

# V-500 V-500L

## High Rigidity, High Accuracy Construction Design High Rigidity, High Speed Transmission System



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- The major construction components are made of Meehanite cast iron. It assures of stable and precision structure.
- The computerized analysis of reinforced ribs design enhances the one-piece mechanism construction with much capability and rigidity to deal with heavy or high speed cutting. It provides also the cost down advantage due to the extension of cutting tools service life brought from the high rigidity construction.
- X, Y and Z axis are applied with linear guide way. It provides advantage of high speed feedrate, accurate repeatability and load deformation-free.
- The designs of widen base, saddle, full support structure and box-shaped column are all contribute to the heavy duty machining and loading capability.
- The reinforced ribs structure of headstock, proportionate ratio designed on to the dimension between spindle head to column surface offer a stable standing and supporting.



### High speed and high accuracy spindle

- 3 axes servo motors are equipped and directly coupled with high precision ballscrew which secures its rigidity and accuracy .
- The Z axis is adopted brake type servo motor. It contributes a high motion balance and sensitive in rapid travelling.
- Three axes equip the linear guide way of high rigidity, low noise, low friction . It applies function of rapid travelling and best accuracy of ball bar.
- The ball bar measuring plus parameter pre-coordinating executed on every machine to ensure the dynamic accuracy.

- The spindle adopts extreme precision angular contact ball bearings. 8000rpm is standard spindle speed.
- With features of high extensive four collet jaws, large contact range, powerful clamping force, low wear and long service life of shank.
- High horse power spindle motor and specialized spindle belt are particularly designed for diversified, heavy applications.
- The advanced high tensive timing belt is applied to assure non-slip, high torque power transmitting and low rotating noise and low thermal temperature.
- Mobile IRD balancing device allows the spindle unit inspected and balanced dynamically on assembly site. This procedure will fully eliminate potential resonance problems of spindle on high speed running, to further ensure the best machining status and accuracy.

### Large volume design in coolant tank

- 200 liters coolant tank. The large capacity coolant circulation can remove away generated chips and heat fast and efficient.
- Special L-shaped coolant tank design is laid inside the machine to urge an economic floor space.

### High efficient chip-removal mechanism

High efficiency and double screw type chip conveyor design, can easily remove the manufactured chip.



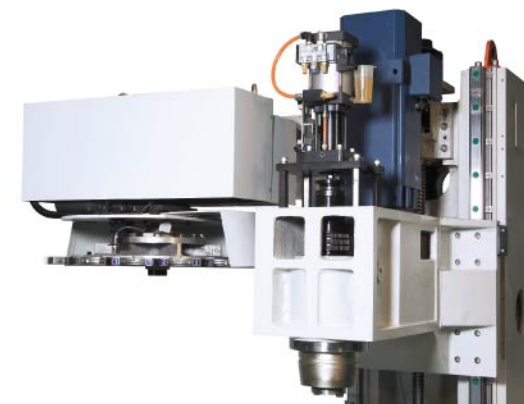
### Separating oil-coolant design

The design of oil and liquid dividing is effectively splitting the lubricant and the coolant. The coolant quality will last long and the machining performance will be guaranteed as well.



### Full enclosure cover design

- Z axis telescopic cover (standard)
- Full enclosure splash guard cover (standard)
- X/Y axis telescopic cover (standard)



### Stable and reliable ATC unit

- The easy operating, fast, but reliable Automatic Tool Changer (ATC) provides outstanding function on tools change.
- The Programmable Logic Control is cable of fast management of the advanced cam driven designed mechanism and random position-selecting function.
- The ATC reliability is tested and proved out by million running tests.
- The fast tools changing performance serves to save off-cutting time.
- The cam driven designed tool magazine assures high accurate rotation, and smooth motion of heavy type cutting tools.



### Friendly machine-operator interface

- The swivel type operating panel makes not only in accordance with the safety regulation but also in considering of friendly and convenient operating for customers.
- Auto-diagnosis function, signal gives warning of operating malfunction will display on TFT-LCD screen for instant trouble shooting.
- The optimal pendant MPG for customer's easy work setting-up.
- Touch screen button & switch, for convenient display, diagram and text.



### High speed high accuracy ball screw

- C3 grade precision ball screws, double-nut designed, pre-tension and anchored at both ends.
- The rotational torque of the ball screws at both ends of travel plus strict quality inspection, to guarantee non-binding for maximum life and higher accuracy.

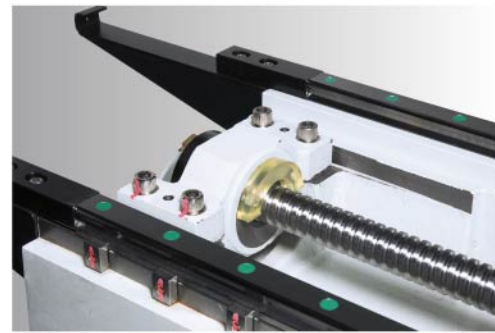


### High speed high accuracy linear guide way

- Zero backlash linear guide ways design applies for Helical, inclination cutting demand.
- Suitable for high speed travelling, minimum power requirement.
- The linear guide way can stand for stress of multiple directions occurred and maintain multiple contact points to ensure cutting rigidity.
- Easy installation, easy change, simple lubricating, long service life.

# VERTICAL MACHINING CENTER

## Collision protection device



Collision protection bumper is equipped to absorb and reduce the vibration and collided force in case of any malfunction operating or collision so that the mechanical accuracy can be maintained.

## Laser inspection



Every machine has been statically and dynamical inspection and compensated by laser measuring instrument.

## Spindle dynamic balancing

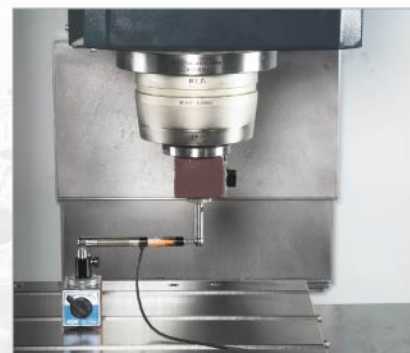


The IRD dynamic balancing device calibrates the spindle displacement, speed, and acceleration of the full speed range.

## Noise testing



## Ball bar inspection



The Renishaw ball bar instrument calibrates the circularity and the geometrical accuracy to ensure the three dimensional motions precise.

## SPECIFICATIONS

MODEL	V-500L		
<b>Capacity</b>			
X-axis travel	mm	500	
Y-axis travel	mm	410	
Z-axis travel	mm	Drum=460+110 / Arm=570	
Distance from table top to spindle end	mm	130-760	
<b>Table</b>			
Size of working surface	mm×mm	600×380	
Permissible mass of work piece	kg	300	
Table working surface configuration	mm	18T×125×3	
Height from floor to table top	mm	845	
<b>A.T.C</b>			
<b>A.T.C Type</b>		<b>Drum type</b>	
Tool shank		BT-40	
Tool storage capacity		12	
Max. tool diameter(with adjacent tools)	mm	105	
Max. tool diameter(without adjacent tools)	mm	180	
Max. tool mass	kg	6	
Max. tool length	mm	300	
<b>Motors</b>			
		<b>Fanuc 0IMC</b>	<b>MACHTEK</b>
Spindle motor (30min/cont)	KW(HP)	7.5(11)	5(7.5)
X-axis feed motor	KW(HP)	1.6(2.1)	1(1.36)
Y-axis feed motor	KW(HP)	1.6(2.1)	1(1.36)
Z-axis feed motor	KW(HP)	1.6(2.1)	1.5(1.36)
<b>Power sources</b>			
Electrical power supply	KVA	25	
Compressed air pressure	Mpa (psi)	0.6(87)	
Coolant tank	L	200	
<b>Machine size</b>			
Height of machine	mm	2520	
Floor space	mm	1900×2100	
Mass of machine	kg	3000	

■ Design and specifications are subject to change without prior notice.

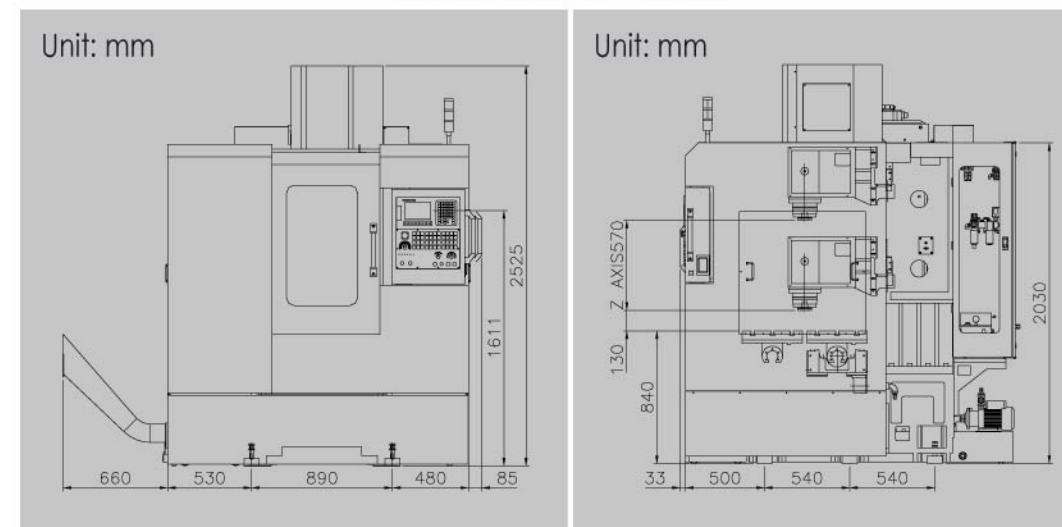
## Standard accessories

- Full enclosure guard
- Work light
- Alarm light
- Rigid tapping
- Automatic tool changer
- Automatic lubrication system
- Telescopic covers
- Base bolt and pad
- Tools box
- Spindle air seal system
- Operation manuals
- Cabinet heat exchanger
- Auto counter for work piece
- Remote MPG

## Optional accessories

- Spindle programmable air blow
- Fanuc/Mitsubishi/Siemens controller
- 4<sup>th</sup> axis rotary table
- 10000/12000rpm spindle
- Linear scale
- Spindle oil cooling system
- Tool probe system
- Touch sensor system
- Deep drill tools holder
- Oil-coolant separator
- Coolant through spindle
- Chips auger
- Roller guide
- Arm type ATC 16/24 tool stations
- Spindle splash ring
- Chips cart
- M30
- Portable air gun
- Portable water gun

## MACHINE DIMENSION



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