Twinhorn®

TÜV CERT DIN EN ISO 9002 CE

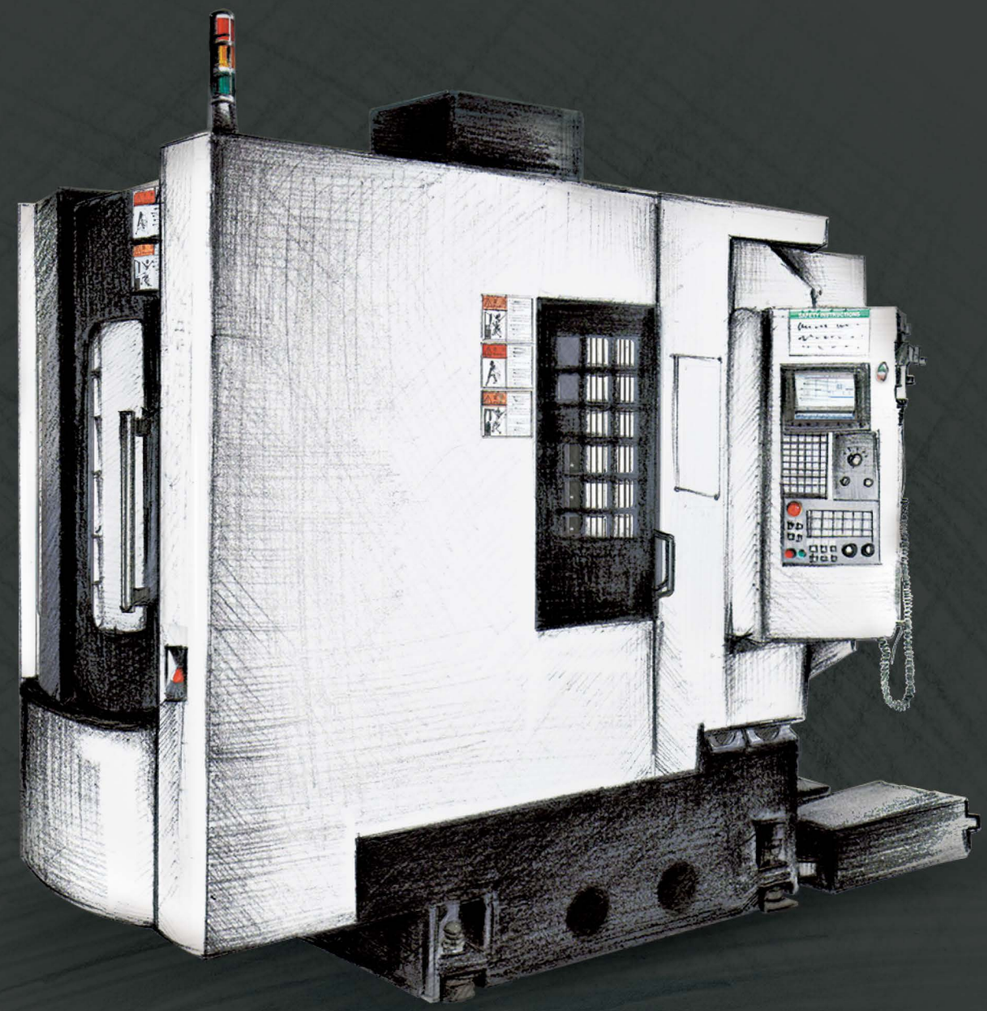
High Speedy Action
High Effective Performance.



VTW-755



VTW-540



Explosive Momentum

VTW-540/755

HIGH SPEED VERTICAL MACHINING CENTER WITH

2APC

Twinhorn

CHI-FA MACHINERY MANUFACTURER CO., LTD.

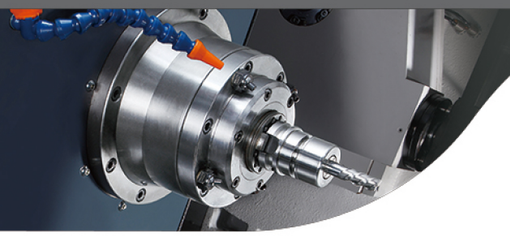
No. 44-8, MING-CHUNG RD., SHENG-KANG DIST.,
TAICHUNG CITY, TAIWAN 42948
Tel:+886-4-2562-8747 (Rep.)
Fax:+886-4-2561-4199
E-mail:inquiry@twinhorn.com.tw
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SOGITECH machine tools

Via J.F. Kennedy n.9 RODANO 20090 (MI)
Tel. 02.95.35.14.39
e mail: commerciale@sogitechsrl.com

www.sogitechsrl.com

Design 201902.VTW Series(E3)1000P

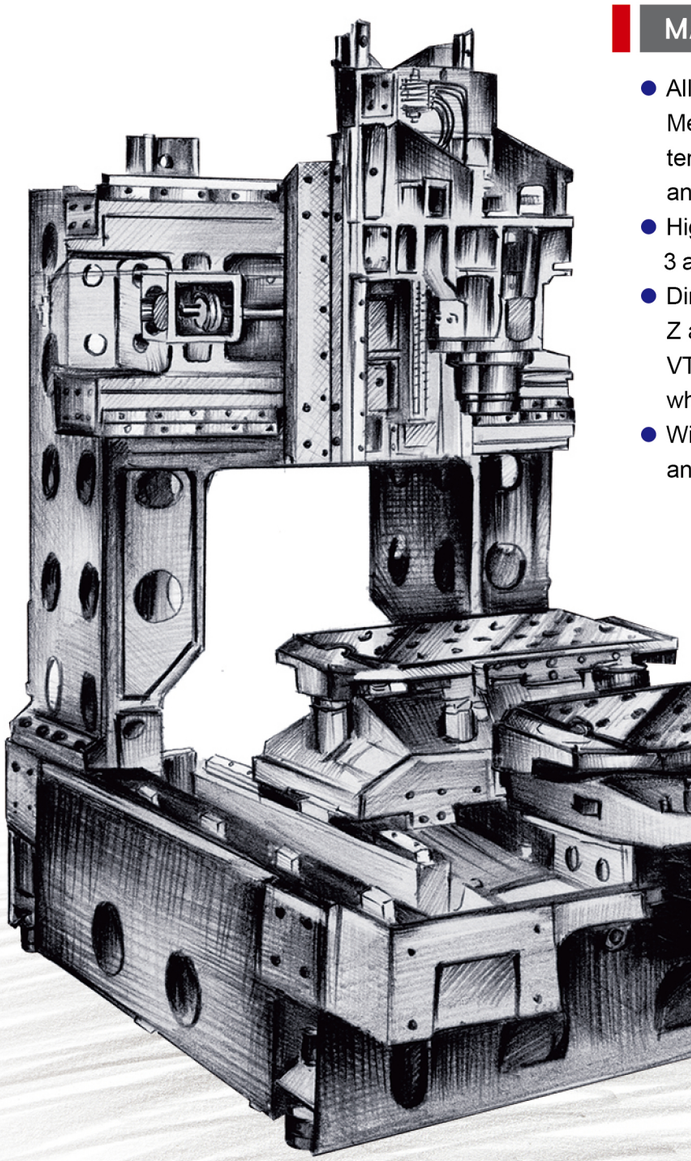


VTW-540

MACHINE SPECIFICATION:

SPINDLE SPEED	15,000 rpm / 20,000 rpm / 24,000 rpm
TOOL CAPACITY	24+1 tools
X / Y / Z STROKE	500 x 400 x 350 mm
X / Y / Z RAPID FEEDRATE	48 / 48 / 48 M/min (opt. 60 / 60 / 60 M/min)
TOOL SHANK	BT30
TOOL CHANGE TIME	1.2 sec
PALLET CHANGE TIME	5 sec



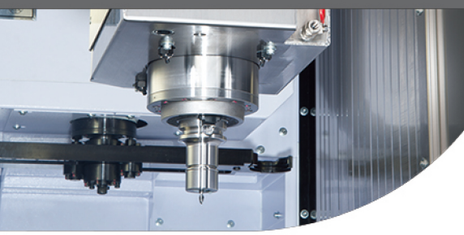


MACHINE CONSTRUCTION

- All major parts are built with certified Meehanite cast irons, featuring high tensile, superior vibration dampening and long term wearing resistance.
- High precision linear guide way on all 3 axes. Rapid feedrate up to 60 m/min.(opt.)
- Direct driven servo motor with brake on Z axis and without counterbalance allows VTW to be more steady and accurate while running and cutting at high speed.
- Wide column design provide high rigid and machining accuracy.

2 pallet APC Design



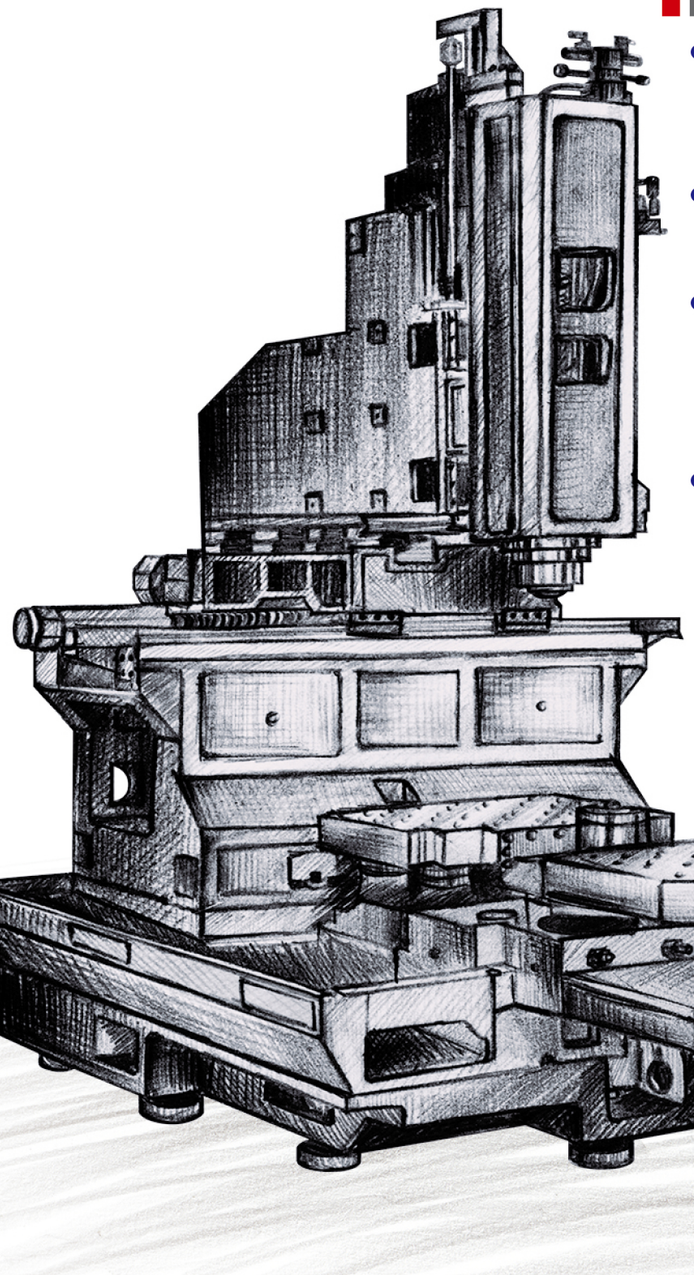


VTW-755

MACHINE SPECIFICATION:

SPINDLE SPEED	12,000 / 15,000 rpm
TOOL CAPACITY	30+1 tools
X / Y / Z STROKE	750 x 550 x 500 mm
X / Y / Z RAPID FEEDRATE	48 / 48 / 48 M/min(opt. 60 / 60 / 48 M/min)
TOOL SHANK	BBT40
TOOL CHANGE TIME	1.8 sec
PALLET CHANGE TIME	7 sec





MACHINE CONSTRUCTION

- All major parts are built with certified Meehanite cast irons, featuring high tensile, superior vibration dampening and long term wearing resistance.
- High precision linear guide way on all 3 axes. X/Y axis rapid feedrate up tp 60 m/min. (opt.)
- 3 axis moving column structure and fixing type working table ensures VTW to work percussively while running in linear way at high speed with heavier loading on the working table.
- Wide column design provide high rigid and machining accuracy.

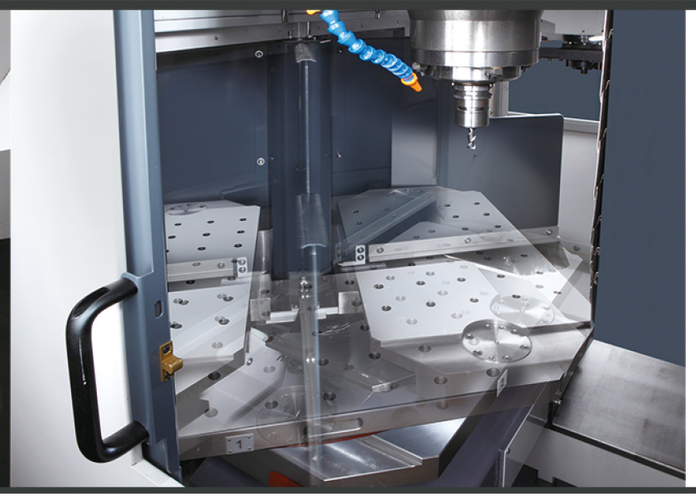
2 pallet
APC Design



ATC SYSTEM

- High reliable ATC system. Rotating in two directions and exchanging the tool in random.



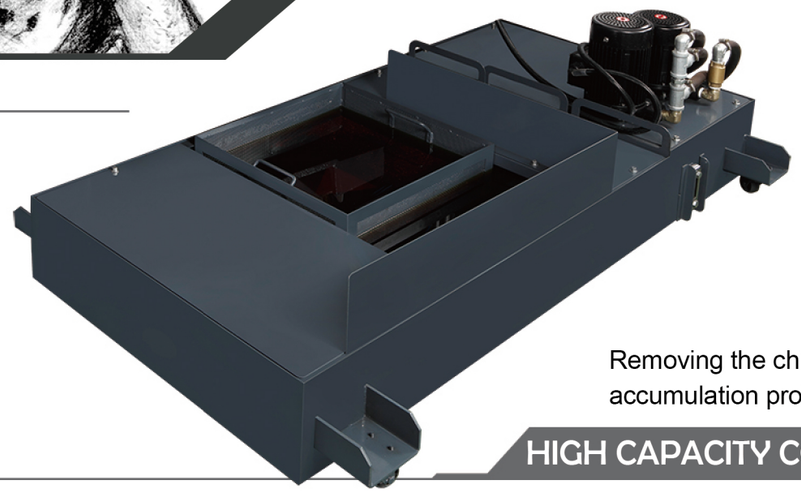


APC SYSTEM

- Pallet exchange in 180 degree. Driven by servo motor to ensure the working table running smoothly and steadily.
- Excellent high speed APC system to greatly grow up the machining efficiency and productivity

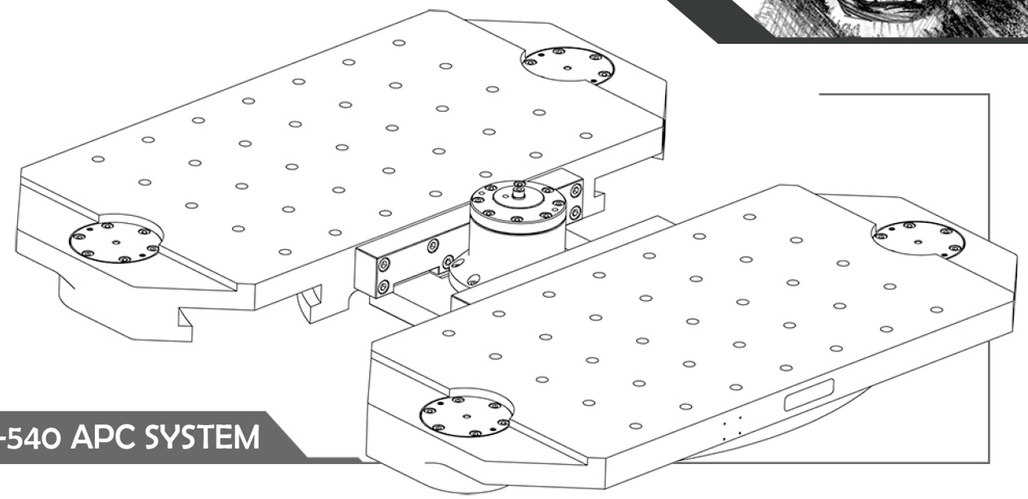




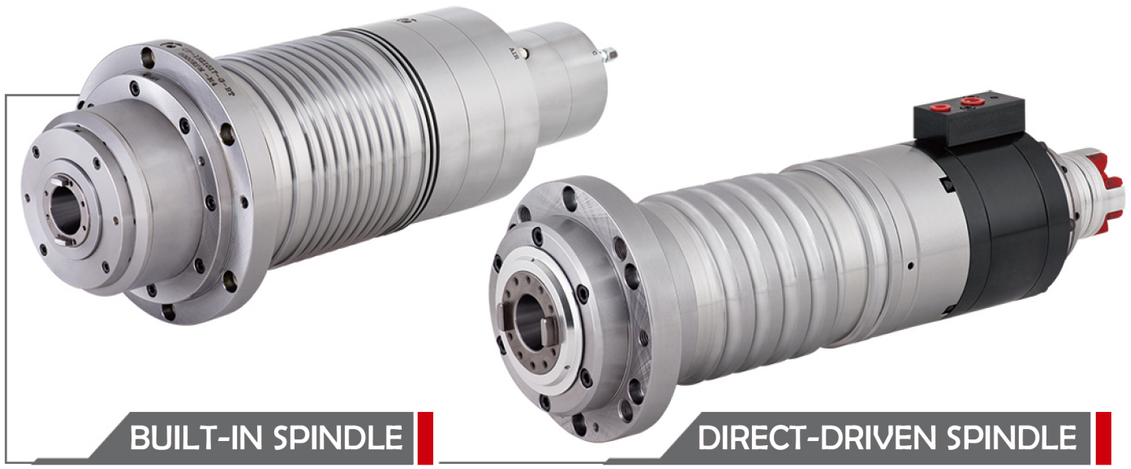


Removing the chips fast to solve chip accumulation problem.

HIGH CAPACITY COOLANT TANK



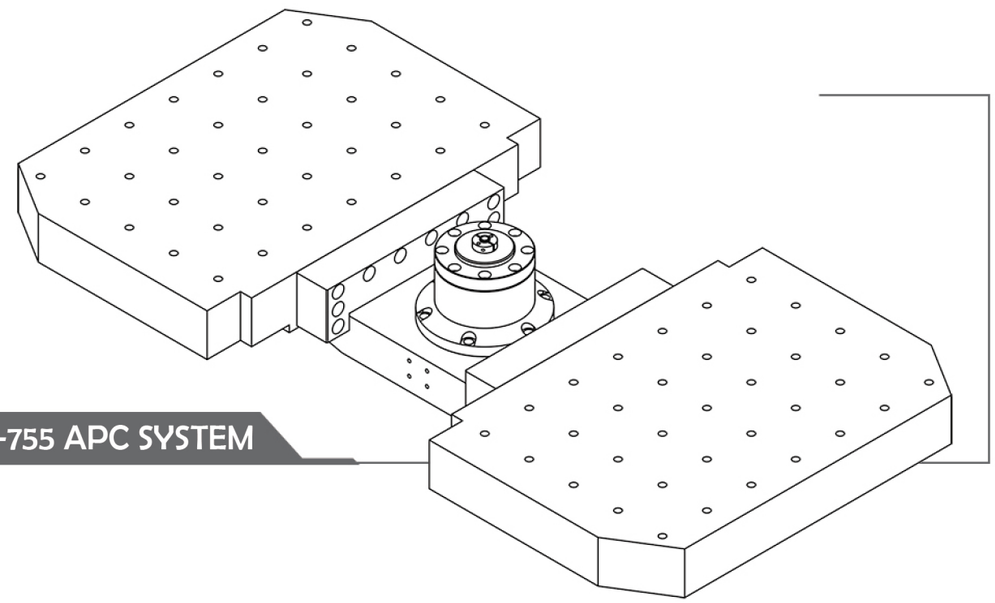
VTW-540 APC SYSTEM



BUILT-IN SPINDLE

DIRECT-DRIVEN SPINDLE

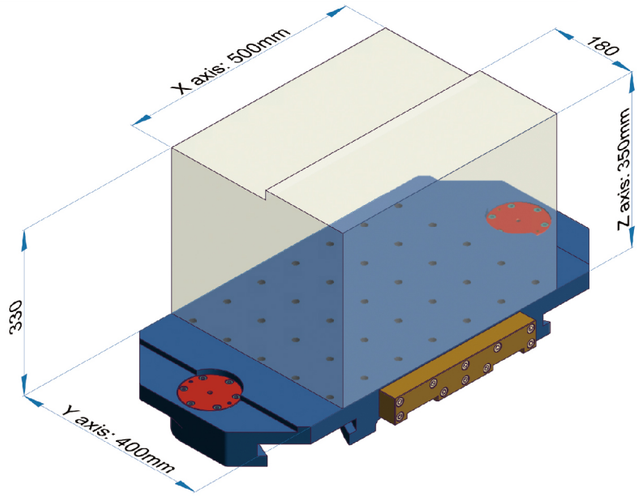
Built-in motor design to ensure the spindle runs with less noise, less vibration and without backlash. Spindle nose adopts labyrinth design and air curtain to prevent the dust entering into spindle interior to ensure the accuracy and life of the spindle.

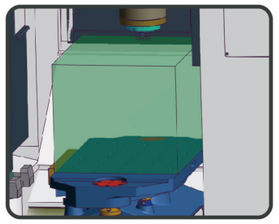


VTW-755 APC SYSTEM

VTW-540

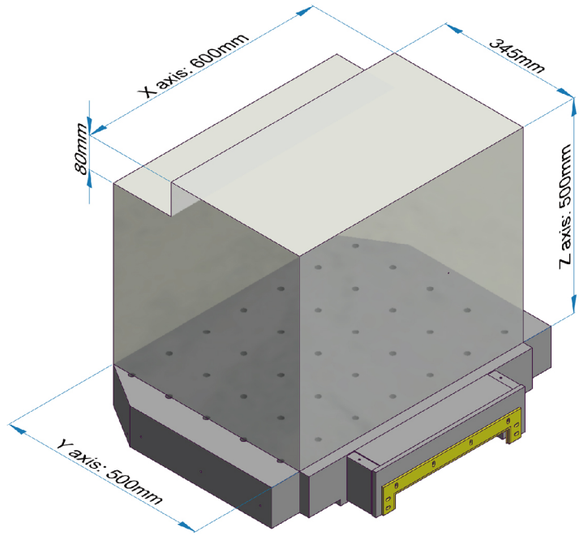
INTERFERENCE-FREE MACHINING ROOM

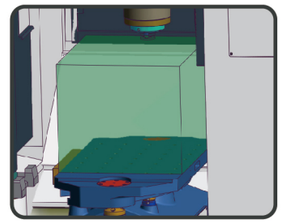




Machining range

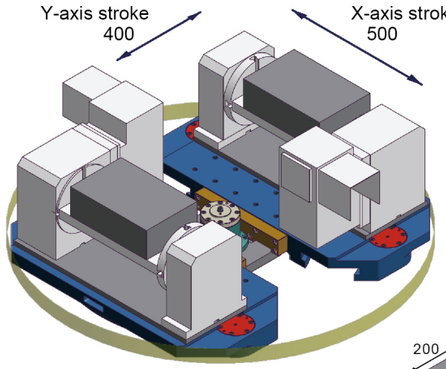
VTW-755



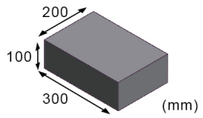


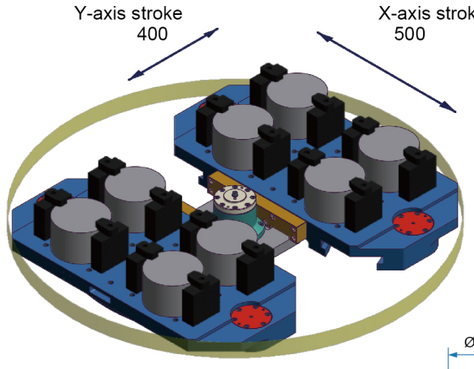
Machining range

EXAMPLE OF APPLICATION

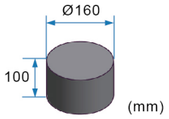


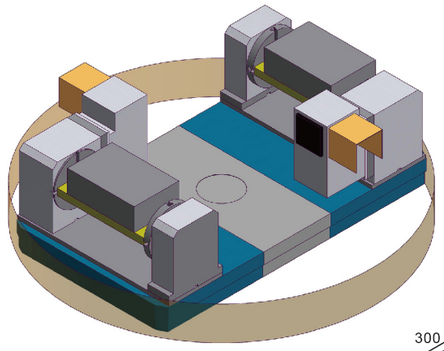
Turn diameter
D1193



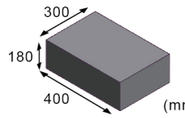


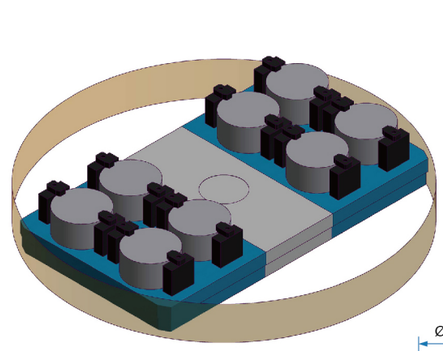
Turn diameter
D1193



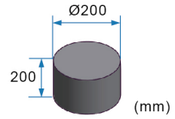


Turn diameter
VTW-755:Ø1640





Turn diameter
VTW-755:Ø1640



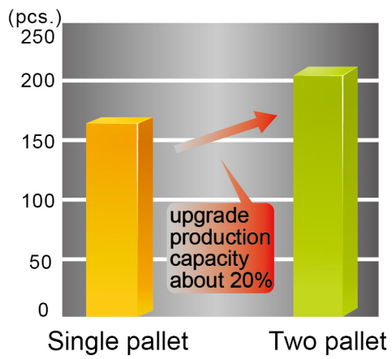
COMPARISON TABLE

BENEFIT OF TWO PALLET:

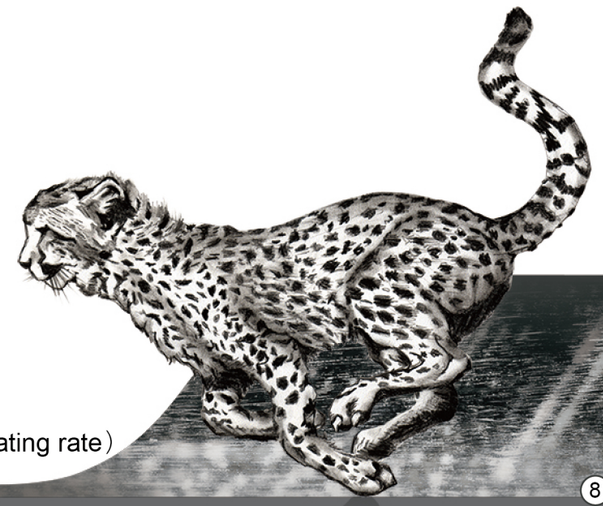
- Without any stop to load/unload workpiece or clean chip during machining process, no interruption with production.
- Ensure high & reliable production capacity.
- Load/unload workpiece during machining process, operator can handle different machine at the same time.

EXAMPLE OF HIGH PERFORMANCE:

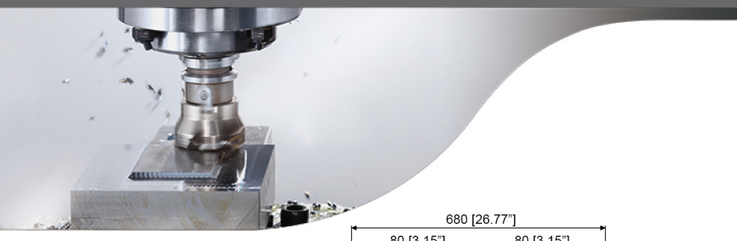
- Allow for multiple set up of various workpieces as well as for multiple side of single workpiece without any time waste on fixture setting & clean, upgrade production capacity about 20%.



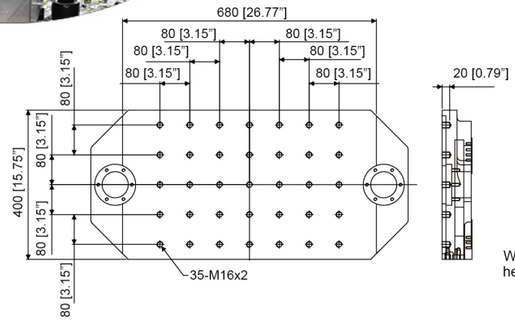
Machining time:150sec / 1pc
Load / unload time:35sec / 1pc（10hrx85%operating rate）

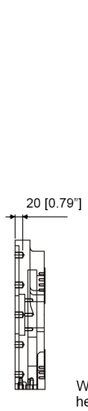


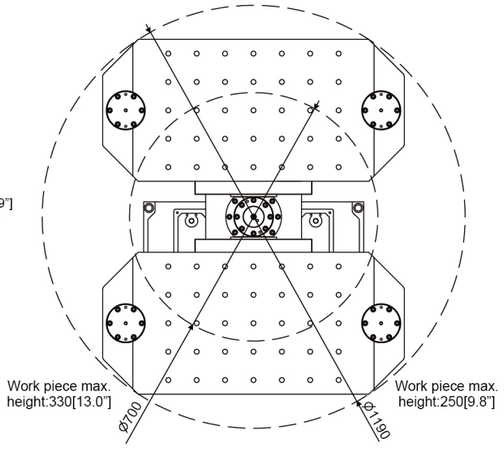
VTW-540 MACHINE DIMENSION DRAWING



Auto Pallet Changer

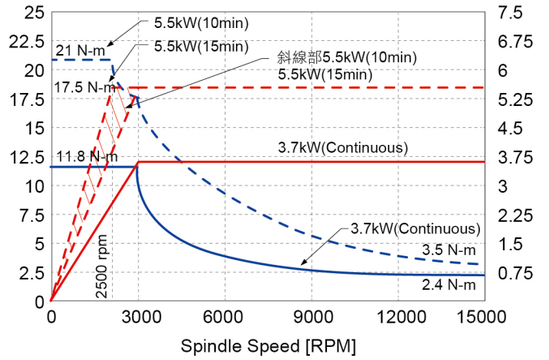




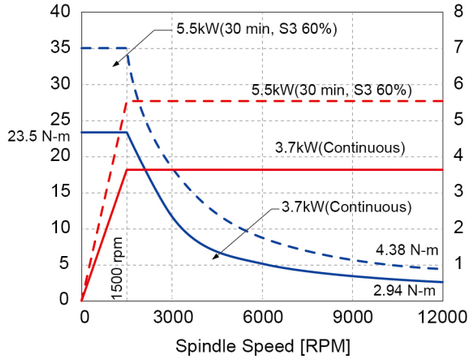


MOTOR POWER -TORQUE DIAGRAM

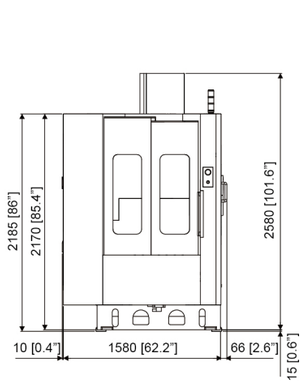
MITSUBISHI AC Spindle Motor-SJ-VL11-10FZT
Output Power-Speed & Torque-Speed Characteristic

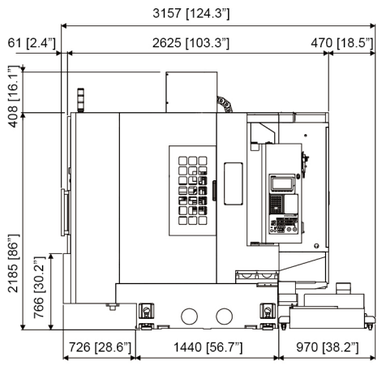


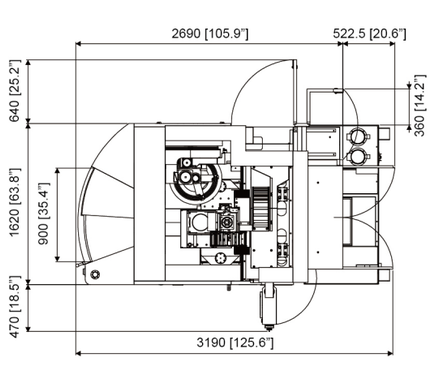
FANUC AC Spindle Motor-αi SERIES3.
Output Power-Speed & Torque-Speed Characteristic



DIMENSION

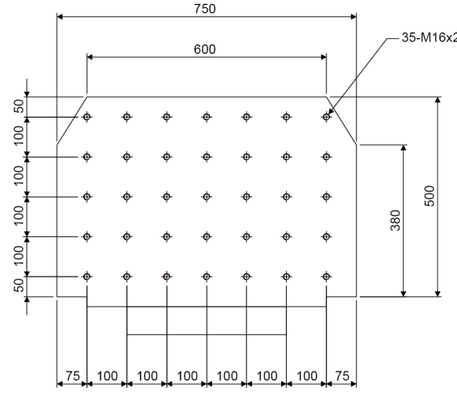


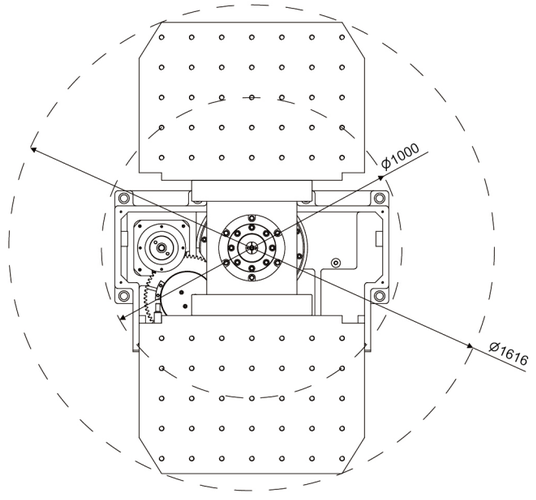




VTW-755 MACHINE DIMENSION DRAWING

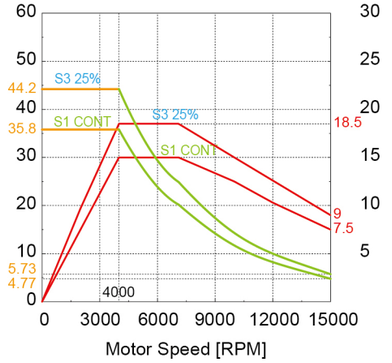
Auto Pallet Changer



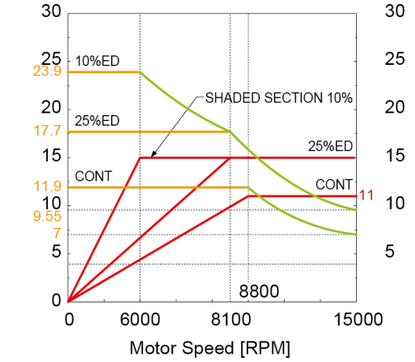


MOTOR POWER-TORQUE DIAGRAM

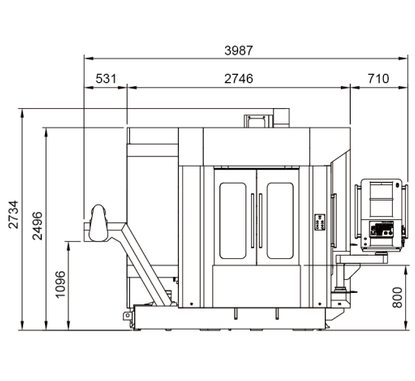
Fanuc Bil 112S/15000

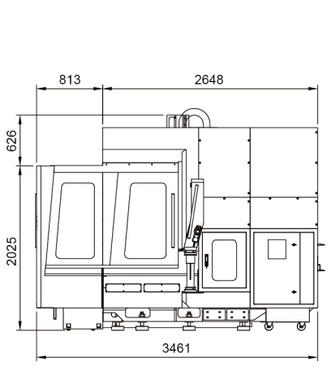


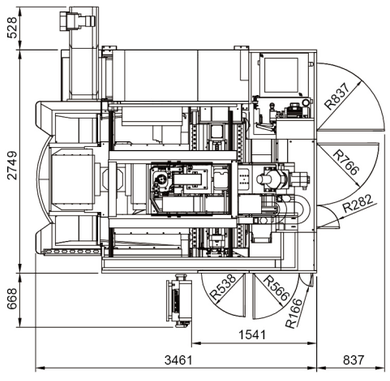
Mitsubishi SJ-2B4357TKH



DIMENSION

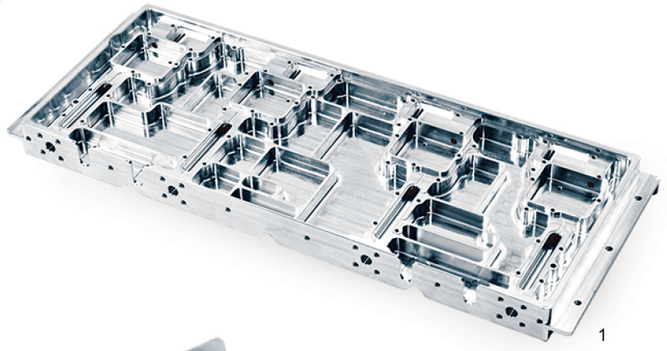


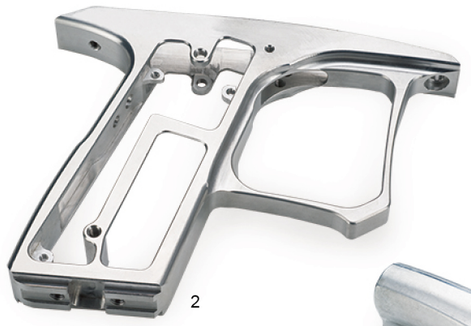


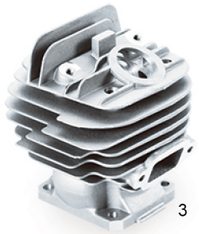


APPLICATION SAMPLE PARTS




1


2


3


4


5

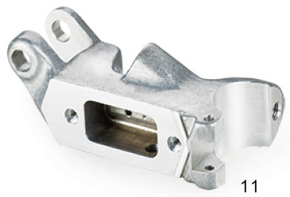

6


7


8


9

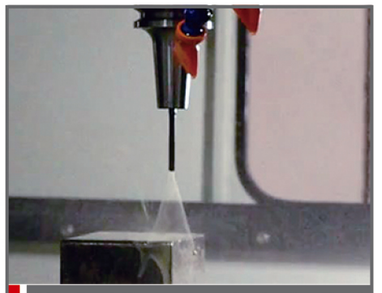

10


11


12

1.Communication Box
2.Paintball Gun Handle
3.Motorcycle Cylinder
4.Bicycle Stem
5.Paintball Gun Body
6.Bicycle Q/R Clamp
7.Bicycle Q/R Clamp
8.Hydraulic Capliers
9.Motorcycle Scapular
10.Oil Block
11.Hydraulic Housing
12. Bicycle Stem Base

ACCESSORY



Coolant through spindle (option)

Allow chip removable when do deep hole drilling.



LED work light

Extend lamp life and save energy.



Manual pulse generator

Make operation friendly.



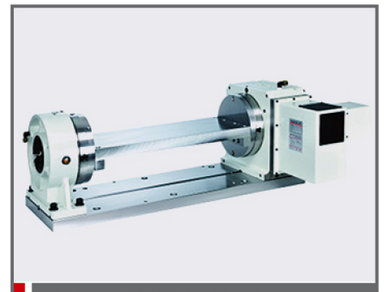
Air gun / Coolant gun

Clean workpiece or chip inside the machine after machining.



Spindle oil cooler (option for VTW-540)

Restrain heat generation during long time machining.



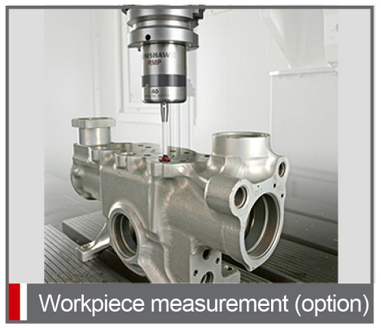
Rotary table (option)

For multi-face machining.



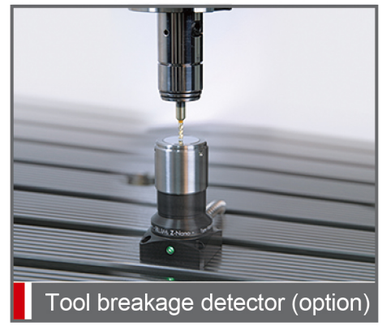
Auto door (option)

Combine with automation to reduce opening / closing time.



Workpiece measurement (option)

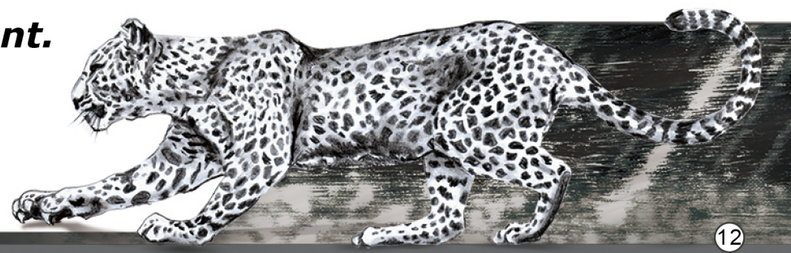
Inspect parts on line, reduce detective part.



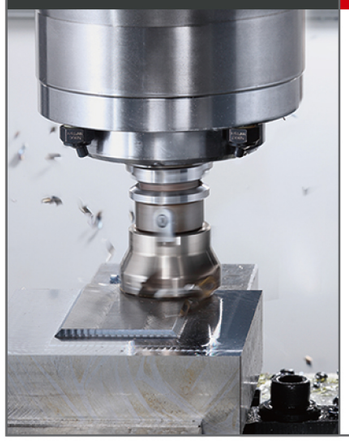
Tool breakage detector (option)

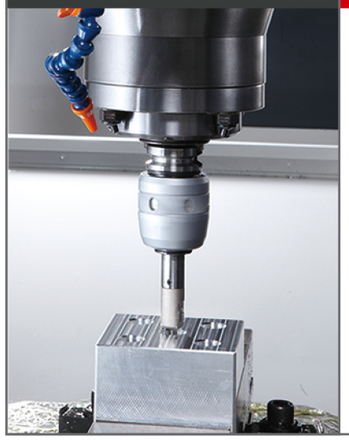
Improve the efficiency of machine tools.

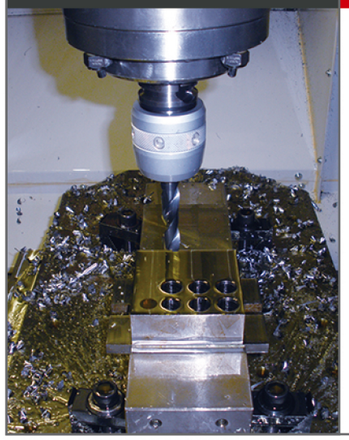
Integral Equipment Satisfy Your Machining Requirement.





Facing	VTW-540
	Material: S50C Spindle speed: 2578 rpm Cutting feedrate: 935 mm/min Cutting width: ϕ50 mm Chip removal: 107 cc/min

Boring	VTW-540
	Material: Aluminum 6061 Spindle speed: 4800 rpm Cutting feedrate: 480 mm/min Cutting width: ϕ20 mm Chip removal: 2.88 cc/min

Drilling	VTW-540
	Material: S50C / Aluminum 6061 Spindle speed: 1600 rpm / 12000 rpm Cutting feedrate: 320 mm/min / 240 mm/min Cutting width: ϕ18.5 mm / ϕ1.6 mm Chip removal: 86 cc/min / 0.5 cc/min

Ending milling	VTW-540
	Material: S50C Spindle speed: 2100 rpm Cutting feedrate: 900 mm/min Cutting width: ϕ20 mm Chip removal: 108 cc/min

Tapping	VTW-540
	Material: S50C / Aluminum 6061 Spindle speed: 270 rpm / 210 rpm Cutting feedrate: 540 mm/min / 525 mm/min Tap dimension: M14P2 / M18P2.5

VTW-540 / 755 MACHINE SPECIFICATION

TRAVEL	VTW-540	VTW-755
X/Y/Zaxis	500 / 400 / 350 mm	750 / 550 / 500 mm
Spindle nose to pallet surface	180 ~ 530 mm	100 ~ 600 mm
Column surface to spindle center	485 mm	500 mm
Pallet top height (from the floor)	800 mm	820 mm
PALLET		
Pallet size	680 x 400 mm	750 x 500 mm
Max. work piece height	330 mm	500 mm
Max. load	150 kg	350 kg
Configuration	35-M16 Pitch 80 mm	35-M16 Pitch 100 mm
SPINDLE		
Spindle speed	15000 rpm	12000 rpm
Spindle torque (cont. / 15 mins)	11.8 / 17.5 N·m	44.8 / 83.3 N·m (LOW) 35.8 / 44.2 N·m (HIGH)
Spindle tapper	BT 30	BBT 40
Pull stud	MAS403 P30T-145	MAS403 P40T-145
FEED		
Rapid feedrate (X/Y/Z axis)	48 m/min	48 m/min (option 60 m/min)
Cutting feedrate (X/Y/Z axis)	10 m/min	10 m/min
Ballscrew dia.	Ø32 mm	Ø40 mm
AUTOMATIC PALLET CHANGER(APC)		
Number of pallet	2	2
Pallet change system	Rotary	Rotary
AUTOMATIC TOOL CHANGER (ATC)		
Tool change system	Arm type	Arm type
Number of tools	24T	30T
Max. tool diameter (with / without adjacent tool)	Ø65 / Ø80 mm	Ø75 / 135 mm
Max. tool length	200 mm	250 mm
Max. tool weight	3 kg	8 kg
Tool to tool	1.2 sec	2 sec(50 Hz) 1.8 sec(60 Hz)
MOTOR		
Spindle motor	3.7 / 5.5 kW(S3-25%)	7.5 / 15 kW (LOW) 15 / 18.5 kW (HIGH)
Coolant pump	530 W x1pcs, 850 W x1pcs	530 W x1pcs, 850 W x1pcs
SUPPLY		
Voltage	200-220 V (50 / 60 Hz)	200-220 V (50 / 60 Hz)
Power supply	20 kVA	35 kVA
Air pressure & volume	0.6 MPa , 350 liters/min	0.6 MPa , 350 liters/min
Coolant tank	190L	230L
DIMENSION		
Floor space	1600 x 2685 mm	3480 x 2800 mm
Machine height	2750 mm	2900 mm
Machine weight	4000 kg	10000 kg

* The company reserves the right to change the mechanical specifications, accessories and appearance without prior notice.

Standard Accessories

- 15000 rpm direct-driven spindle (VTW-540)
- 12000 rpm built-in spindle (VTW-755)
- Arm type 24T ATC system (VTW540)
- Arm type 30T ATC system (VTW-755)
- Chain type chip conveyor (VTW-755)
- Coolant system
- Fully enclosed splash guard
- Work lamp
- Auto lubrication system
- Spindle air blast
- Spindle air curtain
- Spindle oil cooler
- Heat exchanger for electrical cabinet
- Tools & tool box
- Leveling bolts & pads
- Operation & maintenance manual
- Air gun
- Water gun

Optional Accessories

- 20000 rpm direct-driven spindle (VTW-540)
- 24000 rpm built-in spindle (VTW-540)
- 15000 rpm built-in spindle (VTW-755)
- Coolant through spindle
- 4th axis system
- MPG
- Automatic door
- Workpiece measurement device
- Tool breakage detector
- Transformer

