VMC

SINO
CNC MACHINERY

SINCE 1928

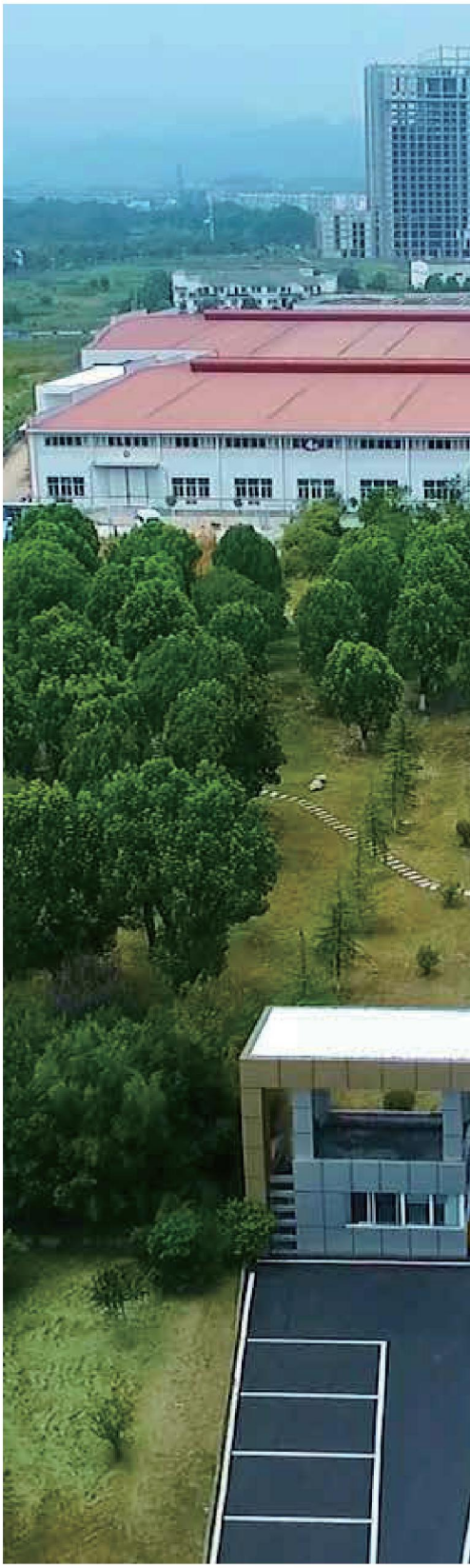
ABOUT US

Sino Machinery Co., Ltd. is a leading milling process solution supplier in China. It is the new name of Huangshan Wannan Machinery Co., Ltd. who was established in 1928. Start with conventional milling machine, it develops into a National High-tech Enterprise which has independent R&d ability on CNC knee-type milling machine, vertical machining center, horizontal machining center and double-column machining center.

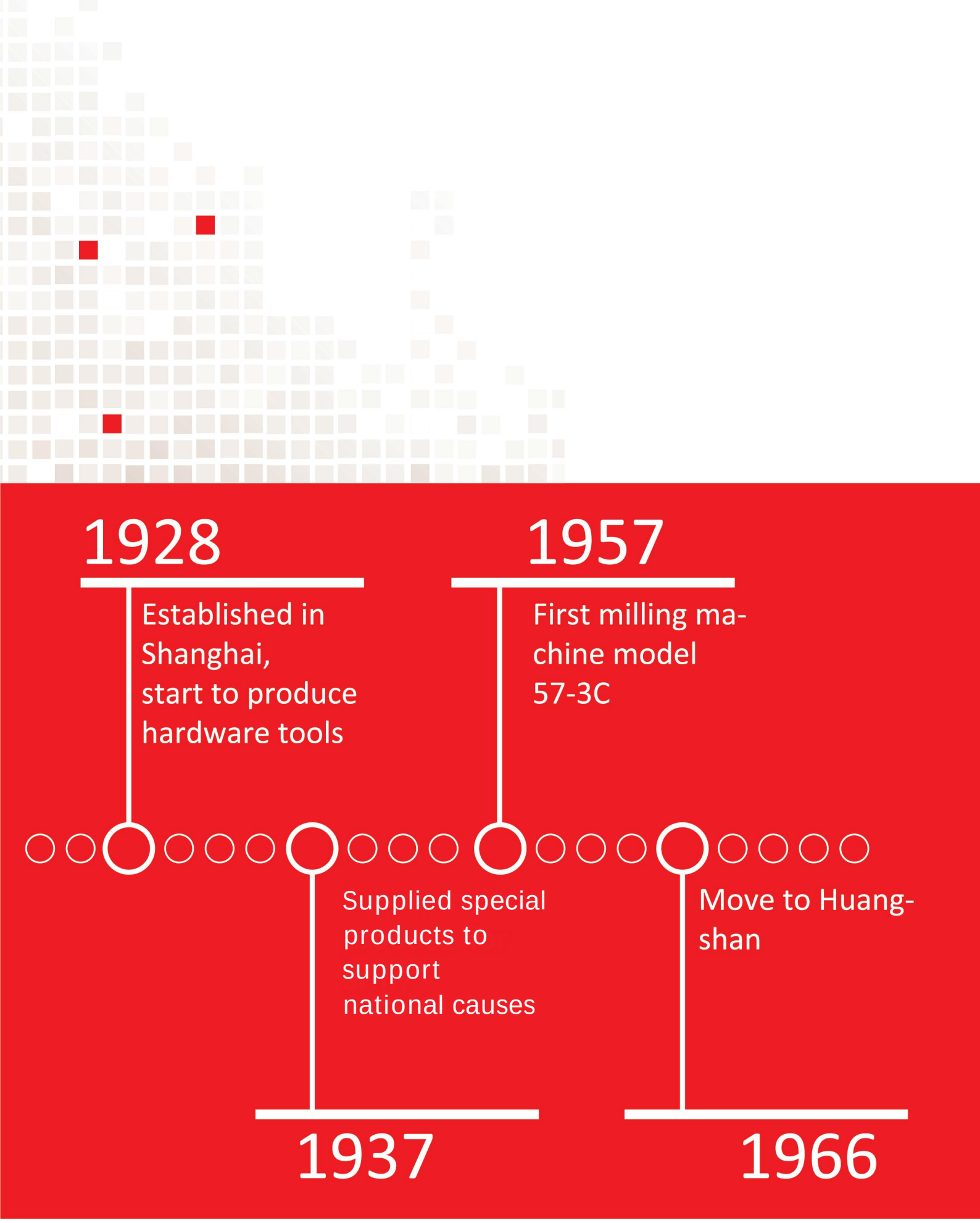
Sino covers an area of 138800 square meter and locates at the world's natural and cultural heritage protected area-Yellow Mountain. People here are sincere and loyal, a lot of them devoted their whole life to accumulate technical experience and developed along with company.

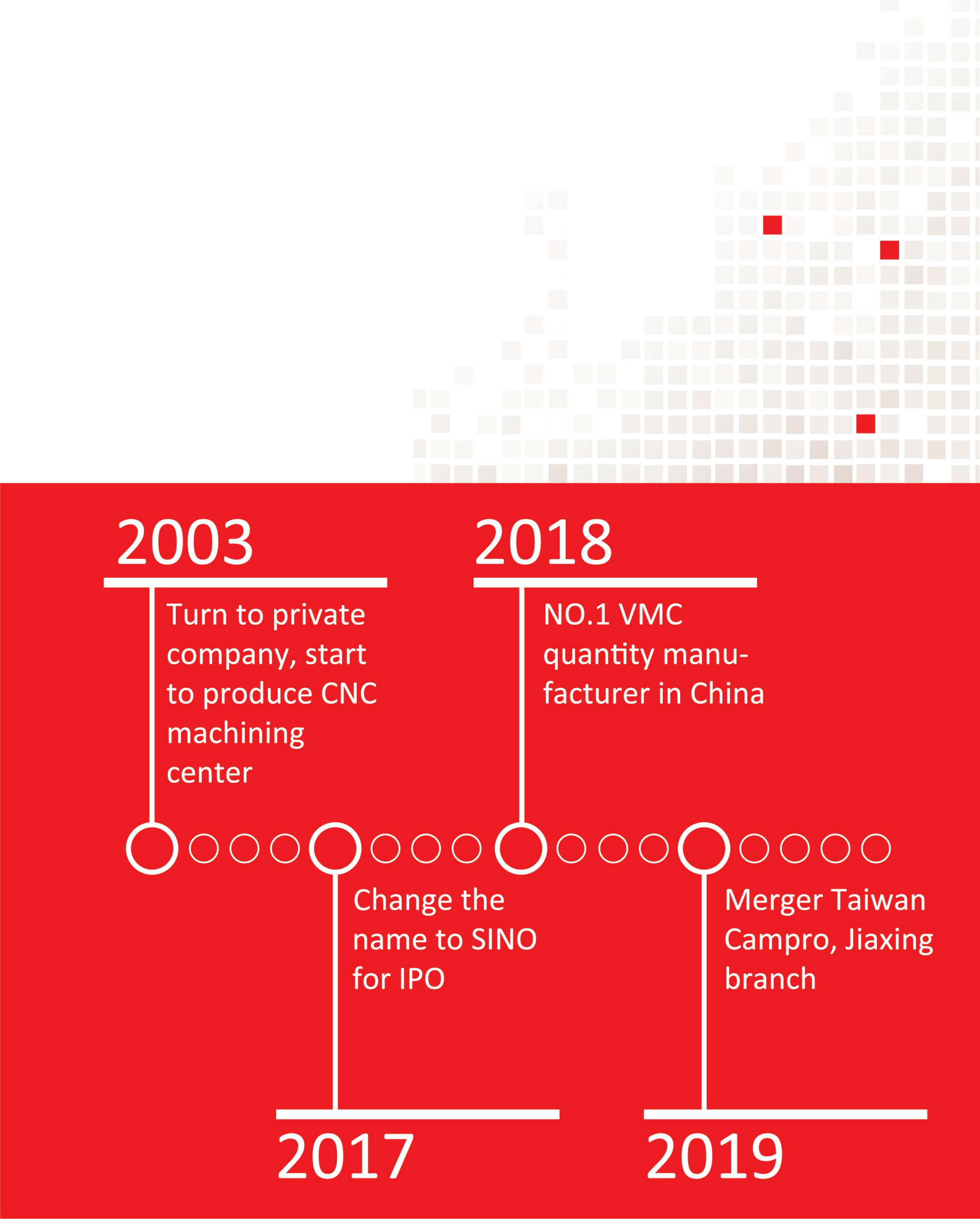
"Professional, creative, responsible, enthusiastic, efficient, philanthropic" is our company philosophy which guides us to take the rapid growth and keen creation as mission. Cooperated with Germany, Japan, Taiwan technical research institution, Sino keeps enhancing the ability on professional customization, creative R&D, efficient delivery and 7*24 hours after-sale service to meet different customer needs all over the world.

In future, we are ready to counter ever changing challenge, just like past 90 years.




新诺精工


1928
Established in Shanghai, start to produce hardware tools
1937
Supplied special products to support national causes
1957
First milling machine model 57-3C
1966
Move to Huangshan


2003
Turn to private company, start to produce CNC machining center
2017
Change the name to SINO for IPO
2018
NO.1 VMC quantity manu-facturer in China
2019
Merger Taiwan Campro, Jiaxing branch

01
SINO SV

SV Series Brief Introduction

Newly Upgraded Vertical Machining Center

Best Intergration of Rigidity, Stability & Accuracy

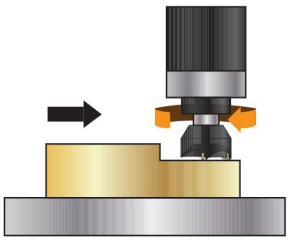
- Combined with Japan design concept, SINO Taiwan technical team researched and developed the new SV series machines which were designed, processed, assembled, tested and formed know how in Taiwan.

- Special design highlights for different models offer better machining performance and range among same level machines.

- Spindle is optional in belt type, direct type, built-in type and gear head type to meet the diverse processing needs of customers.

SVB650

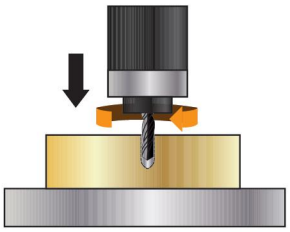
FACE MILL (Material: C45)	
Tool diameter	ϕ100-7Z
Cutting depth	4 mm
Cutting width	80 mm
Cutting speed	300 mm/min
Spindle rpm	800 r/min
Material remove rate	96 cm^3/min



SVB1270

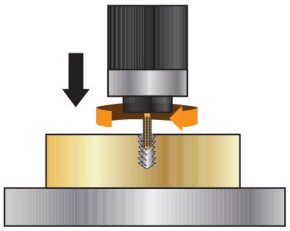
FACE MILL (Material: C45)	
Tool diameter	ϕ100-7Z
Cutting depth	6 mm
Cutting width	80 mm
Cutting speed	900 mm/min
Spindle rpm	600 r/min
Material remove rate	432 cm^3/min

DRILL (Material: C45)	
Tool diameter	ϕ37 U drill
Bore depth	60 mm
Cutting speed	120 mm/min
Spindle rpm	1200 r/min
Material remove rate	129 cm^3/min



DRILL (Material: C45)	
Tool diameter	ϕ59 U drill
Bore depth	70 mm
Cutting speed	100 mm/min
Spindle rpm	1000 r/min
Material remove rate	385 cm^3/min

TAP (Material: C45)	
Tap spec./ pitch	M24xP3.0
Cutting depth	60 mm
Cutting speed	1200 mm/min
Spindle rpm	400 r/min
Spindle load	122 %



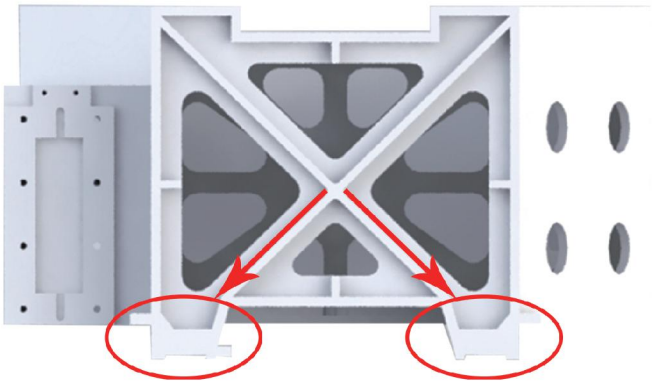
TAP (Material: C45)	
Tap spec./ pitch	M36xP4.0
Cutting depth	60 mm
Cutting speed	800 mm/min
Spindle rpm	200 r/min
Spindle load	100 %

Sample Process

02 SINO SV

SV Series Basic Features

Specially Highlighted Design Vertical Machining Center

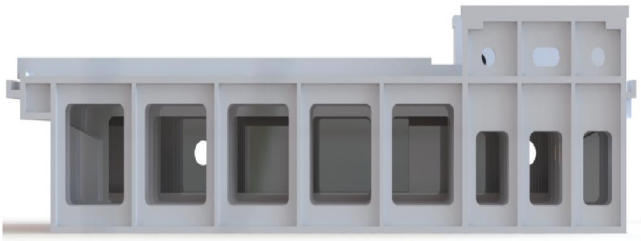


01 Column

The reinforcing ribs inside can not only ensure strong rigidity of column itself but also support the linear guideway.

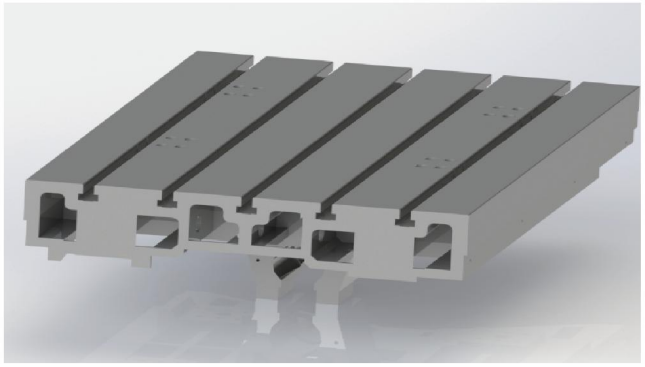
02 Machine Base

More reinforcing ribs inside offer better load bearing and stability.



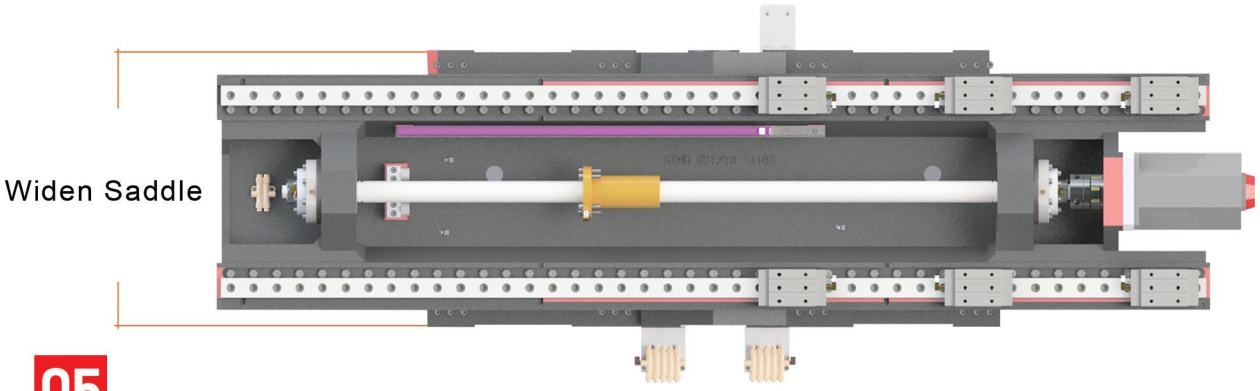
03 Worktable

Double-layer structure improves the worktable rigidity. The hardening surface makes wearability resistance is further improved and prolongs the stability of machine's performance.



04 Linear Motion Slider

Lengthened and heavier load linear guideway sliders than normal designed offer better dynamic loading performance. Dynamic rating load improved 22% while static rating load improved 33%.

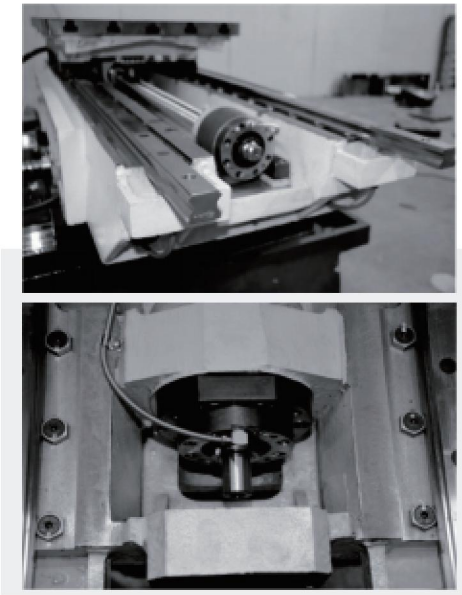


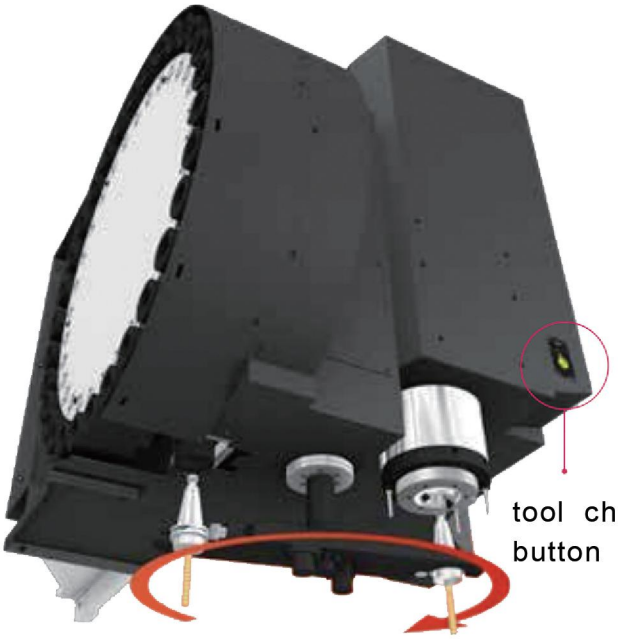
05
Saddle

Widen saddle offers full support to worktable and X travel. Intergrated housing improves the rigidity and stability of machine.

06
Ballscrew

Preloaded and double supported ball screw ensure outstanding positioning and repeatability with virtually no thermal growth. Bearings are lubricated by thin oil. Motor housing with maze design can prevent leakage efficiently.





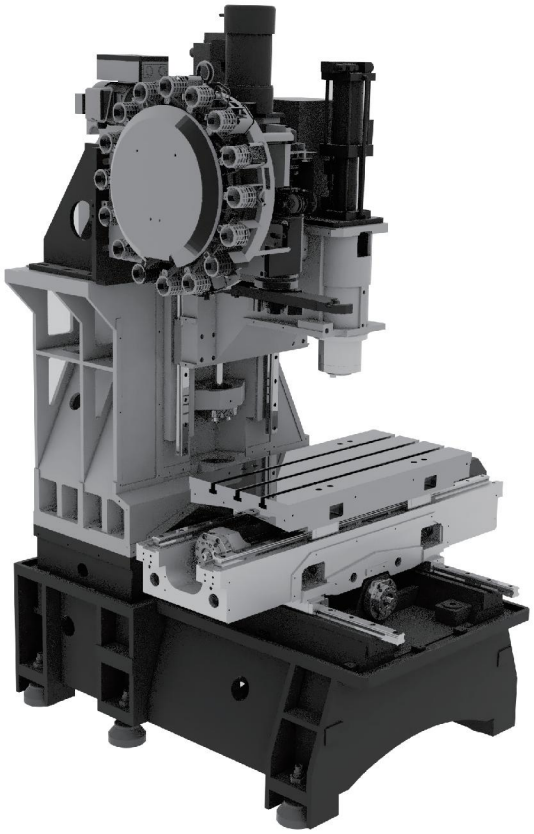
07
Frequency Tool Magazine

Standard equipped with frequency tool magazine shorten tool changing time, improve the machining efficiency and lower maintenance cost.

03
SV500/650

SV 500/650 Basic Features

High Precision High Speed Vertical Machining Center



Spindle Type

SVB Belt type spindle 8000/10000rpm
SVD Direct drive spindle 12000/15000rpm

Rapid Traverse Rate(X /Y/Z axis)

48/48/32m/min

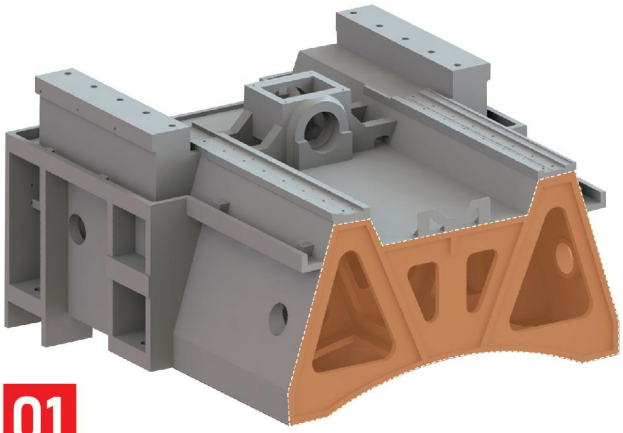
Travel (X /Y/Z axis)

SV 500 500/400/500mm
SV 650 650/400/500mm

Worktable & Machining Area

SV 500

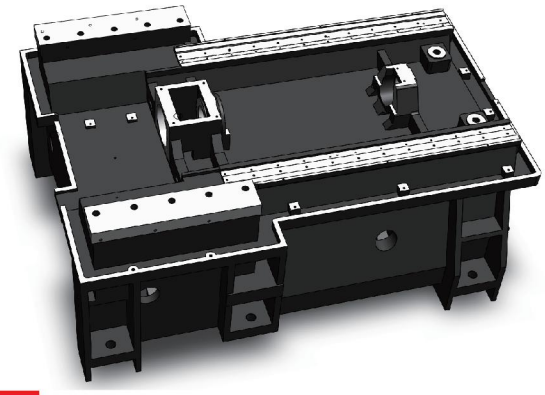
SV 650



01

Machine Base

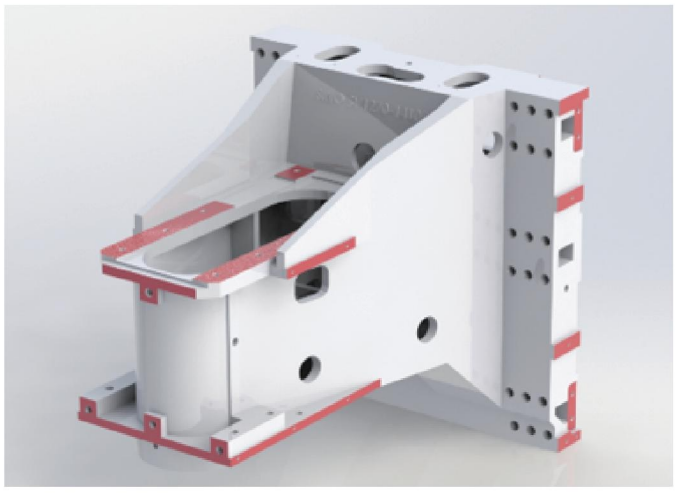
More reinforcing ribs inside offer better load bearing and stability.

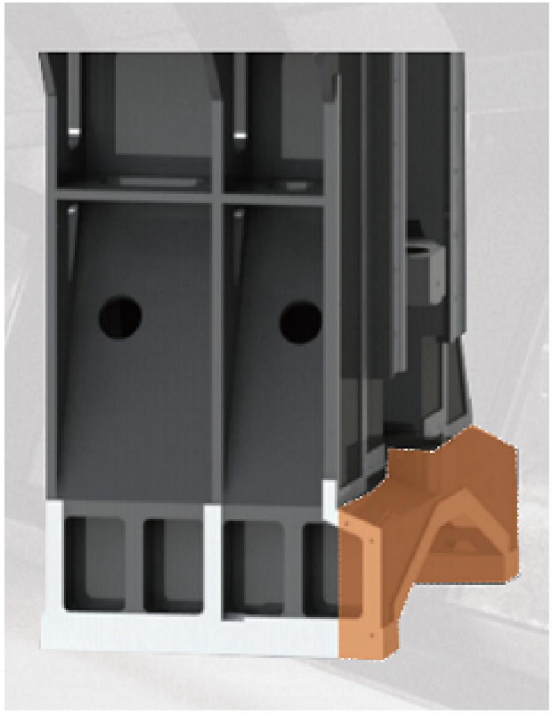


02

Intergrated Bearing Housing

Intergrated ballscrew bearing housing design offers better machine rigidity and long stay accuracy.





03

Enlarged Column Base

Convex design of column base enlarged the contact ratio between column and machine base which ensure enough rigidity during processing.

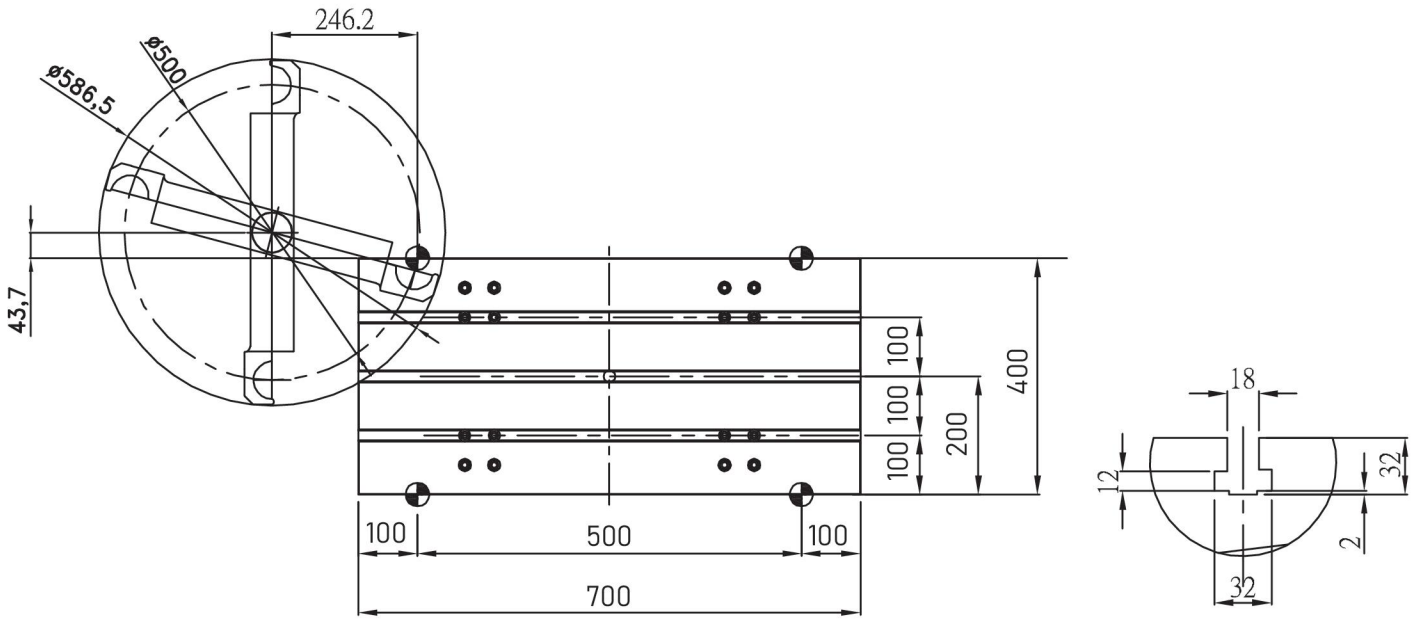
04

Spindle

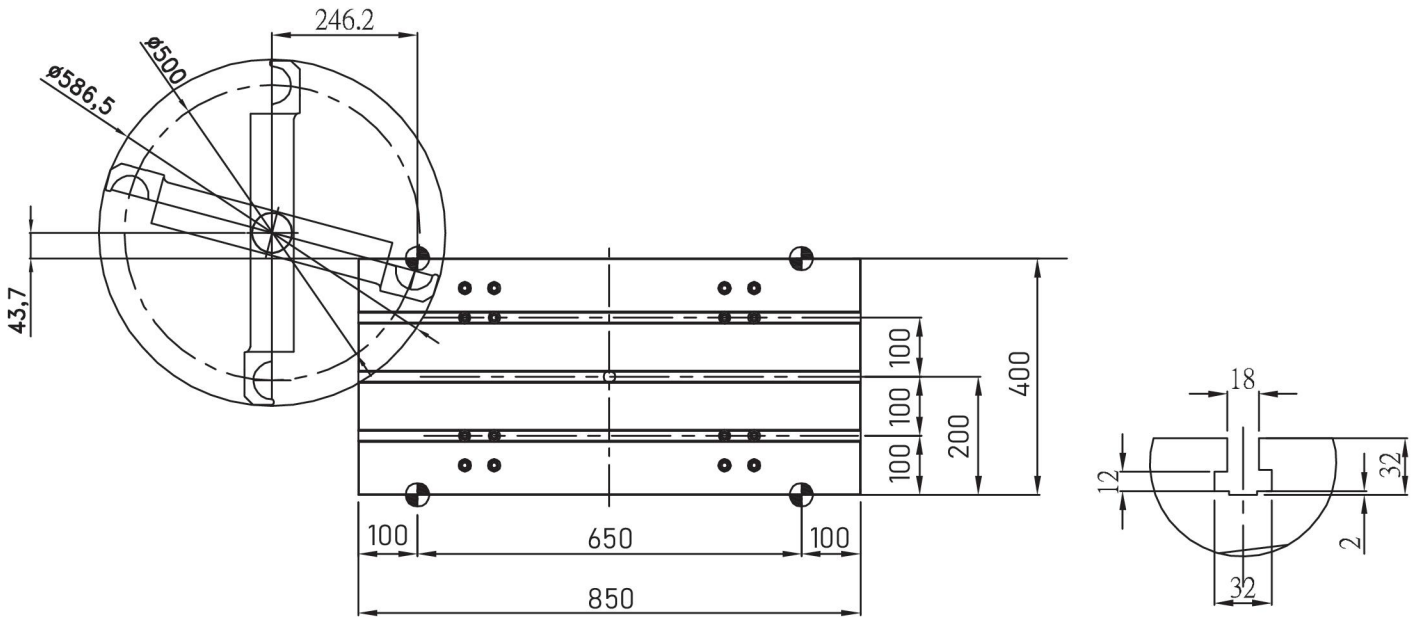
- Spindle case in special appearance acheive lightweight. Its fully enclosed design protects belt from pollution and also reduce belt noise.
- Enlarged contact ratio between spindle case and column ensures high torque.
- BT40-ϕ120 long nose spindle offers diverse processing demands.

SPECIFICATIONS

SV 500



SV 650

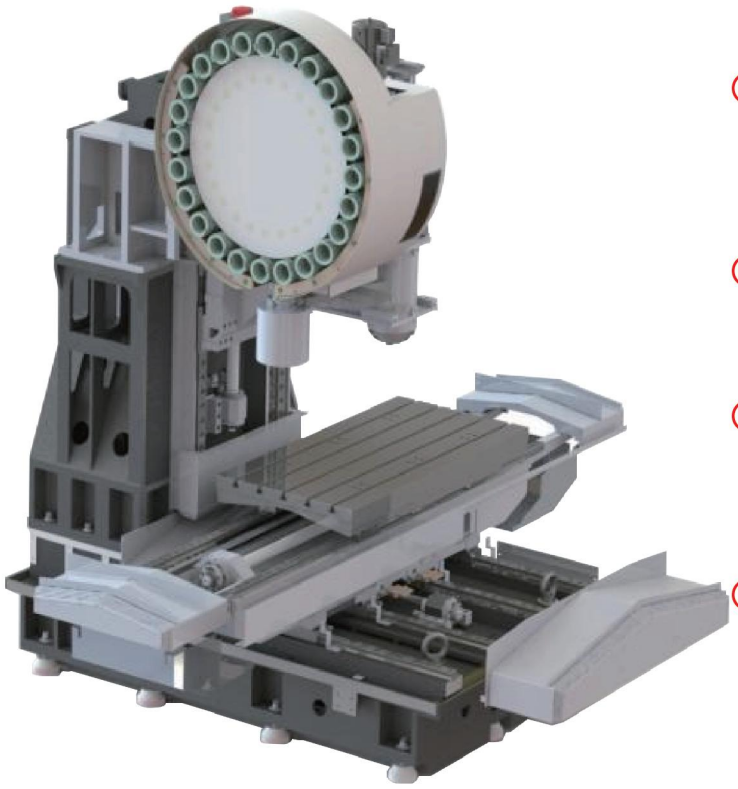


SPECIFICATIONS

ITEM			SVB500	SVD500	SVB650	SVD650
Table	Table size	mm	700x400		850x400	
	Max. load capacity	kg	300		400	
	T-slots	mm	3x18-100			
	Distance from table surface to spindle	mm	100-600			
	Distance from table to floor	mm	900			
Spindle	Spindle taper		BT40			
	Spindle rpm	rpm	8000	12000	8000	12000
	Spindle power output	kw	5.5/7.5		7.5/11	5.5/7.5
	Spindle torque(FANUC)	N.M	26.3		35.8	26.3
	Spindle driving method		belt	direct	belt	direct
Feed	Travel (X/Y/Z)	mm	500/400/500		650/400/500	
	Distance from column to spindle center	mm	451			
	Rapid traverse rate	m/min	48/48/32			
	Slide type		LM guide			
ATC	Number of tools	T	16			
	Max, tool diameter	mm	78/120			
	Max, tool length	mm	220			
	Max tool weight	kg	8			
	Tool change time	sec	2.5			
Accuracy	Positioning accuracy	mm	0.008			
	Re-positioning accuracy	mm	0.005			
Power supply	Air consumption	kg	6-8			
	Electric power supply	KVA	15			
	Voltage	V/HZ	380/50			
Machine	Machine dimension	mm	2100x2100x2550			
	Machine weight	kg	3900		4100	

SV 1270/1470 Basic Features

Specially Highlighted Design Vertical Machining Center



Spindle Type

SVB Belt type spindle BT50 6000rpm
SVD Direct drive spindle BT40 12000rpm

Rapid Traverse Rate (X/Y/Z axis)

24/24/20 m/min

Travel (X /Y/Z axis)

SV 1270 1200/700/700mm
SV 1470 1400/700/700mm

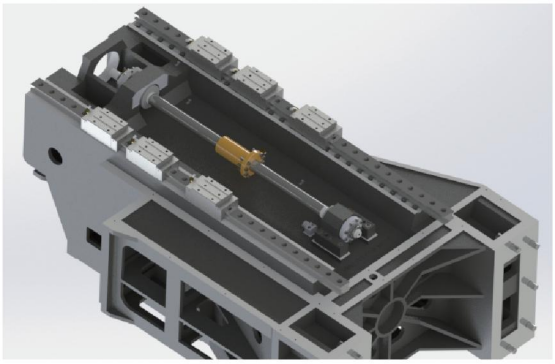
Chip conveyor

2 screw type conveyors inside
1 chain type conveyor outside

Worktable & Machining Area

SV 1270

SV 1470



01

Column

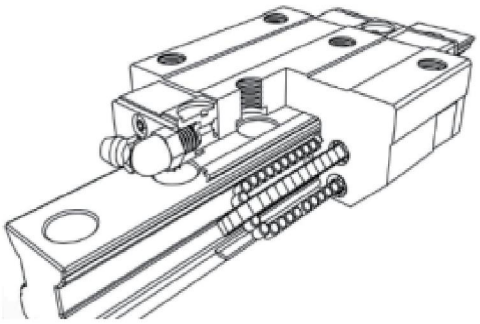
Large span designed cloumn fixed with machine base by double row screws

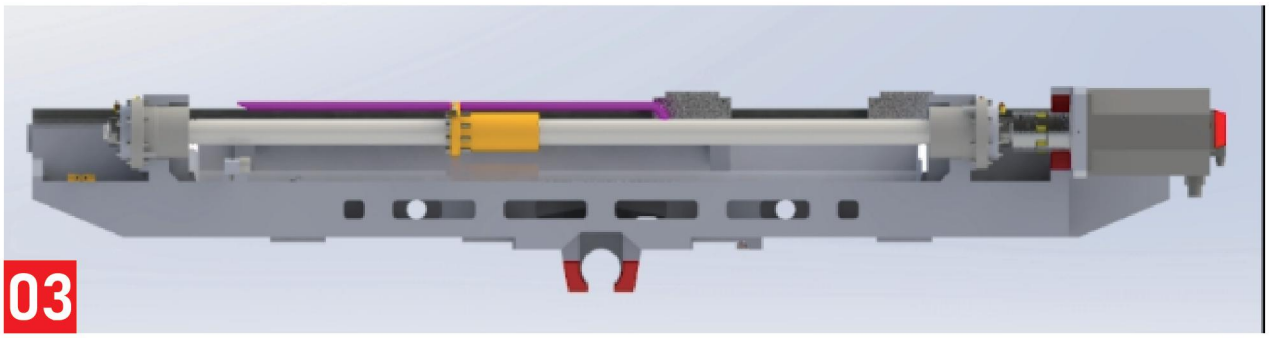
02

Roller Type LM Guideway

3 axes are standard with roller linear guideway.

X axis: 2*45 roller linear guideways and 6 sliders
Y axis: 4*45 roller linear guideways and 8 sliders
Z axis: 2*55 roller linear guideway and 6 sliders

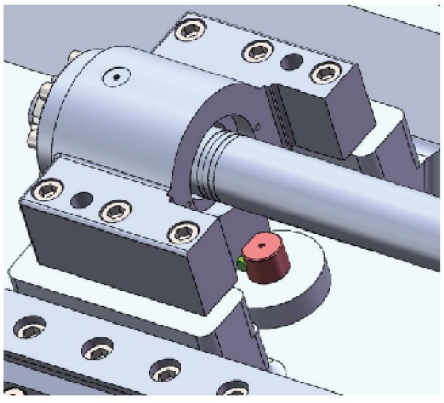




03

Ball Screw and Bearing

- Preloaded and double supported double nuts ball screw ensure outstanding positioning and repeatability with virtually no thermal growth.
- Spacer rings among bearings extend support length and sufficient lubrication. Motor housing with maze design can prevent leakage efficiently.



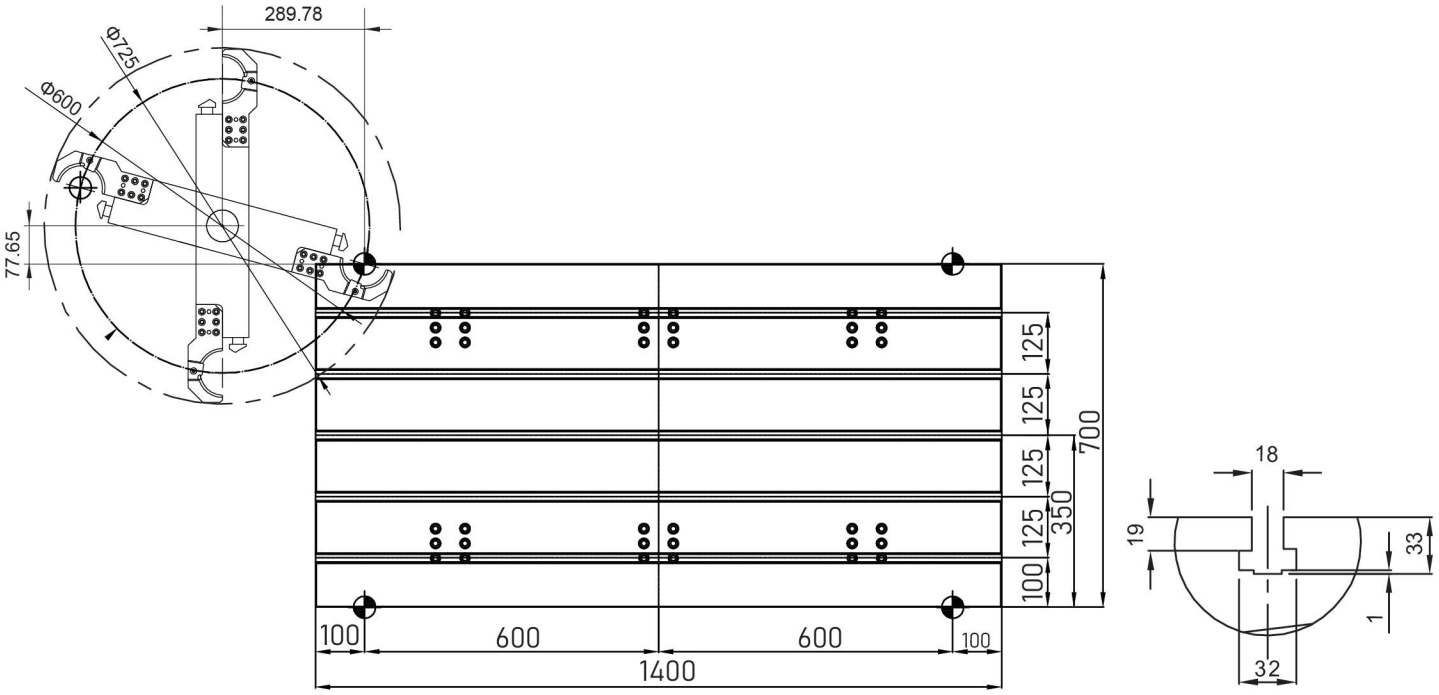
04

Special Pin

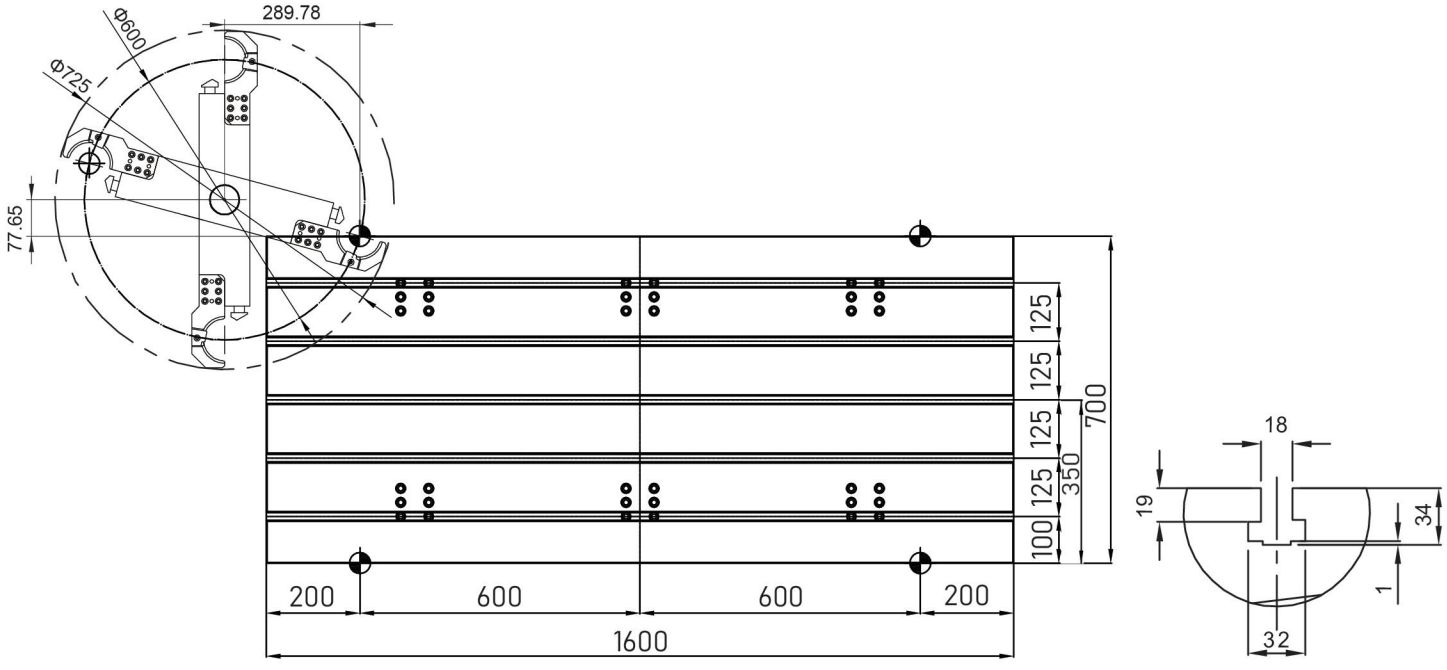
Additional fixed pin is used to avoid the axial movement of bearings which improves leadscrew's rigidity.

SPECIFICATIONS

SV 1270



SV 1470



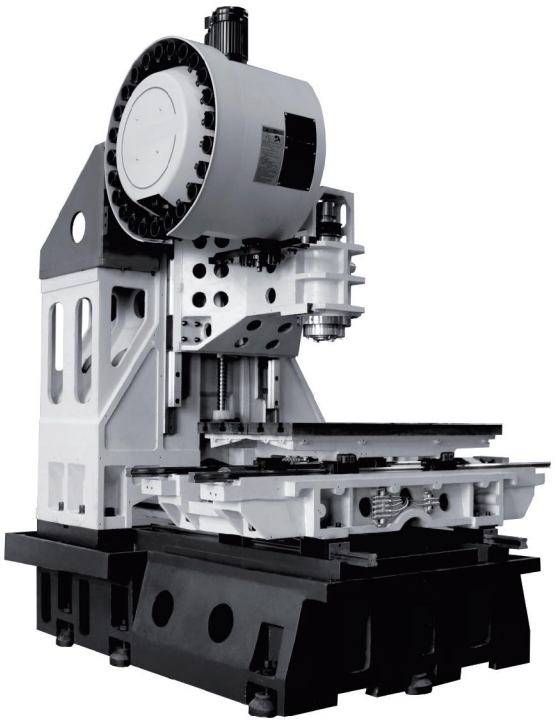
SPECIFICATIONS

ITEM			SVB1270	SVD1270	SVB1470	SVD1470
Table	Table size	mm	1400x700		1600x700	
	Max. Load capacity	kg	1000		1200	
	T-slots	mm	5x18-125		5x18-125	
	Distance from table surface to spindle	mm	150-850	130-830	150-850	130-830
Spindle	Spindle taper		BT50	BT40	BT50	BT40
	Spindle speed	rpm	6000	12000	6000	12000
	Spindle power output	kw	15/18.5	11/15	15/18.5	11/15
	Spindle torque(FANUC)	N.M	143	52.5	143	52.5
	Spindle driving method		belt	direct	belt	direct
Feed	Travel (X/Y/Z)	mm	1200/700/700		1400/700/700	
	Distance from column to spindle center	mm	766		766	
	Rapid traverse rate	m/min	24/24/20		24/24/20	
	Slide type		Roller LM guide			
ATC	Number of tools	T	24		24	
	Max. Tool diameter	mm	110	80	110	80
	Max. Tool length	mm	350	300	350	300
	Max. Tool weight	kg	15	8	15	8
	Tool change time	sec	3.5	2.5	3.5	2.5
Accuracy	Positioning accuracy	mm	0.012	0.012	0.012	0.012
	Re-positioning accuracy	mm	0.005	0.005	0.005	0.005
Power supply	Air consumption	kg	6-8	6-8	6-8	6-8
	Electric power supply	KVA	20	20	20	20
	Voltage	V/HZ	380/50	380/50	380/50	380/50
Machine	Machine dimension	mm	3350*2860*3160	3550*2860*3160	3850*2860*3160	3850*2860*3160
	Machine weight	kg	9700	9700	10000	10000

05 P Series Basic Features

VMC850P/VMC1000P

Best Performance & Top Selling Vertical Machining Center



- **Spindle type**
  VMC850P/VMC1000P Belt type spindle 8000/10000rpm
  V8P/V10P Direct drive spindle 12000/15000rpm

- **Rapid Traverse Rate (X/Y/Z axis)**
  48/48/32 m/min

- **Travel (X/Y/Z axis)**
  VMC850P 850/500/550 mm
  VMC1000P 1000/520/535 mm

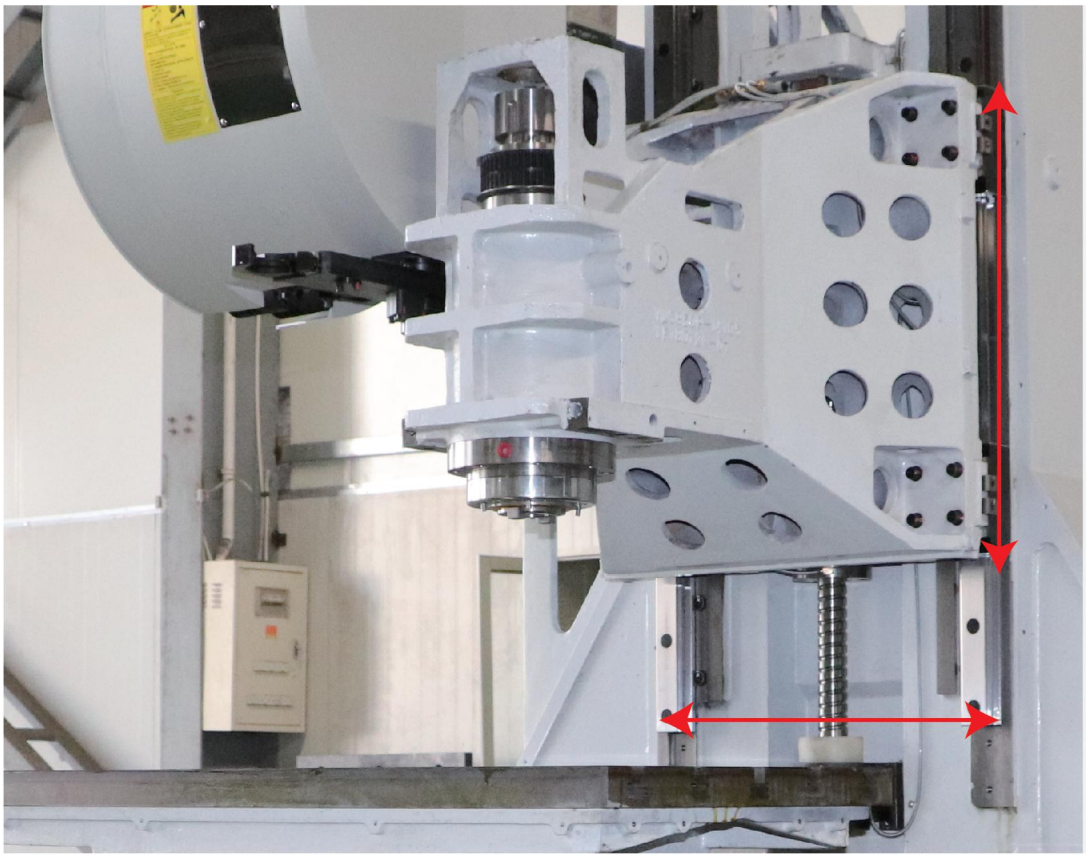
Worktable & Machining Area

VMC850P

VMC1000P

Best Performance & Top Selling Vertical Machining Center

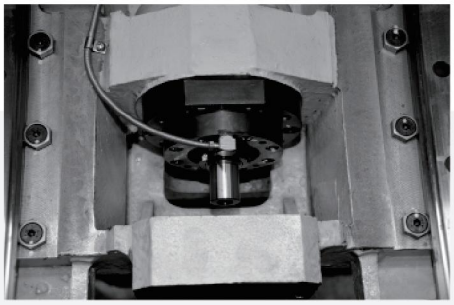
P series is the top selling machine series due to its excellent intergrated machining performance on rigidity and accuracy. It is designed by SINO independent RED department who collects enough feedback from nearly 10000 sets SINO VMC in the market.

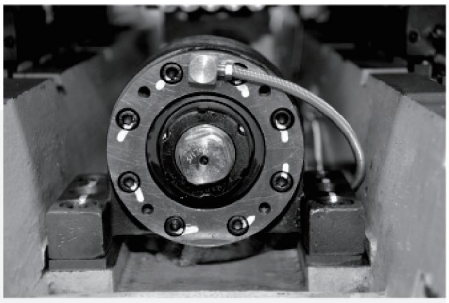


01

High power, high torque headstock

Large span of Z axis guideway and big contact ratio between spindle case and column ensure a high torque of headstock.





02

Preloaded and double anchored ball screw

3+2 precision angular contact bearing ensure outstanding positioning and repeatability with virtually no thermal growth.

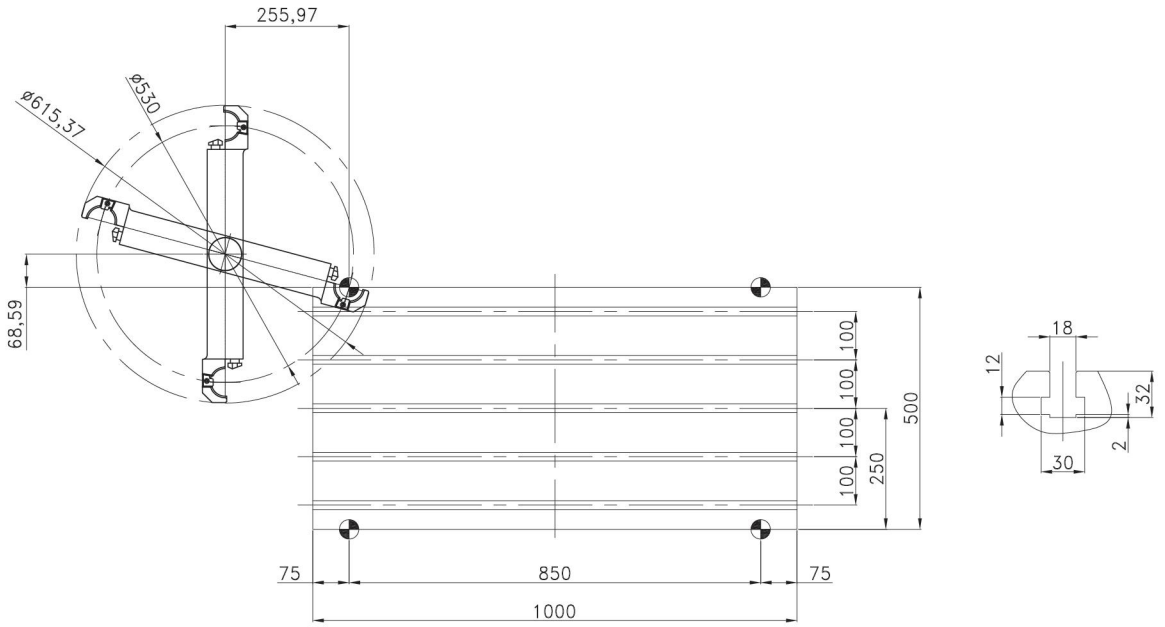
Intergrated ball screw housing ensure long stay accuracy.

SPECIFICATIONS

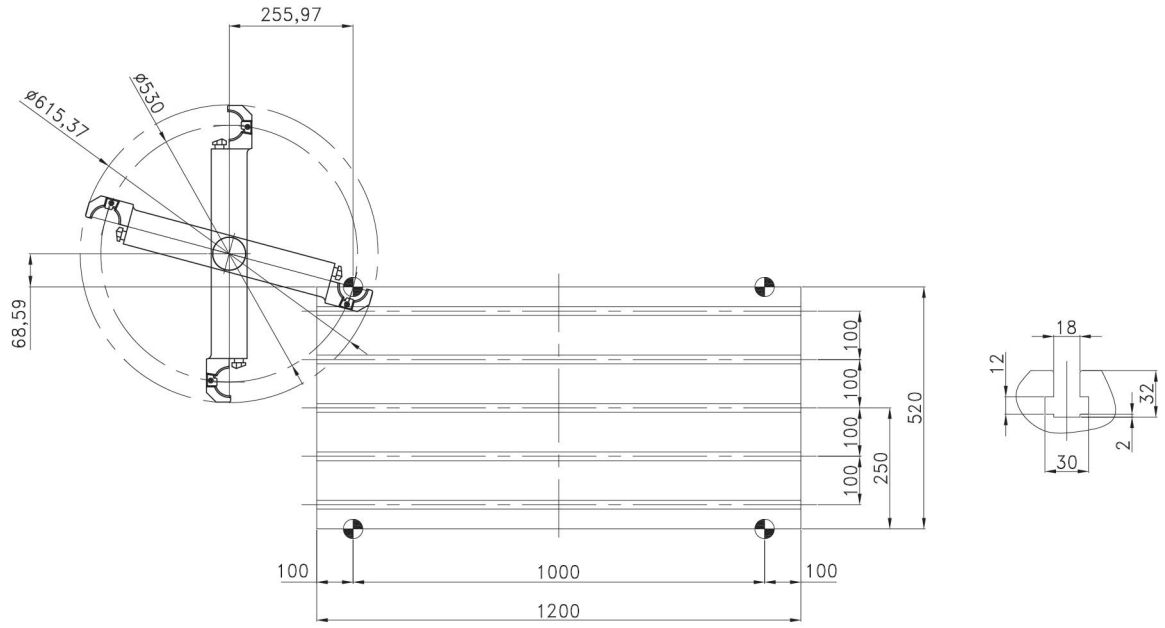
ITEM			VMC850P	V8P	VMC1000P	V10P
Table	Table size	mm	1000x500		1200x520	
	Max. load capacity	kg	500		700	
	T-slots	mm	5x18-100		5x18-100	
	Distance from table surface to spindle	mm	100-650	120-670	80-615	100-635
	Distance from table to floor	mm	900		900	
Spindle	Spindle taper		BT40		BT40	
	Spindle rpm	rpm	8000	12000	8000	12000
	Spindle power output	kw	11/15	7.5/11	11/15	7.5/11
	Spindle torque (FANUC)	N.M	52.5	35.8	52.5	35.8
	Spindle driving method		belt	direct	belt	direct
Feed	Travel (X/Y/Z)	mm	850/500/550		1000/520/535	
	Distance from column to spindle center	mm	582		582	
	Rapid traverse rate	m/min	48/48/32		48/48/32	
	Slide type		LM guide		LM guide	
ATC	Number of tools	T	24		24	
	Max. tool diameter	mm	78/120		78/120	
	Max. tool length	mm	300		300	
	Max. tool weight	kg	8		8	
	Tool change time	sec	2.5		2.5	
Accuracy	Positioning accuracy	mm	0.008		0.008	
	Re-positioning accuracy	mm	0.005		0.005	
Power supply	Air consumption	kg	6-8		6-8	
	Electric power supply	KVA	20		20	
	Voltage	V/HZ	380/50		380/50	
Machine	Machine dimension	mm	2460×2355×2860		2660×2355×2860	
	Machine weight	kg	5500		5800	

SPECIFICATIONS

VMC850P



VMC1000P



06 B Series Basic Features

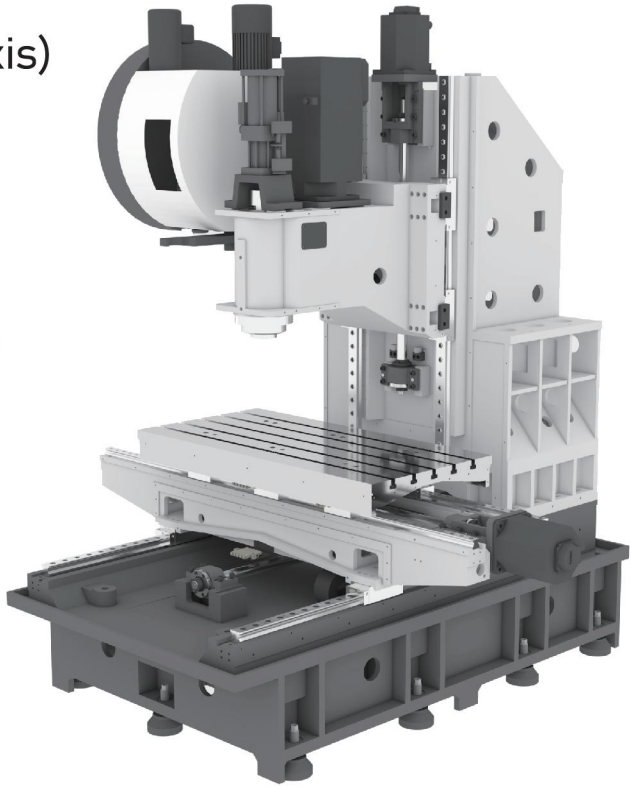
VMC1060B/VMC1160B

Strong Rigidity & High Productivity Vertical Machining Center

- **Spindle type**
  VMC1060B/VMC1160B Belt type spindle 8000/10000rpm
  V10B/V11B Direct drive spindle 10000/12000/15000rpm

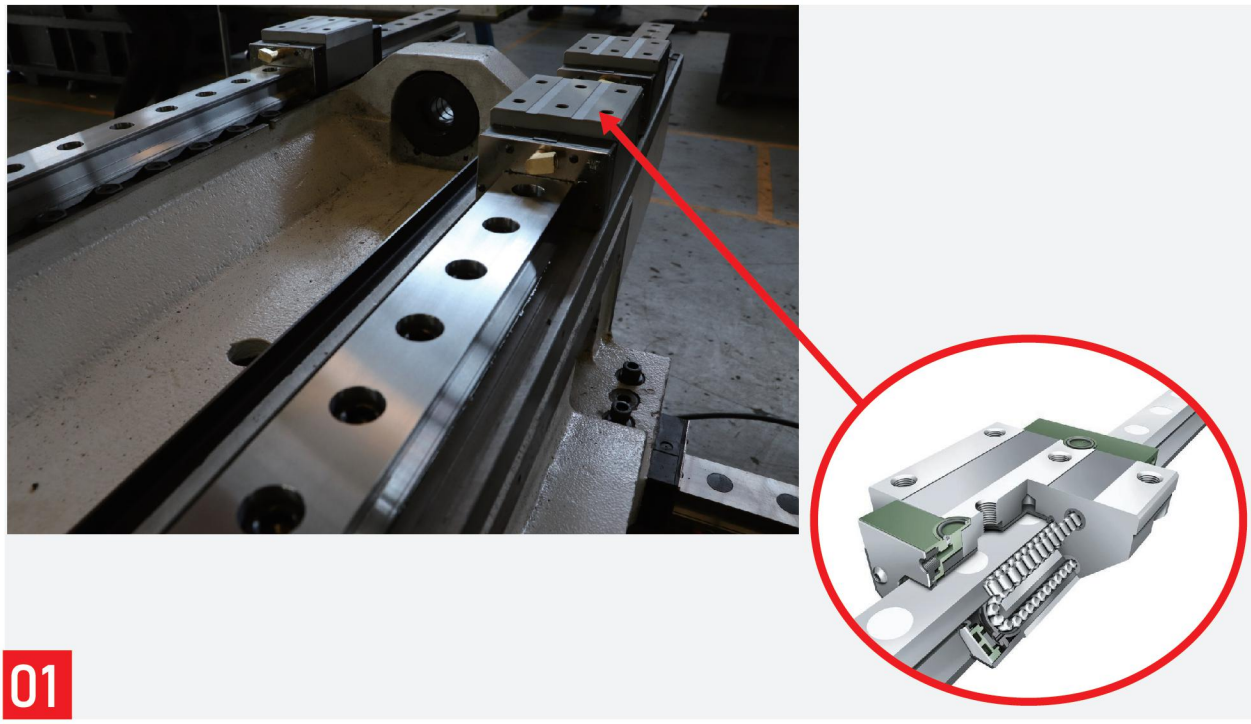
- **Rapid Traverse Rate (X/Y/Z axis)**
  36/36/32 m/min

- **Travel (X/Y/Z axis)**
  VMC1060B 1000/620/630 mm
  VMC1160B 1100/610/630 mm



Strong Rigidity & High Productivity Vertical Machining Center

- B series is featuring high rigidity, heavy cutting ability and high operability. The strong base column construction has optimally-placed ribs to counter chatter and twisting during heavy-duty cutting. With three axis roller linear guideway and wide area motor, this vertical machining center can perform heavy-duty cutting and high-speed machining with high torque from low to high speeds.



01

Roller Type LM Guide

By roller linear contacting, the LM guideway can offer a better rigidity which ensure the fast feed rate and reduce cutting time.

02

Short Nose Spindle and Wide Area Motor

BT40-150mm short nose spindle equipped with wide area motor offers a better rigidity on machining.

Worktable & Machining Area

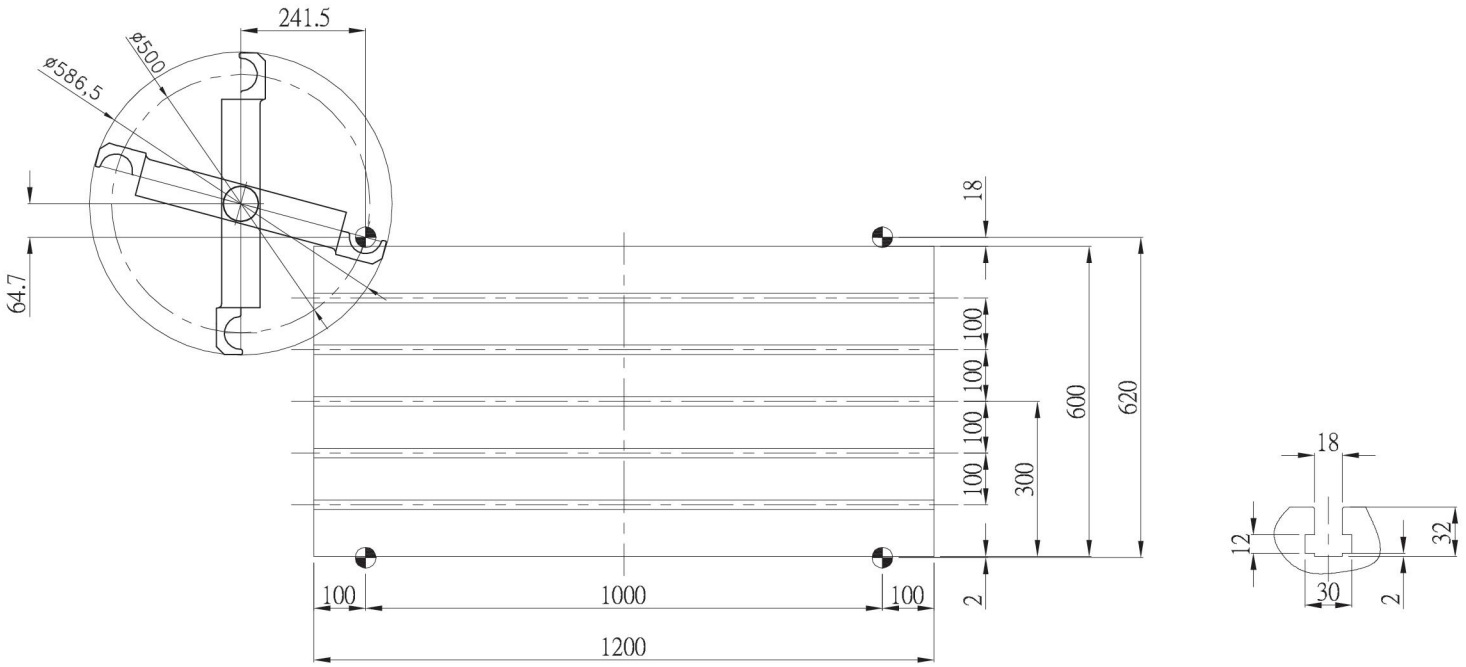
◉ VMC1060B

◉ VMC1160B

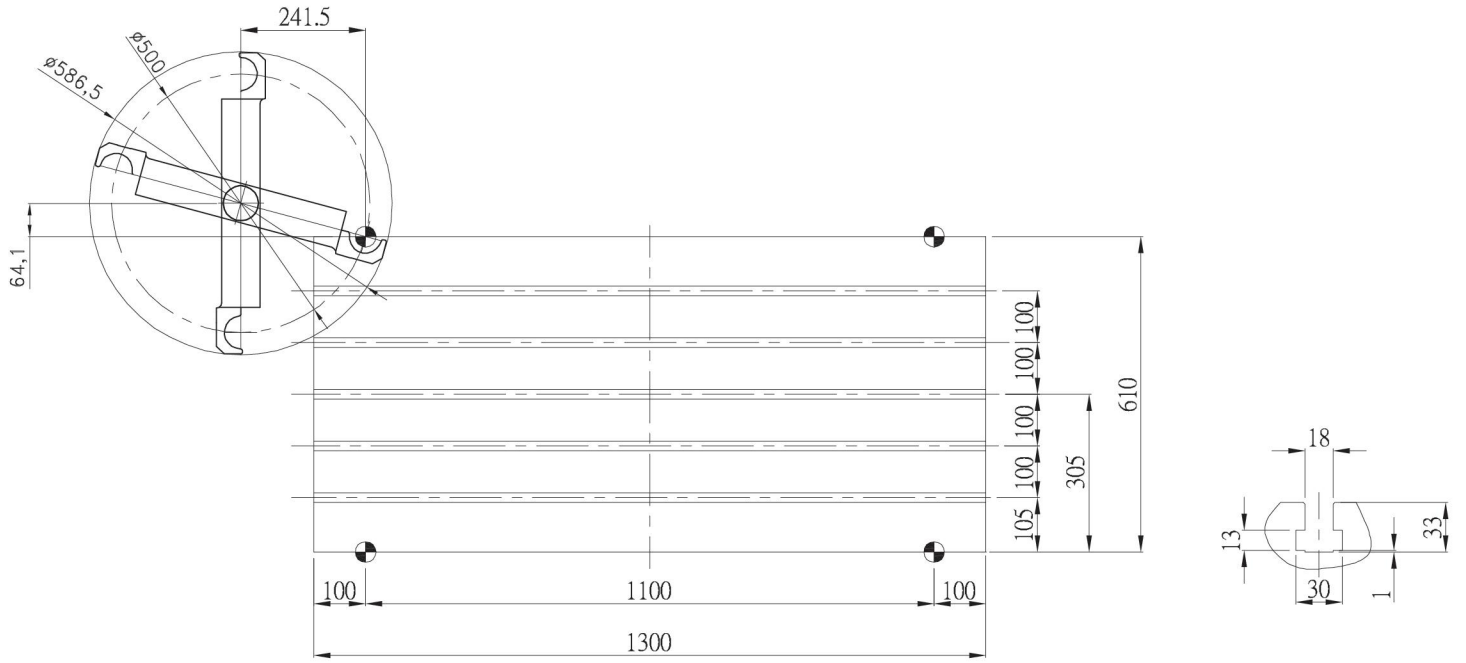
SPECIFICATIONS

ITEM			VMC1060B	V10B	VMC1160B	V11B
Table	Table size	mm	1200x600		1300x610	
	Max. load capacity	kg	800		1000	
	T-slots	mm	5x18-100		5x18-100	
	Distance from table surface to spindle	mm	110-740	120-750	110-740	120-750
	Distance from table to floor	mm	900		900	
Spindle	Spindle taper		BT40		BT40	
	Spindle rpm	rpm	8000	12000	8000	12000
	Spindle power output	kw	11/15 wide area	11/15	11/15 wide area	11/15
	Spindle torque(FANUC)	N.M	105	52.5	105	52.5
	Spindle driving method		belt	direct	belt	direct
Feed	Travel (X/Y/Z)	mm	1000/620/630		1100/610/630	
	Distance from column to spindle center	mm	667		667	
	Rapid traverse rate	m/min	36/36/32		36/36/32	
	Slide type		Roller LM guide			
ATC	Number of tools	T	24		24	
	Max. tool diameter	mm	78/120		78/120	
	Max. tool length	mm	300		300	
	Max. tool weight	kg	8		8	
	Tool change time	sec	2.5		2.5	
Accuracy	Positioning accuracy	mm	0.008		0.008	
	Re-positioning accuracy	mm	0.005		0.005	
Power supply	Air consumption	kg	6-8		6-8	
	Electric power supply	KVA	20		20	
	Voltage	V/HZ	380/50		380/50	
Machine	Machine dimension	mm	2850x2500x2850		3000x2500x2750	
	Machine weight	kg	6800		7000	

VMC1060B

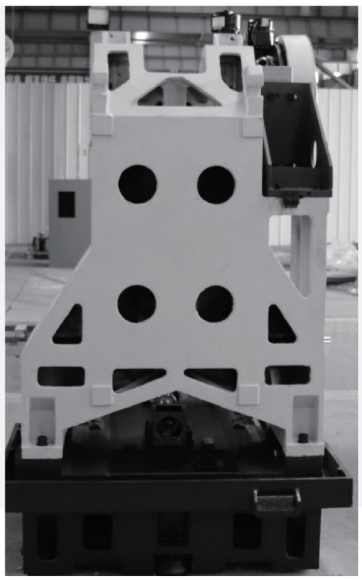


VMC1160B



Common Basic Features

Common Basic Features for P & B series Machines

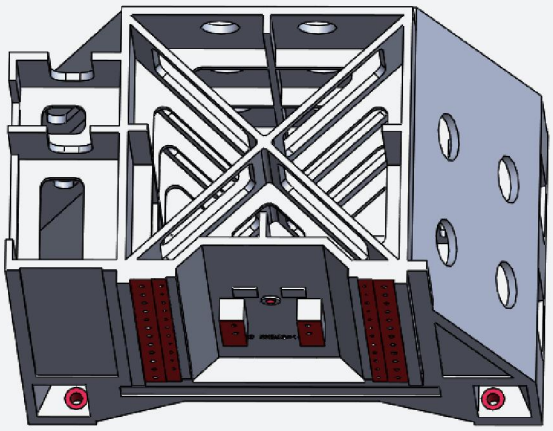


01

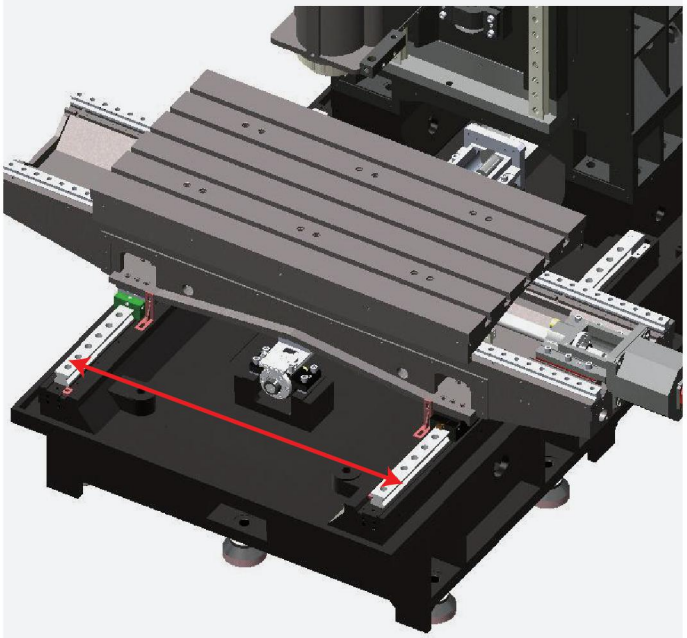
High Rigidity Structural Design

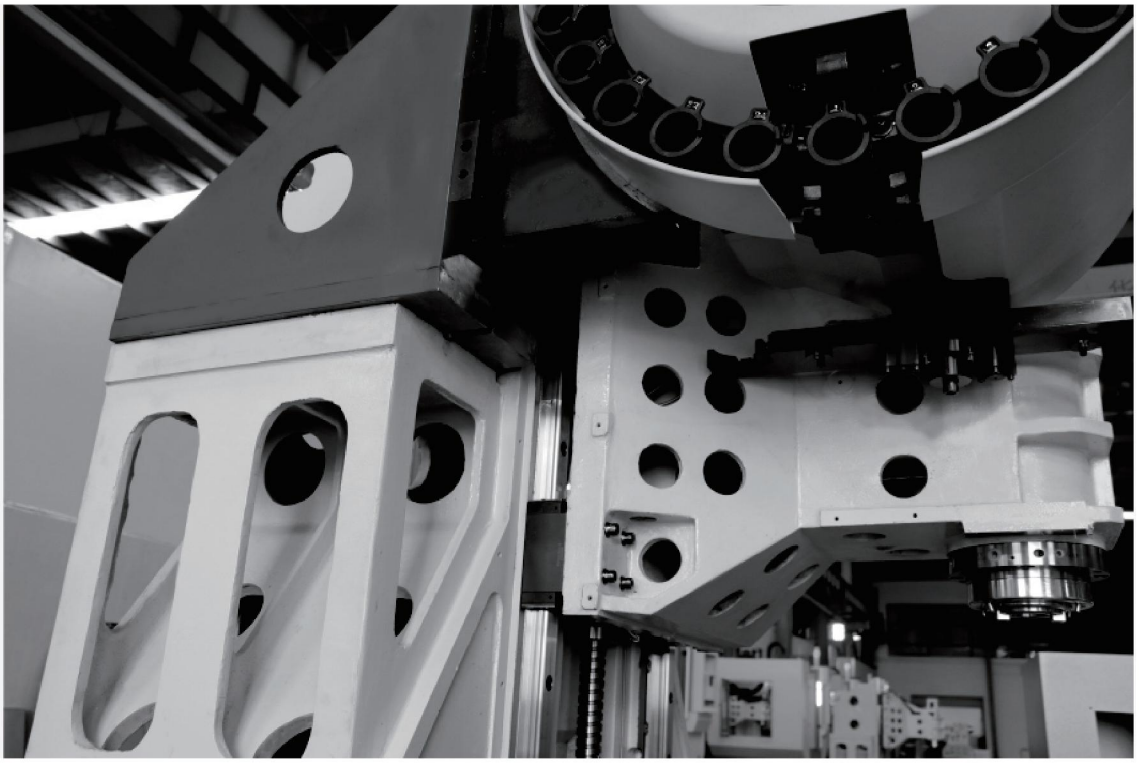
Large pagoda machine column and base ensure the highest stability during high speed movement

- The reinforcing ribs inside ensures strong enough rigidity.



- The large span of Y axis guideways to keep all the X axis travel is supported

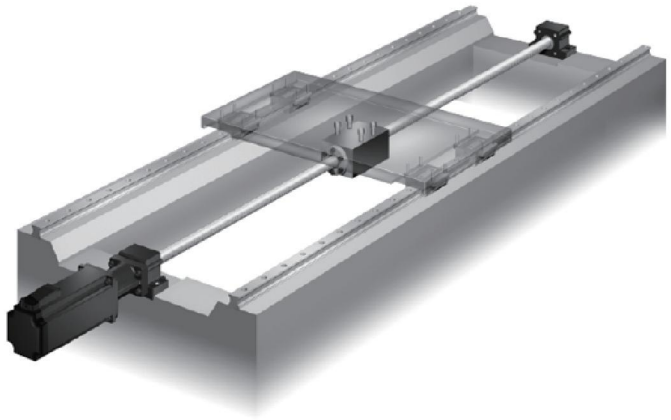




02

Shoulder Carrying Tool Magazine

Shoulder carrying tool magazine can ensure Z axis geometric accuracy and perfect stability, rigidity and the minimum deformation when column loaded with tool magazine weight.



03

Preloaded, Directly Coupled and Double Anchored Ball Screw

In order to eliminate thermal growth and increase accuracy, all axes are driven by high precision double anchored ballscrews.

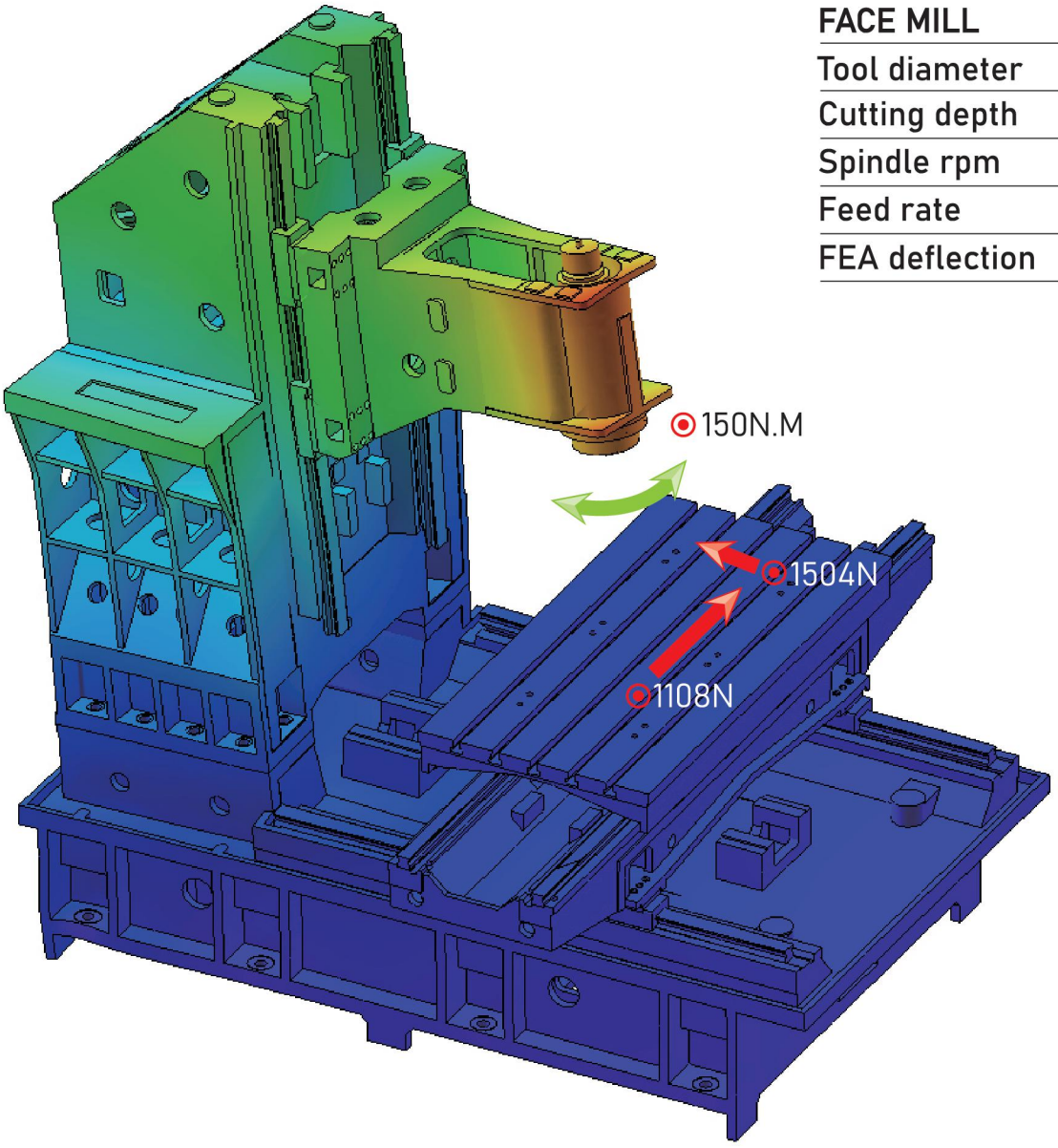
The pretensioned and double anchored design provides outstanding positioning and repeatability with virtually no thermal growth.
The ball screws are directly coupled to the servo motor. This eliminates the need for any transmission parts which may impact machine accuracy and efficiency.

08 Machining Capability

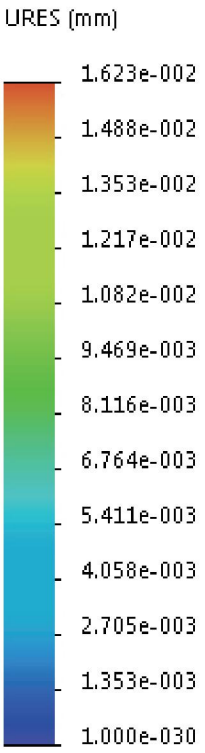
SINO VMC

Orientational Cutting Test Data

The FEA analysis is adopted to ensure the best mass arrangement and rib construction of the machine for constant stability under the intensive load of heavy-duty cutting.

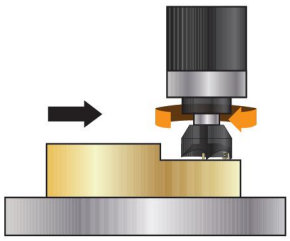


FACE MILL	
Tool diameter	100mm
Cutting depth	6mm
Spindle rpm	500r/min
Feed rate	450mm/min
FEA deflection	0.01623mm

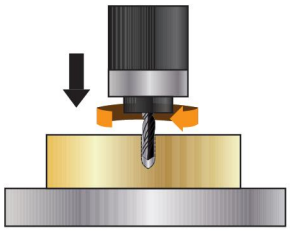


VMC850P

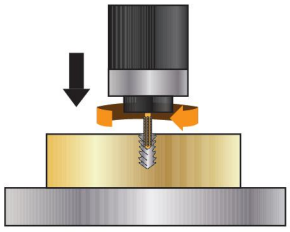
FACE MILL (Material: C45)	
Tool diameter	ϕ100-7Z
Cutting depth	4 mm
Cutting width	80 mm
Cutting speed	500 mm/min
Spindle rpm	800 r/min
Spindle load	114%



DRILL (Material: C45)	
Tool diameter	ϕ37 U drill
Bore depth	90 mm
Cutting speed	160 mm/min
Spindle rpm	1600 r/min
Spindle load	118%



TAP (Material: C45)	
Tap spec./ pitch	M24xP3.0
Cutting depth	60 mm
Cutting speed	600 mm/min
Spindle rpm	200 r/min
Spindle load	95%



VMC1060B

FACE MILL (Material: C45)	
Tool diameter	ϕ100-7Z
Cutting depth	6 mm
Cutting width	80 mm
Cutting speed	500 mm/min
Spindle rpm	600 r/min
Spindle load	118%

DRILL (Material: C45)	
Tool diameter	ϕ59 U drill
Bore depth	90 mm
Cutting speed	100 mm/min
Spindle rpm	1000 r/min
Spindle load	115%

TAP (Material: C45)	
Tap spec./ pitch	M36xP4.0
Cutting depth	60 mm
Cutting speed	800 mm/min
Spindle rpm	200 r/min
Spindle load	110%

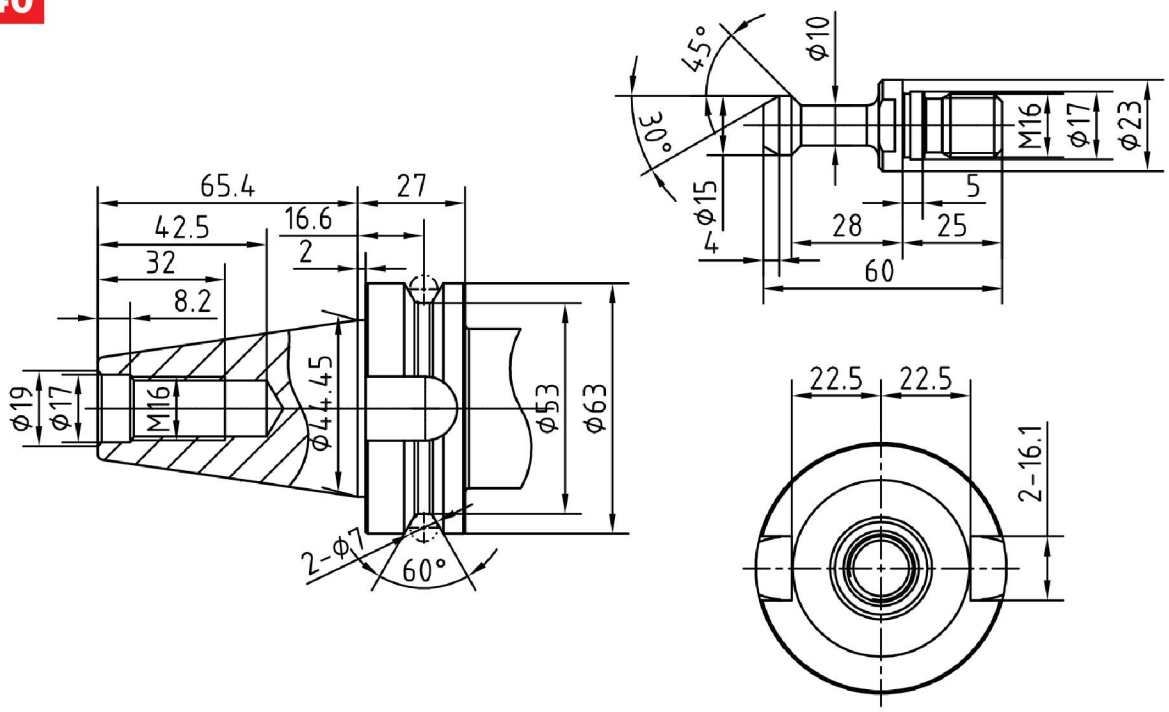
Sample Workpieces

SPECIFICATIONS

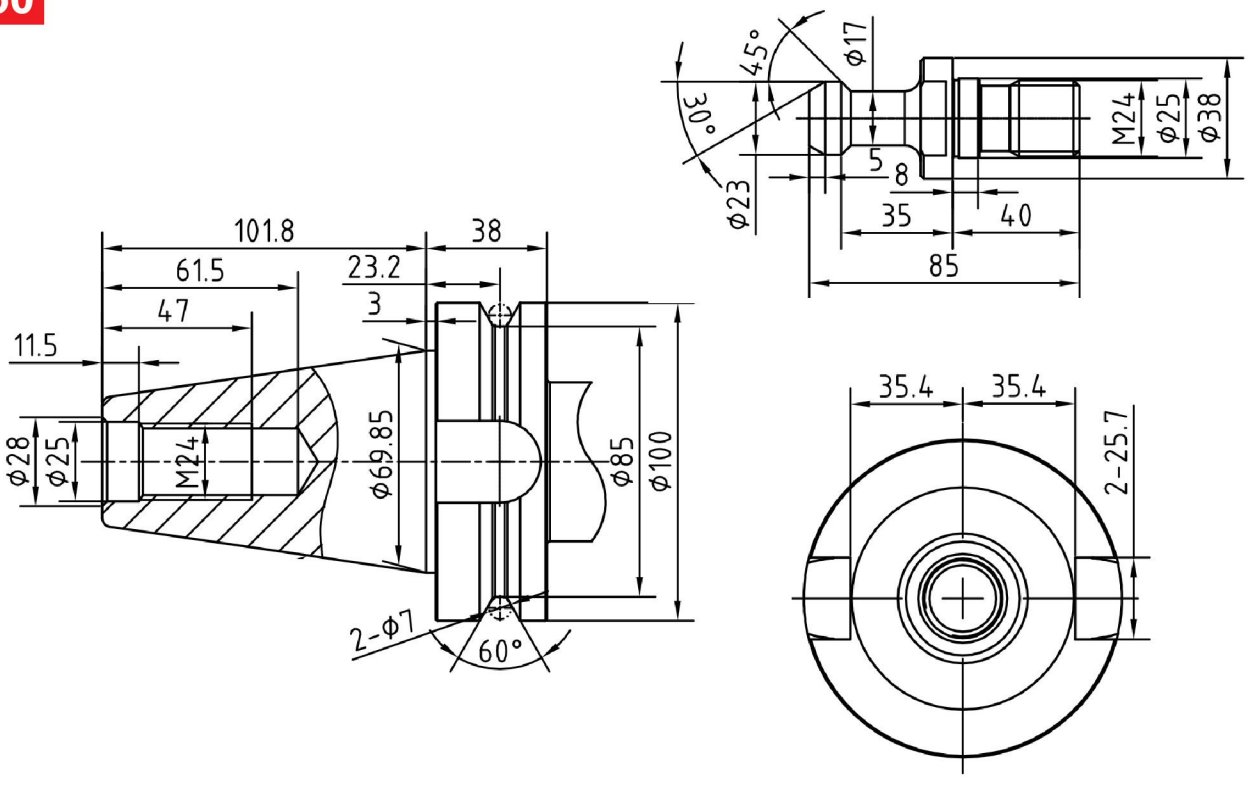
SINO VMC standard accessories	
CNC system	FANUC 0I MF type 5 / Mitsubishi M80 / Siemens 828D
	M30 Auto power off
	Internet interface
	USB and CF card interface
	Rigid tapping
	Manual pulse generator
Spindle	Air blast of spindle
	Spindle ring spray
	Cutting coolant system
	Cutting air system
Electricity	Heat exchanger for electric cabinet
	LED working light
	LED warning light
	Transformer
Mechanism	Oil water separation
	Coolant oil tank
	Auto lubrication system
	Air gun
	Coolant gun
	Inner chip flushing system
	Leveling bolts and leveling blocks
	Tools and tool box
	Operational Manual
	Telescopic guards for three axis
	Fully enclosed splash guard
	Customized color
	1 year mechanism warranty

SINO VMC optional accessories	
CNC system	FANUC 0I MF Type 1
	FANUC a motor
	Mitsubishi M80A
	Bigger motor
	I/0 extension
	Global warranty
	Other system funtion
Spindle	Higher spindle speed
	Spindle oil chiller
	Coolant through spindle
	CTS reservation
	SK40 taper
	Gear box
Chip conveyor	Screw type with chip trolley
	Hinge type with chip trolley
	Scraper type with chip trolley
	Magnetic type with chip trolley
Environment	Air conditioner of electric cabinet
	Oil mist collector
	Oil skimmer
	TUV CE certificate
Others	4th & 5th axis rotary table
	Tool measurement
	Workpiece measurement
	ATC tool extension
	Column height extension
	Linear scale

BT40


65.4
27
42.5
16.6
32
2
8.2
ϕ19
ϕ17
M16
ϕ44.45
ϕ53
ϕ63
2-ϕ7
60°
45°
ϕ10
30°
ϕ15
4
28
25
5
60
M16
ϕ17
ϕ23
22.5
22.5
2-16.1

BT50


101.8
38
61.5
23.2
47
3
11.5
ϕ28
ϕ25
M24
ϕ69.85
ϕ85
ϕ100
2-ϕ7
60°
45°
ϕ17
30°
ϕ23
5
8
35
40
85
M24
ϕ25
ϕ38
35.4
35.4
2-25.7

SINO
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