

NF Series



CNC Double Column Vertical Machining Center

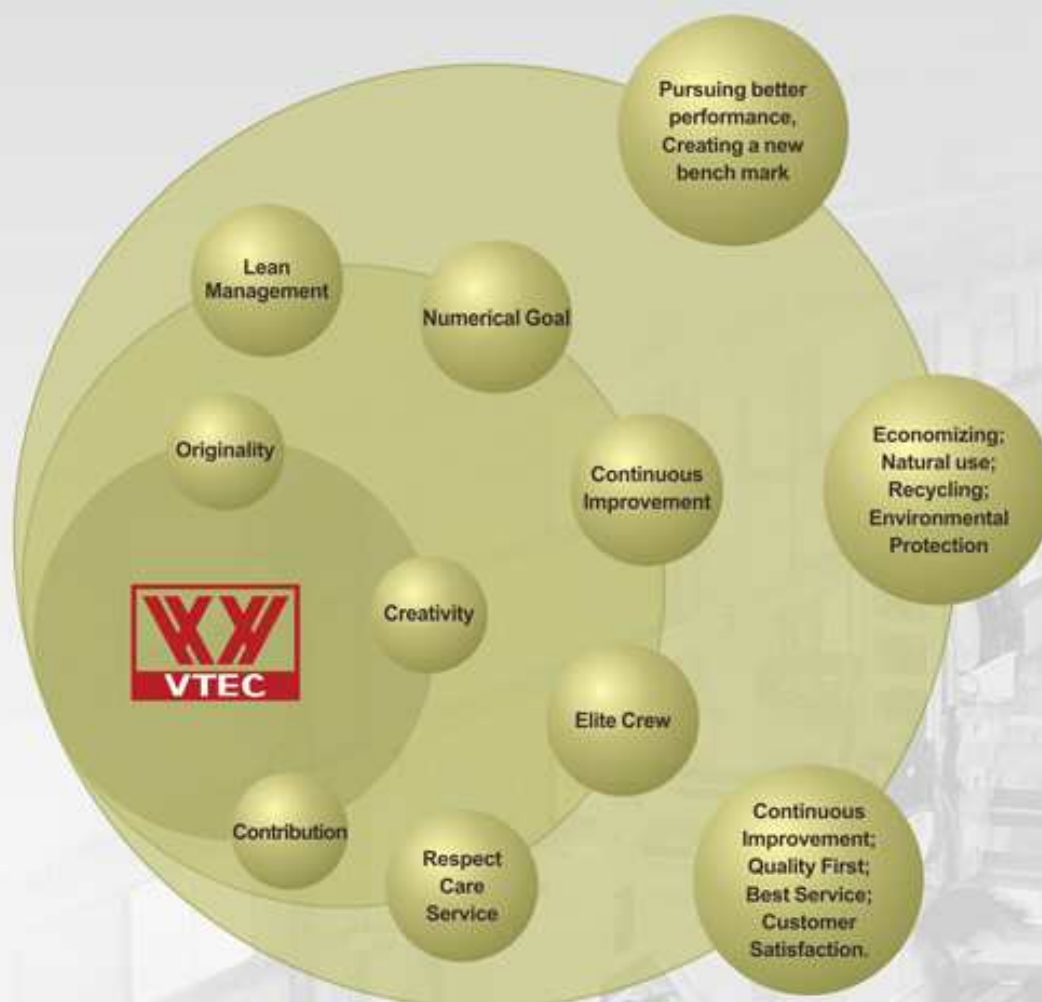
High efficiency machine

Ultra-precision fixed beam 5-face machining center

Casting Structure (up to 5m)
X,Y Axis Roller Type Linear Way
3 Guide Way for X Axis
NF-AH Automatic 5 Face Machining (opt.)



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

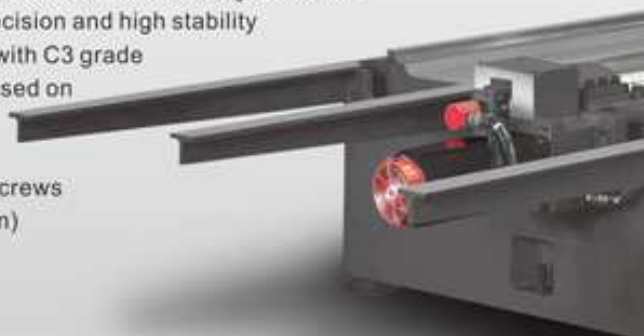
(not available for SF and VB)

3 Guide Way Bed X, Y Axis Roller Type Linear Way Rigid, Reliable, High Performance Machine

- Bed supported by 3 guide ways
- All made of casting structure: base, columns, beam, saddle, and headstock
- Roller type linear ways made by Japan or German (X, Y axis)
- Distance between columns: 2.4m / 2.7m
- Cutting length: 2.2m-10.2m
- Z stroke: Box way: 920 / 1,020mm (Opt.)
Linear way: 1,000 / 1,200mm (Opt.)
- Extra wide front door opening
- ATC for vertical spindle or vertical-to-horizontal spindle (Opt. for NF-AH)
- Max. exchanging tool: Ø215mm x L450mm
- Overhead pendulum type operation panel. (Opt.)
- Head attachments (Opt.): 90 degree / extended / universal / 2-axis
- AH type (Opt.): automatic head magazine / vertical-to-horizontal head exchange during 5 face machining
- Enhanced Vision Wide graphical user interface
(for FANUC 0iMD / 31iB)



- Optimal center-line layout of the spindle system
- Columns and beams made of casting with larger cross-section area to ensure optimal rigidity
- Precision and smoothness in motion based on dual nitrogen cylinders, which are closed to spindle head and make a weight balance
- Feeding design for high precision and high stability
- Pre-tensioned ball screws with C3 grade
- Optimal rigidity at X axis based on gear power transmission
- Unique damping and supporting design for ball screws at X and Y axis (stroke > 4 m)





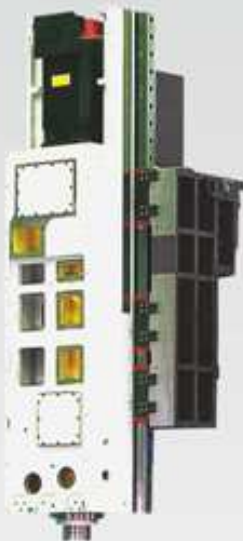
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Headstock Categories: Manual / AC / AH

Spindle Type	Manual Box Way	AC Box Way (Standard)	AH Linear Way
Automatic Tool Changing	Vertical	Vertical	Vertical & Horizontal
Head Magazine	Manual	Semi-automatic	Fully Automatic



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



Linear way



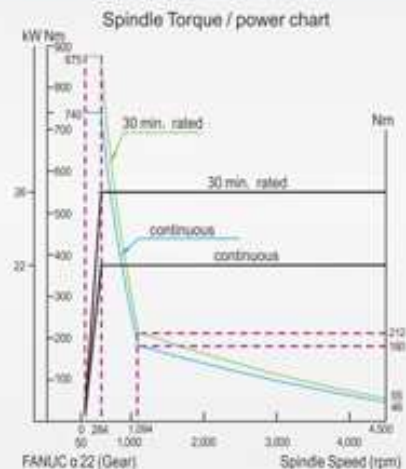
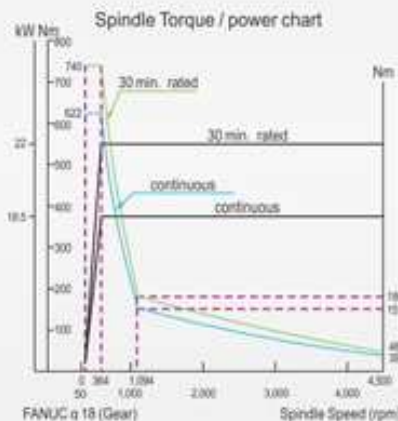
Box way

Design Feature of Spindle System

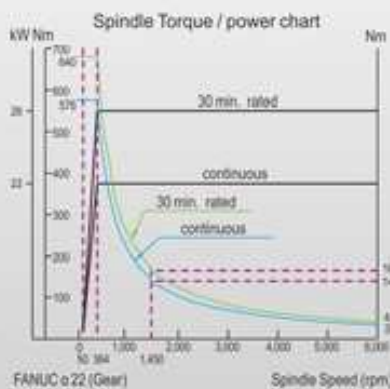
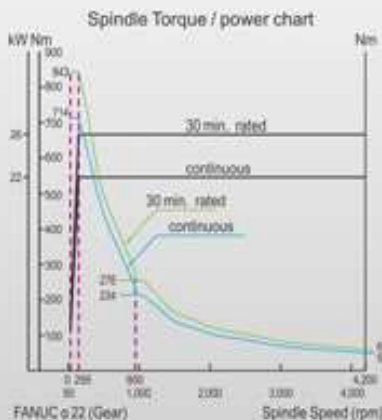
- Least thermal deformation based on box structure, and spindle centered at the interception point of motor, ball screw, and dual balancing weight
- Durable and stable gear box based on one piece casting design and short shaft
- High efficient power transmission with low noise are produced by Japanese 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: 4,200 4,500 6,000 8,000 10,000rpm

Spindle Power and Torque Chart

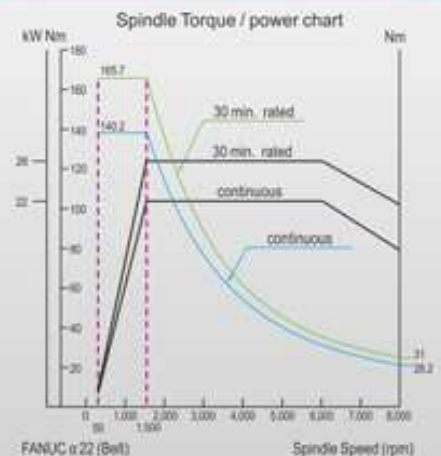
Box way (gear type)



Linear way (gear type)



Belt-driven type / Direct-driven type



Fully automatic 5 face machining



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AH package (Opt.)

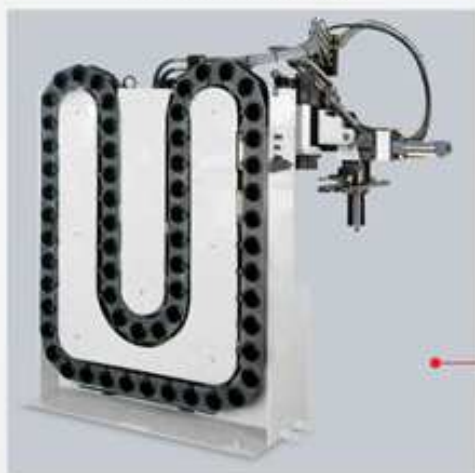
AC 90 degree head



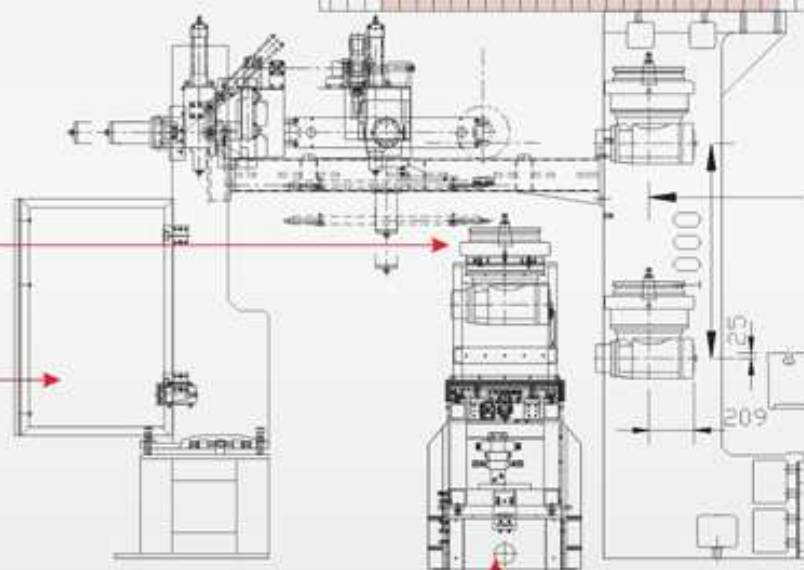
Spindle (power 22/26 kW)
Z axis, 1m linear way



60 tools V/H ATC



Longer Y travel



Automatic head magazine (1 head)



Automatic head magazine (3 heads)



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



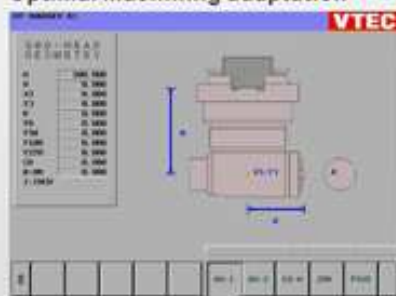
+, -, ×, ÷ arithmetic operations
Sine, cosine and tangent function
10 sets memory registering

Machining Parameter



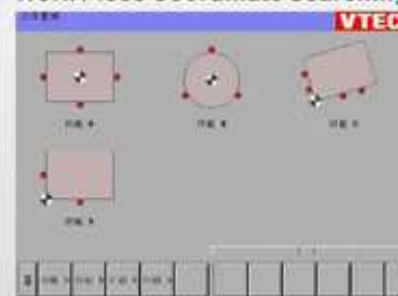
Additions 3 parameters for machining
The best efficiency machining modules
The highest precision machining modules
The smoothest machining modules

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



Factory Manager



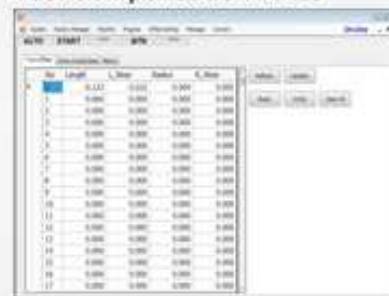
Productivity Analysis



Machine Parameter



Tool Compensation Table



Numerical Controller



SIEMENS 840D



FANUC 0iMD / 31iB



HEIDENHAIN iTNC530 HSCI

With More Standard / Optional Accessories

Accessories

- 01 Auto. tool length measurement (Opt.)
- 02 Pressured air assist balancing
- 03 X axis ball screw supporter (4m above)
- 04 Ring & nozzle type flood coolant (only for box way spindle, it cannot be used with head attachment)
- 05 Heat exchanger for electrical cabinet
- 06 AC head with swing arm type head bracket (Opt)
- 07 Cam type ATC
- 08 Splash water gun & air outlet
- 09 Operation manual
- 10 Screw type chip conveyor
- 11 Caterpillar chip conveyor & cart (Opt)
- 12 Spindle cooling system





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04



05



06



07



08



09



10



11



12

TPS Management

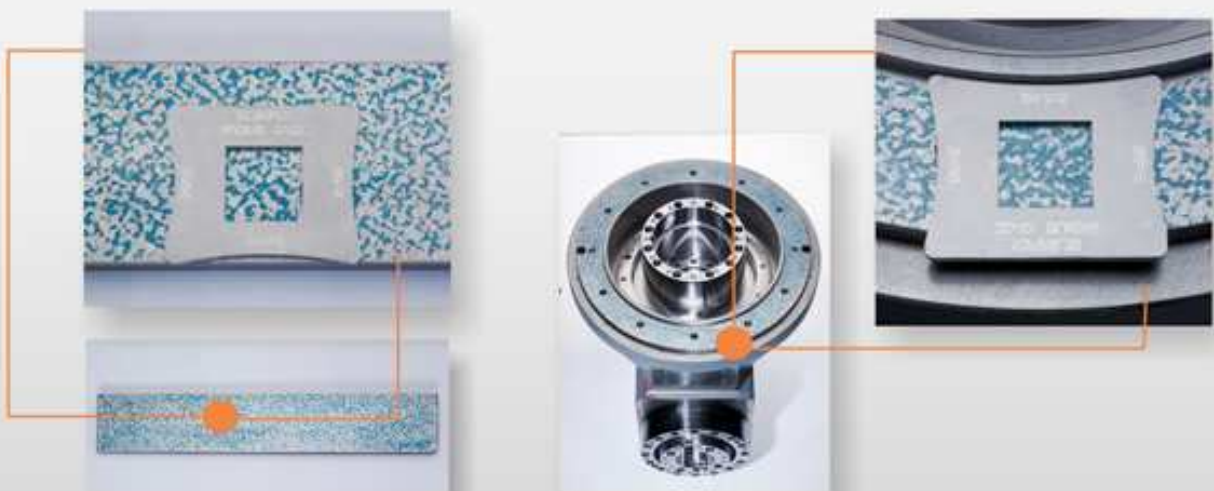
Under the guideline of constructing a thinking-active environment, while in the RD process, we set up the management of production quality. By imposing the necessary training in every key task and keeping continuous improvement, we pursuit the best performance of technology and quality.



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



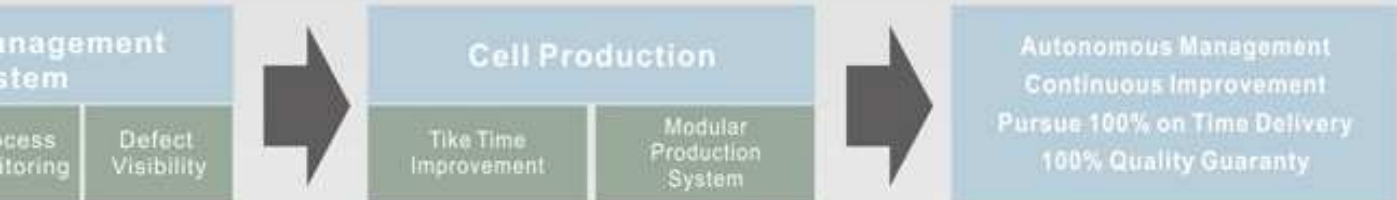
Craft of realization for high rigidity concerning assemble.



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



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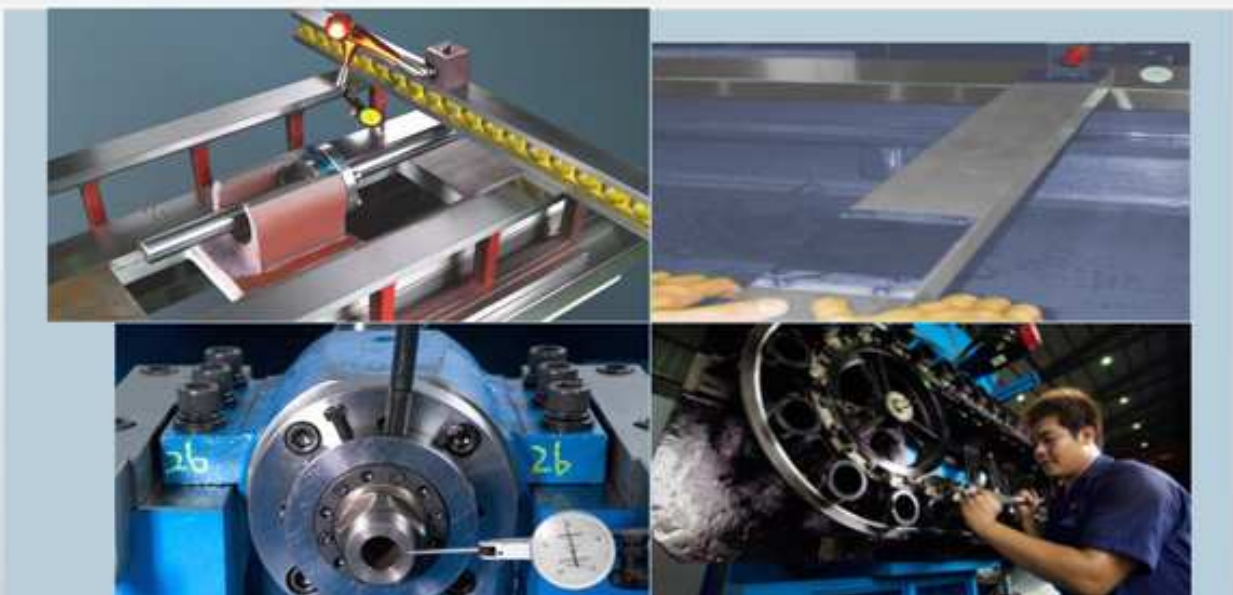
CNC software test and development



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



Precision adjustment in every manufacturing process



ISO 9001:2008 Quality Management



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

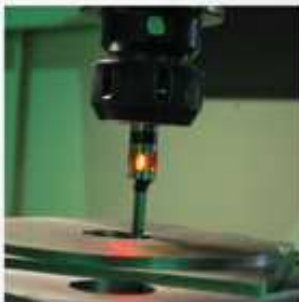
Assembly
inspection

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)

High quality technology service

Annual maintenance and service



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



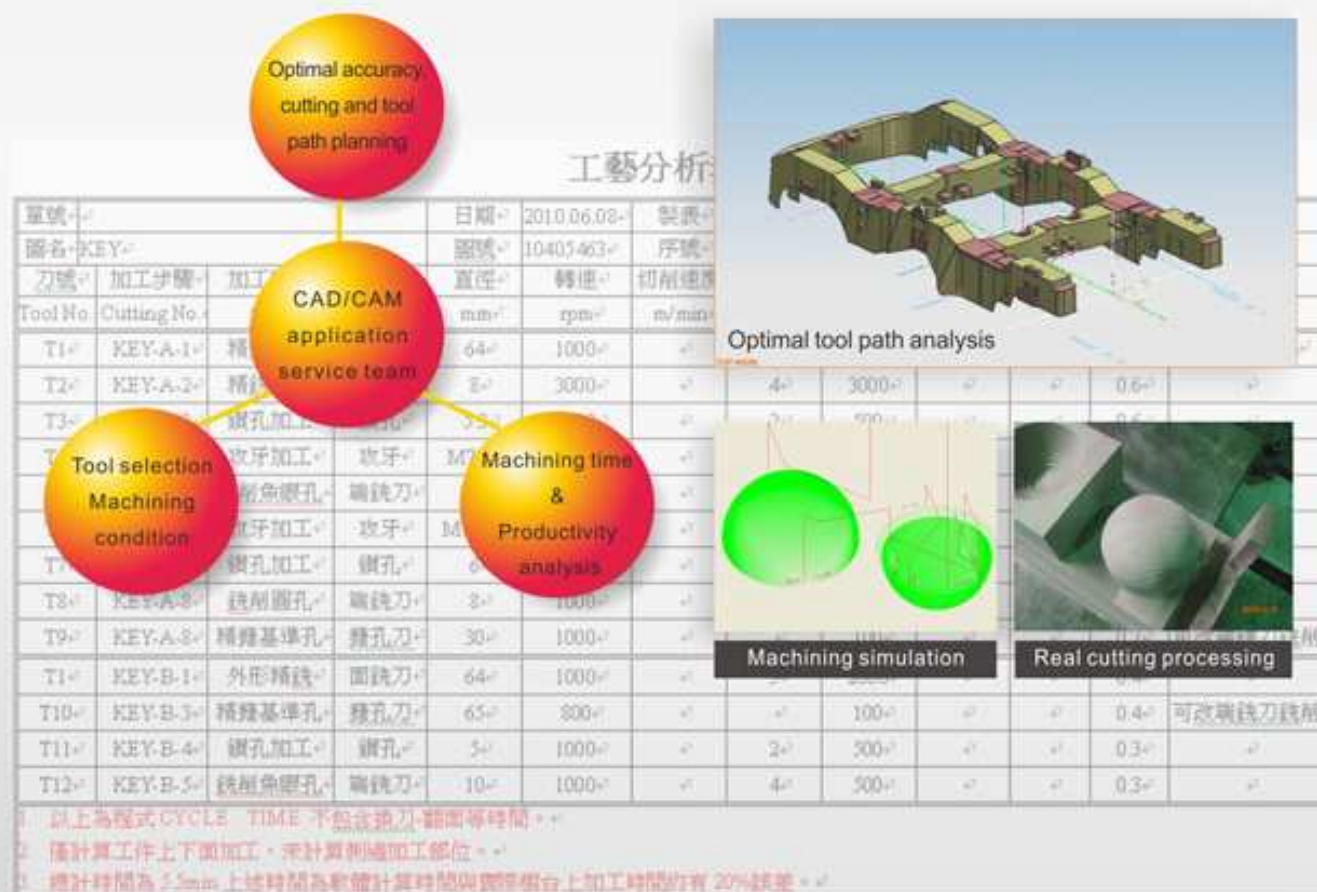
With FANUC e-handbook and remote control, the operator can query and monitor anywhere immediately.



Complete record

CAD/CAM analysis service

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



unit: mm(inch)



NF series

MODEL			UNIT	NF-2223	NF-3223/30	NF-4223/30	NF-5223/30	NF-6223/30	NF-8223/30
TRAVEL									
X axis			mm	2,200	3,200	4,200	5,200	6,200	8,200
Y axis			mm	2,300 / 3,000					
Z axis	Box way		mm	920 / 1,020 (opt.)					
	Linear way		mm	1,000 (opt.) / 1,200 (opt.)					
Distance from spindle nose to table	Box way	Z axis=920	mm	150-1,070 / 225-1,145 (AC) * (opt.)					100-1,020 / 175-
		Z axis=1,020	mm	150-1,170 / 225-1,245 (AC) * (opt.)					100-1,120 / 175-
	Linear way	Z axis=1,000	mm	170-1,170 / 270-1,270 (AC) * (opt.)					120-1,120 / 220-
		Z axis=1,200	mm	170-1,370 / 270-1,470 (AC) * (opt.)					120-1,320 / 220-
Distance from spindle center to column			mm	455					
Distance between columns (port width)			mm	2,400					
TABLE									
Dimension			mm	2,000 x 2,050	3,000 x 2,050	4,000 x 2,050	5,000 x 2,050	6,000 x 2,050	8,000 x 2,050
T-slot (Width x Number x Pitch)			mm	28 x 11 x 200 (150)					
Max. table load			kg	9,000	13,000	16,000	20,000	22,000	24,000
SPINDLE									
Spindle motor (Continuous / 30 minutes rated)			kW	18.5 / 22 (22 / 26 opt.)					
Spindle speed	Box way	2-step gear	rpm	4,500 / 6,000 (opt.)					
		Belt-driven	rpm	8,000 / 10,000 (opt.)					
	Linear way	2-step gear	rpm	4,200 / 6,000 (opt.)					
		Direct-driven	rpm	10,000 (opt.)					
Spindle taper				ISO NO. 50					
FEED									
Cutting feed rate			mm/min	1-7,000					
Rapid traverse			m/min	X: 24, Y: 20, Z: 15	X: 24, Y: 20/15, Z: 15	X: 18, Y: 20/15, Z: 15	X: 12.5, Y: 20/15, Z: 15	X: 10, Y: 20/15, Z: 15	X: 8, Y: 20/15, Z: 15
X, Y, Z motor (Z: Box way / Linear way)			kW	X: 7, Y: 4, Z: 7 / 4		X: 9, Y: 4, Z: 7 / 4			X: 9, Y:
ACCURACY (X, Y, Z) (Measured by laser instrument)									
Positioning accuracy	Refer to JIS B6333		mm				± 0.005 / 300, ± 0.015 / Full Travel		
	Refer to VDI 3441		mm	P0.035			P0.045		
Repeatability	Refer to JIS B6333		mm				± 0.003		
	Refer to VDI 3441		mm				P±0.028		
ATC									
Max. tool weight			kg	18					
Tool shank				BT 50 / CAT 50					
Pull stud				P50T-1					
OTHERS									
Electric power consumption			kVA	60					
Pneumatic requirement			kg/cm²	6					
Machine net weight			kg	29,000	33,400 / 34,900	38,400 / 40,400	43,400 / 45,400	48,000 / 50,400	56,000 / 60,400
Machine gross weight			kg	32,000	37,100 / 38,600	43,400 / 45,400	48,400 / 50,400	53,000 / 55,400	62,000 / 66,400
Max. space volume (L x W x H)			m	8.0 x 6.1 x 4.7	10.0 x 6.1 x 4.7 10.0 x 8.1 x 4.7	12.0 x 6.1 x 4.7 12.0 x 8.1 x 4.7	14.0 x 6.1 x 4.7 14.0 x 8.1 x 4.7	16.0 x 6.1 x 4.7 16.0 x 8.1 x 4.7	20.0 x 6.1 x 4.7 20.0 x 8.1 x 4.7

Standard Accessory & Function

- | | | |
|--|--|---|
| 01. Fanuc 0i MD controller | 09. Enclosed splash guard (without roof)(X<8m)
Four piece splash guard (X≥8m) | 18. Heat exchanger for electrical cabinet |
| 02. 4,500 rpm two-step gear spindle | 10. Working lamp | 19. Flood coolant system (Ring & Nozzle)
(only for box way spindle, it cannot
be used with head attachment) |
| 03. Spindle and gear box cooling system | 11. 3-color signal lamp | 20. Twin chip screws on table side |
| 04. Twin hydraulic cylinders with pressured
air assistance balancing system | 12. Air blast through spindle | 21. Caterpillar type chip |
| 05. X, Y axis ball screw supporter (X > 4m) | 13. Movable manual pulse generator | 22. Foundation pads and bolts kits |
| 06. 40 tools magazine with arm type ATC | 14. Wash gun and pneumatic interface | 23. Tool kits |
| 07. Centralized auto. lubrication system | 15. RS232 / RJ45 interface | 24. Operation manual, PLC & electrical
circuit diagram |
| 08. Independent lubrication oil collector | 16. Absolute pulse coder feedback | |
| | 17. Vision Wide FX graphical user interface | |



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NF-10223/30	NF-xxx30AH	NF-3226/33	NF-4226/33	NF-5226/33	NF-6226/33	NF-8226/33	NF-10226/33	NF-xxx33AH
10,200	as NF-xxx30	3,200	4,200	5,200	6,200	8,200	10,200	as NF-xxx33
	3,000	2,600 / 3,300						3,000
	N.A.	920 / 1,020 (opt.)						N.A.
	1,000 / 1,200 (opt.)	1,000 (opt.) / 1,200 (opt.)						1,000 / 1,200 (opt.)
1,095 (AC) * (opt.)	N.A.	150-1,070 / 225-1,145 (AC) * (opt.)				100-1,020 / 175-1,095 (AC) * (opt.)		N.A.
1,195 (AC) * (opt.)	N.A.	150-1,170 / 225-1,245 (AC) * (opt.)				100-1,120 / 175-1,195 (AC) * (opt.)		N.A.
1,220 (AC) * (opt.)	270-1,270	170-1,170 / 270-1,270 (AC) * (opt.)				120-1,120 / 220-1,220 (AC) * (opt.)		270-1,270
1,420 (AC) * (opt.)	270-1,470 (opt.)	170-1,370 / 270-1,470 (AC) * (opt.)				120-1,320 / 220-1,420 (AC) * (opt.)		270-1,470 (opt.)
		455						
		2,700						
10,000 x 2,050	as NF-xxx30	3,000 x 2,450	4,000 x 2,450	5,000 x 2,450	6,000 x 2,450	8,000 x 2,450	10,000 x 2,450	as NF-xxx33
		28 x 13 x 200 / AH: 28 x 13 x 200 (150)						
26,000	as NF-xxx30	13,000	16,000	20,000	22,000	24,000	26,000	as NF-xxx33
	22 / 26	18.5 / 22 (22 / 26 opt.)						22 / 26
	N.A.	4,500 / 6,000 (opt.)						N.A.
	N.A.	8,000 / 10,000 (opt.)						N.A.
		4,200 / 6,000 (opt.)						
		10,000 (opt.)						
		ISO NO. 50						
		1-7,000						
X: 8, Y: 20/15, Z: 15	as NF-xxx30	X: 24, Y: 20/15, Z: 15	X: 18, Y: 20/15, Z: 15	X: 12.5, Y: 20/15, Z: 15	X: 10, Y: 20/15, Z: 15	X: 8, Y: 20/15, Z: 15	X: 8, Y: 20/15, Z: 15	as NF-xxx33
4, Z: 7 / 4	X: 9, YZ: 4	X: 7, Y: 4, Z: 7 / 4	X: 9, Y: 4, Z: 7 / 4					X: 9, YZ: 4
		± 0.005 / 300, ± 0.015 / Full Travel						
	as NF-xxx30	P0.035	P0.045					as NF-xxx33
		± 0.003						
		P±0.028						
		18						
		BT 50 / CAT 50						
		P50T-1						
		60						
		6						
64,000 / 70,400	as NF-xxx30	36,400 / 38,400	41,400 / 43,900	46,400 / 48,900	51,000 / 53,900	60,000 / 63,900	69,000 / 73,900	as NF-xxx33
70,000 / 76,400	as NF-xxx30	40,100 / 42,100	46,400 / 48,900	51,400 / 53,900	56,000 / 58,900	66,000 / 69,900	75,000 / 79,900	as NF-xxx33
24.0 x 6.1 x 4.7 24.0 x 8.1 x 4.7	as NF-xxx30 H = 5.5	10.0 x 6.4 x 4.7 10.0 x 8.4 x 4.7	12.0 x 6.4 x 4.7 12.0 x 8.4 x 4.7	14.0 x 6.4 x 4.7 14.0 x 8.4 x 4.7	16.0 x 6.4 x 4.7 16.0 x 8.4 x 4.7	20.0 x 6.4 x 4.7 20.0 x 8.4 x 4.7	24.0 x 6.4 x 4.7 24.0 x 8.4 x 4.7	as NF-xxx33 H = 5.5

○ All specifications are subjected to change without prior notice.

Optional Accessory & Function

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> 01. 6,000 rpm spindle (2-step gear) 02. 8,000 rpm/10,000 rpm spindle (belt-driven / direct-driven) 03. 60/90 tools magazine (vertical / horizontal) (NFxx30 / 33) 04. Coolant through tool holder interface (vertical spindle) 05. Coolant through spindle system (vertical spindle) 06. Heidenhain linear scale feedback | <ul style="list-style-type: none"> 07. 100/200/300/400/500 mm higher columns 08. Sub working table 09. Oil skimmer 10. Oil-mist cooling device 11. Rotary table 12. Interface preparation for rotary table 13. 3 axis manual pulse generator (X, Y, Z separated) 14. Automatic tool length measurement 15. Automatic work piece measurement | <ul style="list-style-type: none"> 16. Semi-automatic head attachment: 90 degree / extended / 2-axis (NF&NF-AC) 17. Fully automatic head attachment: 90 degree / extended / 2-axis (NF-AH) 18. Transformer 19. Chip cart 20. Z-axis retract function at power failure 21. Overhead pendulum type operation panel |
|--|--|--|

* AH: type fully automatic 5-face machining package.
Y: travel extended 700 mm / Automatic heads changing /
Automatic head magazine / ATC for vertical & horizontal spindle
* AC: automatic clamping for diversified head attachment.



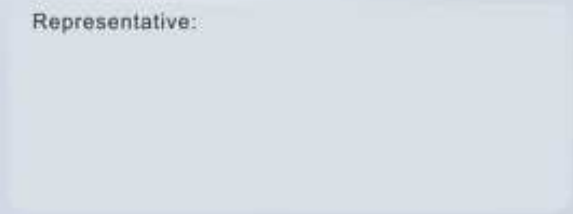
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Vertical. Bridge. 5-Face Machining Center