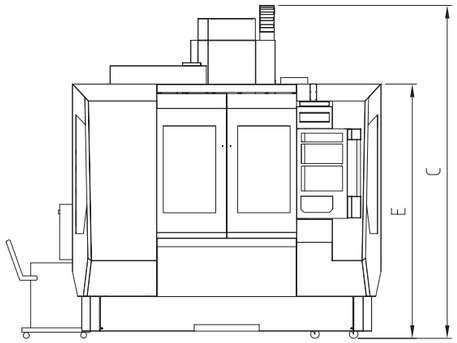
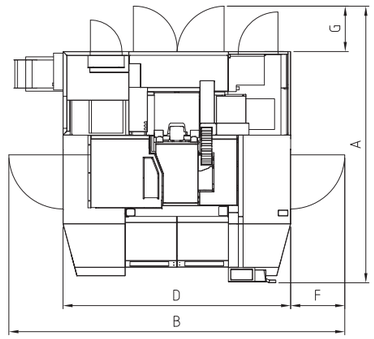
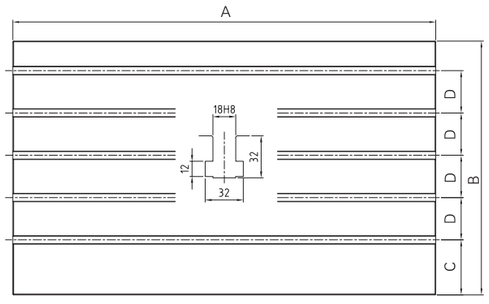
Overall Dimension





Model	A	B	C	D	E	F	G	Weight (kg)
VMC50	3470	3420	3100	2250	2240	580	570	7000
VMC60	3570	4210	3200	2850	2340	680	570	8500
VMC70	3890	5240	3505	3666	2641	785	800	12500

Worktable Size



Model	VMC50A	VMC50B	VMC60A	VMC60B	VMC60C	VMC70A	VMC70B
A	750	950	1000	1200	950	1300	1300
B	500	500	600	600	620	700	700
C	100	100	130	130	70	115	115
D	100	100	100	100	120	100	100

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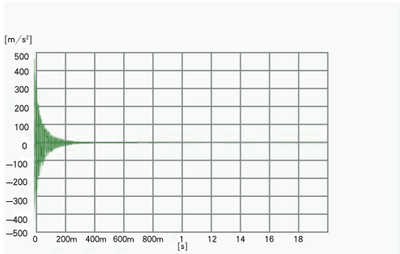
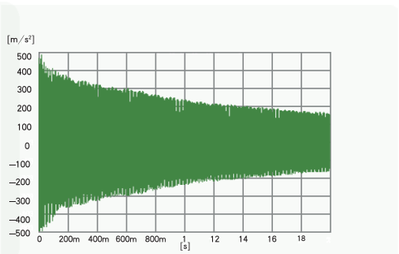
Stable Physical and Mechanical Properties with UHPC

Better Vibration Absorption
The vibration absorption of UHPC mineral casting is 10 times better than iron casting. Under large dynamic load, the stability of machine precision can be guaranteed, while the surface finish quality of the workpiece can also be improved by 20%.

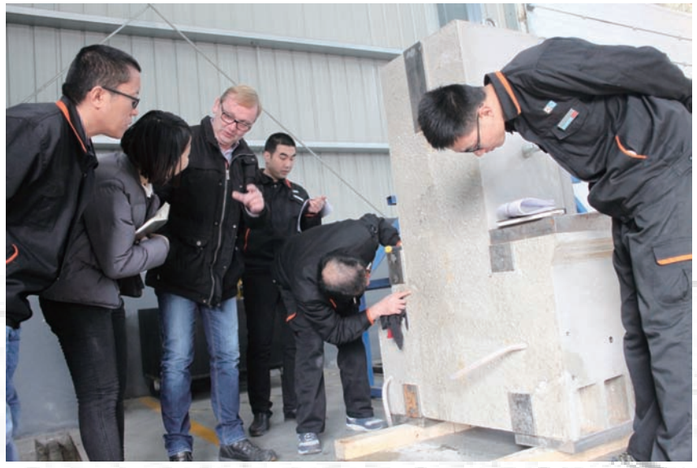
Excellent thermal stability
The thermal conductivity of UHPC mineral casting is 1/20 of that of iron casting, the specific heat capacity is 2.1 times of that of iron casting . Excellent thermal stability and thermal inertia can effectively control any kind of machine deformation caused by temperature change, the stability of machine precision is further guaranteed.



UHPC Casting

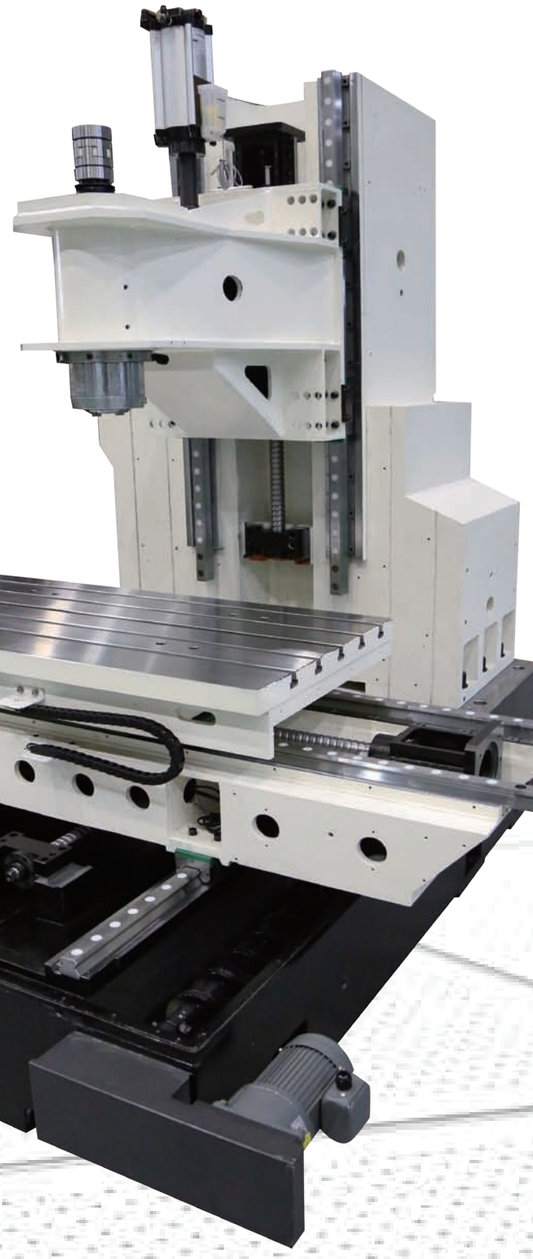


Grey Iron Casting



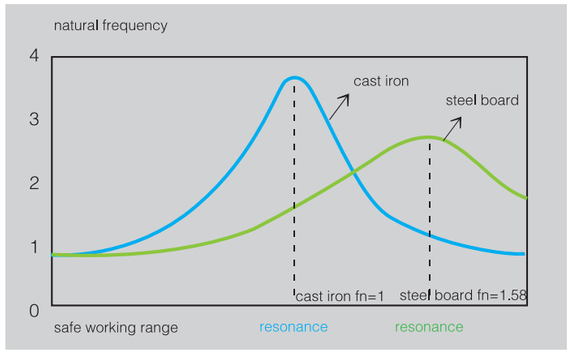
UHPC Technology from Germany

Moving Parts Stable in High–Speed with Lightweight, high rigidity welding structure



High Rigidity
The moving parts are welded by high–strength low–alloy steel, the material elasticity modulus is around 1.4 times of that of iron casting , so the overall regidity can be improved by more than 30% .

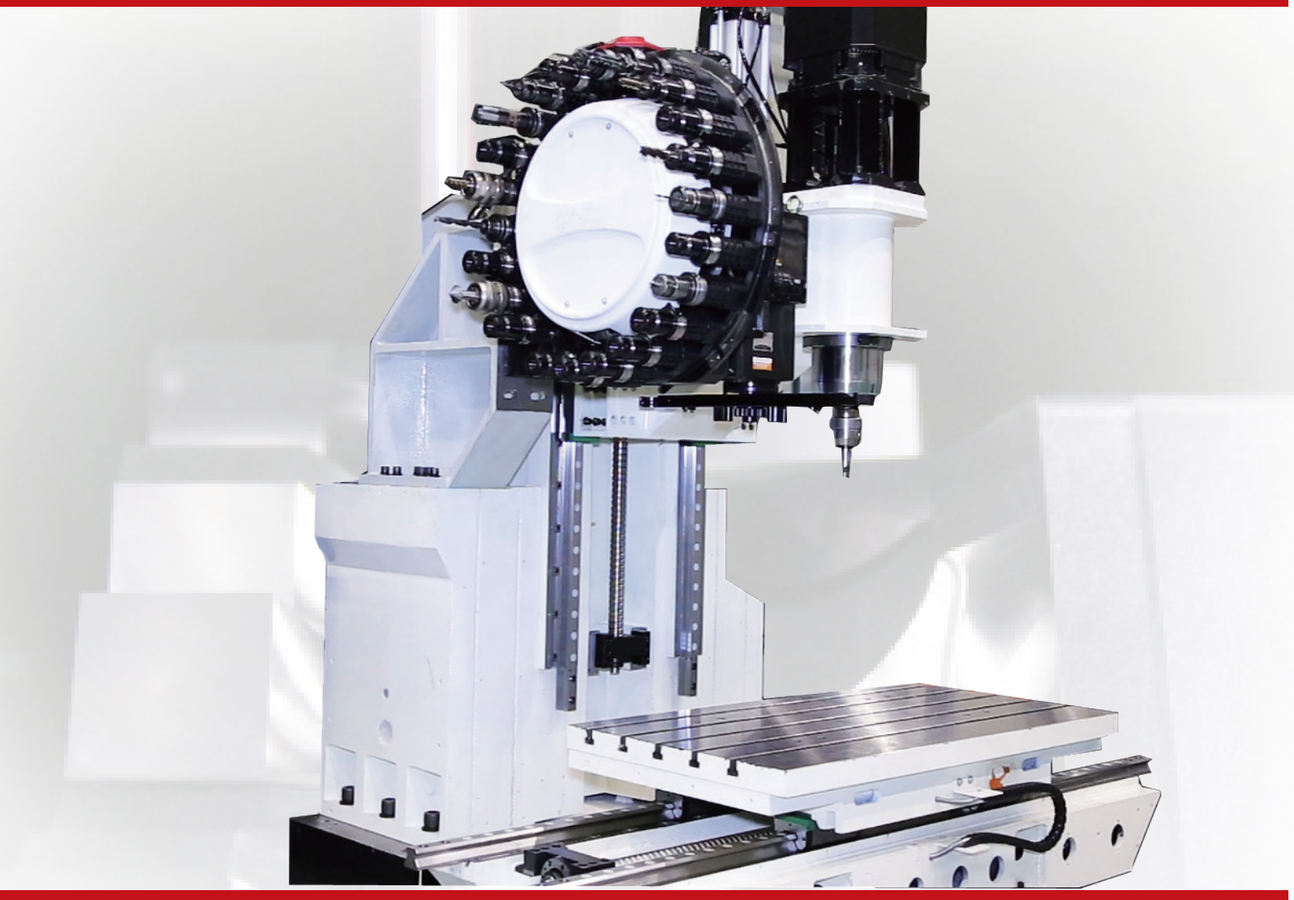
Lighter Weight
Compared to iron casting, the lighter–weight structure can reduce unit weight by 20%–30%, effectively reduce the inertia of moving parts and increase the dynamic response by 10–20%.



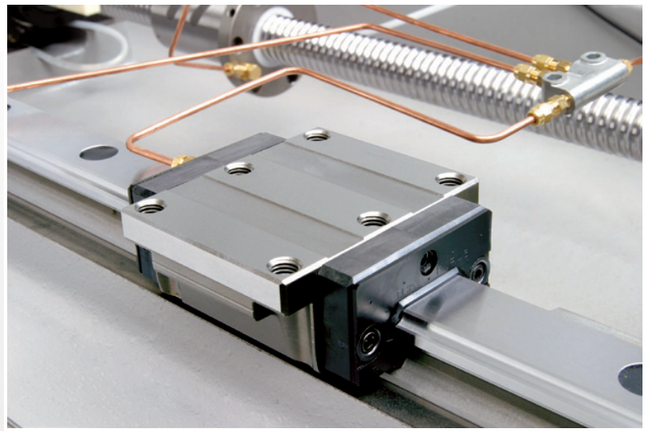
Steel Welding technology from Germany

VMC Basic Property

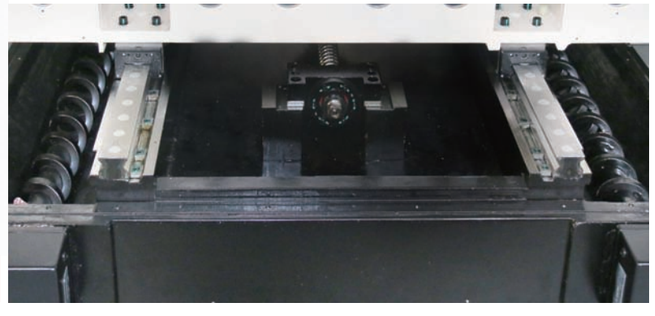
High Precision • High Speed



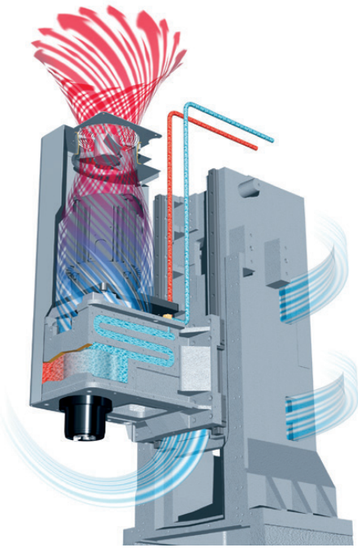
Standard Configuration



Linear guideway and ballscrew are lubricated by grease, to avoid waste oil pollution as well as cutting liquid spoilage caused by oil and liquid mixing. Cost of lubrication grease is only 1/3 of lubrication oil, with 6 month drain interval, the maintenance period can be extended.



Both sides of the machine are configured with augur chip removal groove, with standard chain type chip conveyor at the back side, in this way labor intensity can be effectively decreased.

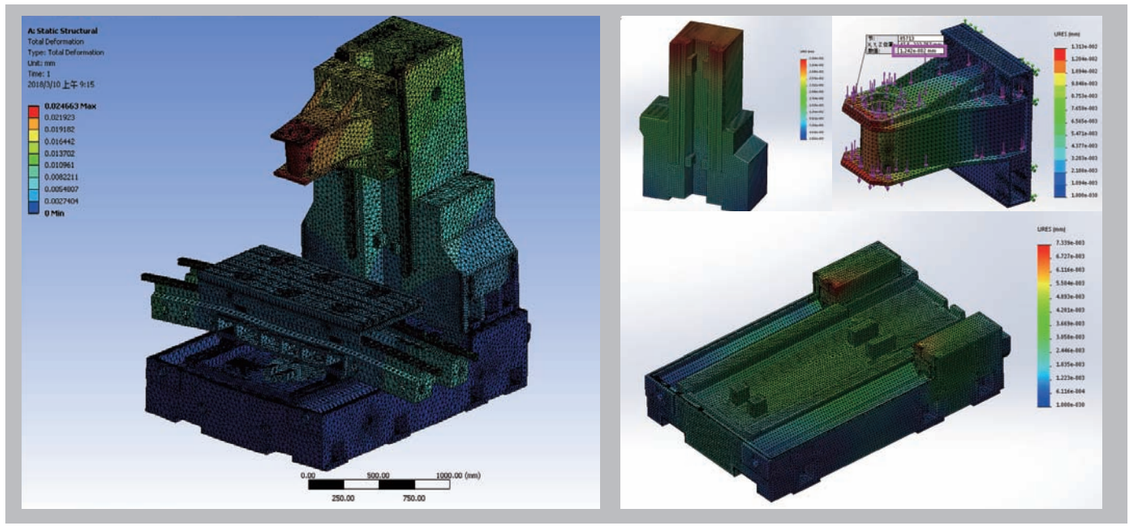


Spindle configured with oil cooler, can keep the spindle temp stable during long time processing and further ensure stable processing capability.

Standard tool magazine is configured with 24 tools(30 tools optional),can increase tool selecting range, realize fast auto tool change and further shorten the stand–by time when no cutting.

Static Rigidity

BY FEA analysis and pyramidal pattern deign, machine bed gain the optimal structural rigidity, the static rigidity is improved by 46%



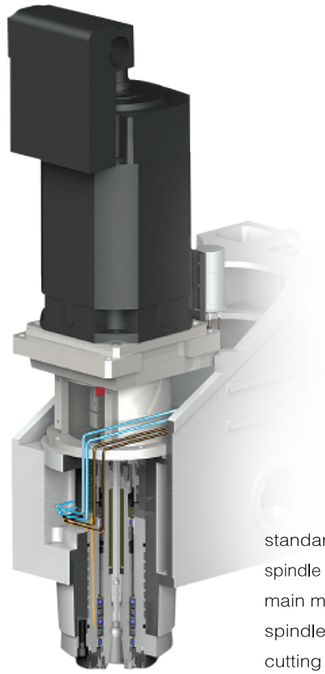
Dynamic Rigidity

By increasing 3–axis dynamic rigidity, VMC products process efficiency is improved by 25%, surface finishment improved by 10%

Wheel hub processing	Ordinary produc	VMC
Spindle speed	9470 r/min	10415 r/min
Feed rate	7197mm/min	14500mm/min
Time of finish machining	103min	76min23s
Machining Result		

High Precision Spindle

Long-term Precision Maintenance, Excellent Processing Property



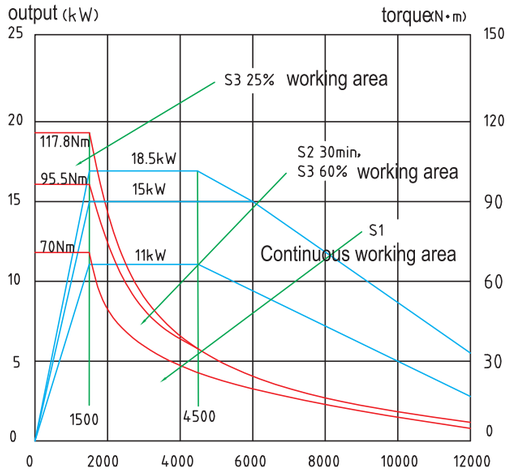
Direct-drive Spindle

• Spindle and motor is coaxially connected with coupler, can simplify the structure of main transmission system, improve rigidity of spindle parts, solve the problems of vibration and backlash and gain excellent performance for high–speed machining.

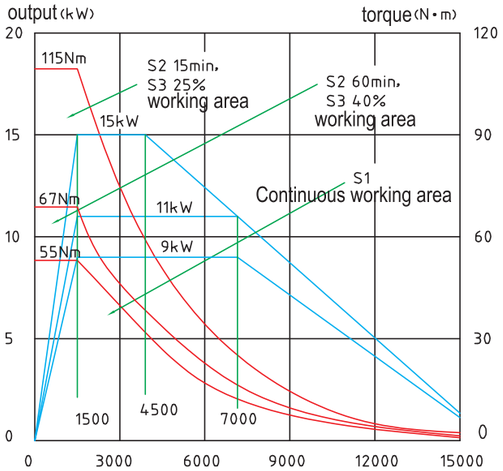
• High speed transmission, large transmitted torque, less noise and good heat repelling

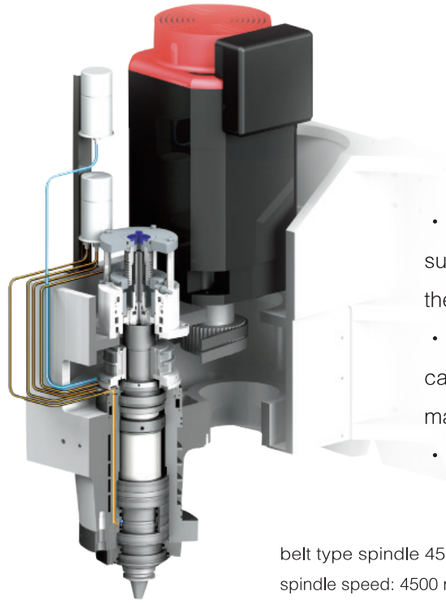
• Speed rpm: 10000/12000/15000

standard 12000r/min spindle
spindle speed: 12000 r/min
main motor power: 11/18.5kW
spindle torque: 70 / 117.8 Nm
cutting speed: 20 m/min



standard 15000 r/min spindle
spindle speed: 15000 r/min
main motor power: 9 /15 kW
spindle torque: 55 / 115 Nm
cutting speed: 20 m/min





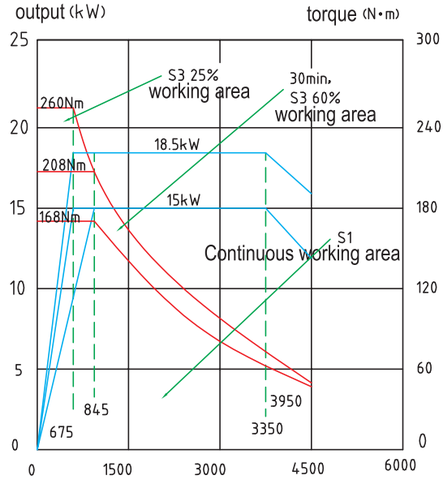
Belt-type Spindle

• With high–strength 4–claws broach, it can have big contact surface, strong clamp force and less damage to taper end to make the spindle rotate steadily with wider processing range.

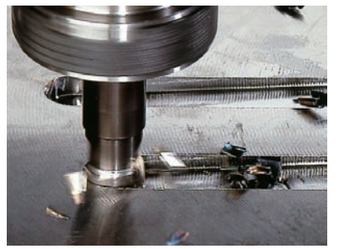
• Spindle belt is in tooth profile to make the transmission non–slip, it can help reduce the noise and heat of the central transmission when machining.

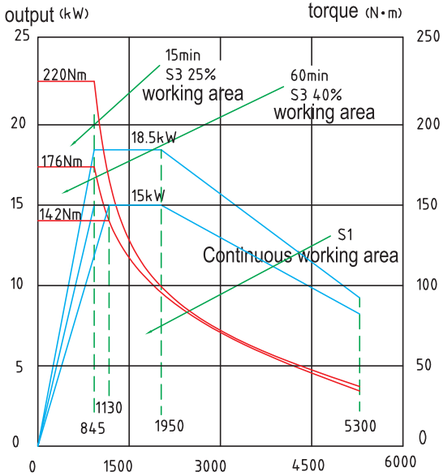
• speed: 4500(1:1.77)/5300(1:1.5)

belt type spindle 4500r/min spindle
spindle speed: 4500 r/min
main motor power: 15 / 18.5 kW
spindle torque: 168 / 260Nm
cutting speed: 20 m/min



belt type 5300r/min spindle
spindle speed: 5300 r/min
main motor power: 15 / 18.5 kW
spindle torque: 142 / 220Nm
cutting speed: 20 m/min



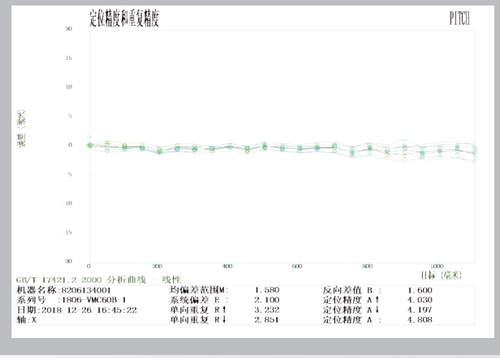


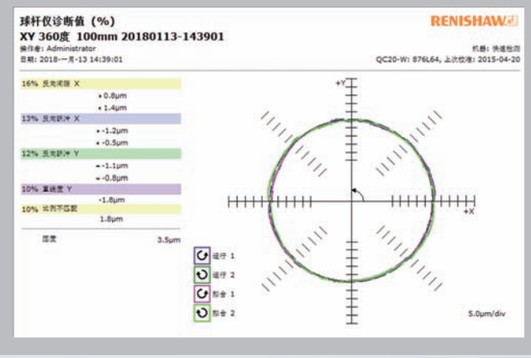
Processing Capability

Perfect Performance, High-precision Machining

Processing Precision

ITEM	Repeatability	Repeatability	Ball-bar test	NASA Test-piece Precision		
				straightness	parallelism	position degree
VMC	0.006	0.004	0.0053	0.0034	0.0033	0.0061



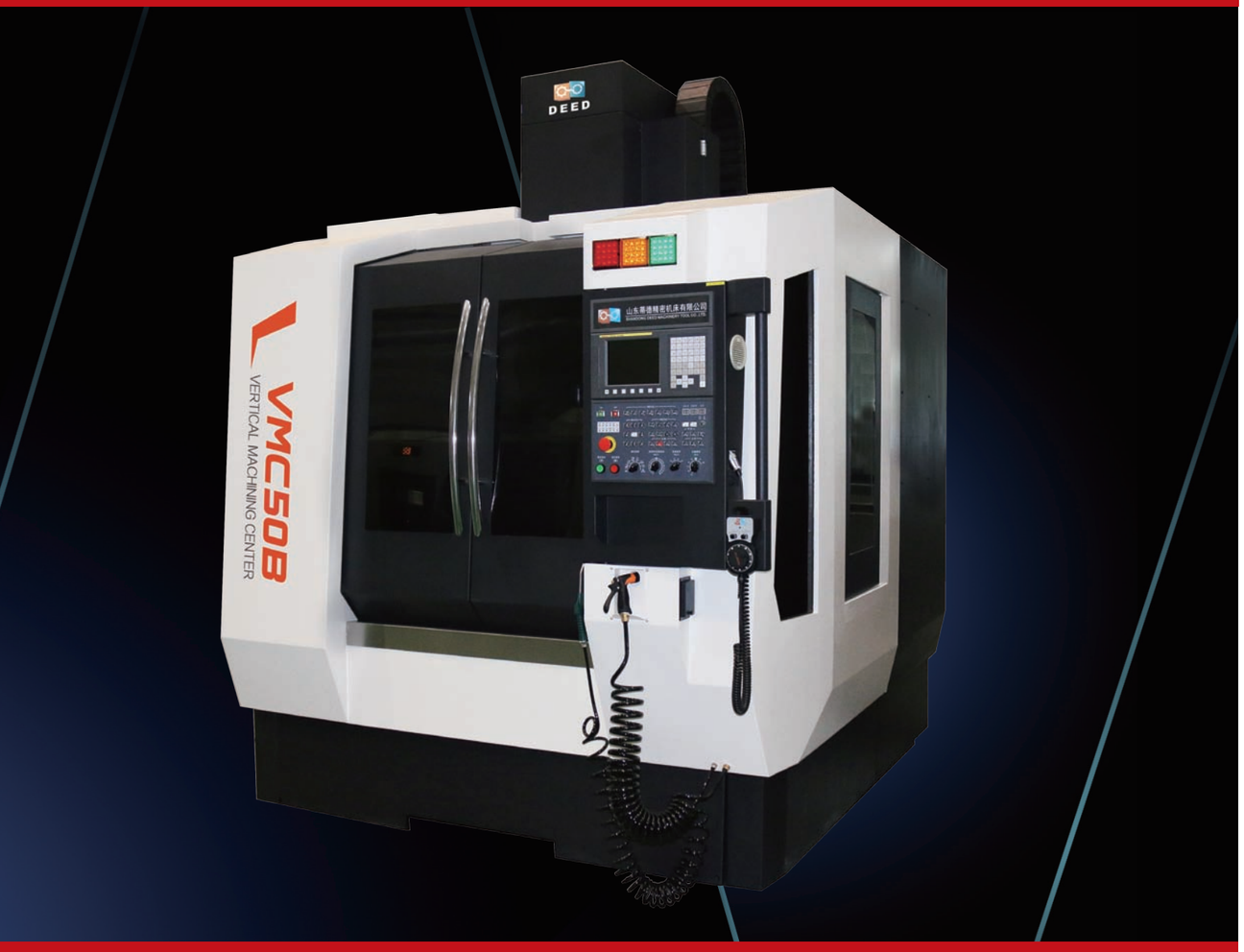


Processing Performance

material	aluminum 6061
tool	D6R3
feedrate	600—3000
spindle rpm	10000

material	aluminum 7075
tool	R2 ball cutter
feedrate	600—3000
spindle rpm	10000

VMC50



Standard Configuration

Controller
3-axis roller linear guideway
3-axis ball screw
Spindle air blower
Spindle air curtain dustproof
Spindle outside cooling
Guideway protection hood
2 sides auger chip conveyor
Auto grease lubrication system
Air gun
Water gun
Whole machine cover
Chain type chip conveyor with cart
Workpiece water cooling
Workpiece air cooling
24T tool magazine
Electrical cabinet air conditioner
Door opening detection
Working lamp
Leveling blocks and adjusting bolt
Tool box
Handheld pulse generator
Operation manual
Alarm light
Spindle oil cooler

Technical Spefication			VMC50B					VMC50C	
Travel	X–axis	mm	850					750	
	Y–axis	mm	500					500	
	Z–axis	mm	600					600	
	Spindle nose–table	mm	150–750					150–750	
	Spindle nose–table	mm	120–720					–	
Worktable	Size	mm	950x500					850x500	
	Load capacity	kg	600					500	
Counterweight			no						
Spindle	Spindle type		direct type			belt type		build–in type	direct type
	Spindle taper		BT40	BT40	BBT40	BT50		HSK–A63	BBT40/BT40
	Spindle speed	rpm	10000rpm	12000rpm	15000rpm	4500rpm	5300rpm	20000rpm	15000rpm
	Spindle motor power (continus /Max.)	kW	11/15	11/18.5	9/15	15/25	15/25	20/24	9/15
	Spindle torque (continus /Max.)	Nm	52.5/95.5	70/117.8	55/115	168/280	142/237	30.7/36.8	55/115
Feed	Rapid traverse	m/min	40/40/32	40/40/40	40/40/40	40/40/32(40)		40/40/40	
	Cutting speed	m/min	12(20)					20	
	Acceleration	m/s^2	4(6)					6	
	3 axes screw diameter	mm	40					40	
	3 axes roller linear guidway width	mm	45					45	
ISO Accuracy (20 ± 0.5℃)	Positioning	mm	0.006					0.006	
	Repeatability	mm	0.004					0.004	
Tool Magazine	Tool magazine type		disk						
	Tool magazine capacity		24/30						
	Tool change time(T–T)	s	1.6			3.5		1.6	
Weight		kg	7500						
Control System			FANUC/SIEMENS/MITSUBISHI/HEIDENHAIN						

*Specifications with FANUC– α motor are marked in red.

Options

NANO smooth interpolation (Fanuc 0i MF1/ MF3)
High-speed high-quality process package (Fanuc 0i MF1/ MF3)
Data server
Fast Ethernet
PMC/L ladder diagram function
AI Contour control
CNC Application program develop unit
Dynamic graph display
FANUC program transmission tool
3D finished product simulation(manual guide)
Real-time processing simulation
CTS 18/20/30/50 bar
5 axis rotary table
4 axis rotary table and tailstock
Linear scale
Tool setter
Workpiece measurement
Servo tool magazine
Oil mist collector
Chip flushing device
Pheumatic door

VMC60

Technical Spefication			VMC60B					VMC60C	
Travel	X–axis	mm	1100					850	
	Y–axis	mm	600					620	
	Z–axis	mm	600					600	
	Spindle nose–table	mm	150–750					150–750	
	Spindle nose–table	mm	120–720					–	
Worktable	Size	mm	1200x600					950x620	
	Load capacity	kg	1000					600	
Counterweight			no						
Spindle	Spindle type		direct type			belt type		build–in type	direct type
	Spindle taper		BT40	BT40	BBT40	BT50		HSK–A63	BBT40/BT40
	Spindle speed	rpm	10000rpm	12000rpm	15000rpm	4500rpm	5300rpm	20000rpm	15000rpm
	Spindle motor power (continus /Max.)	kW	11/15	11/18.5	9/15	15/25	15/25	20/24	9/15
	Spindle torque (continus /Max.)	Nm	52.5/95.5	70/117.8	55/115	168/280	142/237	30.7/36.8	55/115
Feed	Rapid traverse	m/min	40/40/32	40/40/40	40/40/40	40/40/32(40)		40/40/40	
	Cutting speed	m/min	12(20)					20	
	Acceleration	m/s^2	4(6)					6	
	3 axes screw diameter	mm	40					40	
	3 axes roller linear guidway width	mm	45					45	
ISO Accuracy (20 ± 0.5℃)	Positioning	mm	0.006					0.006	
	Repeatability	mm	0.004					0.004	
Tool Magazine	Tool magazine type		disk						
	Tool magazine capacity		24/30						
	Tool change time(T–T)	s	1.6			3.5		1.6	
Weight		kg	8500						
Control System			FANUC/SIEMENS/MITSUBISHI/HEIDENHAIN						

*Specifications with FANUC– α motor are marked in red.

Standard Configuration

Controller
3-axis roller linear guideway
3-axis ball screw
Spindle air blower
Spindle air curtain dustproof
Spindle outside cooling
Guideway protection hood
2 sides auger chip conveyor
Auto grease lubrication system
Air gun
Water gun
Whole machine cover
Chain type chip conveyor with cart
Workpiece water cooling
Workpiece air cooling
24T tool magazine
Electrical cabinet air conditioner
Door opening detection
Working lamp
Leveling blocks and adjusting bolt
Tool box
Handheld pulse generator
Operation manual
Alarm light
Spindle oil cooler

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FANUC program transmission tool
3D finished product simulation(manual guide)
Real-time processing simulation
CTS 18/20/30/50 bar
5 axis rotary table
4 axis rotary table and tailstock
Linear scale
Tool setter
Workpiece measurement
Servo tool magazine
Oil mist collector
Chip flushing device
Pheumatic door

VMC70

Technical Spefication			VMC70B					VMC70C	
Travel	X–axis	mm	1400					1000	
	Y–axis	mm	700					700	
	Z–axis	mm	700					700	
	Spindle nose–table	mm	150–850					150–850	
	Spindle nose–table	mm	90–790					–	
Worktable	Size	mm	1500x700					1100x700	
	Load capacity	kg	1200					800	
Counterweight			no						
Spindle	Spindle type		direct type			belt type		build–in type	direct type
	Spindle taper		BT40	BT40	BBT40	BT50		HSK–A63	BBT40/BT40
	Spindle speed	rpm	10000rpm	12000rpm	15000rpm	4500rpm	5300rpm	20000rpm	15000rpm
	Spindle motor power (continus /Max.)	kW	11/15	11/18.5	9/15	15/25	15/25	20/24	9/15
	Spindle torque (continus /Max.)	Nm	52.5/95.5	70/117.8	55/115	168/280	142/237	30.7/36.8	55/115
Feed	Rapid traverse	m/min	32/32/24	40/40/32	40/40/32	40/40/32(40)		40/40/32	
	Cutting speed	m/min	12(20)					20	
	Acceleration	m/s^2	3(5)					5	
	3 axes screw diameter	mm	40					50	
	3 axes roller linear guidway width	mm	45					45	
ISO Accuracy (20 ± 0.5℃)	Positioning	mm	0.008					0.008	
	Repeatability	mm	0.005					0.005	
Tool Magazine	Tool magazine type		disk						
	Tool magazine capacity		24/30						
	Tool change time(T–T)	s	1.6			3.5		1.6	
Weight		kg	12500						
Control System			FANUC/SIEMENS/MITSUBISHI/HEIDENHAIN						

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Standard Configuration

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3-axis roller linear guideway
3-axis ball screw
Spindle air blower
Spindle air curtain dustproof
Spindle outside cooling
Guideway protection hood
2 sides auger chip conveyor
Auto grease lubrication system
Air gun
Water gun
Whole machine cover
Chain type chip conveyor with cart
Workpiece water cooling
Workpiece air cooling
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Electrical cabinet air conditioner
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Working lamp
Leveling blocks and adjusting bolt
Tool box
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Spindle oil cooler

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Pheumatic door

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