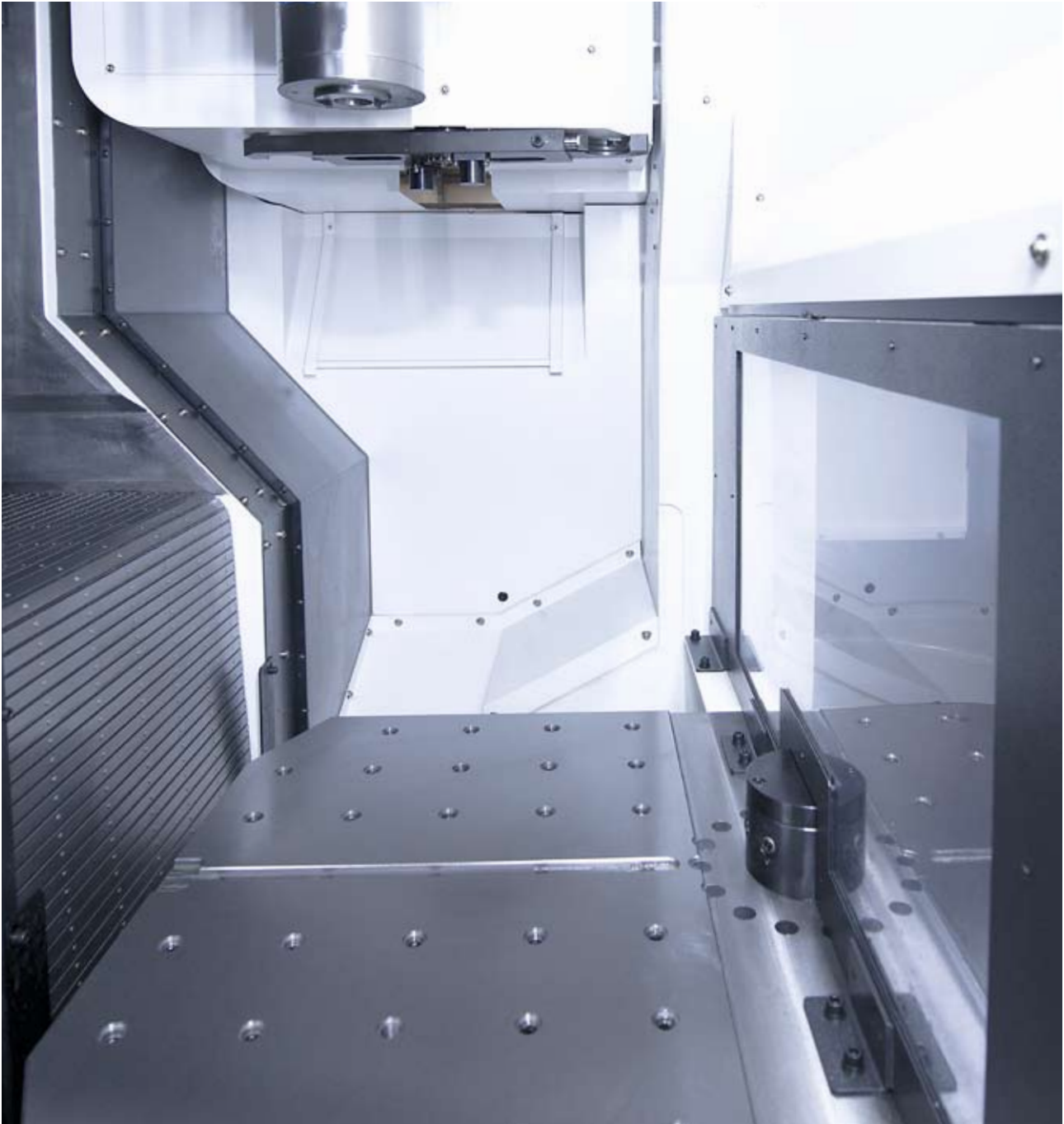# FD Series

HYUNDAI WIA Column Moving Type Vertical Machining Center

HYUNDAI
WIA

Technical Leader

The Vertical Machining Center FD Series by Huyndai WIA CORP, the national (Kor) tool maker with years of expertise and the latest technology, boasts Dual Tables that allows column shifting, maximizing productivity.

ITEM	Y-Axis Stroke			Spindle			Taper	Magazine	
	410mm(16.1")	460mm(18.1")	600mm(23.6")	8,000	10,000	12,000	BT40	24 TOOL	30 TOOL
F410D	●			○	●		●	●	
F500D		●		●	○	○	●	●	○
F600D			●	●		○	●	●	○

● : Standard   ○ : Option

Dual Tables for high productivity High tech
Machining Center featuring column moving

FD Series

- High-precision P4 Angular Contact Bearing main spindle
- High-powered, high-torque main spindle for heavy duty cutting
- Dual Tables for high productivity
- Latest Servo ATC for fastest tool exchange in the class
- Roller Type LM Guide and Box Guide for optimal feed (F500D)
- Roller Type LM Guide on all spindles for high precision heavy cutting (F600D)
- Latest SIEMENS 828D Controllers for various software support

01
FD Series

F410D Basic Features
## High Speed & Productivity Vertical Machining Center

01

Moving Column

The F400D uses a traveling column design. The table and the work piece remain stationary during machining. This design provides uniform loads to; guideways, ballscrews and the spindle motor. In addition, the machines accuracy is increased measurably by enlarging the width of the column, thus minimizing heat distortion within the casting.

02

LM Guideway

F410D features Ball Type LM Guide for reduction in noise and idle time during feeds without sacrificing efficiency.
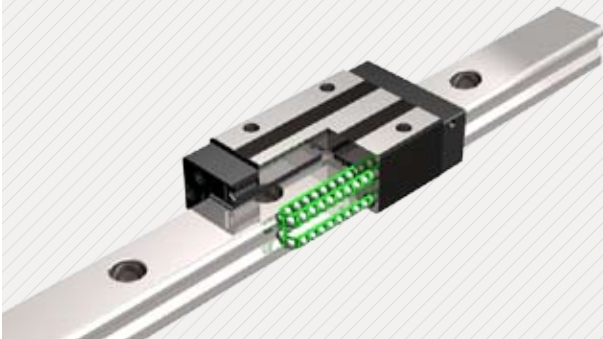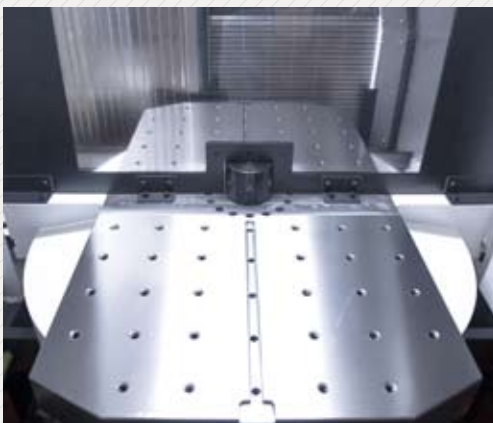
03

Double Anchored Ball screw

All axis are driven by large diameter, high precision double-nut ball screws. The double pretension design provides outstanding positioning and repeatability with virtually no thermal growth.

Directly Coupled Servo Motor

The spindle motor is directly connected to the main spindle by a high speed and high precision coupling.
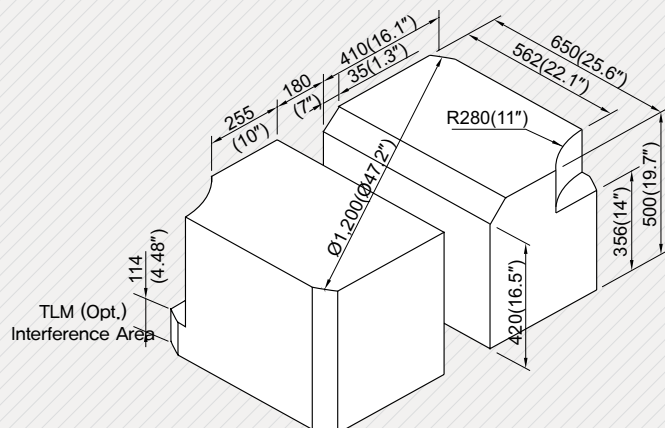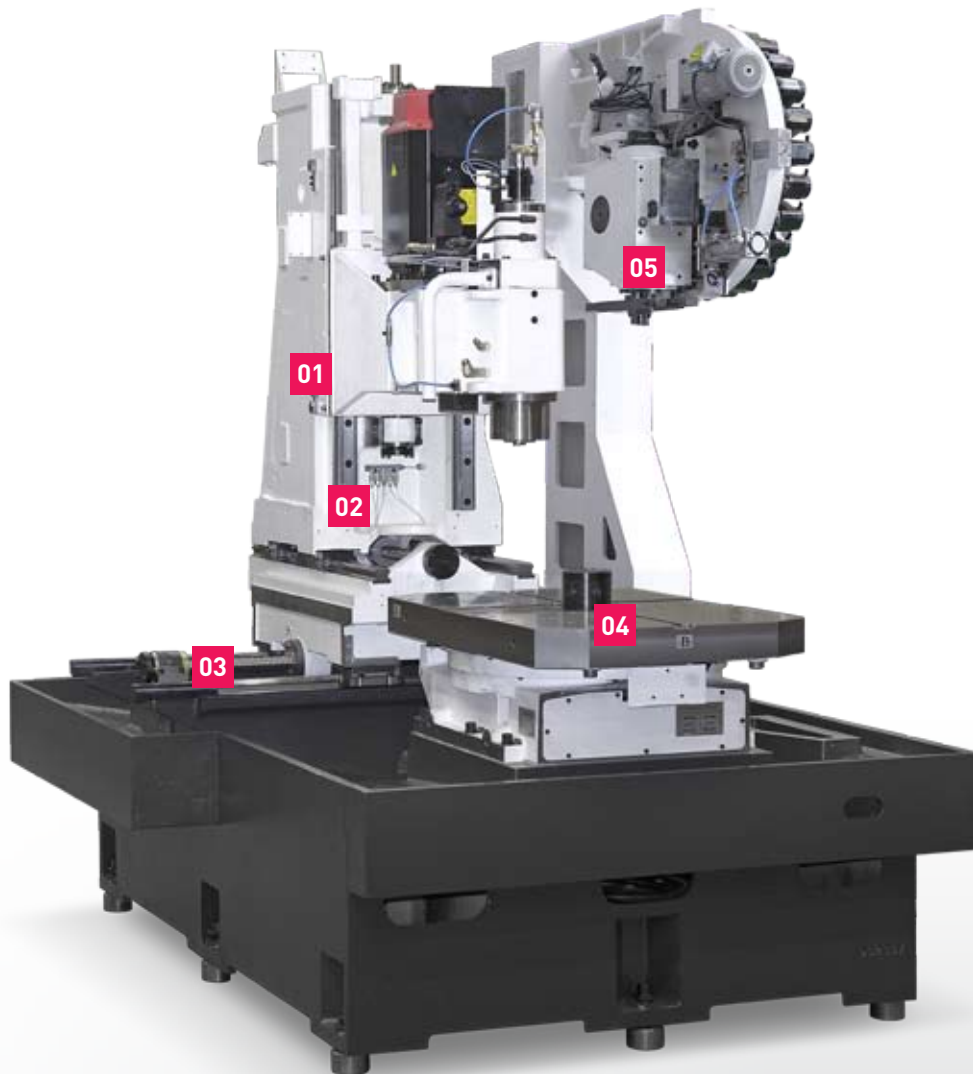
04

Dual Table

High-speed 180°Index Turning Table increases productivity by providing the ability to load and unload on the outer table while processing on the other table.

⊙ **Table Size** (L×W) : 2-560×410 mm
(2-22"×16.1")

⊙ **Max. Load Capacity** : 2-250 kg

⊙ **Table Change Time** : 5.2 sec

05 ATC Speed Improvement

Tool to Tool Time

Before	1.6 sec
After	1.3 sec

19% reduction

Chip to Chip Time

Before	3.8 sec
After	3.5 sec

8% reduction

- ⊙ **Rapid Feed Rate** (X/Y/Z axis) : 36/36/30 m/min
- ⊙ **Spindle Speed** : 10,000 Belt [8,000 Belt] rpm
- ⊙ **Spindle Output** (Max./Cont.) : 18.5/15[16] kW

- ⊙ **Travel** (X/Y/Z axis) :
  570/410/580 mm (22.4"/16.1"/22.8")
- ⊙ **Spindle Torque** (Max./Cont.) :
  117.7/95.4 [152.8] N·m

[SIEMENS]

02 F500D Basic Features

## High Speed & Productivity Vertical Machining Center

01

Moving Column

The F500D uses a moving column design. The table and the work piece remain stationary during machining. This design provides uniform loads to; guideways, ballscrews and the spindle motor. In addition, the machines accuracy is increased measurably by enlarging the width of the column, thus minimizing heat distortion within the casting.

02

Hybrid Type Slideway

Each spindle on F500D is designed with slideways optimized to the model. Sturdy **Box Guide** on Z-axis for heavy loads, and **Roller Type LM Guides** on X and Y axis for optimal feeds.
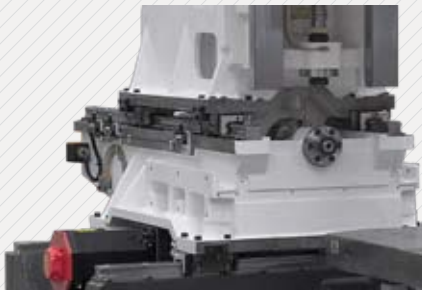
03

Double Anchored Ball screw

All axis are driven by large diameter, high precision double-nut ball screws. The double pretension design provides outstanding positioning and repeatability with virtually no thermal growth.

Directly Coupled Servo Motor

Each axis is directly connected to a highly reliable digital servo motor to provide high rigidity and minimal thermal distortion.

Dual Table

The automatic index table is incorporated into the standard design of the machine. Both sides of the pallet are separated by a heavy-duty guard. Because the table remains stationary during cutting, work can be safely set up on the table side not in use.

04

500(19.7")
500(19.7")
700(27.5")
30(1.2")
R75(2.9")
R305(12")
145 (5.7")
355(13.9")
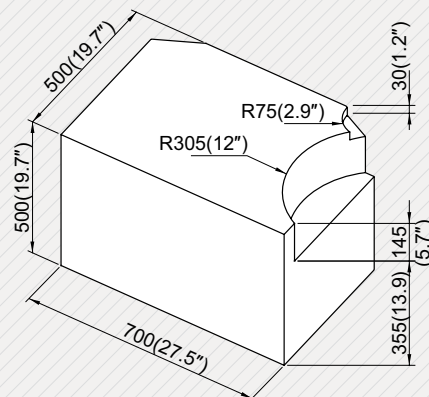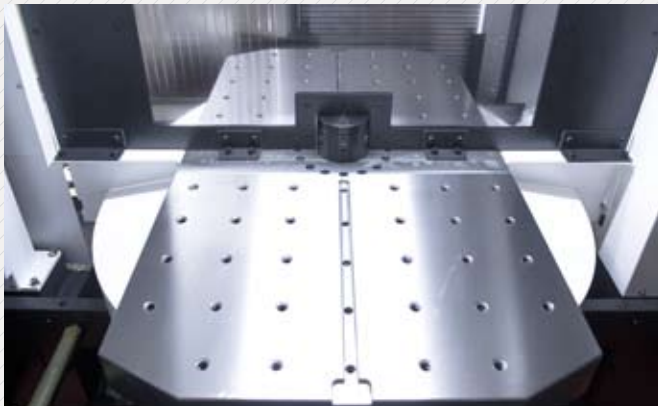
- ⊙ **Table Size** (L×W) : **2-700×500** mm
  (**2-27.5"×19.7"**)
- ⊙ **Max. Load Capacity** : **2-350** kg
- ⊙ **Table Change Time** : **6** sec

04 ATC Speed Improvement

Tool to Tool Time

| Before | 2.4 sec |
| After | 2.1 sec |

13% reduction

Chip to Chip Time

| Before | 5.5 sec |
| After | 4.3 sec |

15% reduction
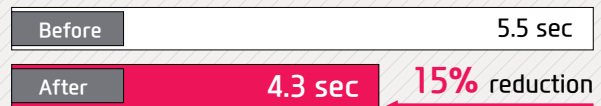
- **Rapid Feed Rate** (X/Y/Z axis) : 40/40/30 m/min
- **Travel** (X/Y/Z axis) : 600/460/570 mm (23.6"/18.1"/22.4")
- **Spindle Speed** : 8,000 Belt [10,000 Belt] [12,000 Direct] [8,000 Belt] rpm
- **Spindle Output** (Max./Cont.) : 15/11 [15/11] [11/7.5] [17] kW
- **Spindle Torque** (Max./Cont.) : 287/143 [230/115] [70/47] [286] N.m

[SIEMENS]

03

F600D Basic Features
High Speed & Productivity Vertical Machining Center

01
Moving Column

The F600D uses a traveling column design. The table and the work piece remain stationary during machining. This design provides uniform loads to; guideways, ballscrews and the spindle motor. In addition, the machines accuracy is increased measurably by enlarging the width of the column, thus minimizing heat distortion within the casting.

02
Roller Type LM Guide

The feed mechanism on F600D features adjustable linear roller guide for high-stiffness, reducing idle time.

Rapid Feed Rate
42 m/min

03
Double Anchored Ball screw

All axis are driven by large diameter, high precision double-nut ball screws. The double pretension design provides outstanding positioning and repeatability with virtually no thermal growth.

Directly Coupled Servo Motor

Each axis is directly connected to a highly reliable digital servo motor to provide high rigidity and minimal thermal distortion.
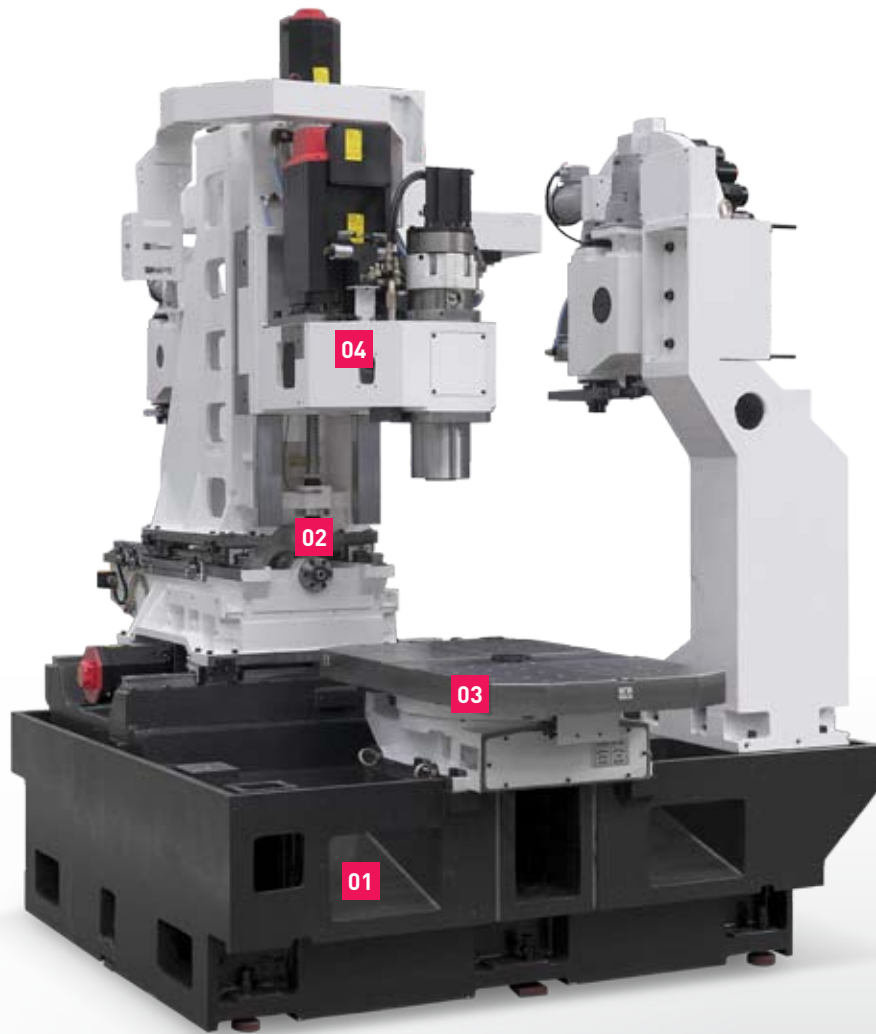
04
Dual Table

The automatic index table is incorporated into the standard design of the machine. Both sides of the pallet are separated by a heavy-duty guard. Because the table remains stationary during cutting, work can be safely set up on the table side not in use.
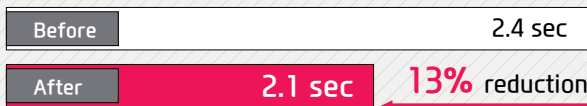
650(25.6")
216(8.5")
78.7(3.1")
R275(10.8")
500(19.7")
115(3.5")
900(35.4")

- ⊙ **Table Size** (L×W) : **2-900×650** mm
  (2-35.4"×25.6")
- ⊙ **Max. Load Capacity** : **2-400** kg
- ⊙ **Table Change Time** : **8.5** sec

05 ATC Speed Improvement

Tool to Tool Time

Before	2.3 sec
After	2.0 sec

13% reduction

Chip to Chip Time

Before	5.7 sec
After	4.2 sec

26% reduction
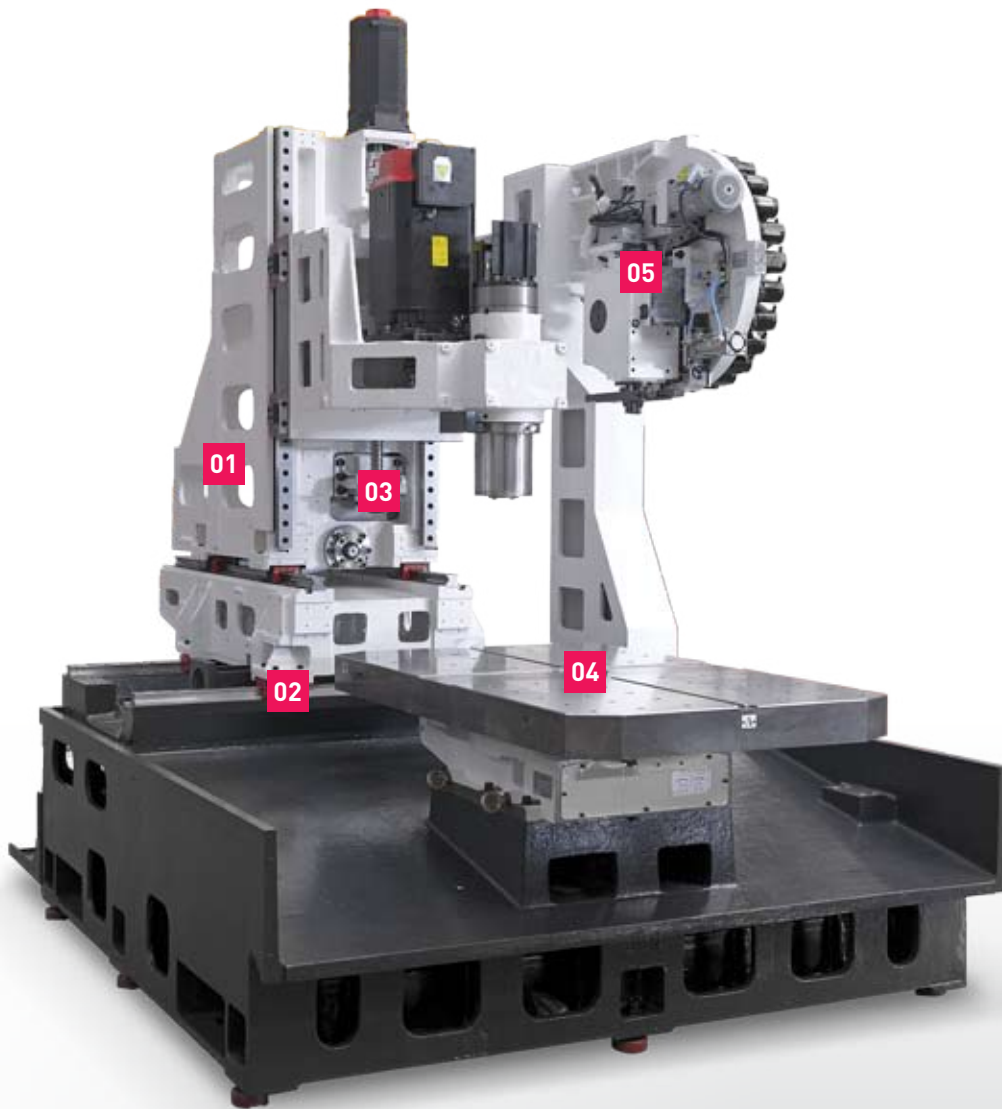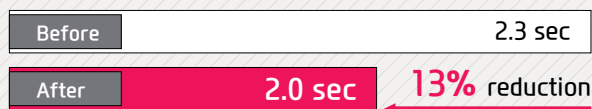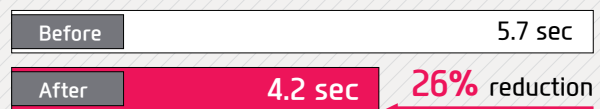
- ⊙ **Rapid Feed Rate** (X/Y/Z axis) : 42/42/42 m/min

- ⊙ **Spindle Speed** : 8,000 Belt [12,000 Direct] rpm

- ⊙ **Spindle Output**(Max./Cont.) : 15/11 [11/7.5] kW

- ⊙ **Travel** (X/Y/Z axis) :
  800/600/600 mm (31.5"/23.6"/23.6")

- ⊙ **Spindle Torque** (Max./Cont.) :
  287/143 [70/47] N.m

04

High-Precision Spindle

Long Lasting High Accuracy & Excellent Performance
Vertical Machining Center
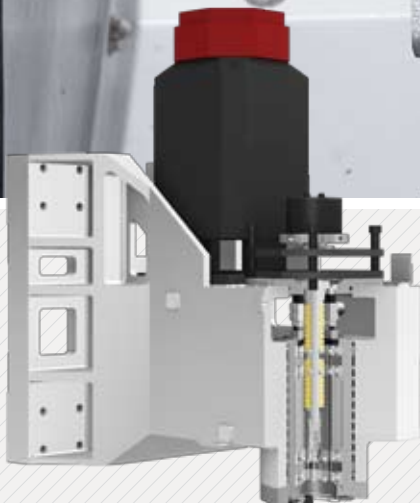
Belt Type Spindle

By using ultra precision class 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 a hydraulic tool lock system the machining stability has been increased.

OPTION

Direct Type Spindle (F500D/600D)

The spindle motor is directly connected to the main spindle by a high speed and high precision coupling.

Rapid spindle acceleration and deceleration is performed without backlash. The coupling also minimizes vibration and heat transfer from the motor preventing thermal growth.

- ⊙ **Spindle Speed** : 12,000 rpm
- ⊙ **Spindle Taper** : ПT #40
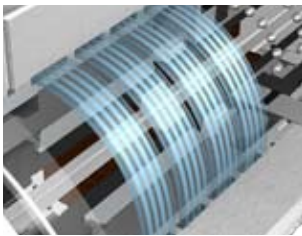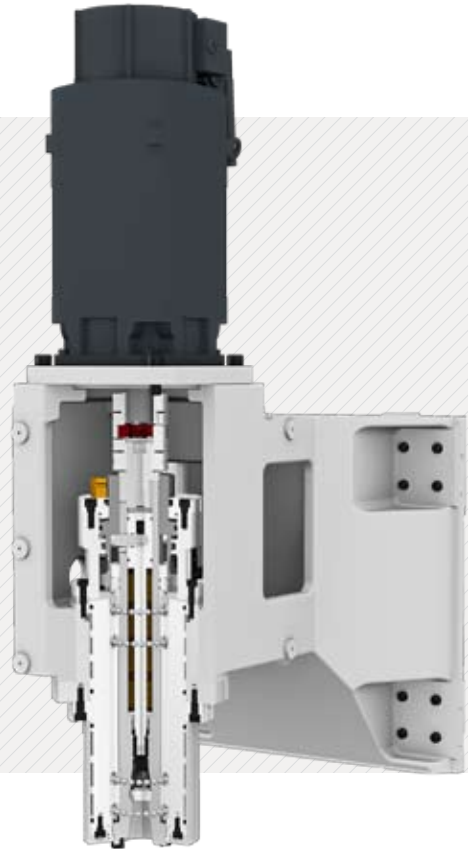
Spindle Cooling **OPTION**

Machine accuracy is maintained by using a cooling system that circulates cooled oil around the spindle reducing the thermal effects of any heat generated

Spindle Thru Coolant **OPTION**

Through the spindle coolant is available. This is particularly useful for deep hole drilling and helps increase tool life and decrease cycle time.

20 bar / 30 bar / 70 bar

Tool Holders

CAT **OPTION**

BT

SIEMENS 1PH8 Spindle Motor

The characteristics of 1PH8 Series Motors include a maximum concentricity of 10μm, unsurpassed quality and a short operating period, which make them stand out as superb machine tools in quality and performance.

F410D (8,000r/min, Belt)

Power (kW) — Torque (N·m)

- 182N·m (S6-40%)
- 18kW (S6-40%)
- 128N·m (Cont.)
- 12kW (Cont.)

Spindle Speed (r/min)

F500D (10,000r/min, Belt)

Power (kW) — Torque (N·m)

- 300N·m (S6-40%)
- 43kW (S6-40%)
- 157N·m (Cont.)
- 18.5kW (Cont.)

Spindle Speed (r/min)
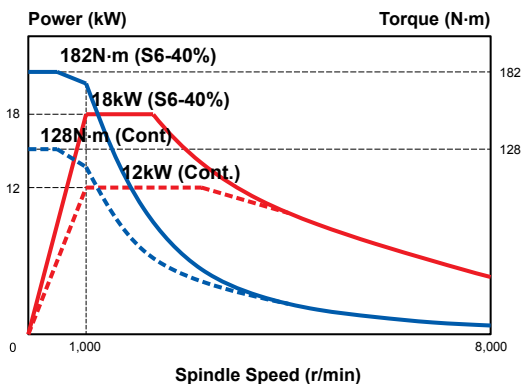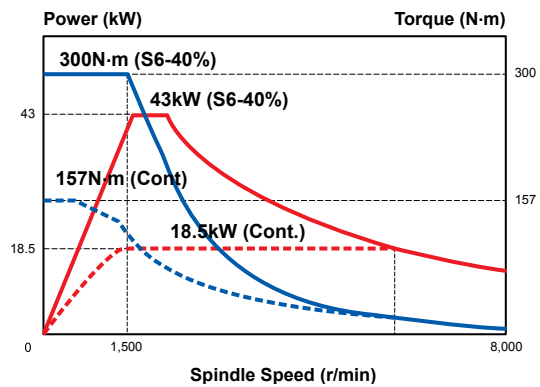
FANUC Spindle

F410D (10,000r/min, Belt)

Power (kW) — Torque (N·m)

- 18.5kW (30min S3 60%)
- 15kW (Cont.)
- 117.7N·m (30min S3 60%)
- 95.4N·m (Cont.)

Spindle Speed (r/min)
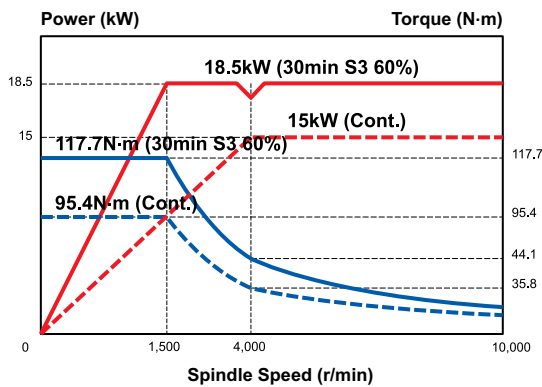
F500D/600D (8,000r/min, Belt)

Power (kW) — Torque (N·m)

- 287N·m (30min S3 60%)
- 143N·m (Cont.)
- 15kW (30min S3 60%)
- 11kW (Cont.)
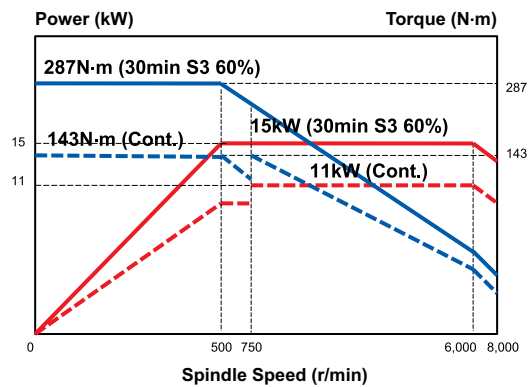
Spindle Speed (r/min)

F500D (10,000r/min, Belt) OPTION

Power (kW) — Torque (N·m)

- 230N·m (15min S3 15%)
- 15kW (30min S3 60%)
- 115N·m (Cont.)
- 11kW (Cont.)
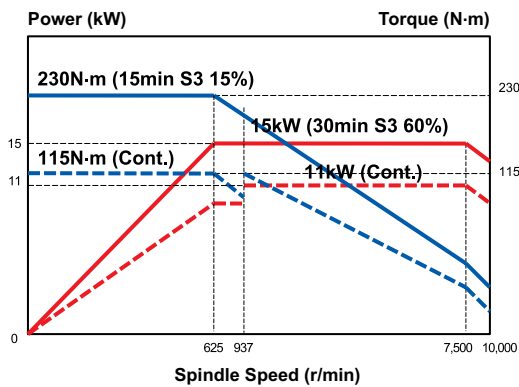
Spindle Speed (r/min)

F600D (12,000r/min, Direct) OPTION

Power (kW) — Torque (N·m)

- 11kW (30min S3 60%)
- 70N·m (30min S3 60%)
- 7.5kW (Cont.)
- 47N·m (Cont.)
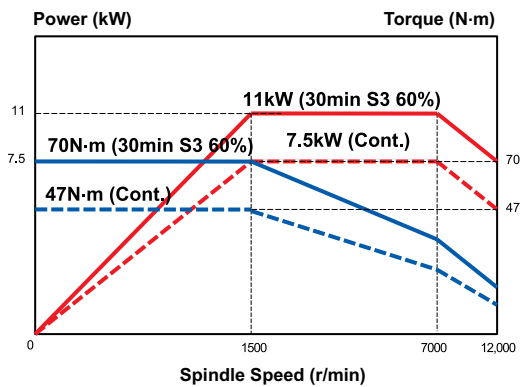
Spindle Speed (r/min)

Machining Capability

F500D
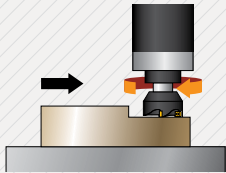
FACE MILL 〈Material(JIS):S45C(Carbon steel)〉

Tool diameter	Ø80 x 6F
Cutting depth	4.5 mm
Cutting width	70 mm
Cutting speed	286 m/min
Spindle rpm	1,137 r/min
Feed rate	0.99 mm/rev
Chip quantity	350 cc/min
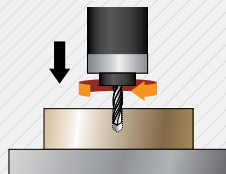
DRILL 〈Material(JIS):S45C(Carbon steel)〉

Tool diameter	Ø43 x MT4
Cutting depth	43 mm
Cutting speed	27 m/min
Spindle rpm	199 r/min
Feed rate	0.38 mm/rev
Chip quantity	109 cc/min
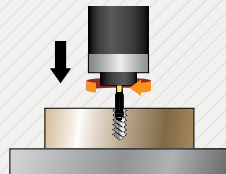
TAP. 〈Material(JIS):S45C(Carbon steel)〉

Tap spec./Pitch	M42 x P4.5
Cutting depth	42 mm
Cutting speed	7 m/min
Spindle rpm	53 r/min
Feed rate	4.5 mm/rev

❖ The above result might be different by types of processing circumstance

Rigid Tapping

Rigid tapping is standard and eliminates the need for special tooling.

Consistent and accurate tapping increases tap life and reduces the machining cycle time.

Sample Workpieces

05

ATC & Magazine

High Productivity Achieved with High Rigidity,
Accuracy Machining

24 Tool Magazine

30 Tool Magazine

OPTION

Servo ATC

Servo Twin Arm ATC implementation further enhances position control, as well as shorter tool change time, maximizing productivity.

F600D Std.

Tool to Tool Time

13% Reduce

Chip to Chip Time

26% Reduce
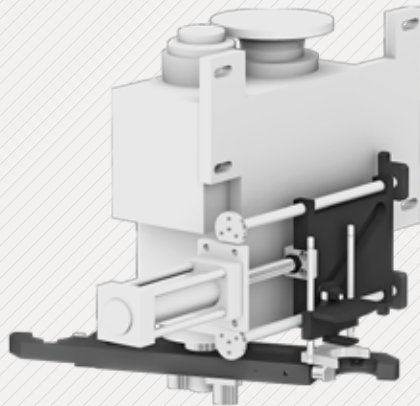
Magazine

The tool magazine holds 24 tools as standard and 30 tools as an option. Random access allows for pre-staging of tools for faster tool changes and increased productivity
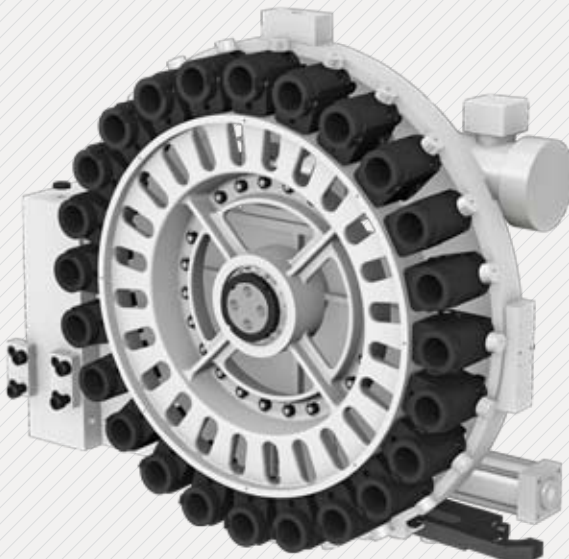
F410D

⊙ No. of Tools : 24 EA

⊙ Tool Shank : BT40

⊙ Max. Tool Dia. (W.T/W.O)
   Ø90/Ø150(Ø3.5″/Ø5.9″)

⊙ Max. Tool Length : 8 kg

⊙ Tool Selection Method :
   Random

F500D/600D

⊙ No. of Tools : 24 [30] EA

⊙ Tool Shank : BT40

⊙ Max. Tool Dia. (W.T/W.O)
   Ø90/Ø150(Ø3.5″/Ø5.9″)

⊙ Max. Tool Length : 8 kg

⊙ Tool Selection Method :
   Random

N6 Smart System

FD Series

OPTION

Software for smart operating and machining

Faster processing programming and enhanced processing accuracy are possible through **HYUNDAI WIA Smart System**. It also maximizes productivity through equipment monitoring and environment-friendly software.

HW-MMS

HW-TM | HW-MCS | HW-AFC

HW-TDC | HW-WARMUP

Machine Monitoring

Intelligent Machining

High Precision

User Friendly

High Productivity

Energy Saving

HW-TOM | HW-WCM

HW-ESS
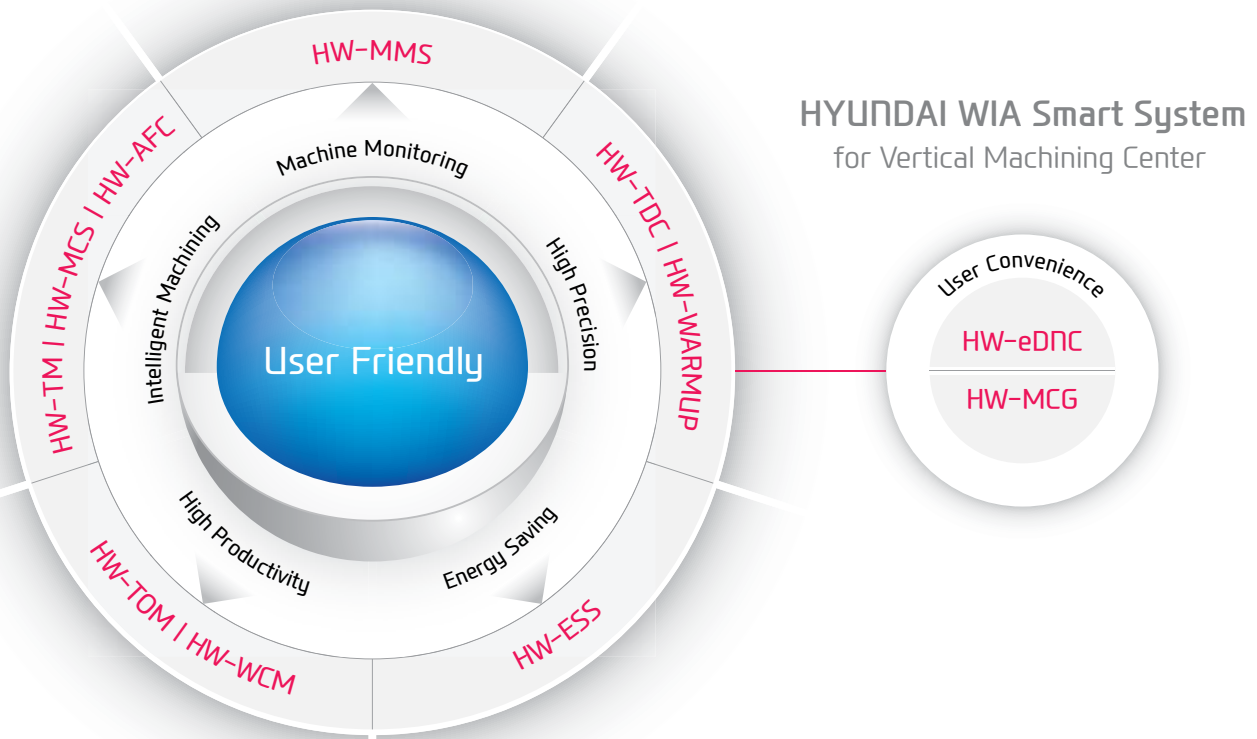
HYUNDAI WIA Smart System
for Vertical Machining Center

User Convenience

HW-eDNC

HW-MCG

HW-MMS

HYUNDAI WIA
Machine Monitoring System

This software is for remote control monitoring of equipment status (mobile, PC.) It checks and manages the state of multiple pieces of equipment and the progress of processing on a real time basis.

HW-eDNC

HYUNDAI WIA ethernet
Direct Numerical Control

This software transmits and receives the CNC of processing equipment, the processing program and the NC data on a PC through the internet or serial communications, while managing the processing program of the CNC memory.

HW-MCG (FANUC)
HYUNDAI WIA
Machine Guidance

NC-installed software featuring operation, maintenance, management monitoring and many more user-friendly systems.

HW-TDC
HYUNDAI WIA Thermal
Displacement Compensation

Software that measures the changes in the external environment as well as heat emission during processing to help in reducing thermal displacement.

HW-WARMUP
HYUNDAI WIA
WARMing Up

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

HW-ESS (FANUC)
HYUNDAI WIA
Energy Saving System

This is an environment-friendly power reduction software reducing the standby power unnecessarily wasted in the equipment waiting for a processing operation.

HW-TOM (FANUC)
HYUNDAI WIA
Tool Offset Measurement

User-friendly GUI software indicating tool length, diameter, and damage

HW-WCM (FANUC)
HYUNDAI WIA Work
Coordinate Measurement

User-friendly GUI software that features material coordinate system measuring

HW-TM (FANUC)
HYUNDAI WIA
Tool Monitoring

This is an equipment-monitoring software which checks the overload, attrition and possible damage of equipment by analyzing the spindles and the output load of the feed shaft generated during a processing operation.

HW-MCS (FANUC)
HYUNDAI WIA
Machining Condition Selection

The software that sets cutting and feeding parameters according to different processing (speed, degree, quality)

HW-AFC (FANUC)
HYUNDAI WIA
Adaptive Feed Control

Software that controls the feed automatically to maintain certain processing overload to extend tool life as well as productivity.
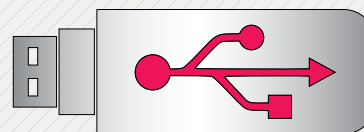
USB Port
Convenience is increased when inputting and outputting program. Because it is now capable of using USB port in addition to current way like CF memory card or LAN

(HW F Series, S 828D : Standard / F32i-A : Non Application)

07

FD Series

SIEMENS Controller

Software for smart operating and machining

SIEMENS

DIFFERENTIATED CAPABILITIES, INTEGRATED ENGINEERING PERFECTLY INTERLINKED

SIEMENS 828D is a latest model CNC that is capable of installing a maximum of 6 axis. It is designed for horizontal/vertical all-purpose equipment.

Through a 80-bit control, it makes possible reduction of processing time and enhancement of productivity. It supports the preparation of a variety of programs and setup functions. It is easy to handle.

SIEMENS Advanced Surface

SIEMENS 828D comes with Advanced Surface,metal processing software that monitors speed and accuracy.

Machining Time : 48 min   Machining Time : 33 min

Speed

SINUMERIK + SINAMICS   80bit NANO ^{FP} **Accuracy**

Unbalanced Velocity   Balanced Velocity

Speed
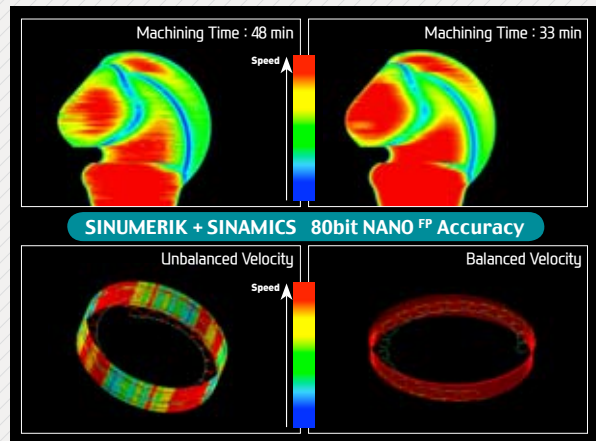
SIEMENS Technology

Shop Mill

- Dialogue-type programming, simple and convenient
- Effective specifications for small quantity batch production
- Step-by-step operation possible without knowledge of the DIN/ISO code

3D Simulation

- 3D confirmation (an option) of the completed processing configuration of the NC program is possible.
- Offers standards for 2D.
- Possible to confirm the simulation of the NC grogram during processing.
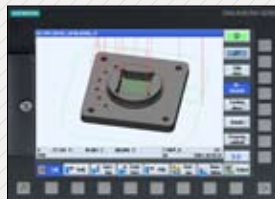
Easy Extend

- Easy to install/uninstall an option (Ex : barfeeder and chip conveyor, etc.)
- Possible to install in one motion without revision of individual perimeters.
- A spate list is unnecessary as option items are indicated with letters.

SIEMENS Communication

Variable Communication Port

RJ 45 Ethernet

USB 2.0

Compact Flash Card

Easy input/output of a program is possible as a USB memory card, a CF memory card and LAN can all be used.

ISO Code Programming

If the ISO Dialect (G291) is ordered, JIS-based G-code programs can be used. (Standard)

n8

FD Series

User Convenience OPTION

Various Devices for User Friendly

Measuring Device

Touch Sensor

Work piece coordinate values can be set automatically using the optional spindle probe.

TLM – Laser & Touch

Tool lengths and diameters can be set automatically using the optional tool setter. This can also be used to monitor tool wear and detect broken tools.

Laser Type
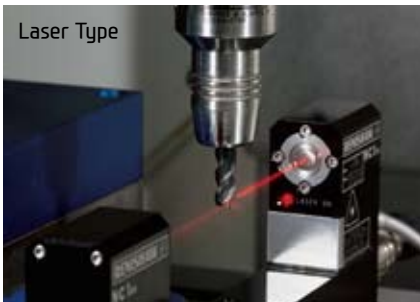
Touch Type

Precision Device

U-Center

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

NC Rotary Table

The feeder on the Machining Center is orthogonal, making it possible to process with 5 axis with rotary table.

❖ Please check interference when mounting NCRT .

Hyd. Device

Hyd. Supply Unit

Instead of the standard hydraulic supply unit, an optional fixture unit can bring the pressure up to **70** bar, maximizing the clamping force on the fixture.

Coolant Uni

Std. Coolant (Nozzle)	Standard
Bed Flushing Coolant	Standard
Spindle Thru Coolant (20/30 bar)	Option
Shower Coolant	Option
Gun Coolant	Option
Side Oil Hole Coolant	Option

Chip Conveyor

As the technology advances on the machining tools, so do the leftover metal chips. Timely and effective disposal of such chips will enhance productivity as well as working environment.

• Hinge Belt Type : Show highly efficiency when treating lots of chips synthetic chip treatment, collective chips. (Long Chip)
• Scraper Type : Facilitate to treat chip shortly cut. (Short Chip)
• Drum Filter Type : Have advantage in precision because chips are not introduced to coolant nozzle. (AL Chip)

Environment Device

Oil Skimmer

An oil skimmer can increase coolant and tool life by removing tramp oil contaminants.

Mist Collector

The mist collector catches and removes these particles to reduce the level of hazards in the air and reduce the accumulation of surface contaminates in your facility.

SPECIFICATIONS

Standard & Optional

Spindle		F410D
10,000rpm (15/11kW)	(FANUC)	●
8,000rpm (17kW)	(SIEMENS)	○
Spindle Cooling System		○

ATC		
ATC Extension	24	●
	30	○
Tool Shank Type	BT40	●
	CAT40	○
U-Center	D'andrea	☆
Stud Bolt Collet Change	45°	☆
	60°	☆
	75°	●
	90°	☆

Table & Column		
APC	ROTARY TURN	●
TAP TYPE Pallet		●
T-SLOT Pallet		○
NC Rotary Table		☆
High Column		–

Coolant System		
Std. Coolant (Nozzle)		●
Bed Flushing Coolant		●
Spindle Thru Coolant	20bar	○
	30bar	○
	70bar, 15ℓ	○
	70bar, 30ℓ	☆
Top Cover		○
Shower Coolant		☆
Gun Coolant		○
Side Oil Hole Coolant		☆
Air Gun		○
Cutting Air Blow		○
Tool Measuring Air Blow (Only for TLM)		○
Air Blow for Automation		☆
Thru MQL Device (Without MQL)		☆
Coolant Chiller		☆
Power Coolant System (For Automation)		☆

Chip Disposal		
Coolant Tank	300ℓ	●
	600ℓ	–
Cabin Screw Chip Conveyor		–
Chip Conveyor (Hinge/Scraper)	Rear (Left)	○
	Front (Right)	–
	Right (Rear)	–
Special Chip Conveyor (Drum Filter)		☆
Chip Wagon	Standard(180ℓ)	○
	Swing(200ℓ)	○
	Swing Large Size(290ℓ)	○
	Large Size(330ℓ)	○
	Customized	☆

Safety Device		
Total Splash Guard		●

S/W		
Machine guidance (HW-MCG) : FANUC		○
Tool Monitoring (HW-TM) : FANUC		○
DNC Software (HW-eDNC)		○
Spindle Heat Distortion Compensation (HW-TDC)		○
Spindle Warm up Function (HW-WARMUP)		○
Energy Saving System (HW-ESS) : FANUC		○
Machine Monitoring System (HW-MMS)		☆
Tool Offset Measurement (HW-TOM) : FANUC		○
Work Coordinate Measurement (HW-WCM) : FANUC		○
Machining Condition Selection (HW-MCS) : FANUC		○
Adaptive Feed Control (HW-AFC) : FANUC		○

ETC		
Tool Box		●
Customized Color	Need Munsel No.	☆
CAD&CAM Software		☆

Electric Device		F410D
Call Light	1 Color : 🟡	●
Call Light	3 Color : 🟡🔴🔴	○
Call Light & Buzzer	3 Color : 🟡🟢🔴B	○
Work Light		●
Electric Cabinet Light		○
Door Inter-Lock		●
Remote MPG		●
3 Axis MPG	FANUC	○
	SIEMENS	–
Spindle Load Meter	FANUC	○
	SIEMENS	●
Spindle Speed Meter	FANUC	○
	SIEMENS	●
Work Counter	Digital	○
Total Counter	Digital	○
Tool Counter	Digital	○
Multi Tool Counter	6EA	○
	9EA	○
Electric Circuit Breaker		○
AVR (Auto Voltage Regulator)		☆
Transformer	25kVA	○
Flash Memory Card		○
Auto Power Off		○
Back up Module for Black out		○

Measuring Device		
Air Zero	TACO	○
	SMC	○
Work Measuring Device		○
TLM (Marposs/Renishaw/Bloom)	Touch	○
	Laser	☆
Tool Broken Detective Device		☆
Linear Scale	X/Y/Z Axis	○
Coolant Level Sensor (Only for Chip Conveyor)		☆

Enviornment		
Air Conditioner		○
Dehumidifier		○
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/Pallet	☆
	2Axis/Pallet	–
External M Code 4ea		○
Automation Interface		☆
I/O Extension (In & Out)	16Contact	○
	32Contact	○

Hyd. Device		
Std. Hyd. Unit	65bar/35ℓ	●
	45bar/60ℓ	–
	45bar/13ℓ	–
Center Hyd. Supply Device	2x3 (6 Port)	○
	2x5 (10 Port)	○
Compact Center Hyd. Supply Device	2x3 (6 Port)	–
Fixture Hyd. Unit	70bar	○
	100bar	○
	Customized	☆

The specifications as above will only serve as a reference.

SPECIFICATIONS

Standard & Optional

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

Spindle		F500D	F600D
8,000rpm (15/11kW)	BELT	●	●
8,000rpm (17kW)	BELT (SIEMENS)	○	–
10,000rpm (15/11kW)	BELT	○	–
12,000rpm (11/7.5kW)	DIRECT	○	○
Spindle Cooling System	8,000rpm	○	○
	10,000rpm	●	–
	12,000rpm	●	●
ATC			
ATC Extension	24	●	●
	30	○	○
Tool Shank Type	BT40	●	●
	CAT40	○	○
U-Center	D'andrea	☆	☆
Stud Bolt Collet Change	45°	●	●
	60°	☆	☆
	75°	☆	☆
	90°	☆	☆
Table & Column			
APC	ROTARY TURN	●	●
TAP TYPE Pallet		●	●
T-SLOT Pallet		○	–
NC Rotary Table		☆	☆
High Column		–	–
Coolant System			
Std. Coolant (Nozzle)		●	●
Bed Flushing Coolant		○	○
Spindle Thru Coolant	20bar	○	○
	30bar	○	○
	70bar, 15ℓ (3.9 gal)	○	○
	70bar, 30ℓ (7.9 gal)	☆	☆
Top Cover		○	○
Shower Coolant		☆	☆
Gun Coolant		○	○
Side Oil Hole Coolant		☆	☆
Air Gun		○	○
Cutting Air Blow		○	○
Tool Measuring Air Blow (Only for TLM)		○	○
Air Blow for Automation		☆	☆
Thru MQL Device (Without MQL)		☆	☆
Coolant Chiller		☆	☆
Power Coolant System (For Automation)		☆	☆
Chip Disposal			
Coolant Tank	460ℓ	●	–
	600ℓ		●
Cabin Screw Chip Conveyor		–	–
Chip Conveyor (Hinge/Scraper)	Rear (Left)	–	–
	Front (Right)	○	○
	Right (Rear)	○	☆
Special Chip Conveyor (Drum Filter)		☆	☆
Chip Wagon	Standard(180ℓ)	○	○
	Swing(200ℓ)	○	○
	Swing Large Size(290ℓ)	○	○
	Large Size(330ℓ)	○	○
	Customized	☆	☆
Safety Device			
Total Splash Guard		●	●
S/W			
Machine guidance (HW-MCG) : FANUC		○	○
Tool Monitoring (HW-TM) : FANUC		○	○
DNC Software (HW-eDNC)		○	○
Spindle Heat Distortion Compensation (HW-TDC)		○	○
Spindle Warm up Function (HW-WARMUP)		○	○
Energy Saving System (HW-ESS) : FANUC		○	○
Machine Monitoring System (HW-MMS)		☆	☆
Tool Offset Measurement (HW-TOM) : FANUC		○	○
Work Coordinate Measurement (HW-WCM) : FANUC		○	○
Machining Condition Selection (HW-MCS) : FANUC		○	○
Adaptive Feed Control (HW-AFC) : FANUC		○	○
ETC			
Tool Box		●	●
Customized Color	Need Munsel No.	☆	☆
CAD&CAM Software		☆	☆

Electric Device		F500D	F600D
Call Light	1 Color : ■	●	●
Call Light	3 Color : ■ ■ ■	○	○
Call Light & Buzzer	3 Color : ■ ■ ■ B	○	○
Work Light		●	●
Electric Cabinet Light		○	○
Door Inter-Lock		●	●
Remote MPG		●	●
3 Axis MPG	FANUC	○	○
	SIEMENS	–	–
Spindle Load Meter	FANUC	○	○
	SIEMENS	●	–
Spindle Speed Meter	FANUC	○	○
	SIEMENS	●	–
Work Counter	Digital	○	○
Total Counter	Digital	○	○
Tool Counter	Digital	○	○
Multi Tool Counter	6EA	○	○
	9EA	○	○
Electric Circuit Breaker		○	○
AVR (Auto Voltage Regulator)		☆	☆
Transformer	25kVA	–	–
	35kVA	○	○
Flash Memory Card		○	○
Auto Power Off		○	○
Back up Module for Black out		○	○
Measuring Device			
Air Zero	TACO	○	○
	SMC	○	○
Work Measuring Device		○	○
TLM (Marposs/Renishaw/Bloom)	Touch	○	○
	Laser	☆	☆
Tool Broken Detective Device		☆	☆
Linear Scale	X/Y/Z Axis	○	○
Coolant Level Sensor (Only for Chip Conveyor)		☆	☆
Enviornment			
Air Conditioner		○	○
Dehumidifier		○	○
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/Pallet	☆	☆
	2Axis/Pallet	–	–
External M Code 4ea		○	○
Automation Interface		☆	☆
I/O Extension (In & Out)	16Contact	○	○
	32Contact	○	○
Hyd. Device			
Std. Hyd. Unit	65bar/35ℓ	–	–
	45bar/60ℓ	●	–
	45bar/13ℓ	–	●
Center Hyd. Supply Device	2x3 (6 Port)	○	○
	2x5 (10 Port)	○	○
Compact Center Hyd. Supply Device	2x3 (6 Port)	○	–
Fixture Hyd. Unit	70bar	○	○
	100bar	–	–
	Customized	☆	☆

The specifications as above will only serve as a reference.

SPECIFICATIONS

External Dimensions

F410D

Rear Chip Conveyor

83 (3.3)
500 (19.7)
1080 (42.5)
570(22.4) X-STROKE
2130 (83.9)
650(25.6) (DOOR OPEN)
420 (16.5)
X-STROKE
2480 (97.6)
900 (35.4)
630 (24.8)
465 (18.3)
2140 (84.3)

543 (21.4)
1290 (50.8)
580(22.8) Z-STROKE
410(16.1) Y-STROKE
2480 (97.6)
2130 (83.9)
957 (37.6)
Rear Chip Conveyor
1190 (46.9)
3317 (130.6)
291 (11.5)

SPECIFICATIONS

External Dimensions

unit : mm(in)

F500D

Right Side Chip Conveyor

600(23.6) X-STROKE
795(31.3) DOOR OPEN
1460 (57.5)
2200 (86.6)
482 (19)
258 (10.2)
251.5 (9.9)
2200 (86.6)
2594.5 (102.1)
875 (34.4)
2420 (95.3)
290 (11.4)
653 (25.7)
2710 (106.7)
3362 (132.4)

Rear Chip Conveyor

460(18.1) Y-STROKE
570(22.4) Z-STROKE
55
55
2200 (86.6)
935(36.8)
2930 (115.4)
1050 (41.3)

SPECIFICATIONS

F600D

619
(24.4)

**Right Side
Chip Conveyor**

519
(20.4)

55
(2.2)

140
(5.5)

800(31.5)
X-STROKE

1317 (51.9)

2700 (106.3)

1186 (46.7)

3886 (153)

111.4
(4.4)

387
(15.2)

600(23.6)
Y-STROKE

200
(7.9)

600(23.6)
Z-STROKE

2200
(86.6)

1520 (59.8)

2200 (86.6)

2853.6
(112.3)

680
(26.8)

3
(0.12)

3620
(142.5)
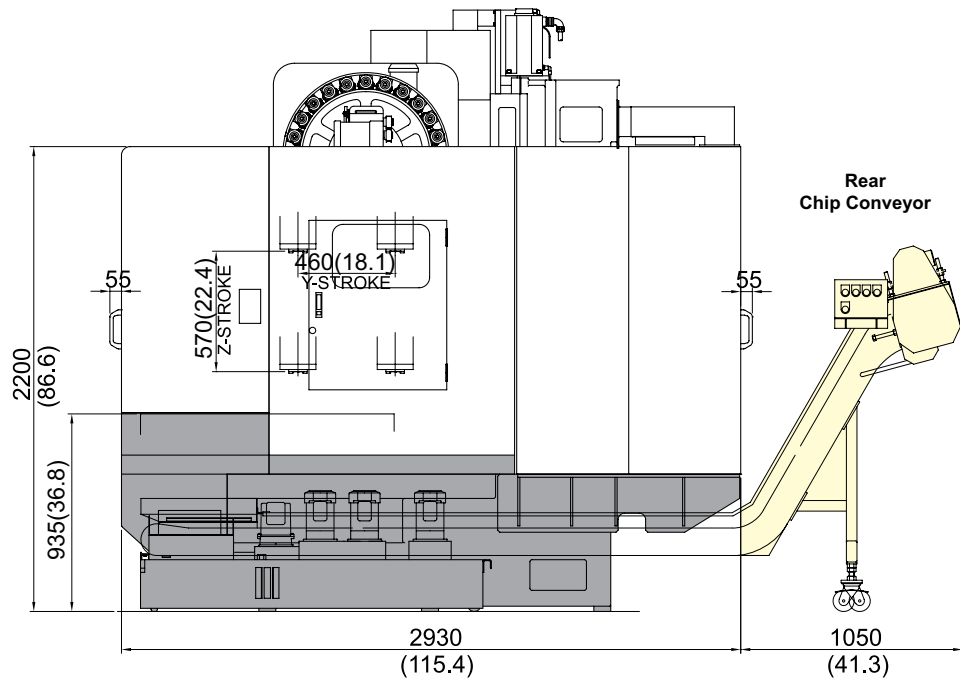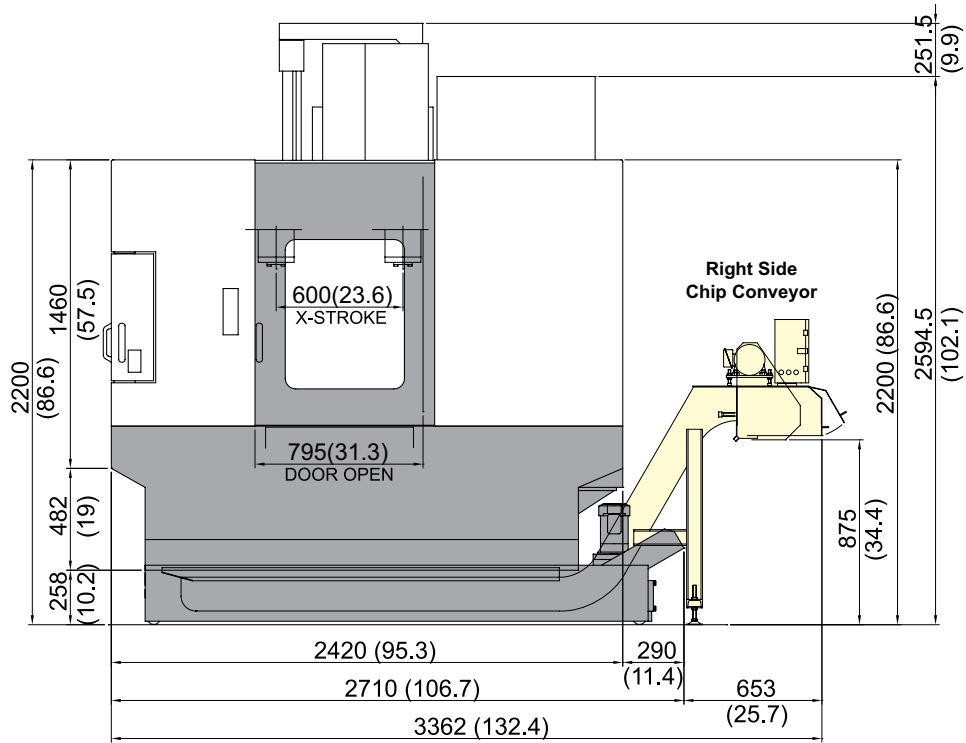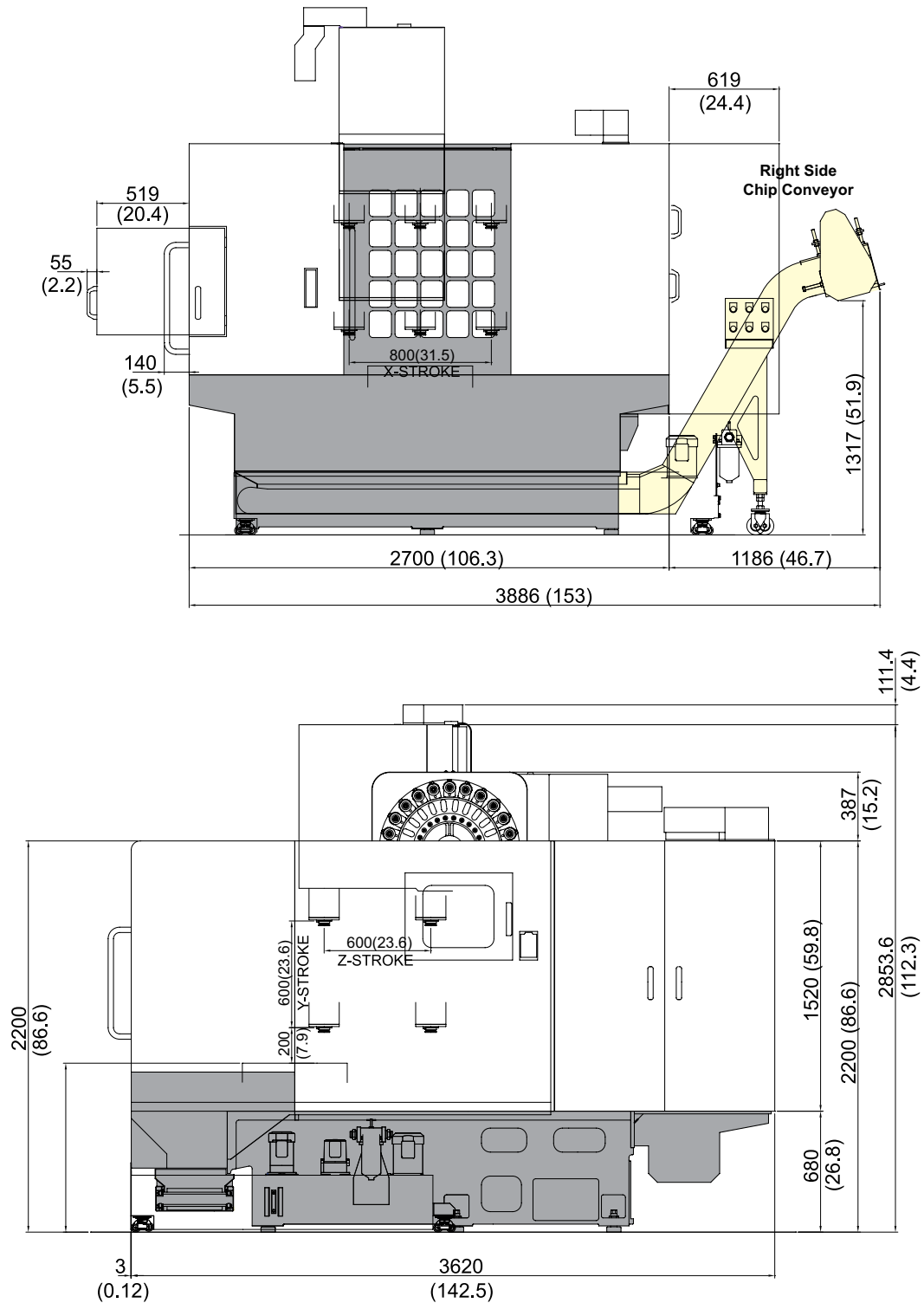
SPECIFICATIONS

Table Dimensions

unit : mm(in)

F410D

STD. MM TAP (M16 TAP)
OPT. INCH TAP (5/8"–11 UNC–2B)

8–M6 TAP DP20

Tap Detail (M16 Tap)

18(SELF CUTT'G AFTER)
17(SELF CUTT'G BEFORE)

1818H12

(SELF CUTTING STROKE)

8–M6 TAP DP20

OPTION

중앙 1-8 $^{+0.027}_{0}$
나머지 2-18 $^{+0.16}_{0}$
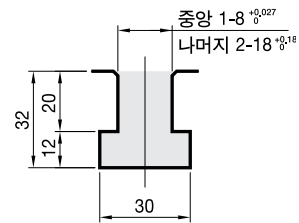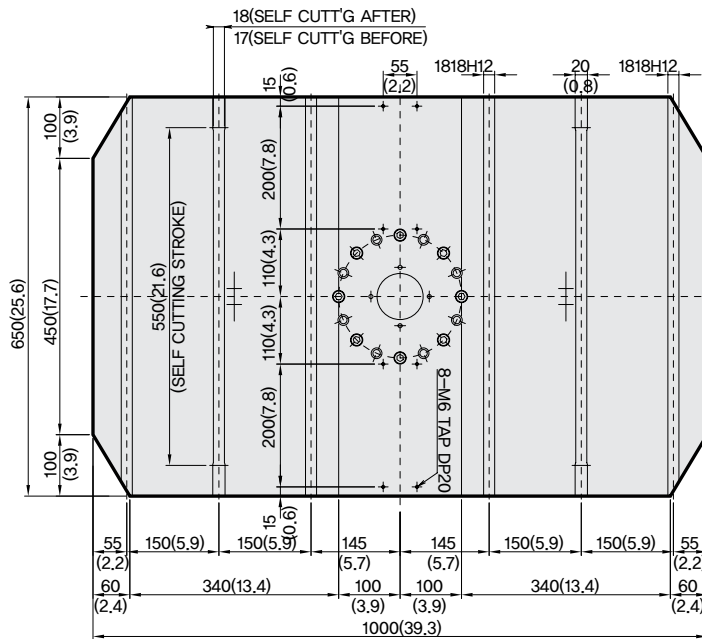
T-Slot Detail

SPECIFICATIONS

Table Dimensions
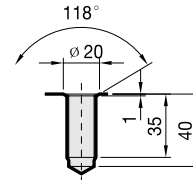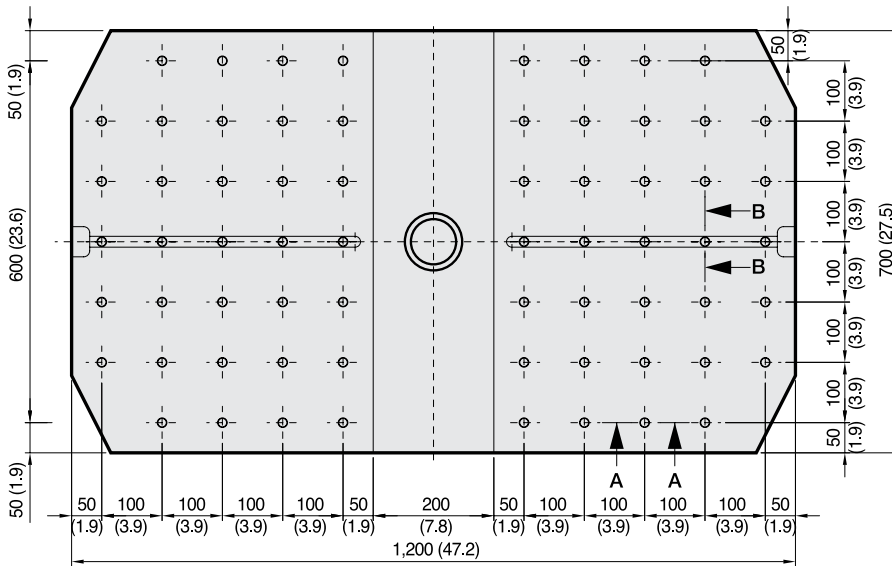
F500D

SECTION A-A
Tap Detail (M16 Tap)
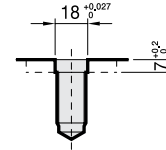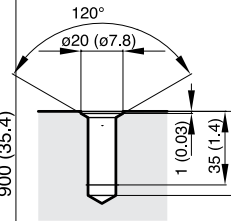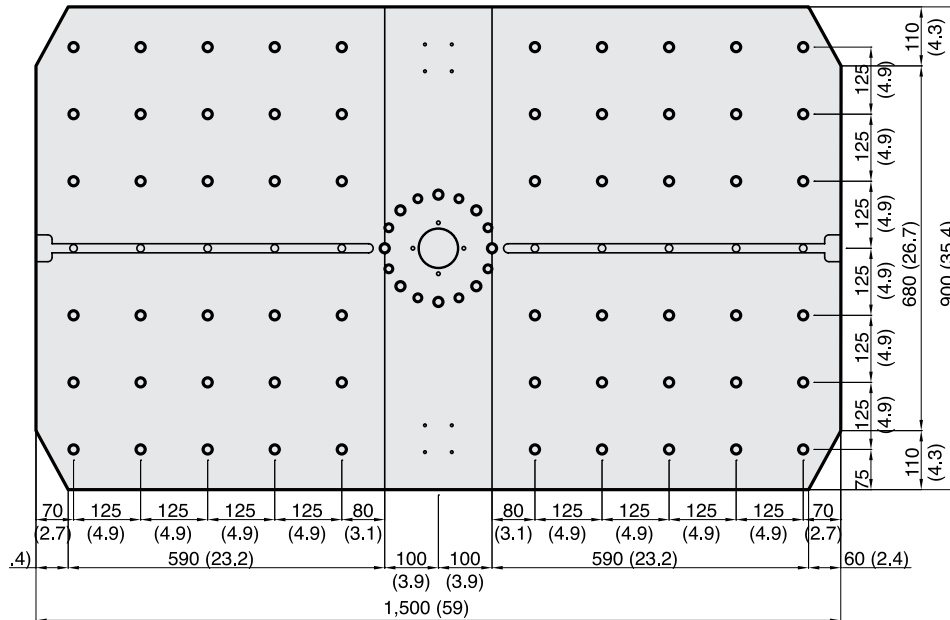
SECTION B-B
Tap Detail (M16 Tap)

T-Slot Detail

OPTION

Table Dimensions

F600D

Tap Detail (M16 Tap)

- 120°
- ø20 (ø7.8)
- 1 (0.03)
- 35 (1.4)

T-Slot Detail

OPTION

- 18H8 +0.027/0
- 1
- 32
- 12 +2.0/0
- 30 +2.0/0
- C0.6
- 0.5
- 45°

SPECIFICATIONS

Tool Shank

BT40

10 (0.39)

M16

22.6 (0.88″)

16.1 (0.63)

Ø63 (Ø2.48)

Ø44.45 (Ø1.75)

45°

7/24

Ø10 (Ø0.39)

Ø15 (Ø0.59)

60°

16.6 (0.65)

2 (0.06)

6 (0.23)

29 (1.14)

27 (1.06)

65.4 (2.57)

35 (1.37)

Ø3 (Ø0.11)

P5

Ø5 (Ø0.19)

11.5 (0.45)

3 (0.11)

Ø4 (Ø0.15)

CAT-40

OPTION

60°

7/24

5/8″-11

45°

Ø63.5 (2.5)

Ø44.5 (1.75)

15 (0.59)

16.383 (0.645)

15.8 (0.625)

68.25 (2.687)

32.15 (1.266)

25 (0.983)

22.5 (0.888)

3.2 (0.125)

2. R0.4

Ø5 (0.097)

Ø3 (0.118)

60°

1BP5

11.5 (0.453)

3 (0.118)

SPECIFICATIONS

Specifications

[   ] : Option

ITEM			F410D	F500D
TABLE	Table Size(LXW)	mm(in)	2-650×410 (2-25.6"×16.1")	2-700×500 (2-27.6"×19.7")
	Maximum Load Capacity	kg(lb)	2-250 (2-551.2)	2-350 (2-771.6)
	Table Change Time	sec	5.2	6
	Change Method	–	Rotary Turn	
	Table Driving Method	–	Rack & Pinion	
SPINDLE	Spindle Taper	–	NT #40	
	Spindle RPM	r/min	10,000 [8,000]	8,000 [8,000] [10,000] [12,000]
	Spindle Power Output (Max./Cont.)	kW(HP)	18.5/15(25/20) [18/12(24/16)]	15/11(20/15) [43/18.5(57.6/24.8)] [15/11(20/15)] [11/7.5(15/10)]
	Spindle Torque (Max./Cont.)	N.m(lbf.ft)	117.7/95.4(86.8/70.3) [182/128(134.2/94.4)]	287/143(211.6/105.4 [300/157(221.2/115.8)] [230/115(169.6/84.8) [70/47(51.6/34.6)]
	Spindle Driving Method	–	BELT [BELT]	BELT [BELT] [BELT] [DIRECT]
FEED	Travel (X/Y/Z)	mm(in)	570/410/580 (22.4"/16.1"/22.8")	600/460/570 (23.6"/18.1"/22.4")
	Distance from Table Surface to Sp	mm(in)	197~777 (7.8"~30.6")	200~770 (7.9"~30.3")
	Distance from Column to SP. center	mm(in)	495 (19.5")	500 (19.7")
	Rapid Feed Rate (X/Y/Z)	m/min	36/36/30	40/40/30
	Cutting Feed Rate (X/Y/Z)	m/min	10	
	Slide Type	–	LM GUIDE	X/Y : ROLLER GUIDE, Z : BOX GUIDE
ATC	Number of Tools	EA	24	24 [30]
	Tool Shank	–	BT40	
	Max. Tool Dia. (W.T / W.O)	mm(in)	Ø90 / Ø150 (3.5"/5.9")	
	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	1.3	2.4
		C-C	sec	3.5	4.3
TANK CAPACITY	Coolant Tank	ℓ (gal)	300 (79.3)	
	Lubricating Tank	ℓ (gal)	1.32 (0.3)	3.1 (0.8)
	Hydraulic Tank	ℓ (gal)	35 (9.2)	60 (15.9)
POWER SUPPLY	Air Consumption (0.5MPa)	ℓ /min	400	
	Electric Power Supply	KVA	30	28
	Thickness of Power Cable	Sq	Over 22	Over 25
	Voltage	V/Hz	220/60 (200/50)	
MACHINE	Floor Space (L×W)	mm(in)	2,200×3,160 (86.6"×124.4")	2,710×2,930 (106.7"×115.4")
	Height	mm(in)	3,015 (118.7")	2,852 (112.3")
	Weight	kg(lb)	6,400 (14,109.6)	9,500 (20,943.9)
NC	Controller	–	HYUNDAI WIA FANUC i Series [FANUC 32i-A] [SIEMENS 828D]	

Specifications are subject to change for improvement without notice.

SPECIFICATIONS

Specifications

	ITEM			F600D
TABLE	Table Size(LXW)	mm(in)		2-900×650 (2-35.4"×25.6")
	Maximum Load Capacity	kg(lb)		2-400 (2-881.8)
	Table Change Time	sec		8.5
	Change Method	–		ROTARY TURN
	Table Driving Method	–		RACK & PINION
SPINDLE	Spindle Taper	–		NT #40
	Spindle RPM	r/min		8,000 [12,000]
	Spindle Power Output (Max./Cont.)	kW(HP)		15/11(20/15 [11/7.5(15/10)]
	Spindle Torque (Max./Cont.)	N·m(lbf.ft)		287/143(211.6/105.4) [70/47(51.6/34.7)]
	Spindle Driving Method	–		BELT [DIRECT]
FEED	Travel (X/Y/Z)	mm(in)		800/600/600 (31.5"/23.6"/23.6")
	Distance from Table Surface to Sp	mm(in)		200~800 (7.9"~31.5")
	Distance from Column to SP. center	mm(in)		690 (27.2")
	Rapid Feed Rate (X/Y/Z)	m/min		42/42/42
	Cutting Feed Rate (X/Y/Z)	m/min		10
	Slide Type	–		ROLLER GUIDE
ATC	Number of Tools	EA		24 [30]
	Tool Shank	–		BT40
	Max. Tool Dia. (W.T / W.O)	mm(in)		Ø90 / Ø150 (3.5"/5.9")
	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	2.0
		C-C	sec	4.2
TANK CAPACITY	Coolant Tank	ℓ (gal)		600 (158.5)
	Lubricating Tank	ℓ (gal)		3.1 (0.8)
	Hydraulic Tank	ℓ (gal)		23 (6.1)
POWER SUPPLY	Air Consumption (0.5MPa)	ℓ /min		400
	Electric Power Supply	KVA		30
	Thickness of Power Cable	Sq		Over 25
	Voltage	V/Hz		220 / 60 (200 / 50)
MACHINE	Floor Space (L×W)	mm(in)		2,720×3,620 (107.1"×142.5")
	Height	mm(in)		2,965 (116.7")
	Weight	kg(lb)		8,500 (18,739.3)
NC	Controller	–		HYUNDAI WIA FANUC i Series [FANUC 32i-A]

SIEMENS 828D (F410D/500D)

Control Function

Max. configuration of axis	5 axis
Max. configuration of axis and sp.	6 axis (axis + spindle)
Least Command/input	0.0001mm / 0.00001inch

Feed Function

Feedrate Override	0 – 120%
Rapid Traverse Override	F0, 5, 25/50, 100%
Acceleration with jerk limitation	
Programmable acceleration	
Follow-up mode	
Measuring system 1 and 2, selectable	
Separate path feed for corners and chamfers	
Travel to fixed stop	

Spindle Functions

Spindle Override	
Spindle Orientation	
Spindle Speed Limitation	50% – 120%
Rigid Tapping	

Interpolations

Linear interpolation axis	Max 4 axis
Circle via center point and end point	
Circle via interpolation point	
Helical interpolation	
non-uniform rational B splines	
Advanced Surface	High Speed, High Rigidity Function
Compressor for 3-axis machining	

Tool Function

Tool Radius Comp.	
Zero Offset (G54, G55, G56, G57 ,G58, G59)	Standard 100 EA
Programmable Zero Offset	
3D Tool Radius Compensation	
Tool management	

Display

CRT / MDI	TFT 10.4″ Color
Screen saver	

Manual Operation

Manual Handle/Jog Feed	
Reposition	
Reference Approach	Ref 1, 2 Approach
Spindle Control	Start, Stop, Rev, Jog, Ort.

Auto Operation

Single Block	
Feed Hold	
Optional Block Skip	
Machine Lock	
Dry Run	
Simulation	2D

Diagnosis Function

Alarm display	
Monitor	
PLC status/LAD display	

Programming Function

Part Program Storage Length	5MB
Program Name	23 digits
Subroutine Call	Protection Level
Absolute/incremental Command	G90 – G91
Scaling, ROT	
Inch / Metric Conversion	
Interactive CYCLE program	
Block Search	
Macro	
Read / Write System Variable	
BackGround Editing	
Miscellaneous Functions	M – Code
Lable Skip	
Program Stop / End	M00, M01, M02, M30
Lookahead , Jerk Limitation Feed & Forward Control	150 Block
SIEMENS Program exe.	
Maximum number of tools/cuttings	256/512
Number of levels for skip blocks 1	

Protection Function

Emergency Stop	
Over Travel	Soft Limit
Contour Monitoring	
Program Protection	

Automation Support Fun.

Actual Speed Display(Monitor)	
Tool Life Management	Time, Parts
Work Count Function	Internal

Language Function

Two Language switchable	Chinese Traditional, Czech, Danish, Dutch, Finnish, Hungarian, Japanese, Korean, Polish, Russian, Swedish, Portuguese, Turkish

Data Transfer

RS 232C I/F	
Ethernet	
USB Memory Stick & CF Card	

Option

DRF offset	
Load and save of MDI	
Teach-in	
Number of levels for skip blocks 8	
Simulation in 3-D display	
Shop Mill	Interactive program
TRACYL	
TRANSMIT	

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CONTROLLER

HYUNDAI WIA FANUC i Series

Axis control / Display unit	
Controlled axis	3 axis (X, Y, Z)
Simultaneous controllable axis	3 axis (G00 & G01 : 3 axis, G02 & G03 : 2 axis)
Least input increment	X, Y, Z axis : 0.001 mm (0.0001")
Least command increment	X, Y, Z axis : 0.001 mm (0.0001")
Inch/Metric conversion	G20 / G21
Interlock	Each axis / All axis
Machine lock	All axis
Emergency stop	
Stored stroke check 1	Over Trable
Stored stroke check 2	
Stored stroke check 3	
Follow-up	
Servo off	
Backlash compensation	+/- 0~9999 pulse (rapid traverse & cutting feed)
Position switch	
Stored pitch error compensation	
LCD/MDI	8.4" color LCD
Operation	
Automatic operation (memory)	
MDI operation	
DNC operation	Need DNC Program
Search function	Sequence, Program
Program restart	
Wrong operation prevention	
Buffer register	
Program check function	Dry run, program check
Single block	
Handle interrupt	
Feed functions	
Manual jog feed	Rapid, Jog, handle
Manual handle feed-rate	x1, x10, x100
Feed command	F code feedrate direct command
Feedrate override	0~200% (10% Unit)
Jog feed	0~5,000 mm/min (197 ipm)
Rapid traverse override	F0, F25%, F50%, F100%
Override cancel	
Rapid traverse bell-shaped acceleration/deceleration	
Auto corner override	G62
Program input & Interpolation functions	
Label Skip	
Control in/out	
Nano Interpolation	Positioning/Linear/Circular (G00/G01/G02/G03)
Exact stop mode/Exact stop	G61 / G09
Dwell	G04, 0~9999.9999sec
Helical interpolation	
Threading/synchronous feed	G33
Manual reference point return	
Reference point return	G28
Reference point return check	G27
2nd, 3rd, 4th Reference point return	G30
Program stop/end	M00, M01 / M02, M30
Tape code	EIA RS-244/ISO 840 (Automatic recognition)
Optional block skip	1 EA
Max. programmable dimensions	+/- 9999.9999 (+/- 8 digits)
Program number	O4 /N8
Absolute/incremental command	G90 / G91
Decimal point input	
Plane selection	G17, G18, G19
Work coordinate system setting	G52~G59
Work coordinate preset	G50.3
Additional work coordinate system	G54.1 P1 ~P48 (48 pairs)
Manual absolute	"On" fixed
Programmable data input	G10
Sub program call	10 Step
Custom macro	
Addition to custom macro common variables	#100 ~ #199 , #500 ~ #999
Circular interpolation	G02, G03
Canned cycle	G73, G74, G76, G80 ~ G89
Optional chamfering/corner R	
Skip function	G31
High speed Skip function	

Program input & Interpolation functions	
Automatic coordinate system setting	
Coordinate system rotation	G68, G69
Programmable mirror image	G50.1, G51.1
Single direction positioning	G60
External data input	Tool offset/message/machine zero point shift
Cylindrical interpolation	
AI advanced preview control	G5.1 (20)
Polar coordinate command	G15, G16
Sub / Spindle functions	
Miscellaneous function	M3 digits
Miscellaneous function lock	
Spindle speed command	S5 digits, binary output
Spindle speed override	50%~120% (10% unit)
Spindle orientation	
Rigid tapping	
Tool functions / Tool compensation	
Tool function	Max. T8 digits
Cutter compensation C	G40~G42
Tool length measurement	Z Axis INPUT C
Tool length compensation	G43, G44, G49
Tool offset amount	G45~G48 (+/- 6 digits)
Tool offset pairs	400 pairs
Tool life management	
Data input / Output & Editing functions	
Reader/Puncher interface	RS232C
Memory card input/output	
Embeded Ethernet	100Mbps
Part program storage length	1280m (512 Kbyte)
Registered programs	400 ea
Memory lock	
Back ground editing	
Extended part program editing	Copy, move, change of NC program
Setting, display, diagnosis	
Self-diagnosis function	
History display	Alarm & operator message
Help function	
Run hour/Parts count display	
Actual cutting feedrate display	
Spindle/Servo setting screen	
Multi-language display	Selection of 5 optional language
Dynamic switching display language	
LCD Screen Save	Screen saver

Option	
Sub Axis Control	4, 5 Axis
Two way pitch error compensation	
Manual Guide 0i	8.4" color LCD
Manual Guide i	10.4" color LCD (Interactive Program)
Dynamic graphic display	
Optional block skip add	9 ea (Application can be limited)
AI contour control(AICC)	40 Block
AI contour control(AICC) II	200 Block
Nano Smoothing	
Tool Management Function	
Protection of data at 8 levels	
Data server	1GB
FASTethernet	100 Mbps (Option board is required)
Part program storage length Expand	5120m (2 Mbyte)

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FANUC 32i-A

Axis control / Display unit

Controlled axis	3 axis (X, Y, Z)
Simultaneous controllable axis	3 axis (G00 & G01 : 3 axis, G02 & G03 : 2 axis)
Least input increment	X, Y, Z axis : 0.001mm (0.0001")
Least command increment	X, Y, Z axis : 0.001mm (0.0001")
Inch / Metric conversion	G20 / G21
Interlock	Each axis / All axis
Machine lock	All axis
Emergency stop	
Stored stroke check 1	
Mirror Image	
Follow-up	
Servo off	
Backlash compensation	+/- 0~9999 pulse (rapid traverse & cutting feed)
Position switch	
Pitch error compensation	
LCD/MDI	10.4" color LCD

Operation

Automatic operation (memory)	
MDI operation	
Research Function	Sequence, Program
Program restart	
Dry run	
Single Block	
Buffer register	
Memory Card DNC operation	

Feed functions

Manual jog feed	Rapid, Jog, handle
Manual handle feed-rate	x1, x10, x100
Feed command	F code feedrate direct command
Feedrate override	0~200% (10% Unit)
Jog feed	0~5,000mm/min (197ipm)
Rapid traverse override	F0, F25%, F50%, F100%
Override cancel	
Rapid traverse bell-shaped acce/deceleration	

Program input & Interpolation functions

Label Skip	
Interpolation function	Positioning/Linear/Circular (G00/G01/G02/G03)
Exact stop mode/Exact stop	G61 / G09
Control in/out	
Dwell	
Helical interpolation	G04, 0~9999.9999sec
Threading/synchronous feed	
Manual reference point return	
Reference point return	
Reference point return check	G28
2nd, Reference point return	G27
Program stop/end	G30
Tape code	M00, M01 / M02, M30
Optional block skip	EIA / ISO (Automatic recognition)
Max. programmable dimensions	1 ea
Program number	+/- 9999.9999" (+/- 8digit)
/Sequence number	O4 / N8 digit
Absolute/incremental command	
Decimal point input	G90 / G91
Plane selection	
Work coordinate preset	G17, G18, G19
Manual absolute	G52~G59
Programmable data input	"On" fixed
Sub program call	G10
Custom macro	10 Step
AI Contour Control(AICC) I	
Circular interpolation	
Canned cycle	
Optional chamfering/corner R	G73, G74, G76, G80 ~ G89
Skip function	
Automatic coordinate system setting	G31
Coordinate system rotation	
Programmable mirror image	

Sub / Spindle functions

Miscellaneous function	M3 digit
Miscellaneous function lock	
Spindle speed command	S5 digits, binary output
Spindle speed override	50% ~ 120% (10% Unit)
Spindle orientation	
Rigid tapping	

Tool functions / Tool compensation

Tool function	Max. T8 digits
Cutter compensation C	G40~G42
Tool length compensation	G43, G44, G49
Tool offset pairs	64 Pair
Tool life management	

Data input / Output & Editing functions

Reader/Puncher interface	RS232C
Memory card input/output	
Embeded Ethernet	100 Mbps
Part program storage length	320 m (128 Kbyte)
Registered programs	125 ea
Memory lock	
Back ground editing	
Extended part program editing	Copy, move, change of NC program
Extenal message	

Setting, Display, Diagnosis

Self-diagnosis function	
Alarm history display	Alarm & Message
Help function	
Run hour/Parts count display	
Actual cutting feedrate display	
Graphic display	
Spindle/Servo setting screen	
Operation monitor screen	Loadmeter Light
Selection of 5 optional language	
LCD Screen Save	Screen saver
Auto Data Backup	
Manual Guide i	Interactive Programming

Option

Sub Axis Control	
Additional work coordinate system	48 Pair / 300 Pair
Additional custom micro change	#100~#199, #500~#999
Work coordinate Command	
Work coordinate Interpolation	
Circular Interpolation	
Single direction positioning	G60
FAST ethernet	100 Mbps
Data server	1GB
AI Contour Control II(AICC II)	
Additional optional blockskip	9 ea (Application can be limited)
Handle interupt	
Manual Handle Feed	3 unit
program storage length	640m (256Kbyte) ~ 5120m (2Mbyte)
Dynamic graphic display	
Protection of data at 8 levels	
Tool monitoring function	HWTM (Embeded FANUC Type)

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AMERICA CORP.
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Raunheim Service Center

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