



TX Series

500
700
1000



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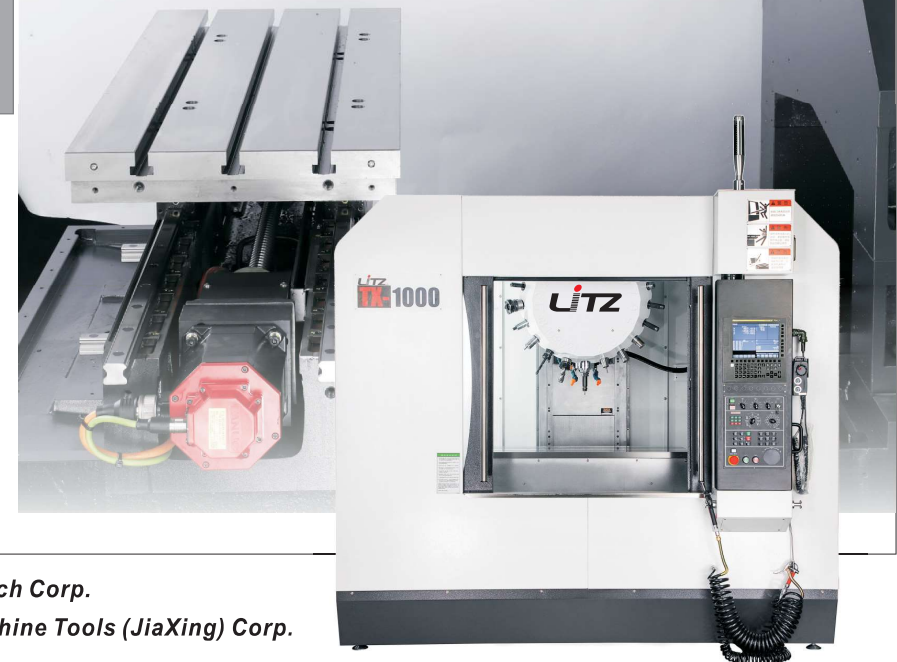
Welcome to Litz website for more information

Dealer



Large Drilling and Tapping Machine

High Precision and High Efficiency



Litz Hitech Corp.

Litz Machine Tools (JiaXing) Corp.

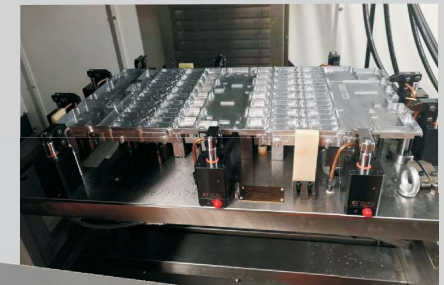
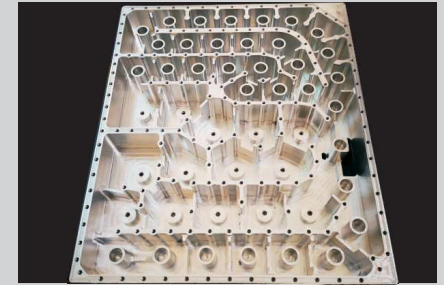
Designed for better productivity

Enlarged Tapping Center

Full product range to meet
customer requirements.

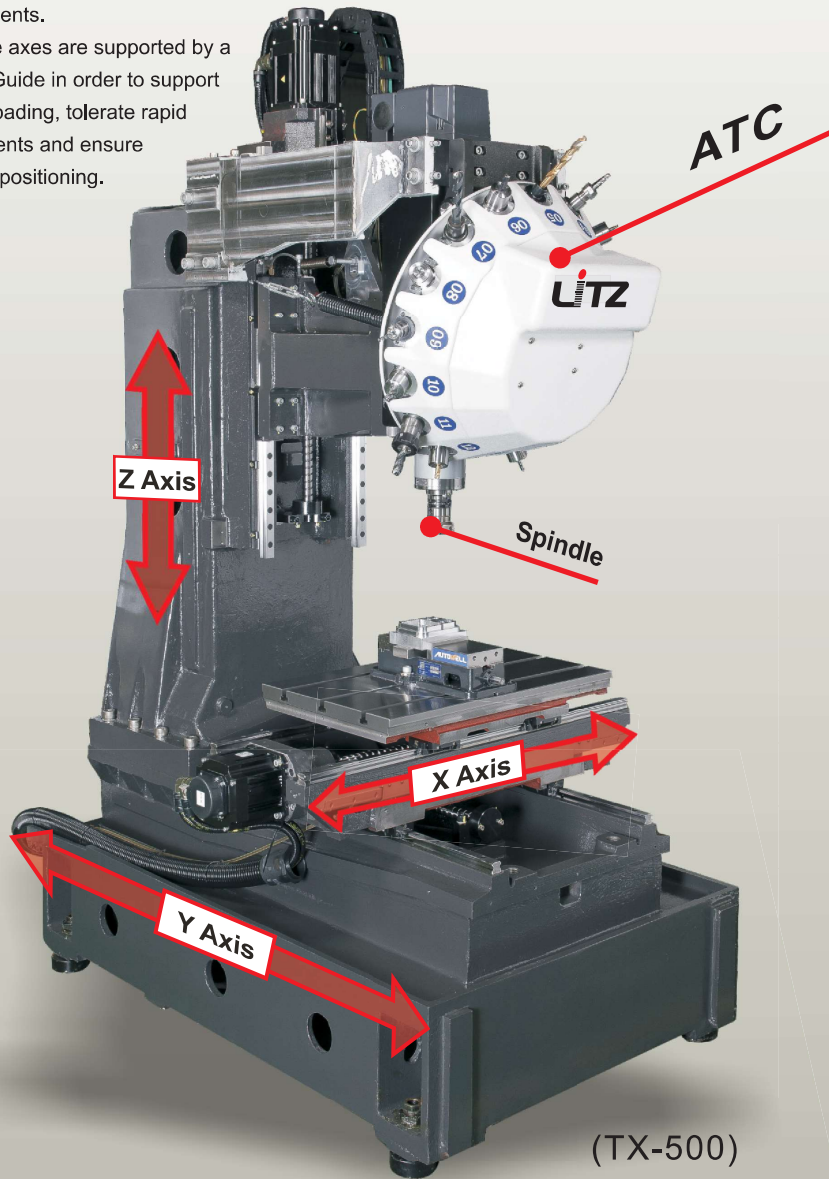


Enlarged Tapping Center
equipped with BT-30,
but provides a wider
working range.

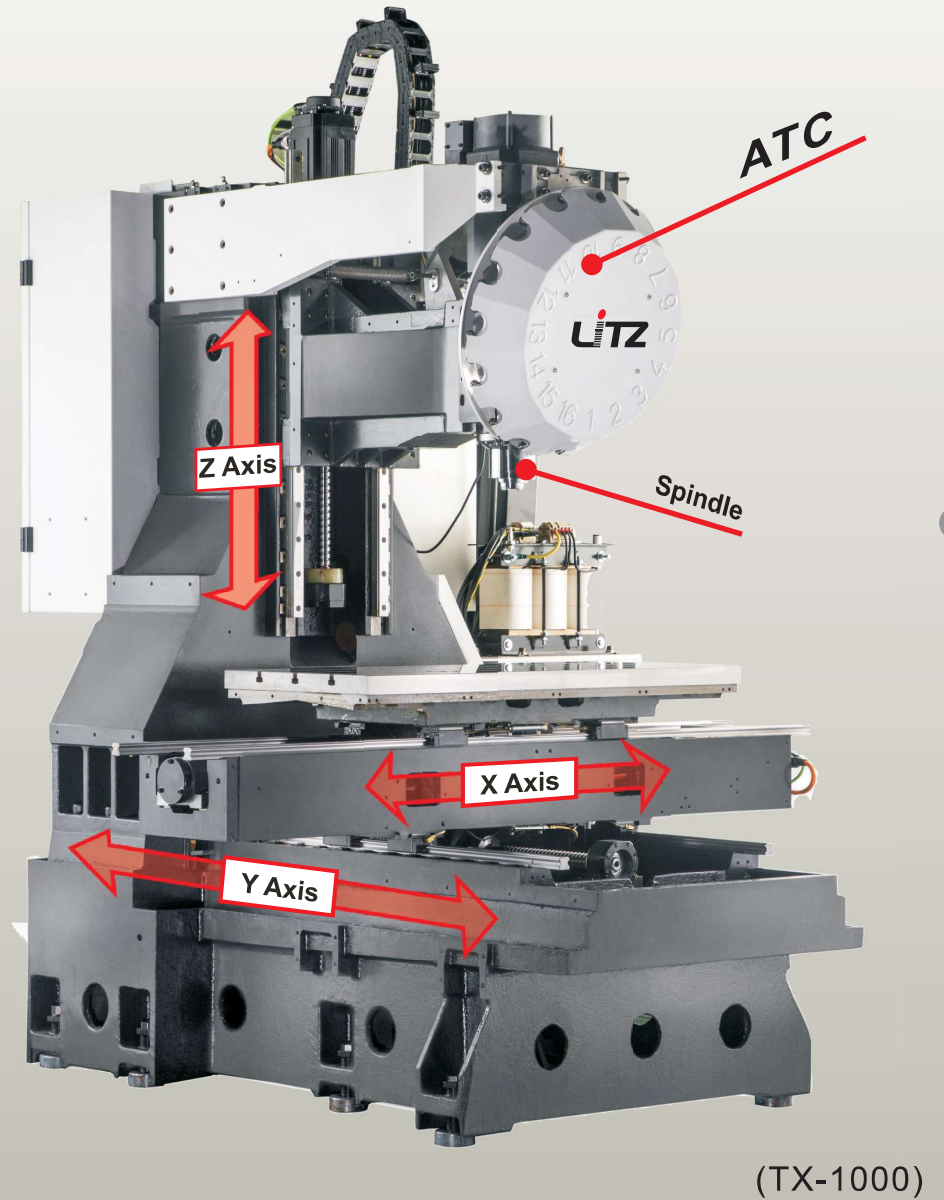


High-rigidity and High-precision Structural Design

- The main machine structure cast iron components use Meehanite cast iron with stable materials composition, ensuring the machine's long-lasting structural quality.
- To provide high rigidity mechanism for the machine, Finite Element Analysis is used to calculate the finest combination of most reasonable structural strength and reinforced rib for the cast iron components.
- All three axes are supported by a Linear Guide in order to support heavy loading, tolerate rapid movements and ensure precise positioning.



- Wide and solid base, box-shaped structure column with widened saddle, full support design with strong structure capable of assuring heavy loading capabilities during machining.
- Re-enforced rib structure is equipped in the spindle head with appropriate contacting length ratio between the spindle head and column, to provide firm support for the spindle



High-speed High-precision Drive System

- 3-Axis direct coupled motor drive eliminates backlash, completely, ensures the achievement of high-precision and provides stability of high-speed drive.
- All 3 axes use high-speed high-precision linear guide rail with high acceleration and enhanced working efficiency and productivity.

High-speed High-precision Linear Guide Rail



Ball-type Linear Guide Rail

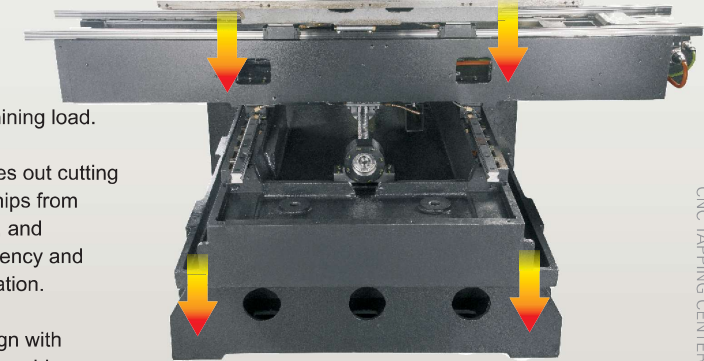
- Linear guide rail without a gap ensures more uniform cutting surface on arc cutting and bevel cutting.
- Suitable for high-speed travel and the drive power requirement can be lowered significantly.
- By using rolling instead of sliding, the linear guide rail reduces friction loss, reacts fast and increases positioning accuracy.
- Capable of bearing load from all directions (up-down, left-right), and the cutting rigidity will not be lowered with multiple contact points on the rail surface with loading.
- Easy assembly with interchangeability, and simply lubrication system.
- Extremely low guide rail wear and tear, long service life span.

Structural Design of Base

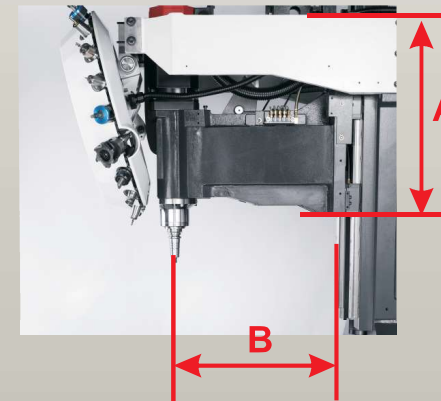
Large-span Base Design

- The large-span base effectively disperses the load force from the saddle; and with short cantilever of saddle ensures excellent dynamic precision.
- Heavy-duty worktable.
- Effective support of the machining load.
- Steep-slope drain duct washes out cutting chips quickly and prevents chips from accumulating in the machine, and improves chips removal efficiency and speeds up cutting fluid circulation.
- Backward-inclined base design with enlarged fluid tank to speed up chip removal and to prevent chips accumulation in the machine.

250KG(TX-500/700)
350KG(TX-1000)

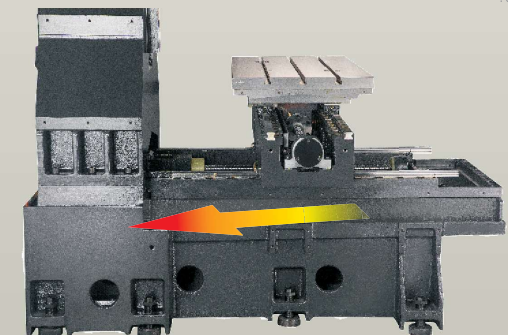


Contacting Ratio between Spindle Head and Column



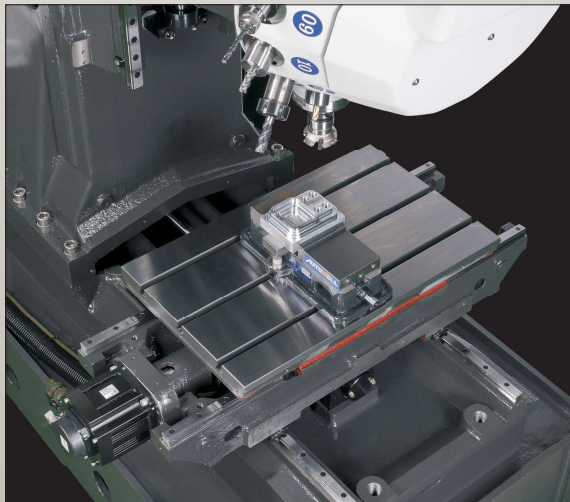
- Optimized design of contacting ratio between spindle head and column (A:B) provides rigidity for the spindle head and spindle during heavy load cutting, and ensures geometric precision of the spindle.

Optimum Chip Removal Angle



- The base chip removal design is a back-flow type to provide optimal chip removing angle and enable the smooth flow of chips into the storage cart.

Spindle Acceleration



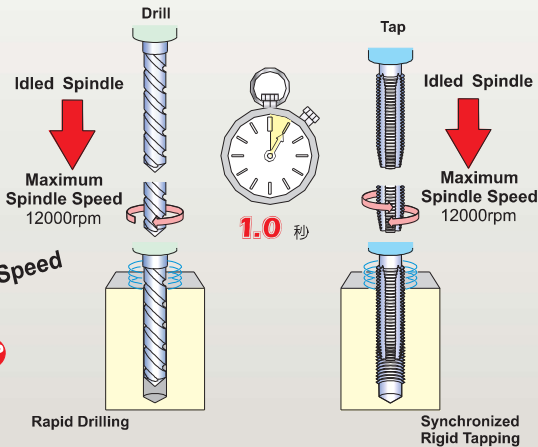
- High torque motor can shorten the axial positioning time (acceleration of all three axes > **1G**), acceleration from idle to **48m/min** only takes **0.21s**.
- X/Y/Z - axis rapid travel speed is **48/48/48m/min**, with improvement of **30%~50%** in positioning time.

Optimized Spindle Design

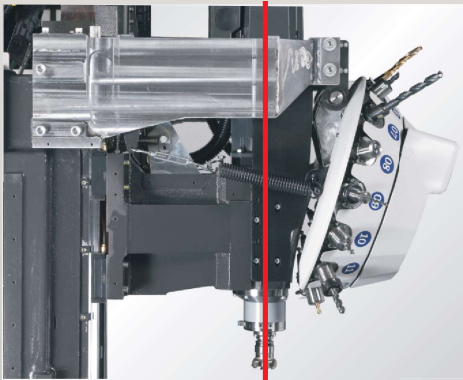
High-performance Spindle Unit



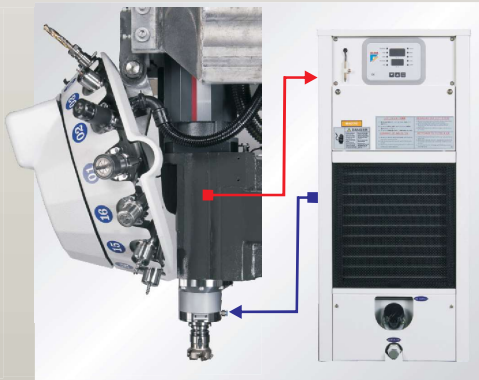
Low-Inertia Spindle Motor Characteristics (Mitsubishi)



Spindle Direct Coupled Drive System



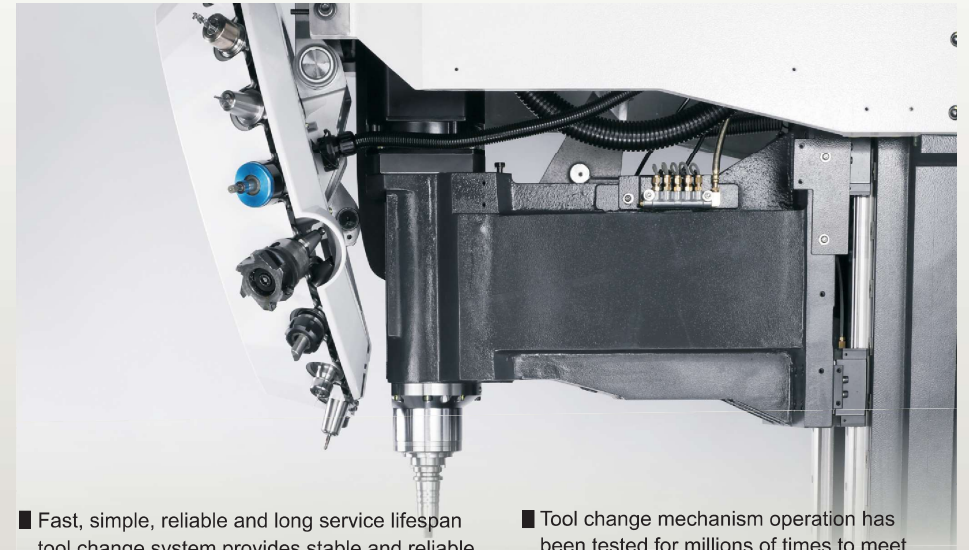
Spindle Coolant System **OP**



IDD - The Optimal Heat Isolation Design IDD (Isolated Direct Drive System)

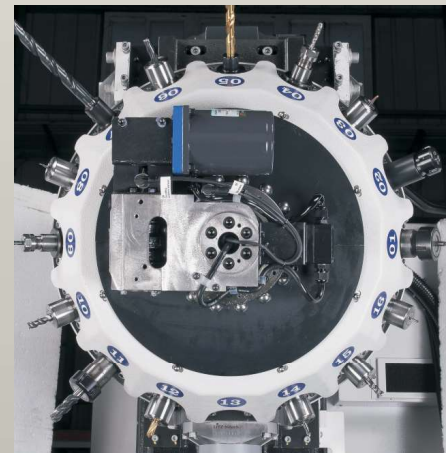
- Spindle direct coupled design with thermal isolation to reduce the thermal displacement and improve the spindle precision and lifespan.
- Thermal isolation coupling design is incorporated between the motor and spindle with optional spindle oil coolant control system for the entire spindle to obtain higher precision control.
- Direct drive of motor and spindle that does not have the noise, backlash or vibration problems from belt or gear drive.
- Direct coupled drive of motor and spindle that enhanced motor efficiency. High quality rigid tapping can be achieved through rotation detection from the motor axis directly.

High-Speed ATC Mechanism and Magazine Unit



- Fast, simple, reliable and long service lifespan tool change system provides stable and reliable tool change operation.
- Unique tool change system design with advanced cam drive mechanism, tool selection ability at any position can be achieved by PLC software control rapidly.
- Tool change mechanism operation has been tested for millions of times to meet the reliability requirements.
- Rapid tool change mechanism saves non-cutting time and improves production efficiency.
- Cam drive magazine can ensure high precision rotation that can be operated smoothly when use heavy tools.

Disc-type Tool Changer 16T **OP**



- Fully-loaded Tool Carriage 25Kg
- Sided-loaded Tool Carriage 12Kg

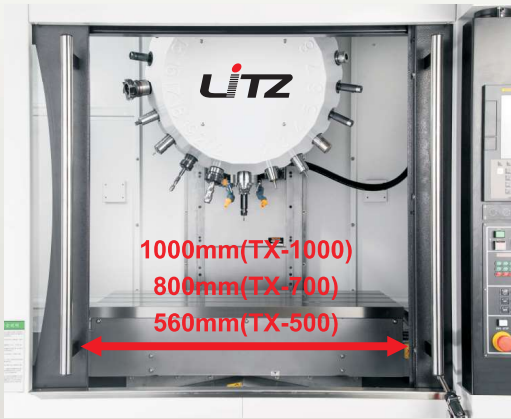
Disc-type Tool Changer 21T



- Fully-loaded Tool Carriage 35Kg
- Sided-loaded Tool Carriage 15Kg

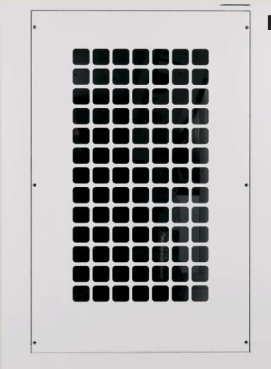
Convenient Operability

超寬的前門



- Large front door opening to facilitate the fixture and workpiece loading/unloading.

Protection and Lighting of Side Door



- External light is easy to enter the machine for brighter lighting inside the machine to facilitate machine operation and monitoring.

Alarm Light(LED) and Buzzer



- Yellow light will flash when the machining program is completed to inform the operator to load/upload workpiece.
- Red light will flash when alarm message generated on machining abnormality, then performing emergency troubleshooting is required.

Front Door Safety Switch



- The machining program cannot operate when the safety is not closed to ensure safety of the operators.
- The machining program will stop when the safety door is opened during machining to protect safety of the operators.

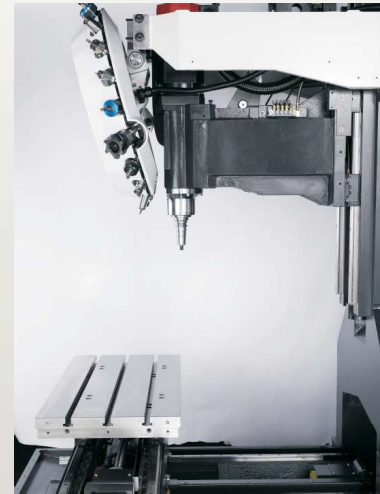
Internal Lighting(High Luminance)



- High luminance working light is installed inside the machine to facilitate the workpiece loading/unloading and measurement tasks by the operator.
- The installed working light has dust proof, water proof and explosion proof functions.
- When the working light fails, the parts can be purchased from the market to facilitate the repair works and service timing.

Expanded Machining Range

Maximum Machining Range



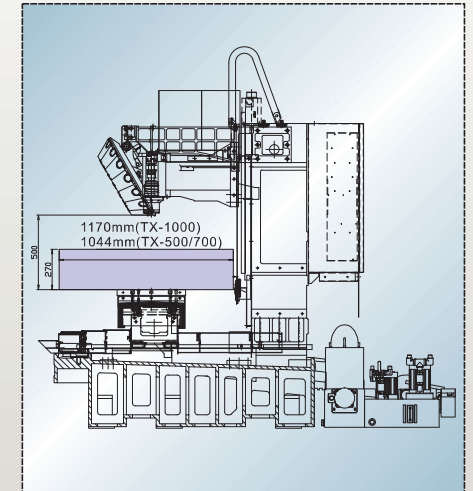
- Expanded X/Y/Z Axis Travel to facilitate mounting of fixtures and expand the size of workpiece.

Minimum Floor Area



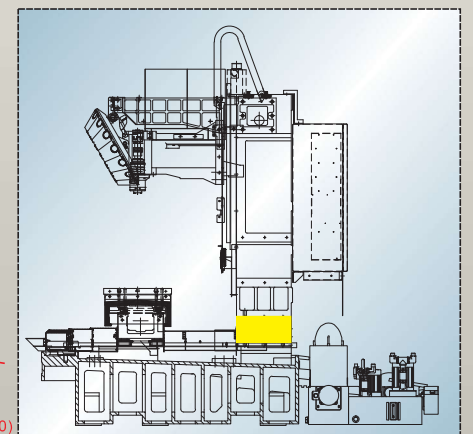
- Simple machine design saves floor space for optimized use of limited space.

High Space Utilization Efficiency



- Large working space, capable of meeting all types of machining requirements with a 4th axis or fixture is applied.

Z Axis Riser



- Raised Column Height (100mm, 200mm) to work with special fixture or extra large workpiece machining.

High Efficiency Chip Removal Mechanism

Optimum Design of Operation Space



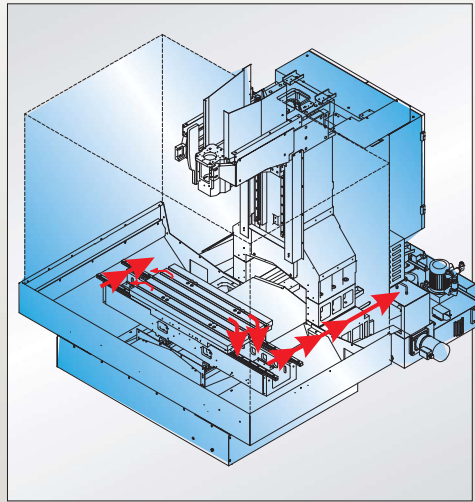
- Optimum design of operation space enables easy collection and cleaning of cutting chips.

Z Axis Protection Cover



- Unique Z Axis protection cover design, can effectively protect the Z Axis drive system, enabling the Z Axis to travel rapidly and smoothly.

Optimum Process Flow of Chip Removal



- Machine design uses back-flow type, equipped with optimum chip removing angle and chip wash down system, enabling the smooth flow of chips into the storage cart.

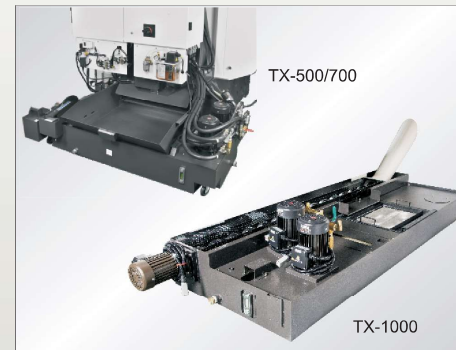
Y Axis Protection Cover



- Y Axis protection cover uses full enclosure type to prevent cutting chips from entering Y Axis drive system that affects the system precision.

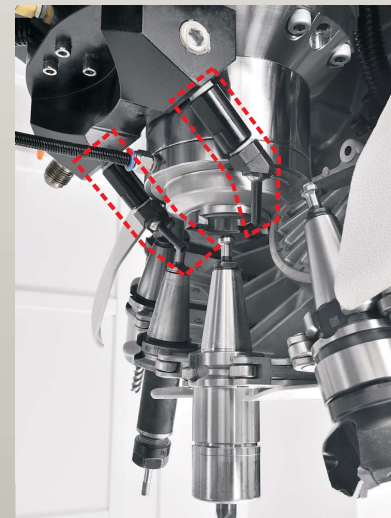
Internal Chip Removal System

High Capacity Coolant Tank



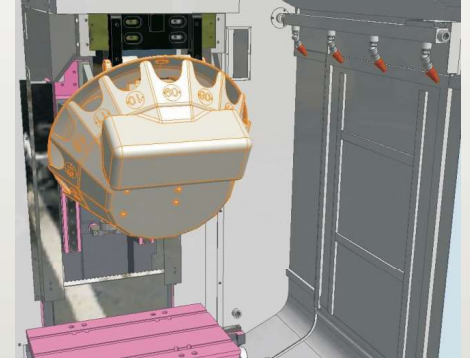
- High capacity coolant tank can store up to 200L(TX-500/700),300L(TX-1000) capable of discharging the cutting heat quickly.
- Drawer-type coolant tank design is placed inside the machine to save space.

Tool Holder Chip Wash Down System



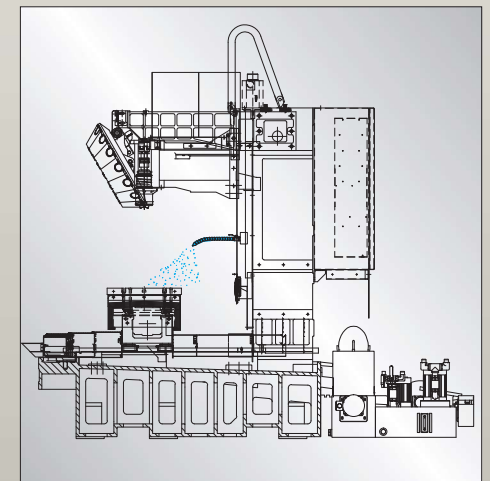
- Before the tool change, the tool holder chip wash down system can wash clean the chips attached to the tool to ensure that the tool is closely fit after tool change.

Side Chip Wash Down



- For the 24 hours continuous machining of light alloy material, large capacity chip wash down device in combination with sloped base and large capacity coolant tank achieve optimized chips removal and coolant circulation.

Fixture Cleaning Device



- The machine is equipped with programmable fixture cleaning system for automatic wash down of chips from the fixture upon completion of machining.

High-Performance Configuration I

4th Axis and Tailstock **OP**



- The 4th Axis provides special tailstock support design for the fixture to expand the machining space between fixture and workpiece.

Tool Length Measurement System **OP**



- The Automatic Tool Measurement System measures the tool length data and inputs it into the controller for compensation.
- Automatic Tool Measurement controlled by macro programs to perform automatic measurement with easy operation.

Workpiece Measurement System **OP**



- Optional Renishaw Workpiece Measurement System
 - EMP 60 New Generation Optical Test Probe System.
 - EMP 60 provides convenient easurement, enables saving 90% of machining assistance and reduces the defect ratio, lowering fixture costs and improving process control.

High-Performance Configuration II

High-pressure Pump Unit



- High pressure pump unit provides sufficient pressure for the coolant system to cool off the heat generated from tools and workpiece machining.

Automatic Lubricating Oil Lubrication System



- Use centralized lubrication system to provide lubrication for the drive system components to ensure accuracy.
- When the drive system idles for a pre-set period of time, the lubrication system will pause the oil feed to achieve energy saving.

Pneumatic System



Automatic Grease Lubrication System **OP**



- Optional grease lubrication to reduce the mixing of lubricating oil and coolant to increase the service lifespan of the coolant.

Oil Separation System **OP**



- Disc-type oil separator is easy to install and space saving.
- Disc-type oil separator can effectively separate the floating oil in the coolant tank to ensure the quality of coolant; also prolong the service lifespan of the coolant, to ensure the machining quality.

- The Pneumatic Unit has pressure sensor, the system will generate alarm message when the pressure is insufficient to ensure normal operations of the machine.

High-Performance Inspection System

Roundness Inspection



To ensure the product quality to achieve maximum efficiency and meet the customer requirements, Litz establishes a comprehensive quality control system, and applies advanced testing equipment and technologies to ensure product quality.

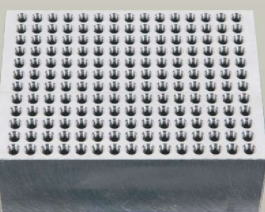
High Capacity Coolant Tank

■ Machining Capabilities

Model	Machining Material	Drill		Tapping		Milling	
		Tool Diameter mm ⁻¹	X Spindle Speed mm	Tool Diameter mm	X Pitch mm	Cutting Capacity cm ³ /min	Spindle Speed mm ⁻¹
TX-500	ADC	∅38x 1200	x 100	M27 x 3.0		600 :	8000 x 3000
TX-700	S45C	∅25 x 639	x 31	M14 x 2.0		90 :	1200 x 1000
TX-1000							

Note: These data are guaranteed performance, not the maximum machining capability

The machining speed exceeds your expectation



Rapid Rigid Tapping(121 Holes)

Model: TX-500/700/1000
 Workpiece Materials: Aluminum (A5052)
 Tapping Speed:4000rpm
 Tool used: M6xP1.0 Screw Tapping
 Effective Tapping Depth: 12mm
 Tapping Time per Hole: 0.90 s/Hole
 (Tapping Time Only)



New Generation Controller



The machine is equipped with advanced high speed controller, Mitsubishi M80 System with innovative software function increases the machine precision, production efficiency and machining process safety, also equipped with network interface connection to achieve quick and direct connection with external network.

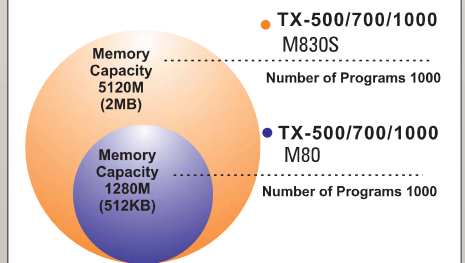
Mitsubishi Controller



■ Mitsubishi M830S System is available as an optional feature.

Internal Memory (Mitsubishi)

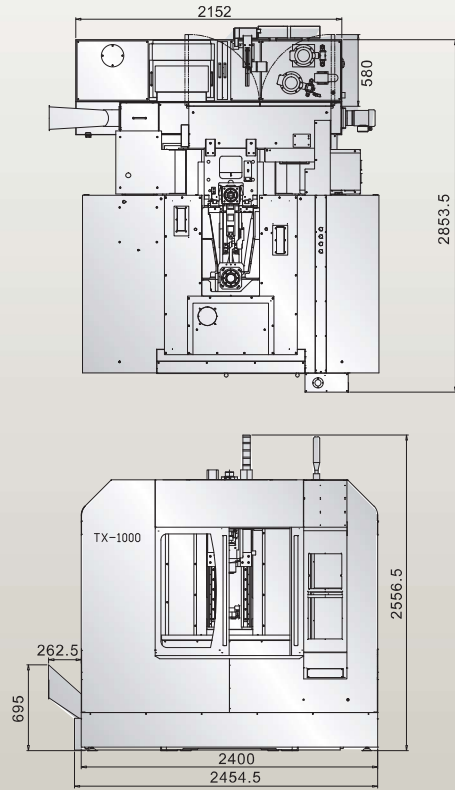
Increased Capacity of Program Memory



■ Number of programs and memory capacity for the new generation are increased compared with the previous model.
 ■ Controller system is equipped with SD Card for unlimited memory expansion.

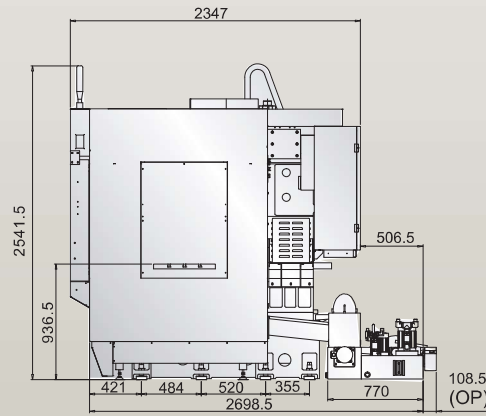
Appearance Dimension Figure

Machine Appearance Dimension



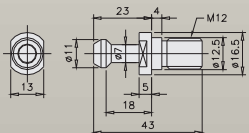
TX-1000

Unit: mm

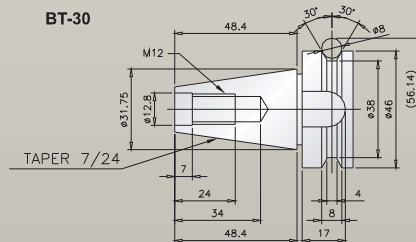


Tool Holder Dimension Figure

Tool Holder and Pull Stud



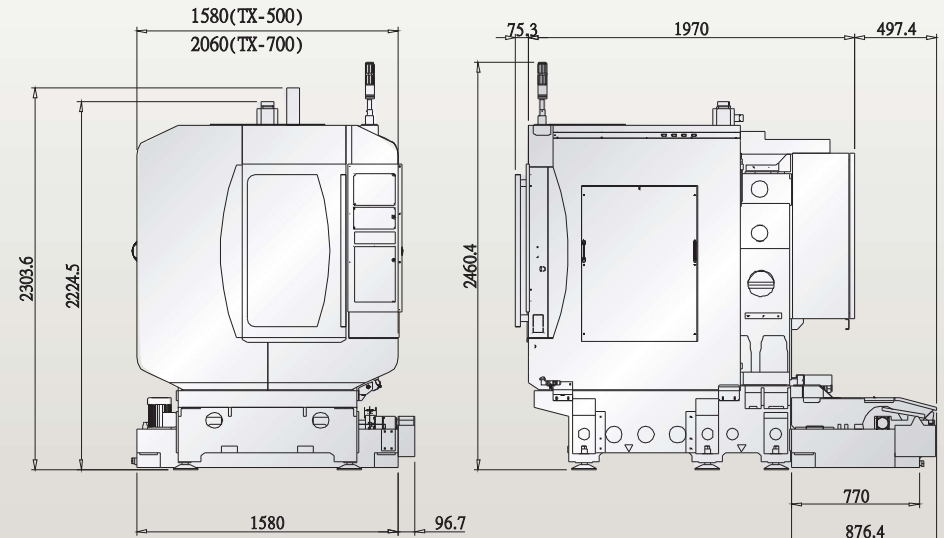
BT-30



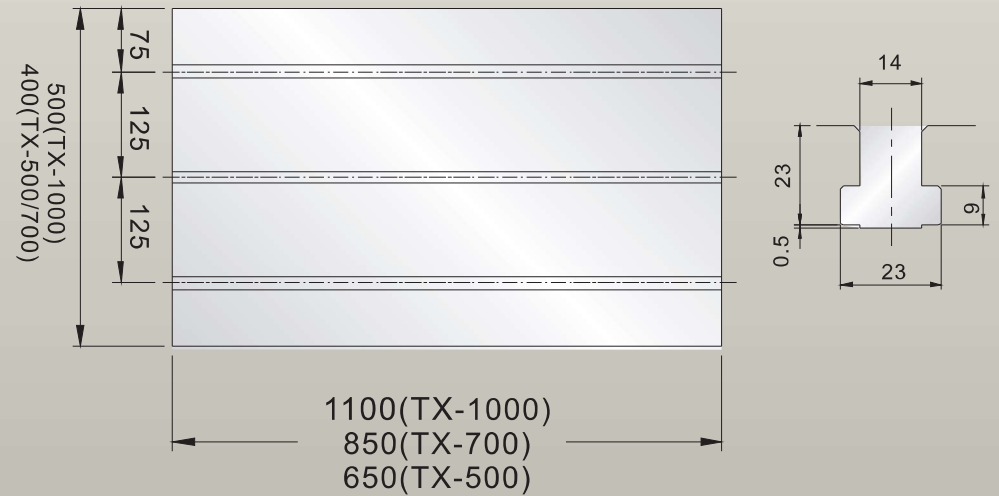
Unit: mm

Machine Appearance Dimension

TX-500/700



Work Table Dimension Figure



Machine Specifications

Machine Specifications

Model		TX-500	TX-700	TX-1000
Travel				
X Axis Travel	mm	500	700	1000
Y Axis Travel	mm	400	400	500
Z Axis Travel	mm	330	330	350
Spindle Nose to Table Surface	mm	170-500	170-500	150-500
Spindle				
Spindle Speed	rpm	12000	12000	12000
Automatic Tool Change (ATC) System				
Magazine Capacity		21	21	21
Maximum Tool Diameter (Without Adjacent Tool)	mm	60 / 80	60 / 80	60 / 80
Maximum Tool Length	mm	250	250	250
Maximum Tool Weight	kg	3	3	3
Tool Changing Type		Disc-type (Armless type)		
Tool Shank		BT-30	BT-30	BT-30
Motor				
Spindle Motor (Continuous / 15 Minutes Rating)	kw	3.5 / 5.5	3.5 / 5.5	3.5 / 5.5
X/Y/Z Axes Motor	kw	1.5 / 1.5 / 2.2	1.5 / 1.5 / 2.2	1.5 / 1.5 / 2.2
Work Table				
Work Table Area	mm	650x400	850x400	1100x500
Work Table Maximum Loading	kg	250	250	350
T Slot (Slot x Width x Center Distance)	mm	3x14x125	3x14x125	3x14x125
Rapid Speed				
X Axis Rapid Speed	M/min	48	48	48
Y Axis Rapid Speed	M/min	48	48	48
Z Axis Rapid Speed	M/min	48	48	48
Cutting Feedrate	mm/min	1-20000	1-20000	1-30000
Controller				
Mitsubishi		M80	M80	M80
Miscellaneous				
Machine Weight	kg	3000	3500	4100
Power Consumption	KVA	15	15	15
Coolant Tank Capacity	L	200	200	300
Pneumatic Supply	kg/cm ²	6	6	6

■ All pictures of this catalog are for reference only, in case of inconsistent with the actual machine, the actual machine shall prevail.

■ The Company reserves the rights of the product specifications, appearance, equipment change or suspension of use.

List of Accessories

● Standard Accessories ○ Optional Accessories ☆ Requires Inquiry X Not Available

	TX-500	TX-700	TX-1000		TX-500	TX-700	TX-1000
Spindle				Lubrication System			
Spindle Speed 12000RPM	●	●	●	Central Lubrication System	●	●	●
Spindle Speed 24000RPM	○	○	○	Manual Grease Lubrication	○	○	○
Spindle Oil Cooler	○	○	○	Automatic Grease Lubrication	○	○	○
Coolant through Spindle System	○	○	○	Automatic Lubricating Oil Lubrication	●	●	●
Spindle Air Blow Device	●	●	●	ATC Tool Change			
Rigid Tapping	●	●	●	ATC Magazine Tool number 16T	○	○	○
Controller				ATC Magazine Tool number 21T	●	●	●
Mitsubishi M80	●	●	●	Tool Specifications BT-30	●	●	●
Mitsubishi M830S	○	○	○	Tool Specifications CAT or Others	○	○	○
FANUC OiMD	○	○	○	Automatic Tool Change (ATC) System	●	●	●
Cooling System				Servo Magazine	○	○	○
Coolant Cooling System	●	●	●	Electrical			
Spindle Programmable Air Blow System	●	●	●	Front Door Safety Door Device	●	●	●
Chip Removal System				Working Light	●	●	●
Coolant Flush	●	●	●	Alarm Light	●	●	●
Side Chip Wash Down Device	○	○	○	Electric Cabinet Heat Exchanges System	●	●	●
Fixture Cleaning Device	○	○	○	Transformer Unit	○	○	○
Machine Portable coolant Gun	●	●	●	FrontLED Light	○	○	○
Machine Portable Air Gun	●	●	●	Others			
Full Enclosure Cover (Panel)	●	●	●	DDR Built in 4th Axis	○	○	○
Slideway Protection Cover X/Y/Z	●	●	●	4th Axis (Rotating Axis)	○	○	○
Measurement System				Tool kit	○	○	○
Infrared Tool Breakdown Detection	○	○	○	CE Specifications	○	○	○
Workpiece Measurement System	○	○	○	Raised Column 100mm	○	○	○
Tool Length Measurement System	○	○	○	Raised Column 200mm	○	○	○
Oil Separator				Automatic Door	○	○	○
Disc-type oil separator	○	○	○	Base Bolts and Pads	●	●	●
				Tool Box	●	●	●
				Oil Mist Collector	○☆	○☆	○☆
				Tailstock Support	○☆	○☆	○☆
				Shock Absorption Foot Pads	○	○	○

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.

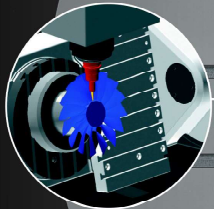


Heidenhain & Siemens Control System

iTNC530 / 840D
Ideal for high-end application CNC system. Modular, open, flexible operating interfaces are the highlight of the controller. Programming and visual structure can be integrated with network systems.



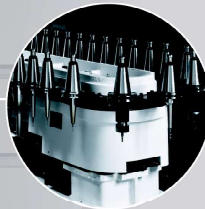
Litz Hitech & Open Mind, the CAM company
The strategic alliances



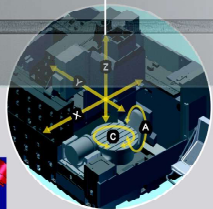
The monitoring & collision test within work range



Total Solution

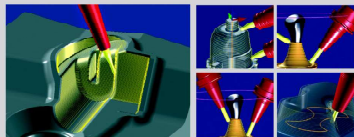


MST Tools (Japan)



Litz Hitech LU Series

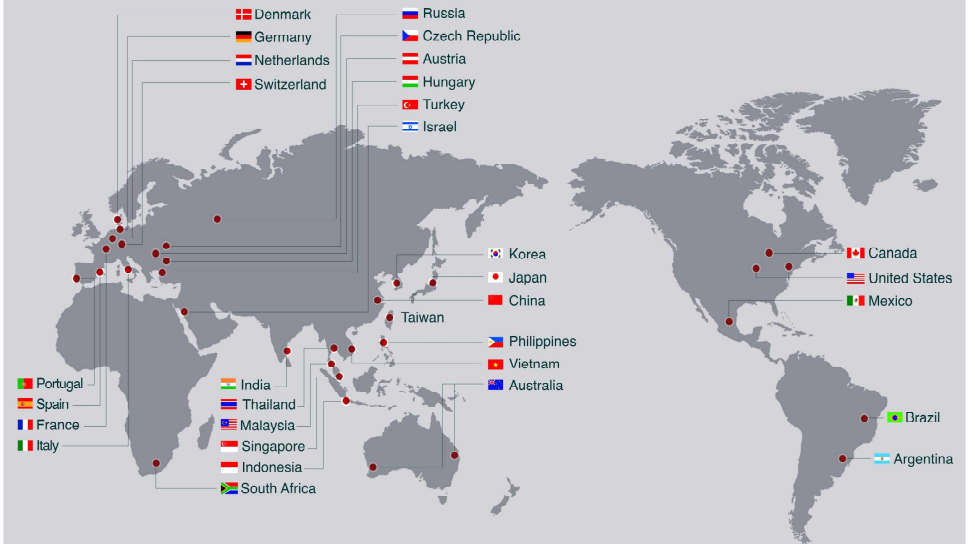
5 Axes Series employs U shape base with dual-support A/C axes rotary worktable's high rigidity mechanism. The machine is equipped with 12000RPM direct-drive high speed spindle. High durable roller type linear guideways, 3 axes high precision linear scales along with other high quality components brings 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



SALES & DISTRIBUTION NETWORK



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