

SF Series High Speed Machine

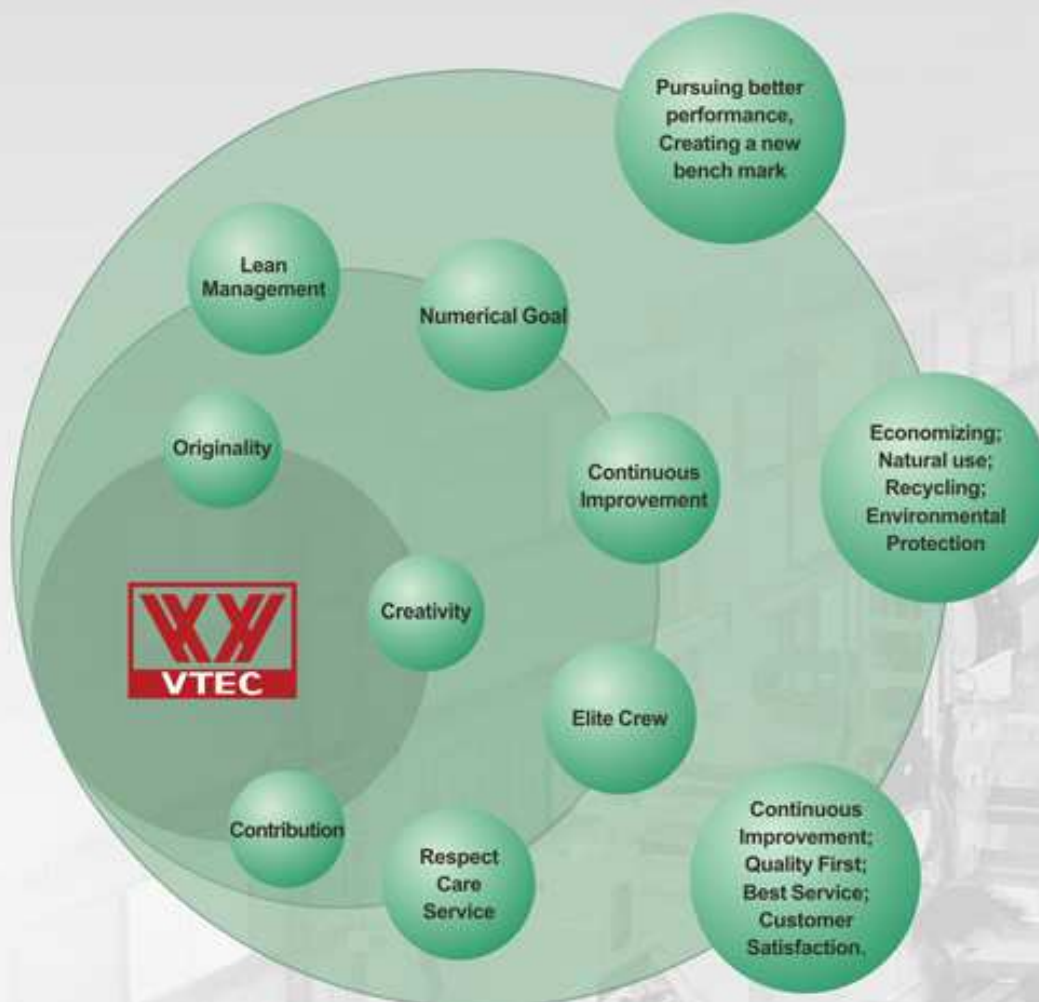


CNC Double Column Vertical Machining Center

Casting Structure
X, Y Axis Roller Type Linear Way
24 / 20 m/min Rapid Traverse



VISION WIDE TECH CO., LTD.



Pursuing better performance, Creating a new bench mark!

Vision Wide offers high quality and competitive priced products, our advantages are derived from customer-oriented machine designs, utilizing reliable high quality components and suppliers, integrating our precise process control during production, assembly and testing.

Pursuing better performance, Creating a new bench mark! We solidify our commitment to the company motto of "Originality", "Creativity", and "Contribution" for best performance and organizational enhancements from a professional team-based environment.

From the little improvements to the future new products, we have the technology for today's industries. We continue to make us more competitive nowadays and afterwards in the CNC machining centers.

High Value. High Precision.
High Reliability Products



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1. SF series

X: 2.1 - 4.1m (Linear way)
Y: 1.2 / 1.6 / 2.0m (Linear way)
Z: 800 / 1,000mm (Linear way)
Z: 800mm (Box way)



4. NF series

X: 2.2 - 10.2m
Y: 2.3 / 2.6m
Z: 920 / 1,020mm (Box way)
Z: 1,000 / 1,200mm (Linear way)



2. VB series

X: 2.0 - 4.0m
Y: 1.6 / 2.0m
Z: 800 / 1,020mm (Box way)



5. VH series

X: 4.2 - 10.2m
Y: 3.0 / 3.5 / 4.0m
Z: 1,000 (Box way)
Z: 1,000 / 1,200mm (Linear way)



3. VF series

X: 2.0 - 5.0m
Y: 2.3 / 2.6m
Z: 920 / 1,020mm (Box way)



6. BM series

X: 4.2m - 10.2m
Y: 3.0 / 3.5 / 3.7 / 4.2m
Z: 1,000 / 1,200mm
W: 1,000 / 1,200mm



7. Attachment Heads

Manual Attachment Heads (not available for BM)



90° angular head



Universal head



Extended head

Automatic Attachment Heads semi-auto 5-face machining (AC)
fully-auto 5-face machining (AH)



AC 90° angular head



AC 2-axis head

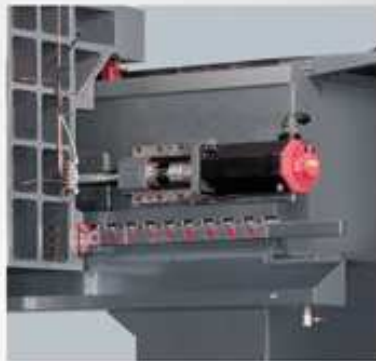


AC extended head

(not available for SF and VB)

A combination of speed and precision.

- All made of casting structure: base, columns, beam, saddle, and headstock
- Various spindles 18,000 / 20,000 / 24,000 rpm (Opt.)
- 24 / 20 m/min Rapid traverse
- Roller type linear ways made by Japan or German (X, Y axis)
- Distance between columns: 1.38 / 1.7 / 2.1 m, extra wide front door opening
- Cutting length: 2.1 m - 4.1 m
- Z stroke: 800 mm (optional: 1,000 mm)
- Fast cam-type ATC (3 second tool-to-tool)
- Attachment heads (Opt.):
Manual head attachments: 90 degree / extended / universal
Semi-automatic: 90 degree
- Enhanced Vision Wide VW-FX series graphical user interface (for FANUC 0iMD / 31iB)



- Large span for high torque and high rigidity when machining



- High lead, high speed feeding, and low-noise for ball screw
- Torque enlarger unit on X-axis increases the transmission torque and ensures the transmission accuracy.



- Particularly suitable for smaller distance between columns (SF-xx12)
- Integral structure of the cross beam and columns for excellent rigidity





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Best center-line layout of spindle system provides powerful and reliable performance!

Spindle Unit



Linear way

Box way

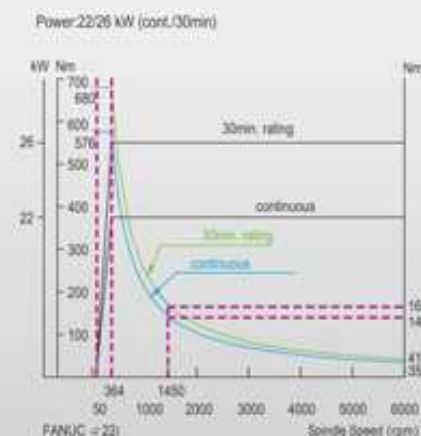
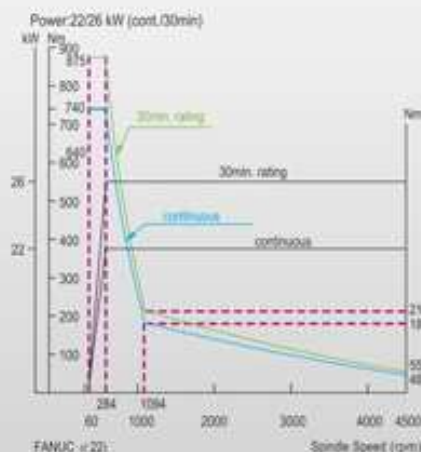
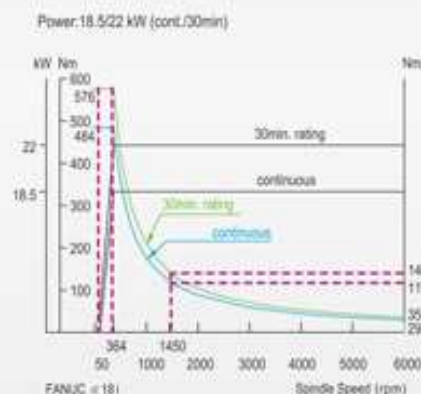
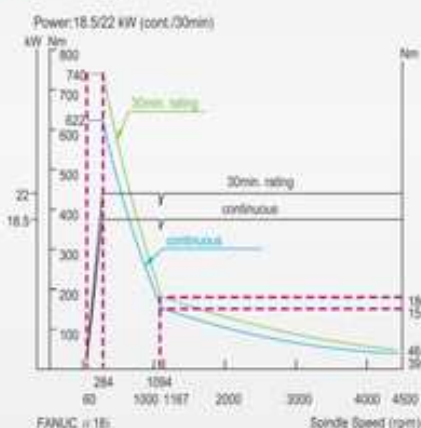
Design Feature of Spindle System

- Least thermal deformation based on box structure, and spindle centered at the interception point of motor, ball screw, and dual balancing weight
- High efficient power transmission with low noise are produced by Japanese JIS 0 grade gears
- Spindle made by the first class supplier
- Floating tool release mechanism
- Temperature cooling system for gears, bearings, and spindle
- Various spindle selections for versatile applications:
4,000 4,500 6,000 8,000 10,000 18,000 20,000 24,000 rpm

Spindle Power and Torque Chart

Box way

■ Gear type





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■ Gear type spindle



Z-axis box way : 4,500 / 6,000 rpm
Z-axis linear way : 4,000 / 8,000 rpm

■ Direct-driven spindle



Z-axis linear way :
Direct-driven 10,000 rpm

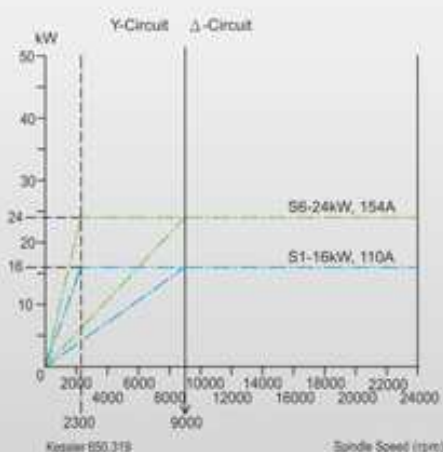
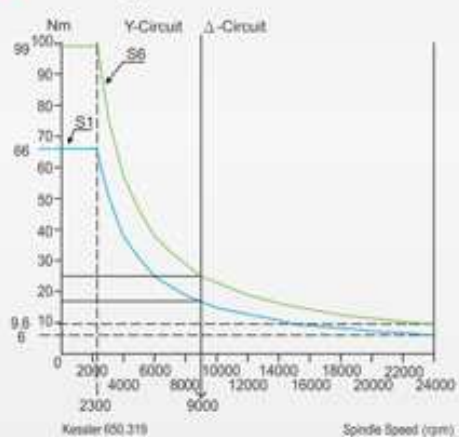
■ Built-in high speed spindle



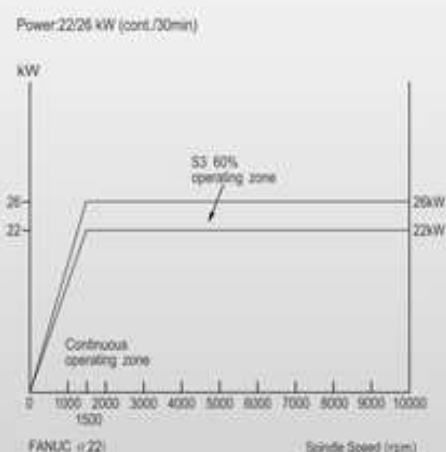
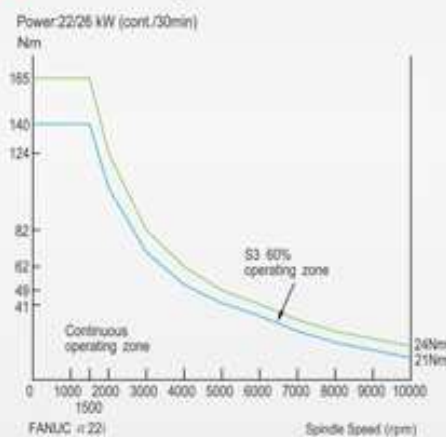
Linear way : 18,000~24,000 rpm
Heat extension : <0.02 mm
Low vibration : 1mm / sec

Linear way

■ Built-in type



■ Direct-driven type



Vision Wide convenient software for safe and easy operations

Concept of Software Development

Background of co-growing by experience sharing with customers. Design concept of simple, quick and convenient operation. Customer satisfaction from quick service and working process shortening. Win-win by supporting customers for productivity management.

VW FX

Tool Table



Tool table data
Tools status refer to ATC

Tool Compensation Table



Tool compensation data
Duty rate information

Tool Load Manager



Over load alarm for each tool
Setting range 0~120%
No need any further external hardware

Manual Tool Compensation & Measurement



Fast tool compensation
Manual tool compensation

Machine Status



Fast mappings of I/O and program comment
Quick maintenance

Calculator Function



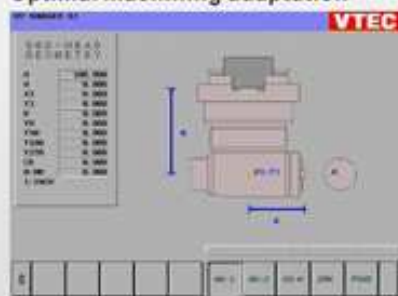
+, -, ×, ÷ arithmetic operations
Sine, cosine and tangent function
10 sets memory registering

Machining Parameter



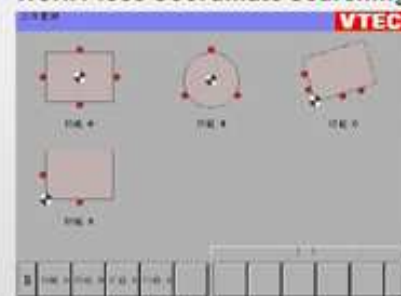
Additions 3 parameters for machining
The best efficiency machining modules
The highest precision machining modules
The smoothest machining modules

Optimal machining adaptation



V/H Tool length and diameter compensation
Working coordinates affine transformation and compensation (between different faces)
Automatic horizontal spindle center finding
V/H rigid tapping
V/H manual interrupting
V/H manual feeding
(V/H = vertical/horizontal)

Work Piece Coordinate Searching



Get the middle point of a rectangle geometry
Get the radius and center of a circular geometry
Calculate the tilted angle between a line and X axis
Get the corner of the included angle



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In-time service
Efficiency management
Customer-oriented design

Remote control

Machine Status Monitor



Tools status refer to ATC
Duty rate information
Coordinates display
Running program display
Running function display

Machine Parameter



Built-in e-book for quick lookup
Easy parameter backup

Program Manager



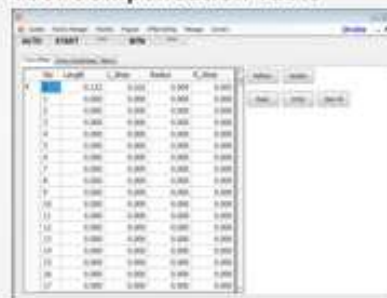
NC memory file manager
Data Server file manager
Simple and quick transfer

Factory Manager



Operation time counter
Duty rate counter
Machined parts counter

Tool Compensation Table



Tool compensation data
Variable value setting in Macro

Machine Status Detecting



Quick checking of machine status by a remote PC (Timer/Keep relay/Counter/Data)

Productivity Analysis



Machine productivity analysis
Factory productivity analysis

Numerical Controller



SIEMENS 840D



FANUC 0iMD / 31iB

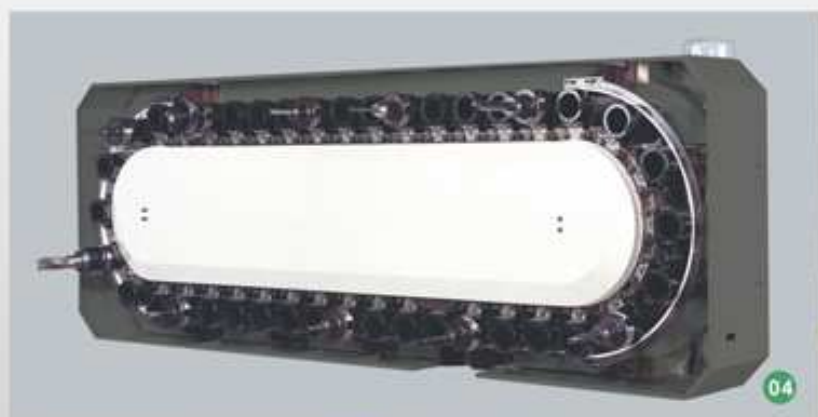


HEIDENHAIN iTNC530 HSCI

With More Standard / Optional Accessories

Accessories

- 01 Auto. tool length measurement (Opt.)
- 02 Cam type ATC
- 03 Ring & nozzle type flood coolant (incompatible with attachment heads)
- 04 Automatic tool changing: 32 / 40 (Opt.) / 60 tools (Opt.)
Max. exchanging tool : $\varnothing 180 \times L380$ mm
- 05 Fast cam-type automatic tool changer (3 second tool-to-tool)
- 06 Pressured air assist balancing
- 07 Heat exchanger for electrical cabinet
- 08 Splash water gun & air outlet
- 09 Operation manual
- 10 Screw type chip conveyor
- 11 Caterpillar chip conveyor / Chip cart (Opt.)
- 12 Spindle cooling system





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Multi-layer front door design provides the widest door opening



TPS Management

Under the guideline of constructing a thinking-active environment, while in the RD process, we set up the management of production quality. By imposing the necessary training in every key task and keeping continuous improvement, we pursuit the best performance of technology and quality.



Modular Production – After components assembled and tested, they will be combined with the main production line.



Craft of realization for high rigidity concerning assemble.



Sliding face: 15~20 scrapping spots, 70% contact rate
Fixed face: 25~30 scrapping spots, 70% contact rate



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CNC software test and development



Max. measurement travel 20 m. Straightness is inspected by optical instruments.



Precision adjustment in every manufacturing process



ISO 9001:2008 Quality Management

Quality & Inspection



Dynamic accuracy
(ISO 10791-7)



CMM inspection



Straightness inspection
with collimator

Quality
plan

Supplier
self-inspection

Continual
Improvement

Materials
inspection

We commit for
"Quality First"
by following P-D-C-A
process in every
production segment,
using the advanced
instruments and strict
quality standards.

Reliability
test

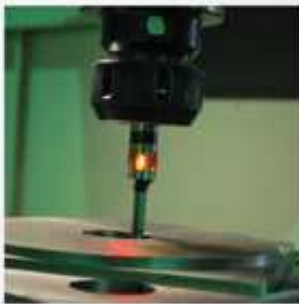
Assembly
inspection

Cutting
test

Geometric
accuracy
inspection

Positioning
accuracy
inspection

Function
test



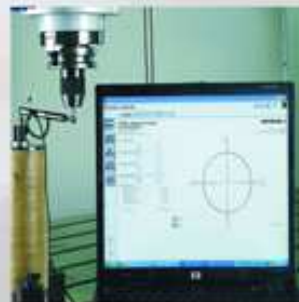
3D mold cutting



Vibration inspection



Heavy cutting



Circularity by ball bar test
(ISO 230-4)



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High quality technology service

Annual maintenance and service



Frequent overseas service training given to agents so that profession and service are delivered



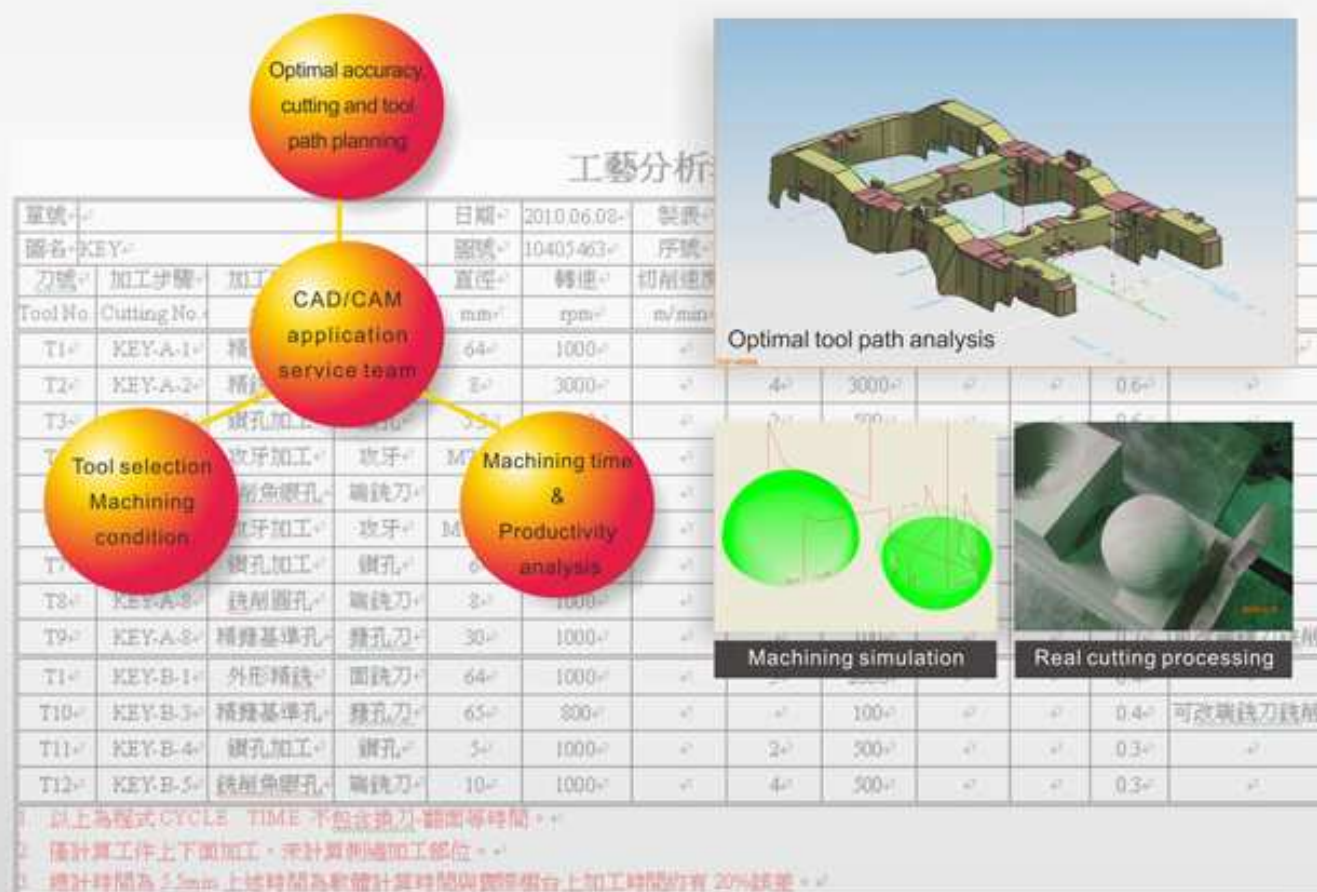
With FANUC E-hand books and remote control, the operator may query and monitoring anywhere immediately.



Complete record

CAD/CAM analysis service

The CAD/CAM application team offers the best proposal according to customers' machining requirements.



unit: mm(inch)

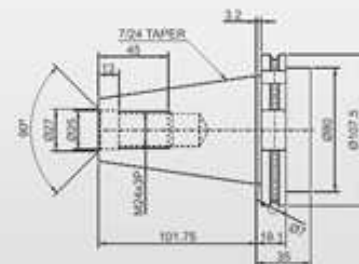


unit: mm(inch)

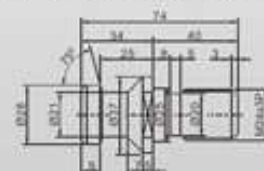


unit: mm

Tool shank (DIN-50, DIN69871)



Pull stud bolt
(DIN-50, DIN69872B, ISO7388/2-4A)



Attachment Heads



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Manual Attachments Heads



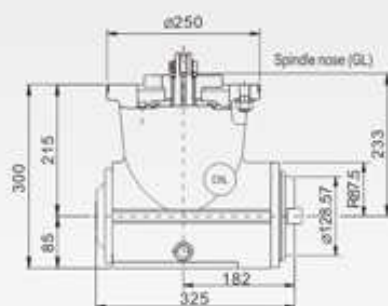
90° angular head



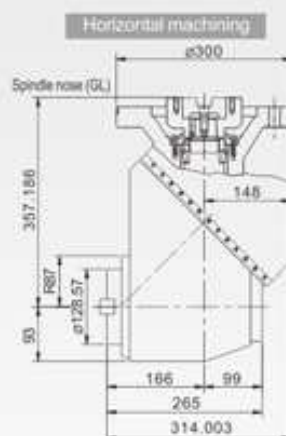
Universal head



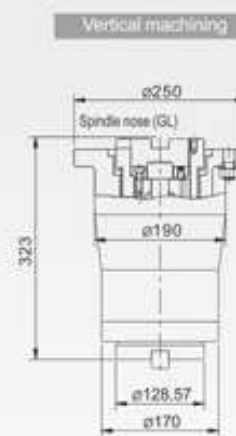
Extended head



Max. power	11kW
Max. speed	2,000rpm
Spindle taper	#50
Head clamping	Manual
Axis indexing	Manual at C-axis



Max. power	11kW
Max. speed	1,200rpm
Spindle taper	#50
Head clamping	Manual
Axis indexing	Manual at A and C-axis

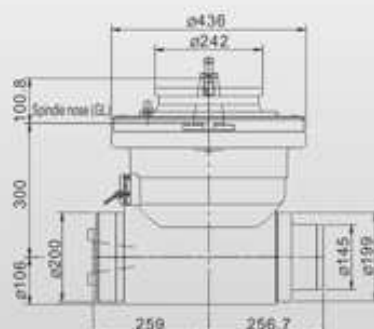


Max. power	11kW
Max. speed	2,000rpm
Spindle taper	#50
Head clamping	Manual
Axis indexing	Not available

Hydraulic Attachment Heads



AC 90° angular head



Max. power	26kW
Max. speed	3,000rpm
Spindle taper	#50
Head clamping	Hydraulic
Axis indexing	Auto angular indexing (1°, C-axis)

SF series

MODEL				UNIT	SF-2112	SF-2612	SF-3112	SF-4112
TRAVEL								
X axis				mm	2,100	2,600	3,100	4,100
Y axis				mm	1,200			
Z axis	Box way			mm	800			
	Linear way			mm	800			
Distance from spindle nose to table	Box way (2-step gear)	Z axis=800	mm	150-950				
		Z axis=1,000	mm	130-1,150				
	Linear way (Direct-driven / Built-in)	Z axis=800	mm	185-985 (BT 50) / 163-963 (BT 40)				
		Z axis=1,000	mm	-				
Distance from spindle center to column				mm	453			
Distance between columns (port width)				mm	1,370			
TABLE								
Dimension				mm	2,000 x 1,100	2,500 x 1,100	3,000 x 1,100	4,000 x 1,100
T-slot (Width x Number x Pitch)				mm	22 x 7 x 150	22 x 7 x 150	22 x 7 x 150	22 x 7 x 150
Max. table load				kg	4,000	5,000	6,000	8,000
SPINDLE								
Spindle motor (Continuous / 30 minutes rated)				kW	18.5 / 22 (22 / 28 opt.)			
Spindle speed	Box way	2-step gear	rpm	6,000 / 4,500 (opt.)				
		Belt-driven	rpm	8,000 (opt.) / 10,000 (opt.)				
	Linear way	2-step gear	rpm	4,000 (opt.) / 6,000 (opt.)				
		Direct-driven	rpm	10,000 (BT-50)(opt.) / 15,000 (BT-40)(opt.)				
		Built-in	rpm	18,000 (opt.) / 24,000 (opt.)				
Spindle taper					ISO NO. 50	ISO NO. 50	ISO NO. 50	ISO NO. 50
FEED								
Cutting feed rate				mm/min	1-10,000			
Rapid traverse				m/min	XY:24 Z:15			
X, Y, Z motor (FANUC)				kW	XYZ: 4			
ACCURACY (X, Y, Z)								
Positioning accuracy	Refer to JIS B6333			mm	± 0.005 / 300, ± 0.015/ Full Travel			
	Refer to ISO 10791-2			mm	P0.02	P0.02	P0.03	P0.012
Repeatability	Refer to JIS B6333			mm	± 0.003	± 0.003	± 0.003	± 0.003
	Refer to ISO 10791-2			mm	Ps0.015	Ps0.015	Ps0.025	Ps0.025
ATC								
Tool storage capacity				pcs	32 / 40 (opt.)			
Max. tool weight				kg	18	18	18	18
Tool size (D x L) (Full tools)				mm	Ø125 x 380L	Ø125 x 380L	Ø125 x 380L	Ø125 x 380L
Max. tool size (D x L) (next pockets empty)				mm	Ø180 x 380L	Ø180 x 380L	Ø180 x 380L	Ø180 x 380L
Tool shank					BT 50 / CAT 50	BT 50 / CAT 50	BT 50 / CAT 50	BT 50 / CAT 50
Pull stud bolt					P50T-1	P50T-1	P50T-1	P50T-1
OTHERS								
Electric power consumption				kVA	45	45	45	45
Machine net weight				kg	20,500	22,500	24,500	28,000
Machine gross weight				kg	23,500	25,500	28,500	32,000
Max. space volume (L x W x H)				m	7.62 x 5.05 x 4.15	8.62 x 5.05 x 4.15	9.62 x 5.05 x 4.15	11.62 x 5.05 x 4.15

Standard Accessory & Function

- | | | |
|---|--|--|
| 01. Fanuc 0iMD controller | 09. Working light | 17. Flood coolant system (Ring & Nozzle) |
| 02. 6,000 rpm 2-step gear spindle (Box way) | 10. 3-color signal lamp | 18. Heat exchanger for electrical cabinet |
| 03. Spindle and gear box cooling system | 11. Air blast through spindle | 19. Twin chip screws on table side |
| 04. Twin hydraulic cylinders with pressured air assistance balance system | 12. Moveable manual pulse generator | 20. Caterpillar type chip conveyor |
| 05. 32 tool magazine with arm type ATC | 13. Wash gun & pneumatic interface | 21. Foundation pads & bolts kits |
| 06. Centralized auto lubrication system | 14. RS232 interface | 22. Tool kits |
| 07. Independent lubrication oil collector for 3 axes (X/Y/Z) | 15. Absolute pulse coder feedback | 23. Operation manual, PLC & electrical circuit diagram |
| 08. Enclosure splash guard (without roof) | 16. Vision Wide VW-FX graphical user interface | |



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SF-2116	SF-2616	SF-3116	SF-4116	SF-2120	SF-2620	SF-3120	SF-4120
2,100	2,600	3,100	4,100	2,100	2,600	3,100	4,100
1,600				2,000			
800				800			
800 / 1,000 (opt.)				800 / 1,000 (opt.)			
150-950				150-950			
130-1,150				130-1,150			
185-985 (BT 50) / 163-963 (BT 40)				185-985 (BT 50) / 163-963 (BT 40)			
185-1,185 (BT 50) / 163-1,163 (BT 40)				185-1,185 (BT 50) / 163-1,163 (BT 40)			
453				453			
1,700				2,100			
2,000 x 1,500	2,500 x 1,500	3,000 x 1,500	4,000 x 1,500	2,000 x 1,800	2,500 x 1,800	3,000 x 1,800	4,000 x 1,800
22 x 9 x 160	22 x 9 x 160	22 x 9 x 160	22 x 9 x 160	22 x 11 x 160	22 x 11 x 160	22 x 11 x 160	22 x 11 x 160
8,000	9,000	10,000	12,000	8,000	9,000	10,000	12,000
18.5 / 22 (22 / 26 opt.)				18.5 / 22 (22 / 26 opt.)			
6,000 / 4,500 (opt.)				6,000 / 4,500 (opt.)			
8,000 (opt.) / 10,000 (opt.)				8,000 (opt.) / 10,000 (opt.)			
4,000 (opt.) / 8,000 (opt.)				4,000 (opt.) / 8,000 (opt.)			
10,000 (BT-50)(opt.) / 15,000 (BT-40)(opt.)				10,000 (BT-50)(opt.) / 15,000 (BT-40)(opt.)			
18,000 (opt.) / 24,000 (opt.)				18,000 (opt.) / 24,000 (opt.)			
ISO NO. 50	ISO NO. 50	ISO NO. 50	ISO NO. 50	ISO NO. 50	ISO NO. 50	ISO NO. 50	ISO NO. 50
1-10,000				1-10,000			
XY:24 Z:15			X:18 Y:24 Z:15	XY:24 Z:15			X:18 Y:24 Z:15
XYZ: 4			X:7 YZ: 4	XYZ: 4			X:7 YZ: 4
± 0.005 / 300, ± 0.015/ Full Travel				± 0.01 / 300, ± 0.015/ Full Travel			
P0.02	P0.02	P0.03	P0.03	P0.02	P0.02	P0.03	P0.03
± 0.003	± 0.003	± 0.003	± 0.003	± 0.003	± 0.003	± 0.003	± 0.003
Ps0.015	Ps0.015	Ps0.025	Ps0.025	Ps0.015	Ps0.015	Ps0.025	Ps0.025
32 / 40 (opt.)				32 / 40 (opt.)			
18	18	18	18	18	18	18	18
Ø125 x 380L	Ø125 x 380L	Ø125 x 380L	Ø125 x 380L	Ø125 x 380L	Ø125 x 380L	Ø125 x 380L	Ø125 x 380L
Ø180 x 380L	Ø180 x 380L	Ø180 x 380L	Ø180 x 380L	Ø180 x 380L	Ø180 x 380L	Ø180 x 380L	Ø180 x 380L
BT 50 / CAT 50	BT 50 / CAT 50	BT 50 / CAT 50	BT 50 / CAT 50	BT 50 / CAT 50	BT 50 / CAT 50	BT 50 / CAT 50	BT 50 / CAT 50
P50T-1	P50T-1	P50T-1	P50T-1	P50T-1	P50T-1	P50T-1	P50T-1
50	50	50	50	50	50	50	50
20,000	22,000	24,000	27,500	21,000	23,000	25,500	29,500
23,500	25,500	28,000	31,500	24,500	26,500	29,500	33,500
7.62 x 5.45 x 4.15	8.62 x 5.45 x 4.15	9.62 x 5.45 x 4.15	11.62 x 5.45 x 4.15	7.62 x 5.85 x 4.15	8.62 x 5.85 x 4.15	9.62 x 5.85 x 4.15	11.62 x 5.85 x 4.15

ⓘ All specifications are subjected to change without prior notice.

Optional Accessory & Function

- | | | |
|--|--|---|
| 01. 4,000 / 4,500 / 8,000 rpm 2-step gear spindle | 10. Sub working table | 18. Manual clamping heads: 90 degree / extended / universal |
| 02. 8,000 / 10,000 rpm belt-driven spindle | 11. Oil skimmer | 19. Semi-auto clamping heads: 90 degree |
| 03. 18,000 / 20,000 rpm Built-in spindle | 12. Oil mist cooling device | 20. Transformer |
| 04. 10,000 rpm direct-driven spindle | 13. Rotary table | 21. Chip cart |
| 05. 40T / 60T tool magazine | 14. Interface preserved for rotary table (Machine contains within the hose and oil tank) | 22. Z-axis retract function at power failure |
| 06. Coolant through tool holder interface | 15. 3-axis manual pulse generator | 23. Full enclosure splash guard |
| 07. Coolant through spindle system | 16. Automatic tool length measurement | |
| 08. HEIDENHAIN linear scale feedback | 17. Automatic work piece measurement | |
| 09. 200 / 300 / 400 mm higher column extension (Higher column 200 mm extended only for SF-xx12 series) | | |



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Vertical. Bridge. 5-Face Machining Center