

VB Series



VISION WIDE
WIDEN YOUR CUTTING VISION



VISION WIDE TECH CO., LTD.

No.43, 17th Industrial Rd., Taiping,
Taichung 41154, Taiwan
TEL: 886-4-2271 2000
FAX: 886-4-2271 2009
E-mail: info@visionwide.com.tw

Representative:



Days 04-24521567 - 2011 (M 4500)

CNC Double Column Vertical Machining Center

Casting Structure / 3-Axis Box Way
Step Square Beam
Ball Screw Cooling System (Opt.)
800 mm Z Stroke



[http:// www.visionwide-tech.com](http://www.visionwide-tech.com)

Vertical. Bridge. 5-Face Machining Center.

VISION WIDE TECH CO., LTD.

High Value. High Precision.
High Reliability Products

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 / 2.6 / 3.0 / 3.3m
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

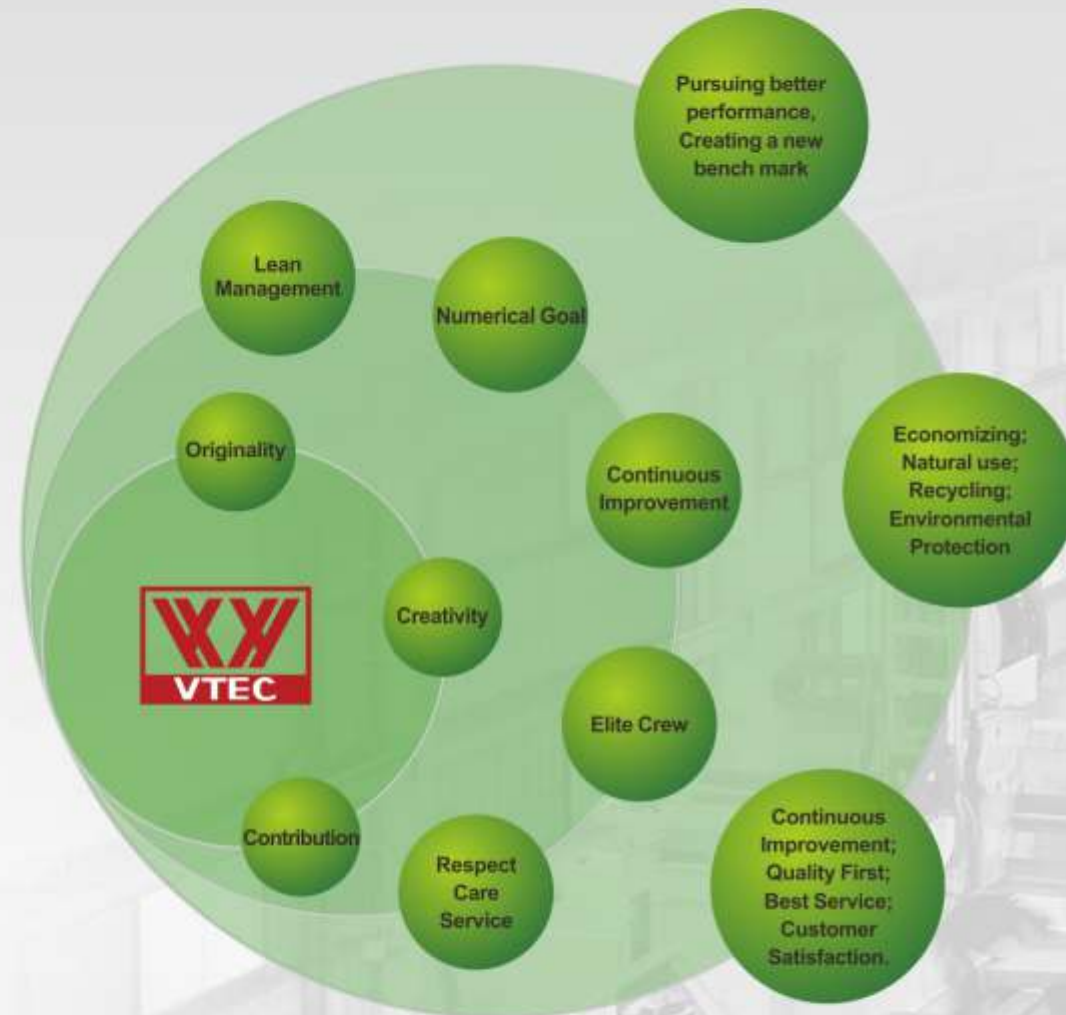


7. Attachment Heads

Manual Attachment Heads (not available for BM)



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



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.

Casting Structure 3 Axis Box Way Rigid, Reliable, High Performance !



VISION WIDE
WIDEN YOUR CUTTING VISION

- All made of casting structure: base, columns, beam, saddle, and headstock
- 3 axis box ways with hard-wearing surface
- Distance between columns: 1.7 / 2.1m
- Cutting length: 2.0m-4.0m
- Z stroke: 800mm (optional: 1,020mm)
- Extra wide front door opening
- Fast cam-type ATC (3 second tool-to-tool)
- Max. exchanging tool: Ø180mm x L380mm
- Pendulum type operation panel
- Attachment heads (Opt.): 90 degree / extended / universal / 2-axis
- 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
- Rigid step square beam
- Grinded table surface as datum plane
- Precision and smoothness in motion based on dual nitrogen cylinders, which are closed to spindle head and make a weight balance
- Feeding designed for high precision and high stability
- Pre-tensioned ball screws with C3 grade
- Unique damping and supporting design for ball screws at X and Y axis (stroke > 5m)



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



VISION WIDE
WIDEN YOUR CUTTING VISION



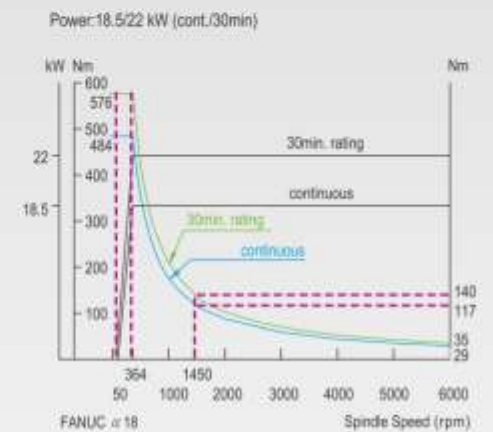
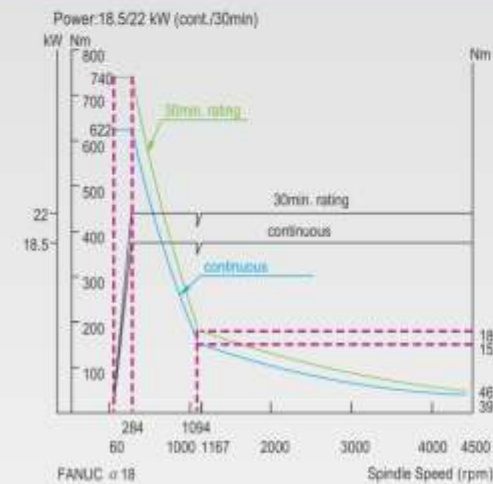
Box way

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: 4,500 6,000 8,000 10,000rpm

Spindle Power and Torque Chart

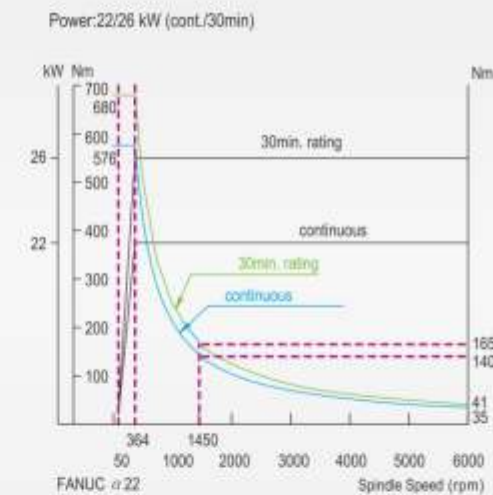
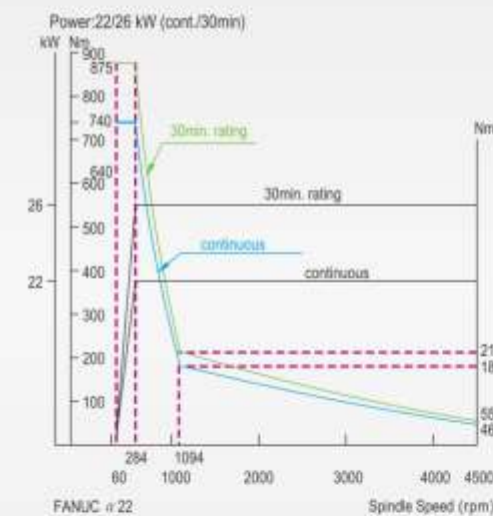
Gear type



■ Gear type spindle (4,500 / 6,000rpm)



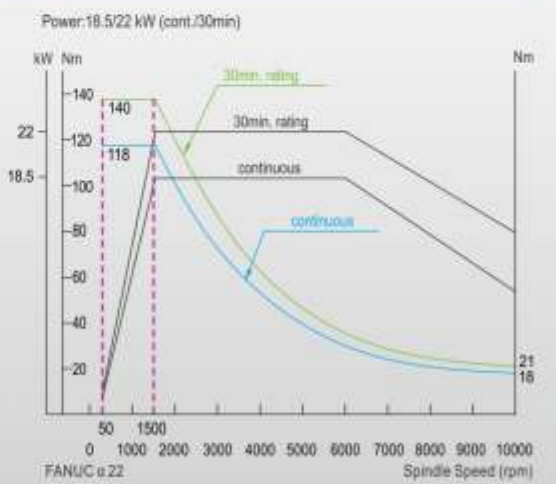
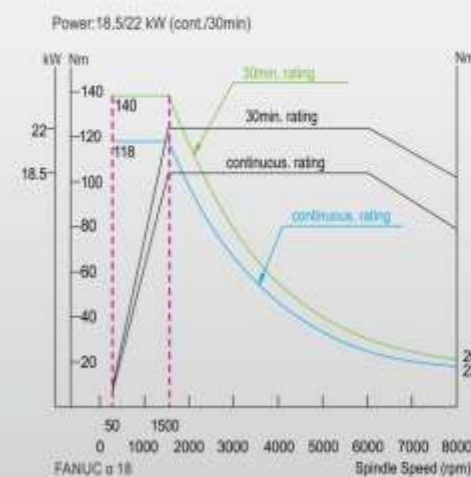
■ Belt-driven type spindle (8,000 / 10,000rpm)



Twin Hydraulic cylinders plus pressured nitrogen accumulator balancing design provides smooth & accurate feeding performance. Cylinders are self-alignment, balancing force is set optimally by adjustable pressure valve. (SF/VB/VF/NF/VH)



Belt-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



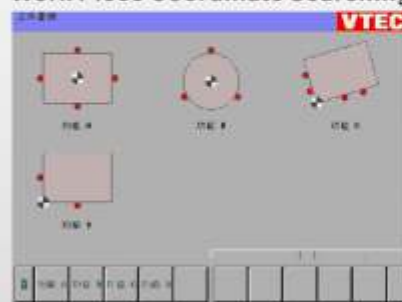
Additions 3 parameters for machining
The best efficiency machining modules
The highest precision machining modules
The smoothest machining modules

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

Remote control

Machine Status Monitor



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

Factory Manager



Operation time counter
Duty rate counter
Machined parts counter

Productivity Analysis



Machine productivity analysis
Factory productivity analysis

Efficiency management

Service-oriented design

In-time service

Machine Parameter



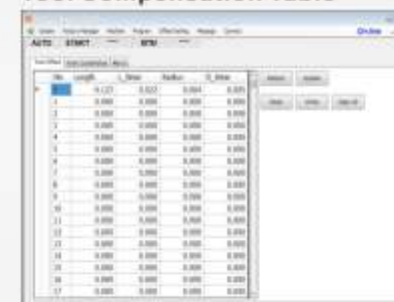
Built-in e-book for quick lookup
Easy parameter backup

Program Manager



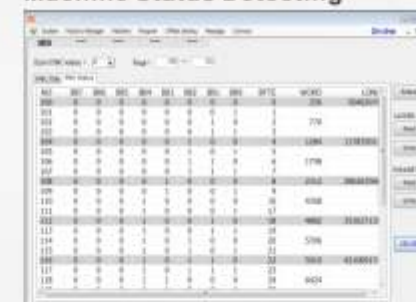
NC memory file manager
Data Server file manager
Simple and quick transfer

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)

Numerical Controller



SIEMENS 840D



FANUC 0iMD / 31iB



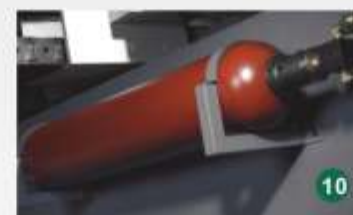
HEIDENHAIN iTNC530 HSCI

With More Standard / Optional Accessories

- 01 Auto. tool length measurement (Opt.)
- 02 Ring & nozzle type flood coolant (incompatible with attachment heads)
- 03 X axis ball screw supporter (4m above)
- 04 Screw type chip conveyor
- 05 Ball screw cooling system (Opt.)
- 06 Heat exchanger for electrical cabinet
- 07 Splash water gun & air outlet
- 08 Cam type ATC
- 09 Operation manual
- 10 Pressured air assist balancing
- 11 Spindle cooling system
- 12 Caterpillar chip conveyor & cart (Opt.)



Multi-layer front door design provides the widest door opening



- Fast Cam-type Automatic Tool Changer
- 3 second tool-to-tool



- Automatic Tool Changing: 32 / 40 tools (Opt.)
- Tool Size (Max): $\varnothing 180 \times L380$ mm



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.



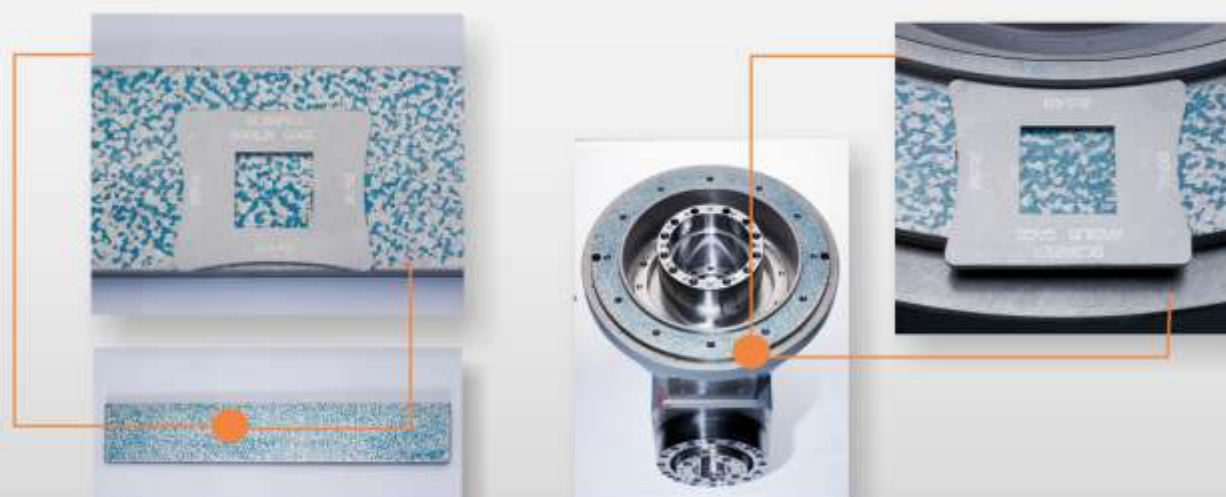
CNC software test and development



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



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

Precision adjustment in every manufacturing process





Dynamic accuracy
(ISO 10791-7)



CMM inspection



Straightness inspection
with collimator

Quality
plan

Supplier
self-inspection

Materials
inspection

Assembly
inspection

Geometric
accuracy
inspection



Vibration inspection

Continual
Improvement

Reliability
test

Cutting
test

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

Positioning
accuracy
inspection

Function
test



3D mold cutting



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.

工藝分析

Optimal accuracy cutting and tool path planning

CAD/CAM application service team

Tool selection Machining condition

Machining time & Productivity analysis

Optimal tool path analysis

Machining simulation

Real cutting processing

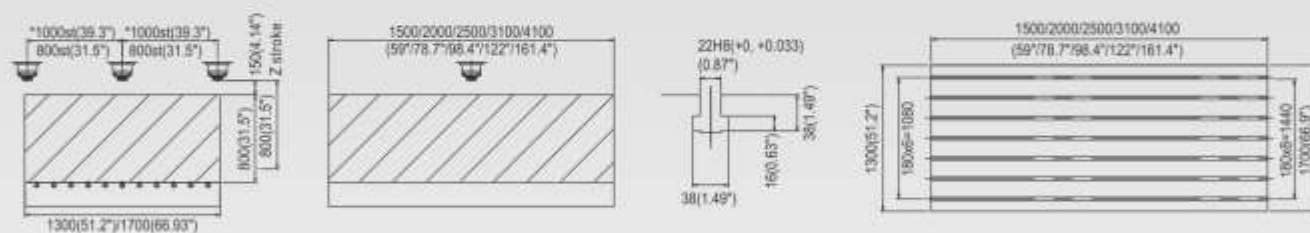
單號	圖名	加工步驟	加工	日期	2010.06.08	製表
刀號	加工步驟	加工	直徑	轉速	切削速度	序號
Tool No.	Cutting No.		mm	rpm	m/min	
T1	KEY-A-1	精	64	1000		
T2	KEY-A-2	精	8	3000		
T3	鑽孔加工	鑽孔	5.5			
T4	攻牙加工	攻牙	M6			
T5	銑魚眼孔	端銑刀				
T6	攻牙加工	攻牙	M6			
T7	鑽孔加工	鑽孔	6			
T8	KEY-A-3	銑制圓孔	端銑刀	8	1000	
T9	KEY-A-8	精銑基準孔	鑽孔刀	30	1000	
T10	KEY-B-1	外形精銑	面銑刀	64	1000	
T11	KEY-B-3	精銑基準孔	鑽孔刀	65	800	
T12	KEY-B-4	鑽孔加工	鑽孔	5	1000	
T13	KEY-B-5	銑制魚眼孔	端銑刀	10	1000	

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，未計算側面加工部位。
3. 總計時間為 3.5min 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。

Manual Attachments Heads

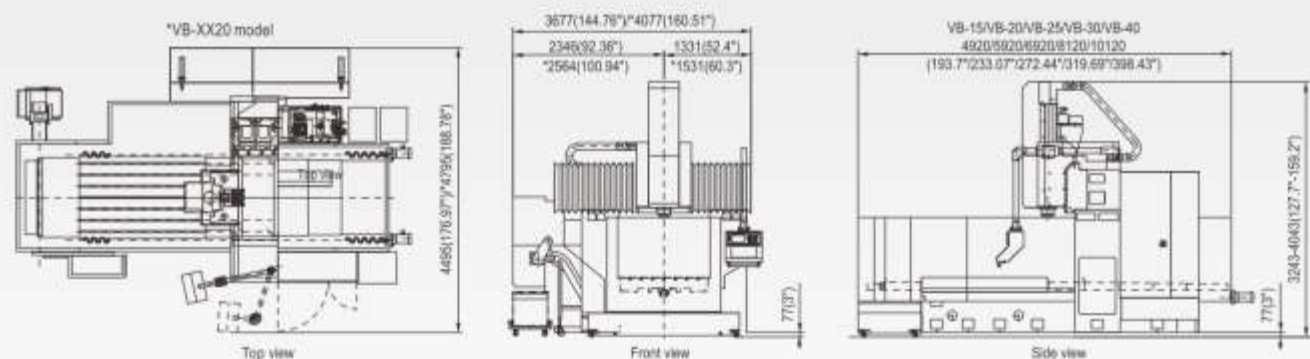
Table and T-slot Dimension

unit: mm(inch)



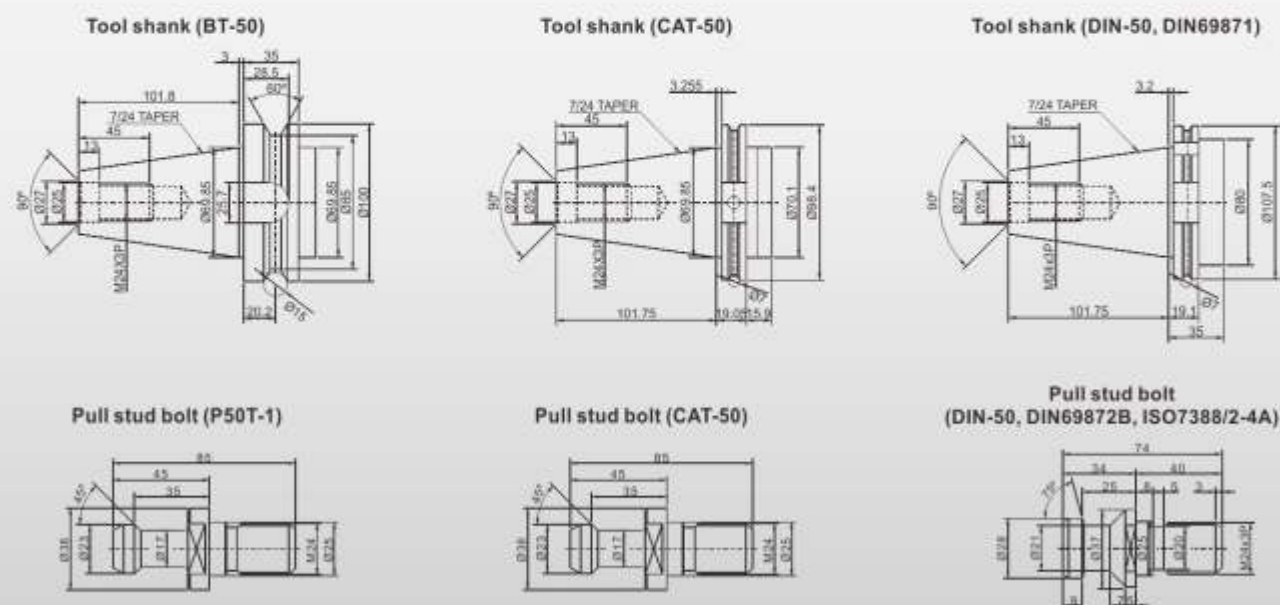
Major Machine Dimension

unit: mm(inch)



Tool Shank & Pull Stud Dimension

unit: mm



Manual Attachments Heads



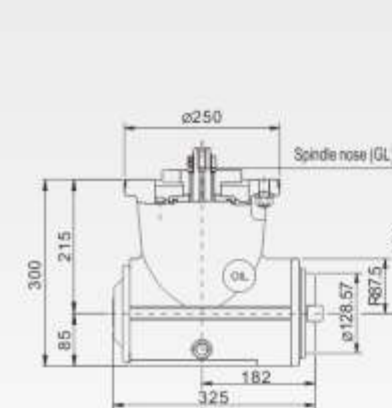
90° angular head



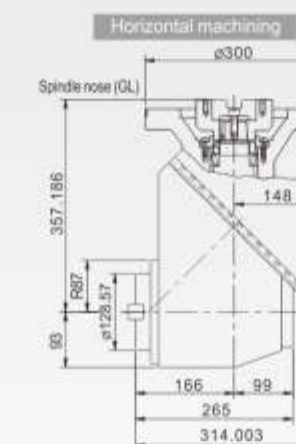
Universal head



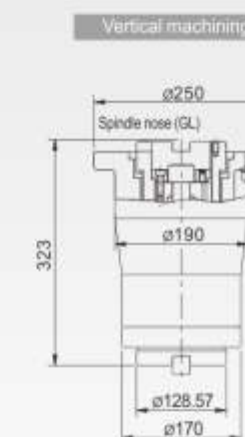
Extended head



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

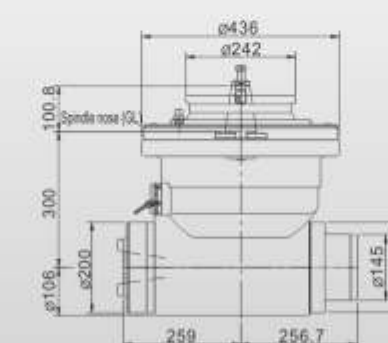


Max. power	11kW
Max. speed	2,000rpm
Spindle taper	#50
Head clamping	Manual
Axis indexing	Not available

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)

VB series

SPECIFICATION	UNIT	VB-2016	VB-2516	VB-3016	VB-2020	VB-2520	VB-3020	VB-4020
TRAVEL								
X axis	mm	2,000	2,500	3,100	2,000	2,500	3,100	4,100
Y axis	mm	1,600	1,600	1,600	2,000	2,000	2,000	2,000
Z axis	mm	800 / 1,020 (opt.)	800 / 1,020 (opt.)	800 / 1,020 (opt.)	800 / 1,020 (opt.)	800 / 1,020 (opt.)	800 / 1,020 (opt.)	800 / 1,020 (opt.)
Distance from spindle nose to table (Z=800mm standard column) (STD.)	mm	150-950	150-950	150-950	150-950	150-950	150-950	150-950
Distance from spindle nose to table (Z=1,020mm column+200) (OPT.)	mm	130-1,150	130-1,150	130-1,150	130-1,150	130-1,150	130-1,150	130-1,150
Distance from spindle center to column	mm	430	430	430	430	430	430	430
Distance between columns	mm	1,700	1,700	1,700	2,100	2,100	2,100	2,100
TABLE								
Dimension	mm	2,000 x 1,300	2,500 x 1,300	3,100 x 1,300	2,000 x 1,700	2,500 x 1,700	3,100 x 1,700	4,100 x 1,700
T-slot (Width x Number x Pitch)	mm	22 x 7 x 180	22 x 7 x 180	22 x 7 x 180	22 x 9 x 180	22 x 9 x 180	22 x 9 x 180	22 x 9 x 180
Max. table load	kg	8,000	9,000	10,000	9,000	10,000	11,000	12,000
SPINDLE								
Spindle motor (Continuous / 30 minutes rated)	kW	18.5 / 22 (22 / 26 opt.)			18.5 / 22 (22 / 26 opt.)			
Spindle speed (2-step gear box)	rpm	4,500 / 6,000 (opt.)	4,500 / 6,000 (opt.)	4,500 / 6,000 (opt.)	4,500 / 6,000 (opt.)	4,500 / 6,000 (opt.)	4,500 / 6,000 (opt.)	4,500 / 6,000 (opt.)
Spindle speed (Belt-driven)	rpm	8,000 / 10,000 (opt.)	8,000 / 10,000 (opt.)	8,000 / 10,000 (opt.)	8,000 / 10,000 (opt.)	8,000 / 10,000 (opt.)	8,000 / 10,000 (opt.)	8,000 / 10,000 (opt.)
Spindle taper		ISO NO. 50	ISO NO. 50	ISO NO. 50	ISO NO. 50	ISO NO. 50	ISO NO. 50	ISO NO. 50
FEED								
Cutting feed rate	mm/min	1-7,000	1-7,000	1-7,000	1-7,000	1-7,000	1-7,000	1-7,000
Rapid traverse	m/min	X Y Z: 15	X Y Z: 15	X Y: 12, Z: 15	X Y: 12, Z: 15	X Y: 12, Z: 15	X Y: 12, Z: 15	X Y: 12, Z: 15
X, Y, Z Motor capacity (FANUC)	kW	X: 4.5, Y: 3.5, Z: 3.5	X: 4.5, Y: 3.5, Z: 3.5	X: 4.5, Y: 3.5, Z: 3.5	X: 4.5, Y: 3.5, Z: 3.5	X: 4.5, Y: 3.5, Z: 3.5	X: 4.5, Y: 3.5, Z: 3.5	X: 7, Y: 3.5, Z: 3.5
ACCURACY (X, Y, Z) (Measured by laser instrument)								
Positioning accuracy	Refer to JISB6333	mm	± 0.005 / 300, ± 0.015 / Full Travel		± 0.005 / 300, ± 0.015 / Full Travel			
	Refer to VDI3441	mm	P0.025	P0.025	P0.03	P0.025	P0.03	P0.03
Repeatability	Refer to JISB6333	mm	± 0.003	± 0.003	± 0.003	± 0.003	± 0.003	± 0.003
	Refer to VDI3441	mm	Ps0.02	Ps0.02	Ps0.025	Ps0.02	Ps0.025	Ps0.025
ATC								
Tool storage capacity	pcs	32 / 40 (opt.)	32 / 40 (opt.)	32 / 40 (opt.)	32 / 40 (opt.)	32 / 40 (opt.)	32 / 40 (opt.)	32 / 40 (opt.)
Max. tool weight	kg	18	18	18	18	18	18	18
Tool size (D x L) (Full tools)	mm	Ø125 x 380L	Ø125 x 380L	Ø125 x 380L	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	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	BT 50 / CAT 50	BT 50 / CAT 50	BT 50 / CAT 50
Pull stud bolt		P50T-1	P50T-1	P50T-1	P50T-1	P50T-1	P50T-1	P50T-1
OTHERS								
Electric power consumption	kVA	55	55	55	55	55	55	55
Machine net weight	kg	21,500	24,500	27,500	23,500	26,500	29,500	32,500
Machine gross weight	kg	25,000	28,000	32,000	27,000	30,000	34,000	35,000
Max. space volume (standard column)	mm	7,580 x 5,355 x 4,043	8,580 x 5,355 x 4,043	9,780 x 5,355 x 4,043	7,580 x 5,755 x 4,043	8,580 x 5,755 x 4,043	9,780 x 5,755 x 4,043	11,780 x 5,755 x 4,043
Max. space volume (+200mm column)	mm	7,580 x 5,355 x 4,243	8,580 x 5,355 x 4,243	9,780 x 5,355 x 4,243	7,580 x 5,755 x 4,243	8,580 x 5,755 x 4,243	9,780 x 5,755 x 4,243	11,780 x 5,755 x 4,243

⊙ All specifications are subjected to change without prior notice.

Standard Accessory & Function

- | | | |
|---|--|---|
| 01. Fanuc 0i MD controller | 09. Enclosure splash guard (without roof) | 18. Flood coolant system (Ring & Nozzle) (without AC interface) |
| 02. 4,500 rpm two-step gear spindle (box way) | 10. Working light | 19. Heat exchanger for electrical cabinet |
| 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 balance system | 12. Air blast through spindle | 21. Caterpillar type chip conveyor |
| 05. X-axis ball screw supporter (4m above) | 13. Moveable manual pulse generator | 22. Foundation pads & bolts kits |
| 06. 32 tool magazine with arm type ATC | 14. Wash gun & pneumatic interface | 23. Tool kits |
| 07. Centralized auto lubrication system | 15. RS232 interface | 24. Operation manual, PLC & electrical circuit diagram |
| 08. Independent lubrication oil collector for 3 axes (X/Y/Z) | 16. Absolute pulse coder feedback | |
| | 17. Vision Wide VW-FX graphical user interface | |

Optional Accessory & Function

- | | | |
|--|--|---|
| 01. 6,000 rpm two-step gear spindle | 10. Oil skimmer | 16. Automatic work piece measurement |
| 02. 8,000 rpm / 10,000 rpm belt-driven spindle | 11. Oil mist cooling device | 17. Manual clamping heads: 90 degree / extended / universal |
| 03. 40 tool magazine | 12. Rotary table | 18. Semi-auto clamping heads: 90 degree |
| 04. Coolant through tool holder interface | 13. Interface preserved for rotary table (Machine contains within the hose and oil tank) | 19. Transformer |
| 05. Coolant through spindle system | 14. 3-axis manual pulse generator | 20. Chip cart |
| 06. Ball screw cooling system | 15. Automatic tool length measurement | 21. Z-axis retract function at power failure |
| 07. HEIDENHAIN linear scale feedback | | 22. Full enclosure splash guard |
| 08. 200 / 300 / 400 mm higher column extension | | |
| 09. Sub working table | | |