

Gate

Gate Machinery International Ltd

High Speed Vertical Machining Centres With Linear Guideways



NEW

VMC-500LG/650LG/760LG Series

Vertical Machining Centre

Reinforced Structural Design Exhibits
The Best Cost-Performance Choice

VMC

500LG / 650LG / 760LG

The vertical machining centre integrates the features of high speed and maximum stability.

The series of the machine enhances the structural design to assure the best dynamic and static stability.

They are equipped with a 10,000 rpm high speed spindle, combined with rapid traverse on three axes making it the most valuable vertical machining centre.



VMC-500LG / 650LG / 760LG

Vertical Machining Center



**10,000RPM
Direct-drive
Spindle**
(Standard Equipment)

- BT-40 spindle taper
- The acceleration/deceleration time for the direct-drive spindle is quickly accomplished in only 1~1.8 seconds. This greatly upgrades the machine efficiency.
- 12,000/15,000 rpm is optional.

Arm Type ATC
(Standard Equipment)

- The tool magazine can be fitted with BT-40 tool shank.
- The magazine body is manufactured from aluminum alloy for reducing the inertia load. It also features fast tool change and stable motion.
- The smooth cam-driven tool change mechanism takes only 1.5 seconds exchange time (T to T).



Cutting Capability



Aluminum

DRILLING

Max. Dia. Φ 32mm

Tool: Φ 32 driller
Spindle speed : 700rpm
Feedrate : 210mm/min



S45C

DRILLING

Max. Dia. Φ 26.5mm

Tool : Φ 32 driller
Spindle speed : 700rpm
Feedrate : 210mm/min
Drilling depth : 25mm/min



S45C

FACE MILLING

Chip Removal Rate
150cc/min

Tool : Φ 50 Face milling cutter
Spindle speed : 1500rpm
Feedrate : 1875mm/min
Milling width : 40mm
Milling depth : 2mm



S45C

FACE MILLING

Max. Cutting Depth
4mm

Tool Φ 50 Face milling cutter
Spindle speed : 1200rpm
Feedrate : 600mm/min
Milling width : 40mm
Chip removal rate : 96 cc/min



S45C

TAPPING

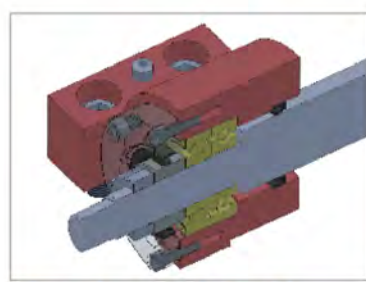
M20

Tool: M20 taper
Spindle speed : 240rpm
Feedrate : 600mm/min
Tapping depth : 25mm

Exceptional Cutting Efficiency and Stability

Perfect Structural Rigidity

- The stable and low-centre-of-gravity machine base offers a solid foundation for the entire machine. The V-shape inner ribs provide long lasting dynamic and static accuracy.
- Extra wide span between linear guideways exhibits exceptional stability to absorb cutting vibration; free from over hanging problems.
- All structural parts are made from high tensile FC-300 cast iron, stress relieved and deformation free.
- The box type construction features anti-deformation and anti-bending.
- The A-shaped machine column firmly supports the ATC unit and the head stock. The design is capable of dealing with cutting force from axial and radius direction.



Anchored Ball Screws

- Both ends of ball screws are anchored on the machine by angular contact ball bearings, that features higher rigidity and stability.
- Pretensioned ball screws remove backlash and increase positioning accuracy.



Spacious Interior Space

- Wide interior space features good ventilation, efficient chip evacuation. Two coolant flush motors are standard, with the coolant flushing rings inside the chip enclosure that is capable of removing heat source from the machine.
- Two pumps are independently controlled for spindle cutting and chip flushing.



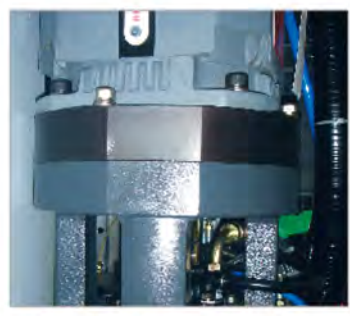
Concealed Pneumatic Parts

The pneumatic parts are centralized in a compartment to prevent them from bumping, while helping to keep the machine looking neat.



Servo Drive

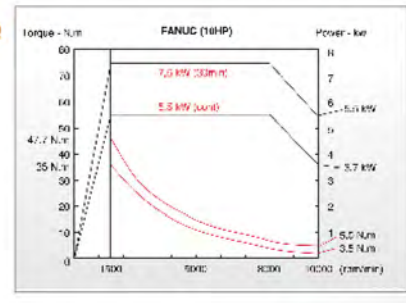
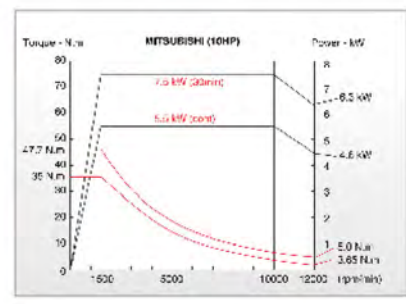
Increasing overall performance to achieve outstanding result of high speed and high precision cutting.



Optimized Spindle Head H/L Ratio

The height-to-length ratio of spindle headstock is nearly 1:1, making it to realize the superior capability in radial and axial cutting resistance.

- Equipped with spindle oil cooler.
- Cooling device for spindle motor flange.



NEW

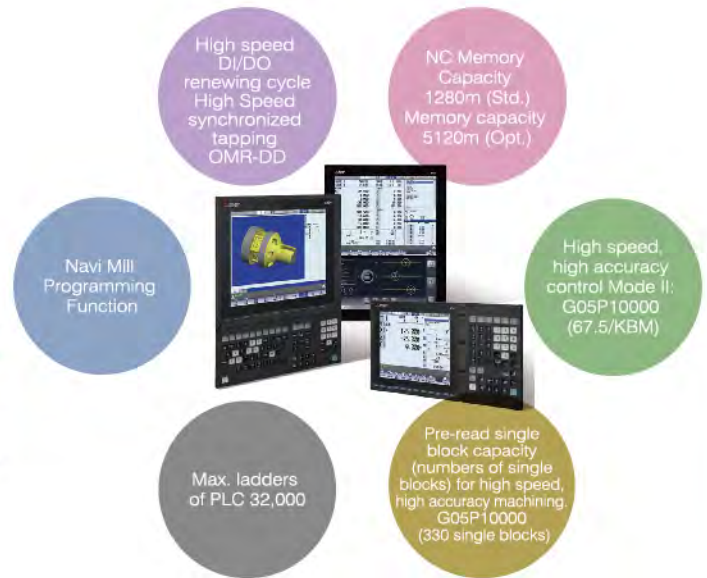
VMC-500LG/650LG/760LG Series

The machine is equipped with a Mitsubishi M80-A control (standard) for higher speed and accuracy. An internet interface (front mounted SD card slot & USB port device) is provided for increasing safety and convenience during machining.



Attentive in-process management, combined with rigorous quality inspection, equates to maximum operational dependability.

Other controls available: Siemens, Fanuc & Fagor



SPECIFICATION

Item/Model	Unit	VMC-500LG	VMC-650LG	VMC-760LG	
Travel	Max. travel range of X/Y/Z	mm	500x430x420	650x430x420	760x430x450
	Spindle nose to table face	mm	100~520	100~520	150~600
Work Table	Table size	mm	550x400	750x400	860x420
	T-Slot (WxNo.xP)	mm		14x3x125	
	Max. loading capacity	kg	250	250	300
Spindle	Spindle taper			BT40	
	Spindle speed	rpm		10,000rpm(D.D.S)	
	Spindle motor	kw		5.5/7.5	
Feed Rate	Rapid Traverse Speed of X/Y/Z	m/min	Mitsubishi: 48/48/48 Fanuc: 36/36/36	Mitsubishi: 48/48/48 Fanuc: 36/36/36	Mitsubishi: 36/36/36 Fanuc: 36/36/36
	Max. cutting feed rate of X/Y/Z	m/min		1~12	
	Servo motor of X/Y/Z	kw		Mitsubishi: 1.5/1.5/2.0B Fanuc: 1.6/1.6/3.0B	
Automatic Tool Changer	ATC type			Arm Type	
	Tool capacity	pcs		20T	
	Max. tool diameter	mm		Φ 75	
	Max. tool length	mm		200	
	Max. tool weight	kg		Avg:5	
	Max. tool diameter without adjacent tool	mm		Φ 150	
	Tool change time (T to T)	sec		1.5	
Other	Machine dimension (LxW)	mm	1650x2500	2150x2500	2000x2520
	Machine height	mm	2500	2500	2600
	Net weight	kg	2850	3000	3500
	Total required power	kva		15	

*We reserve the right to modify the design and specifications without notice in advance.

STANDARD EQUIPMENT

- 10,000rpm direct-drive spindle
- Rigid tapping
- Spindle air blast device
- Fully enclosed splash guard
- Heat exchange for electrical cabinet
- Automatic lubrication system
- Spindle oil cooler
- Cooling system and coolant tank
- Work lamp
- Foundation bolts and blocks
- Tool box with tools
- Operation and maintenance manual
- Coolant flushing device
- Air gun and water gun

OPTIONAL EQUIPMENT

- 10,000/12,000rpm belt type spindle
- 12,000/15,000rpm direct-drive spindle
- 24,000/30,000/36,000rpm built-in spindle
- Y axis rear side screw type chip conveyor
- 4th axis rotary table
- Transformer
- Air conditioner for electrical cabinet
- Coolant through spindle 30/70 bar
- Tool length measurement

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