

SF Series High Speed Machine

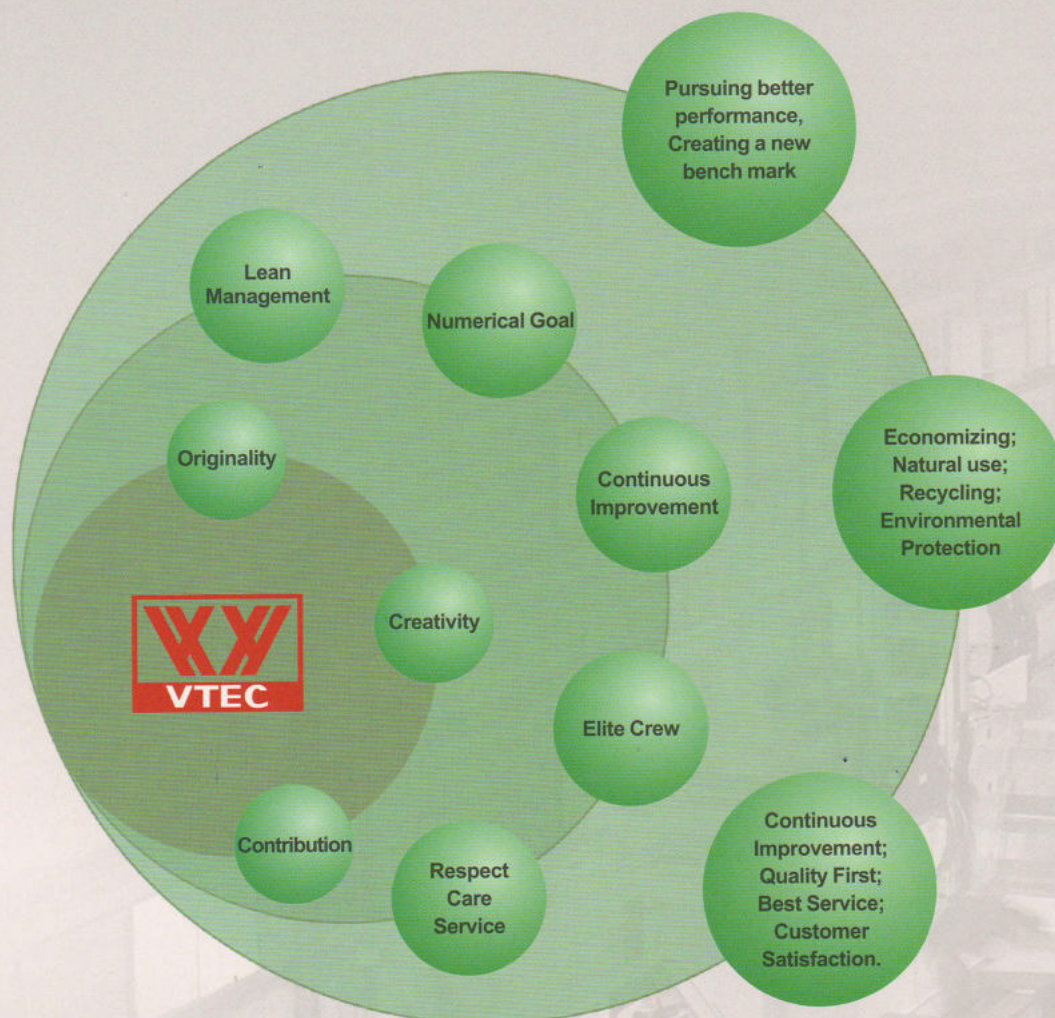


CNC Double Column Vertical Machining Center

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)



2. VB series

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



3. VF series

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



4. NF series

X: 2.2 - 10.2m
Y: 2.3 / 2.6 / 3.0 / 3.3m
Z: 920 / 1,020mm (Box way)
Z: 1,000 / 1,200mm (Linear way)



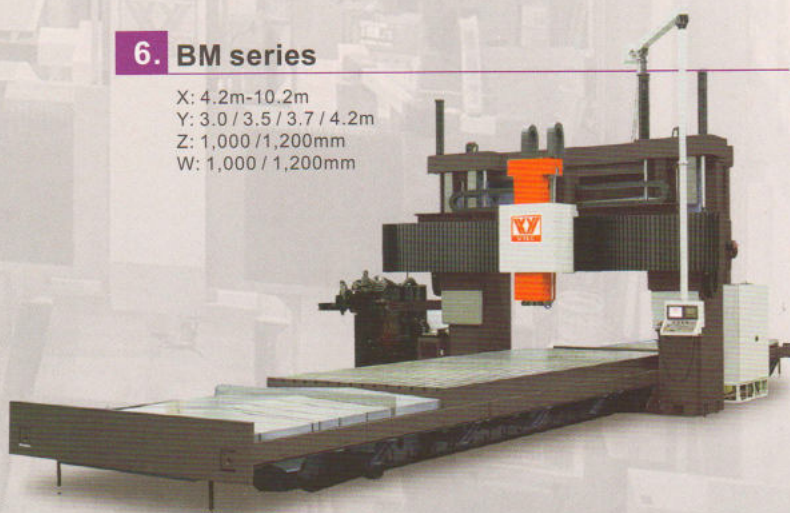
5. VH series

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



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



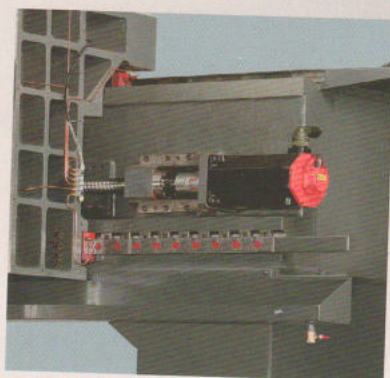
AC extended head

(not available for SF and VB)

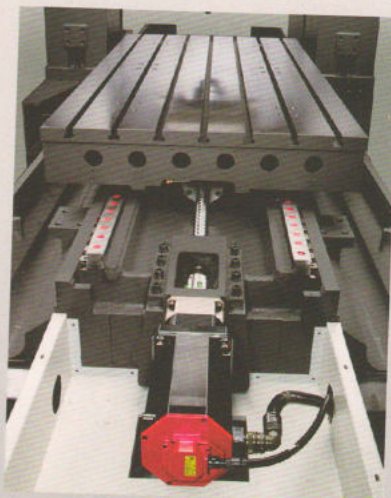
A combination of speed and precision.

Machine Features

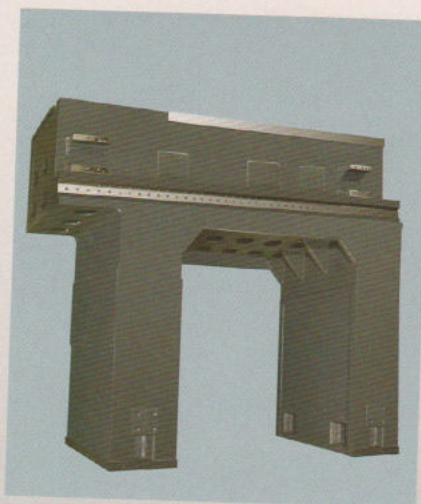
- All made of casting structure: base, columns, beam, saddle, and headstock
- Various spindles 18,000 / 20,000 / 24,000 rpm (Opt.)
- 24 / 20 m/min Rapid traverse
- Roller type linear ways made by Japan or German (X, Y axis)
- Distance between columns: 1.38 / 1.7 / 2.1 m, extra wide front door opening
- 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)



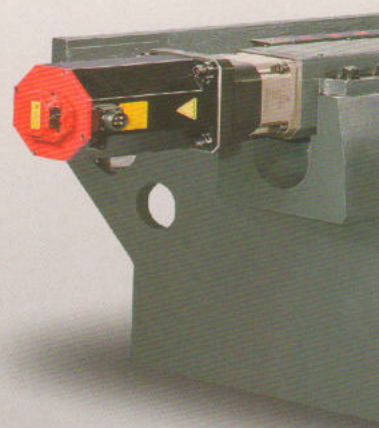
- Large span for high torque and high rigidity when machining



- 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.

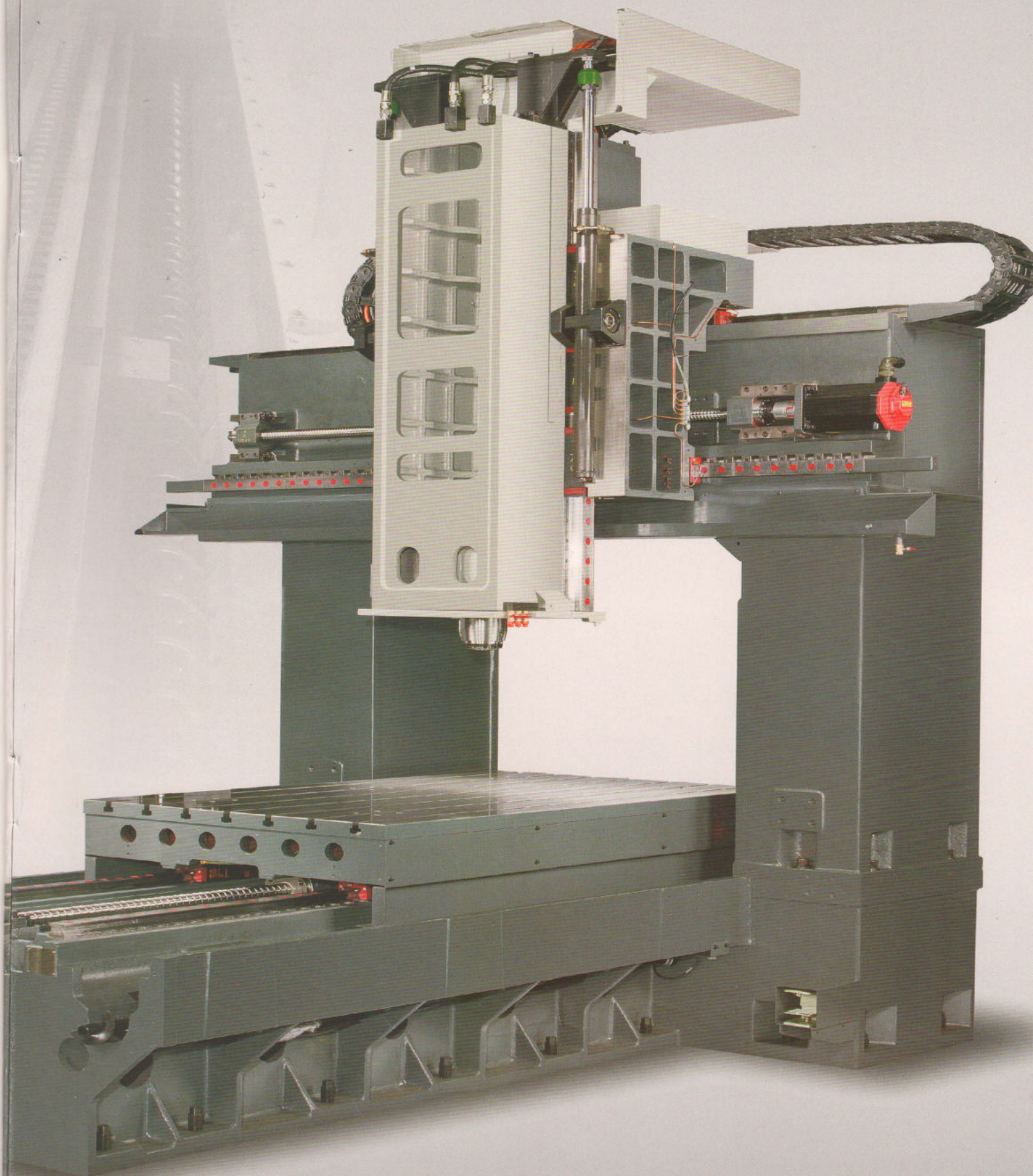


- Particularly suitable for smaller distance between columns (SF-xx12)
- Integral structure of the cross beam and columns for excellent rigidity



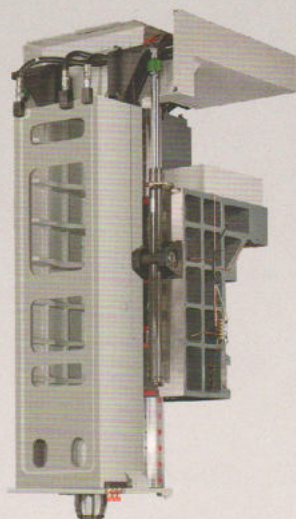


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Best center-line layout of spindle system provides powerful and reliable performance!

Spindle Unit



Linear way



Box way

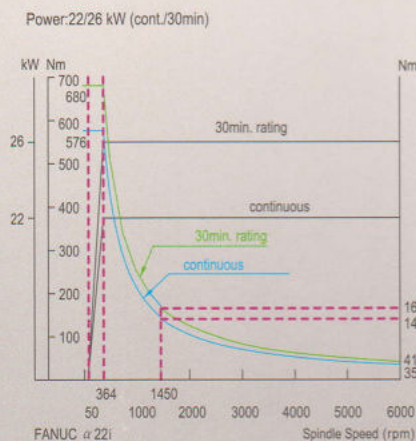
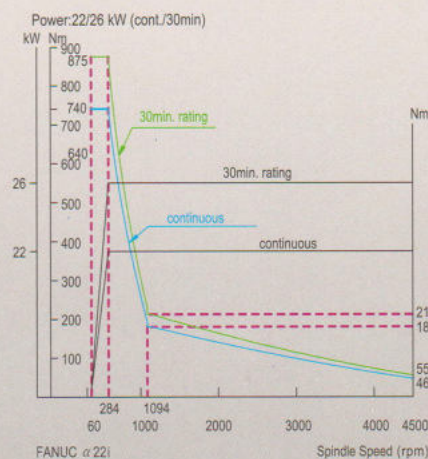
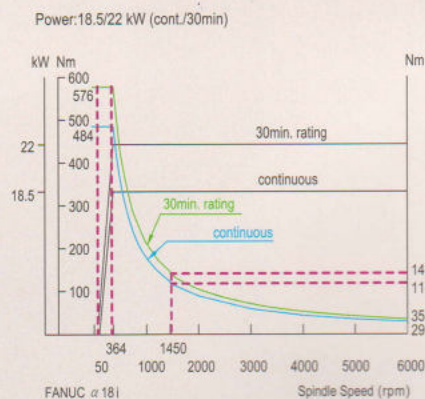
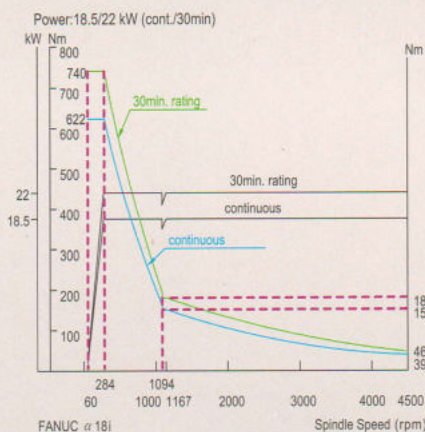
Design Feature of Spindle System

- 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

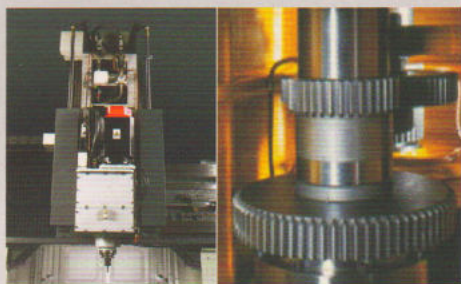
■ Gear type





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■ Gear type spindle



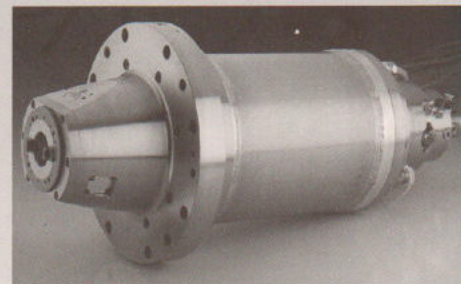
Z-axis box way : 4,500 / 6,000 rpm
Z-axis linear way : 4,000 / 8,000 rpm

■ Direct-driven spindle



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

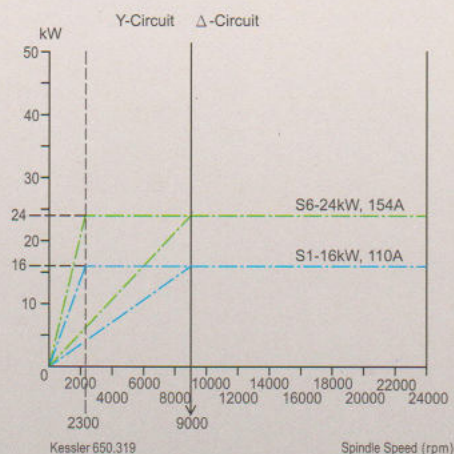
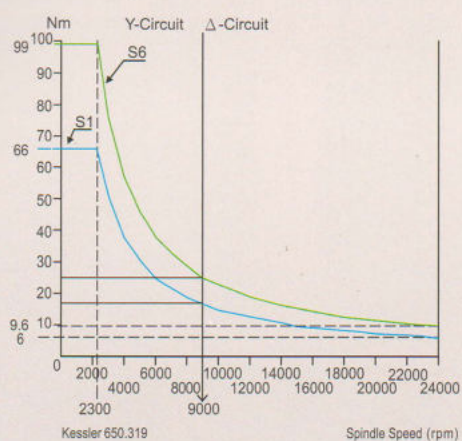
■ Built-in high speed spindle



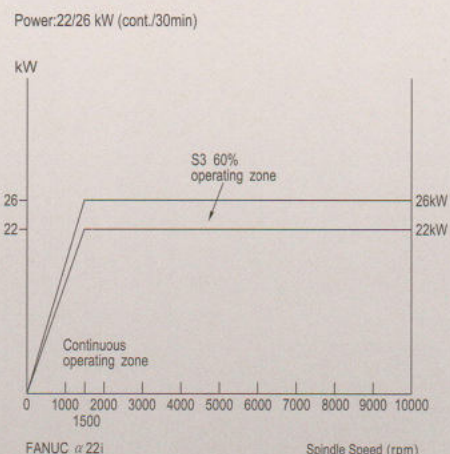
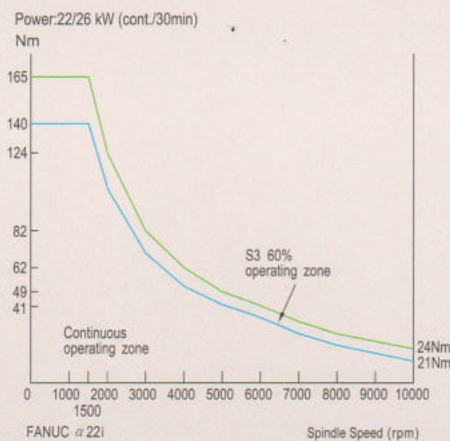
Linear way : 18,000~24,000 rpm
Heat extension : <0.02 mm
Low vibration : 1mm / sec

Linear way

■ Built-in type



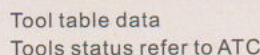
■ Direct-driven type



Control Unit

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.

Tool Table



Tool compensation data
Duty rate information

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

Fast tool compensation
Manual tool compensation

Fast mappings of I/O and program comment
Quick maintenance

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

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

- 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)

- 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



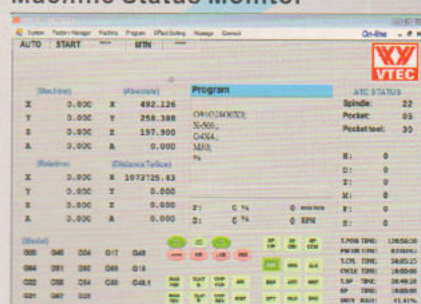
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Efficiency management Customer-oriented design

In-time service

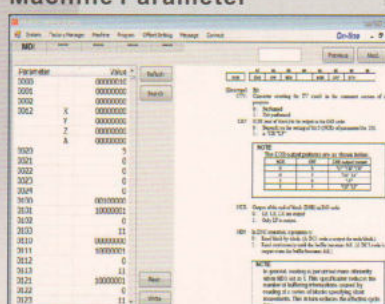
Remote control

Machine Status Monitor



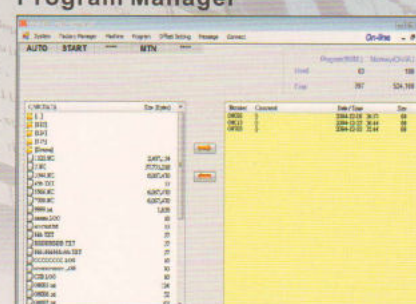
Tools status refer to ATC
Duty rate information
Coordinates display
Running program display
Running function display

Machine Parameter



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

Program Manager



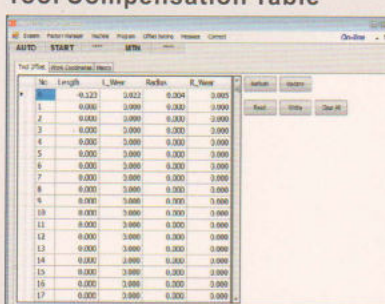
NC memory file manager
Data Server file manager
Simple and quick transfer

Factory Manager



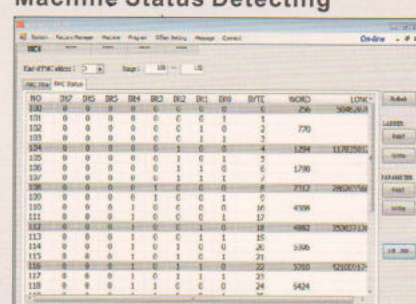
Operation time counter
Duty rate counter
Machined parts counter

Tool Compensation Table



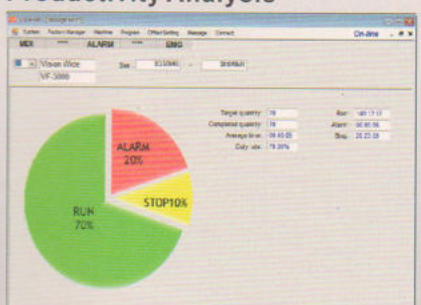
Tool compensation data
Variable value setting in Macro

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



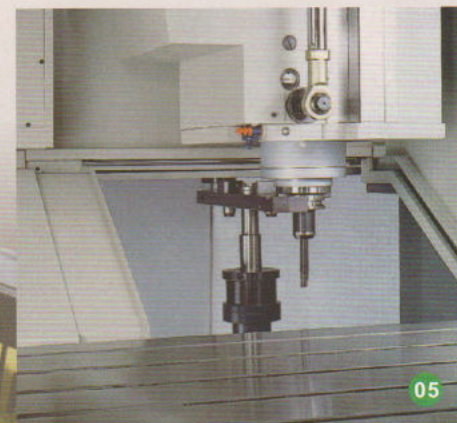
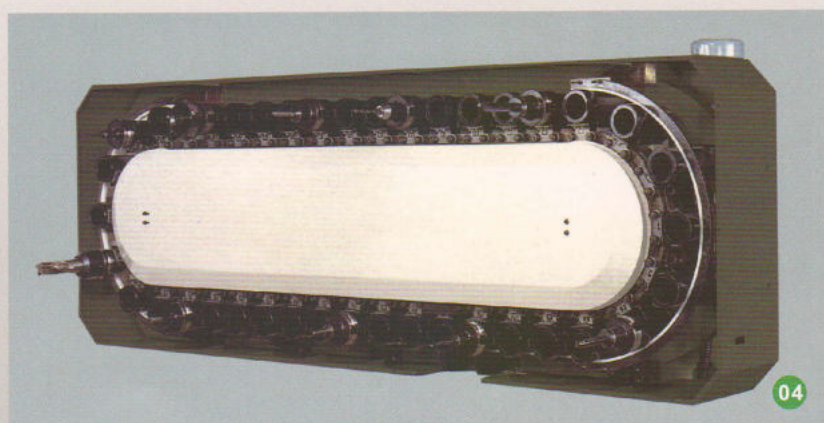
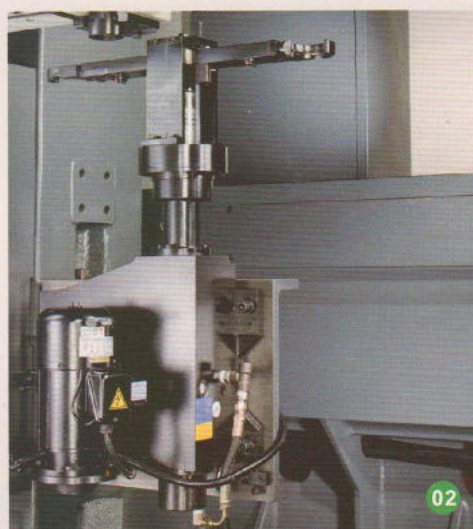
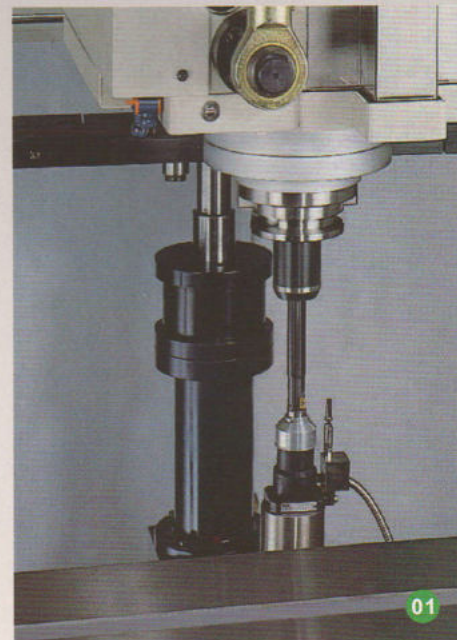
FANUC 0iMD / 31iB



HEIDENHAIN iTNC530 HSC

With More Standard / Optional 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 : Ø180 x 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



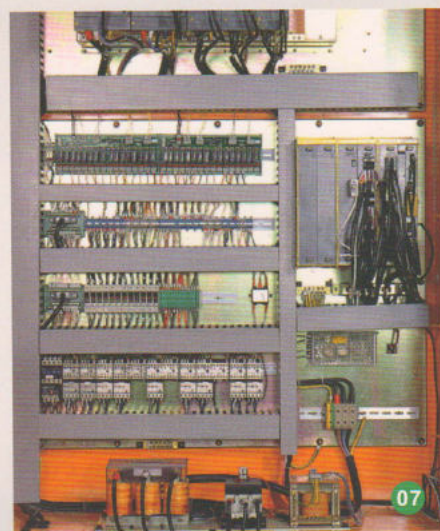


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Multi-layer front door design provides the widest door opening



06



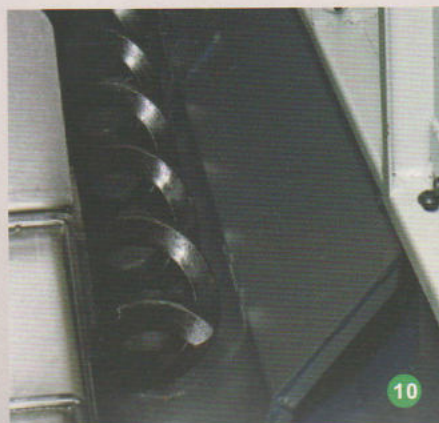
07



08



09



10



11



12

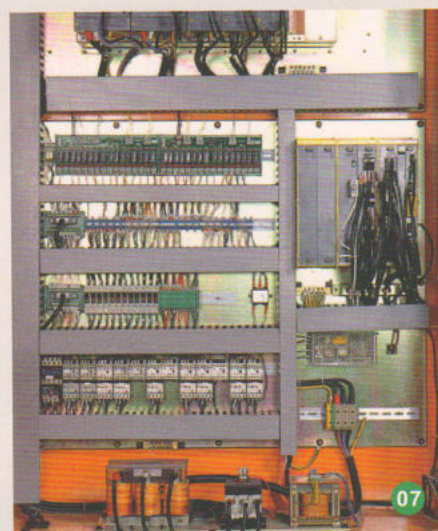


VISION WIDE
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Multi-layer front door design provides the widest door opening



06



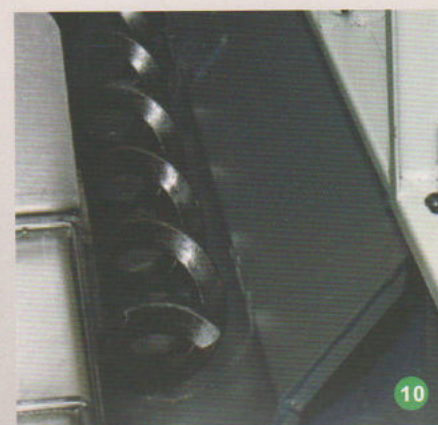
07



08



09



10



11



12

TPS Management

Under the guideline of constructing a thinking-active environment, while in the RD process, we set 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.

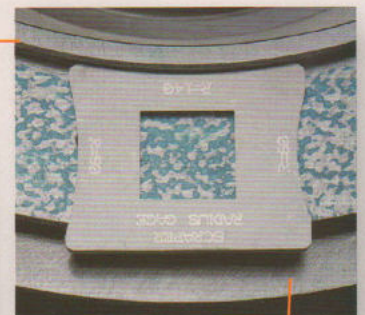
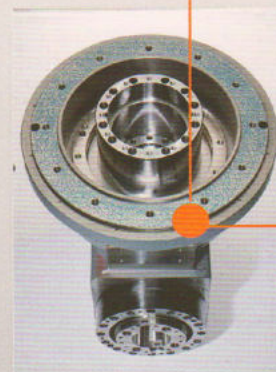
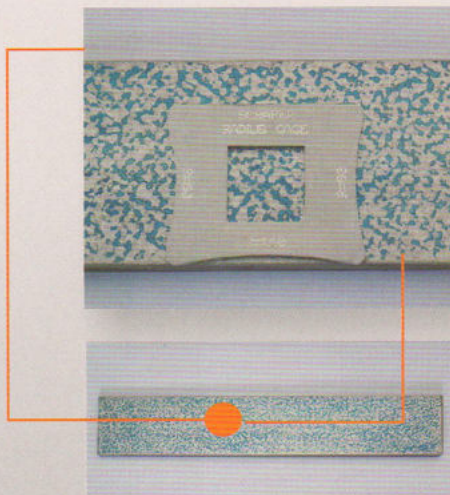


Headstock



Angle head checking and running

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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Management System

Process Monitoring

Defect Visibility

Cell Production

Take Time Improvement

Modular Production System

Autonomous Management
Continuous Improvement
Pursue 100% on Time Delivery
100% Quality Guaranty

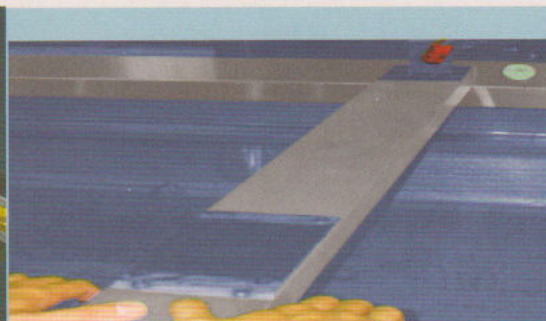
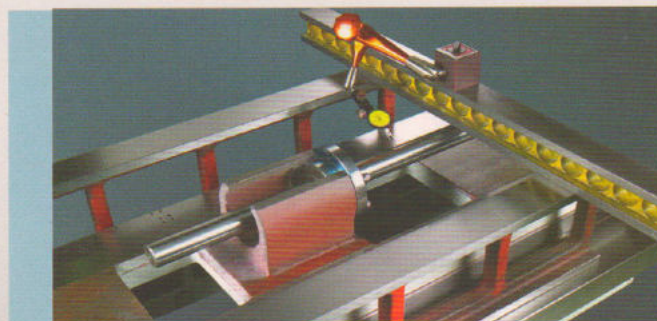
CNC software test and development



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"

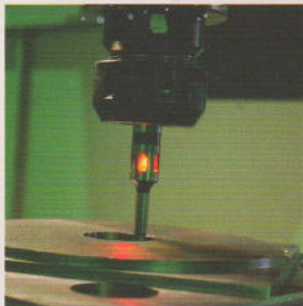
by following P-D-C-A
process in every
production segment,
using the advanced
instruments and strict
quality standards.

Reliability
test

Assembly
inspection

Cutting
test

Geometric
accuracy
inspection



3D mold cutting

Positioning
accuracy
inspection

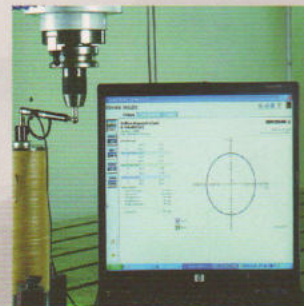
Function
test



Vibration inspection



Heavy cutting



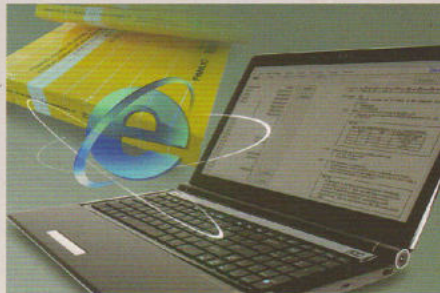
Circularity by ball bar test
(ISO 230-4)

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.



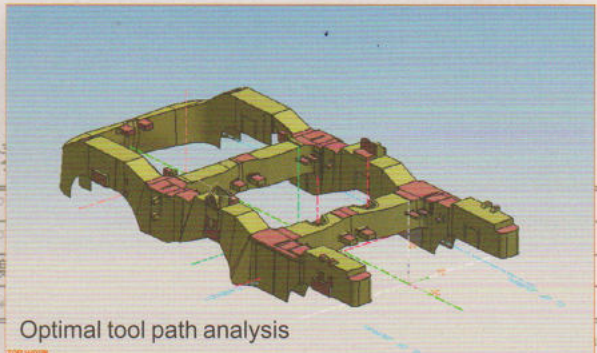
Complete record

CAD/CAM analysis service

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

Optimal accuracy, cutting and tool path planning

工藝分析



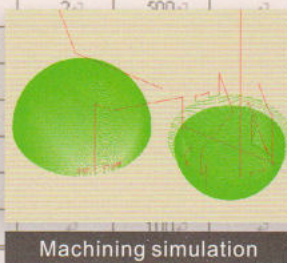
Optimal tool path analysis

Tool selection
Machining condition

CAD/CAM application service team

Machining time & Productivity analysis

單號	圖名	刀號	加工步驟	加工	日期	2010.06.08	製表
Tool No.	Cutting No.	直徑	轉速	切削速度	圖號	10405463	序號
		mm	rpm	m/min			
T1	KEY-A-1	精			64	1000	
T2	KEY-A-2	精			8	3000	
T3	KEY-A-3	鑽孔加工	鑽孔		2.5	500	
T4	KEY-A-4	攻牙加工	攻牙	M7			
T5	KEY-A-5	銑削魚眼孔	端銑刀				
T6	KEY-A-6	攻牙加工	攻牙	M			
T7	KEY-A-7	鑽孔加工	鑽孔		6		
T8	KEY-A-8	銑削圓孔	端銑刀		8	1000	
T9	KEY-A-9	精磨基準孔	磨孔刀		30	1000	
T1	KEY-B-1	外形精銑	面銑刀		64	1000	
T10	KEY-B-3	精磨基準孔	磨孔刀		65	800	
T11	KEY-B-4	鑽孔加工	鑽孔		5	1000	
T12	KEY-B-5	銑削魚眼孔	端銑刀		10	1000	
					4	500	



Machining simulation



Real cutting processing

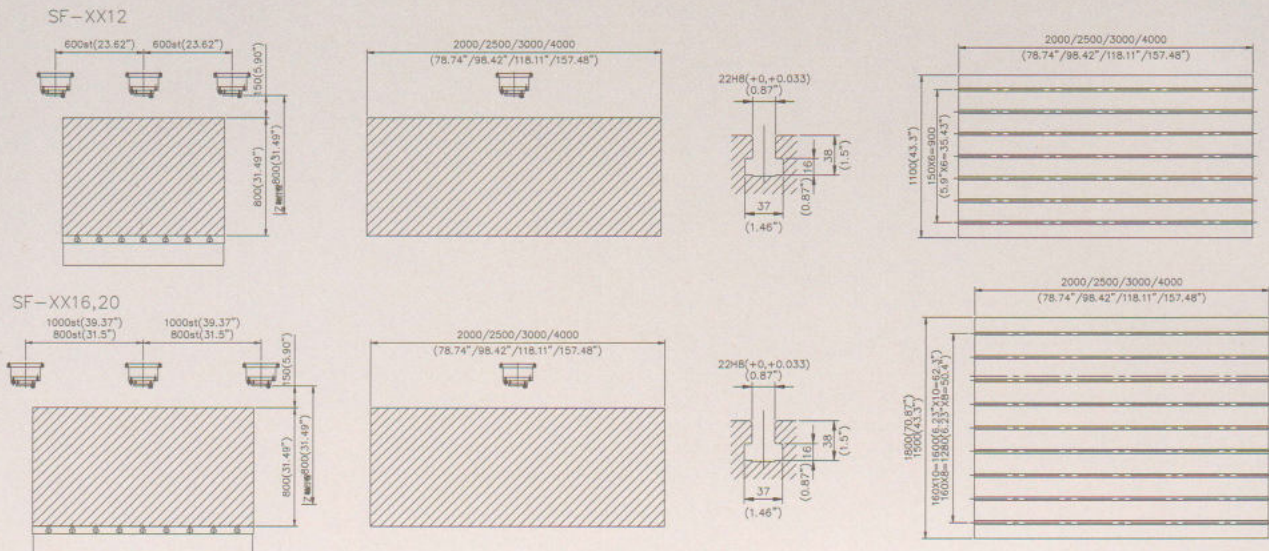
1 以上為程式 CYCLE TIME 不包含換刀、翻面等時間。

2 僅計算工件上下面加工，未計算側邊加工部位。

3 總計時間為 5.5min 上述時間為軟體計算時間與實際機台上加工時間約有 20% 誤差。

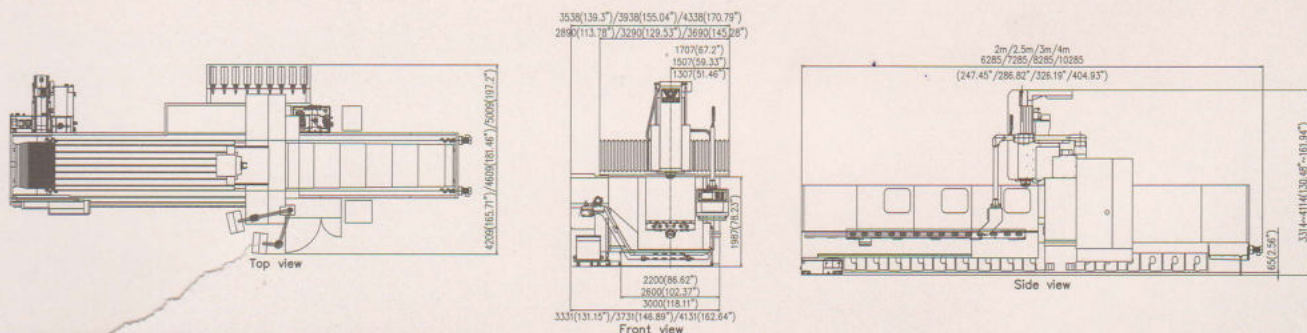
Table and T-slot Dimension

unit: mm(inch)



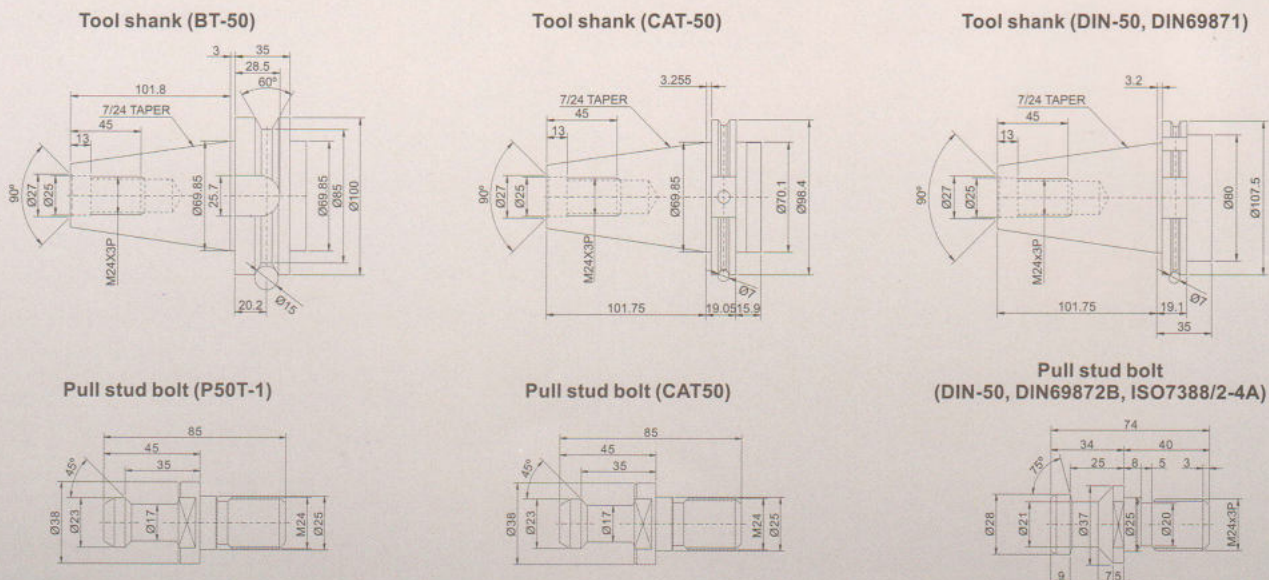
Major Machine Dimension

unit: mm(inch)



Tool Shank & Pull Stud Dimension

unit: mm



Attachment Heads

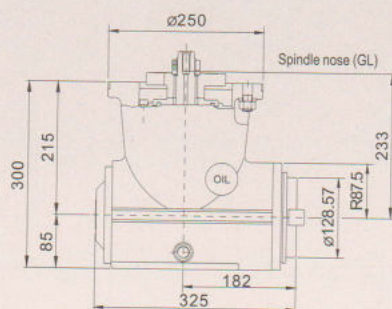


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Manual Attachments Heads



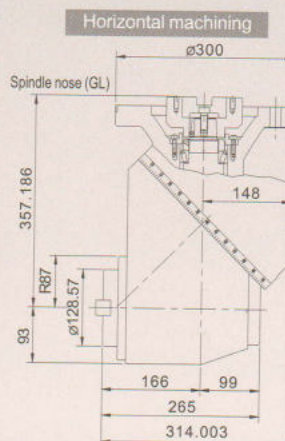
90° angular head



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



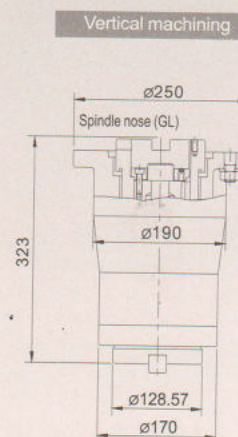
Universal head



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



Extended head

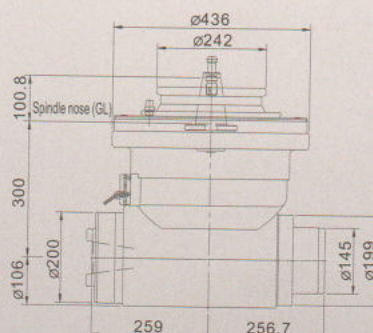


Max. power	11kW
Max. speed	2,000rpm
Spindle taper	#50
Head clamping	Manual
Axis indexing	Not available

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 / 26 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.) / 8,000 (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	P0.04
Repeatability	Refer to JIS B6333		mm	± 0.003	± 0.003	± 0.003	± 0.004
	Refer to ISO 10791-2		mm	Ps0.015	Ps0.015	Ps0.025	Ps0.04
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

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| <ul style="list-style-type: none"> 01. Fanuc 0iMD controller 02. 6,000 rpm 2-step gear spindle (Box way) 03. Spindle and gear box cooling system 04. Twin hydraulic cylinders with pressured air assistance balance system 05. 32 tool magazine with arm type ATC 06. Centralized auto lubrication system 07. Independent lubrication oil collector for 3 axes (X/Y/Z) 08. Enclosure splash guard (without roof) | <ul style="list-style-type: none"> 09. Working light 10. 3-color signal lamp 11. Air blast through spindle 12. Moveable manual pulse generator 13. Wash gun & pneumatic interface 14. RS232 interface 15. Absolute pulse coder feedback 16. Vision Wide VW-FX graphical user interface | <ul style="list-style-type: none"> 17. Flood coolant system (Ring & Nozzle) 18. Heat exchanger for electrical cabinet 19. Twin chip screws on table side 20. Caterpillar type chip conveyor 21. Foundation pads & bolts kits 22. Tool kits 23. Operation manual, PLC & electrical circuit diagram |
|--|--|--|



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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

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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