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Heavy Duty Double Column Machining Center





VISION WIDE TECH CO., LTD.

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

Outting feed rate: 7 m/ min

○ High torque gear type spindle: 4,000/ 6,000 rpm

Belt type spindle: 8,000/ 10,000rpm

X-axis travel: 2.0/ 2.5/ 3.1/ 4.1m

Y-axis travel: 1.6/ 2.0m

O Z-axis travel: 800/ 1,020mm

Port width: 1,700/ 2,100mm

Box way for XYZ-axis





Photo: VB-2016 model with enclosed splash guard (with roof)

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.



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)

Rapid traverse: 12m/min

Cutting feed rate: 7m/min

▶ High torque gear type spindle: 4,000/6,000rpm

• Belt type spindle: 8,000/10,000rpm

X-axis travel: 3.2/4.2/5.2m

Y-axis travel: 2.3/2.6m

O Z-axis travel: 920/1,020mm

Port width: 2,400/2,700mm

Box way for XYZ-axis





Photo: VF3000 with enclosed splash guard (without roof)

High rigid structure design



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

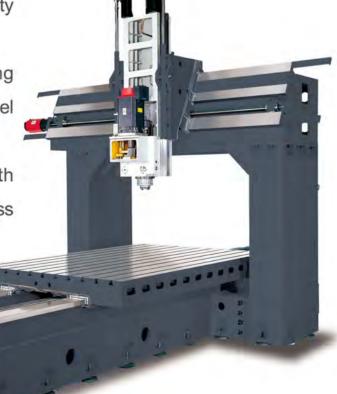
The large size on column cross section dimension

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



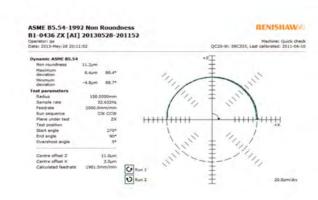
Large special span in Y-axis for rigidity, with bevel beam design reduces movement friction, and improve positioning accuracy.

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 savin

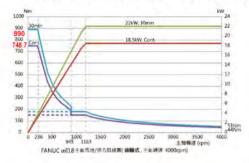


High Speed. High Precision. High Efficiency.

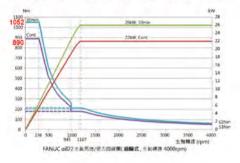
High torque gear type Spindle

Spindle power and torque charts

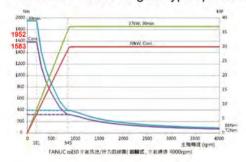
Fanuc a 18 18.5/22kW gear type spindle 4,000rpm



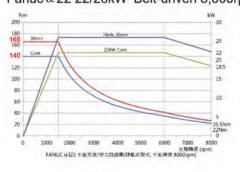
Fanuc a 22 22/26kW gear type spindle 4,000rpm



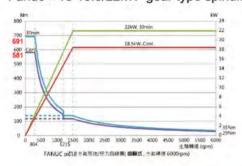
Fanuc a 30 30/37kW gear type spindle 4,000rpm



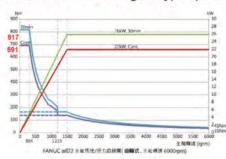
Fanuc a 22 22/26kW Belt-driven 8,000rpm



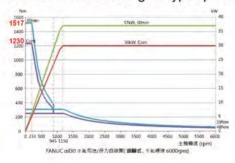
Fanuc a 18 18.5/22kW gear type spindle 6,000rpm



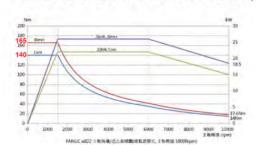
Fanuc a 22 22/26kW gear type spindle 6,000rpm



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

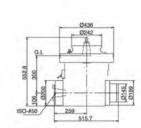


Fanuc a 22 22/26kW Belt-driven 10,000rpm



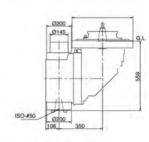
Auto multi-angle head attachment





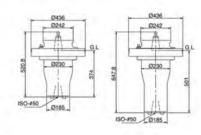
Tool clamping	Auto hydraulic clamping				
Head clamping	Auto hydraulic clamping				
C-axis indexing	Auto 1°/5°				
Machining coolant	External nozzle/ CTS 20/ 70 bar				
Max. power	26 kW				
Max. speed	3,000 rpm				



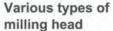


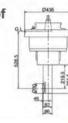
Tool clamping	Auto hydraulic clamping					
Head clamping	Auto hydraulic clamping					
C-axis indexing	Auto 1°/5°					
B-axis indexing	Auto / 5° (manual1°)					
Machining coolant	External nozzle/ CTS 20/ 70 bar					
Max. power	26 kW					
Max. speed	3,000 rpm					

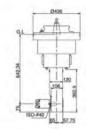


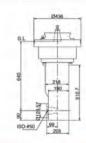


Tool clamping	Auto hydraulic clamping
Head clamping	Auto hydraulic clamping
Max. power	26kW
Max. speed	4,000rpm









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







- - Manual swiveling arm type head bracket (on operation side)
 - Auto swiveling arm type head bracket (on operation side)



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 belt-driven spindle can be chose 4,000/6,000/8,000/10,000 rpm



Face milling:

Tool dia.: 125mm

Cutting feed:1,000mm

Cutting width:100mm

Cutting depth: 6.5mm

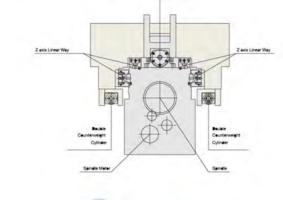
Removal rate:650cc/min



End milling:

Total dia.: 63mmx9 inserts
Cutting speed:800rpm
Cutting feed:400mm/min
Cutting depth: 40mm
Cutting width: 20mm

Removal rate: 320cc/min





Gun drilling(u):

Total dia.:32mm

Cutting speed:1,500rpm

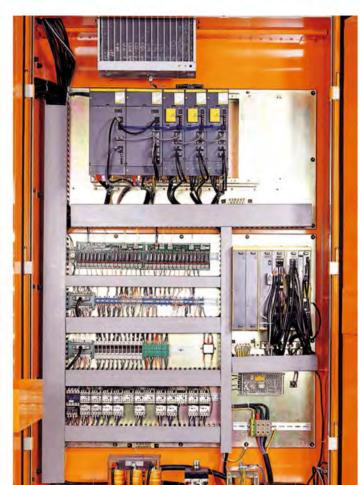
Cutting feed:500mm/min

Cutting depth: 30mm

Removal rate: 480cc/min

Coolant through spindle

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



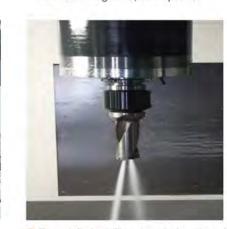
 Side-mount tool magazine, 40T tools magazine, 60T optional



 Ring& nozzle type flood coolant (opt. for no head attachment)



 Fast tool length measurement device for mold cutting



 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.

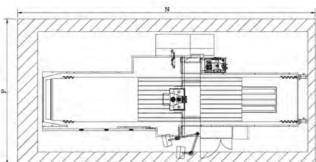
Test specification: 22/26kw/6,000rpm

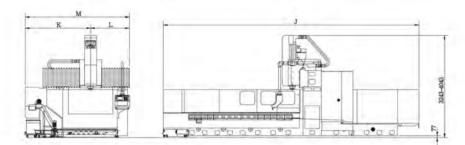
Heavy Duty Double Column Machining Center

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Machine Dimension

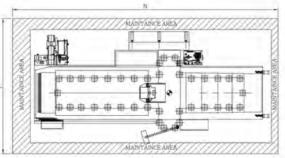
	P	N	M	L	K	J	MODEL				
		7,580				5,910	VB-2016				
	5,355	8,580	3,752	1,371	2,381	2,381	2,381	2,381	2,381	6,910	VB-2516
		9,780				8,110	VB-3016				
_		7,580	4.450			5,910	VB-2020				
		8,580		4 574	0.504	6,910	VB-2520				
	5,755	9,780	4,152	1,571	2,581	8,110	VB-3020				
		11,780		. 146		10,110	VB-4020				

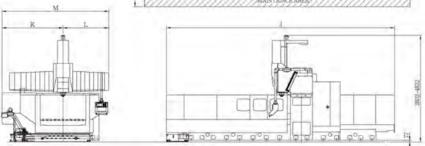




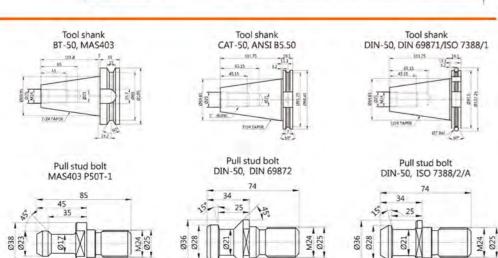
Machine Dimension

MODEL	J	K	1	M	N	Р				
			-	101	7.7					
VF-3000	7,480	20.00		1000	10,000					
VF-4000	9,480	2,380	2,380	2,380	2,380	2,380	2,130	4,860	12,000	5,355
VF-5000	11,480				14,000					
VF-3026	7,480	-		5,200	10,000	5,755				
VF-4026	9,480	2,550	2,300		12,000					
VF-5023	11,480				14,000					



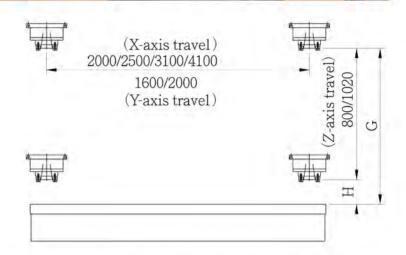


Tool Shank & Pull Stud Dimension



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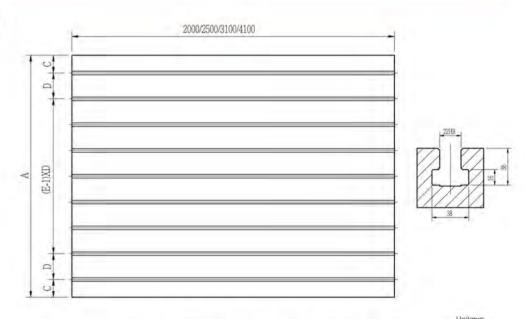
Working Range



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

MODEL	X	Y	Z	H	G
VF-3000	3,200	2,300			1,070/ 1,170
VF-4000	4,200				
VF-5000	5,200		920/	150	
VF-3026	3,200		1,020	150	
VF-4026	4,200		1.55		
VF-5026					

Table Dimension



MODEL	Α	В	C	D	E	G	H	K	L	
VB-2016		2,000								
VB-2516	1,300	2,500	110	180	7	7				
VB-3016		3,100								
VB-2020		2,000				22H8	22H8 38	38	16	38
VB-2520	1,700	2,500	130	180	0					
VB-3020		3,100			9	,				
VB-4020		4,100								
VF-30xx		3,200								
VF-40xx	2,500	4,200	125	180	0 9	28H8	48 48	20	48	
VF-50xx		5,200								

High Speed. High Precision. High Efficiency.

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/ 1,0	020 (opt.)			
Distance from	Box way	Z axis=800	mm		150-950			150	0-950		
spindle nose to table	(2-step gear/ Belt-driven)	Z axis=1,020	mm	130-1	,150 (column+20	00mm)		130-1,150 (cc	olumn+200mm)		
Distance from spindle center to column		mm		430			4	30			
Distance between columns (port width)		mm		1,700	= 1		2,	100			
TABLE											
Dimension		mm	2,000x1,300	2,500x1,300	3,100x1,300	2,000x1,700	2,500x1,700	3,100x1,700	4,100x1,70		
T-slot(Width	x Number x	Pitch)	mm		22x7x180			22x	9x180		
Max. table lo	oad		kg	8,000	9,000	10,000	9,000	10,000	11,000	12,000	
SPINDLE											
Spindle mot	or(cont./30 m	in. rated)	kW	18.5/ 22	(22/ 26 opt.) (30/	(37 opt.)		18.5/ 22 (22/ 26	opt.) (30/ 37 opt.)		
Caladla		2-step gear			4,000/ 6,000 (opt.			4,000/6,	000 (opt.)		
Spindle speed	Box way	Belt-driven	rpm		0 (opt.)/10,000 (2000		8,000 (opt.)	/ 10,000 (opt.)		
Spindle tape	er		1.5	3,17	ISO NO.50		ISO NO.50				
FEED					38.8.9.8.8.9						
Cutting feed	rate		mm/min		1-7,000			1-7	,000		
Rapid traver	se		m/min	X/ YZ:15 X/ Y:12		X/ Y:12, Z:15	X/ YZ:15 X/ Y:12, 2			2, Z:15	
3 axis motor pov	ver (FANUC) (Z:b	ox way/linear way)	kW	X:7, Y/Z:4		X:7, Y/Z:4 X			X:9, Y/Z:4		
ACCURY(X	Y,Z)(Measu	red by laser	instrume	ent)							
Positioning accuracy	Refer to VD	1 3441	mm	±0.005	5/300, ±0.010 F	ull travel	±0.005/300, ±0.010 Full travel				
accuracy	Refer to JIS	-B6333	mm		P0.022		P0.022				
Repeatability	Refer to VD	1 3441	mm		±0.003			±0.003			
	Refer to ISC	10791-2	mm		Ps0.016		Ps0.016				
ATC											
ATC capacit	у		pcs		32/40 (opt.)		ſ	32/4	0 (opt.)		
Max. tool we			kg		18		18				
Tool size (D:	xL) (Full tools	s)	mm		Ф125x380L		Φ125x380L				
Max. tool size (DxL) (next pocket empty)				Φ180x380L			Ф 180	0x380L			
Tool shank		-		BT 50/ CAT 50		BT 50/ CAT 50					
Pull stud		-		P50T-1				0T-1			
Pull stud								20			
OTHERS											
	rement		kVA		55				55		
OTHERS Power requir			kVA ka	21,500	55 24,500	27,500	23,500	26,500	29,500	32,500	
OTHERS	requirement		kVA kg	21,500 25,000		27,500 32,000	23,500 27,000	1000000	Va. 01.5	32,500 35,000	

Standard & Optional Accessories

Standard Accessory

- 1 FANUC 0iMD controller
- 2 4,000rpm 2-step geartype spindle
- 3 Spindle oil cooler
- 4 Twin hydraulic cylinders with pressured air assistance balacing system
- 5 X-axis ball screw supporter (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 40 tools magazine with arm type ATC
- 13 Enclosed splash 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
- 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 60 tools magazine with arm type ATC
- 13 Enclosed splash guard with roof
- 14 Helical blade screw conveyor on table sides
- 15 Chip can
- 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 preparation 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 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 AC90 degree angular head coolant through spindle system 20bar

V Specification

MODEL		Unit	VF-3000	VF-4000	VF-5000	VF-3026	VF-4026	VF-5026	
TRAVEL									
X axis	1xis mm 3,200		3,200	4,200	5,200	3,200	4,200	5,200	
Y axis		mm		2,300			2,600		
Z axis Box way m				900/ 1,020 (opt.)			920/ 1,020 (opt.)		
Distance from spindle nose	Box way Z axis=800 (2-step gear)	mm		150-1,070			150-1,070		
to table	Belt-driven) Z axis=1,02	0 mm		50-1,070			50-1,070		
Distance from	n spindle center to column	mm	-	390			390		
Distance bet	ween 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	5,200x2,05	
T-slot(Width	x Number x Pitch)	mm		28x11x180			28x11x180		
Max. table lo	oad	kg	11,000	13,000	15,000	11,000	13,000	15,000	
SPINDLE									
Spindle mot	or(cont./30 min. rated)	kW	18.5/ 2	2 (22/ 26 opt.) (30/ 3	37 opt.)	18.5/ 22 (22/ 26 opt.) (30/ 37 opt.)			
Spindle	2-step gea			4,000/6,000 (opt.)			4,000/ 6,000 (opt.)		
speed	Box way Belt-driven	rpm	8,0	000 (opt.)/10,000 (o	pt.)	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 traver	se	m/min	X/ Y/ Z:12	X: 10	Y/ Z:12	X/ Y/ Z:12	X: 10	Y/ Z:12	
3 axis motor pov	ver (FANUC) (Z:box way/linear way	kW		X:9 · Y:9 · Z:7		X:9 · Y:9 · Z:7			
Positioning	Refer to JIS B6333	mm	±0.0	05/300, ±0.015 Ful	l travel	±0.005/300, ±0.015 Full travel			
accuracy	Refer to ISO 10791-2	mm	P0.	028	P0.038	P0.	.028	P0.038	
	Refer to JIS-B6333			±0.003			±0.003		
Repeatability	Refer to ISO 10791-2	mm		Ps0.025		Ps0.025			
ATC									
ATC capacit	У	pcs		40/60 (opt.)		40/ 60 (opt.)			
Max, tool we	eight	kg		18		18			
Tool size (D:	xL) (Full tools)	mm		Φ125 x 450L		Ф 125 x 450L			
Max. tool siz	e (DxL) (next pocket empty) mm		Ф215 x 450L		Ф 215 x 450L			
Tool shank		1		BT 50/ CAT 50		1	BT 50/ CAT 50		
Pull stud		144		P50T-1			P50T-1		
OTHERS									
Power requi	rement	kVA		60			60		
Pneumatic i	requirement	kg	33,400	38,400	43,400	36,400	41,400	46,400	
	100		37,100	43,400	48,400	40,100	46,400	51,400	
Machine net	weight	kg	01,100	10,100	1.0,1.00	131,133	1-41	0.11.0.0	

High Speed. High Precision. High Efficiency.

Standard & Optional Accessories

Standard Accessory

- 1 FANUC 0iMD controller
- 2 4,000rpm 2-step geartype spindle
- 3 Spindle oil cooler
- 4 Twin hydraulic cylinders with pressured air assistance balacing system
- 5 X-axis ball screw supporter (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 40 tools magazine with arm type ATC
- 13 Enclosed splash 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
- 28 Vision WideVW-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 (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 60 tools magazine with arm type ATC
- 13 Enclosed splash 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 preparation for fourth axis
 (Hydraulic device and electrical interface)
- 22 Z-axis retract function at power failure
- 23 Anti-collision and machining simulation software
- 24 Remote monitoring software-Professional
- 25 (Not available for Siemens controller) Auto tool length measurement
- 26 Auto workpiece 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 AC90 degree angular head coolant through spindle system 20bar