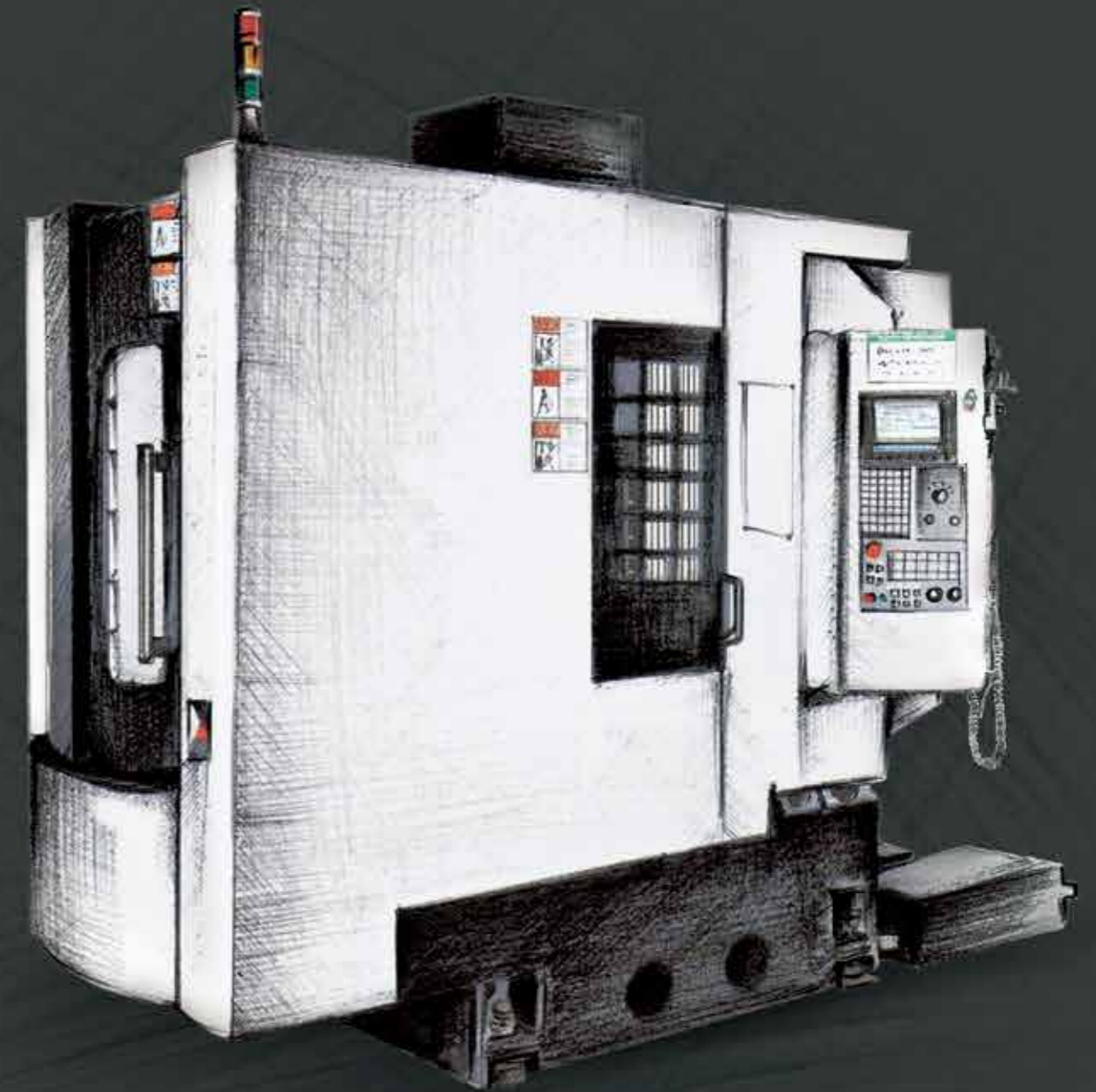


Twinhorn[®]



High Speedy Action
High Effective Performance.



Twinhorn[®]

CHI-FA MACHINERY MANUFACTURER CO., LTD.

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**Explosive
Momentum**

VTW-540

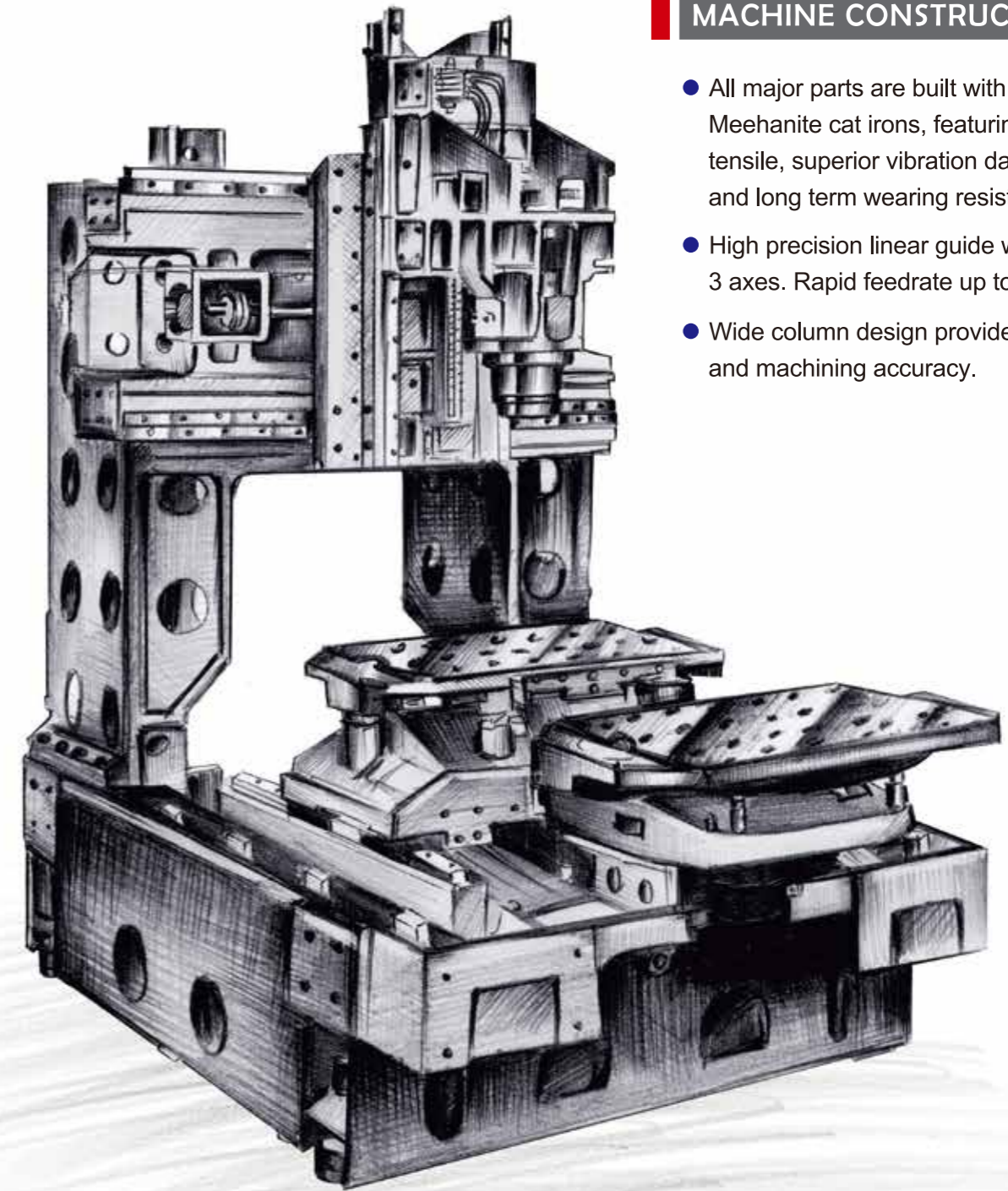
HIGH SPEED VERTICAL MACHINING CENTER WITH
2APC



VTW-540

MACHINE SPECIFICATION

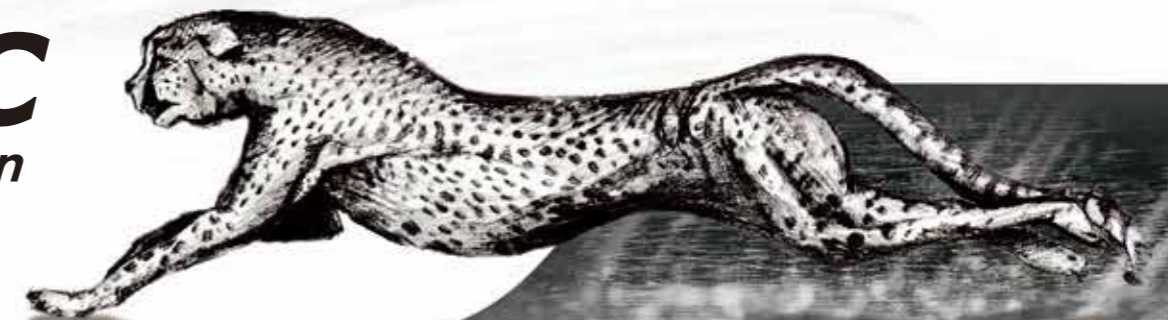
SPINDLE SPEED	15,000rpm/20,000rpm/24,000rpm
TOOL CAPACITY	24+1 tools
X/Y/Z STROKE	500 x 400 x 350mm
X/Y/Z RAPID FEED	60 x 60 x 60 m/min
TOOL CHANGE TIME	1.2 sec
PALLET CHANGE TIME	3.5 sec



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.
- Wide column design provide high rigid and machining accuracy.

2APC
Design



ATC SYSTEM

- High reliable cam ATC System provide 1.2 sec T-T.



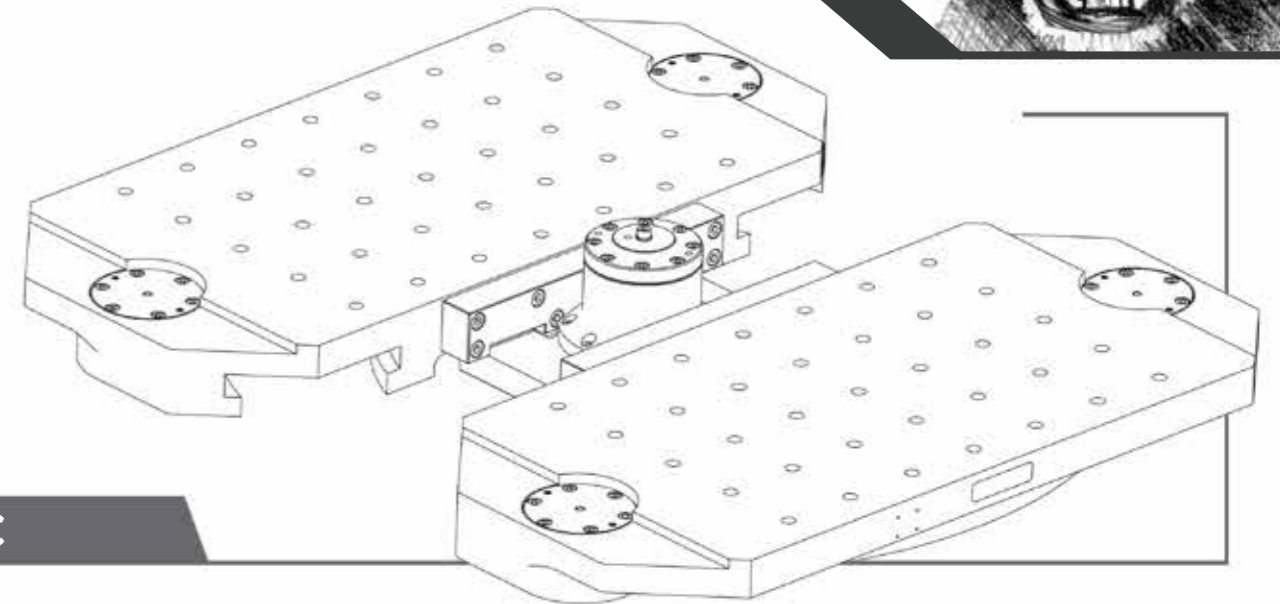
AUTO PALLET CHANGER

- The pallet is servomotor driven to achieve smooth turing.
- Pallet chang time 3.5 sec.
- Extremely high performance & capacity.



HIGH CAPACITY COOLANT TANK

190 Liter of coolant tank can remove chip easlily.



APC



BUILT-IN SPINDLE

Built-in spindle without belt noise & backlash and low vibration.

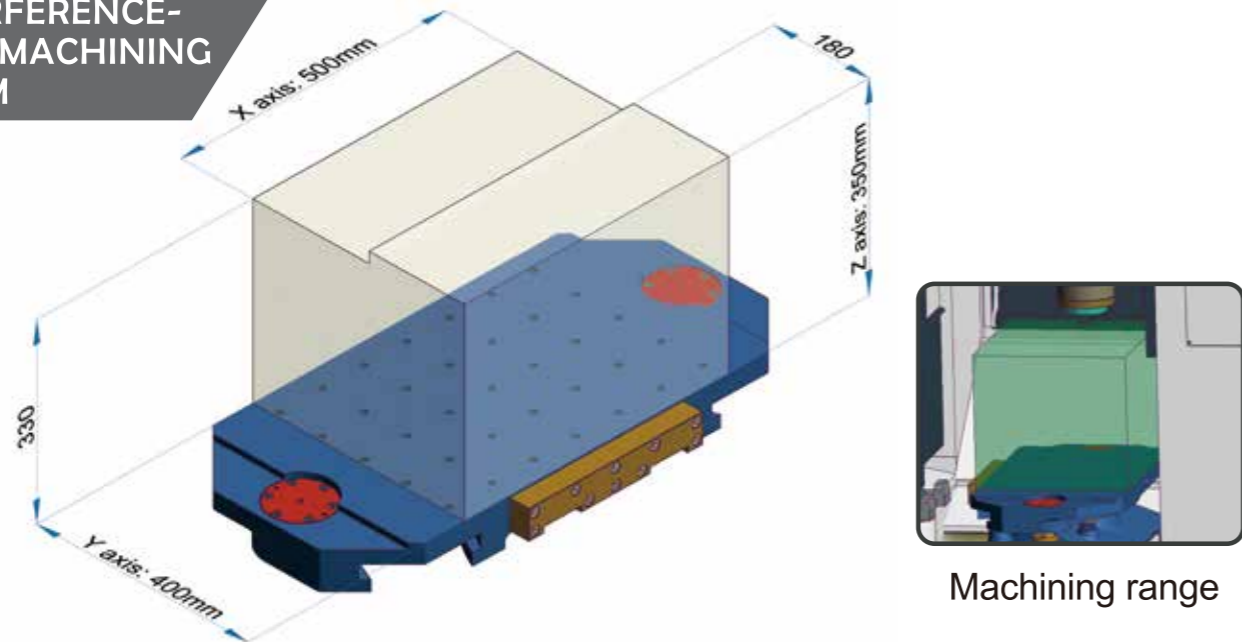


DIRECT DRIVEN SPINDLE

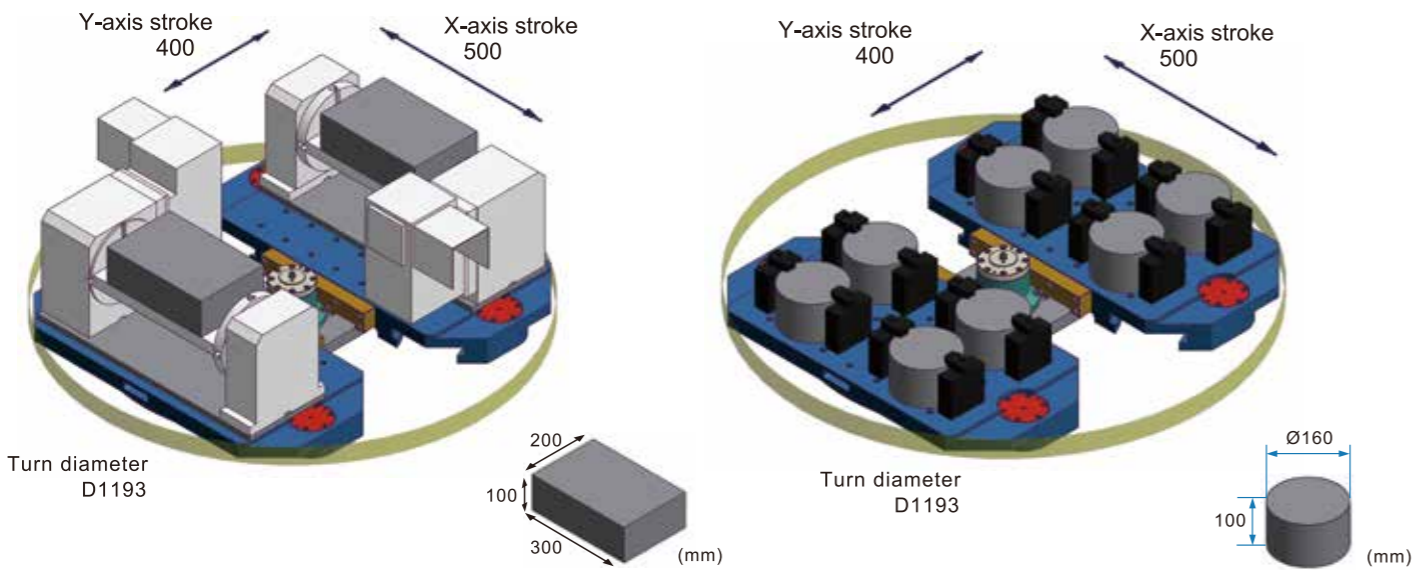
P4 grade pre-load angular contact high precision bearings with enlarged support design provide higher cutting force than average.

The labyrinth packing design on spindle nose to prevent coolant or fine particle contamination during machining in order to ensure spindle accuracy and life cycle.

INTERFERENCE-FREE MACHINING ROOM



EXAMPLE OF APPLICATION



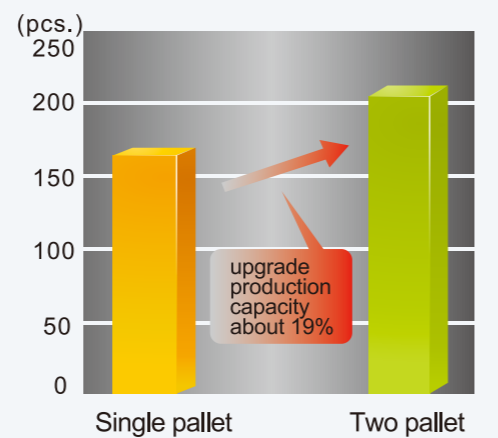
COMPARISON TABLE

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 hand different machine at 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 19%.



Machining time: 150sec / pc
 Load/unload time: 35sec / pc
 (10 hr x 85% operating rate)

Facing



Material	S50C
Spindle speed	2578rpm
Cutting feed	935mm/min
Cutting wide	Ø50
Chip removal	107cc/min

Drilling



Material	S50C	Aluminum 6061
Spindle speed	1600rpm	12000rpm
Cutting feed	320 mm/min	240 mm/min
Cutting wide	Ø18.5	Ø1.6
Chip removal	86cc/min	0.5cc/min

Ending milling



Material	S50C
Spindle speed	2100rpm
Cutting feed	900mm/min
Cutting wide	Ø20
Chip removal	108cc/min

Boring



Material	Aluminum6061
Spindle speed	4800rpm
Cutting feed	480mm/min
Cutting wide	Ø20
Chip removal	2.88cc/min

Tapping



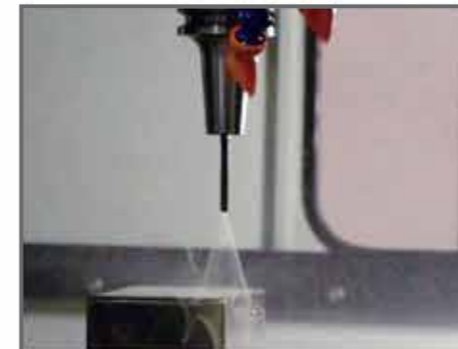
Material	S50C	Aluminum 6061
Spindle speed	270rpm	210rpm
Cutting feed	540 mm/min	525 mm/min
Tap dimension	M14P2	M18P2.5

Excellent Cutting Ability!



APPLICATION SAMPLE PARTS

OPTION



Coolant through spindle (CTS)

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

Restrain heat generation during long time machining.



Rotary table

For multi-face machining.



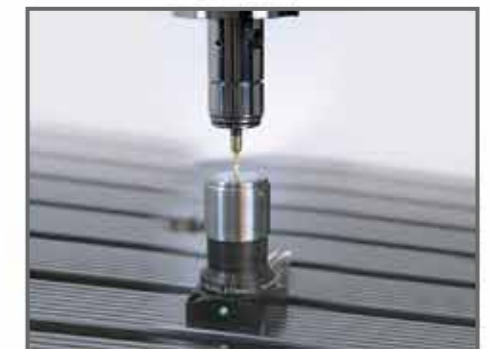
Auto door

Combine with automation to reduce opening/closing time.



Workpiece measurement

Inspect parts on line, reduce defective part.



Tool breakage detector

Improve the efficiency of machine tools.

Integral Equipment Satisfy Your Machining Requirement.

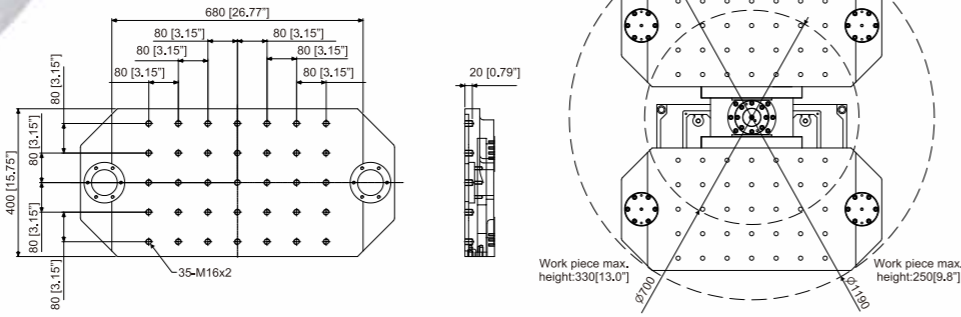


- 1.Communication Box 2.Paintball Gun Handle 3.Motorcycle Cylinder 4.Bicycle Stem
- 5.Paintball Gun Body 6.Bicycle Q/R Clamp 7.Bicycle Q/R Clamp 8.Hydraulic Capliers
- 9.Motorcycle Scapular 10.Oil Block 11.Hydraulic Housing 12. Bicycle Stem Base

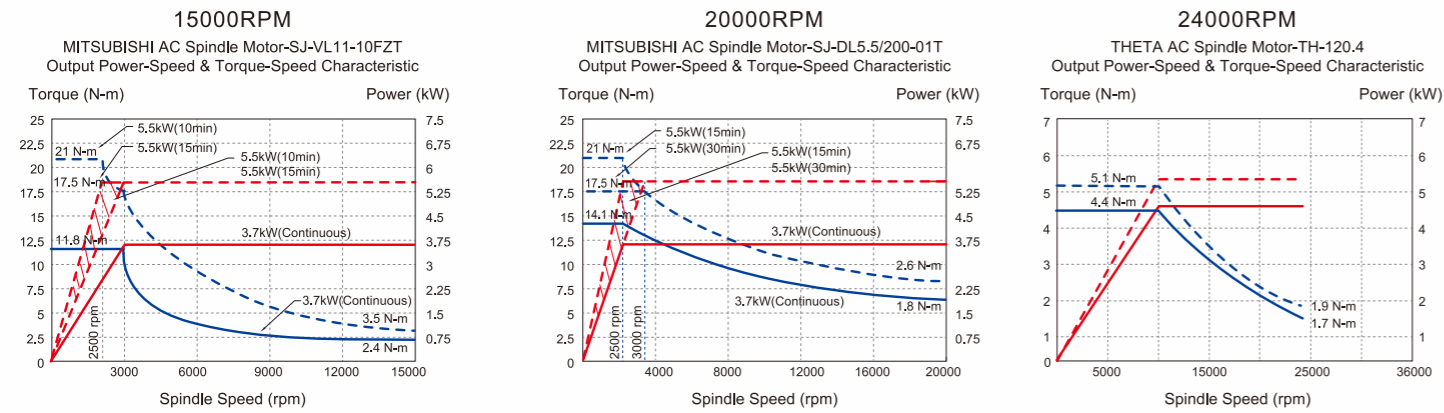
MACHINE DIMENSIONAL & OUTLINE DRAWING

VTW-540 MACHINE SPECIFICATION

Auto Pallet Changer ▶

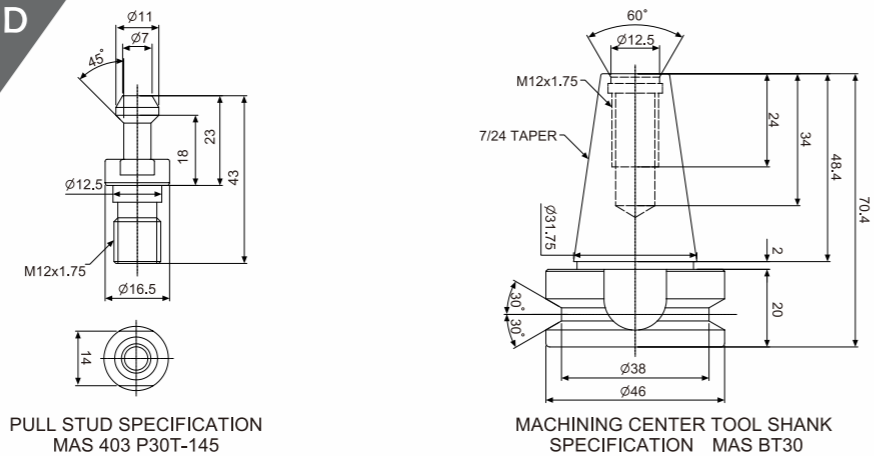


VT DRAWING

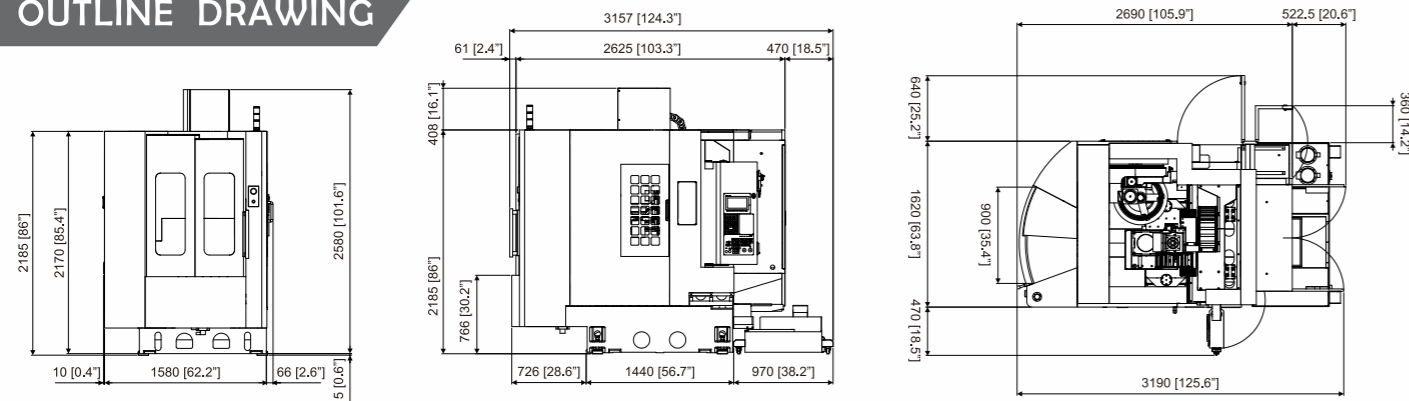


SPECIFICATION OF PULL STUD & TOOL SHANK

Spesification ▶



DIMENSIONAL & OUTLINE DRAWING



TRAVEL

X/Y/Zaxis	500 / 400 / 350 mm
Spindle nose to pallet surface	180 ~ 530 mm
Column surface to spindle center	485 mm
Pallet top height (from the floor)	800 mm

PALLET

Pallet size	680 x 400 mm
Max. work piece height	330 mm
Max. load	150 kg x2
Configuration	35-M16 Pitch 80 mm

SPINDLE

Spindle speed	15000rpm
Spindle rated torque (cont. / 15min)	11.8/17.5 N•m
Spindle taper	ISO 7/24 Papper NT No. 30

FEED

Rapid feed (X/Y/Z axis)	60,000 mm/min
Cutting feed (X/Y/Z axis)	10,000 mm/min
Ballscrew dia. & pitch	32mm,P16

AUTOMATIC PALLET CHANGER(APC)

Number of pallet	2
Pallet change system	Swing

AUTOMATIC TOOL CHANGER(ATC)

Tool change system	ARM TYPE
Type of tool shank	BT30
Type of pull-stud	P30T-1
Number of tools in the magazine	24Tools
Max. tool dia. (adjacent pot full / empty)	φ63 / φ130 mm
Max. tool length	200 mm
Max. tool weight	3 kg
Tool selection system	Random
Tool to tool	1.2 sec

MOTOR

Spindle motor (cont. / 15min)	3.7 / 5.5kW
Feed axis motor (X/Y/Z axis)	1.5 / 2.2 / 2.2 kW
APC motor	1.5 kW
Coolant pump motor	530W x1pcs, 850 x1pcs
Hydraulic pump motor	2.2 kW

SUPPLY

Electric voltage	200-220 V (50/60Hz)
Electric power supply	16 kVA
Air pressure & volume	0.5 MPa , 350 liters / min

TANK

Coolant tank	190 L
Lubrication tank	1.8 L

SIZE

Floor space (w/o chip conveyor)	1600 x 2685 mm
Machine height	2750 mm
Machine weight	4000 kg

Standard Accessories

- 15000rpm Direct driven spindle
- Arm type ATC system (24 Tools)
- Coolant system
- Fully enclosed splash guard
- Work lamp
- Auto lubrication system
- Warming lamp
- Spindle air blast
- Spindle air curtain
- Rigid tapping
- Heat exchanger for electric cabinet
- Tool box with adjustment tools.
- Leveling bolts & pads.
- Operation & maintenance manual

Optional Accessories

- 20000rpm Direct driven spindle
- 24000rpm Built-in spindle
- Spindle oil cooler
- Coolant through spindle
- Rotary table
- LED work light
- Manual pulse generator
- Air gun
- Coolant gun
- Auto door
- Workpiece measurement
- Tool breakage detector