VISION WIDE
Solution . Satisfaction . Smile

VB VF SERIES

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ISO9001

VB VF-E-20190501

VB VF SERIES

Heavy Duty Double Column Machining Center

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VISION WIDE TECH CO., LTD.

VB series

Heavy Duty Double Column Machining Center

Heavy Duty Double Column Machining Center

With Vision Wide tradition in making high rigid structure,

VB series provides not only high accuracy but also heavy cutting ability.

VB series is designed for being the most proper devices in mold and precision machining industry.

- Rapid traverse: 15 m / min
- Cutting feed rate: 7 m / min
- High torque gear type spindle: 4,000 / 6,000 rpm
- Belt type spindle: 8,000 / 10,000 rpm
- X-axis travel: 2,000 / 2,5000 / 3,1000 / 4,100 mm
- Y-axis travel: 1,600 / 2,000 m
- Z-axis travel: 800 / 1,020 mm
- Port width: 1,700 / 2,100 mm
- Box way for XYZ-axis

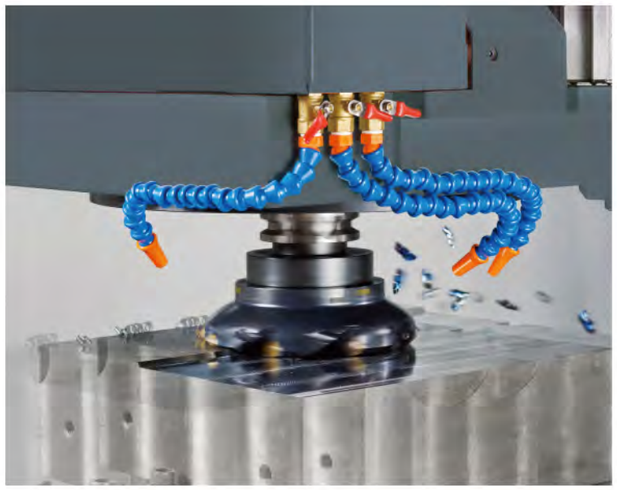


Photo: VB-2016 model with enclosed sheet metal guard with roof.

VB series

Heavy Duty Double Column Machining Center

High rigid structure design

With Vision Wide tradition, the optimized structure design offers heavy cutting rigidity in heavy cutting.

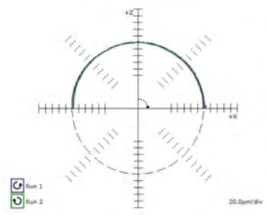
- X-axis feeding system is fully supported by box guide ways, improving high rigidity and reliability.
- High rigid box way, enhancing loading capability and keeping high dynamic level accuracy.
- 2-way support design on the bed with optimal span design, ensuring straightness within 0.01mm/2m at X-axis motion.

Photo: VB-2016 model

Large size column provides the beam the strongest support

High precision mechanism features

Large special span in Y-axis for rigidity, with stepped design reduces movement friction, and improve positioning accuracy.



Z-axis 15m / min rapid traverse, 0.5G high acceleration / deceleration performance achieve the requirements from contour accuracy of high speed mold machining.

High speed balancing system including economical twin hydraulic cylinders with pressured air assistance achieves:

- Smoother Z-axis movement
- Z-axis retract function at power failure
- Excellent performance for power saving

Heavy Duty Double Column Machining Center

With bevel support design on cross beam,
VF series is the most suitable machine to meet requirements from high efficiency and heavy cutting.
(per kW of spindle power offers 40Nm,15% more than before in heavy cutting)

- Rapid traverse: 12 m / min
- Cutting feed rate: 7 m / min
- High torque gear type spindle: 4,000 / 6,000 rpm
- Belt type spindle: 8,000 / 10,000 rpm
- X-axis travel: 3,200 / 4,200 / 5,200 m
- Y-axis travel: 2,300 / 2,600 m
- Z-axis travel: 920 / 1,020 mm
- Port width: 2,400 / 2,700 mm
- Box way for XYZ-axis

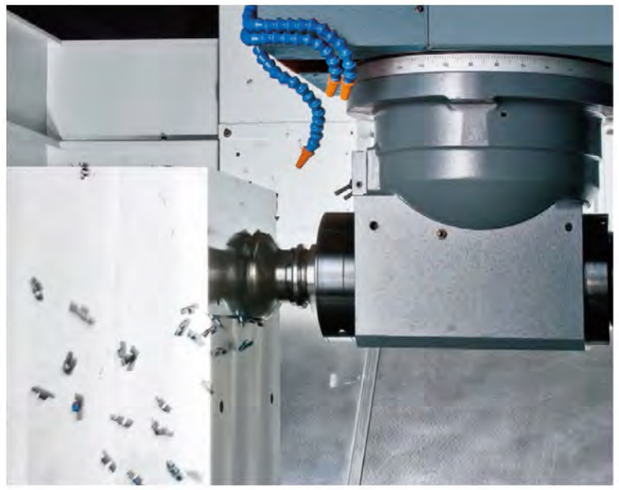
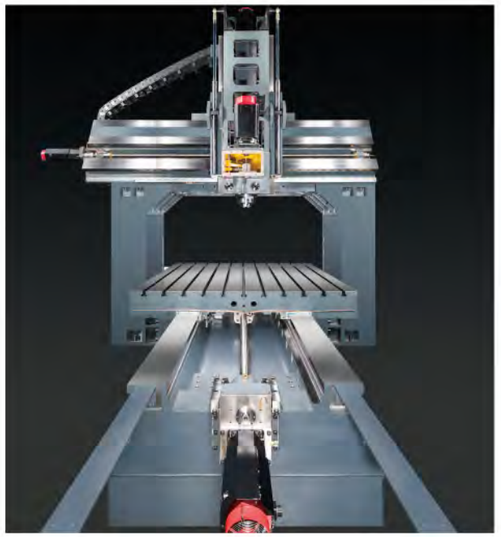


Photo: VF-3000 model with enclosed sheet metal guard without roof.

VF series

Heavy Duty Double Column Machining Center

High rigid structure design



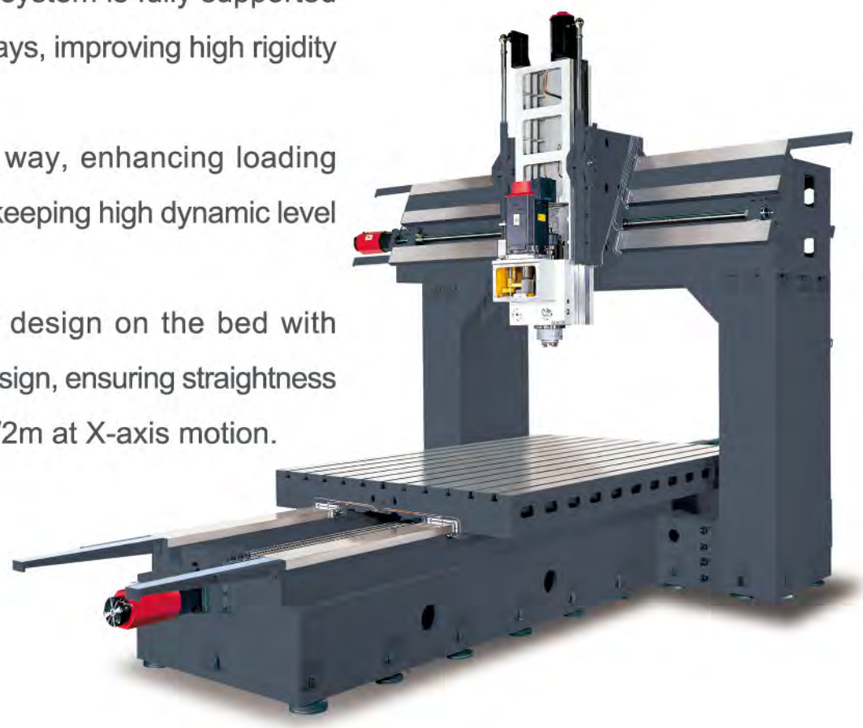
Following Vision Wide tradition,
the optimized structure design offers
the best rigidity in heavy cutting.

The large size on column
cross section dimension

425x1,000mm

gives the beam the strongest support

- X-axis feeding system is fully supported by box guide ways, improving high rigidity and reliability.
- High rigid box way, enhancing loading capability and keeping high dynamic level accuracy.
- 2-way support design on the bed with optimal span design, ensuring straightness within 0.01mm/2m at X-axis motion.



High precision mechanism features

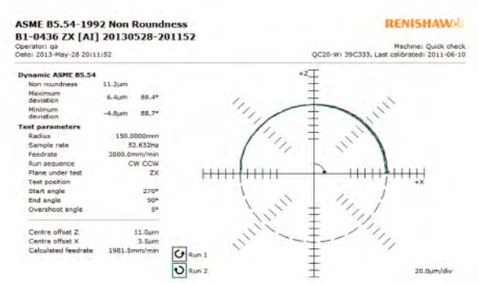
Large special span in Y-axis for rigidity, with bevel beam design reduces movement friction, and improve positioning accuracy.

Z-axis center closing to beam achieves exclusively excellent dynamic performance.

Beam contact width (805mm) offering larger dimension and giving the best support on Z-axis.

Beam rigidity and cutting capability increase significantly with 3 box ways support design.

Y-axis motion in best straightness and cutting rigidity.



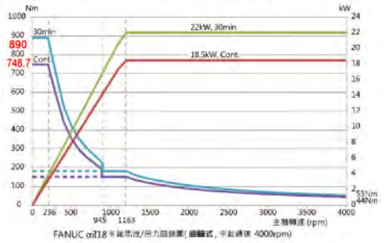
12m / min rapid traverse and 0.5G high acceleration/deceleration on Z-axis performance achieve the requirements from contour accuracy of the speed mold machining.

High speed balancing system including economical twin hydraulic cylinders with pressured air assistance achieves.

- Smoother Z-axis movement
- Z-axis retract function at power failure
- Excellent performance for power saving

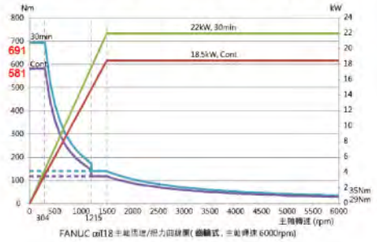
Spindle power and torque charts

Fanuc α 18 18.5/22kW gear type spindle 4,000rpm



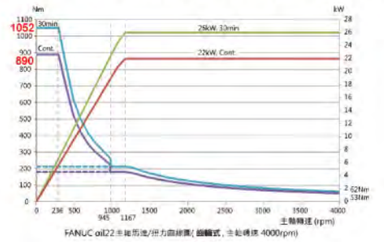
FANUC αi18 主軸馬達/扭力曲線圖(齒輪式 , 主軸轉速 4000rpm)

Fanuc α 18 18.5/22kW gear type spindle 6,000rpm



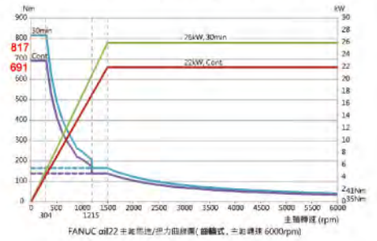
FANUC αi18 主軸馬達/扭力曲線圖(齒輪式 , 主軸轉速 6000rpm)

Fanuc α 22 22/26kW gear type spindle 4,000rpm



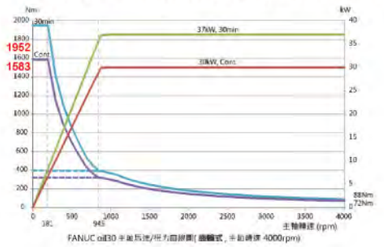
FANUC αi22 主軸馬達/扭力曲線圖(齒輪式 , 主軸轉速 4000rpm)

Fanuc α 22 22/26kW gear type spindle 6,000rpm



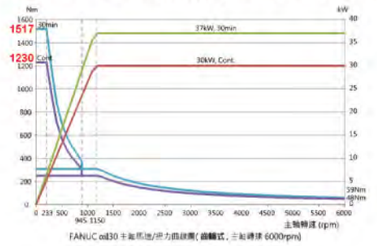
FANUC αi22 主軸馬達/扭力曲線圖(齒輪式 , 主軸轉速 6000rpm)

Fanuc α 30 30/37kW gear type spindle 4,000rpm



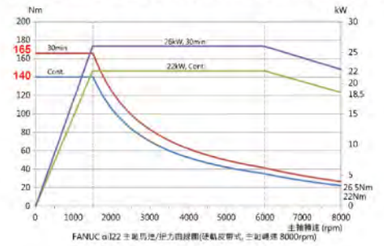
FANUC αi30 主軸馬達/扭力曲線圖(齒輪式 , 主軸轉速 4000rpm)

Fanuc α 30 30/37kW gear type spindle 6,000rpm



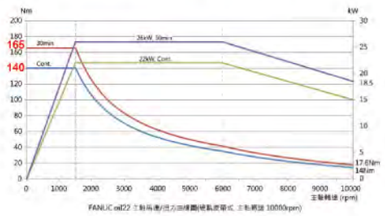
FANUC αi30 主軸馬達/扭力曲線圖(齒輪式 , 主軸轉速 6000rpm)

Fanuc α 22 22/26kW Belt-driven 8,000rpm



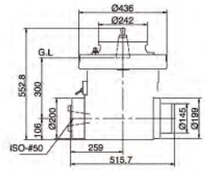
FANUC αi22 主軸馬達/扭力曲線圖(皮帶式, 主軸轉速 8000rpm)

Fanuc α 22 22/26kW Belt-driven 10,000rpm



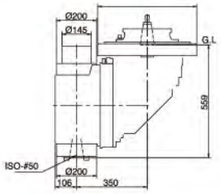
FANUC αi22 主軸馬達/扭力曲線圖(皮帶式, 主軸轉速 10000rpm)

Auto multi-angle head attachment



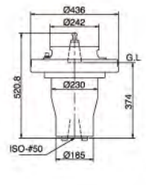
AC 90°angular head

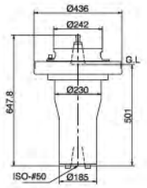
Tool clamping	Auto hydraulic clamping
Head clamping	Auto hydraulic clamping
C-axis indexing	Auto 1˚/ 5˚
Machining coolant	External nozzle/ CTS 20/ 70 bar(opt.)
Max. power	26 kW
Max. speed	3,000 rpm



AC 2-axis head

Tool clamping	Auto hydraulic clamping
Head clamping	Auto hydraulic clamping
C-axis indexing	Auto 1˚/ 5˚
B-axis indexing	Auto 5˚/ manual1˚
Machining coolant	External nozzle/ CTS 20/ 70 bar(opt.)
Max. power	26 kW
Max. speed	3,000 rpm

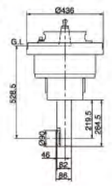


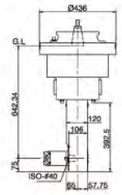


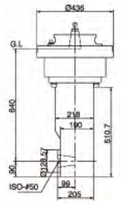
AC extended head

Tool clamping	Auto hydraulic clamping
Head clamping	Auto hydraulic clamping
Max. power	26kW
Max. speed	4,000rpm

Various types of milling head







Tool clamping	Manual
Head clamping	Auto hydraulic clamping
C-axis indexing	Auto 1˚/ 5˚
Max.power	26 kW
Max. speed	800 rpm

Various head storage unit

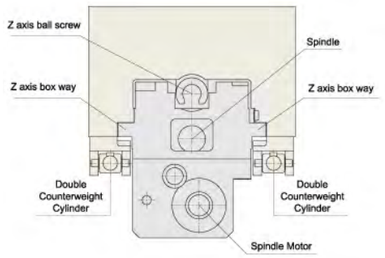
- A Table type head bracket
- B Manual swiveling arm type head bracket (on operation side)
- C Auto swiveling arm type head bracket (on operation side)

VB/VF series

Heavy Duty Double Column Machining Center

Optimal central symmetric spindle system design. Strong, stable, durable and scalability

- Minimum distance between spindle center and Z-axis roller way not only shortens cutting lever arm but also significantly improves rigidity.



- Symmetric spindle gravity configuration, Z-axis call screw, spindle center and spindle motor configure at gravity point of Z-axis box structure centerline provide the best feed precision and thermal balance.

- Gear spindles made of Japan-made JIS-0 grade.

- 2-step gear type spindle provides high torque and high speed characteristics to ensure heavy cutting ability on surface finish.

- High speed spindle can be chose 4,000/6,000/8,000/10,000 rpm

Cutting Ability

Face milling:

Tool dia.:125mm

Cutting feed:1,000mm/min

Cutting width:100mm

Cutting depth:6mm

Removal rate:600cc/min

High feed machining:

Tool dia.:40mmx4inserts

Cutting speed:2,400rpm

Cutting feed:10m/min

Cutting depth:1mm

Cutting width:32mm

Removal rate:320cc/min

Indexable insert drilling:

Tool dia.:32mm

Cutting speed:1,500rpm

Cutting feed:500mm/min

Cutting depth:30mm

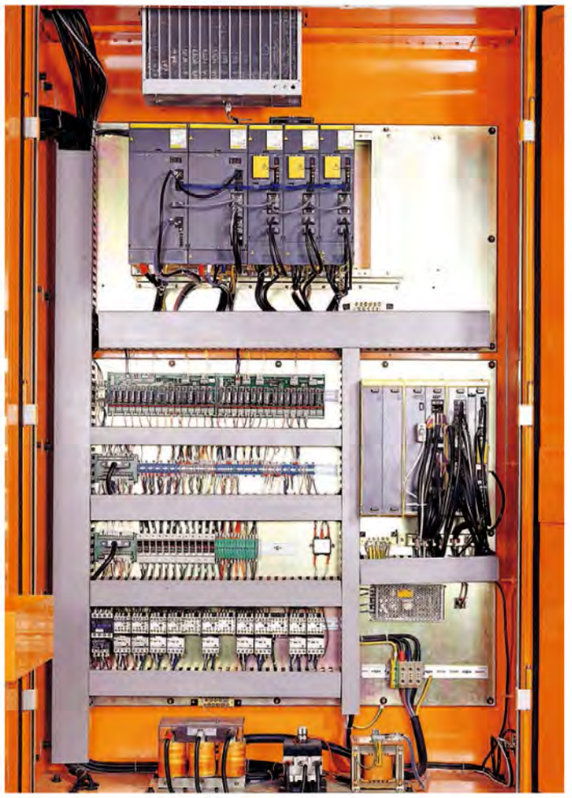
Removal rate:400cc/min

Coolant through spindle

spindle power=22/26kW, speed=4500rpm, material=S45C(mid carbon steel)

position = 1/2x(z travel)

Safe, friendly and reliable operation device



- **Safe and reliable electrical circuit design**
- **CE compliant safety circuit design**
- **CE compliant EU regulation electrical parts for whole machine**
- **Anti-interference design on motor power cables**
- **Heat exchanger for electrical cabinet**
- **Main power protecting device**
- **Ethernet and RJ45 interface**
- **USB port(opt.)**

- Vertical type tool magazine to save floor space.
  VB: 32 tools (standard) / 40 tools (optional)
  VF: 40 tools (standard) / 60 tools (optional)

- Fluid nozzle for spindle provides best spray angle.
  (not available for head attachment)

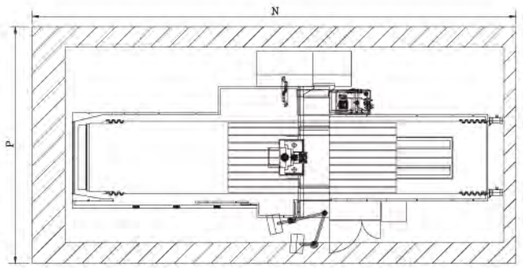
- Tool length measurement device at magazine side for mold cutting to change tool fast.

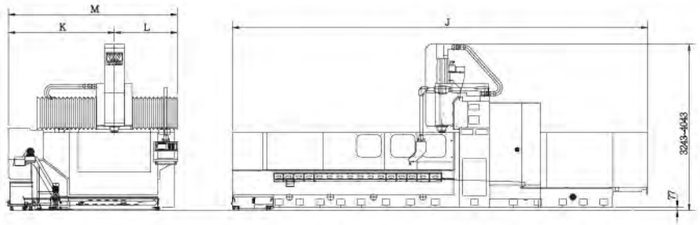
- Especially in drilling deep holes, though Coolant through-tool holder or high pressure coolant-through-spindle function, the chips and heat from machining can be removed more efficiently.

VB Machine Dimension

Unit:mm

MODEL	J	K	L	M	N	P
VB-2016	5,910	2,381	1,371	3,752	7,580	5,355
VB-2516	6,910				8,580	
VB-3016	8,110				9,780	
VB-2020	5,910	2,581	1,571	4,152	7,580	5,755
VB-2520	6,910				8,580	
VB-3020	8,110				9,780	
VB-4020	10,110				11,780	

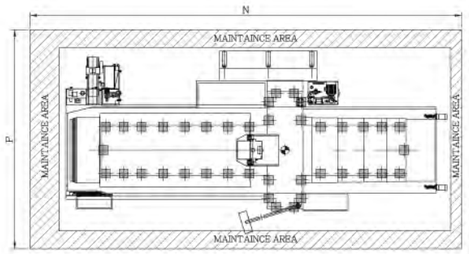


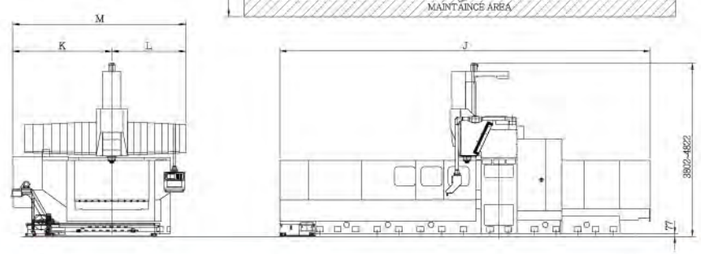


VF Machine Dimension

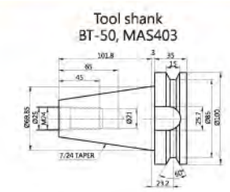
Unit:mm

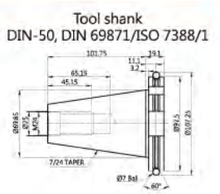
MODEL	J	K	L	M	N	P
VF-3000	7,480	2,380	2,130	4,860	10,000	5,355
VF-4000	9,480				12,000	
VF-5000	11,480				14,000	
VF-3026	7,480	2,550	2,300	5,200	10,000	5,755
VF-4026	9,480				12,000	
VF-5023	11,480				14,000	

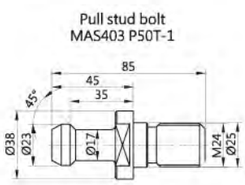


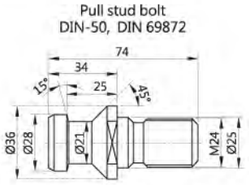


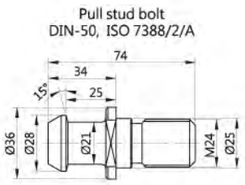
Tool Shank & Pull Stud Dimension



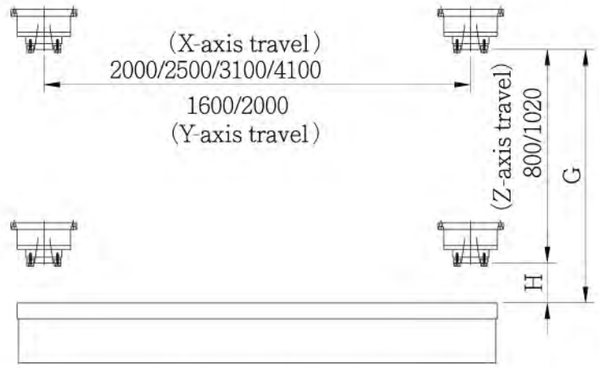








Working Range



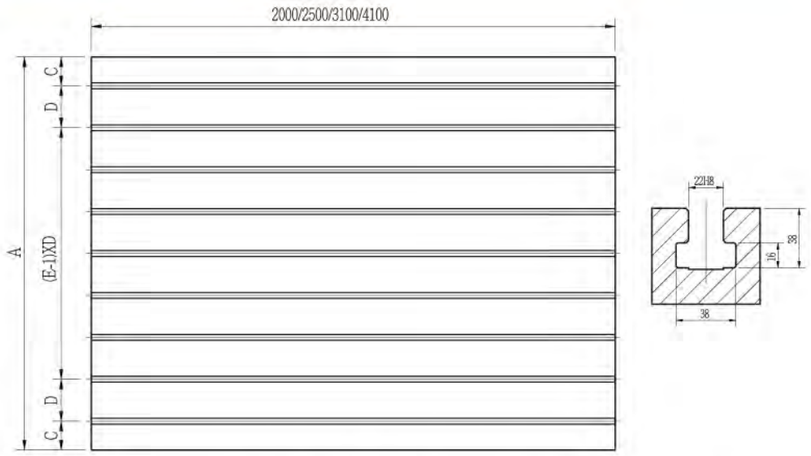
Unit:mm

MODEL	X	Y	Z	H	G
VB-2016	2,000	2,300	920/ 1,020	150	950/ 1,020
VB-2516	2,500				
VB-3016	3,100				
VB-2020	2,000	2,600			
VB-2520	2,500				
VB-3020	3,100				
VB-4020	4,100				

Unit:mm

MODEL	X	Y	Z	H	G
VF-3000	3,200	2,300	920/ 1,020	150	1,070/ 1,170
VF-4000	4,200				
VF-5000	5,200				
VF-3026	3,200	2,600			
VF-4026	4,200				
VF-5026					

Table Dimension



Unit:mm

MODEL	A	B	C	D	E	G	H	K	L
VB-2016	1,300	2,000	110	180	7	22H8	38	16	38
VB-2516		2,500							
VB-3016		3,100							
VB-2020	1,700	2,000	130	180	9				
VB-2520		2,500							
VB-3020		3,100							
VB-4020		4,100							
VF-30xx	2,500	3,200	125	180	9	28H8	48	20	48
VF-40xx		4,200							
VF-50xx		5,200							

VB Specification

MODEL			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			2,000			
Z axis	Box way		mm	800/ 1,020 (opt.)			800/ 1,020 (opt.)			
Distance from spindle nose to table	Box way (2-step gear/ Belt-driven)	Z axis=800	mm	150-950			150-950			
		Z axis=1,020	mm	130-1,150 (column+200mm)			130-1,150 (column+200mm)			
Distance from spindle center to column			mm	430			430			
Distance between columns (port width)			mm	1,700			2,100			
TABLE										
Dimension			mm	2,000x1,300	2,500x1,300	3,100x1,300	2,000x1,700	2,500x1,700	3,100x1,700	4,100x1,700
T-slot(Width x Number x Pitch)			mm	22x7x180			22x9x180			
Max. table load			kg	8,000	9,000	10,000	9,000	10,000	11,000	12,000
SPINDLE										
Spindle motor(cont./30 min. rated)			kW	18.5/ 22 (22/ 26 opt.) (30/ 37 opt.)			18.5/ 22 (22/ 26 opt.) (30/ 37 opt.)			
Spindle speed	Box way	2-step gear	rpm	4,000/ 6,000 (opt.)			4,000/ 6,000 (opt.)			
		Belt-driven		8,000 (opt.)/ 10,000 (opt.)			8,000 (opt.)/ 10,000 (opt.)			
Spindle taper			-	ISO NO.50			ISO NO.50			
FEED										
Cutting feed rate			mm/min	1-7,000			1-7,000			
Rapid traverse			m/min	X / Y / Z:15		X/ Y:12, Z:15	X / Y / Z:15		X/ Y:12, Z:15	
3 axis motor power (FANUC) (Z:box way/linear way)			kW	X:7, Y/Z:4			X:7, Y/Z:4			X:9, Y/Z:4
ACCURY(X,Y,Z)(Measured by laser instrument)										
Positioning accuracy	Refer to JIS B6333		mm	±0.005/300, ±0.010 / Full travel			±0.005/300, ±0.010 / Full travel			
Repeatability	Refer to VDI 3341		mm	P0.022			P0.022			
	Refer to JIS B6333		mm	±0.003			±0.003			
	Refer to VDI 3341		mm	Ps0.016			Ps0.016			
ATC										
ATC capacity			pcs	32/ 40 (opt.)			32/ 40 (opt.)			
Max. tool weight			kg	18			18			
Tool size (DxL) (Full tools)			mm	Φ125x380L			Φ125x380L			
Max. tool size (DxL) (next pocket empty)			mm	Φ180x380L			Φ180x380L			
Tool shank			-	BT 50/ CAT 50			BT 50/ CAT 50			
Pull stud			-	P50T-1			P50T-1			
OTHERS										
Power requirement			kVA	55			55			
Pneumatic requirement			kg	21,500	24,500	27,500	23,500	26,500	29,500	32,500
Machine net weight			kg	25,000	28,000	32,000	27,000	30,000	34,000	35,000
Machine gross weight			m	7.58x5.36x4.33	8.58x5.36x4.33	9.78x5.36x4.33	7.58x5.76x4.33	8.58x5.76x4.33	9.78x5.76x4.33	11.78x5.76x4.33

Standard & Optional Accessories

Standard Accessory

1 FANUC 0iMF controller
2 4,000rpm 2-step gear type spindle
3 Spindle oil cooler
4 Twin hydraulic cylinders with pressured Nitrogen assistance counterweight system
5 X-axis ball screw supporter device (4m & above)
6 Centralized auto lubrication system
7 Independent lubricarion oil collector
8 Ball screw cooling system
9 Air blast through spindle
10 Wash gun and pneumatic interface
11 Cutting fluid cooling system
12 Vertical type tool magazine 32 tools with arm type ATC
13 Enclosed sheet metal guard(without roof)
14 Swiveling arm type operation panel
15 Spring conveyor on table sides
16 Caterpillar type chip conveyor
17 Heat exchanger for electrical cabinet
18 Working lamp
19 Operation cycle finish and alarm light
20 Movable manual pulse generator
21 Footswitch for tool clamping
22 RJ45 interface
23 XYZ-axis absolute pulse coder feedback
24 XYZ-axis travel hard limits protection
25 Spindle cutting load software protection
26 Remote monitoring software-Standard (Not available for Siemens controller)
27 Auto power off function
28 Vision Wide VW-FX100 user interface
29 Foundation pads and bolts kits
30 Adjustment tool and tool kits
31 Technical manuals (operation, maintenance manual and circuit diagram)

Optional Accessory & Function

1 6,000rpm 2-step gear type spindle
2 8,000/ 10,000rpm belt-driven spindle
3 Z-axis travel 1,020mm
4 200/ 300/ 400/ 500mm higher column
5 Interface preparation for coolant through spindle system
6 Coolant through spindle system 20/70 bar(Vertical spindle)
7 Coolant through tool holder interface
8 Coolant through tool holder 5/20 bar cutting fluid interface
9 Oil skimmer
10 Oil mist cooling device
11 Spindle ring cutting coolant device(for no head attachment)
12 Vertical type tool magazine 40 tools with arm type ATC
13 Enclosed sheet metal guard with roof
14 Helical blade screw conveyor on table sides
15 Chip cart
16 Air conditioning for electrical cabinet
17 XYZ-axis linear scale feedback
18 3 axis independent manual pulse generator
19 Sub working table
20 Rotary table
21 Interface reserved for fourth axis
22 Z-axis retract function at power failure
23 Anti-collision and machining simulation software
24 Remote monitoring software-Professional (Not available for Siemens controller)
25 Auto tool length measurement
26 Auto workpiece coordinate measurement
27 Transformer
28 Auto warm up

Optional accessory for auto head attachment

1 Auto AC90 degree angular head/ AC 2-axis head/ AC extended head
2 Auto AC milling head/ small head/ customized head attachment
3 Manual 90 degree angular head/ universal head/ extended head
4 Manual swiveling arm type head bracket on operation side(one head attachment)
5 Auto swiveling arm type head bracket on operation side(one head attachment, one cover)
6 AC 90 degree angular head and AC 2-axis head offered coolant through spindle 20/70bar

● For the specification of each model, please contact our sales representatives.

VF Specification

MODEL			Unit	VF-3000	VF-4000	VF-5000	VF-3026	VF-4026	VF-5026
TRAVEL									
X axis			mm	3,200	4,200	5,200	3,200	4,200	5,200
Y axis			mm	2,300			2,600		
Z axis	Box way		mm	920/ 1,020 (opt.)			920/ 1,020 (opt.)		
Distance from spindle nose to table	Box way (2-step gear/ Belt-driven)	Z axis=800	mm	150-1,070			150-1,070		
		Z axis=1,020	mm	50-1,070			50-1,070		
Distance from spindle center to column			mm	390			390		
Distance between columns (port width)			mm	2,400			2,700		
TABLE									
Dimension			mm	3,200x2,050	4,200x2,050	5,200x2,050	3,200x2,050	4,200x2,050	5,200x2,050
T-slot(Width x Number x Pitch)			mm	28x11x180			28x11x180		
Max. table load			kg	11,000	13,000	15,000	11,000	13,000	15,000
SPINDLE									
Spindle motor(cont./30 min. rated)			kW	18.5/ 22 (22/ 26 opt.) (30/ 37 opt.)			18.5/ 22 (22/ 26 opt.) (30/ 37 opt.)		
Spindle speed	Box way	2-step gear	rpm	4,000/ 6,000 (opt.)			4,000/ 6,000 (opt.)		
		Belt-driven		8,000 (opt.)/ 10,000 (opt.)			8,000 (opt.)/ 10,000 (opt.)		
Spindle taper			-	ISO NO.50			ISO NO.50		
FEED									
Cutting feed rate			mm/min	1-7,000			1-7,000		
Rapid traverse			m/min	X/ Y/ Z:12	X: 10 Y/ Z:12		X/ Y/ Z:12	X: 10 Y/ Z:12	
3 axis motor power (FANUC) (Z:box way/linear way)			kW	X:9 · Y:9 · Z:7			X:9 · Y:9 · Z:7		
Positioning accuracy	Refer to JIS B6333		mm	±0.005/300, ±0.015 / Full travel			±0.005/300, ±0.015 / Full travel		
	Refer to VDI 3341		mm	P0.028		P0.038	P0.028		P0.038
Repeatability	Refer to JIS-B6333		mm	±0.003			±0.003		
	Refer to VDI 3341		mm	Ps0.025			Ps0.025		
ATC									
ATC capacity			pcs	40/ 60 (opt.)			40/ 60 (opt.)		
Max. tool weight			kg	18			18		
Tool size (DxL) (Full tools)			mm	Φ125 x 450L			Φ125 x 450L		
Max. tool size (DxL) (next pocket empty)			mm	Φ215 x 450L			Φ215 x 450L		
Tool shank			-	BT 50/ CAT 50			BT 50/ CAT 50		
Pull stud			-	P50T-1			P50T-1		
OTHERS									
Power requirement			kVA	60			60		
Pneumatic requirement			kg	33,400	38,400	43,400	36,400	41,400	46,400
Machine net weight			kg	37,100	43,400	48,400	40,100	46,400	51,400
Machine gross weight			m	10.0x6.1x4.7	12.0x6.1x4.7	14.0x6.1x4.7	10.0x6.5x4.7	12.0x6.5x4.7	14.0x6.5x4.7

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5 Interface preparation for coolant through spindle system
6 Coolant through spindle system 20/70 bar(Vertical spindle)
7 Coolant through tool holder interface (Hydraulic device and electrical interface)
8 Coolant through tool holder 5/20 bar cutting fluid interface
9 Oil skimmer
10 Oil mist cooling device
11 Spindle ring cutting coolant device(for no head attachment)
12 Vertical type tool magazine 60 tools with arm type ATC
13 Enclosed sheet metal guard with roof
14 Helical blade screw conveyor on table sides
15 Chip cart
16 Air conditioning for electrical cabinet
17 XYZ-axis linear scale feedback
18 3 axis independent manual pulse generator
19 Sub working table
20 Rotary table
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