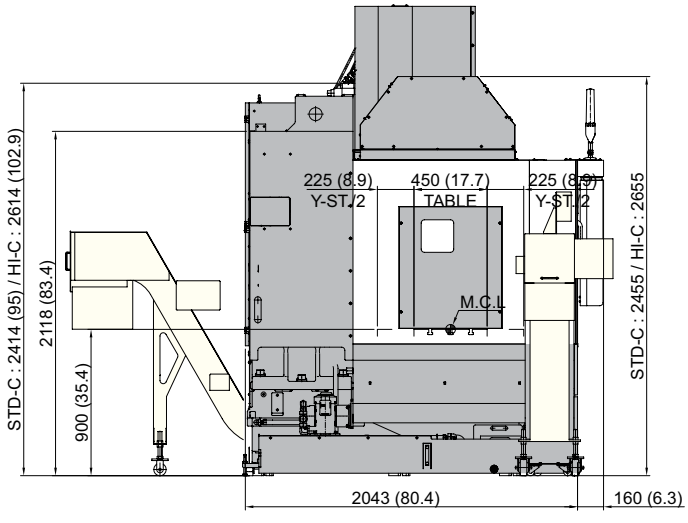


*Level Block Height : Upper Chip Conveyor (Side)_80mm (3.1″), Upper Chip Conveyor (Rear)_180mm (7.9″)

External Dimensions (KF4L)

unit : mm(in)



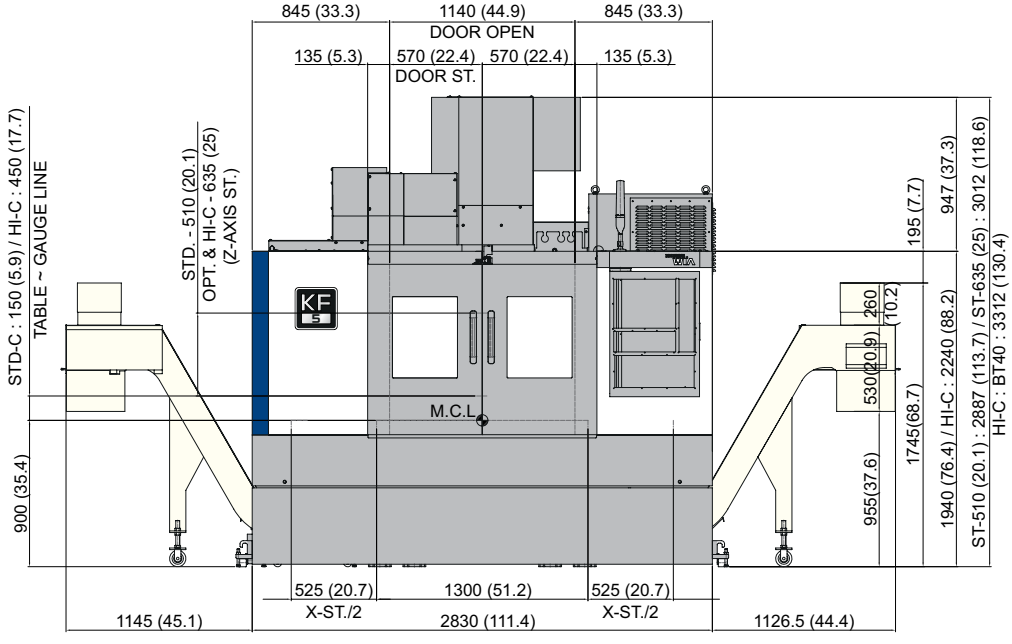


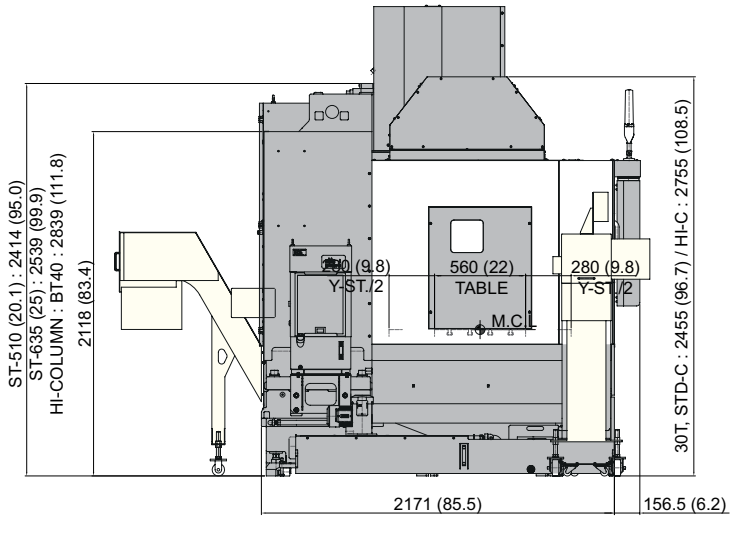
*Level Block Height : Upper Chip Conveyor (Side)_80mm (3.1″), Upper Chip Conveyor (Rear)_180mm (7.9″)

SPECIFICATIONS

External Dimensions (KF5)

unit : mm(in)

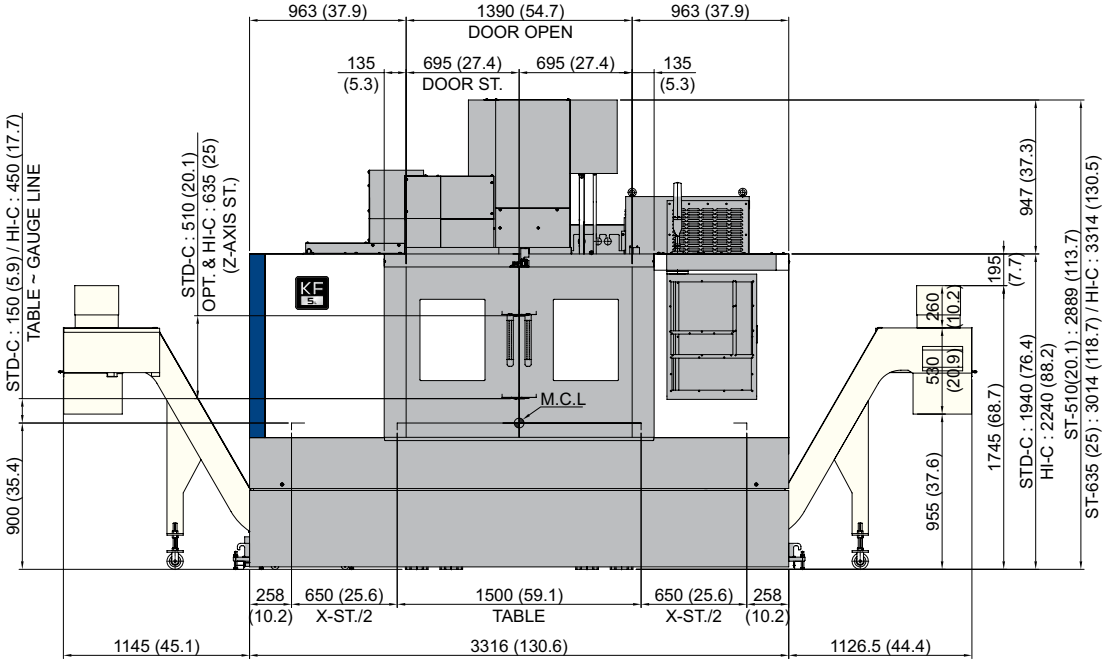


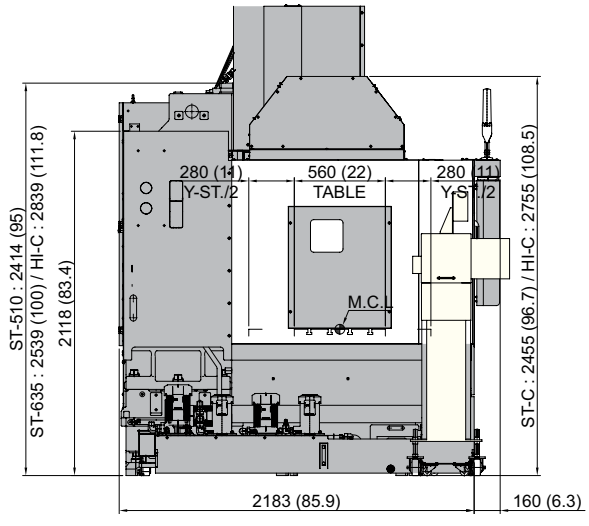


*Level Block Height : Upper Chip Conveyor (Side)_80mm (3.1″), Upper Chip Conveyor (Rear)_180mm (7.9″)

External Dimensions (KF5L)

unit : mm(in)



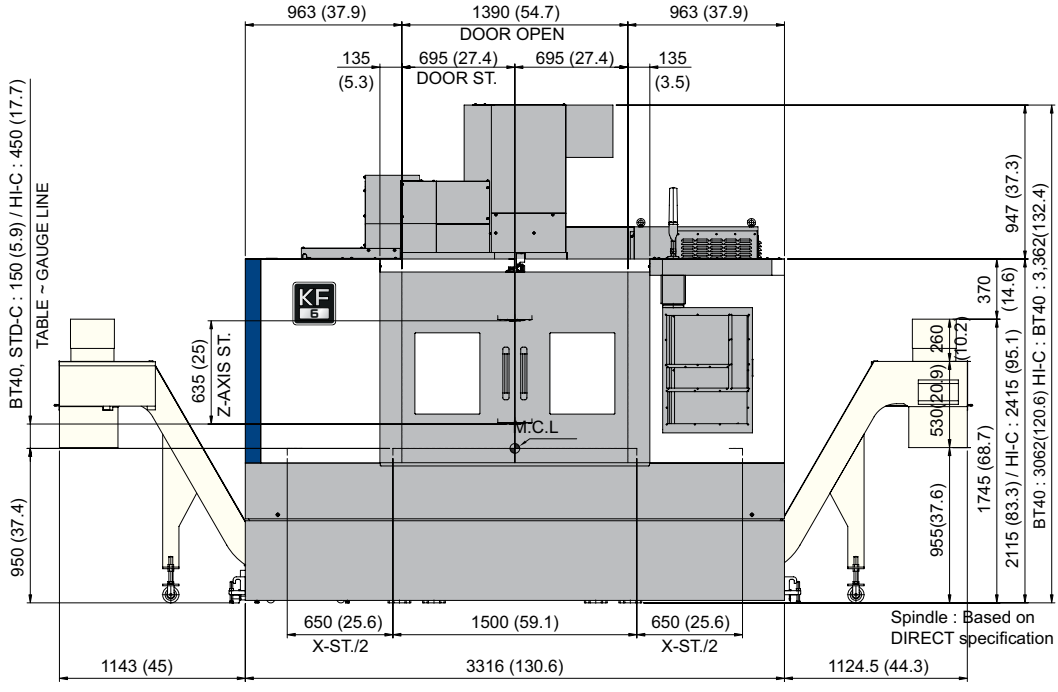


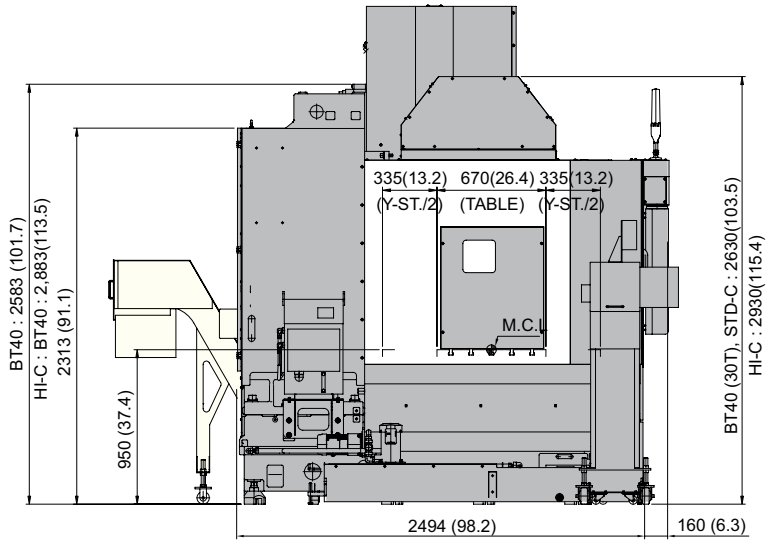
*Level Block Height : Upper Chip Conveyor (Side)_80mm (3.1″), Upper Chip Conveyor (Rear)_180mm (7.9″)

SPECIFICATIONS

External Dimensions (KF6)

unit : mm(in)

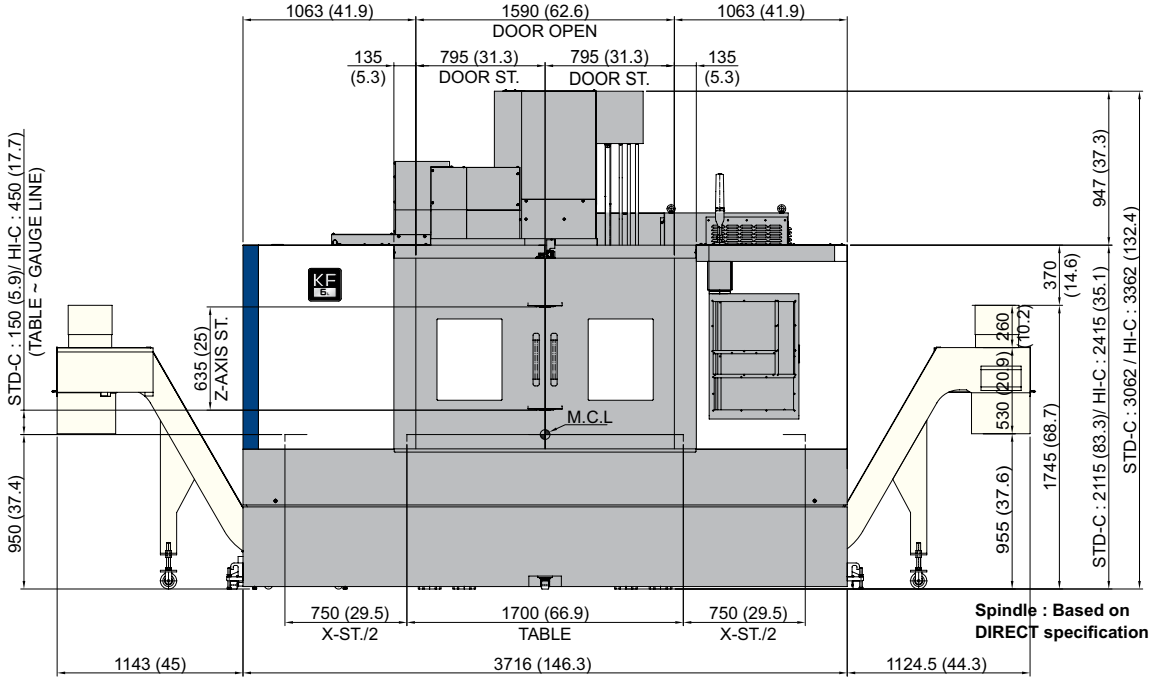


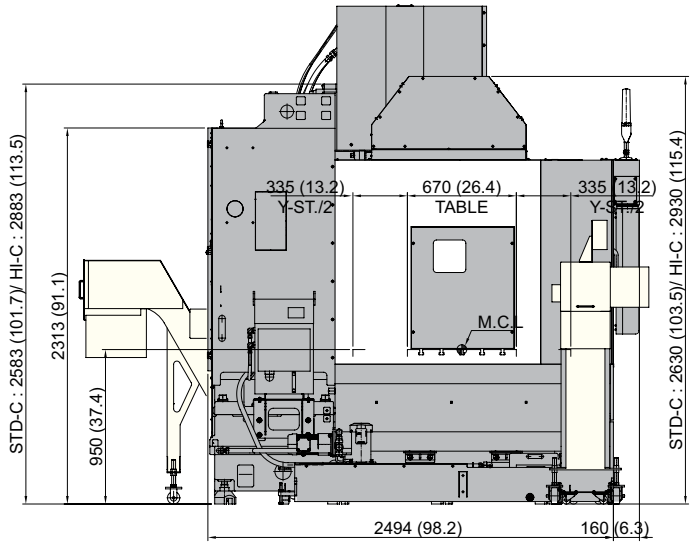


*Level Block Height : Upper Chip Conveyor (Side)_80mm (3.1″), Upper Chip Conveyor (Rear)_180mm (7.9″)

External Dimensions (KF6L)

unit : mm(in)



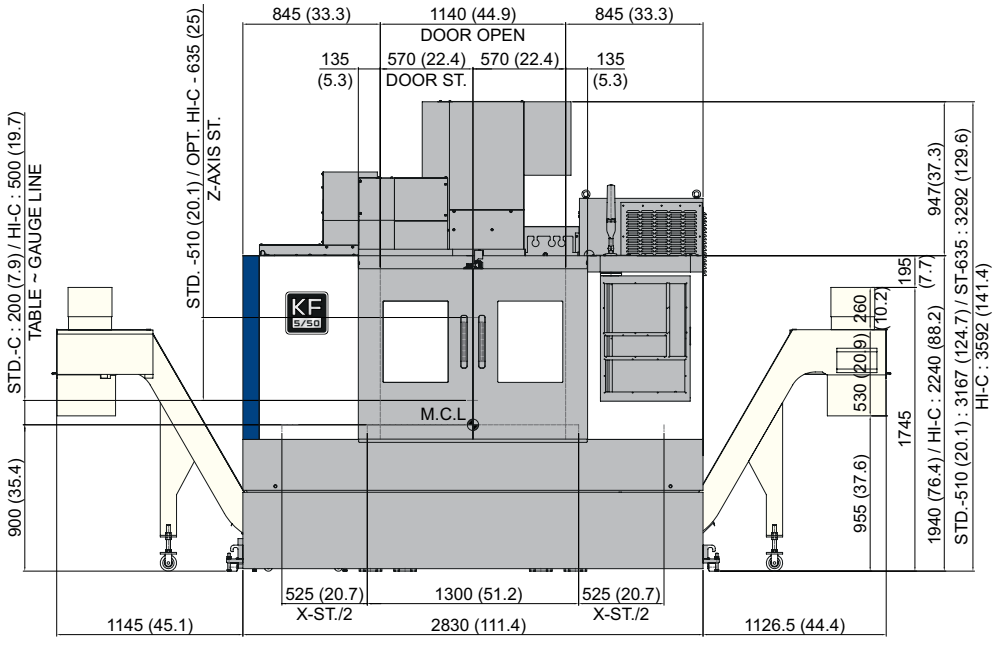


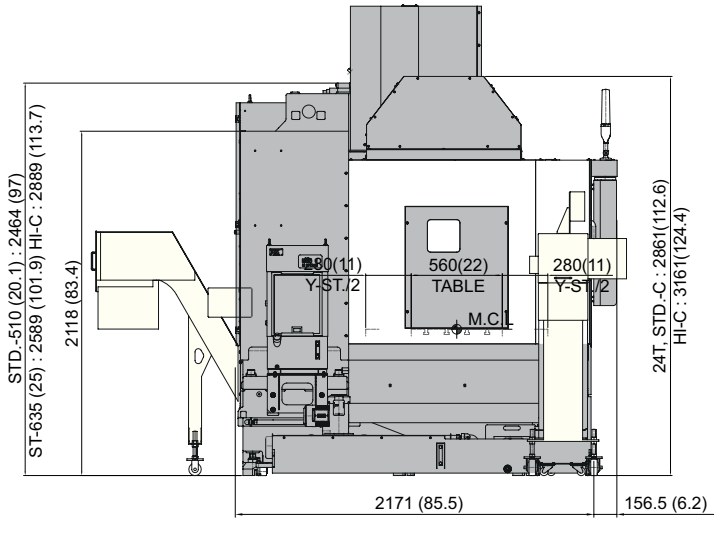
*Level Block Height : Upper Chip Conveyor (Side)_80mm (3.1″), Upper Chip Conveyor (Rear)_180mm (7.9″)

SPECIFICATIONS

External Dimensions (KF5/50)

unit : mm(in)

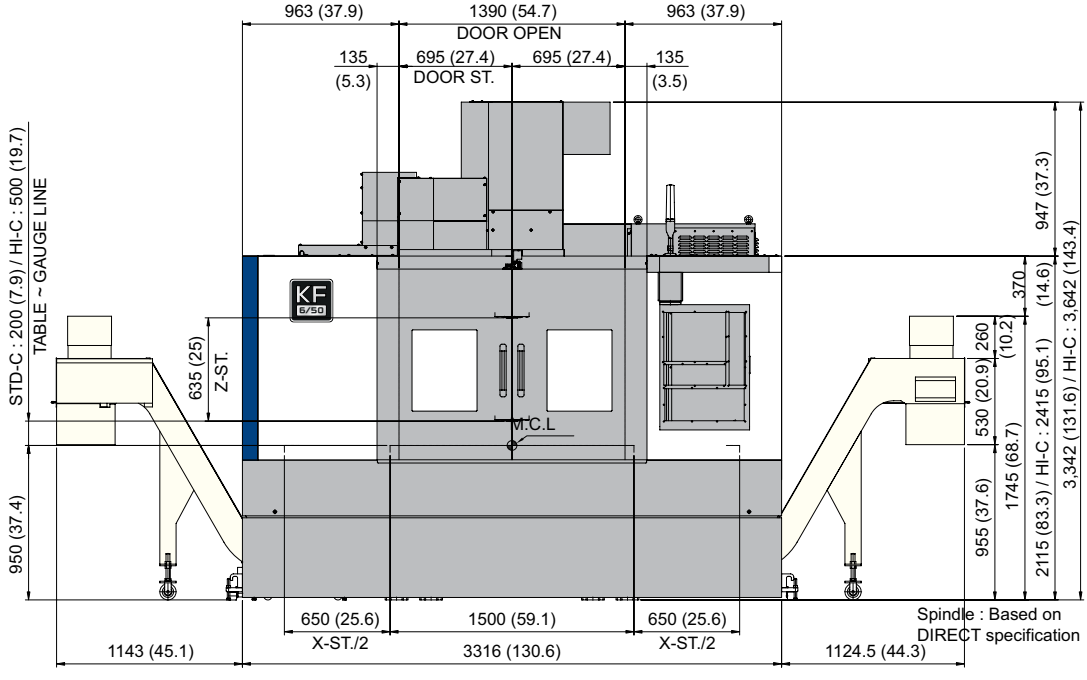


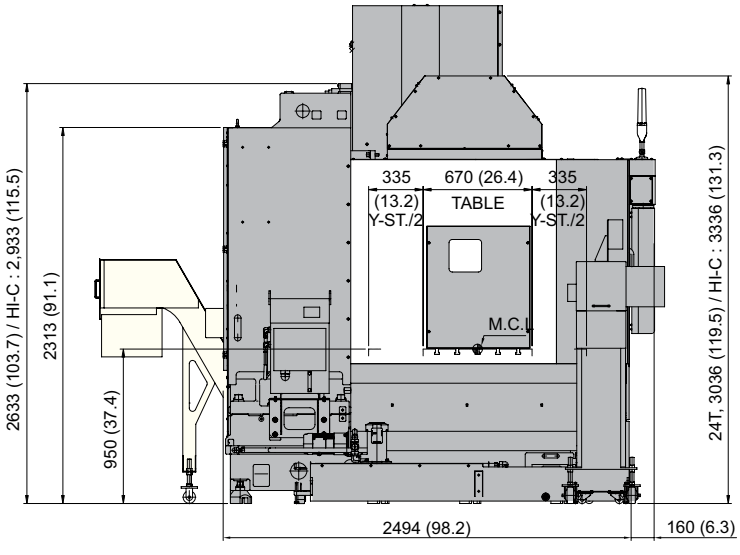


*Level Block Height : Upper Chip Conveyor (Side)_80mm (3.1″), Upper Chip Conveyor (Rear)_180mm (7.9″)

External Dimensions (KF6/50)

unit : mm(in)





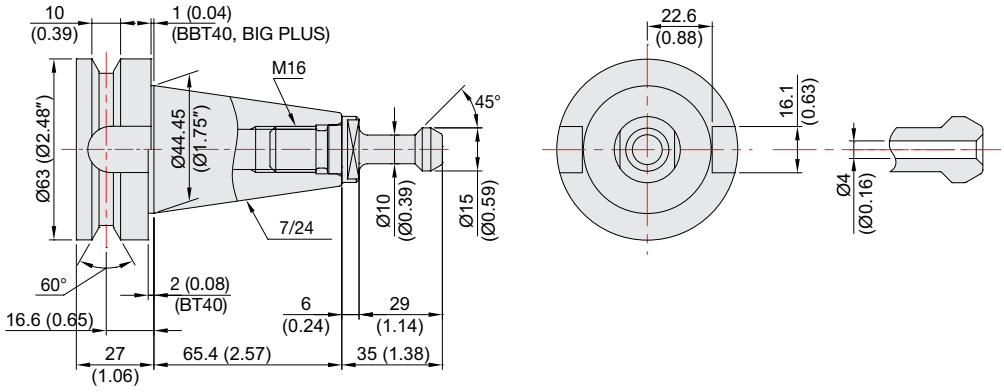
*Level Block Height : Upper Chip Conveyor (Side)_80mm (3.1″), Upper Chip Conveyor (Rear)_180mm (7.9″)

SPECIFICATIONS

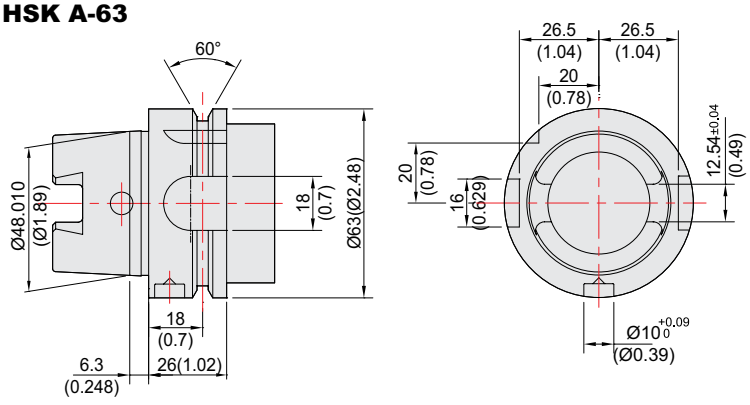
Table Dimensions (BT40/BBT40 | Opt. HSK A-63)

unit : mm(in)

BT40/BBT40, BIG PLUS

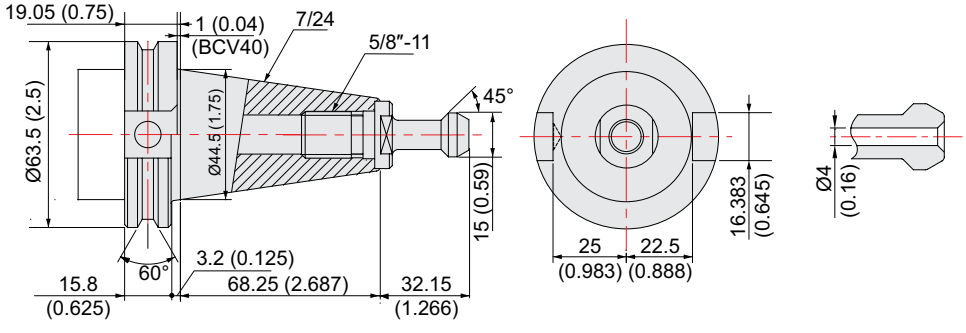


HSK A-63



OPTION

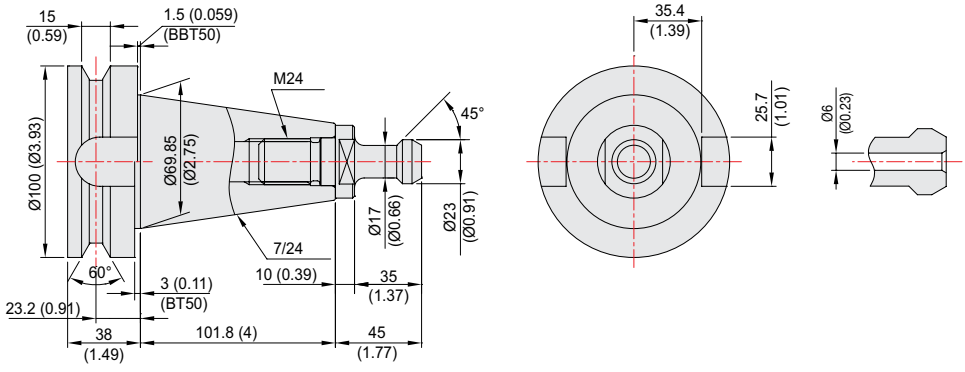
CAT40/BCV40



Tool Shank (BT50/BBT50 | Opt. HSK A-100)

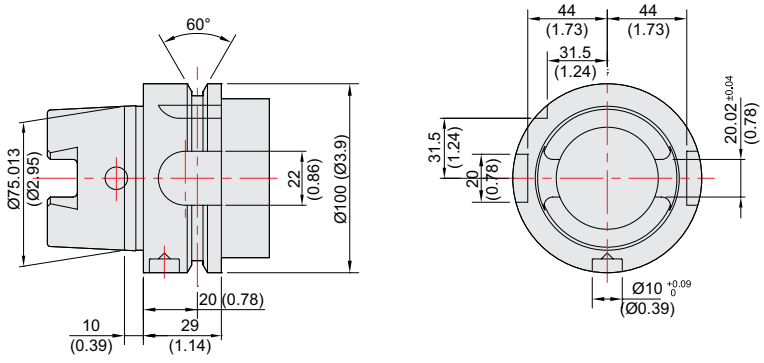
unit : mm(in)

BT50/BBT50, BIG PLUS

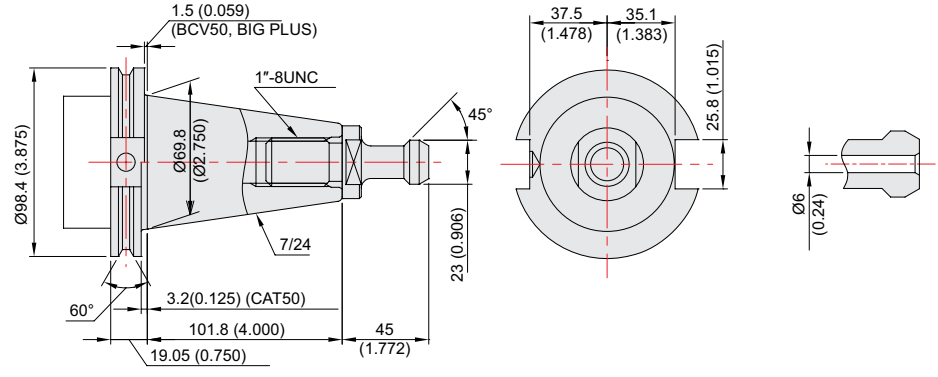


HSK A-100

OPTION



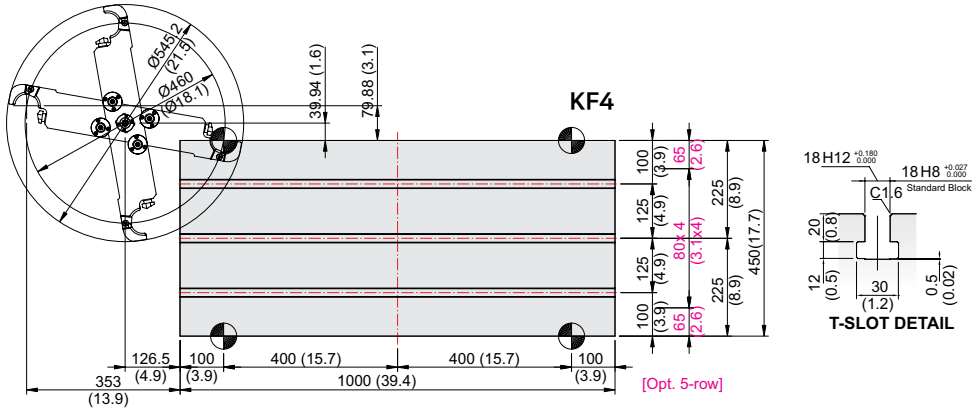
CAT50/BCV50

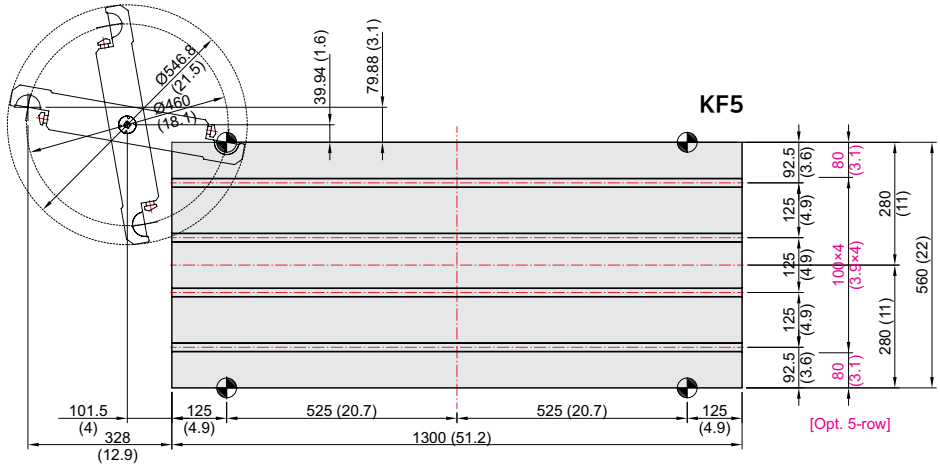


SPECIFICATIONS

Table Dimensions

unit : mm(in)





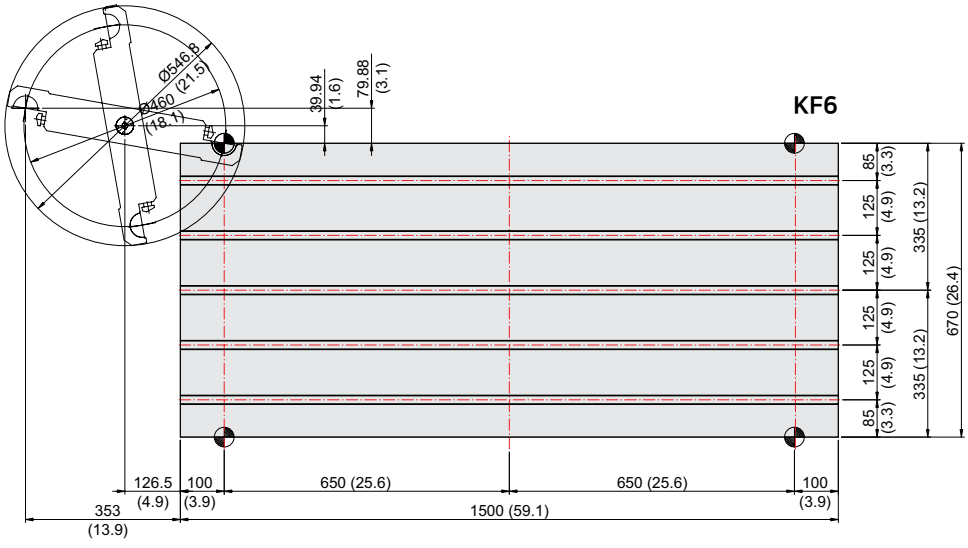
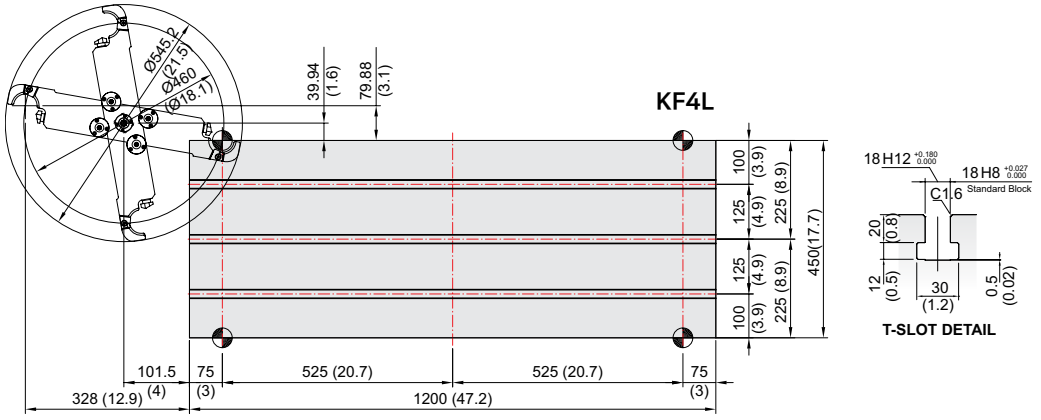
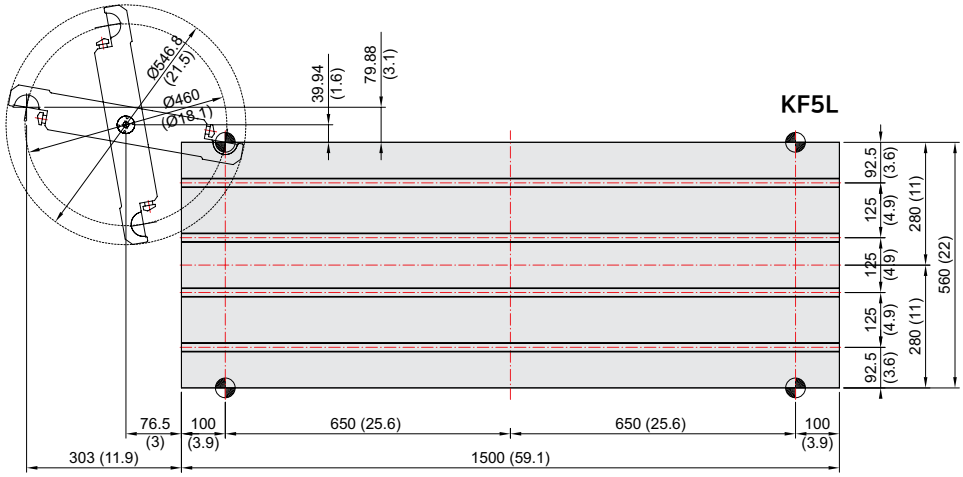
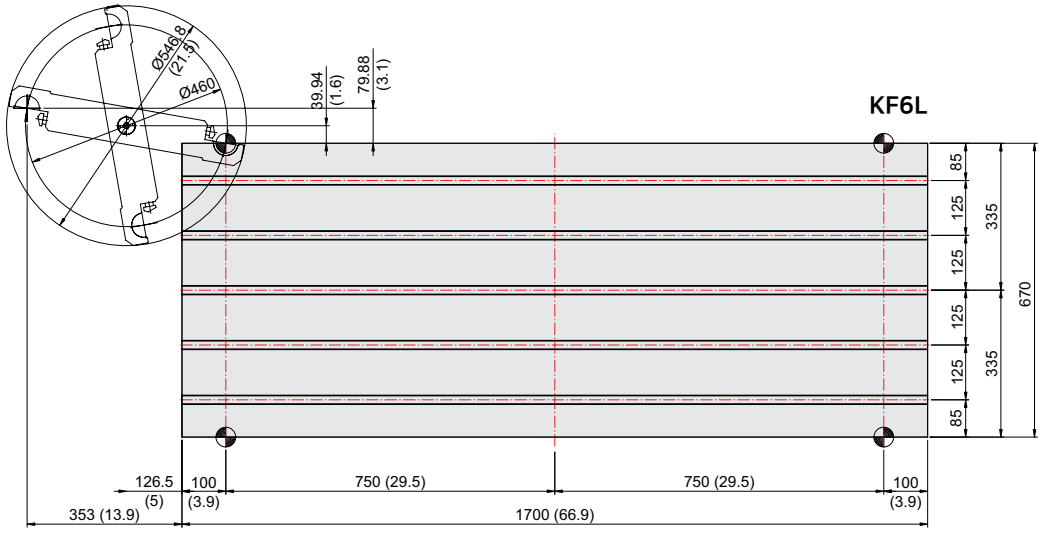


Table Dimensions

unit : mm(in)



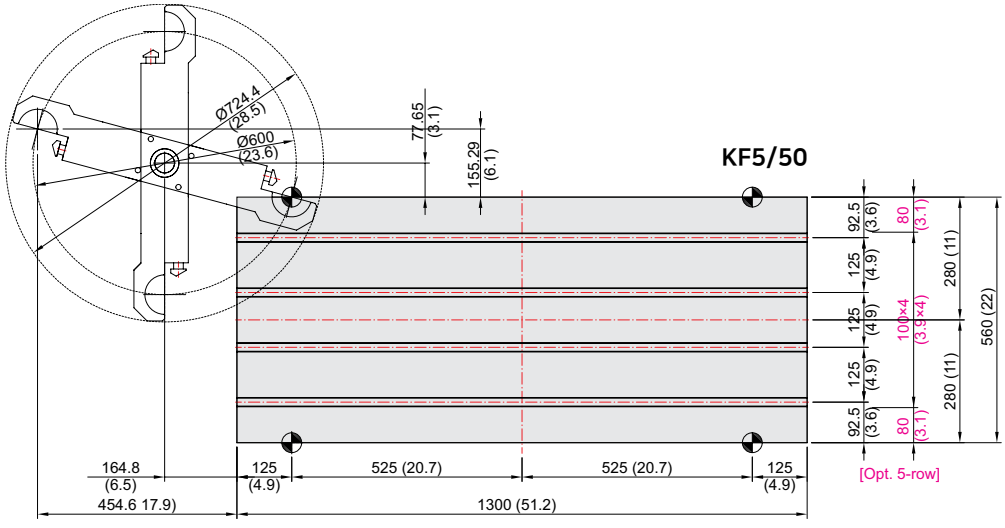


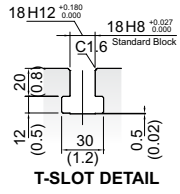


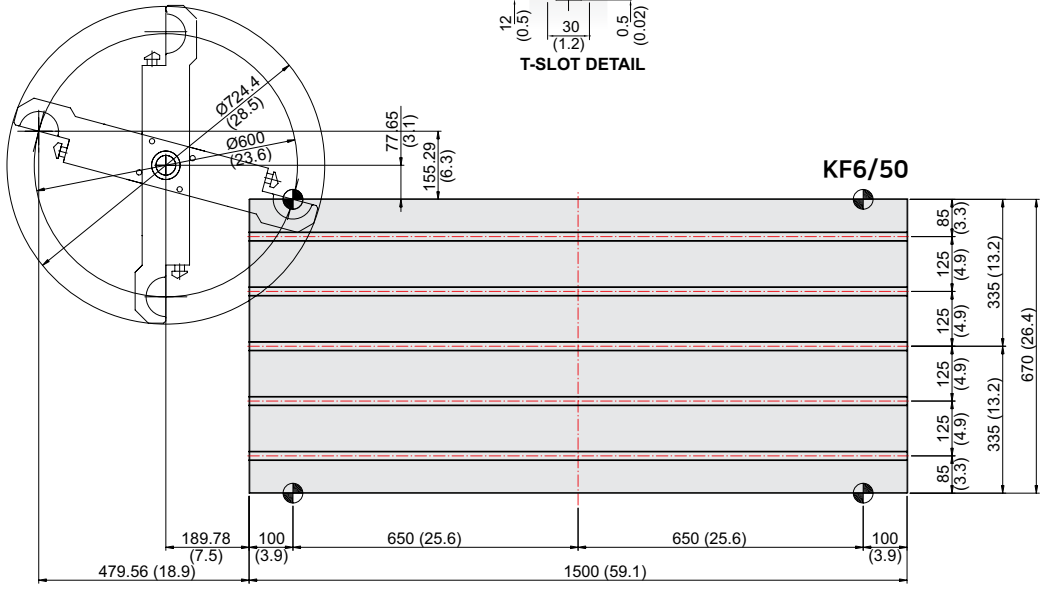
SPECIFICATIONS

Table Dimensions

unit : mm(in)







SPECIFICATIONS

Specifications

[ ] : Option

ITEM			KF4	KF4L
TABLE	Table Size (L×W)	mm(in)	1,000×450 (39.4″×17.7″)	1,200×450 (47.2″×17.7″)
	Maximum Load Capacity	kg(lb)	600 (1,323)	
FEED	Travel (X/Y/Z)	mm(in)	800/450/510 (31.5″/17.7″/20.1″)	1,050/450/510 (41.3″/17.7″/20.1″)
	Rapid Traverse Rate (X/Y/Z)	m/min (ipm)	36/36/30 [42/42/36] (1,417/1,417/1,181 [1,654/1,654/1,417])	
	Distance from Table Top to SP. Nose	mm(in)	150 ~ 660 [860](5.9″ ~ 25.9″ [33.9″])	
	Distance from Column to SP. center	mm(in)	585 (23″)	
	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)	30T : Ø80 [40T : Ø76]/Ø125 (30T : Ø3.1″ [40T : Ø3″]/Ø4.9″)	
	Max. Tool Length	mm(in)	300 (11.8″)	
	Max. Tool Weight	kg(lb)	8 (17.6)	
	Tool Selection Method	-	RANDOM [FIXED]	
	Tool Change Time C-C	sec	3.0	
TANK CAPACITY	Coolant Tank	ℓ (gal)	300 (11.8)	340 (89.8)
	Lubricating Tank	ℓ (gal)	Grease : 0.7 [Oil : 4] (Grease : 0.18 [Oil : 1])	
	Hydraulic Tank	ℓ (gal)	-	
POWER SUPPLY	Air Consumption (0.5MPa)	ℓ /min(gal)	110 (29)	
	Electric Power Supply	KVA	26	
	Thickness of Power Cable	mm^2	Over 25	
	Voltage	V/Hz	220/60 (200/50)	
MACHINE	Floor Space (L×W)	mm(in)	2,690×2,043 (105.8″×80.4″)	2,830×2,043 (111.4″×80.4″)
	Height	mm(in)	2,889 (113.7″)	2,889 (113.7″)
	Weight	kg(lb)	5,500 (12,125)	5,800 (12,787)
CNC	Controller		FANUC i Series - Smart Plus [12K : SIEMENS 828D] [12K : HEIDENHAIN TNC 620]	

Spindle

[ ] : Option

ITEM	**Speed** (r/min)	**Power** (Max./Cont.) kW (HP)	**Torque** (Max./Cont.) N.m (lbf.ft)	Driving Method
FANUC	8,000	18.5/11 (25/15)	118/52.5 (87/38.7)	DIRECT
	[8,000 : High-torque]	15/11 (20/15)	286/143 (210.9/105.5)	
	[10,000]	18.5/11 (25/15)	118/52.5 (87/38.7)	
	[12,000]	18.5/11 (25/15)	118/52.5 (87/38.7)	
	[15,000]	18.5/11 (25/15)	118/52.5 (87/38.7)	
SIEMENS	[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 (80/47)	

Specifications are subject to change without notice for improvement.

SPECIFICATIONS

Specifications

[ ] : Option

ITEM				KF5	KF5L
TABLE	Table Size (L×W)		mm(in)	1,300×560 (51.2″×22″)	1,500×560 (59.1″×22″)
	Maximum Load Capacity		kg(lb)	1,000 (,2204)	
FEED	Travel (X/Y/Z)		mm(in)	1,050/560/510 [635] (41.3/22/20 [25])	1,300/560/510 [635] (51.2/22/20 [25])
	Rapid Traverse Rate (X/Y/Z)		m/min (ipm)	36/36/30 [42/42/36] (1,417/1,417/1,181[1,654/1,654/1,417])	
	Distance from Table Top to SP. Nose		mm(in)	150~660 [150~785] [450~1,085] (5.9″~26″ [5.9″~30.9″] [17.7″~42.7″])	
	Distance from Column to SP. center		mm(in)	650 (25.6)	
	Slide Type		-	ROLLER TYPE LM GUIDE	
ATC	Number of Tools		ea	30 [40, 60]	
	Tool Shank		-	BBT40 [HSK-A63]	
	Max. Tool Dia. (W.T / W.O)		mm(in)	30T : Ø80/125 [40, 60T : Ø76/125] (30T : Ø3.1″/4.9″ [40, 60T : Ø3″/4.9″])	
	Max. Tool Length		mm(in)	300 (11.8″)	
	Max. Tool Weight		kg(lb)	8 (17.6)	
	Tool Selection Method		-	RANDOM [FIXED]	
	Tool Change Time	C-C	sec	3.0 [Z-Axis 635mm : 3.2]	
TANK CAPACITY	Coolant Tank		ℓ (gal)	340 (89.8)	370 (97.7)
	Lubricating Tank		ℓ (gal)	Grease : 0.7 [Oil : 4] (Grease : 0.18 [Oil : 1])	
	Hydraulic Tank		ℓ (gal)	- [BUILT-IN : 3.9] ([BUILT-IN : 1])	
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)	2,830×2,176 (111.4″×85.7″)	3,316×2,183 (130.6″×85.7″)
	Height		mm(in)	2,889 [3,014/3,314] (113.7″ [118.7″/130.5″])	
	Weight		kg(lb)	6,500 [7,000] (14,330 [15,432])	7,000 (15,432)
CNC	Controller		-	FANUC i Series - Smart Plus [12K : SIEMENS 828D] [12K : HEIDENHAIN TNC 620]	

Spindle

[ ] : Option

ITEM	**Speed** (r/min)	**Power** (Max./Cont.) kW (HP)	**Torque** (Max./Cont.) N.m (lbf.ft)	**Driving Method**
FANUC	8,000	18.5/11 (25/15)	118/52.5 (87/38.7)	DIRECT
	[8,000 : High-torque]	15/11 (20/15)	286/143 (210.9/105.5)	
	[10,000]	18.5/11 (25/15)	118/52.5 (87/38.7)	
	[12,000]	18.5/11 (25/15)	118/52.5 (87/38.7)	
	[15,000]	18.5/11 (25/15)	118/52.5 (87/38.7)	
	[20,000]	22/18.5 (29.5/25)	98/80 (72.3/59)	BUILT-IN
SIEMENS	[12,000]	16.2/8.5 (21.7/11.4)	119.7/63 (88.3/47)	DIRECT
HEIDENHAIN	[12,000]	17/10 (22.8/13.4)	108.6/63.7 (80.1/47)	

Specifications are subject to change without notice for improvement.

SPECIFICATIONS

Specifications

[ ] : Option

ITEM			KF6	KF6L
TABLE	Table Size (L×W)	mm(in)	1,500×670 (59.1″×26.4″)	1,700×670 (66.9″×26.4″)
	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″)	1,500/670/635 (59.1″/26.4″/25″)
	Rapid Traverse Rate (X/Y/Z)	m/min (ipm)	36/36/30 (1,417/1,417/1,181)	
	Distance from Table Top to SP. Nose	mm(in)	150 ~ 785 [450 ~ 1,085] (5.9″~30.9″) [17.7″~42.7″])	
	Distance from Column to SP. center	mm(in)	690 (27.2″)	
	Slide Type	-	ROLLER TYPE LM GUIDE	
ATC	Number of Tools	ea	30 [40, 60]	
	Tool Shank	-	BBT40 [HSK-A63]	
	Max. Tool Dia. (W.T / W.O)	mm(in)	30T : Ø80/125 [40, 60T : Ø76/125] (30T : Ø3.1″/4.9″ [40, 60T : Ø3″/4.9″])	
	Max. Tool Length	mm(in)	300 (11.8″)	
	Max. Tool Weight	kg(lb)	8 (17.6)	
	Tool Selection Method	-	RANDOM [FIXED]	
	Tool Change Time C-C	sec	3.2	
TANK CAPACITY	Coolant Tank	ℓ (gal)	370 (97.7)	390
	Lubricating Tank	ℓ (gal)	Grease : 0.7 [Oil : 4] (Grease : 0.18 [Oil : 1])	
	Hydraulic Tank	ℓ (gal)	- [BUILT-IN : 3.9] ([BUILT-IN : 1])	
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)	3,316×2,494 (130.6″×98.2″)	3,790×2,494 (149.2″×98.2″)
	Height	mm(in)	3,062 (120.6″)	3,062 (130.6″×120.6″)
	Weight	kg(lb)	7,500 (16,535)	7,800 (17,196)
CNC	Controller	-	FANUC i Series - Smart Plus [12K : SIEMENS 828D] [12K : HEIDENHAIN TNC 620]	

Spindle

[ ] : Option

ITEM	**Speed** (r/min)	**Power** (Max./Cont.) kW (HP)	**Torque** (Max./Cont.) N.m (lbf.ft)	**Driving Method**
FANUC	8,000	18.5/11 (25/15)	118/52.5 (87/38.7)	DIRECT
	[8,000 : High-torque]	15/11 (20/15)	286/143 (210.9/105.5)	
	[10,000]	18.5/11 (25/15)	118/52.5 (87/38.7)	
	[12,000]	18.5/11 (25/15)	118/52.5 (87/38.7)	
	[15,000]	18.5/11 (25/15)	118/52.5 (87/38.7)	
	[20,000]	22/18.5 (29.5/25)	98/80 (72.3/59)	BUILT-IN
SIEMENS	[12,000]	16.2/8.5 (21.7/11.4)	119.7/63 (88.3/47)	DIRECT
HEIDENHAIN	[12,000]	17/10 (22.8/13.4)	108.6/63.7 (80.1/47)	

Specifications are subject to change without notice for improvement.

SPECIFICATIONS

Specifications

[ ] : Option

ITEM				KF5/50	KF6/50
TABLE	Table Size (L×W)		mm(in)	1,300×560 (51.2″×22″)	1,500×670 (59.1x26.4)
	Maximum Load Capacity		kg(lb)	1,000 (,2204)	1,300 (2,866)
SPINDLE	Taper		-	BBT50 [HSK-A100]	
	Speed (rpm)		r/min	8,000	
	Power (Max./Cont.)		kW(HP)	22/11 (30/15)	
	Torque (Max./Cont.)		N·m (lbf·ft)	353.2/143 (260.5/105.5)	
	Driving Method		-	DIRECT	
FEED	Travel (X/Y/Z)		mm(in)	1,050/560/510 [635] (41.3″/22″/20″ [25″])	1,300/670/635 (51.2″/26.4″/25″)
	Rapid Traverse Rate (X/Y/Z)		m/min (ipm)	36/36/30 (1,417/1,417/1,181)	
	Distance from Table Top to SP. Nose		mm(in)	200~710 [200~835] [500~1,135] (7.9″~27.9″ [7.9″~32.9″] [19.7″~44.7″])	200 ~ 835 (7.9″~32.9″)
	Distance from Column to SP. center		mm(in)	650 (25.6″)	690 (27.2″)
	Slide Type		-	ROLLER TYPE LM GUIDE	
ATC	Number of Tools		ea	24	24 [32]
	Tool Shank		-	BBT50 [HSK-A100]	
	Max. Tool Dia. (W.T / W.O)		mm(in)	Ø125/Ø250 (Ø4.9″/Ø9.8″)	
	Max. Tool Length		mm(in)	350 (13.8″)	
	Max. Tool Weight		kg(lb)	15 (33.1)	
	Tool Selection Method		-	RANDOM	
	Tool Change Time	C-C	sec	5.5	
TANK CAPACITY	Coolant Tank		ℓ (gal)	340 (89.8)	370 (97.7)
	Lubricating Tank		ℓ (gal)	Grease : 0.7 [Oil : 4] (Grease : 0.18 [Oil : 1])	
	Hydraulic Tank		ℓ (gal)	-	
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)	2,830×2,176 (111.4″×85.7″)	3,316×2,494 (130.6″×98.2″)
	Height		mm(in)	3,167 [3,292/3,592] (124.7″ [129.6″/141.4″])	3,342 (131.6″)
	Weight		kg(lb)	7,300 (16,094)	8,900 (19,621)
CNC	Controller		-	FANUC i Series - Smart Plus	

Specifications are subject to change without notice for improvement.

CONTROLLER

FANUC i Series - Smart Plus

[ ] : Option ☆ Needed technical consultation

Controlled axis / Display / Accuracy Compensation	
Control axis	3 axis (X, Y, Z)
	[4 axis (X, Y, Z, A)] [5 axis (X, Y, Z, A, C)]
Simultaneously controlled axis	3 axis [Max. 4 axis]
Least setting Unit	X, Y, Z axis : 0.001 mm (0.0001 inch)
	B axis : 1 deg [0.001] deg
Least input increment	X, Y, Z axis : 0.001 mm (0.0001 inch)
	B axis : 1 deg [0.001] deg
Inch / Metric conversion	
High response vector control	
Interlock	All axis / Each axis
Machine lock	All axis
Backlash compensation	± 0 ~ 9999 pulses (Rapid traverse / Cutting feed)
Position switch	
LCD / MDI	15 inch LCD unit (with Touch Panel)
Feedback	Absolute motor feedback
Stored stroke check 1	Over travel
Stored stroke check 2, 3	
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 axis (Max.)
Feed function / Acc. & Dec. control	
Manual feed	Rapid traverse
	Jog : 0~2,000mm/min (79 ipm)
	Manual handle : x1, x10, x100 pulses
	Reference position return
Cutting Feed command	Direct input F code
Feedrate override	0 ~ 200% (10% Unit)
Rapid traverse override	1%, 25%, 50%, 100%
Override cancel	
Feed per minute	G94
Feed per revolution	G95
Cylindrical interpolation	G07.1
Inverse time feed	G93
Look-ahead block	200 blocks (AI APC)
Program input	
Tape Code	EIA / ISO
Optional block skip	9 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
Programmable mirror image	G51.1, G50.1
G code preventing buffering	G4.1
Optional chamfering corner R	

Program input	
Polar coordinate command	G15, G16
Canned cycle	G73, G74, G76, G80 ~ G89
Scaling	G50, G51
Coordinate system rotation	G68, G69
Conversational Program	Smart Guide-i
Auxiliary function / Spindle speed function	
Level-up M Code	Multi / Bypass M code
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	5,120m (2MB)
No. of registerable programs	1,000 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	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 24 languages
Display language switching	Selection of 5 optional Languages
LCD Screen Saver	Screen saver

Option	
Fast ethernet	Needed option board
Data server	Needed option board
Protection of data at 8 levels	
Additional Axis	
Manual handle feed	2/3 units
Addition of custom macro	#100 ~ #199,
	#500 ~ #999, #98000 ~ #98499
Add. Workpiece	Max. 300 pairs (G54.1 P1 ~ P300)
AICC II	400 blocks ☆

Figures in inch are converted from metric values. | Specifications are subject to change without notice for improvement.

CONTROLLER

SIEMENS 828D

[ ] : Option ☆ Needed technical consultation

Controlled axis / Display / Accuracy Compensation	
Control axis	3 axis (X, Y, Z)
	[4 axis (X, Y, Z, A)]
	[5 axis (X, Y, Z, A, C)]
Simultaneously controlled axis	Max. 4 axis
Least setting Unit	X, Y, Z axis : 0.001 mm (0.0001 inch)
	[A, C (B) axis : 1 deg [0.001] deg]
Least input increment	X, Y, Z축 : 0.001 mm (0.0001 inch)
	[A, C (B) axis : 1 deg [0.001] deg]
Inch / Metric changeover	G70 (inch) / G71 (metric)
Interlock	All axis / Each axis
Pitch error compensation	Ball screw Pitch error compensation
Feedforward control	
LCD / MDI	15 inch color LCD (With Touch panel)
Keyboard	QWERTY full keyboard
Stored stroke check	Over travel
Operation	
Automatic operation	
MDI operation	
Program restart	
Program check function	Dry run / Program check / Machine lock
Single block	
Block search	Block search
Reposition	
Working area limit	Working area limitations
Interpolation functions	
Positioning	G00
Linear interpolation	G01
Circular interpolation	Circular Interpolation CW (G02)
	Circular Interpolation CCW (G03)
Exact position stop	Single block exact stop (G09)
	Exact stop G60 (G601, G602, G603)
Dwell	Dwell (G04)
Reference position return	Return to reference point
	Return to 2nd reference point
Helical interpolation	
Spline interpolation	Non-uniform rational B splines
Compressor for 3-axis machining (Improving machining quality)	Compcad /Compcurv (Cycle 832)
Feed function / Acc. & Dec. control	
Manual feed	Rapid traverse
	Jog
	Manual handle
	Reference position return
Cutting Feed command	Direct input F code
Feedrate override	0 ~ 200% (10% Unit)
Rapid traverse override	1%, 25%, 50%, 100%
Feed per minute	G94
Feed per revolution	G95
Look-ahead block	300 block
Program input	
ISO correspondence	G291(ISO)/G290
	(ISO G Code system-A)
Optional block skip	2
Program stop / end	M00, M01 / M02, M30
Maximum command unit	± 999,999.999 mm, ± 99,999.9999 inch
Plane selection	X-Y : G17, X-Z : G18, Y-Z : G19
Workpiece coordinate system	G54 ~ G57, G505~G549
	G500 (Basic frame - setable zero offset)
	G53 (Work offset non modal)
	G153 (basic frame non modal)
Sub program call	11 folds nested
G code preventing buffering	STOPRE
Drilling/Milling cycle	Programing (Cycle 82, 83, 84, 840)
User cycle	

Auxiliary function / Spindle speed function	
Auxiliary function	M Code 4 digit
Spindle speed function	S Code 5 digit
Spindle override	0% ~ 150% (10% Unit)
Spindle orientation	SPOS
Rigid tapping	
Autometic mode Interchange	Spindle / Axis mode
Constant surface speed control	G96, G97
Spindle speed limitation	LIMS
Tool function / Tool compensation	
Tool function	Tool number & Tool name
	Tool : T + Offset : D
Tool life management	
Tools in tool list	256 ea
Cutting Edges in tool list	512 ea
Tool radius compensation	ISO (G40, G41, G42)
Tool length offset	
Geometry / Wear compensation	
Measurement of tool length	
Tool management function	
Editing function	
Part program storage size	5MB : (NC SRAM)
	2GB(V4.95 later) : (NC CARD)
No. of registerable programs	750 ea
External Strorage devices	Local network, Server, USB, Flash drive
Background editing	
Extended part program editing	Copy, move and change of NC program
Memory card program edit	
Data input / output & Interface	
I/O interface	USB memory interface
	Embedded Ethernet Interface
Screenshot	
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.
Multi language display	Support 9 languages Chinese (Simplified/Traditional), English, French, German, Italian, Korean, Portuguese, Spanish
	[☆ 22 Support languages : Inquiry need]
LCD Screen Saver	Screen saver & Motion sensing

NC Functional Std.	
ShopMill (P17)	Machining step programming for milling
Real time simulation (P22)	Real time simulation
3D simulation (P25)	3D simulation
Network drive (P01)	Network drive
Advanced Surface (S17)	Specialized option for modl machining 1

■ Option	
Top Surface (S17)	Specialized option for modl machining 2
Top Speed plus (S62)	Specialized option for modl machining 3
Execute external storage device, EES (P75)	
Added optional skip block (P16)	10 ea
Contour handwheel (M08)	
Axis additional option (C20)	☆

GLOBAL NETWORK



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