

Manufacturer



Litz Hitech Corp.

No.18, Yu 9 Road, Yu-Shih Industrial Park,
Tachia District, Taichung City, Taiwan
TEL: +886-4-26815711

FAX: +886-4-26815108 E-mail: sales@litzhitech.com http://www.litzhitech.com



Litz Machine Tools (JiaXing) Corp.
No.1398 Hefeng Road, Jiaxing, Zhejiang
TEL: +86-573-82222735
FAX: +86-573-82222739
E-mail: sales.jl@litzhitech.com

http://www.litzchina.cn

Welcome to Litz website for more information

Dealer







Litz Hitech Corp. | Litz Machine Tools (JiaXing) Corp.

PAGE

- 1 Cover Page
- 2-3 INDEX/CONTENTS

New Generation Machining Center

- 4 New Generation Machining Center
- 5 Transmission System
- 6 Structure
- 7 Linear guideway
- 8 Oil/Coolant Separator, Spindle coolant Cooling
- 9 Spindle Unit
- 0 Spindle Specification and Performance
- 11 Tool Changing System -ATC

Chip Removal System

- 12 Highly Efficient Chip Removal Mechanism Control System
- 13 Controller
- **14-15 Meet Customer Requirements**

Operation

- 16-17 User-friendly, Accessibility, Maintainability
- 18 Convenience
- 19 High Performance Configuration
- 20 Cooling System
- 21 Safety Door

Machine Precision

- 22 Machine Equipped Measuring Devices
- 23 Advanced Inspection Equipment and Technology
- 24 Machining Performance

Production and Wor

25 Workshop Environment and Floor Area

Equipment Specification

- 26 Outline Dimensions
- 27 Worktable Dimensions
- 28 Machine Specifications
- 29 Equipment List

Business and Service Locations

30-32 Business and Service Locations

Production Site





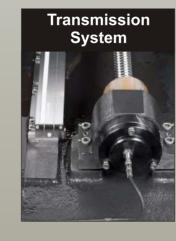




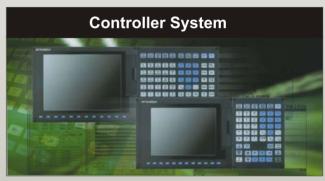






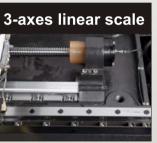












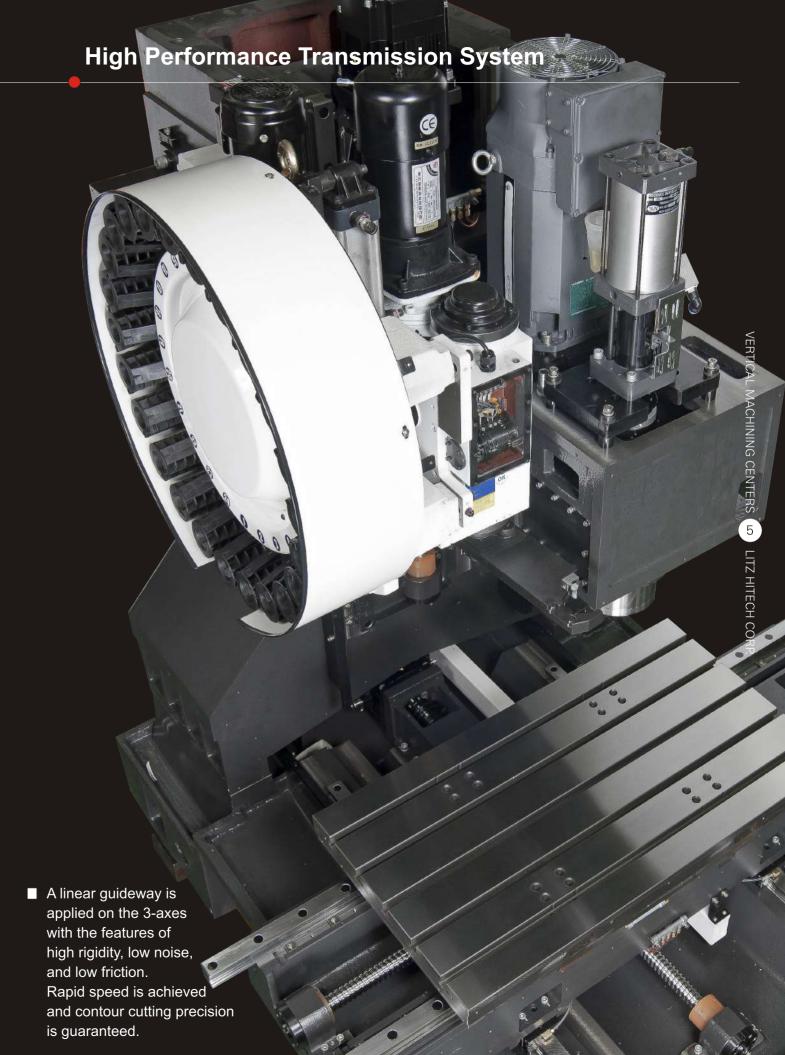














High Rigidity and High Precision Structure Design



- The major construction parts are based on Meehanite cast iron, which is stable in structure and long-term quality is assured.
- Casting parts are calculated and analyzed by the finite element method. Proper structure strength combined with enhanced ribs provides high rigidity for the machine.
- A linear guideway is applied on the 3-axes, supporting heavy loads, rapid moving, and assuring precise positioning.
- A wide base, box-shaped column, enhanced saddle, full span supports for heavy loads, and robust structure all contribute to its ability for heavy duty machining.
- Enhanced ribs inside the spindle head and a proper contact length ratio between the spindle head and column provide solid support for the spindle.

Linear Guideway with High Speed and High Precision



- A linear guideway with zero backlash ensures a consistent cutting surface on curved or tilted surfaces.
- Suitable for high speed operation and the horsepower requirement is minimized.
- By using rolling contact instead of sliding contact, the linear guide reduces the friction loss and increases the sensitivity and positioning precision.
- Capable of taking loads from all directions simultaneously. Multiple point contacts of the rail contact surface under loads, the cutting rigidity will not be compromised.
- Easy to assemble with interoperability. The lubrication mechanism is simple.
- Tiny wear and tear of linear guideways, long service time.

Collision Protection Device



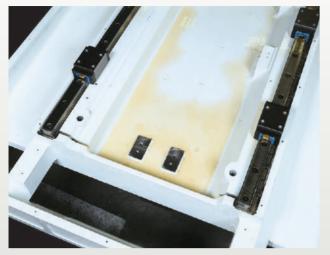
■ The machine is equipped with a collision protection device which can absorb collisions due to machine malfunctions or mistakes made by operators. The damage caused by the collision can be minimized and still maintain the design precision.

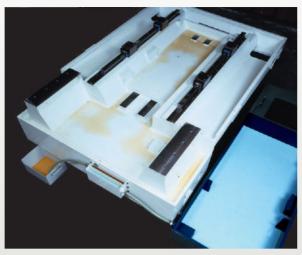
High Precision Linear Scale OP



- The X/Y/Z-axis can be equipped with a linear scale system to detect thermal displacement due to rapid movement of the machine. The thermal displacement result will be sent to the controller for compensation, suitable for high precision parts machining.
- The linear scale system is designed with a gas protection device to prevent the linear scale from contamination by dust and oil vapor. The precision of the linear scale is assured and the service time can be extended.

G CENTERS (∞) LITZ HITECH





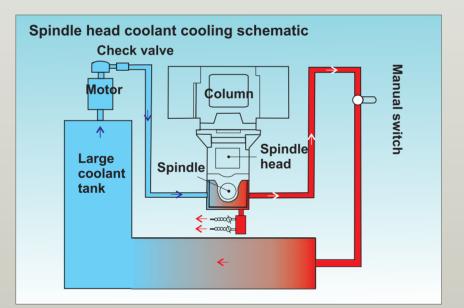
■ The oil/coolant separating design can separate lubricating oil and coolant effectively.

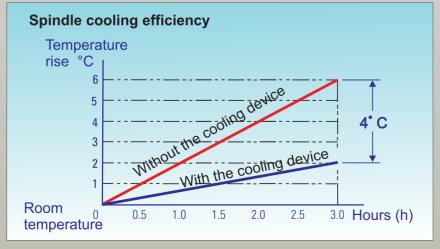
Coolant quality will not be reduced due to mixing and the machining quality can be assured.

Spindle head and spindle coolant cooling system - completely eliminate the thermal displacement of the Z-axis



- The unique and cost-effective
 spindle head cooling system
 will remove the heat generated
 by high speed operation of the
 spindle, eliminating the thermal
 displacement of the spindle head.
- The system can achieve excellent cooling performance without the need of an additional pump, filter, or hydraulic oil.
- Reducing the heat generated by the high speed operation of the spindle, ensuring spindle precision, and extending the service time of the spindle.
- In case of dry cutting, the system is designed with loops to maintain the cooling efficiency.





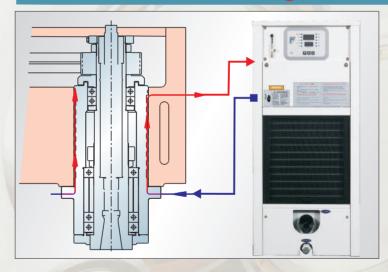
High Speed High Precision Spindle Unit

Spindle Unit



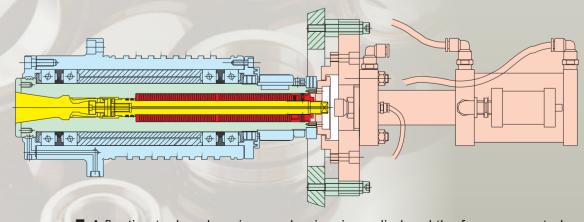
- The spindle uses an angular contact ball bearing with high speed and high precision.
- The four jaw collet provides strong tool holding force, large contact area, low wear on the tool shank, and long service time.
- A high horsepower spindle motor is used for standard machines, suitable for high speed and heavy cutting.
- The spindle is driven by a high torque timing belt, there is no slipping, and the noise and heat generated during transmission are significantly reduced.
- Online spindle dynamic balancing is achieved through an IRD dynamic balancing system, eliminating the resonance caused by a high speed rotating spindle and assuring optimized machining precision.

Spindle oil cooling system OP



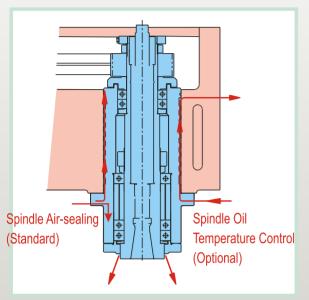
■ The high speed rotating spindle with a spindle oil temperature control system can maintain the spindle at constant temperature and control the thermal displacement of the spindle effectively, to assure the high speed and precision of the spindle.

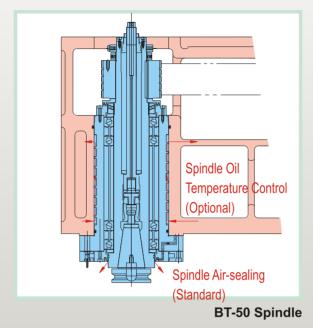
Floating Unclamping Tool Mechanism (CV-1000A)



■ A floating tool unclamping mechanism is applied and the force generated by tool releasing will not be transmitted to the spindle bearing. Thus the life of the spindle bearing is extended.

Spindle Dust-proof Air-sealing System





BT-40 Spindle

■ The spindle air-sealing system can control the high-speed of the spindle to generate vacuum and suck up dust, which assures the precision of the spindle and thus extends the service life of the spindle.

Spindle Pull Force



■ The high tensile spindle provides high rigidity for tool clamping and enhances the cutting rigidity.

Stable and Reliable ATC

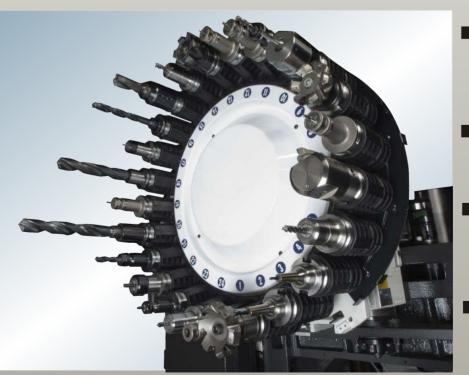
Arm-type Tool Changing Mechanism



Arm-type Tool Changing Mechanism

- A fast, simple, reliable, and durable tool exchange device, providing stable and reliable exchange of tools.
- A unique tool exchange device design, an advanced cam-drive mechanism capable of random tool selection can be achieved using the PLC software control.

Tool Magazine Unit



Tool Magazine stations: 24 tools

- The tool changer mechanism has been subject to a million times of operating tests to satisfy the requirements of high reliability.
- The rapid tool changer mechanism saves non-cutting time, and therefore increases production efficiency.
- The cam drive mechanism of the magazine ensures precise rotation and smooth operation of the magazine, even for heavy tools.
- Tool magazines with 24 stations and 32 stations are available for selection.

■ Simple and efficiently design of the chip removal mechanism is applied. Chips are transported by a large amount of cutting coolant from the chip cleaning device to the screw type chip auger located on the front of the machine. The screw-type chip auger will transport the chips to the chip cart located on the left side of the machine. The Operator can clean up the chips easily and simply.



X/Y-axis telescopic enclosure (standard)

FANUC (Japan) Controller Series



CNC FANUC Series 0i-MF with Outstanding Reliability and Cost Performance

	O.Dasic M.Option Not available							
	Model							
	1	2	3	5				
Max. number of axes controlled	11	9	6	6				
Max. number of paths controlled	2	1	1	1				
Display	15/10.4/8.4	10.4/8.4	10.4/8.4	10.4/8.4				
Max. cutting feed speed for 1mm-long path	1		_	_				
program: 60m/min, Max. number of preview blocks: 400	☆	_	_	_				
Separated Control Unit	☆	-	-	-				
Working network	☆	☆	-	-				
High quality machining software packages	☆	☆	☆	-				
Large capacity program operation (copy to CF card from USB/ethernet)	0		0					
Preparation and supports before machining	0		0					
Multi-language (Vietnamese, Indonesian, Tamil)	0	0	0					

Mitsubishi Controller Series

High end controller from Mitsubishi achieves higher productivity and comfort



CNC M800/M80 Series

CNC dedicated CPU

Fine segment processing capacity

High capability in program processing enables a shorter cycle time.

PLC process capability (PCMIX value)

High processing capability of the PLC enables large-scale ladder logic to be processed at high speed.

NC-to-drive communication capability

Optical communication speed between NC and drive has been increased. This improves the system responsiveness, leading to more accurate machining.

Extra-wide front door



■ Extra-wide door, easy for loading/unloading the parts or jigs to/from the machine.

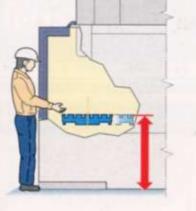
Extra-large side window



■ Wide windows on both sides of the machine. easy for installation and cleaning.

Worktable Accessibility



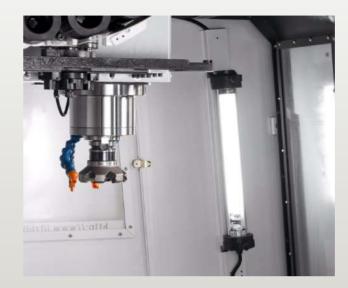


■ Ergonomic design for easy loading/unloading of workpieces to/from the worktable.

Easy access to the worktable

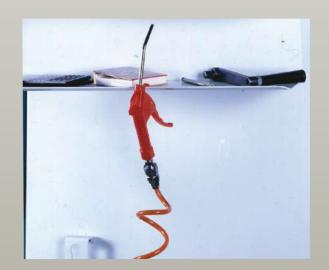
- Short distance between the operator and worktable, easy for operation inside the machine.
- Shortens the distance between the front of the machine and the worktable.

Light inside the machine



- Bright in the working area and tip of the tool.
- 2 high brightness fluorescent lamps are equipped inside the machine.

Easy-to-use Air Gun



- A tube from the air compressing system is installed on the right-front of the machine with quick couplings for a compressed air tube and air gun.
- Operators can use the air gun to clean the residual chips on jigs or workpieces, simple and easy.

Convenient storage compartment



- A compartment is located under the operation cabinet to store items such as calculators, keys and pens. Very convenient.
- A hook is installed on the front edge of the storage compartment to place tools such as air guns and pliers.

Coolant gun for machine cleaning



■ The Coolant gun for machine cleaning can remove the residual chips attached to the machine, keep the cleanness of the machine and facilitate the maintenance works.

Convenient document clip and stationery drawer



- Document folder and notepads are attached on the side of the operation cabinet. Operators can put the work order or important data on the folder.
- The stationery drawer is located on the back of the document folder. Operators can put the stationery, discs, or IC card inside for easy management.

Convenient service access



■ Centralized air compressing system and lubricating system is easy for repair and maintenance.

Disc type oil/coolant separator





■ The disc-type oil/coolant separator can be attached easily without taking up space. The disc-type oil/coolant separator can separate the oil from coolant tank effectively. to assure the coolant quality, extend the life of the coolant, and guarantee the machining quality.

Tool shelf and tool cabinet op



- Operators can use the tool shelf attached on the side or back of the machine to store the tools temporarily.
- A tool box is placed under the tool shelf to store the material for machine maintenance.

High Performance Configuration

ZF (German) Gearbox and Cooler







- A high horsepower motor with a ZF (German) Gearbox can provide high torque output at low speed, suitable for heavy cutting.
- The ZF gearbox is stable, smooth and low noise, even at high speed.
- The ZF gearbox is equipped with an oil cooler to remove the heat generated due to high speed operation of the gearbox, to ensure the transmission performance, and extend the service life of the gearbox.

DDR Motor OP





(4th axis, embedded rotating shaft)

■ The embedded rotating 4th axis has the features of high rotating speed, high precision, high maximum torque, high braking torque and zero backlash, suitable for precision parts machining with high performance.

Spindle external programmable air blowing system



- The programmable air blowing system outside the spindle device is used during dry cutting to reduce the chips on the workpiece surface, which may otherwise compromise the quality of the machining surface.
- It is possible to input specific commands into the programmable air blowing system outside the spindle to use the NC to control the air blowing.

■ The programmable coolant nozzle can

- input a specific M code into the commands of the machining programs. The nozzles will adjust the angles automatically based on the length of the tools during machining.
- Simpler and more accurate control of the coolant cools the contact point between the tool tip and workpiece and removes the heat generated during machining effectively. The machining quality is improved.





■ 6 nozzles are installed around the spindle to provide the optimized cooling results for tools and workpieces and improving the machining quality.

Deep drilling stop block and oil-feed tool holder



- A deep drilling stop block and oil-feed tool chuck are suitable for the drilling of deep hole parts.
- The oil-feed tool chuck can be equipped with various types of coolant sprays to meet different cooling requirements.

Wash Down System OP





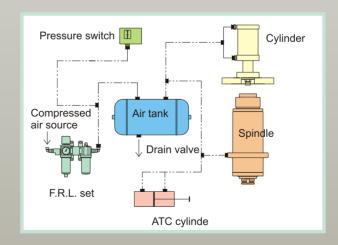
■ The highly efficiently strong wash down system moves the chips to the screw-type chip auger, which is transported to the chip cart outside the machine, to maintain the tidiness of the working environment and the safety of the operators.

CE Specification OP

Safety Door System

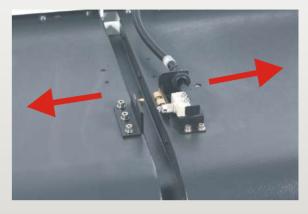


Air tank system



- To avoid several machines using the same compressed air source simultaneously, which will cause a sudden significant pressure drop or insufficient pressure of the air compressing system and result in abnormal machine operation.
- The gas tank is capable of water draining manually.

Standard Specification



- When door is open, the machining programs will not start, ensuring the safety of the operators.
- For the safety of the operators, opening the door during machining will stop the program.

Filtering and Detecting of the **lubricating system**



- The OMP 60 uses microelectronics and components, thus providing a compact structure.
- Optionally, the probe can be equipped with an OMI-2 interface receiver. The system uses state-of-the-art modulated optical transmission with excellent light interference resistance capability.
- The probe is equipped with a 360° infrared optical transmission system. The transmission distance is up to 6m and the probe can perform measurement from any direction.



Tool Length Measurement op



- The automatic tool measuring system will measure the tool length and input the result into the controller automatically for compensation.
- Automatic tool measuring is controlled by macros, which can perform the measurement automatically and are easy to operate.

4th Axis (Rotating Worktable) OP



- With the 4th axis rotating worktable, it is possible to perform multi-surface machining simultaneously which can reduce the non-production time of loading/unloading workpieces.
- A worm gear and worm transmission are used for precise positioning. High precision can be maintained even during a long time of operation.
- High precision bearings are used for spindle rotating, ensuring the stability of the rotation center.
- The smallest division precision, which is frequently used in spiral cuttings and precision-required aerospace industry.

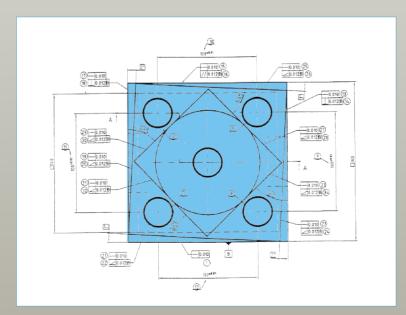
Renishau Ballbar System

Date: 17:11 Dec 28 1999

Circular Test, Laser Inspection, Dynamic Spindle Balancing



Standard Specimen Test



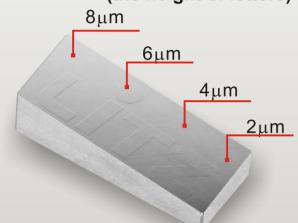
■ In addition to the tests and inspections performed with precision instruments, each machine is subject to dynamic cutting tests in accordance with international standards.



■ Upon the completion of cutting, the standard specimen shall be inspected with a 3D coordinate measuring machine (CMM) to ensure the required precision.

Machining Accuracy

level Accuracy Experience
-Highly accurate parts and molds machining solution
Machining Accuracy
(the height of letters)



Machining example: embossed letter machining

Machine used: CV-1000A

Material: NAK80

Dimension: 90x40x30mm

Machining duration: 1 h 52 mi

Machining duration :1 h 52 min
Tools: rough machining: R2 CBD ball end mill

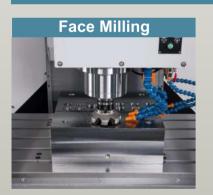
finish machining: R2 CBD ball end mill

Cutting specifications : Rough machining : 8000rpm

Feed rate: 1600mm/min

Fine machining: 8000rpm Feed rate: 1600mm/min

Cutting Performance





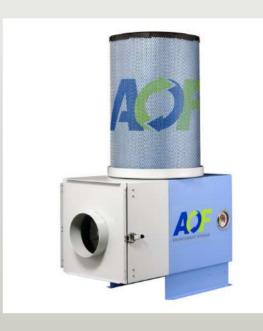


	_							
	Face Mil	Ø80mm	Drill Ø	36 mm	Tap M24xP3.0			
		ml/min	35 n	nl/min	M24xP3.0			
CV-60	O Spindle Speed	Feed Rate	Spindle Speed	Feed Rate	Spindle Speed	Feed Rate		
	1000 min ⁻¹	1000 mm/min	230 min ⁻¹	35mm/min	100 min ⁻¹	300 mm/min		
	Face Mil	Ø80mm	Drill Ø	040 mm	Tap M24 xP3.0			
CV-800		nl/min	25m	I/min	M24 xP3.0			
	O Spindle Speed	Feed Rate	Spindle Speed	Feed Rate	Spindle Speed	Feed Rate		
	900 min	900 mm/min	160 min ⁻¹	20mm/min	100 min ⁻¹	300 mm/min		
	Face Mil	Ø80mm	Drill Ø	940 mm	Tap M27xP3.0			
		nl/min	50m	I/min	M27xP3.0			
CV-1000	Spindle Speed	Feed Rate	Spindle Speed	Feed Rate	Spindle Speed	Feed Rate		
	1000 min ⁻¹	1140 mm/min	207min ⁻¹	40mm/min	100 min ⁻¹	300 mm/min		

Oil Mist Removal

Remove the oil mist of the coolant from the machine to keep a clean and healthy working environment, increase working performance and achieve energy saving and environmental protection.

Oil Mist Collector OP



Advantages of the Oil Mist Collector

- Extend machine life- oil mist spreads quickly and widely. Reducing the damage of mechanical parts and components inside the electrical and control cabinet caused by oil contamination.
- Reduce the hazards to health- any form of oil mist, smoke, or pollution may be harmful to the lungs, throat, and skin and can be a risk to health.
- Reduce accidents- Spread oil mist may cause slippery floors and result in danger and accidents.
- Reduce fire risks- The accumulation of oil mist may cause a fire or make the fire more serious.
- Save production costs- Oil mist can be collected and recycled back to the machine for reusing.
- Reduce the requirements for compensation- In case the air is polluted, employees would request an increase in their salary as compensation.
- Increase the employee morale-improving the polluted environment will increase the enthusiasm and passion of the operators.

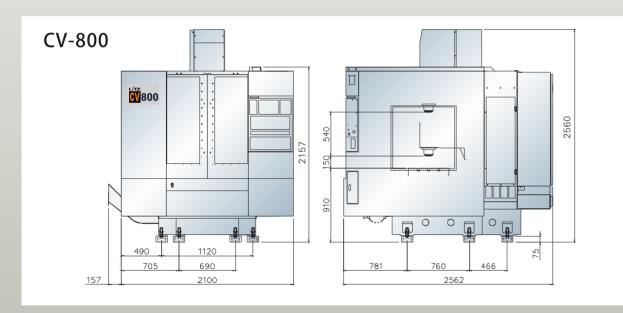
Safe metal skid packing and smallest footprint

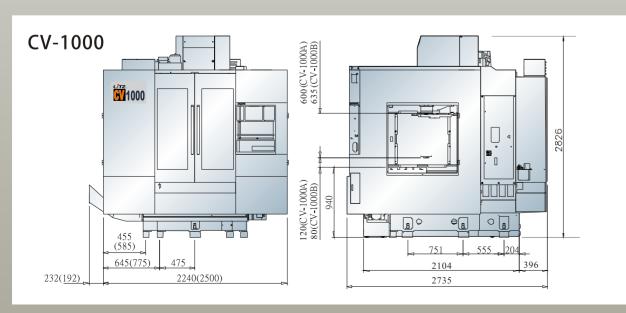


- Simple and compact design of the machine saves the space required, maximizing the utilization of limited space.
- Small footprint of the machine.
- The machine can be fitted into a 20 ft high cubicle container. Each container can accommodate 2 machines, saving the cost for packing and shipping.
- The machine is shipped with an iron pallet, easy and safe.
- The forklift can be applied from 4 directions to the iron pallet, easy for handling. All the accessories are mounted and fixed, ensuring the handling quality.

AL MACHINING CENTERS 25

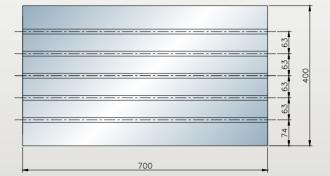
CV-600 **600** 800 990



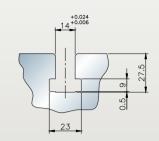


Worktable Dimensions

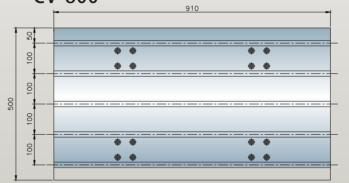
CV-600



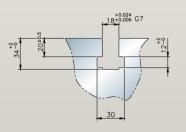
CV-600 T-slot dimensions



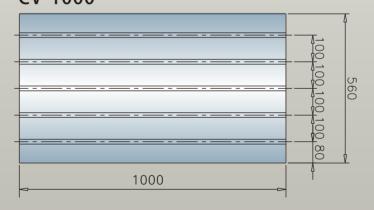
CV-800



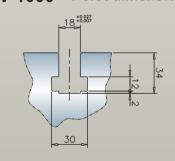
CV-800 T-slot dimensions



CV-1000

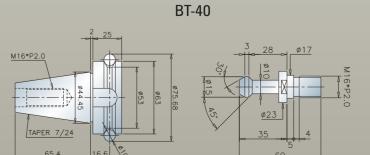


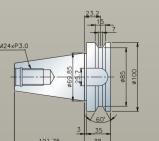
CV-1000 T-slot dimensions

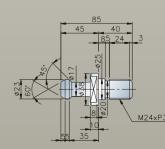


BT-50

Tool Shank and Pull Stud







Equipment List

Model		CV-600	CV-800	CV-1000A	CV-1000B
Travels for 3-axes					
X-axis Travel	mm	600	800	1020	1020
Y-axis Travel	mm	410	500	560	560
Z-axis Travel	mm	540	540	600	635
Spindle nose to worktable sur	rface mm	100~640	150~690	120~720	80~715
Spindle		'			
Spindle Speed	rpm	10000	8000	8000	6000
Automatic Tool Changing Sys	tem				
Number of Tools	pcs	24	24	24	24
Max. tool diameter	mm	80/125	80/125	80/125	125/225
Max. tool length	mm	200	270	300	350
Max. tool weight	kg	8	8	8	15
Tool changing method		ARM	ARM	ARM	ARM
Tool specification		BT-40	BT-40	BT-40	BT-50
Motor					
Spindle motor (continuous/30min. rated)	kw(HP)	5.5/7.5(7.5/10)	7.5/11(11/15)	7.5/11(11/15)	11/15(15/20)
Motors on X/Y/Z-axis	kw	1.5/1.5/2.0	2.0/2.0/3.5	2.0/2.0/3.5	2.0/2.0/3.5
Worktable					
Worktable area	mm	700x400	910x500	1000x560	1000x560
Worktable max. load capacity	v kg	350	500	750	750
T-slot (No. x Width x Distance from the center)	mm	5x14x63	5x18x100	5x18x100	5x18x100
Rapid Speed					
X-axis rapid speed	M/min	36	36	36	36
Y-axis rapid speed	M/min	36	36	36	36
Z-axis rapid speed	M/min	24	24	24	Box way: 18
Cutting feed rate	mm/min	1-20000	1-20000	1-20000	1-20000
Controller					
Mitsubishi		M80	M80	M80	M80
Miscellaneous					
Machine Weight	kg	4200	5300	7500	8000
Power Consumption	KVA	15	20	25	25
Coolant Tank Capacity	L	200	290	290	290
Compressed air source	kg/cm2	6	6	6	6

All the photos contained herein are for reference only. In case of any discrepancy with the actual machine parts, the actual machine shall prevail.

Machine Specifications

					·					
C/L	Cr	CV.70	CK.7		C ₁	CV. 7000 A 00 8				
Spindle	8	800°	OA "	008	Oil/coolant separator	20.0	000	000	200	
Spindle speed: 6000 RPM	_	_			Disc type oil/coolant separator					
Spindle speed: 8000 RPM	—			\bigcirc	Machine oil/coolant separation system					
Spindle speed: 10,000 RPM		0	0	\bigcirc						
Spindle speed: 12,000 RPM	\bigcirc	\bigcirc	\bigcirc	_	ATC System					
Spindle oil cooling system	\bigcirc	\bigcirc	0		Automatic Tool Changer Mechanism (ATC)	•				
Coolant through the spindle system (CTS)	\bigcirc				BT-40 tool specification	•			_	
Spindle dust-proof air-sealing system			•		BT-50 tool specification	_				
Spindle head coolant cooling system	_	_			Arm type tool magazine 24T					
ZF gearbox + cooling system	_	0	0	0	Arm type tool magazine 32T	_			_	
					Arm type tool magazine 40T	_	_	\Rightarrow	_	
Cooling System										
Spindle external programmable air blow system					3-Axes Transmission System					
Stop block for oil feed tool holder	\bigcirc	0	0		3-axes coolant thru ballscrew (CTB)	—		0	\bigcirc	
Programmable coolant nozzle	$\stackrel{\wedge}{\sim}$	$\stackrel{\wedge}{\Box}$	$\stackrel{\wedge}{\Box}$	\Rightarrow	3-axes linear roller guideway				\bigcirc	
Splash ring (arm type only)	$\stackrel{\wedge}{\sim}$	$\stackrel{\wedge}{\Box}$	$\stackrel{\wedge}{\Longrightarrow}$	\Rightarrow	3-axes linear scale				\bigcirc	
Coolant cooling system	0	\bigcirc	\bigcirc		Z-axis brake motor system	•			•	
Chip Removal System					Controller					
Chip auger inside the machine	0	0	0		Mitsubishi M80					
Chip conveyor	0	0	<u> </u>	<u> </u>	FANUC OIMF	0			\bigcirc	
<u>Chip cart</u>		•			Siemens 828D	0	\bigcirc	\bigcirc	\bigcirc	
Coolant gun for machine cleaning		•								
Air gun for machine cleaning	0	0	0		Electrical Parts					
Wash down device	0	0	0	<u> </u>	Work light					
Hood for the top of the machine	0	0	0	<u> </u>	Alarm indicator					
Fully-covered sheet metal		•			M30 automatic power off system					
					Heater exchanger for electrical cabinet					
Measurement System					Air-conditioner for electrical cabinet	0				
Infrared tool breakage detection		0	0							
Tool length measurement system		0	0		Worktable					
Workpiece measurement system	0	0	0	<u> </u>	Worktable area: 1000x560mm	_	_			
CCD measurement system	☆	\Rightarrow	☆	☆	Worktable area: 1120x560mm	_	—			
Production and Workshop					Miscellaneous					
Production management and network service	0	0	0	0	4th Axis (rotating table)					
Human-Machine Interface - intelligent machine	0	0	0	0	Tooling		0			
Oil mist Collector	0	0	0	0	DDR embedded motor (Mitsubishi system onl	y) ☆	☆	$\stackrel{-}{\Rightarrow}$	☆	

[■] LITZ reserves the right to modify the product specifications, appearance, equipment or discontinue the products.

30

Total Production Solution

Highly efficient manufacturing fashion, equipped with high performance control system. The high speed contouring capability can achieve best possible surface quality under most demanding machining cycle time. Highly dynamic five axes machining provides solution for complex tasks.

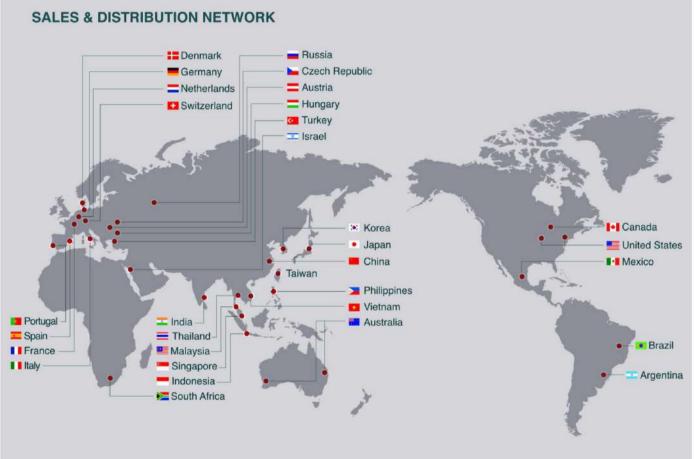


mechanism. The machine is equipped with 12000RPM direct-drive high speed spindle. High durable roller type linear guideways, 3 axes high precision linear scales along with other high quality components brings out the excellences of the 5 axes simultaneous control. Mill, drill, tap, spiral, irregular and other complex

machining can be easily achieved.

Technical Support Global Presence





www.litzhitech.com

VERTICAL MACHINING CENTERS

LITZ HITECH CORP