

SOLUTION OF WORLDWIDE SALES NETWORK



Company Profile



- 1976 Established the Metal processing department at MAR.01.
- 1992 Established the Machine Center R&D department.
- 1993 Continually 4th year of Knee-type Milling machine production reached 1800 sets monthly.
- 2003 Established the US branch office & warehouse at Feb.01.
- 2005 Established China branch as Twinhorn machinery co., Ltd.
- 2008 Started constructing China manufacture & production headquarters.
- 2009 Invested in the technical cooperation with Italian 5Ax maker on Movingcolumn and Gantry types 5Ax machining centers.
- 2010 Completed the construction of China manufacture & production
- 2012 Became the most biggest manufacturer of tapping center in greater China.
- 2014 Expanded the 4th assembly plant(factory area 4000m²) in Taiwan headquarters.

Twinhorn



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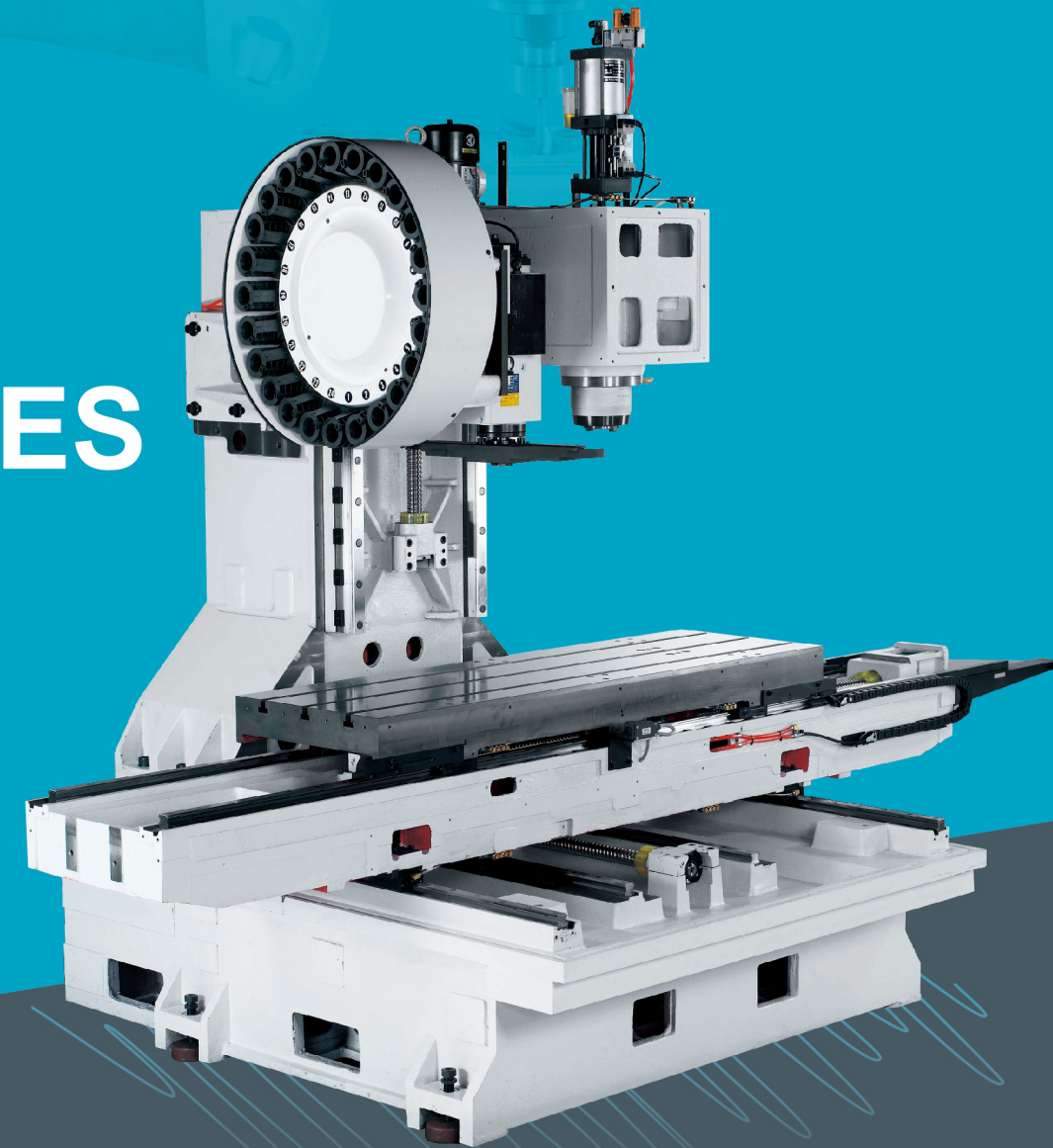
MTT
TECHNOLOGY



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Design 201810_VE Series(E1)1000P

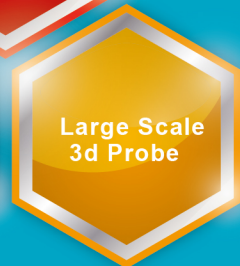
VE SERIES



Vertical Machining Center

www.twinhorn.com.tw

Twinhorn



- X-axis working table is supported by 6 linear slide blocks.
- X / Y / Z 3-axes linear guide way width 35 / 35 / 45 mm.
- All three axes are driven by high power servo motors, three axes; rapid displacement feed. 30 / 30 / 24 M/min (VE-1500L3 : 24 / 24 / 24 M/min)
- High strength integral casting and oil-water separation design of machine Base.
- Using strict Germany VDI3441 as machine standard inspection.



MODEL: VE-1500L3



MODEL: VE-1020L3

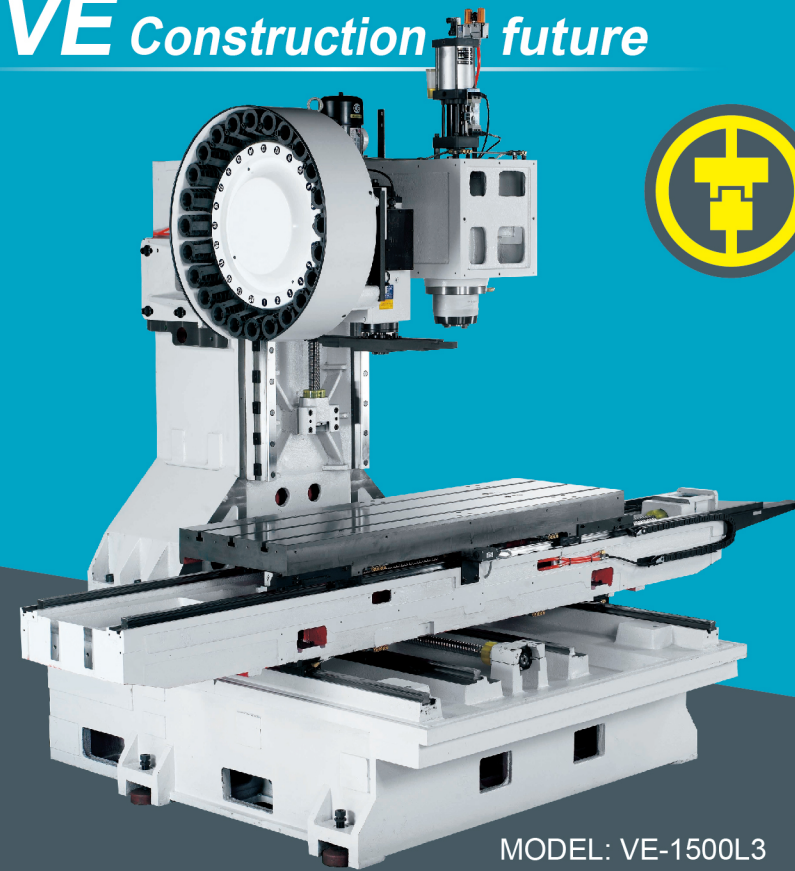


Strong lateral flushing design (Option)
A strong chip removing device is arranged on the rear side of the machine to remove chips without dead ends.



Chip Conveyor and Cart (Option)
Save manpower and improve chip elimination efficiency.

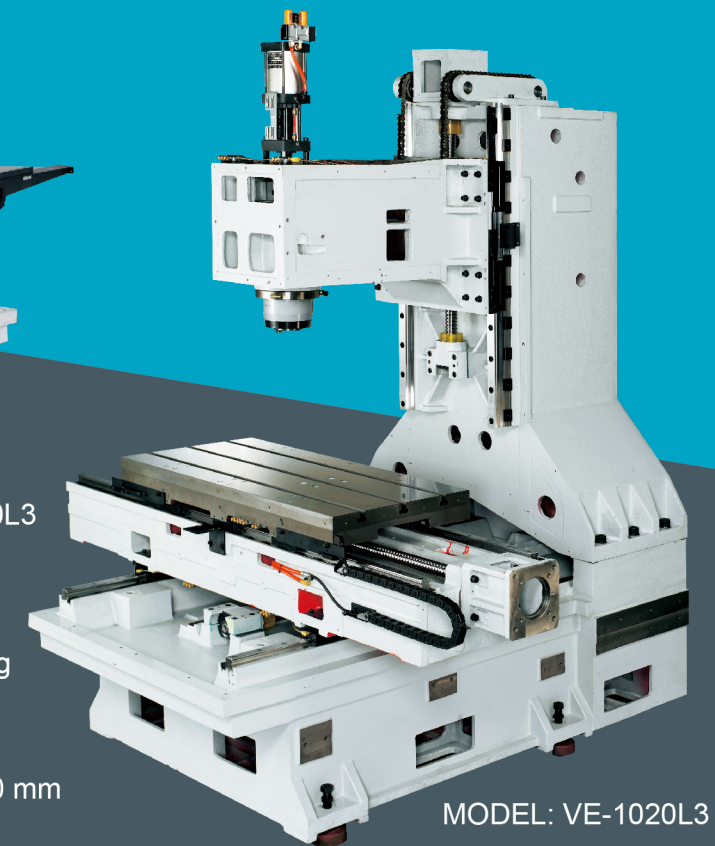
VE Construction future



MODEL: VE-1500L3



- The Z-axis without counterweight balance, the head stock is fast feed and micro-speed feed are extremely smooth.



MODEL: VE-1020L3



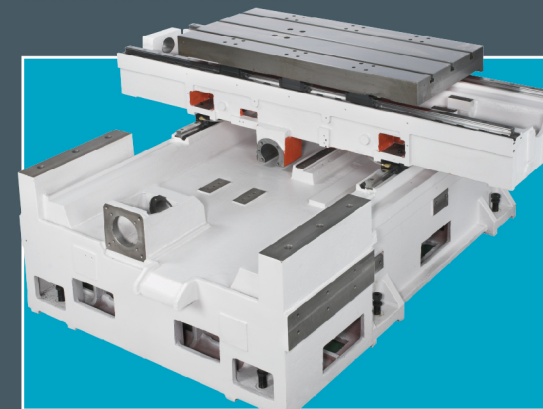
- Super large span inverted Y-shaped column, strong rigidity.
- High rigidity, lightweight, anti-sagging spindle head.



- Three-axis pre-pull type C3 and $\varnothing 40$ mm of precision ball screw.



MODEL: VE-1500L3



MODEL: VE-1020L3

H

igh rigidity mechanical structure

- All major parts are built with Meehanite cast irons, featuring high tensile strength and long term wearing resistance.
- High rigidity, uniform distribution of the machine base, with the level of heavy structure.
- Y-axis base is designed with wide linear guide ways (VE-1500L3 has 4 linear guides) for superior support and sliding performance

TEST



Spindle run out inspection test



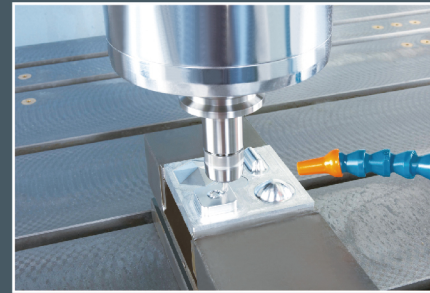
Y, Z axis vertical adjustment



Laser inspection test

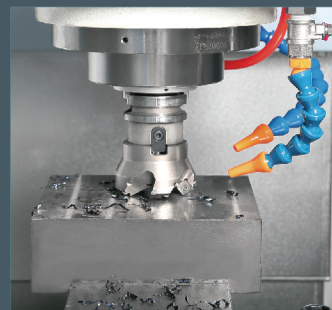


Circulation inspection



Standard work piece cutting test

Cutting Ability



Face Milling

Cutting type	Face Mill 80, 6 tooth, Dry
Material	S50C (HRC 18°)
Spindle speed	1500 RPM
Feedrate	2000 mm / min
Cutting width	65 mm
Cutting depth	1.5 mm
Material removal	195 cc / min



End Milling

Cutting type	End Mill 30, 4 tooth
Material	S50C (HRC 18°)
Spindle speed	1800 RPM
Feedrate	590 mm / min
Cutting width	15 mm
Cutting depth	15 mm
Material removal	133 cc / min



Drilling

Cutting type	HSS Drill Ø20
Material	S50C (HRC 18°)
Spindle speed	380 RPM
Feedrate	114 mm / min
Material removal	36 cc / min

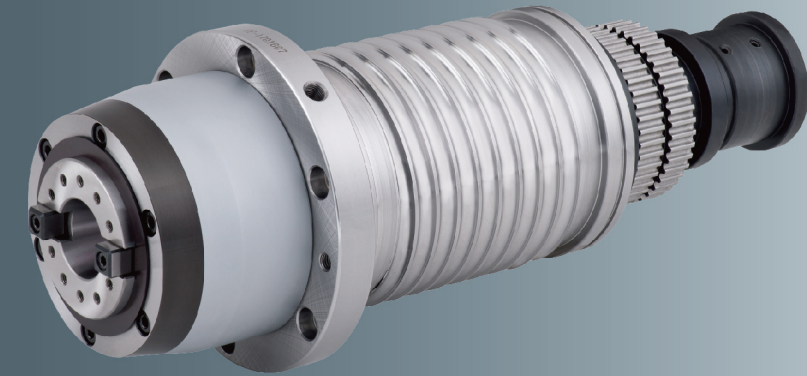


Tapping

Cutting type	M20
Material	S50C (HRC 18°)
Spindle speed	250 RPM
Feedrate	625 mm / min
Thread	2.5 mm

High Precision, High Rigidity Spindle

The advanced spindle is designed for durability and easy maintenance, generating minimum thermal growth.

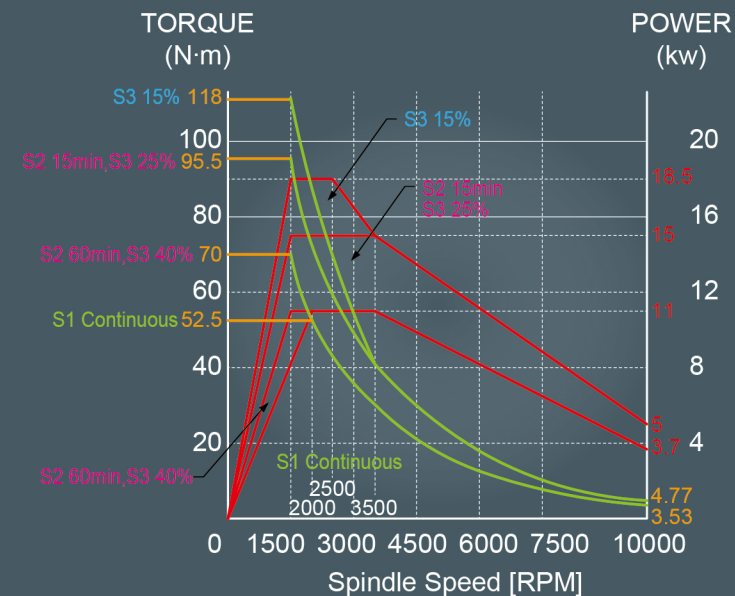


- The spindle adopts P4-level precision pre-load ball bearing, high strength arrangement structure, the spindle can withstand the strong radial and axial thrust, and the rigidity is excellent.
- P4 class pre-load angular contact high precision spindle bearings provide standard spindle speed 8000 R.P.M.
- The labyrinth packing design on front end of spindle to prevent coolant or fine particle contamination during machining. It also ensures spindle accuracy and service life.

Spindle power and torque diagram

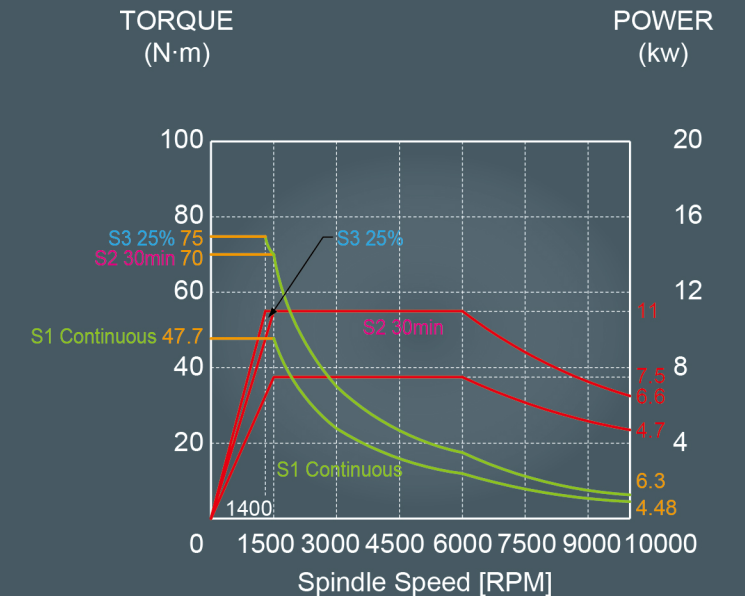
Fanuc βi1 12/10000

Output Power-Speed & Torque-Speed Characteristic



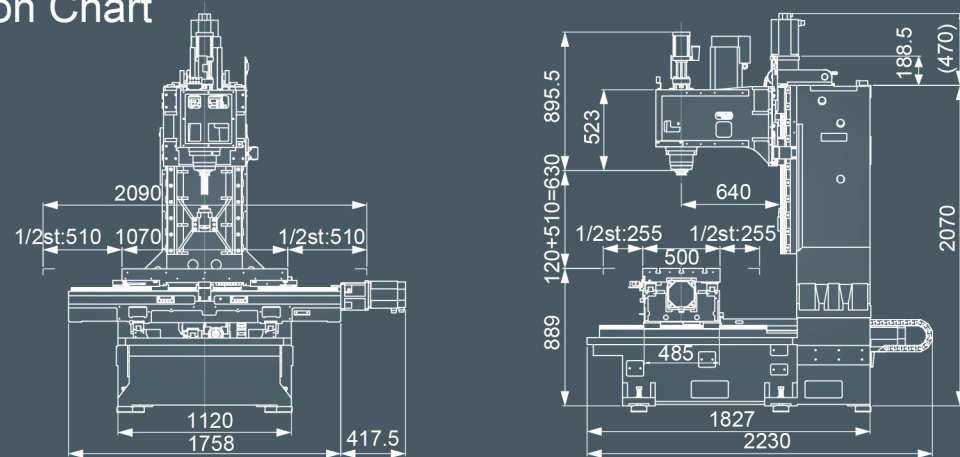
Mitsubishi SJ-DG11/100

Output Power-Speed & Torque-Speed Characteristic

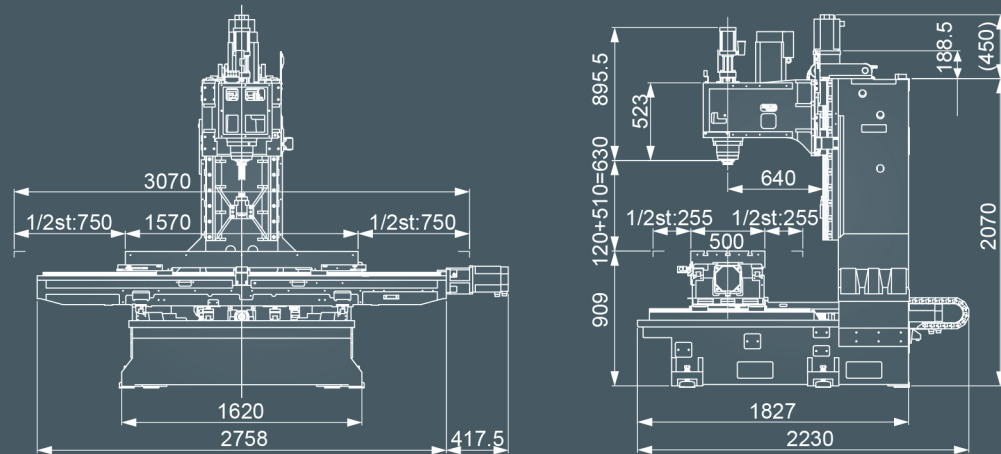


Related Dimension Chart

VE-1020L3

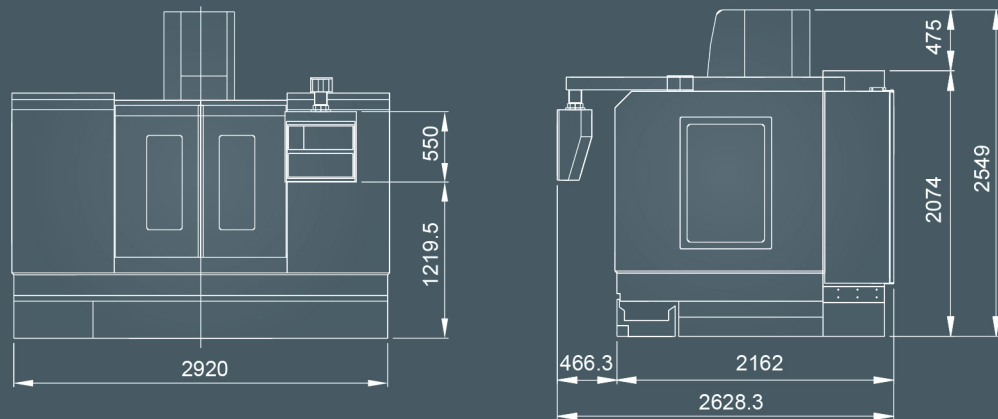


VE-1500L3

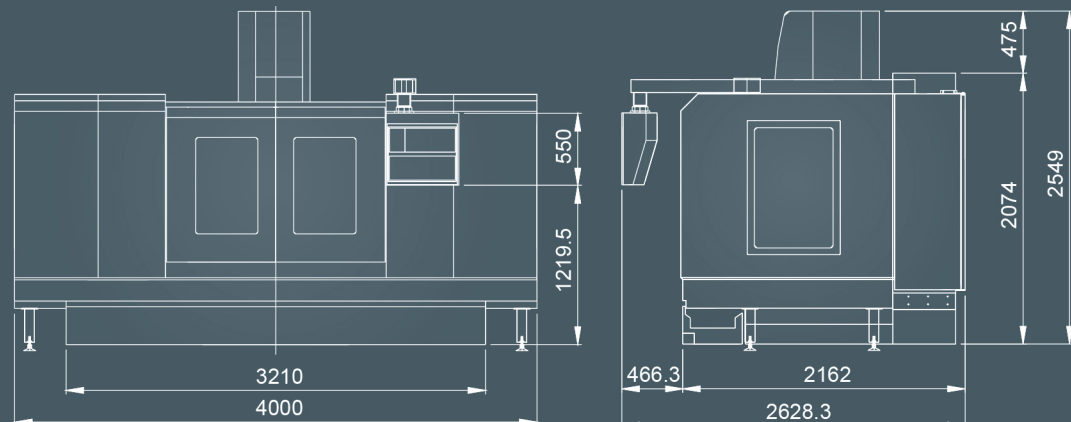


Appearance Dimension Chart

VE-1020L3



VE-1500L3



Specification

Item	VE-1020L3	VE-1500L3
Travel		
X-axis	1020 mm	1500 mm
Y-axis		510 mm
Z-axis		510 mm
Spindle nose to table		120-630 mm
Spindle center to column front		627 mm
Z-axis guide ways surface to table center		353-863 mm
Axis		
X, Y Rapid feedrate	30000 mm/min	24000 mm/min
Z Rapid feedrate		24000 mm/min
Cutting feed		10000 mm/min
Ball screw diameter & pitch	Ø 40 mm, P12 / 12 / 12 mm	
Table		
Table dimension	1070×500 mm	1570×500 mm
Max. table load		600 kg
T-slot number		3
T-slot space		150 mm
T slot wide		18 mm
Headstock		
Spindle speed	8000 R.P.M	
Spindle motor power	(F) : 11 / 15 kw (S1-cont./ S2-15 min) ; (M) : 7.5/11 kw (S1-cont./ S2-30 min)	
Spindle pull stud spec.	MAS 403 P40T-1, 45°	
Automatic Tool Change ATC		
Maximum tool diameter (with adjacent tool)	Ø 80 mm	
Maximum tool diameter (with no adjacent tool)	Ø 125 mm	
Max. tool length	300 mm	
Max. tool weight	7 kg	
Accuracy VDI 3441 (JIS B6338)		
Positioning accuracy	P 0.014 mm (±0.004 / 300 mm)	
Repeatability accuracy	PS 0.010 mm (±0.003 mm)	
Others		
Machine weight	6000 kg	6600 kg
Machine max. height	2600 mm	
Floor space	4270×3500 mm	5320×3500 mm
Air pressure required	6 kg/cm ² , 200 L/min	

※Specification and design characteristics subject to change without prior notice.

Standard Accessories

1. Disc type tool magazine 24 tools
2. Coolant system
3. Floating tool unclamp
4. Automatic lubrication system
5. Work lamp
6. Spindle air blast
7. Work air blast
8. Automatic power off (M30)
9. Heat exchanger for electrical cabinet
10. Leveling bolts and pads
11. Tool box with the tools
12. Enclosed splash guard
13. Rigid tapping
14. Air gun, coolant gun

Optional Accessories

1. Spindle oil cooler
2. Belt type spindle
10000 rpm / 12000 rpm
3. Spiral type chip conveyor and cart
4. Chain type chip conveyor and cart
5. Auto tool length measurement
6. Auto work piece measurement
7. Coolant through spindle CTS
8. Powerful chip flush nozzle
9. Oil skimmer
10. 4th axis rotary table
11. Linear scale
12. Transformer

Option controller

1. Fanuc Oi-MF
2. Mitsubishi M80
3. Siemens 828D