



You Ji Machine Industrial Company Limited

Leader of Vertical Turning Center

- YV-1000
- YV-1200
- YV-1600

CNC Vertical Turning Lathe



High Precision \ High Rigidity High Stability \ Heat Resistance

- The You Ji series of vertical turning lathes are designed especially for high precision, high rigidity, high stability, under super heavy cutting conditions including non-symmetric work-pieces.
- The outstanding rigidity of the structure and design provides mechanical features for super heavy cutting, which achieves maximum machining accuracy and stability thus increasing the life of cutting tools.



High Rigidity 、 Heavy Cutting 、 High Efficiency

- Fanuc spindle motor, high torque and high horse power spindle motor, incorporating a German ZF dual speed gearbox provide high torque and high turning speed allowing the machine to develop and extend its cutting ability to cover all applications of turning operations.
- Cross roller bearings provide the strength to carry heavy axial and radial loads, thereby ensuring long life heavy cutting with very high precision, stability, low vibration and maximum support for the forces exerted on the main spindle.
- The heavy box section structure of the column provides maximum support for the sliding crossrail during heavy cutting conditions. The highest degree of machining precision will be maintained during heavy uninterrupted cutting operations.
- The X-axis box structure slideways are heat treated and the sliding faces are Turcite B coated allowing slide assemblies to move with high precision, accuracy and low friction.
- The YV series of CNC vertical turning lathes are checked and inspected under strict quality control which simulates all kinds of cutting conditions as a full test prior to shipment.

Best complex function



Turning



Boring



Milling



Drilling



90° drilling



Reaming



Tapping



Grinding

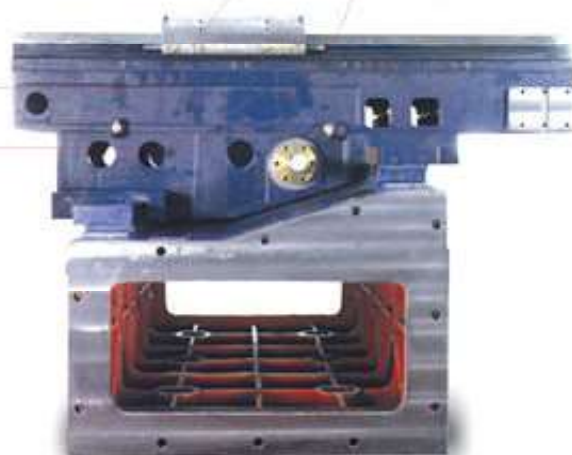
High Rigid Structure



The machine column and base are made of high grade cast iron and heat treated with a stress releasing process. The structure and strength of material of the castings is designed to absorb the cutting shocks and vibrations. In addition, the box structure design allows turning operations of a high accuracy under heavy cutting conditions.



The box section design is fitted to the machine base. The heavily walled and multi ribbed design allows low heat transfer to retain good thermal stability. This design allows static and dynamic torsion ensuring high rigidity and stability of the machine base.



The box section structure is fitted to the column. The heavily walled and multi ribbed design will eliminate all internal loading. High rigidity and high precision will be achieved when cutting.

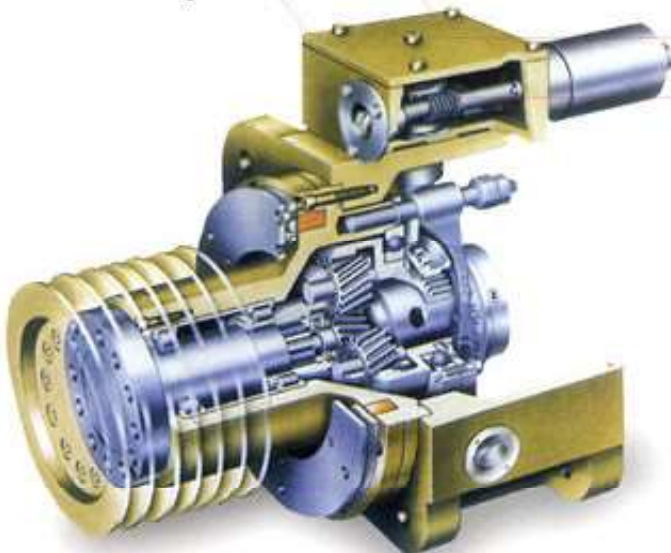
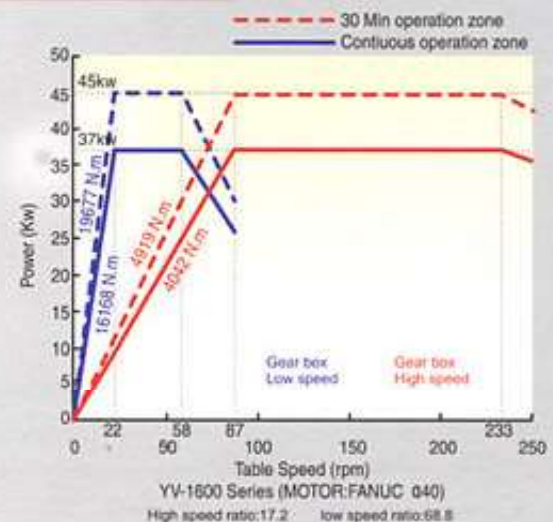
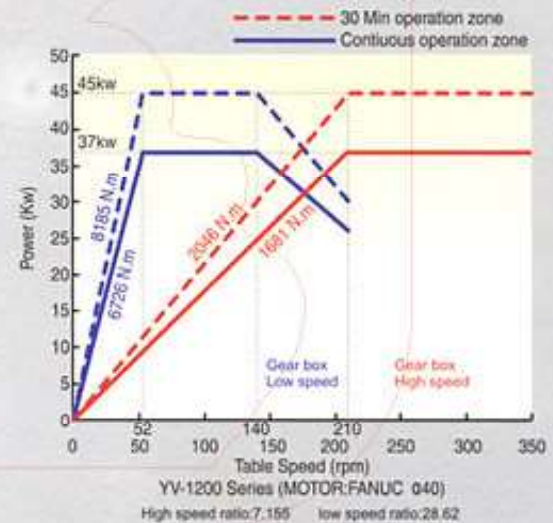
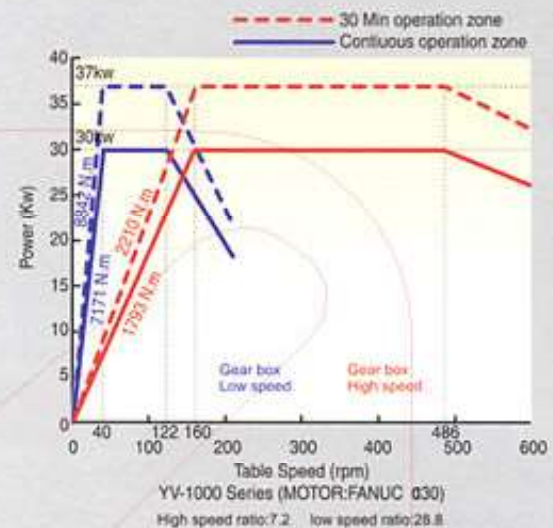
High Efficiency Transmission

The features of ZF gearbox

- Eliminates noise and heat transmitted to spindle.
- Eliminates vibration transmitted to the spindle.
- Separate lubrication systems for the gearbox.
- High efficiency (over 95%)
- Gear shift is controlled by solenoid valve.

Heavy cutting depends on the power of the main spindle motor. The machines are equipped with high specification FANUC spindle motors and German ZF dual speed gearboxes with high torque output. This allows the machine to be used under heavy cutting conditions and meets the application for all kinds of cutting operations covered by vertical turning lathes.

Torque Diagram:

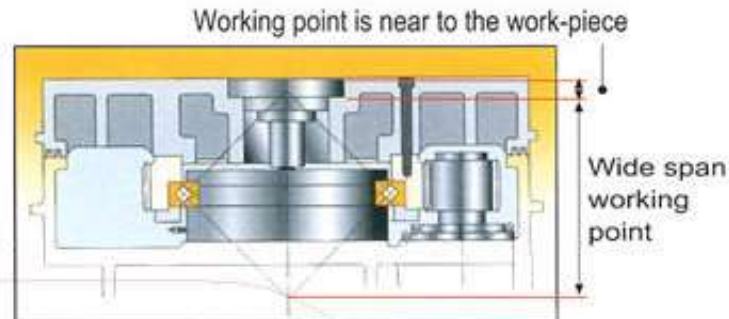


High Precision Bearings



Features of cross roller bearing

- Double-row cross roller bearings occupies the space of a single-row bearing only without compromising functionality or strength.
- Saves space and lowers the machine height for easy operation.
- Low center of gravity in the machine and low centrifugal forces.
- Nylon separators for low inertia, ensures the machine is able to operate even under low running torque.
- Heat dispersion and wear-resistant for longer bearing life.
- Maximum rigidity, high precision, shock-resistant and ease of lubrication.



The large vertical turning lathes are equipped with cross roller bearing. The bearing, with the characteristics of high precision, high loading and high rigidity, is suitable for machining large and non-symmetrical work-pieces.



High grade nickel-chrome alloy steel is used for the driven gear. Correct heat treatment and accurate grinding allows it to be classified as first class precision in the Japanese JIS 1 standards.



A monitoring and filtering unit checks the quantity of oil fed to the main bearing ensuring a longer life for the main spindle. An alarm message will be displayed automatically if a fault in the system will be detected.

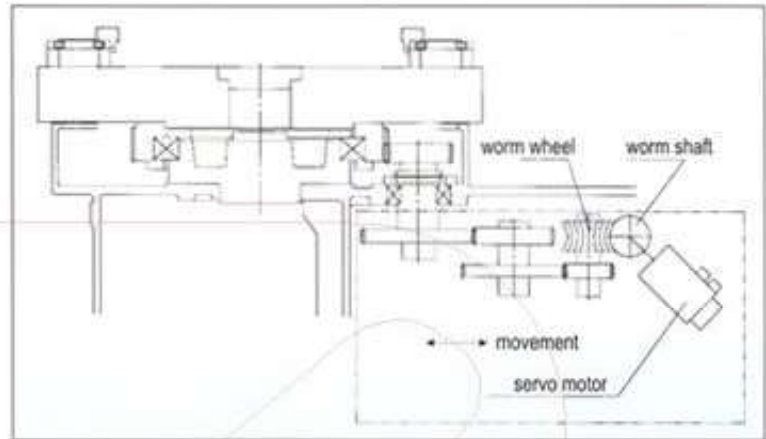
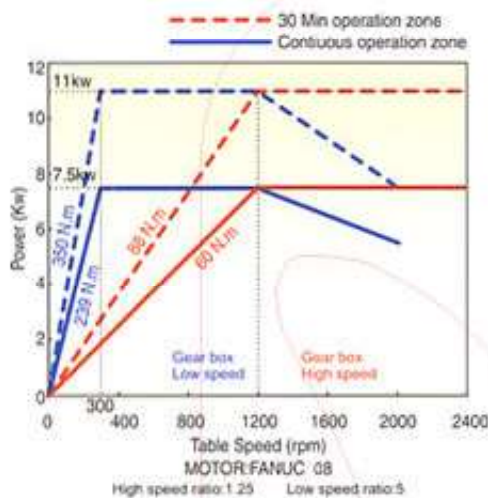


Spindle Cooler

Multi-Function Characteristics

The spindle structure of driven tools

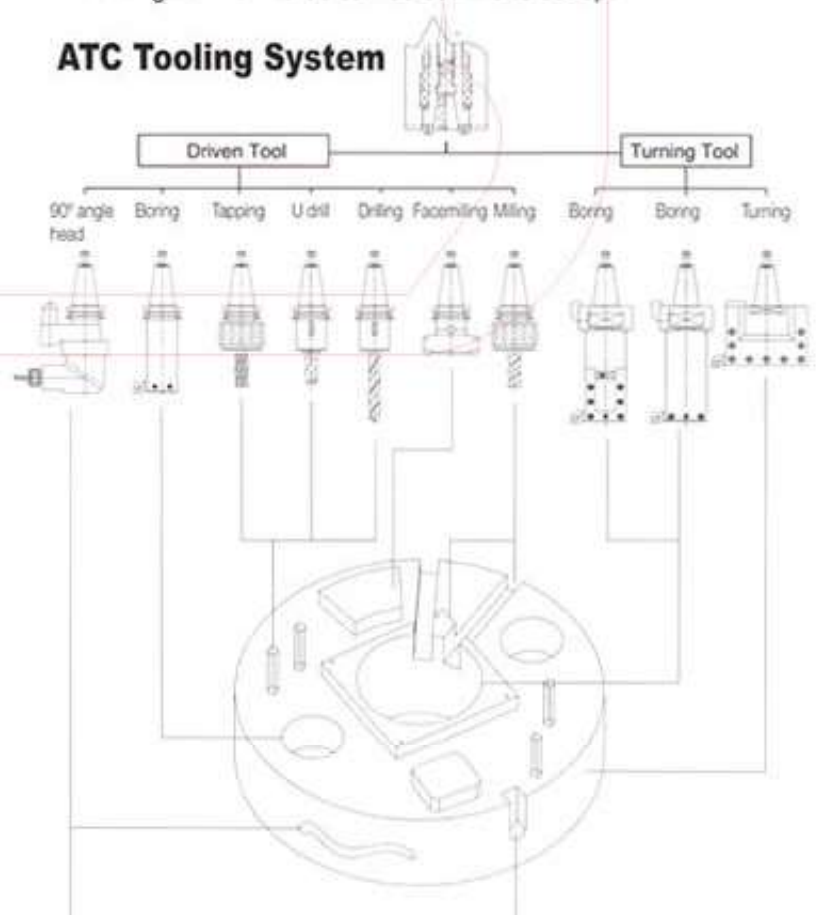
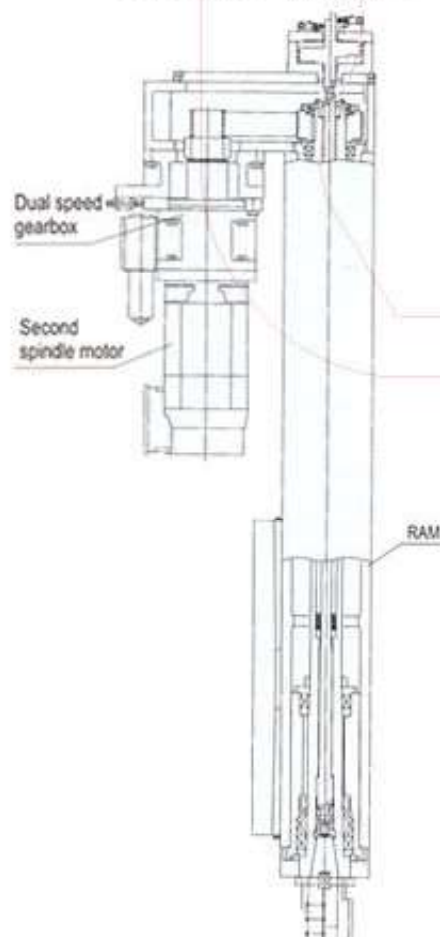
The motor driving the spindle and dual speed gearbox is situated on top of the RAM, enabling high horse power output for face milling, end milling, drilling and tapping capacity.



High precision CF-axis gearbox

The high power servo motor combined with the precision worm wheel & worm shaft provides positioning accuracy up to 15 seconds of arc. Multiple angles and cam shapes can be machining. This accurate rotary axis when used in conjunction with the X and Y axes transforms the machine functionality into that of a machining center in addition to the normal turning operation of a vertical lathe. This allows for a wide range of work to be carried out in one set up.

ATC Tooling System



High Stability of Structure



The symmetric box section design has heat-resistance and combines the symmetric cross rail and pre-pulling type ball screw to ensure the precision.



X axis box guide way has Turcite B coated to ensure the high precision and super heavy cutting.



The second spindle has high output power allowing the drilling and milling attachment of CF axis control to display the multi-functions such as, drilling tapping & milling operations on the machine.



Air conditioner for electrical cabinet maintains the temperature of the electrical cabinet below room temperature and ensures the stability for the controller.



The crossrail can be moved up and down independently and is an ergonomic operation design feature. Four super high pressure cylinders clamp and hold the crossrail automatically and maintain precision after its positioning.



Super large side area and single body structure applied in rigid Z axis to raise the cutting ability and ensure the machining precision at higher and deep inner diameter. Built-in coolant device cools the tool and extends the tool life to lower the initial cost.

Automatic Tool Change System

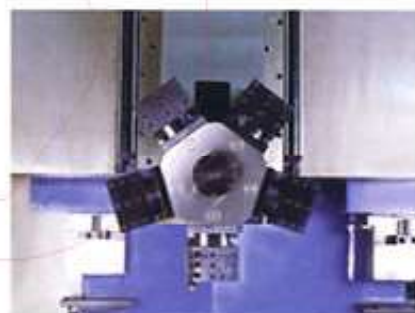


Design of the 16 tool magazine meets the demands of various machining operations and is convenient for fast tool selection and easy operation.

- Maximum weight of single tool holder: 50 kg
- Maximum loading weight of tool magazine: 360kg
- ATC tool magazine allows the maximum tool size is 280Wx150Tx400L



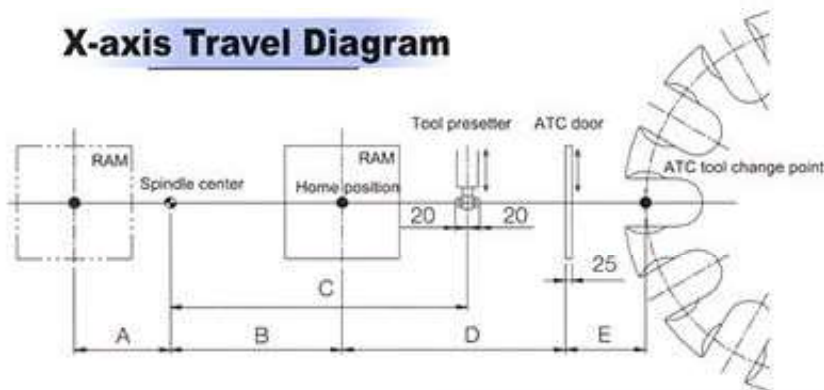
Full guarding of tool magazine protects the operator whilst allowing easy access for cleaning.



Turret orientation is provided with curved coupling. Orientation accuracy is 5°, repeatability is 3°. Arc gear can bear heavy cutting and drove cutting to rotate rapidly by high torque hydraulic motor and controlled the speed by cam to let tool change smooth. Intelligent computer is convenient for fast tool selection to achieve efficient operation.

The transmission of the tool magazine is driven by a hydraulic motor for fast positioning of the ATC. shortest path movement will change tools efficiency. Also there is available for four options of tool magazines such as 24, 32, 48, and 60 tools.

X-axis Travel Diagram

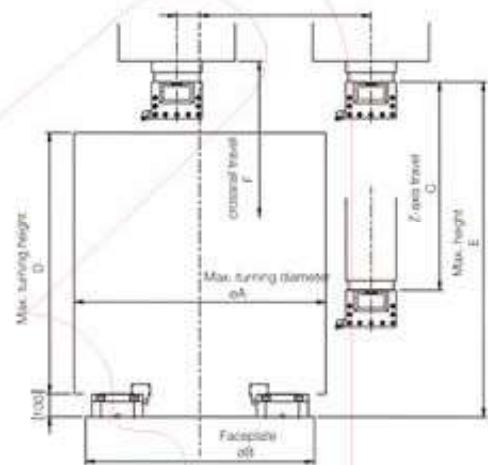
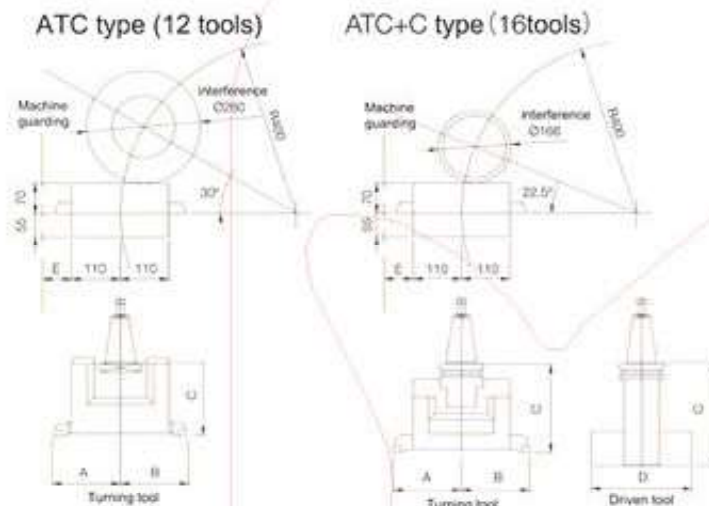


Model	A	B	C	D	E
YV-1000A	400	720	710		
YV-1000ATC	400	720	750	127	273
YV-1000ATC+C					
YV-1200A	100	1231	1100		
YV-1200ATC	100	835	875	219	221
YV-1200ATC+C					
YV-1600A	100	1518	1300		
YV-1600ATC	100	1125	1100	184	216
YV-1600ATC+C					

Unit:mm

Maximum Tool Size

Machining Range



Model	A	B	C	D	E
YV-1000ATC	175	200	400		138
YV-1000ATC+C	175	200	400	250	138
YV-1200ATC	175	200	400		86
YV-1200ATC+C	175	200	400	250	86
YV-1600ATC	175	200	400		81
YV-1600ATC+C	175	200	400	250	81

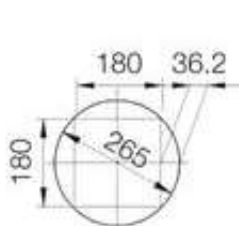
* Please note that tooling interference when using driven tools.

Unit:mm

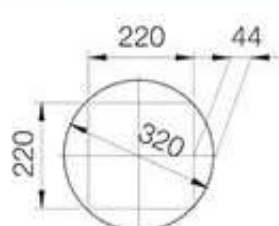
Model	A	B	C	D	E	F
YV-1000A						
YV-1000ATC	1100	1000	800	900	1210	500 (option)
YV-1000ATC+C						
YV-1200A						
YV-1200ATC	1350	1250	900	1200	1470	800
YV-1200ATC+C						
YV-1600A						
YV-1600ATC	1800	1600	900	1200	1470	800
YV-1600ATC+C						

Unit:mm

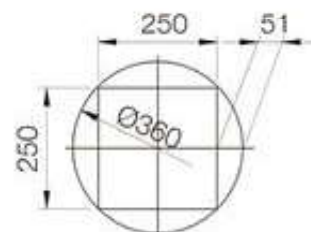
RAM Interference



YV-1000ATC
YV-1000ATC+C



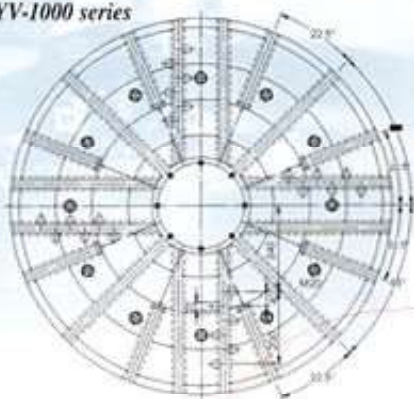
YV-1200ATC
YV-1200ATC+C
YV-1600ATC
YV-1600ATC+C



Option

Diagram of faceplate

YV-1000 series



YV-1200 series

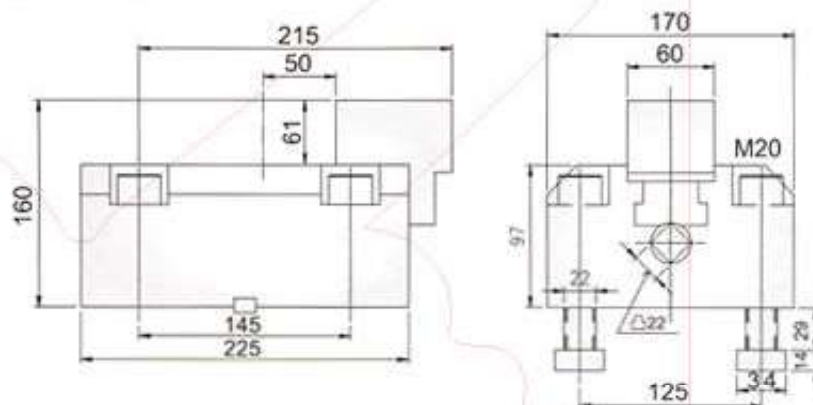


YV-1600 series

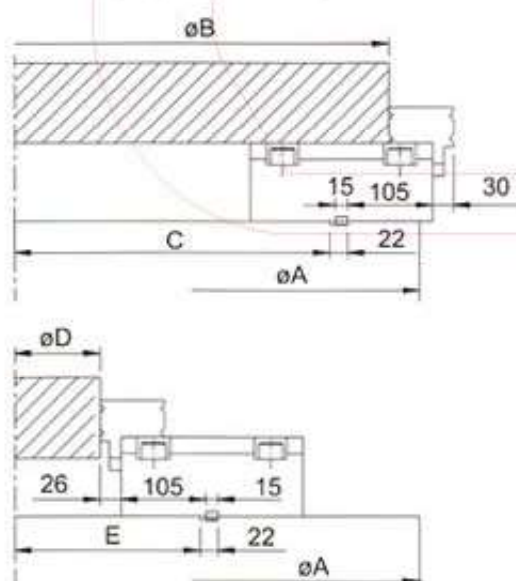


Dimension of 4T chuck jaws:

- 4 jaws manual independent chuck
- Maximum clamping torsion of single jaws is 18.5 kgf-m
- Weight of single jaw: 28kg



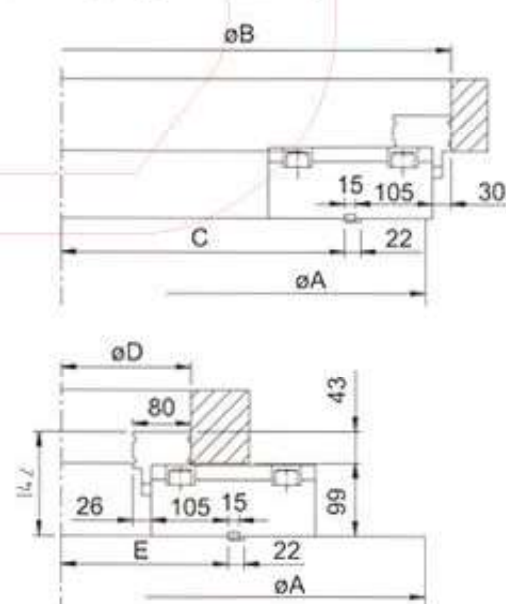
Outside clamping for chuck jaws



Unit: mm

MODEL	A	B	C	D	E
YV-1000 Series	1000	930	429	210	229
YV-1200 Series	1250	1194	524	240	244
YV-1600 Series	1600	1514	684	240	244

Inside clamping for chuck jaws



Unit: mm

MODEL	A	B	C	D	E
YV-1000 Series	1000	1080	429	355	229
YV-1200 Series	1250	1340	524	386	244
YV-1600 Series	1600	1660	684	386	244

Optional Accessories



3 jaws, 4 jaws, 6 jaws hydraulic chucks are available as options to improve set up time.



Magnetic chuck



Paper filter used in coolant through spindle system



Work-piece probe



Tool presetter



Automatic pallet changer (APC) raises the productivity and saves set up time.



Z-axis linear scale



X-axis linear scale



Tailstock



Completed full guarding



Oil skimmer



Pendant control



Grinding device



Coolant through spindle system

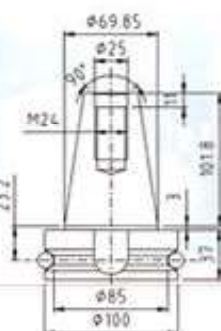
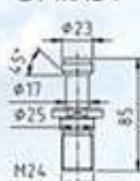


Coolant cooler

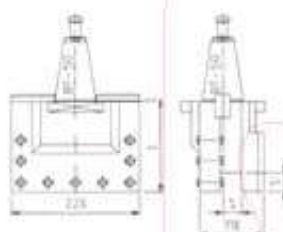
Dimension of Tool Holder



BT MAS-I

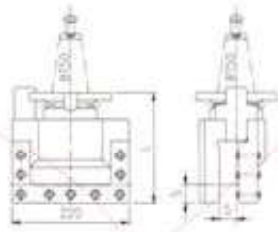


ATC series

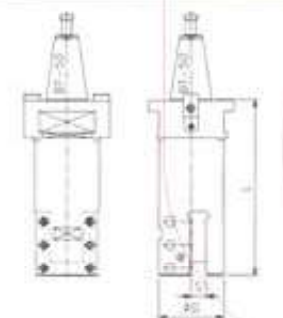


Model	L	S
ST132	160	32
ST140	160	40

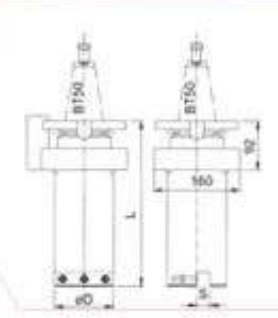
ATC+C series (Turning tool holder)



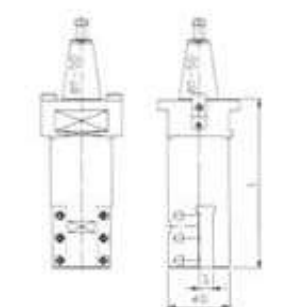
Model	L	S
MST132	210	32
MST140	210	40



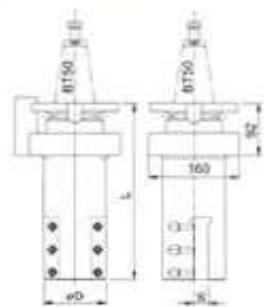
Model	L	S	OD
BB225	200	25	100
BB325	300	25	110



Model	L	S	OD
MBB225	200	25	100
MBB325	300	25	110



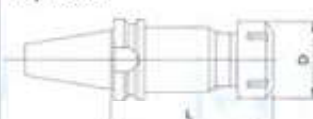
Model	L	S	OD
BT225	200	25	100
BT325	300	25	110



Model	L	S	OD
MBT225	200	25	100
MBT325	300	25	110

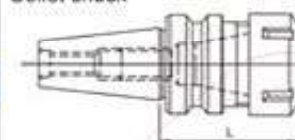
ATC+C series (Driven tool)

Tap holder



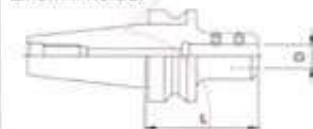
Model	L	D	Taping Range
BT50-TER16	80	28	M3-M12
BT50-TER40	117	63	M12-M35

Collet chuck



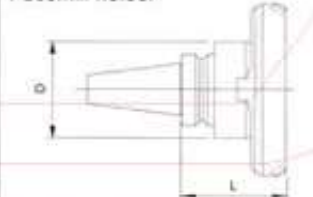
Model	L	Capacity	Collet Type
BT50-ER20-100	100	1-13	ER-20
BT50-ER32-100	100	2-20	ER-32
BT50-ER40-100	100	3-26	ER-40

Endmill holder



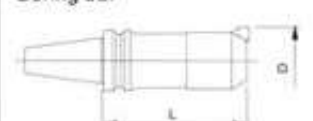
Model	L	C	D
BT50-SLA20-105	105	50	20
BT50-SLA25-105	105	55	25
BT50-SLA32-105	105	60	32
BT50-SLA40-105	105	80	40
BT50-SLA50.8-105	105	95	50.8

Facemill holder



Model	L	D	Face dia
BT50-FMA25.4-105	125	85	80
BT50-FMA31.75-105	127	85	100
BT50-FMA38.1-75	98	95	125
BT50-FMA50.8-75	99	95	150

Boring bar



Model	L	D
BT50-BSA62-300	300	62~90
BT50-BSA72-320	320	72~110
BT50-BSA105-195	195	105~160

A series



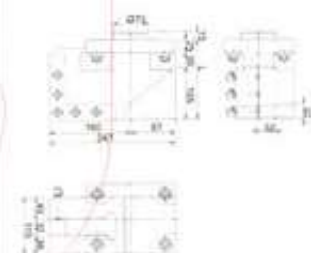
Unit: mm

Model	L
STA1-160	160
STA1-200	200



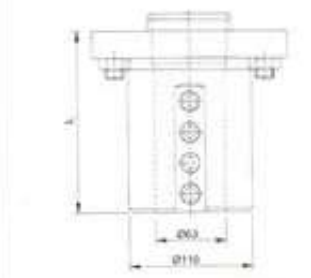
Unit: mm

Model	L
STA2-160	160
STA2-210	210
STA2-260	260



Unit: mm

Model	L
STA3-160	160



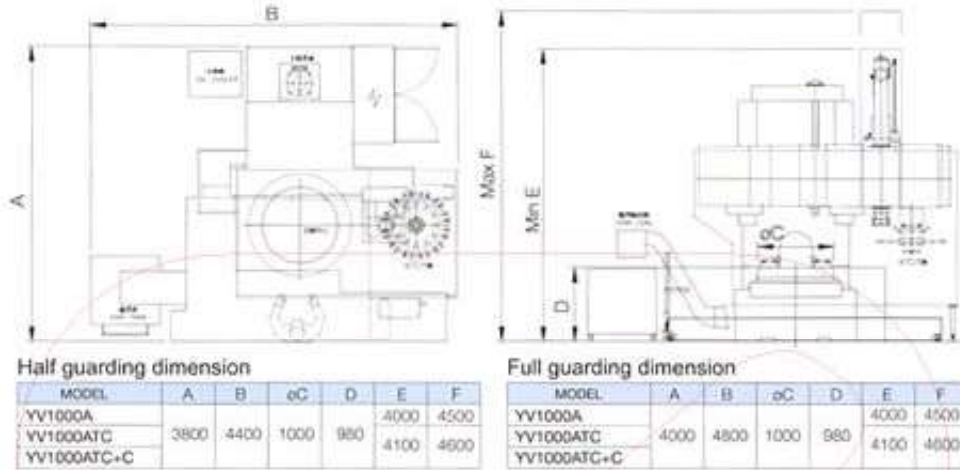
Unit: mm

Model	L
STA4-160	160
STA4-210	210
STA4-260	260

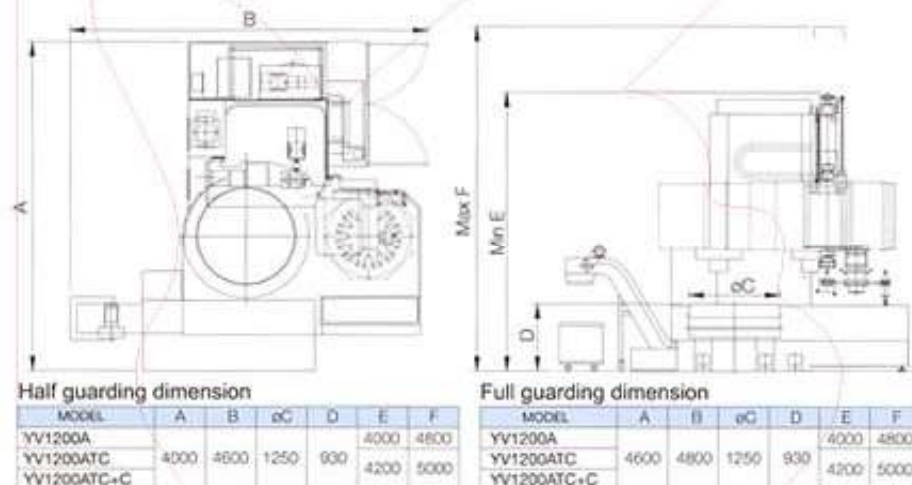
* Simultaneous taper & flange contact tool holder (option)

Machine Layout Dimension

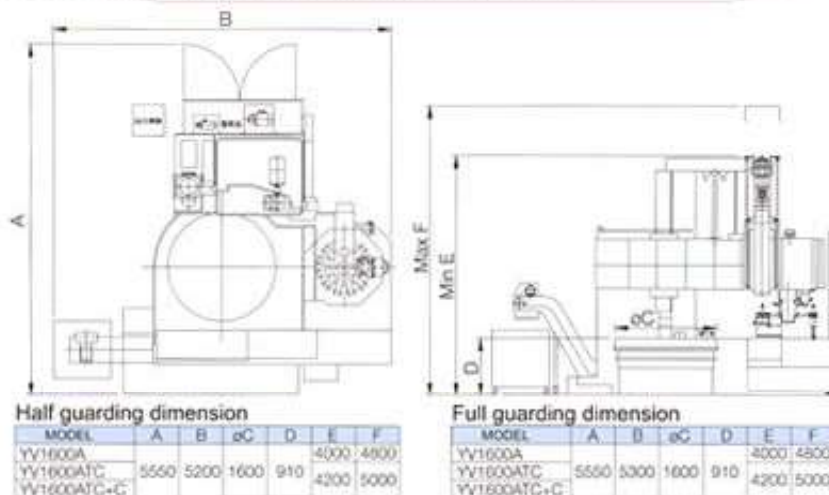
MODEL: YV-1000A, YV-1000ATC, YV1000ATC+C



MODEL: YV-1200A, YV1200ATC, YV1200ATC+C



MODEL: YV-1600A, YV-1600ATC, YV-1600ATC+C



Machine Specification

Standard Specification	Unit	YV-1000A	YV-1000ATC	YV-1000ATC+C	YV-1200A	YV-1200ATC	YV-1200ATC+C	YV-1600A	YV-1600ATC	YV-1600ATC+C
Capacity										
Table diameter	mm	Ø1000	Ø1000	Ø1000	Ø1250	Ø1250	Ø1250	Ø1600	Ø1600	Ø1600
Max. swing diameter	mm	Ø1350	Ø1350	Ø1350	Ø1600	Ø1600	Ø1600	Ø2000	Ø2000	Ø2000
Max. turning diameter	mm	Ø1100	Ø1100	Ø1100	Ø1350	Ø1350	Ø1350	Ø1800	Ø1800	Ø1800
Max. turning height	mm	900	900	900	1200	1200	1200	1200	1200	1200
Max. work-piece weight	kg	4000	4000	4000	5000	5000	5000	8000	8000	8000
Travel										
Horizontal travel of rail head (X-axis)	mm	1120	1120	1120	1330	930	930	1610	1225	1225
Vertical travel of RAM (Z-axis)	mm	800	800	800	900	900	900	900	900	900
Vertical travel of cross rail	mm				800	800	800	800	800	800
Spindle										
Spindle speed	Low	rpm	2-160	2-160	2-160	2-108	2-108	2-108	2-62	2-62
	High	rpm	160-600	160-600	160-600	108-350	108-350	108-350	64-250	64-250
2 nd spindle speed	Low	rpm			2-1200			2-1200		2-1200
	High	rpm			1200-2400			1200-2400		1200-2400
Max. table torque	Nm(kgf-m)	8,800(898)	8,800(898)	8,800(898)	8,200(836)	8,200(836)	8,200(836)	17,500(1785)	17,500(1785)	17,500(1785)
Feed rate										
Rapid traverse of rail head (X-axis)	m/min	12	12	12	12	12	12	12	12	12
Rapid traverse of ram (Z-axis)	m/min	10	10	10	10	10	10	10	10	10
Cutting feed rate	mm/min	0.001-2000	0.001-2000	0.001-2000	0.001-2000	0.001-2000	0.001-2000	0.001-2000	0.001-2000	0.001-2000
Manual feed rate	m/min	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10
Automatic Tool Changer (ATC)										
Number of tool position			12 tools	16 tools		12 tools	16 tools		12 tools	16 tools
Type of tool taper			7/24 taper BT-50	7/24 taper BT-50		7/24 taper BT-50	7/24 taper BT-50		7/24 taper BT-50	7/24 taper BT-50
Max. tool size of ATC	mm		280W x150Tx400L			280W x150Tx400L			280W x150Tx400L	
Max. tool weight	kg	50	50	50	50	50	50	50	50	50
Max. loading weight of ATC	kg		360	360		360	360		360	360
Time of tool change (tool to tool)	Sec	5	40	40	5	40	40	5	40	40
Turret										
Turret type		5 station			5 station			5 station		
Size for square tool holder	mm	□32x32(Ø63)			□32x32(Ø63)			□32x32(Ø63)		
Motors										
Spindle motor	kw	30/37 (α 30)	30/37 (α 30)	30/37 (α 30)	37/45 (α 40)	37/45 (α 40)	37/45 (α 40)	37/45 (α 40)	37/45 (α 40)	37/45 (α 40)
# 2 spindle motor	kw			7.5/11 (α 8)			7.5/11 (α 8)			7.5/11 (α 8)
X-axis servo motor	kw					7 (α 30)				
Z-axis servo motor	kw					9 (α 40/3)				
CF axis servo motor	kw			7 (α 30)			7 (α 30)			7 (α 30)
Coolant motor	kw	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Tank capacity										
Hydraulic tank	L	65					130			
Coolant tank	L					400				
Lubrication tank	L					4.6				
Power sources										
		AC220 ±10%, 60 Hz ±5Hz								
Power capacity	KVA	80	80	100	80	80	100	80	80	100
Floor dimension	mm	3800x4400	3800x4400	3800x4400	4000x4600	4000x4600	4000x4600	5550x5200	5550x5200	5550x5200
Machine weight	kg	20,000	20,000	21,000	22,000	22,000	23,000	24,000	24,000	25,000
Accuracy	mm	P:±0.007/500, Ps:±0.005(X & Z), P:±7.5°/360°, Ps:±5°(C-axis)								

• Specification is subject to change without prior notice.

Standard Accessories

- Fanuc 0i-T controller
- 4T independent manual chuck
YV-1000 (40),
YV-1200 (49"),
YV-1600 (63")
- ZF dual speed gearbox
- Hydraulic unit
- Coolant unit
- Pressure relief automatic lubrication unit
- Alarm lamp
- Air conditioner for electrical cabinet
- Chip conveyor and chip bucket
- Working lamp
- 5 station turret (A Series)
- 12 positions tool magazine (ATC Series)
- 16 positions tool magazine (ATC+C Series)
- Tool kit
- Operation manual
- Half guarding
- Spindle cooler

Optional Accessories

- Fanuc 18i-T controller
- Siemens 840D controller
- Tool presetter
- X axis and Z axis linear scale
- 3 jaw hydraulic chuck
- Work-piece probe
- Paper filter
- X axis box guide way
- Grinding function
- Oil skimmer
- Transformer
- Square guarding
- Complete full guarding
- Pendant control
- Tool magazine for 24, 32, 48, 60 tool position
- Tailstock
- Coolant cooler
- Coolant through spindle
- Automatic pallet changer
- Tool holder (Simultaneous taper & flange contact)
- **A series tool holder:**
((YV1000A,YV1200A,YV1600A))
STA1-160,STA1-200
STA2-160,STA2-210,
STA2-260
STA3-160
STA4-160,STA4-210,
STA4-260
- **ATC series tool holder:**
※ST132, ST140
※BB225, BB325
※BT225, BT325
- **ATC+C series turning tool holder:**
※MST132, MST140
※MBB225, MBB325
※MBT225, MBT325
- **ATC+C series driven tool:**
※BT50-TER16,
BT50-TER40
※BT50-ER20-100,
BT50-ER32-100
BT50-ER40-100
※BT50-SLA20-105,
BT50-SLA25-105
BT50-SLA32-105,
BT50-SLA40-105
BT50-SLA50.8-105.
※BT-50FMA25.4-105,
BT50FMA31.75-105
BT50-FMA38.1-75,
BT50-FMA50.8-75
※BT-BSA62-300,
BT-BSA72-320,
BT50-BSA105-195



Product Range:

- CNC Vertical Turning Lathe
- CNC Horizontal Turning Lathe
- CNC Vertical Machining Center
- CNC Horizontal Machining Center
- NC Special Purpose Machine
- Automatic Production Line

You Ji Machine Industrial Company Limited

2-1, 2nd Lane, Hua-Kuang Road, Jwu-Hu Vill,
Lu-Jwu Hsiang, Kaohsiung Hsien, Taiwan.

TEL: 886-7-6983068 (REP.)

FAX: 886-7-6983071 <http://www.youji.com>

E-mail: youji@youji.com.tw

Distributor : _____