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Welcome to Litz website for more information

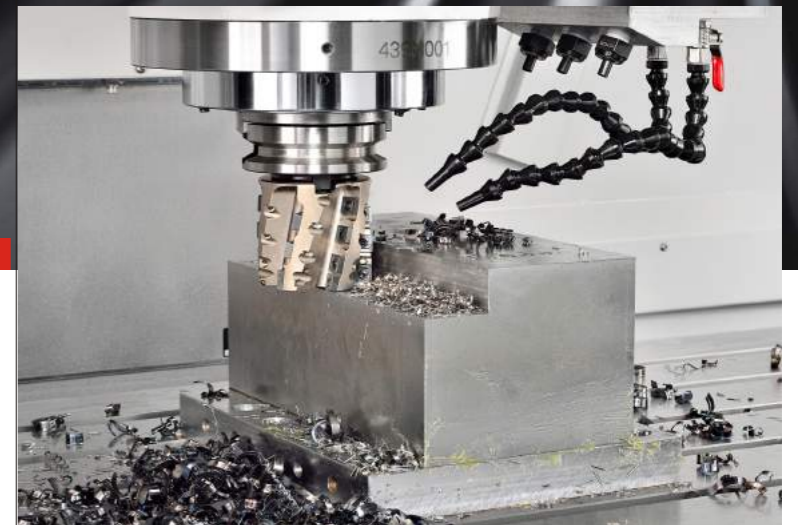
Dealer



VERTICAL MACHINING CENTER

VB

VERTICAL MACHINING CENTER



**VB-1100 / VB-1300**

**High rigidity . High Performance**



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

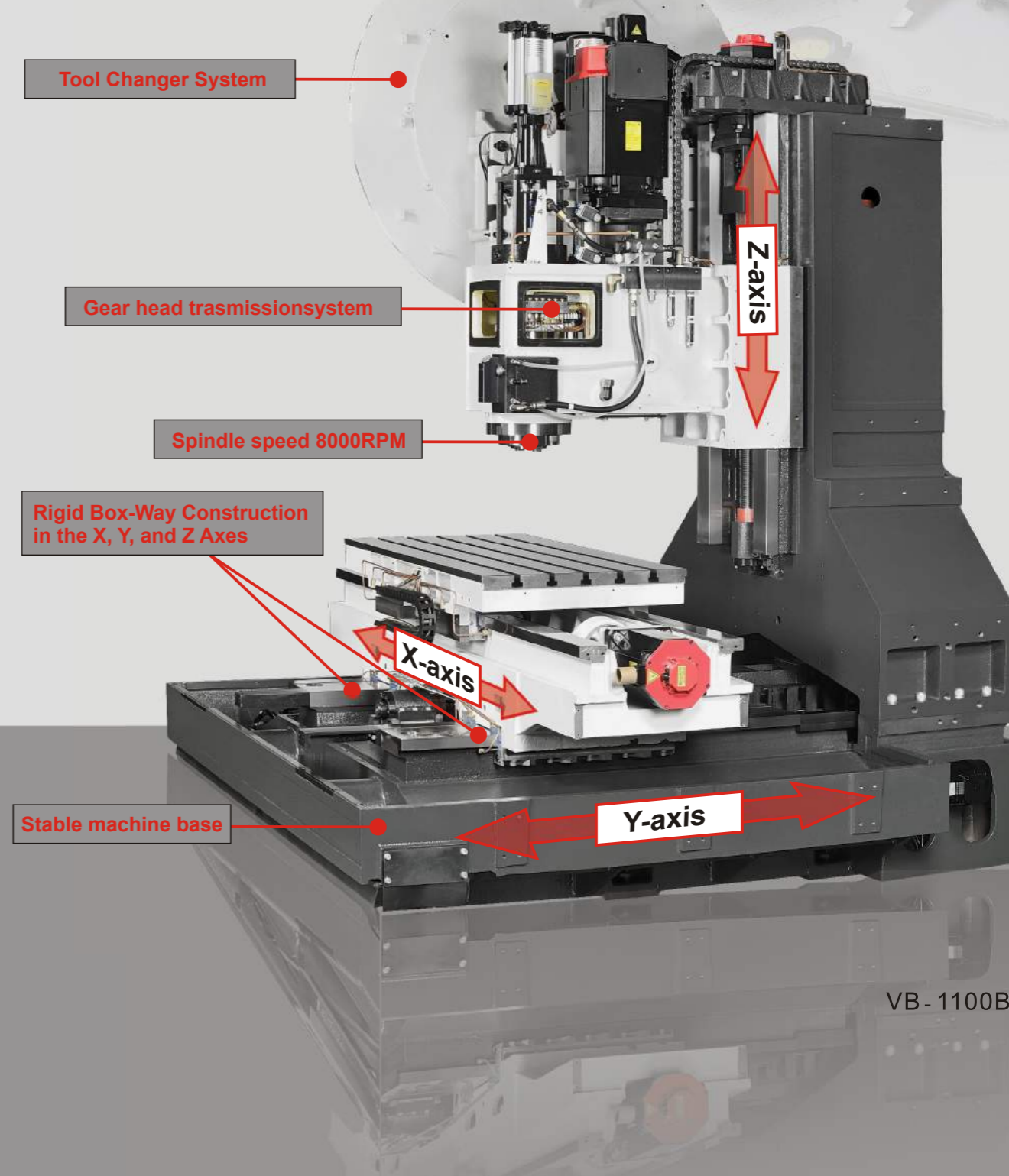
## X/Y/Z Box-Way with Gearhead Spindle Integrated

Heavy Duty ALL Box-Way Construction in the X, Y, & Z-Axes Utilizing Turcite B. Spindle driven by spur gears system which creates high transmission efficiency, high cutting rigidity, and low noise level. 2-step gear head provides high torque for heavy duty cutting.



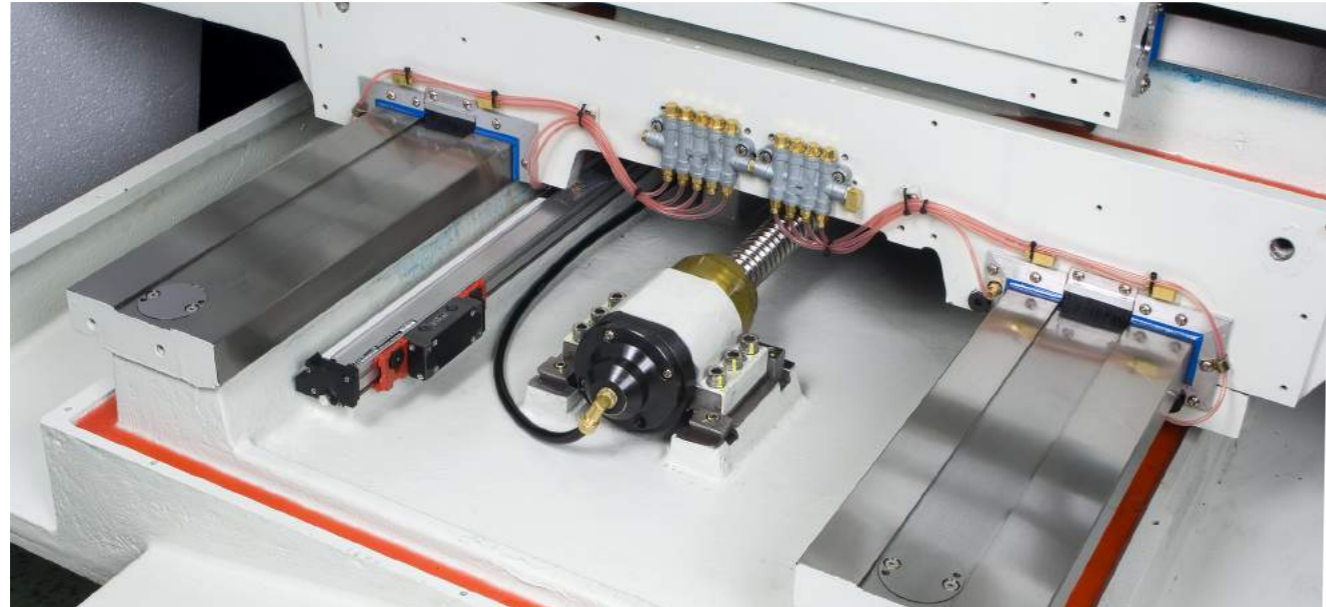
## High rigidity, high-precision structure design

- .Main Casting enhanced with reasonable structure strength and reinforced rib support based on finite element analysis gives high rigid body characteristics.
- .Wide and solid base, box structure column, widened and lengthened saddle, heavy load full support design, and robust structure combined to ensure heavy load support for machining.
- .Solid spindle support, thanks to rib reinforced spindle head and reasonable head-column contact length ratio.



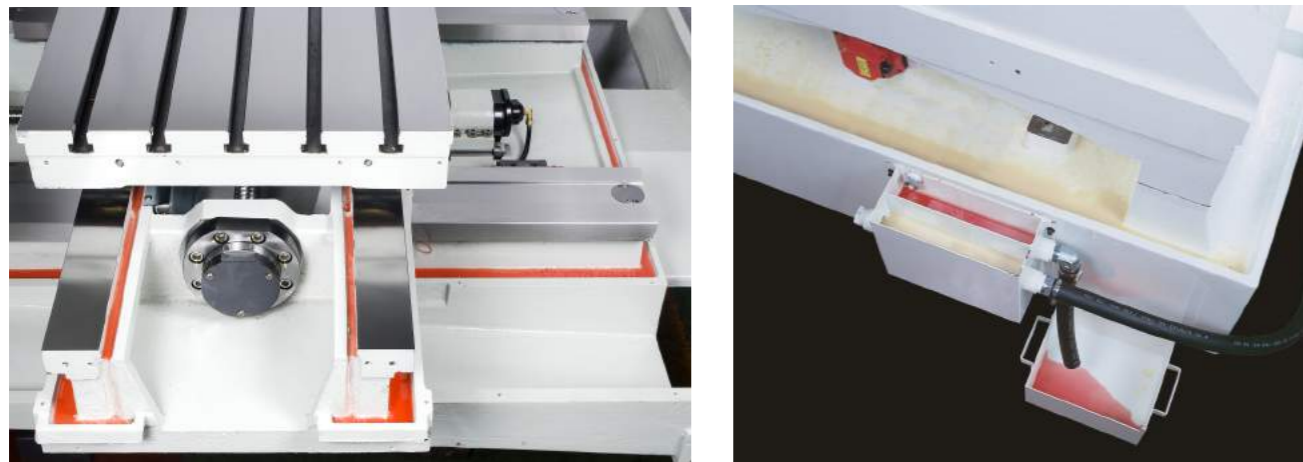
# High Rigidity, High performance

# Superior hand Scraping Skill



- . 3-axis motor and precision high-speed ball screw direct-drive and pretension assembly for improved rigidity and precision.
- . Heavy Duty ALL Box-Way Construction in the X, Y, & Z-Axes Utilizing Turcite B.
- . Superior hand scraping skill.
- . Acquire the best accuracy with ball bar testing and parameter pre-adjustment.
- . 4 box-way rail in Y axis to enhance the support.

## Oil-coolant separation design



. Featuring water-oil separation design to prevent cutting coolant deteriorating from mixing with oil and hamper machining quality.

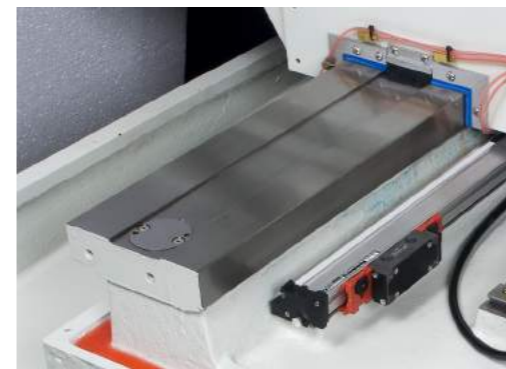
## High contact rate provides machine stability and durability




. Hand scraping skill



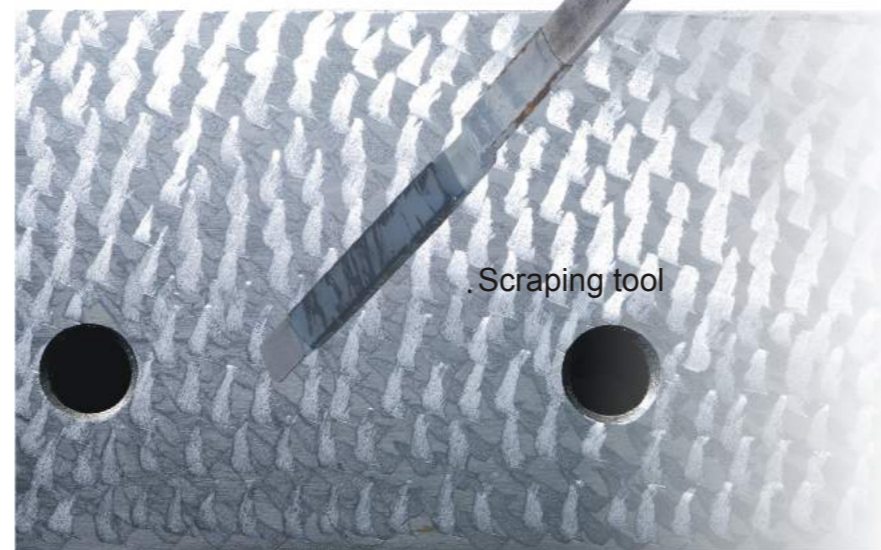
. Ballscrew nut calibration



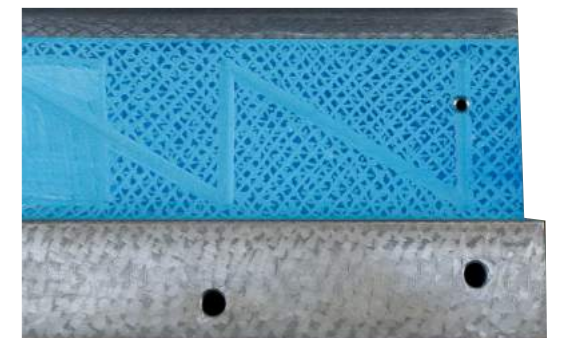
. Grinded box-way surface

鍍花拓印檢驗紀錄表	
機型	SV-1000A 機號 64V-066
部位	<input checked="" type="checkbox"/> 主軸箱 <input type="checkbox"/> 副箱 <input type="checkbox"/> 工作台 <input type="checkbox"/> 前橋
鍍花人員	黃澤榮 日期 9/2 11.02
拓印點範圍:(拓印面積需在 80mmx40mm 以上)	
	
檢查重點: 1. 檢查每平方英寸點數 PPI 12點	
2. 檢查接觸率 PIP 10-80%	
3. 檢查平均深度 10um	
4. 檢查油溝的形狀大小	
判定	<input checked="" type="checkbox"/> 合格 <input type="checkbox"/> 不合格, 重新鍍花
品檢員	鍍花人員 黃澤榮

. Printed from a scraped turcite.



. Scraping tool



. Special design oil way for better oil distribution.

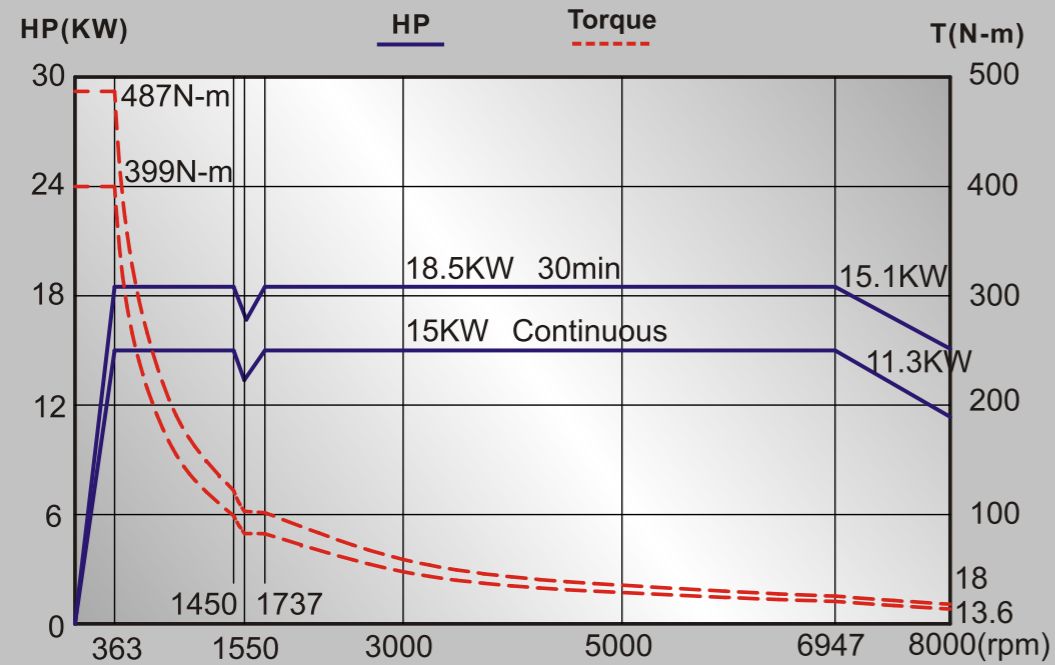
## Outstanding performance



## Gear head spindle



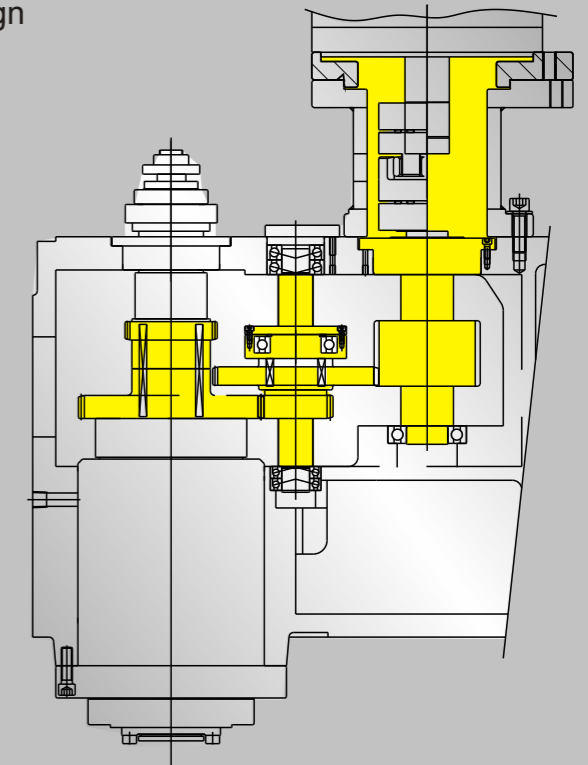
## Torque Chart



FANUC ail 15/8000-B+Gear Box (Low Rate 22:91)& (High Rate 44:38)  
8K Spindle Power-Torque Chart

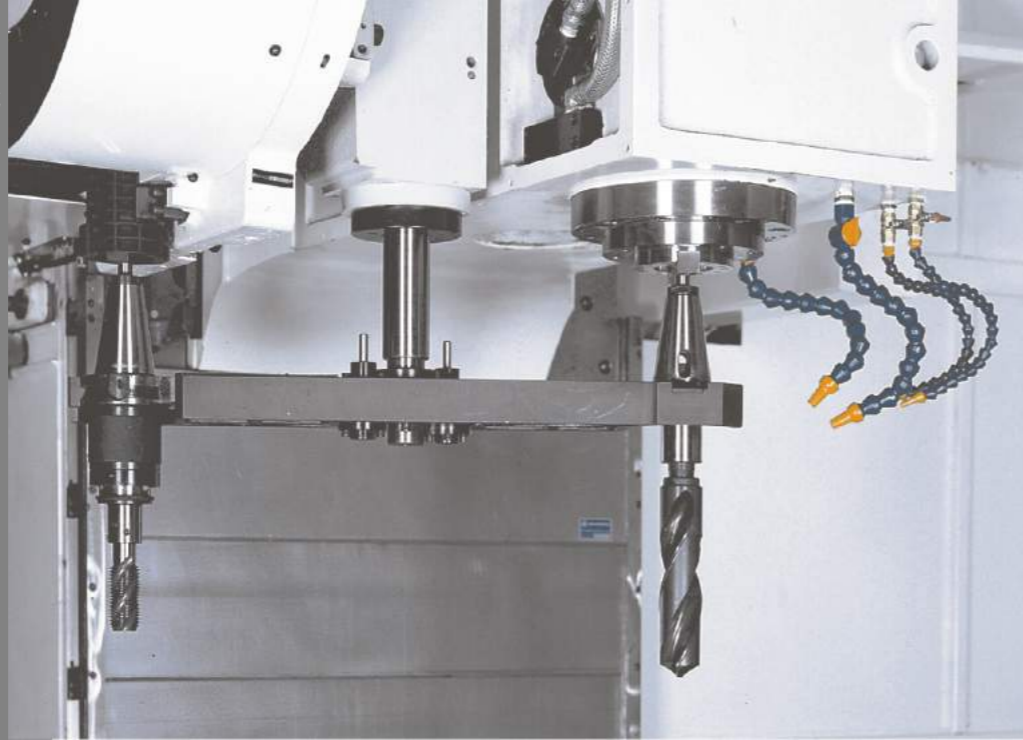
## High torque gear head spindle transmission

Robust one-piece spindle head design provides better cutting performance and stability.

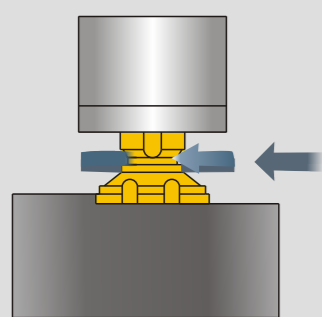


# CAM Type Automatic Tool Changer

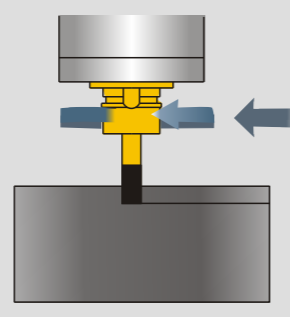
The Unique high speed and Synchronized ATC mechanism provides dualTool exchanging. Variable ATC arm rotation speed is available. the low arm speed can be set while Extra heavy weight tools or large tools are applied



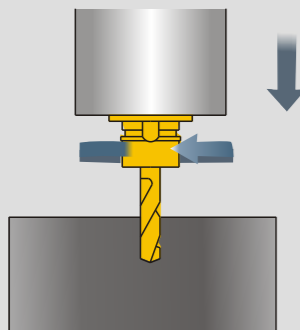
## Performance



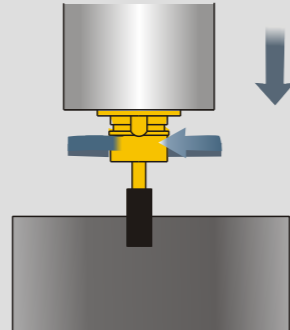
Face Milling	
Chip removal rate	458cm <sup>3</sup> /min
Tools	Ø125mm (9 edges)
Spindle Speed	254rpm
Feed Rate	537mm/min
width	100mm
depth	8mm



End Mill	
Chip removal rate	268cm <sup>3</sup> /min
Tools	Ø45 mm(6 edges)
Spindle Speed	350rpm
Feed Rate	636mm/min
width	45 mm
depth	10mm



Drilling	
Chip removal rate	143cm <sup>3</sup> /min
Tools	Ø65mm
Spindle Speed	122rpm
Feed Rate	43 mm/min



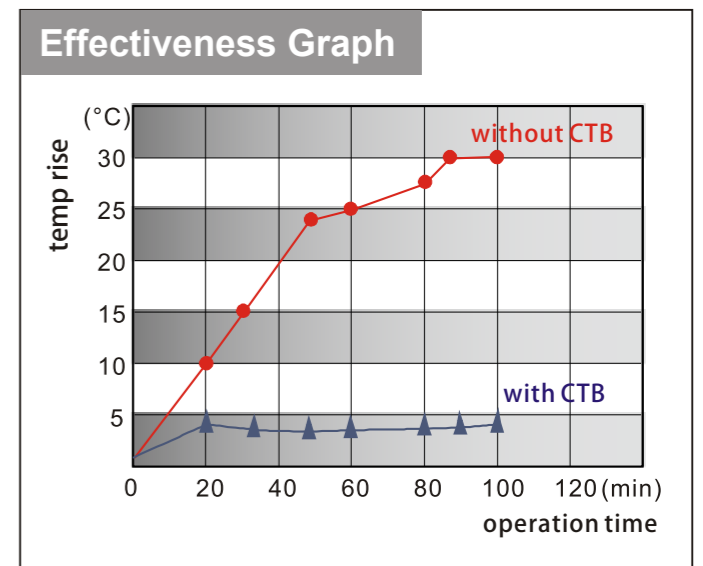
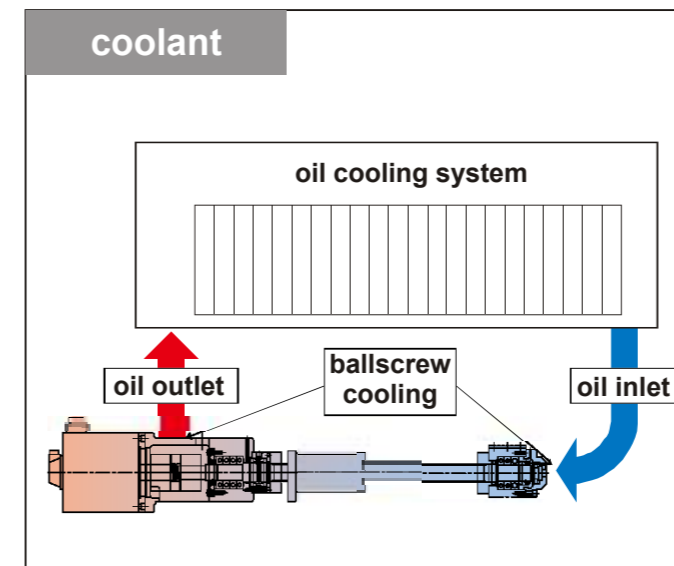
Tapping	
Tools	M30xP2
Spindle Speed	150rpm
Feed Rate	300 mm/min

## Tool Magazine Unit

Mode	Max. tool length	Max. tool dia.	Max. tool weight
	Standard(mm)	Standard(mm)	(Kg)
VB-1100B/BG	305	120/150	15
VB-1300B/BG	305	120/150	15

## 3-axis coolant through OP

The ballscrew transmission system employs hollow cooling design to minimize heat and thermal expansion of ball screw in high-speed operations with coolant oil to balance high speed and high precision at the same time.



# Standard Function - Optional Function

## Machine



### 1 Lighting System

High brightness work light is standard for easy loading and unloading work from the table.

### 2 Portable MPG

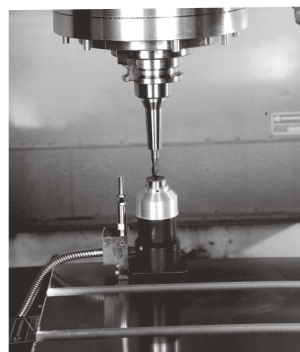


Portable hand wheel beneficial to operation flexibility.

### 3 Full enclosed ATC

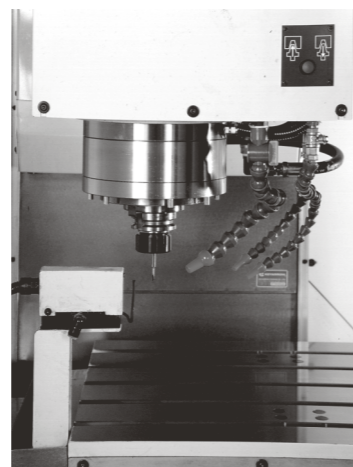
Full enclosed ATC design to prevent duct or oil mist go inside the ATC area.

### 4 Tool Length Measurement **OP**



The automatic tool measuring system will measure the tool length and input the result into the controller automatically for compensation.

### 5 IR tool damage detector **OP**



The IR tool damage detector is aimed to identify any damages to mini tools before machining and signal the NC controller to hold the next machining process.

### 6 Auto power ON for machine warm-up Auto power Off

Operator can set power On timing and activate the warm-up program by timer, as well as power Off.

### 7 3 color signal light



### 8 Safety switch (standard)



The machining program starts only when the safety door is closed to ensure operator safety.

### 9 DDR Motor **OP**



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.

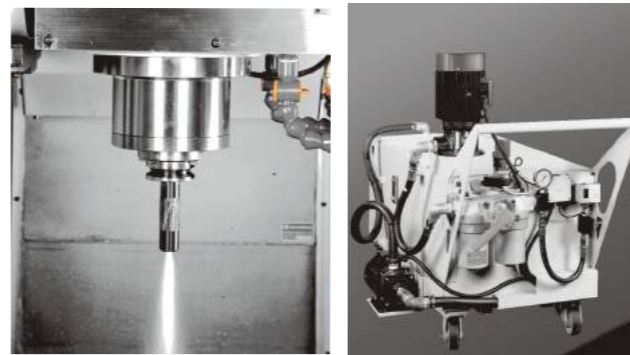
## Coolant

### 10 Programmable nozzle adjustment device **OP**



Programmable nozzle adjusting device: you may add M code in machining scripts to change nozzle angle according to tool length during machining.

### 11 Coolant through spindle device and filter **OP**



With the addition of the coolant through spindle system, the cutting coolant passes through the center of the spindle and is ejected at the tip of cutter to directly cool the workpiece and the cutting blade of the cutter by removing the heat generated from cutting in order to ensure excellent cutting quality, and it is suitable for component parts of deep hole processing.

### 12 High Precision Linear Scale **OP**

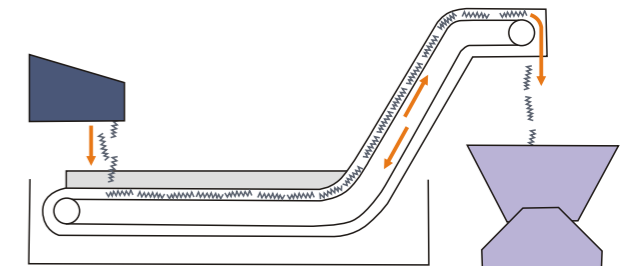


The X/Y/Z-axis can be equipped with a linear scale system to detect thermal displacement due to rapid movement of the machine. The thermal displacement result will be sent to the controller for compensation, suitable for high precision parts machining.

## Chip Management

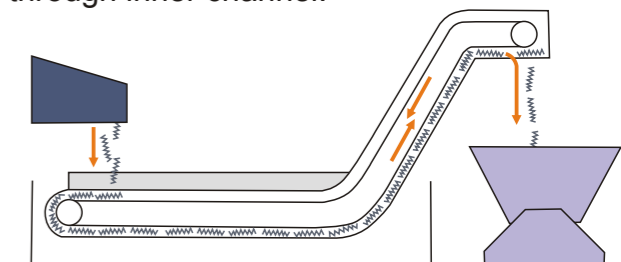
### 13 chain tynechip conveyor **OP**

Suitable for chip length from 30-150mm



### 14 scraper tynechip conveyor **OP**

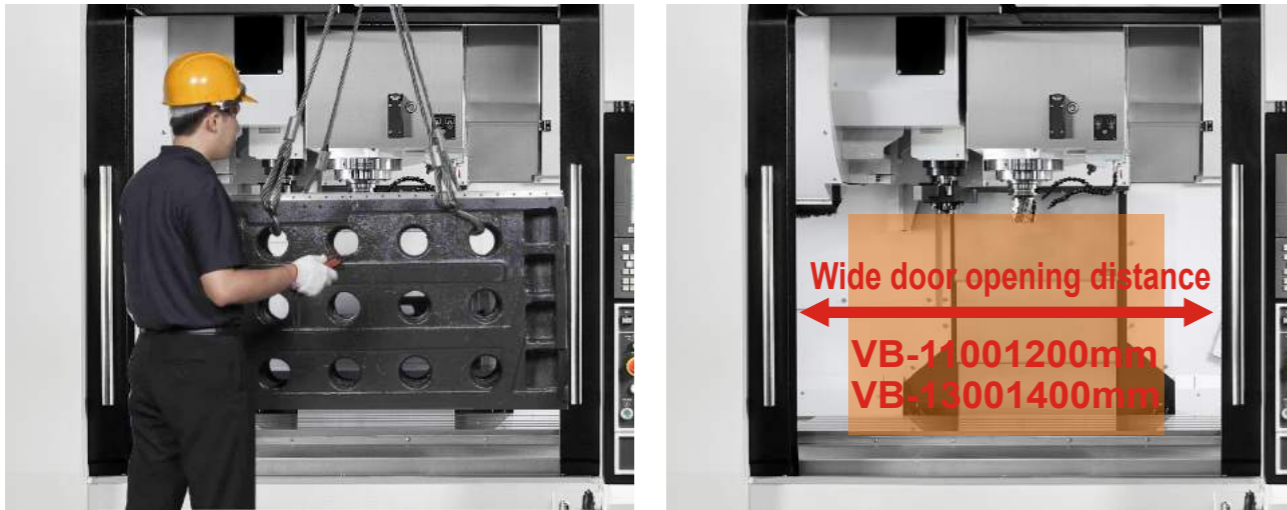
scraper tynechip conveyor can remove the long and curl chips through outer channel; and remove the coolant and small chips through inner channel.



# Standard Function - Optional Function

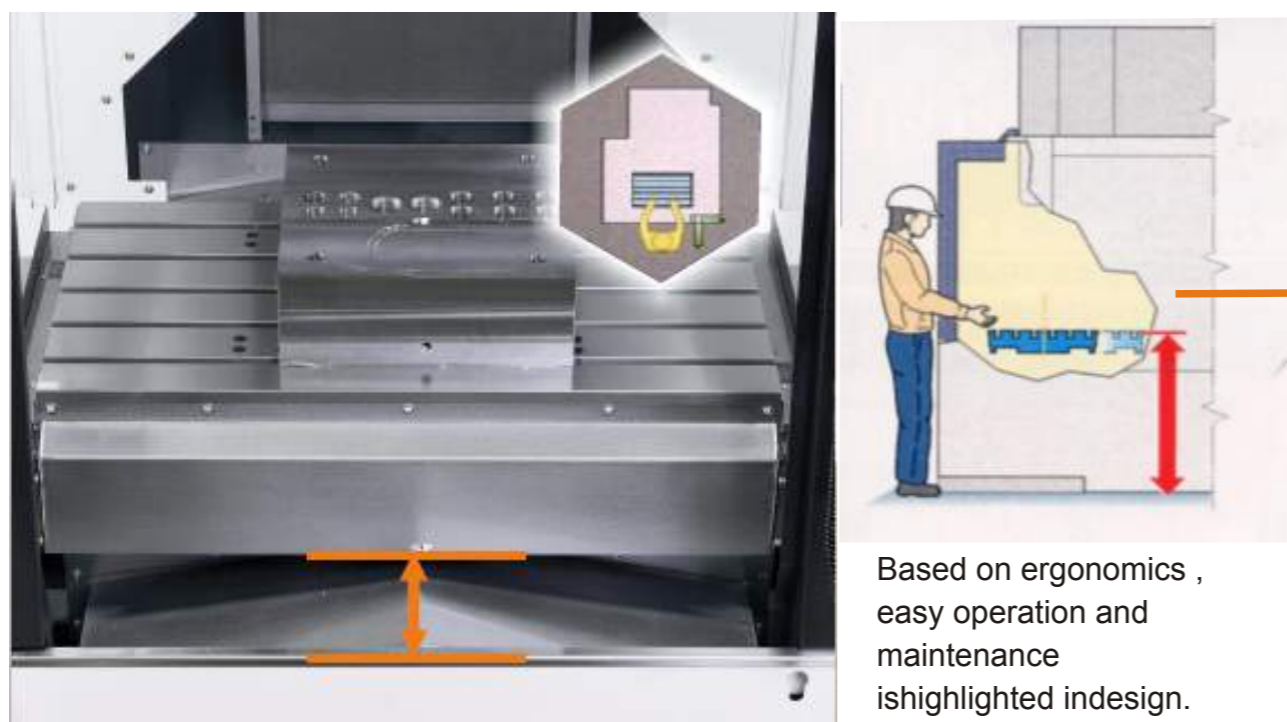
## Front and top door in one piece.

Wide opened front for easier loading/unloading.

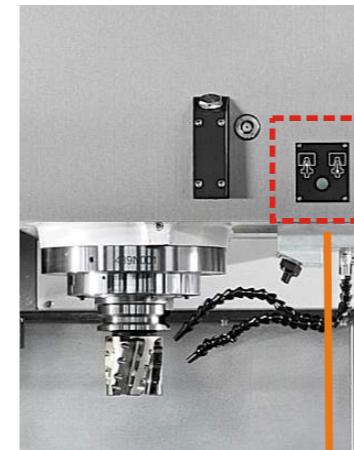


## Operator close to table and spindle.

Operator can easily approach workpiece.



## Tool clamp/unclamp button



Operator can easily clamp or unclamp the tool from the front.

## Rotatable operation panel



Ergonomic operation panel design.

## Full ATC guard

Full ATC guarding can prevent dust or chip go inside the ATC.

## Removable side doors.

Removable side doors help easier maintenance and clean.



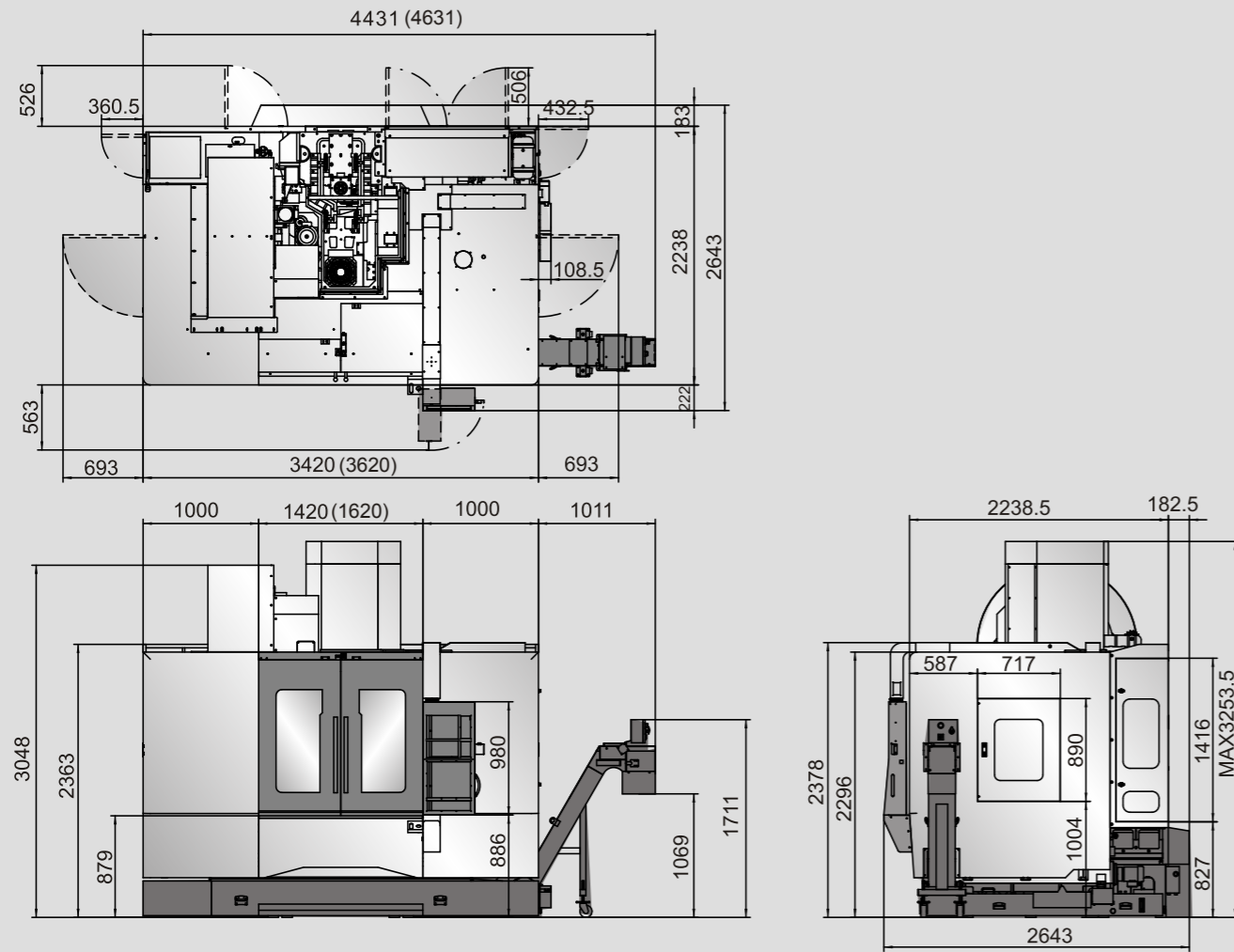
## Chip Cart



# Machine Layout

## Outline Dimensions VB-1100(VB-1300)

Unit: mm

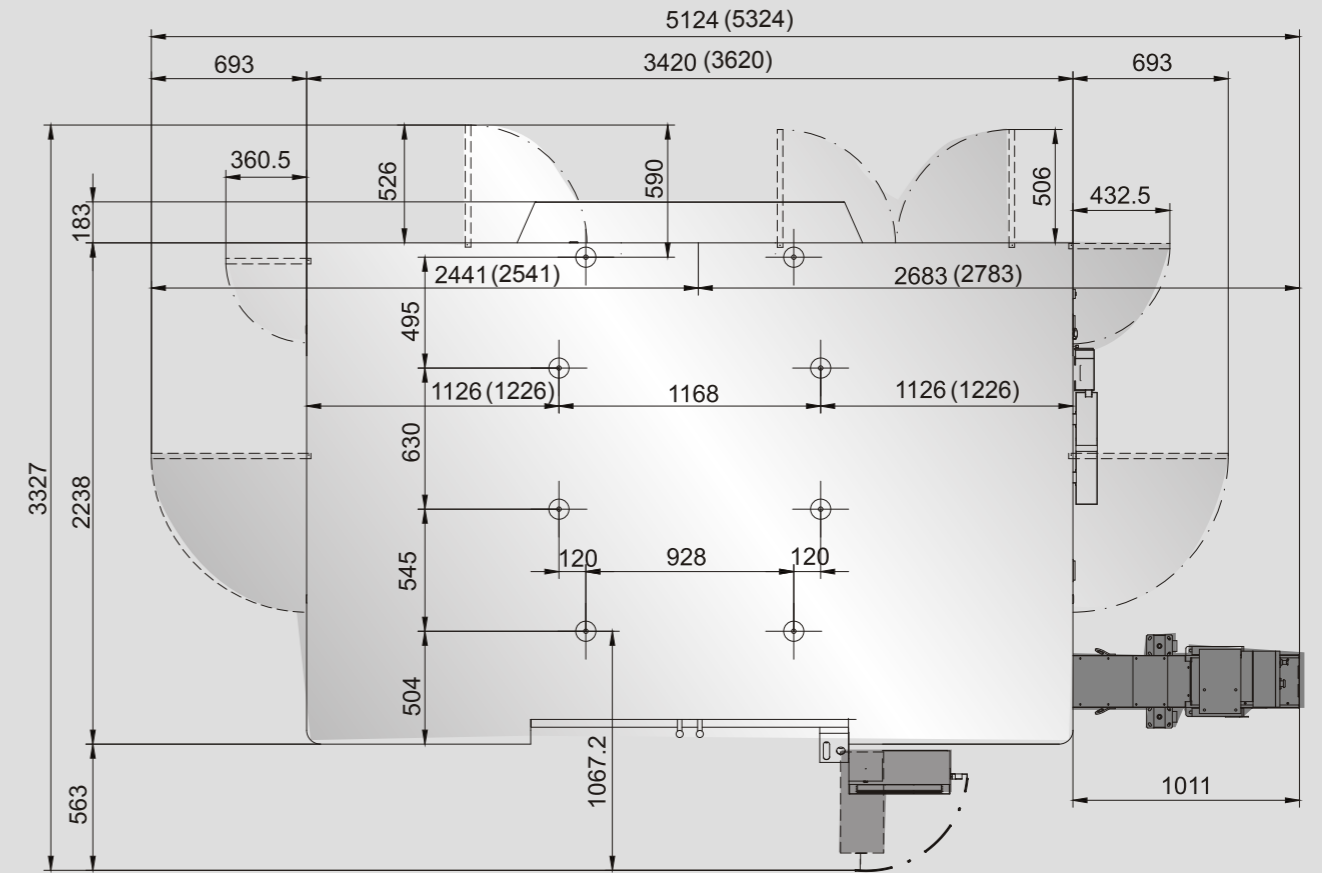


## Worktable Dimensions VB-1100(VB-1300)

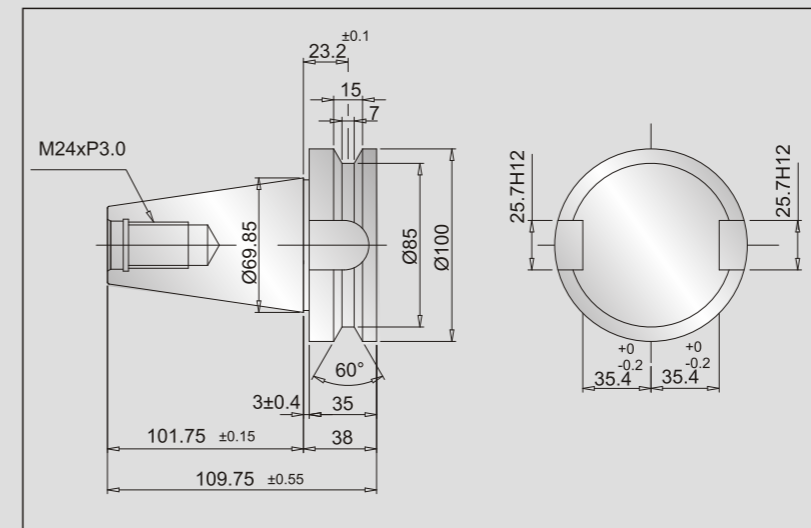


## Foundation drawing VB-1100(VB-1300)

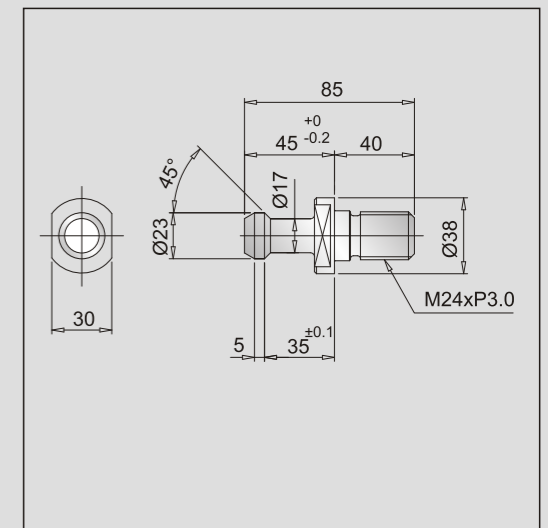
Unit: mm



## Tool Shank



## Pull Stud



(BT-50)



## Machine Specifications

		VB-1100B/BG		VB-1300B/BG	
<b>Travels for 3-axes</b>	X-axis Travel	mm	1100	1300	
	Y-axis Travel	mm	610	610	
	Z-axis Travel	mm	600	600	
	Spindle nose to worktable surface	mm	125~725	125~725	
	Spindle center to Z rail surface	mm	660	660	
	Table Center to Z axis rail surface	mm	355~965	355~965	
	Table surface to floor	mm	988	988	
<b>Spindle</b>	Spindle Speed	RPM	10000 (B) / 8000 (BG)		
<b>Automatic Tool Changing System</b>	Number of Tools	T	30	30	
	Max. tool length	mm	305	305	
	Max. tool weight	kg	15	15	
	Tool changing method		ARM	ARM	
	Tool specification		BT-50	BT-50	
<b>Worktable</b>	Worktable area	mm	1300x600	1500x600	
	Worktable max. load capacity	kg	1000	1000	
	Working area	mm	1100x600	1300x600	
	T-slot Width	mm	18	18	
	T-slot No.	mm	5	5	
	T-slot Distance from the center	mm	100	100	
<b>Rapid Speed</b>	X-axis rapid speed	M/min	30	30	
	Y-axis rapid speed	M/min	30	30	
	Z-axis rapid speed	M/min	24	24	
<b>Controller</b>			FANUC 0i-MF		FANUC 0i-MF
<b>Miscellaneous</b>	Machine Weight	Kg	9600	10000	
	Coolant Tank Capacity	L	416	450	
	Power Consumption	KVA	25	25	
	Compressed air source	kg/cm <sup>2</sup>	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.
- LITZ reserves the right to modify the product specifications, appearance, equipment or discontinue the products.

## Equipment List

<b>Spindle</b>	
Spindle speed: 8000RPM(BG)	●
Spindle speed: 10000RPM(B)	●
Spindle oil cooling system	●
Coolant through the spindle system (CTS)	○
Spindle dust-proof air-sealing system	●
<b>Cooling System</b>	
Spindle external programmable air blow system	●
Stop block for oil feed tool holder	○
Programmable coolant nozzle	●
Splash ring(arm type only)	●
Coolant cooling system	●
<b>Chip Removal System</b>	
Chip auger inside the machine	●
Chip conveyor	●
Chip cart	●
Coolant gun for machine cleaning	●
Air gun for machine cleaning	●
Wash down device	●
Fully-covered sheet metal	●
<b>Measurement System</b>	
Tool length measurement system	☆
Workpiece measurement system	☆
<b>Miscellaneous</b>	
Oil Mist Collector	○
<b>Oil/coolant separator</b>	
Disc type oil/coolant separator	○
Automatic Tool Changer Mechanism (ATC)	●
<b>ATC System</b>	
BT-50 tool specification	●
Arm type tool magazine 30T	●
Arm type tool magazine 40T	☆
<b>3-Axes Transmission System</b>	
3-axes linear scale	○
Counter weight central guide device	●
<b>Controller</b>	
Mitsubishi M80	○
FANUC 0iMF	●
Siemens 828D	○
<b>Electrical Parts</b>	
Work light	●
Alarm indicator	●
M30 automatic power off system	●
Heater exchanger for electrical cabinet	●
Air-conditioner for electrical cabinet	○
<b>Miscellaneous</b>	
4th Axis (rotating table)	☆○

● Standard    ○ Options    ☆ Upon request

# 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.

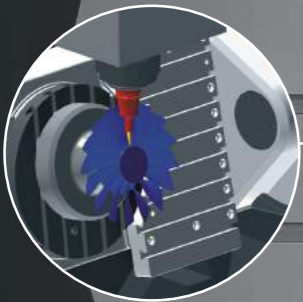


## Heidenhain & Siemens Control System

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

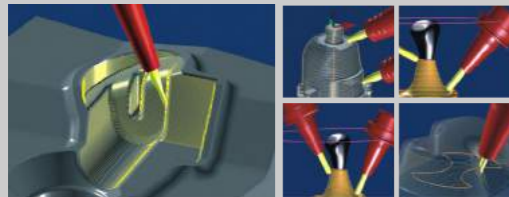


## MST Tools (Japan)



## 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



[www.litzhitech.com](http://www.litzhitech.com)