MICROSTAR®

WT50

TWIN-SPINDLE, TWIN-LIVE TOOL TURRET PRECISION TURNING CENTER

Coming Up The New Machine.
Most suitable for the combined machining
for automotive parts manufacturing industry.

TMW TAKAHASHI MACHINERY

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TMW MICROSTAR®

WT50

integrates machining processes for automobile parts

This Twin-Spindle, Twin Turret precision turning center has developed by 60 years furbished technology and following customer's needs.


Combined Machining — WT50

- Milling with the max. 10,000 rpm (Op. 15,000 rpm) live tool with Y-axis.
- Multiple cutting and driven tools are available on each station with multi axis rotating tool unit, double holder, etc.

High Accuracy — WT50

- The X and Z-axis have dovetail type fine-scraped slide way.
- Reliable built-in spindle supplies fine profile and high speed machining.
  [Roundness: 0.3μm or less / Roughness: 0.8s or less] (Takahashi Test Value)
- At cold start, 5μm or less in diameter in displacement is realized by TAKAHASHI thermal distortion compensation device.
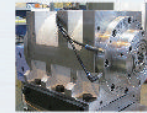
The built-in headstock has rotor and stator built-in and drives a spindle directly
As for the built-in headstock, high speed, highly precise processing are possible than a belt driven headstock.

High Productivity — WT50

- Faster cutting cycle time by 10% due to refinement of built-in spindle.*
- Quicker loading/unloading time by 20% due to new 2-axes gantry loader system.*
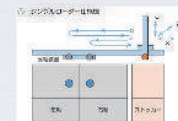
Space-Saving Design — WT50

- Floor space reduced by 30%.*
- 25% weight reduction (similar model ratio) of machine weight make possible the setting at the upper floor of the factory.
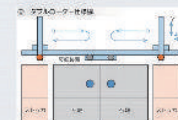
Flexibility In Applications — WT50

- Loader and automation systems are available for production line.
- The turnover device of standard accessory enables front and back machining continuously.

①Single Loader (standard)
One loader operates for two spindles (left and right) in turn.
One stocker can be located either on left or right side.

②Double Loader (optional)
Two loaders operate for each spindle (left and right) independently.
Two stockers are located on both left or right side.
Simultaneous machining of the side of the parts is possible by Part turn-over device.
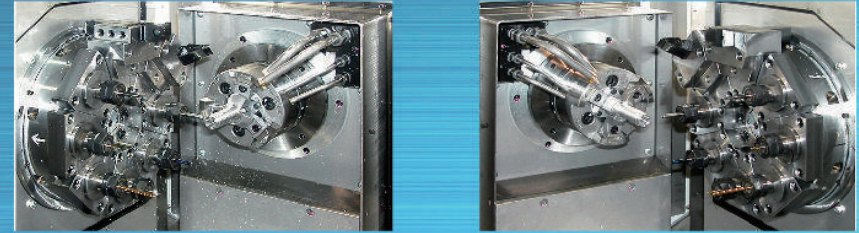
*from our previous model.
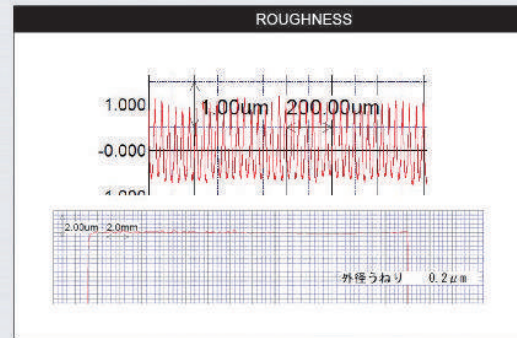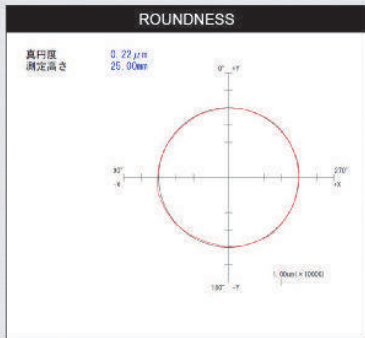
WT50

Sample parts - Precise finishing

Fuel pumps, Control valves for transmission, etc.

TOOLING SAMPLE

MACHINING ACCURACY

ROUNDNESS

真円度　0.22μm
測定高さ　25.00mm

ROUGHNESS

1.00um　200.00um

2.00um　2.0mm

外径うねり　0.2μm

TOOLING ZONE
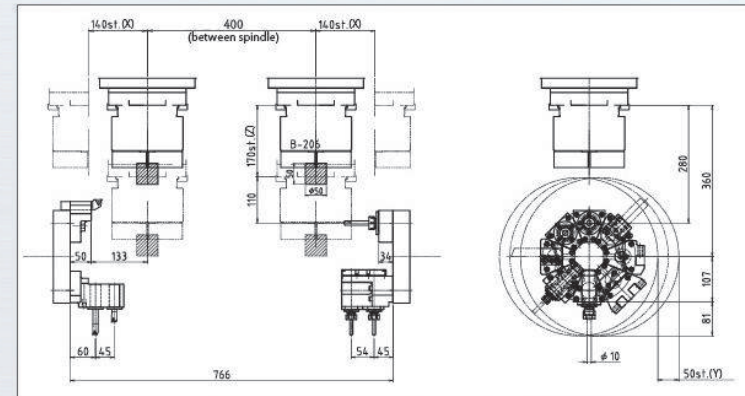
AUTOMATION DEVICE

【Automation device】

Bowl Feeder

It vibrates to sort parts then feed it.

Feeding/ Discharging Conveyor

It supplies blank materials and discharge machined parts to conveyor.

Cleaning / Automatic Measurement Device

After machining, it cleans parts and measure them automatically.

Rotary Stacker

it keeps many parts compactly and adapts to stacking in a variety of sizes.

Pallet Stacker

It supplies feeding and discharging parts by pallet. It also protects parts from scratches during operation.

TOOL HOLDERS
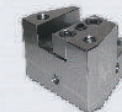

Double Boring Bar Holder

Boring Bar Holder

Double OD Turning Holder

Double Face Drive Tool Unite

Face Drive Tool Unite

Face Turning Holder

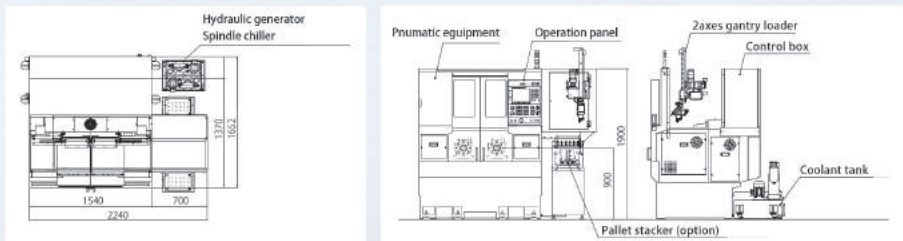Various options are able to choose as well as standard accessories.

TMW MICROSTAR® WT50

【STANDARD ACCESSORIES】

☐ 2-Axis Gantry Loader x 1	☐ Coolant Blow and Air Blow for Spindle x 2
☐ Loading/unloading chuck x 1	☐ Coolant Blow and Air Blow for Turret x 2
☐ Part Turn Over Device	☐ LED Work Light x 2
☐ Teaching Box for Loader Operation x 1	☐ Alarm Indicator x 1
☐ OD Turning Holder □20mm(3/4") x 2	☐ Spindle Chiller System x 1
☐ Face Turning Holder □20mm(3/4") x 2	☐ Tool Counter (CRT/for 10 tools) x 2
☐ Boring Bar Holder Φ25mm(or Φ1") x 2	☐ Work Counter x 2
☐ OD Drive Tool Unit x 2	☐ Automatic Circuit Breaker x 2
☐ Face Drive Tool Unit x 2	☐ Thermal Displacement Offset x 2
☐ Hydraulic Unit x 1	☐ Automatic Lubrication System x 1
☐ Foot Switch x 1	

【OPTIONAL ACCESSORIES】

☐ Chucking System (by Hydraulic and Pneumatic)	☐ Coolant/Air Through Spindle System
☐ Toolholders	☐ Multiple Pallet Stacker System
☐ Driven Tool Units	☐ Rotary Stacker System
☐ Chipconveyor System	☐ Parts Supply/Discharge Coveyor
☐ Automatic Fire Extinguisher System	☐ Oil Mist Collector
☐ Automatic Measuring System and Feedback System	☐ High Pressure Coolant System

Specifications

Specifications		Unit	B-Type Spindle	C-Type Spindle
Capacity	Max.turnable size	mm(in)	φ 100(3.9)×80(3.15)[*1]	
	Most suitable size	mm(in)	φ 50(1.97)×50(1.97)	
Spindle	Center Height	mm(in)	900(35.4)	
	Max. speed	min⁻¹	8.000	6.000
	Motor	kw(HP)	3.7/2.2(4.9/2.9)built-in motor	5.5/2.2(7.3/2.9)built-in motor
Tool post	No. of turret station		8	
	Turning holder	mm(in)	□20(3/4)	
	Boring bar holder	mm(in)	φ 25(1.0)	
Slide ways	X.Z.Y-axis travel	mm(in)	140(5.51)×170(6.69)×50(1.97)	
	X.Z.Y-axis rapid feed rate	mm/min(PM)	15(590). 15(590). 12(472)	
	C-axis rapid feed rate	min⁻¹	500	
Milling	Motor	kw(HP)	2.2/1.5(2.9/2) built-in motor	
	No. of live tool unit		Max. 8	
	Max. tool dia	mm(in)	φ 10(3/8)	
Machine Size	Floor space	mm(in)	1,540(60.6)(W)×1,652(65.0)(D) (2.5㎡)	
	Weight	kg(ib)	3,600(7.938)	
CNC System			FANUC 0i-TF	

＊1 : It may change due to the interference by chuck size and shape or size of workpiece.

【CNC UNIT STANDARD SPECIFICATIONS】

Specifications	Machine	Auto loader
CNC Device	FANUC 0i-TF	
Control	2systems(Left axis + Right axis)	1system or 2systems(OP)
Controlled axis	8axes(X,Z,Y,C×2)	single 2axes(X,Z):double 4axes(X,Z×2)
Least input increment	0.0001mm(X,Z,Y) 0.001deg(C)	0.001mm
Manual handle feed	0.00005mm(X) 0.0001mm(Z,Y) 0.001deg(C)	0.001mm
M function	Max 3 pairs in one block	
Spindle command	S4digits	－
Tool & offset command	T4digits	－
Feed rate override	0～120%	
Rapid traverse override	12.5%、25%、50%、100%	
Spindle override	50～120%	－
Part program strage & editing	2,560m(total amount)	
Tool offset amount memory	128 sets(total amount)	
Number of registerable programs	800(total amount)	
Custom macro	Standard	
Custom macro Common variable	＃100～＃199、＃500～＃999(each system)	
Multiple repetitive canned cycle	Standard	－
Rigid tapping	Standard	－
Polar coordinate interpolation	Standard	－
Cylindrical interpolation	Standard	－
Input/Output interface	Memory card,USB,Ethernet	

※ Other specification follows standard specification of FANUC 0i-TF

【Machine External Views】

Hydraulic generator
Spindle chiller
1370
1652
1540
700
2240

Pnumatic eguipment
Operation panel
2axes gantry loader
Control box
Coolant tank
1900
900
Pallet stacker (option)