

HISION



NINGBO HAITIAN PRECISION MACHINERY CO., LTD.

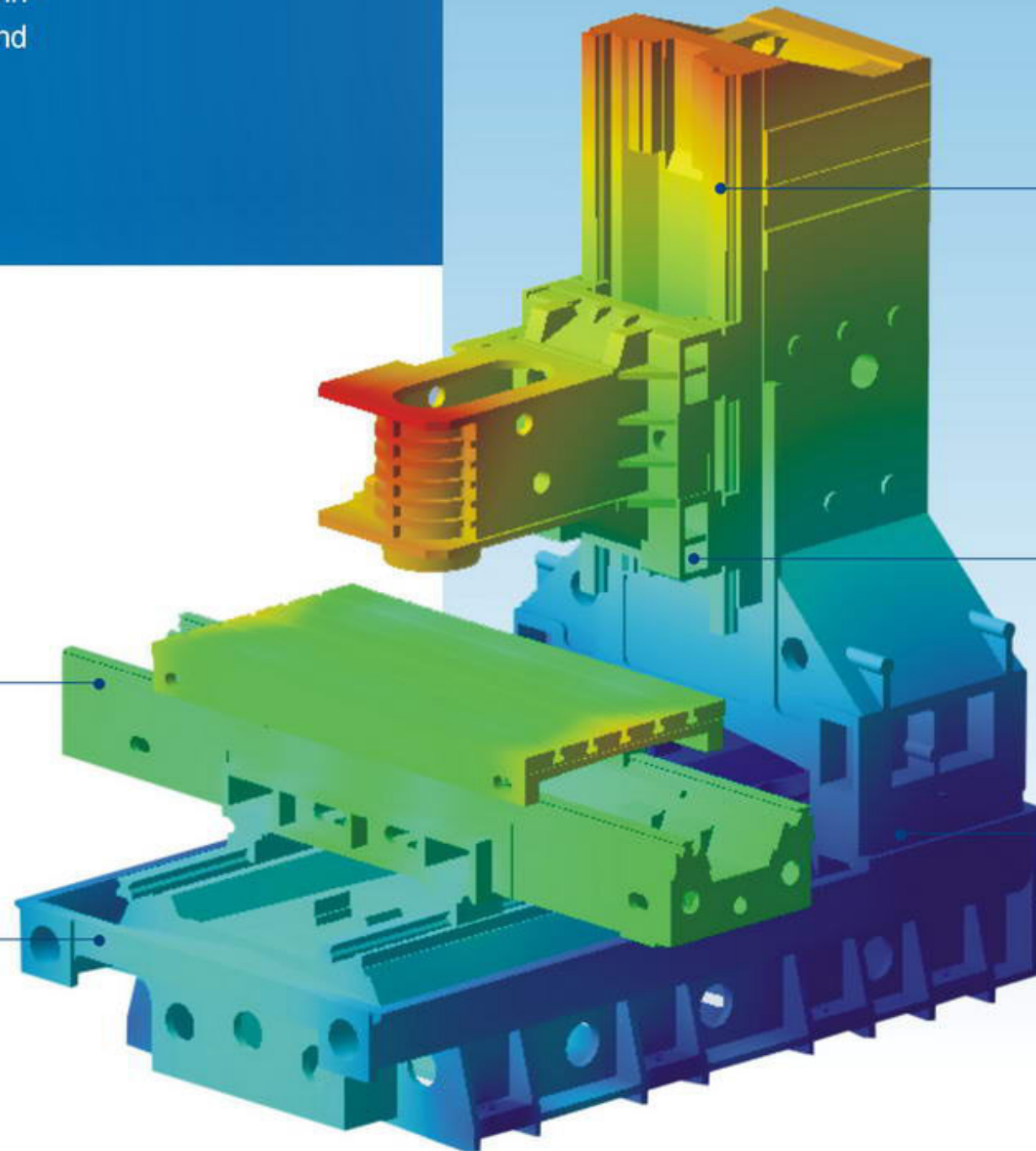
Huangshan Road 235, Beilun District, Ningbo, China.
P.C.: 315800
TEL: 0086-0574-86182580
FAX: 0086-0574-86182559
SERVE: 0086-0574-86182599
WEB: www.hisioncnc.com
E-MAIL: hision@mail.haitian.com

**VMC Series
Vertical Machining Center**

NINGBO HAITIAN PRECISION MACHINERY CO., LTD.



Hision vertical machining center is technologically advanced VMC with use of the latest innovations in machine tool design for higher rigidity, stability and precision.



Guideway

Z axis guide adopts the overloaded roller guides with cage and four-direct equal load, efficiently improving the rigidity of Z axis. The Dynamic load is improved by 18.5% and the static load is enhanced by 87%.

spindle box

The spindle head using unique reinforced structure design for optimization of the stiffness, rigidity, vibration resistance and thermal stability.

Column

Column introduces a reinforcement structure with internal three sides of asterisk (like UK's Flag) ribs to prevent deformation more than 20%.

Horizontal slide

The combination of well ribbed cross-section with a large span support structure design, greatly improves the rigidity of Horizontal Saddle.

Bed

The internal triangular ribbed design and optimized layout of foundation support, improved the stability of machine tool.

ATC

24 tool changer smooth and fast.

Heat insulation & vibration absorption mechanism

Heat insulation & vibration absorption mechanism is installed between spindle head box and spindle motor to isolate spindle motor's heat and prevent its vibration.

Constant temperature and oil cooling system

This latest system features CFC-free and environmental protection; avoiding the adverse effect of parts processing accuracy which is caused by spindle thermal deformation.

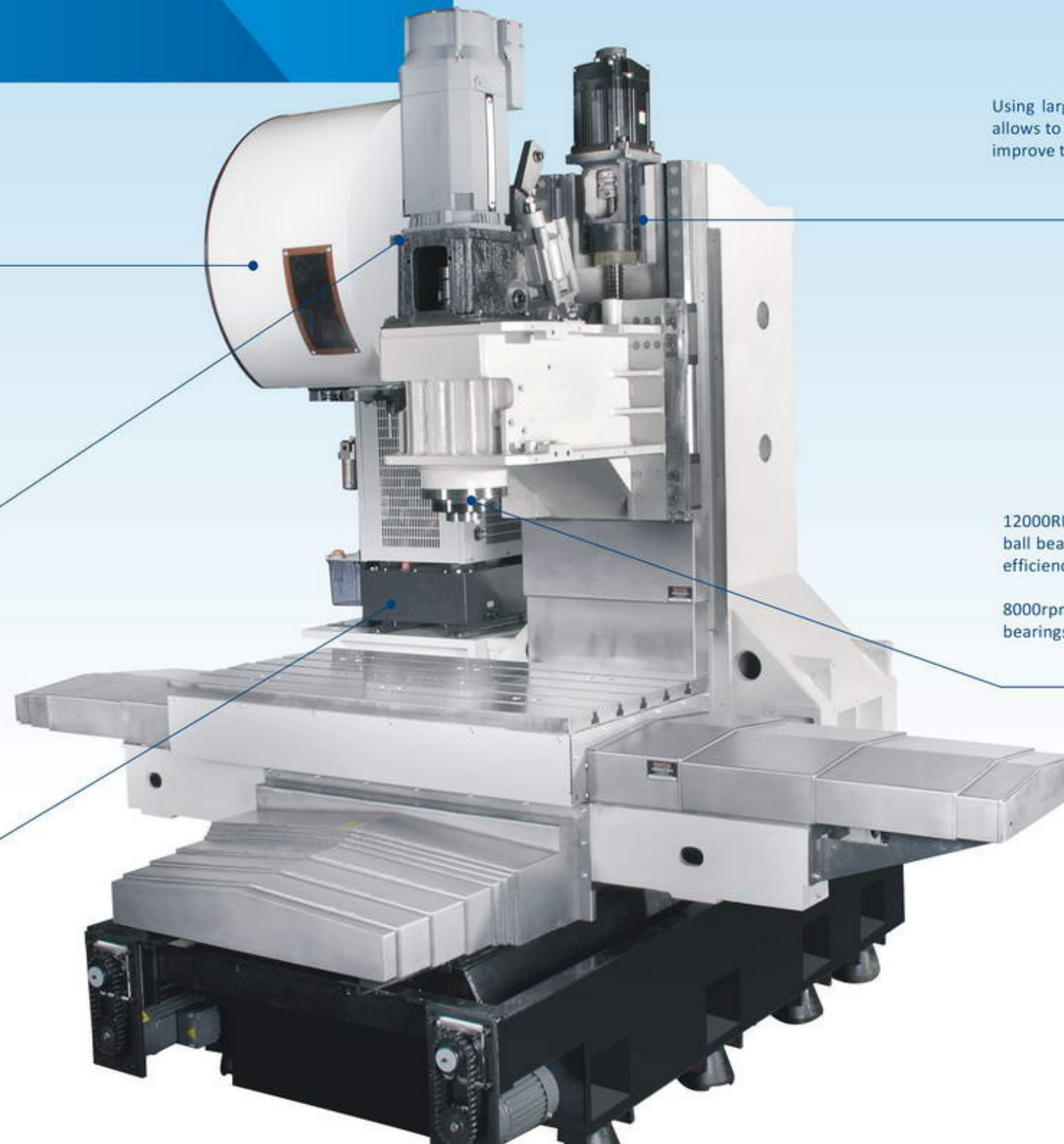
Direct drive of Z-axis

Using large diameter ballscrew & powerful servo motor allows to eliminate the Z-axis counter balance system and improve the dynamics of the Z-axis.

Spindle

12000RPM spindle with direct drive motor and ceramic ball bearings provides low vibration, low noise and high efficiency.

8000rpm spindle with belt drive motor and steel ball bearings improves the torque improved more than 50%.

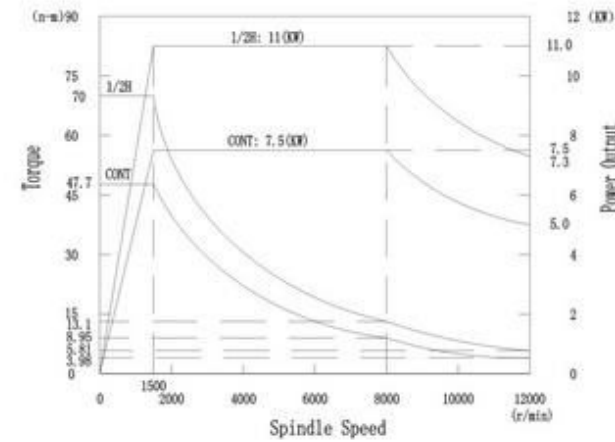


Efficient motor

The three axes are using high-power servo motor, to achieve 36/36/30 (m/min) rapid traverse with high acceleration for high speed machining.

Powerful Spindle

The combination of high-speed spindle and high power spindle motor, significantly enhances the cutting performance of the machine.



Reliability

Overall machine design, parts manufacturing and assembly control guarantees reliable machine performance.

Maintenance and service

Hison has in place very advance maintenance and service program to provide high spindle utilization for all their machines.

High-precision machining example

Circular Interpolation

Machining diameter : $\Phi 50\text{mm}$

d20 milling cutter

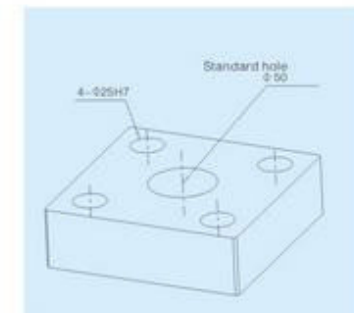
Roundness: 0.0025mm



Boring

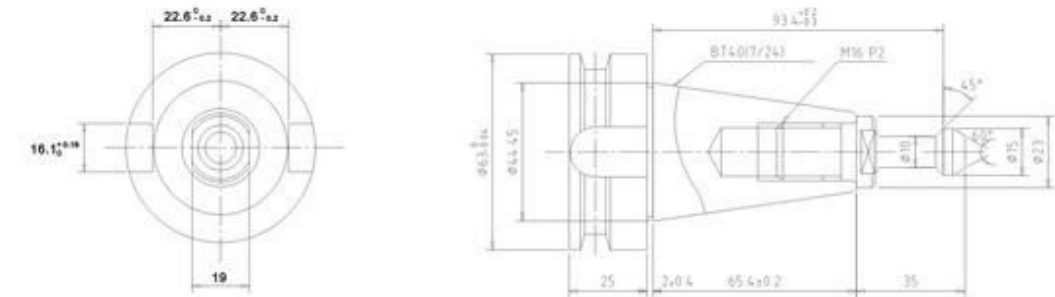
Distance between Adjacent holes: 100mm

Precision: 0.003mm



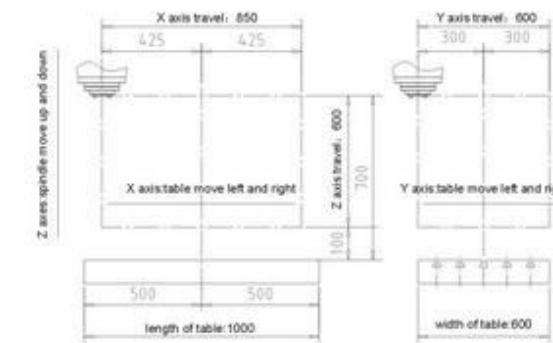
Pull stud

BT40 (7:24)



Processing range

VMC850L



VMC1000L

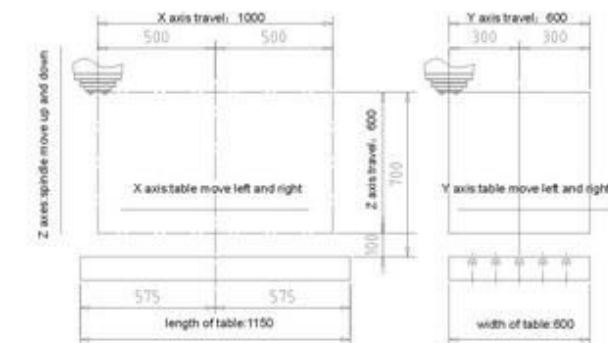
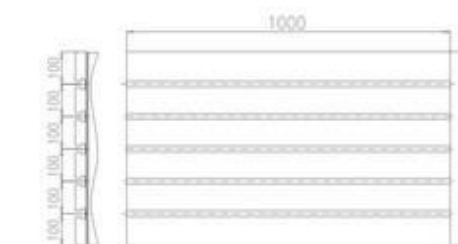
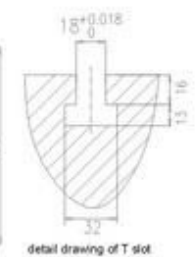


Table size

VMC850L



VMC1000L



CNC
M70A system
Special feature

Convenient operation and versatility

The standard Mitsubishi M70A CNC has friendly user interface. It can be mastered within a few hours by machine operator.

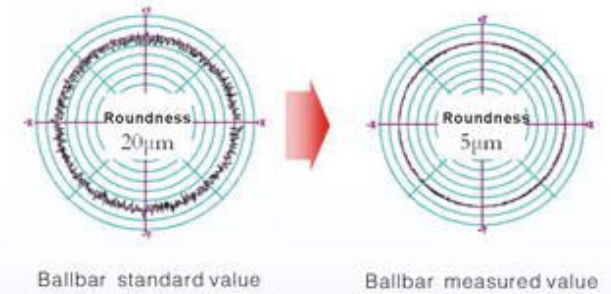


Information Transfer

Control has multiple channels for information transfer! USB, CF card, Ethernet, RS-232 according to the requirements of the user.

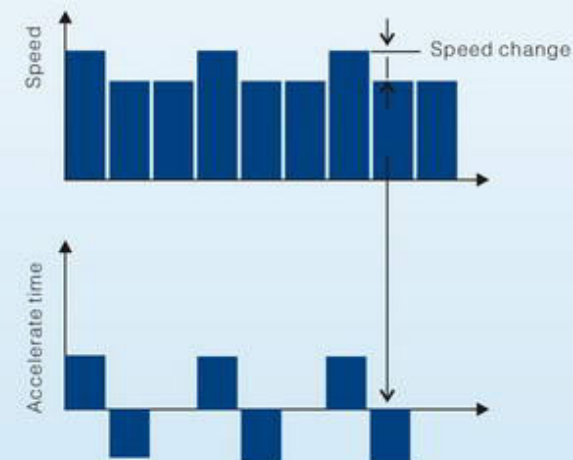
High precision and high efficiency

Nanometer control reduces the processing time and vibration, improves the machining accuracy. Roundness error is reduced four times.

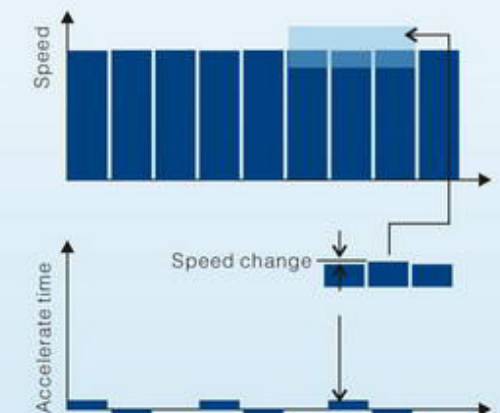


Nanometer interpolation step is smaller, therefore, acceleration time becomes small what greatly improves the processing efficiency.

Micron system(before)



Nano system(70V series)



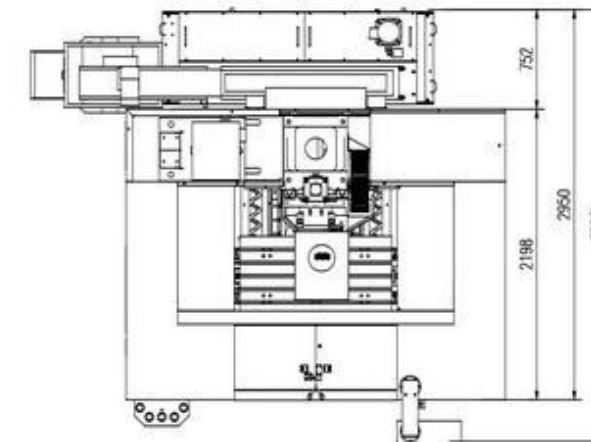
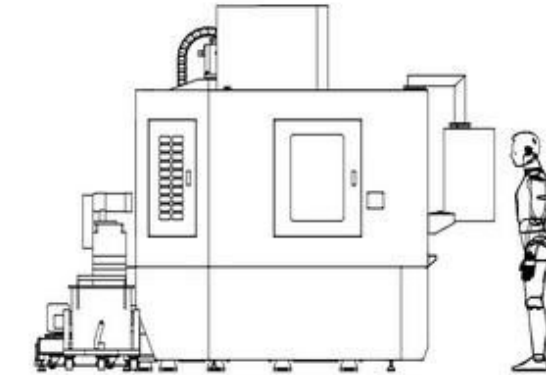
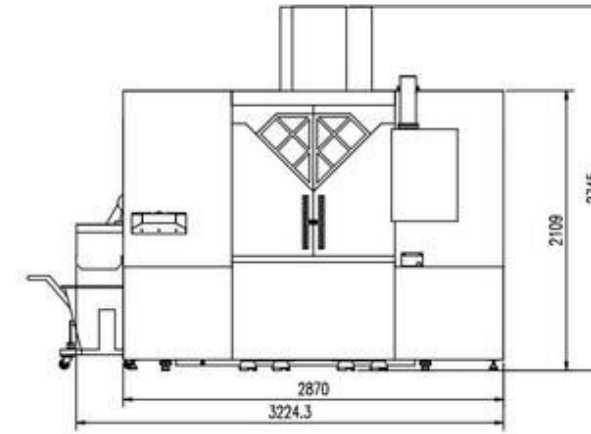
Machine Safety

During power failure machine axis stop without delay to prevent the part damage and provide operator safety.

Machine Technical Specification

Item		Unit	VMC850L		VMC1000L	
Processing range	X axis travel	mm	850		1000	
	Y axis travel	mm	600		600	
	Z axis travel	mm	600		600	
	Distance from spindle nozzle to worktable	mm	100-700		100-700	
Table	Table size	mm	1000x600		1150x600	
	T-slot size(slot number*width*pitch)	mm	5x18x100		5x18x100	
	Worktable height(from the ground)	mm	950		950	
	Maximum load of worktable	kg	600		800	
Spindle	Max. Spindle speed	rpm	12,000	8,000	12,000	8,000
	Spindle drive		Direct drive	Belt drive	Direct drive	Belt drive
	Spindle motor power	kW	7.5/11		7.5/11	
	Max. Spindle torque	N.m	70	105	70	105
	Spindle front bearing diameter	mm	70		70	
	Taper of spindle bore		BT40		BT40	
	Pull stud		P-40T-I (45°)		P-40T-I (45°)	
Feedrate	Rapid feed speed X/Y/Z	m/min	36/36/30		36/36/30	
	Maximum feed rate	m/min	10		10	
	Jog feedrate	m/min	0~5		0~5	
	Guide rail type		linear guideway		linear guideway	
Accuracy	Precision positioning accuracy	mm	0.008		0.008	
	Repeat positioning accuracy	mm	0.005		0.005	
ATC	Magazine type		disc type		disc type	
	Tool number		24		24	
	Max. tool weight	kg	7		7	
	Tool shank		BT40 (7: 24)		BT40 (7: 24)	
	Max. tool size	mm	Φ80(Φ125Adjacent pocket)x300		Φ80(Φ125Adjacent pocket)x300	
	Tool change time	sec	3		3	
Aother	Air pressure	bar	6		6	
	Power capacity	KVA	25		25	
	Weight of machine	Kg	6000		6500	

Machine Layout



Standard

- CNC system Mitsubishi M70A
- Oil cooling system
- Cutting cooling system
- Pneumatic, lubrication system
- Protective covers
- Guideway covers for three axis
- Dual screw type chip conveyor
- Work light
- Three-color signal lamp
- Transformer
- Workpiece cleaning air gun
- Accessories
- 24T disc type tool magazine
- Chain type chip conveyor

Optional configuration

- CNC system FANUC 0i MD or FANUC 0i Mate MD
- Coolant through spindle
- Rotary table(fourth axis)
- Workpiece cleaning water gun
- BT50 spindle