US WHEELER

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24/7 Service Hotline.
Machine Tool Lifetime Service

We provide on-call service 24/7. If you encounter any equipment maintenance and repair problems, please contact us. If you have any suggestions, please log in to the company's official website to leave a message.
www.wheeler-us.com

24h SERVICE

For more information please follow
Official WeChat account

Sample parameters and information are subject to change witchout prior notice,and the final data is subject to the technical agreement

HL-EM02309-02-1000

EM Series

VERTICAL MACHINING CENTER

US WHEELER

INDUSTRIAL ROBOT/
CNC MACHINETOOLS/
SMART FACTORY

ABOUT US

Hangzhou Wheeler Intelligent General Machinery Incorporated Co.,Ltd is a national high-tech enterprise focusing on CNC machining equipment, machine tool loading and unloading automation, digital factories, and non-standard fixture design and manufacturing. The company was established in January 2015, and its operation center is located in Linping Economic Development Zone, Hangzhou. The company currently has more than 300 employees and an efficient professional technical R&D team, including more than 60 professional and technical personnel with various intermediate and senior technical titles (engineers). The company has a 5,000 square meter R&D center and a 43,000 square meter production and debugging base, and owns more than 50 patent technologies. It has offices and after-sales service outlets in Shanghai, Jiangsu, Anhui, Shandong, Henan, Jilin, Chongqing, Ningbo, Taizhou, Wuhan, Xi'an, Zhengzhou, etc. The company's products are exported to Turkey, Egypt, South Africa, Brazil, Australia, Singapore, Malaysia, Thailand and other countries.

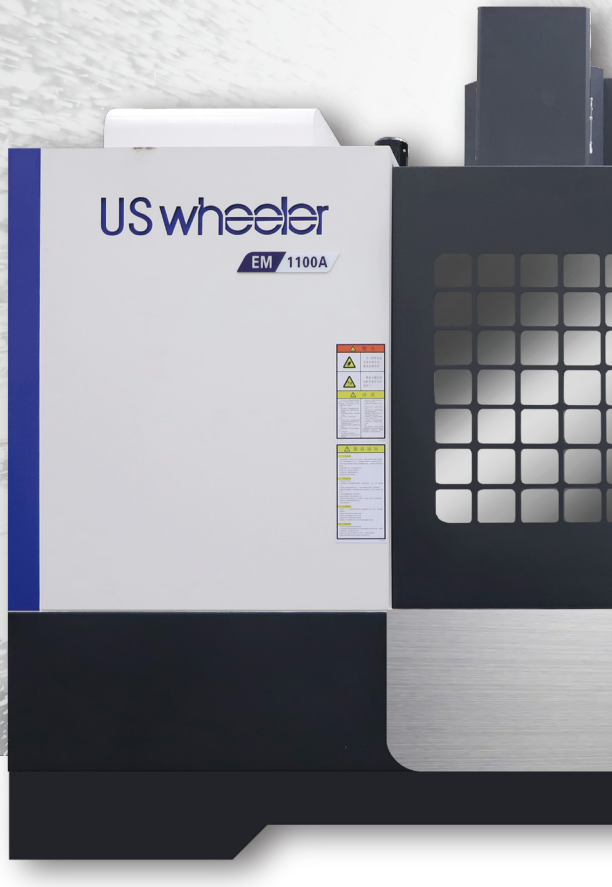
Our Certification

The company's main products include machining equipment, machine tool loading and unloading robots, machine tool fixtures, peripheral automated logistics equipment, and robot integration systems. It is a strategic partner of robot companies such as Germany's KUKA and Switzerland's ABB. It provides customers with mechanical processing automation technology solutions, a full set of automation equipment, technical consulting, and comprehensive after-sales and technical services. The products are widely used in mass production industries such as automotive parts processing and engineering machinery.

MECHANICAL STRUCTURE

EM Series
Vertical Machining Center

The EM series vertical machining center is a new generation of CNC machine tools produced by US-WHEELER with advanced technology. The rational structural design of the machine tool, high rigidity, high stability, high precision, and high-quality parts selection, effectively save processing time.



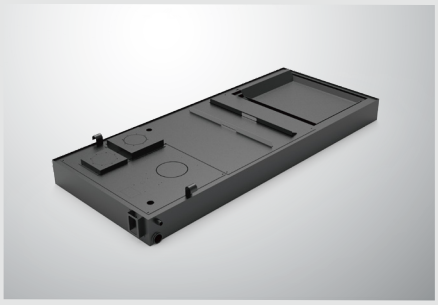
+Humanized design

Centralized Layout

Auxiliary equipment is gathered behind the machine for easy inspection.

Rotatable Operation Panel

The 0 °~60 ° rotary operation panel improves operational convenience and visibility.



Water Tank

A full series of multi-layer filter chip water tanks ensure clean and efficient water return.

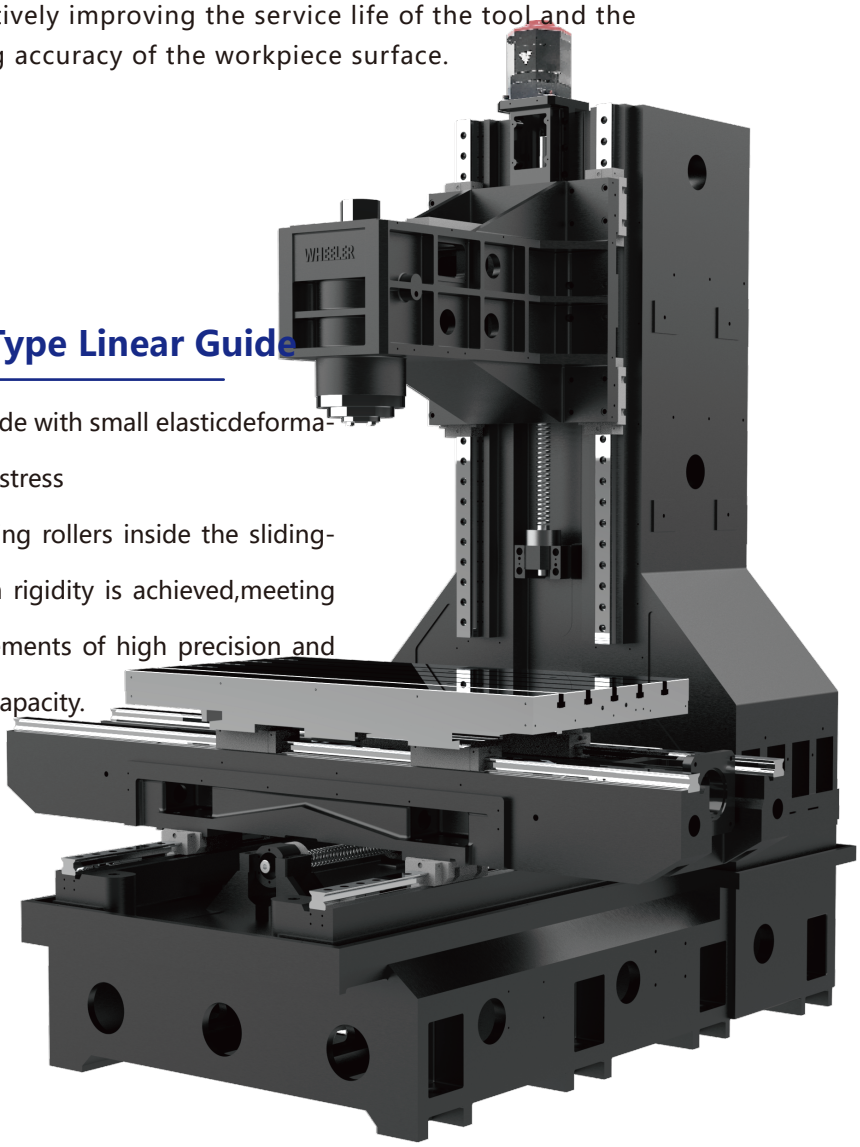
EM series - The Scope and Field of Application

This series of machine tools has strong overall rigidity, convenient and flexible operation, and adopts fully enclosed protection. Suitable for processing box type parts and various complex 2D and 3D molds. After one-time clamping, multiple processes such as milling, drilling, boring, reaming, and tapping can be achieved. Widely used in parts and mold with multiple processes, high precision, and high efficiency processing in industries such as automotive, mold, aviation, and military. Rotary coordinate axes can also be added according to customer needs to process multi angle parts, cylindrical gears, camshafts, and other types of parts.

MECHANICAL STRUCTURE

Spindle

The spindle adopts a precision sleeve type spindle and is assembled with advanced precision P4 grade bearings. The four walls of the tapered hole in the spindle hole are thick and stable, ensuring low vibration at various speeds during machining, effectively improving the service life of the tool and the machining accuracy of the workpiece surface.



Roller Type Linear Guide

+Roller guide with small elasticdeformation under stress

+By installing rollers inside the sliding-block, high rigidity is achieved,meeting the requirements of high precision and high load capacity.

Ball Screw

Adopting imported C3 grinding grade ball screw, it has the characteristics of good rigidity, wear resistance, torque resistance, and long service life. After adding pre tensioning nuts, the backlash was eliminated, ensuring high machining accuracy of the machine.

MAIN CONFIGURATION

High Speed ATC

The tool changing device is driven by a cam motor. During machining, the ATC can rotate to the next tool to be used and wait for the tool changing command, which can minimize non cutting time. At the same time, it can be equipped with 24 tools {optional 30 tools},making itsmachining diversified.

T 24 Standard Configuration

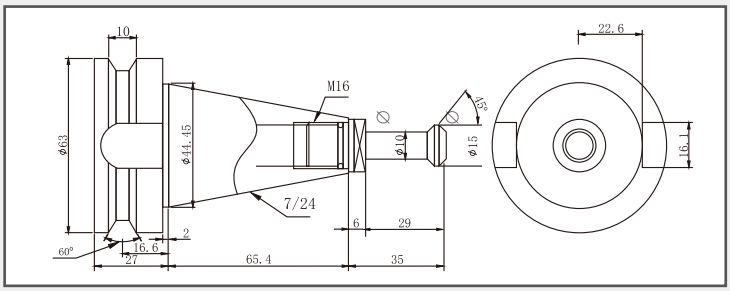
T 30 Optional Configuration

Tool Holder Model

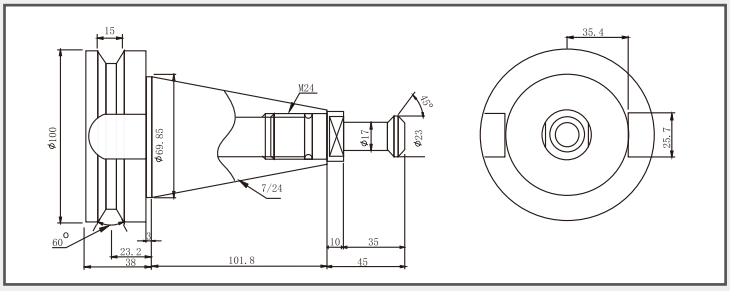
Match the corresponding size tool holder to the equipment processing requirements

Vertical machining centers are equipped with high-performance and high-precision spindles, providing faster acceleration and deceleration and more stable machining results.
The high-precision, high-speed, and high torque spindle can adapt to the processing needs of various types of parts, providing strong support for high-precision and high-strength processing of vertical high-speed machining centers.

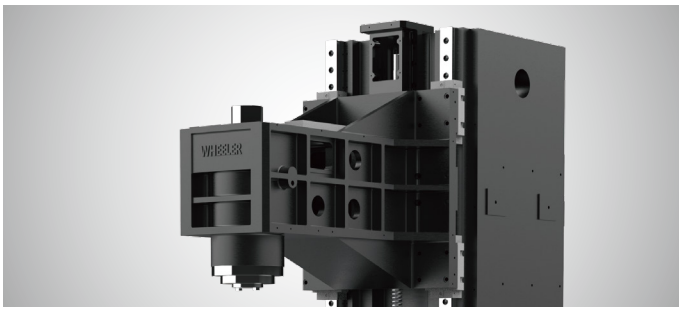
BT 40



BT 50

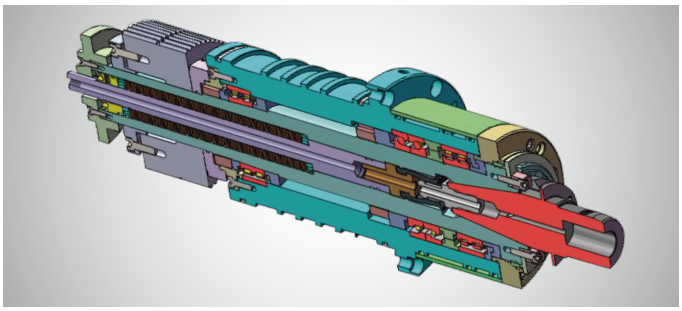


MAIN CONFIGURATION



+Spindle Head

The contact length ratio between the main Spindle head and the column is appropriate, providing stable support for spindle. The spindle head is equipped with an independent cooling system, which keeps the spindle heat within a reasonable range, reduces the thermal extension of the spindle, and ensures machining accuracy.



+Spindle

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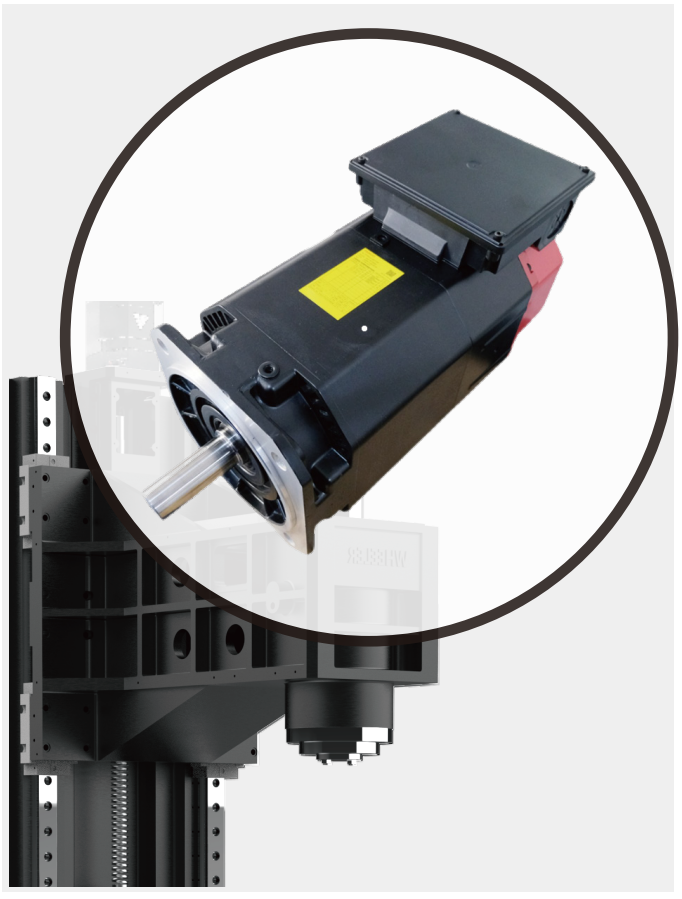


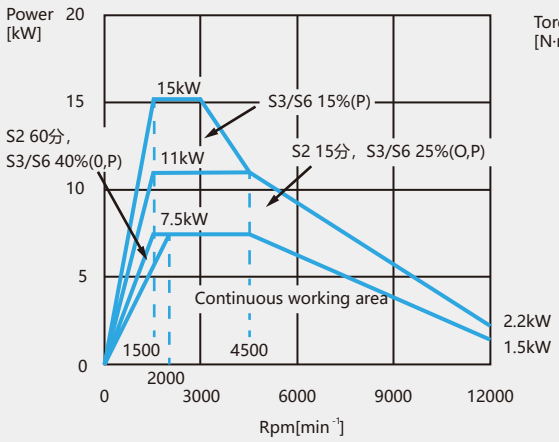
High performance spindle motor (for BT50) to assist in efficient machining

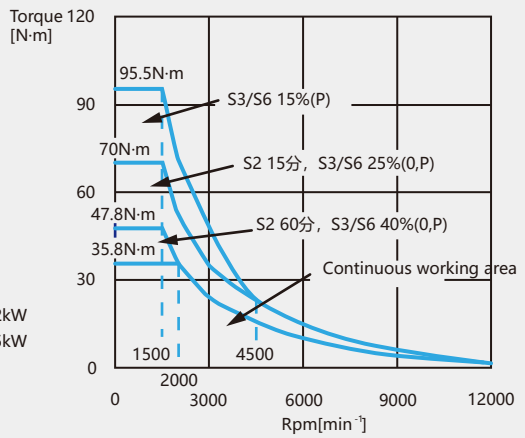
The ilP-B series spindle motor is an air-cooled asynchronous motor with a compact structure, high output and torque characteristics. The HRV control of the spindle motor makes it more efficient and produces less heat. It can provide more stable machine tool processing effects and ensure equipment processing efficiency.

	7.5/11kW	11/15kW	15/18.5kW
Drive Mode	Direct -Drive	Belt -Drive	Belt -Drive
Max. Rpm	12000rpm	10000rpm	8000rpm
Rated Torque	35.8Nm	52.5Nm	143Nm
Max. Torque	95.5Nm	118Nm	236Nm

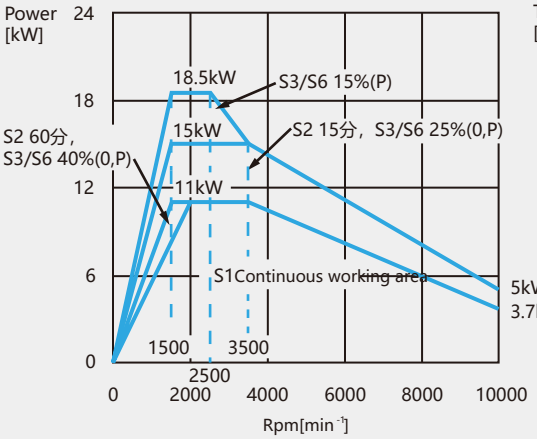
MOTOR CHARACTERISTIC CURVE

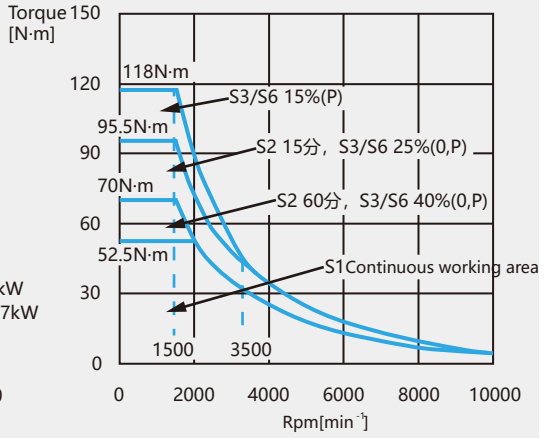
7.5/11kW



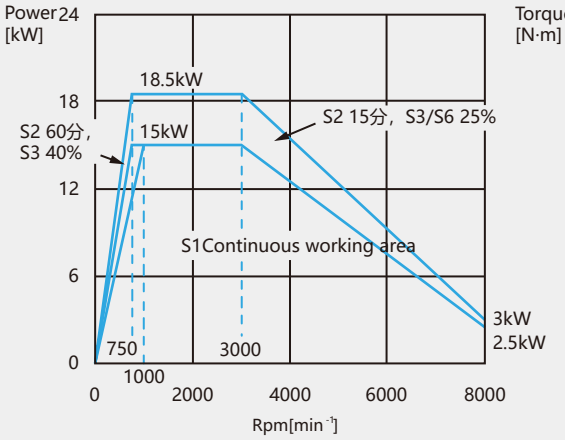


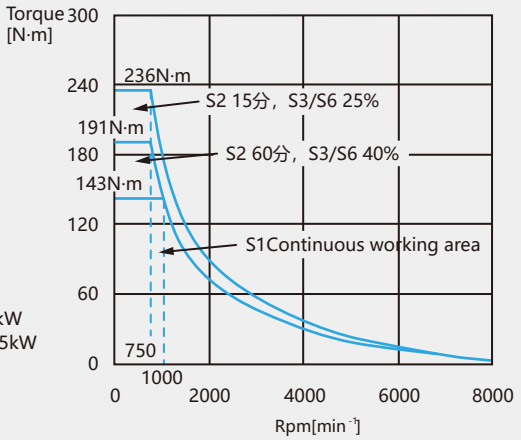
11/15kW





15/18.5kW





OPERATION SYSTEM

FANUC - 0iMF PLUS

A brand new operating experience

- Equipped with i HMI (Type0)
- Supports up to 21.5 "PANEL i H Pro
- Standard personalized features, customized design according to customer needs

Higher operational efficiency

- System configuration servo selection software Servo sizer
- Fault detection - diagnostic function provides quick roubleshooting
- Prevent machine tool damage during power outages
- Insulation degradation detection function

Stronger performance

- Intelligent servo control
- Efficient processing technology
- Great surface treatment technology provides highquality processing

0iF Plus System Storage Capacity Leap Forward

- System processing program storage capacity comes standard with 2M+1000 programs
- Using FANUC program transfer software can support online program editing
- PMC series comes standard with 24000 steps and program capacity expansion
- PMC series standard MEM B
- User software capacity 6M

More diverse functions

- AICC I/II
- Multi step skipping
- Dynamic graphic display
- AI thermal compensation

More convenient operation

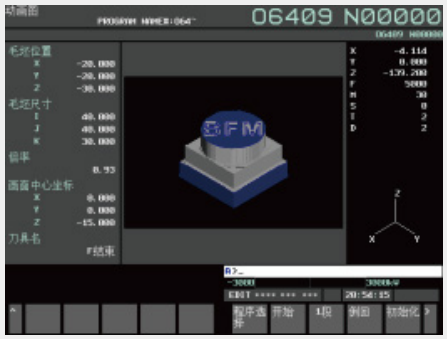
- A leap in storage capacity
- Quick macro call
- Online program editing
- Efficient machining with one click setting

Efficient machining settings

Recommended settings that can be set with one touch

Vertical Machining Center ATC

Rich ATC data display



Dynamic Graphic Display

3D model, no mechanical movement simulation

Automatic Centering Interface

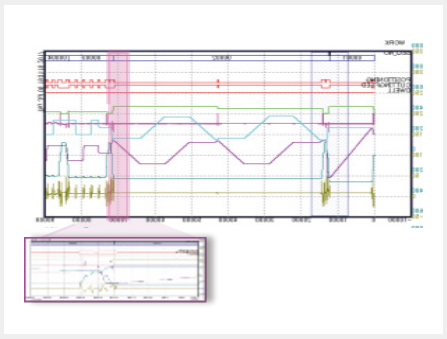
Calculate the center coordinate based on the measurement coordinates and set it to the coordinate system

ATC Test

Targeting MTB

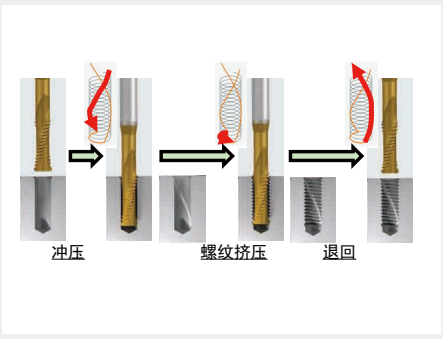
Development Platform

Composable module development



Servo Sensor

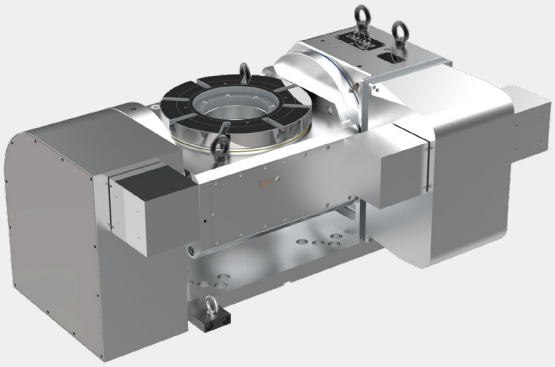
Improving machine behavior through visualization



The Latest Machining Technology Punch Tap

Special tools in response to high productivity

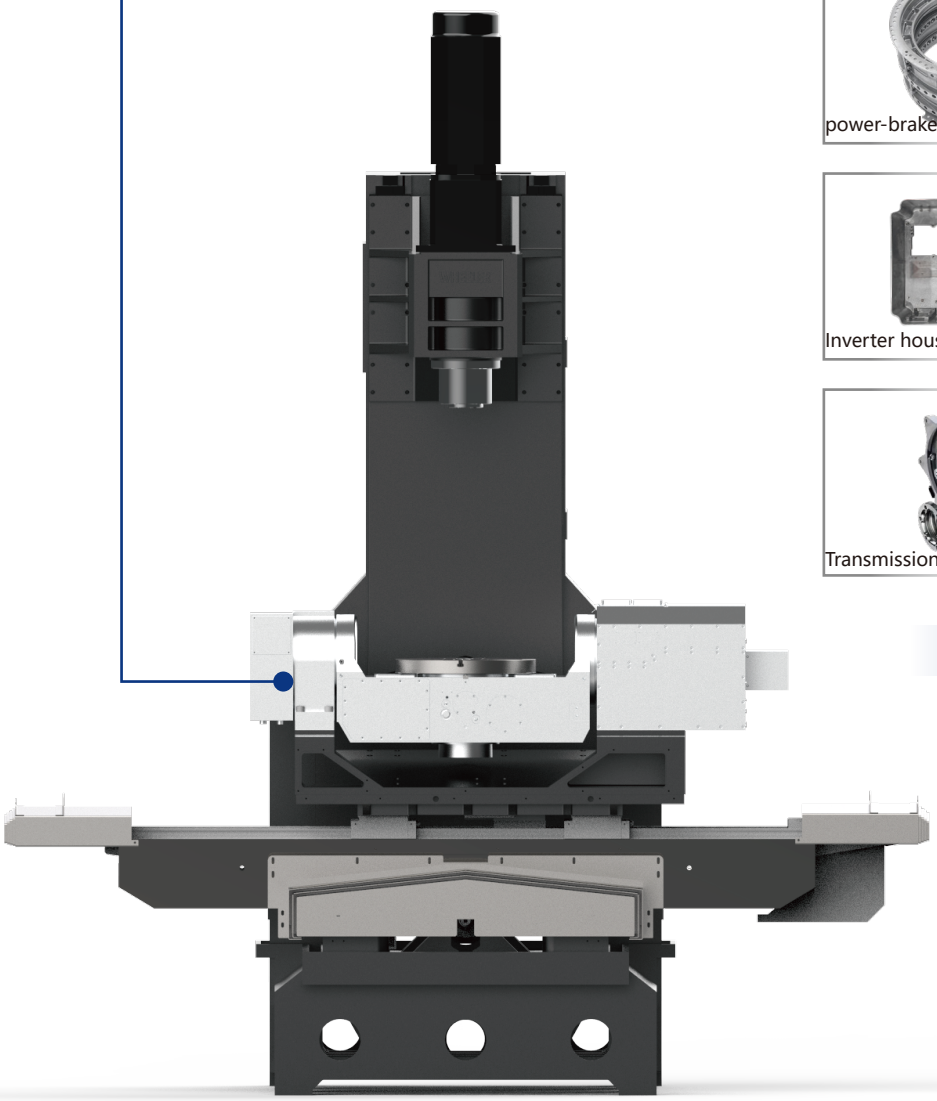
4/5 AXIS ROTARY TABLE SYSTEM



Optional four axis/five axis rotary table

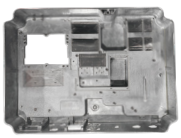
Adding four or five axes to the machine tool can broaden the machining surface of the tool and reduce the repeated clamping of the workpiece, which is beneficial for simplifying the process, improving efficiency, shortening production time, and reducing costs.

Completing multi sided machining with one clamping process and integrating it with automated robotic arms, preparing for the infrastructure of Industry 4.0.




power-brake


motor housing


Inverter housing


Spinning machine components


Transmission

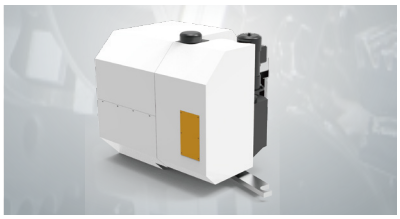

knuckle

: Common fields

- New energy vehicles
- High-end Equipment Manufacturing
- Photovoltaic industry
- Traditional automotive components
- Textile industry

STANDARD CONFIGURATION

- Control System
- Water Tank Cooling Device
- Automatic Lubrication Device
- Shield Protection
- Spindle Hole Blowing Device
- Automatic Tool Changing Device (ATC arm)
- Transformer
- Electrical Cabinet Heat Exchanger
- Manual Pulse Generator
- Work Light
- Tri-color warning light
- LCD
- Pneumatic Components
- Air Gun



Full Cover Type Tool Magazine

Prevent moisture and dust from entering the magazine and extend the service life of the tool magazine.

Heat Exchanger

Effectively block the entry of moisture, oil, and dust into the electrical control box.

Spindle

Adopting super precision P4 grade bearings and optional oil cooling to maintain the stability of spindle temperature rise; And it can be optionally equipped with coolant through spindle.

Ball Screw

The ball screw is precisely preloaded to provide better rigidity and effectively reduce the impact of thermal expansion and contraction during use, improving its service life and accuracy retention.

OPTIONAL CONFIGURATION

- Spindle Oil Cooling Device
- Coolant Through Spindle
- Oil Water Separator
- CNC Rotary Table (4 axis/5 axis)
- Automatic tool length measurement system
- ZF Gear Box
- Water Gun
- Chain Chip Conveyor

Oil cooler

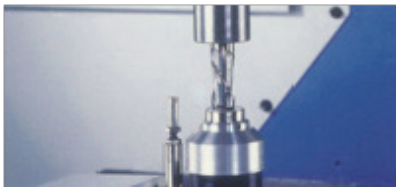
Maintain a constant temperature to ensure the machining accuracy of the spindle, and synchronous mode of constant temperature and room temperature fuction is avaliable.

Oil Water Separator

Effectively remove floating oil from cutting fluid, maintain cutting fluid performance, and extend the service life of cutting fluid.

Chain Chip Conveyor

Automatic chip removal, convenient and fast.



Auto knife length measuring device

Improve work efficiency and ensure machining accuracy.

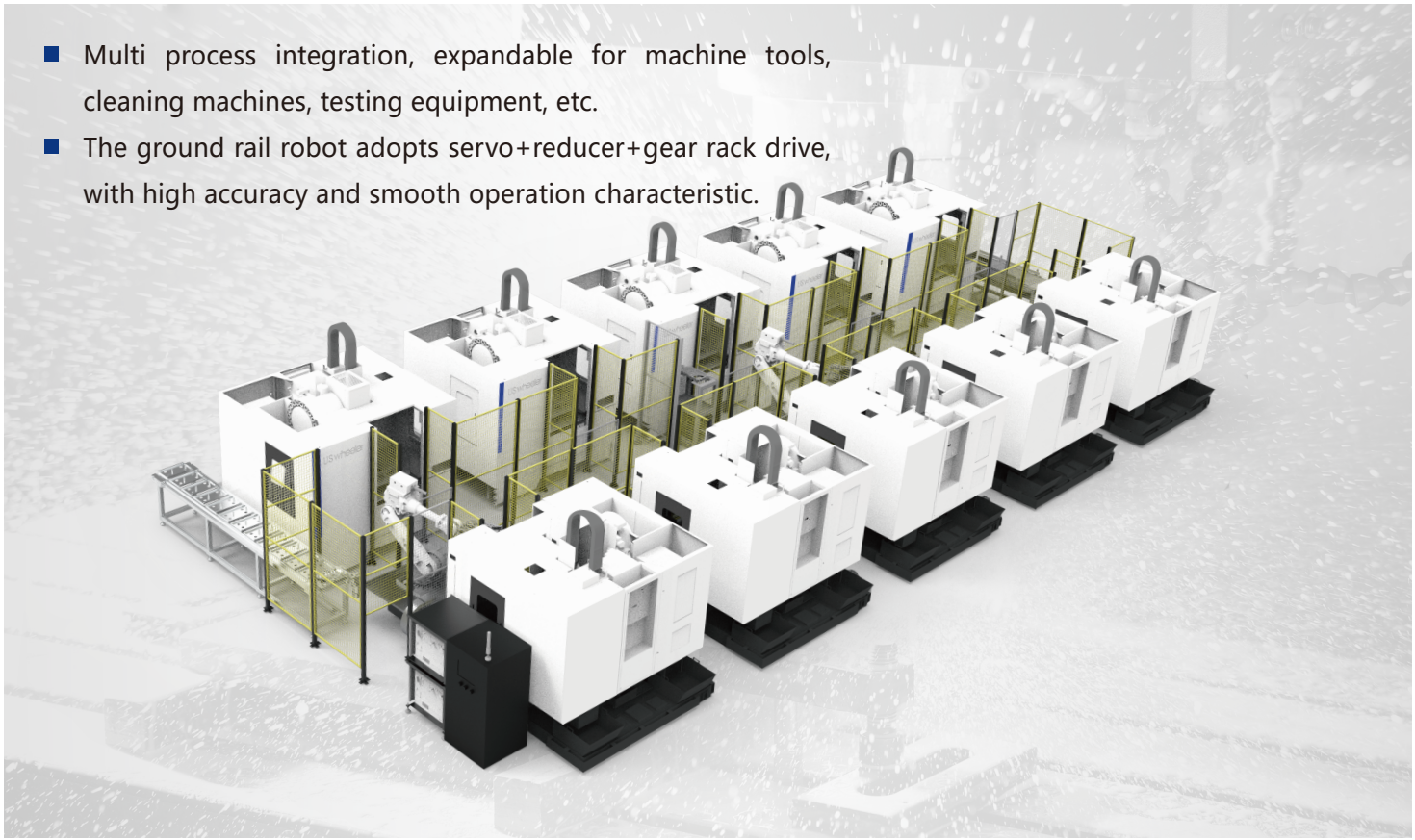
AUTOMATION MANUFACTURE

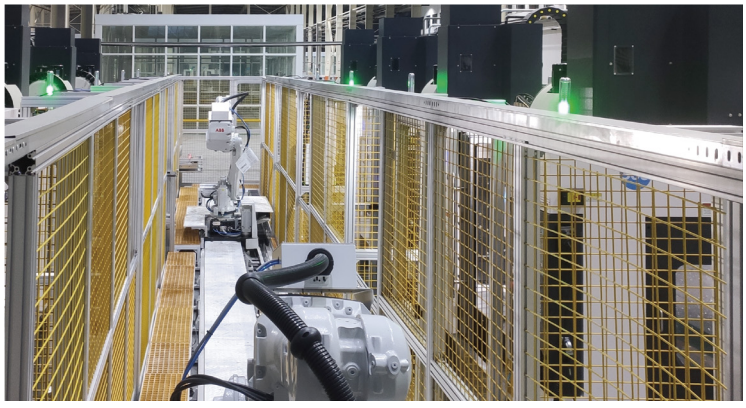
US-WHEELER provides a complete set of automation project solutions from design to delivery, mainly covering four directions: machine tool loading and unloading, automated production line integration, intelligent warehousing and logistics, and building intelligent factories for customers.

+ Robot ground rail line with Veritical Machining Center

Characteristics Of The Production Line

- Multi process integration, expandable for machine tools, cleaning machines, testing equipment, etc.
- The ground rail robot adopts servo+reducer+gear rack drive, with high accuracy and smooth operation characteristic.

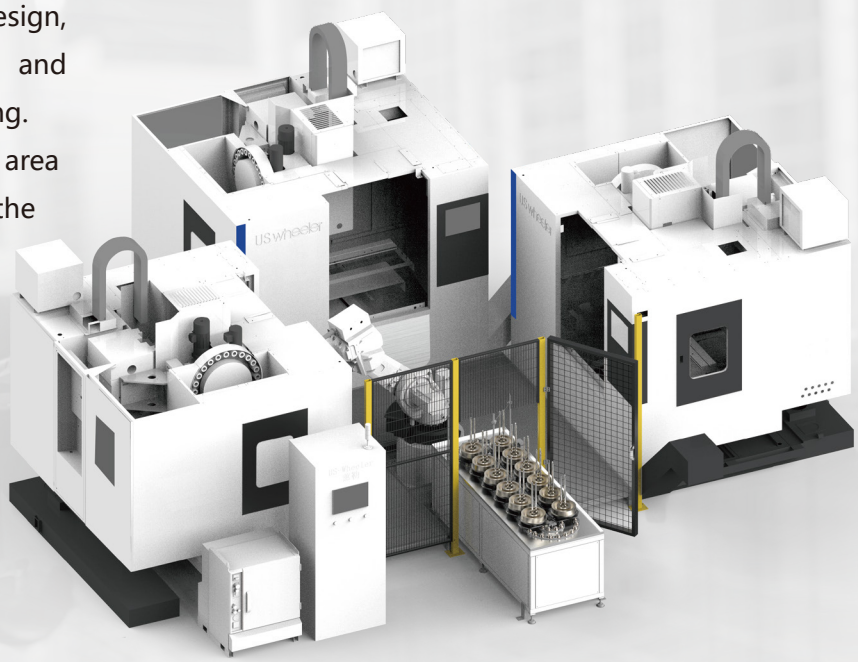




+ Triangle Shaped Robot Unit

Characteristics of the production line

- The part station adopts a rotatable design, which can achieve shared loading and unloading, achieve cost & space saving.
- Install a ground drip tray in the robot area to prevent water from dripping onto the ground during robot handling.



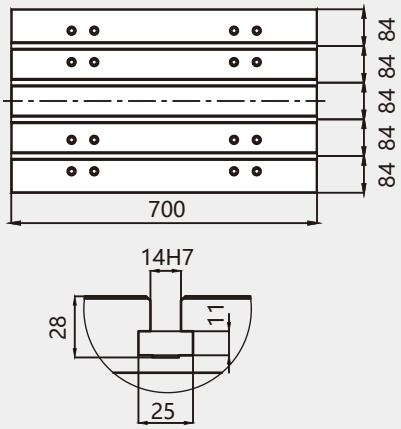
+ Truss manipulator unit

Characteristics Of The Production Line

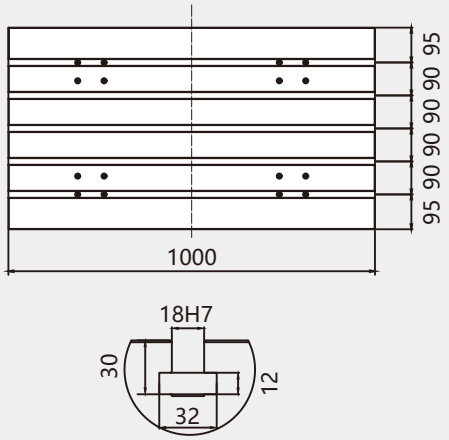
- The truss adopts servo+reducer+gear rack drive, with high accuracy and smooth operation;
- Utilize the vertical space of the site to reduce the overall foot print.
- Achieve compatibility with multiple models and specifications

WORK TABLE SIZE

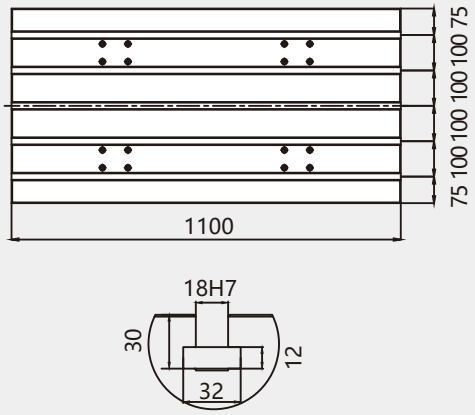
EM 600A



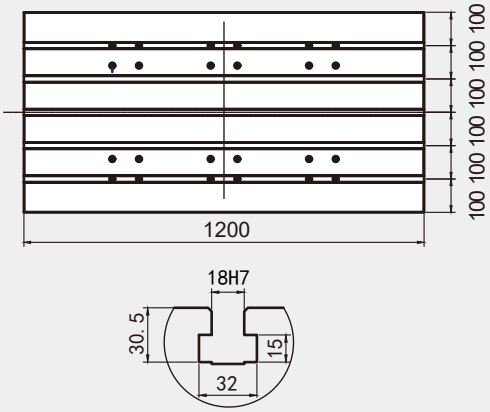
EM 855A



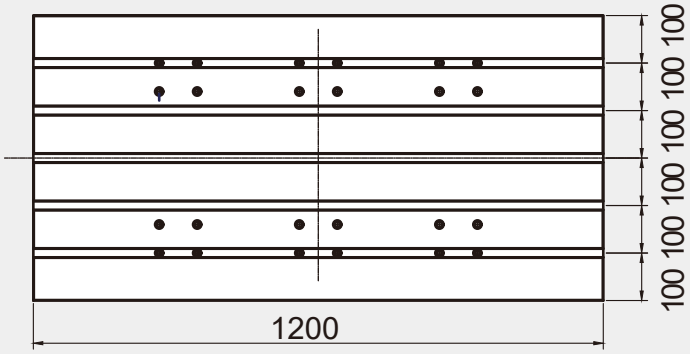
EM 900A

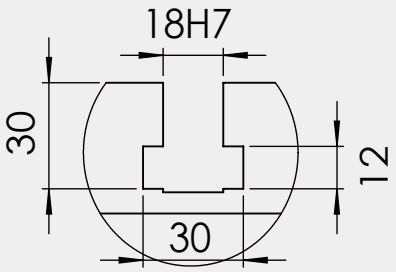


EM 1100A

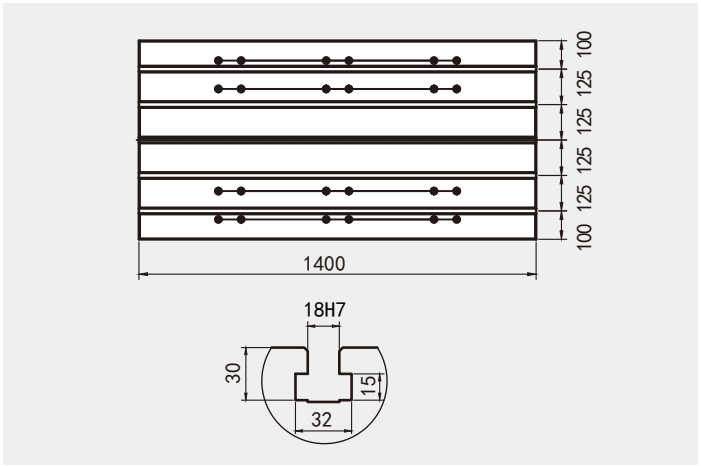


EM 1165Z

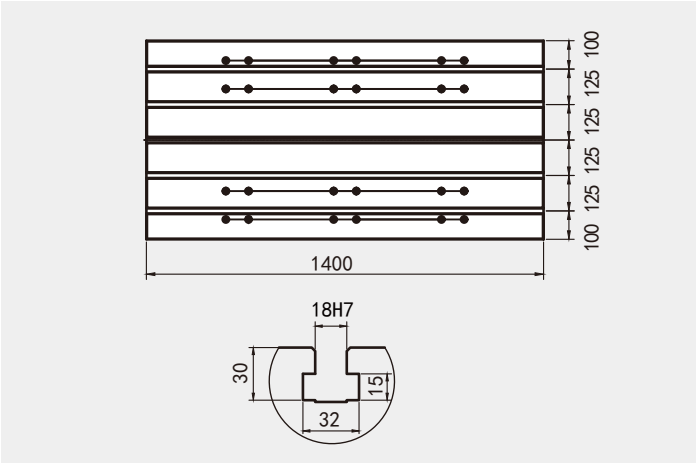




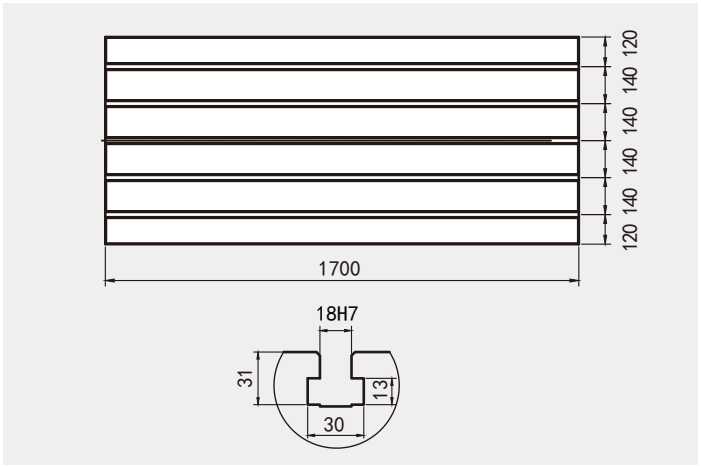
EM 1300A



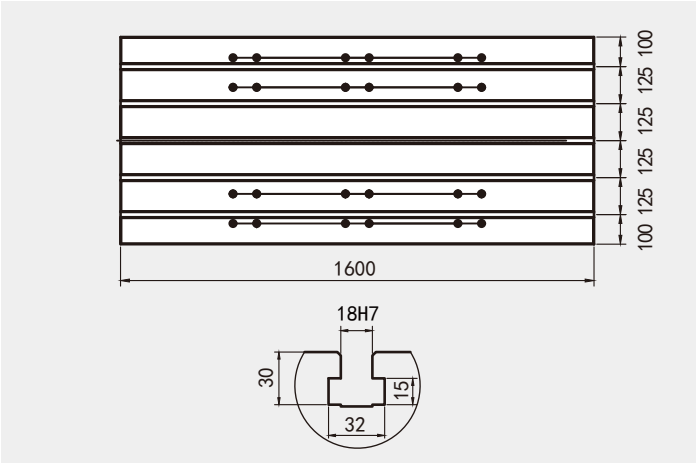
EM 1300B



EM 1500B

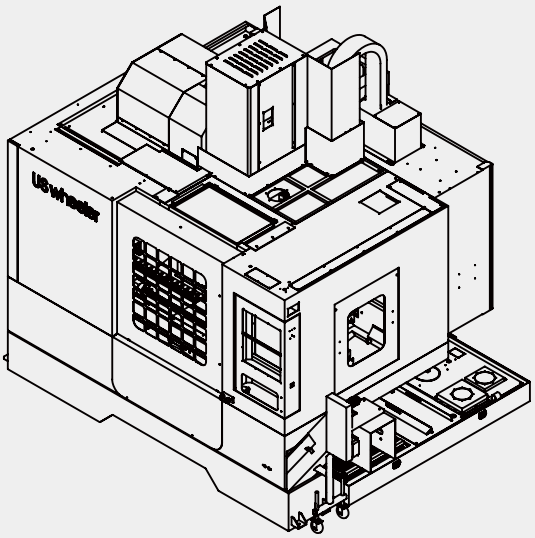


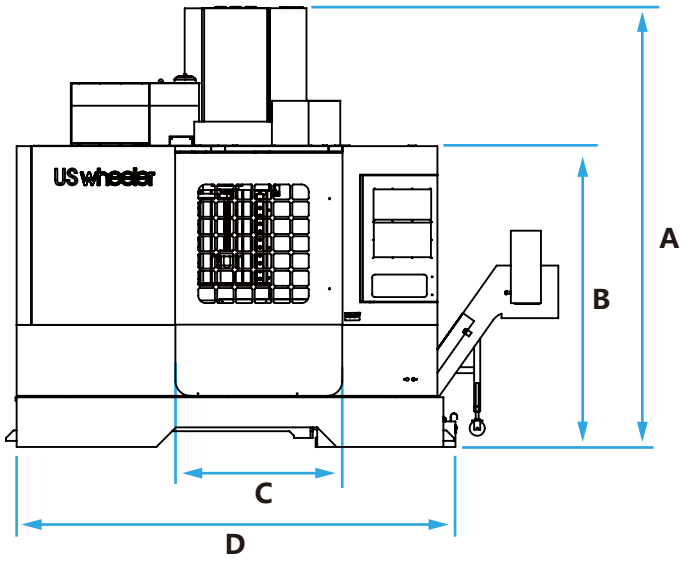
EM 1570

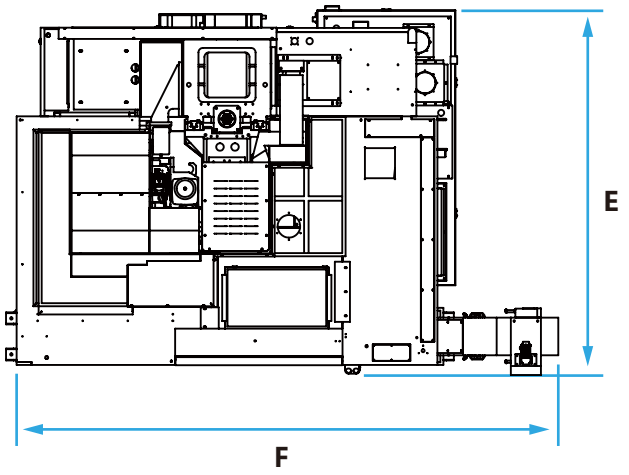


MACHINE DIMENSIONS

■ Standard Single Door Configuration







Applicable Models

For Appearance: :

EM 600A EM 800A EM 855A

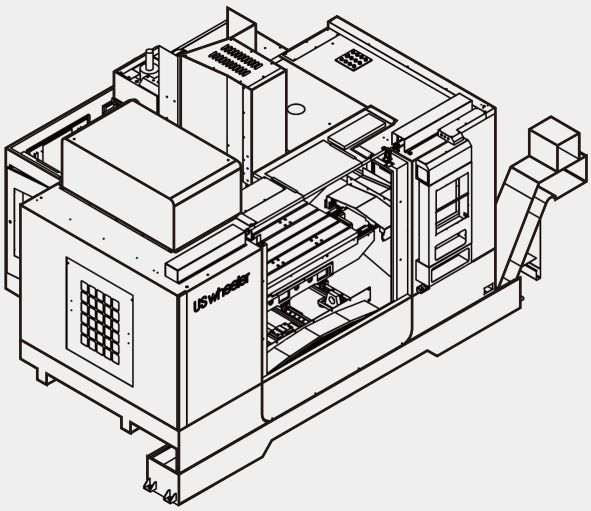
EM 900A EM 1100A

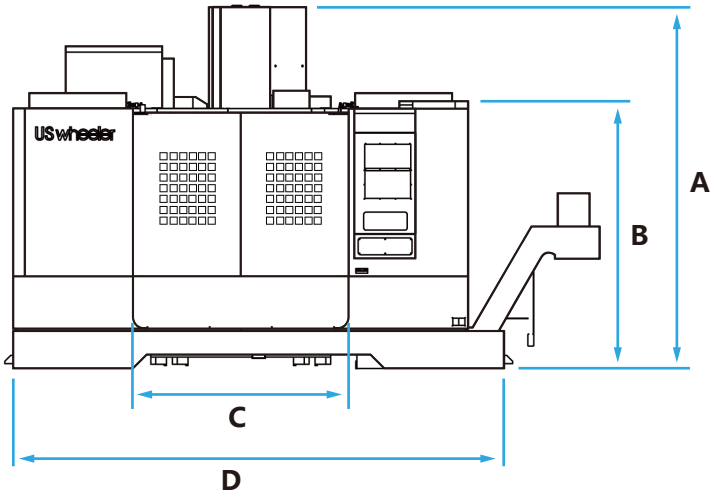
+ Detailed Model Dimensions

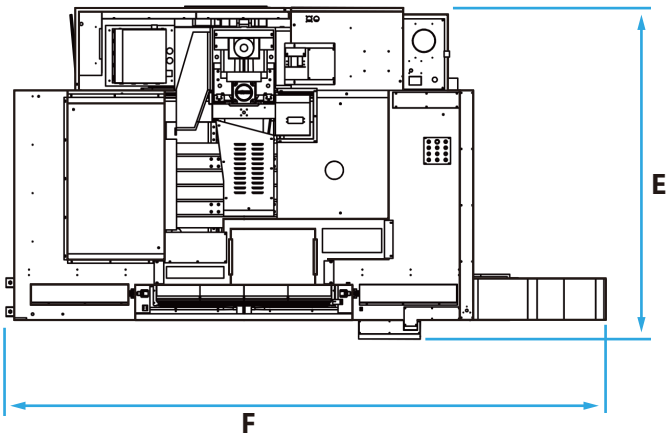
unit: mm

Model	A	B	C	D	E	F	Weight (approx. kg)
EM 600A	2850	1950	730	2050	2050	2280	3700
EM 800A	2850	2000	1000	2500	2240	3600	5000
EM 855A	3000	2200	800	2500	2310	2600	5400
EM 900A	3000	2200	800	2500	2310	2600	5800
EM 1100A	2928	2002	1114	2910	2430	3674	6500

■ Standard Double Door Configuration







Applicable Models For Appearance:

EM 1300A EM 1370 EM 1570

EM 1165Z EM 1500B

+ Detailed Model Dimensions

unit: mm

Model	A	B	C	D	E	F	Weight (approx. kg)
EM 1165Z	2900	2214	1503	3200	2400	4000	7200
EM 1300A	3150	2270	1600	3670	2750	4500	7800
EM 1300B	3150	2270	1600	3670	2750	4500	7800
EM 1500B	3650	2520	1800	4300	3250	5200	10400
EM 1570	3300	2420	1750	3900	2750	4750	9000

DETAILED INFORMATION

The final parameters are subject to the technical agreement*

			EM 600A	EM 855A	EM 855Z
Machining Range	X axis	mm	600	800	800
	Y axis	mm	400	550	550
	Z axis	mm	450	550	500
	Spindle nose to table surface	mm	150-600	120-670	120-620
	Spindle center to column rail suiface	mm	447	590	595
Work table	Work Table Size	mm	700*420	1000*550	1000*550
	Work Table Load	Kg	350	600	500
	T Slot quantity	Num	4	5	5
	T Slot size/space	mm	14*84	18*90	18*90
Spindle	Servo Motor Drive Mode	-	Belt- Drive	Belt- Drive	Belt- Drive
	Spindle Rpm	r/min	50-10000	50-8000	50-8000
	Main Motor Power	kW	7.5/11	11/15	11/15
	Spindle motor torque (rated/Max)	N·m	35.8/95.5	52.5/118	52.5/118
Servo Axis	X/Y/Z Fast Moving Speed	m/min	42/42/48	42/42/42	48/48/36
	X/Y/Z Servo Motor Drive Mode	-	Direct - Drive	Direct - Drive	Direct - Drive
	X/Y/Z Servo Motor Rpm	rpm	3000/3000/3000	3000/3000/3000	3000/3000/3000
	X/Y/Z Ball Screw Diameter	mm	Φ32/Φ32/Φ32	Φ40/Φ40/Φ40	Φ40/Φ40/Φ40
	X/Y/Z Ball Screw Pitch	mm	16/16/16	16/16/16	16/16/16
	Feed Rate	mm/min	1-10000	1-10000	1-10000
	Minimum Feed Rate	mm	0.001	0.001	0.001
ATC	ATC Capacity	No.	24	24	24
	ATC Form	-	ATC	ATC	ATC
	Tool Holder Specifications	-	BT-40	BT-40	BT-40
	Pull Studs	-	45°	45°	45°
	Max. tool diameter (adjacent)	mm	Φ80	Φ80	Φ80
	Max. tool diameter (Nonadjacent)	mm	Φ150	Φ150	Φ150
	Max. Tool Length	mm	300	300	300
	Max. Tool Weight	Kg	8	8	8
	Tool Change Time(tool to tool)	Sec	2.5/3	2.5/3	2.5/3
Others	Machine Weight	(约)Kg	3700	5400	5500
	Covered Area	mm	2050*2280	2600*2310	2600*2310
	Machine Height	mm	2850	3000	3000
	Power Capacity	kVA	25	25	30
	Lubricant Capacity	L	4	4	4
	Cutting Fluid Capacity	L	250	286	286
	Air Pressure	Bar	6~8	6~8	6~8
	CNC control systemt		FANUC - 0iMF PLUS		

The final parameters are subject to the technical agreement*

			EM 900A	EM 1100A	EM 1100B
Machining Range	X axis	mm	920	1100	1100
	Y axis	mm	550	600	600
	Z axis	mm	570	600	600
	Spindle nose to table surface	mm	120-690	120-720	120-720
	Spindle center to column rail suiface	mm	590	650	650
Work table	Work Table Size	mm	1100*550	1200*600	1200*600
	Work Table Load	Kg	800	800	800
	T Slot quantity	Num	5	5	5
	T Slot size/space	mm	18*100	18*100	18*100
Spindle	Servo Motor Drive Mode	-	Belt- Drive	Belt- Drive	Belt- Drive
	Spindle Rpm	r/min	50-10000	50-8000	50-6000
	Main Motor Power	kW	11/15	11/15	15/18.5
	Spindle motor torque （rated/Max)	N·m	52.5/118	52.5/118	143/236
Servo Axis	X/Y/Z Fast Moving Speed	m/min	42/42/42	36/36/36	36/36/20
	X/Y/Z Servo Motor Drive Mode	-	Direct - Drive	Direct - Drive	Direct - Drive
	X/Y/Z Servo Motor Rpm	rpm	3000/3000/3000	3000/3000/3000	3000/3000/2000
	X/Y/Z Ball Screw Diameter	mm	Φ40/Φ40/Φ40	Φ40/Φ40/Φ40	Φ40/Φ40/Φ40
	X/Y/Z Ball Screw Pitch	mm	16/16/16	12/12/12	12/12/12
	Feed Rate	mm/min	1-10000	1-10000	1-10000
	Minimum Feed Rate	mm	0.001	0.001	0.001
ATC	ATC Capacity	No.	24	24	24
	ATC Form	-	ATC刀	ATC	ATC
	Tool Holder Specifications	-	BT-40	BT-40	BT-50
	Pull Studs	-	45°	45°	45°
	Max. tool diameter (adjacent)	mm	Φ80	Φ80	Φ105
	Max. tool diameter (Nonadjacent)	mm	Φ150	Φ150	Φ200
	Max. Tool Length	mm	300	300	300
	Max. Tool Weight	Kg	8	8	15
	Tool Change Time(tool to tool)	Sec	2.5/3	2.5/3	4.5/7
Others	Machine Weight	(约)Kg	5800	6500	6900
	Covered Area	mm	2600*2310	2900*2400	2900*2400
	Machine Height	mm	3000	3000	3000
	Power Capacity	kVA	25	30	30
	Lubricant Capacity	L	4	4	4
	Cutting Fluid Capacity	L	286	286	286
	Air Pressure	Bar	6~8	6~8	6~8
	CNC control systemt		FANUC - 0iMF PLUS		

DETAILED INFORMATION

The final parameters are subject to the technical agreement*

			EM 1100Z	EM 1165Z	EM 1300A
Machining Range	X axis	mm	1100	1100	1300
	Y axis	mm	600	650	700
	Z axis	mm	600	600	700
	Spindle nose to table surface	mm	80-680	130-730	120-820
	Spindle center to column rail suiface	mm	635	680	750
Work table	Work Table Size	mm	1200*600	1200*600	1400*700
	Work Table Load	Kg	800	800	1000
	T Slot quantity	Num	5	5	5
	T Slot size/space	mm	18*100	18*100	18*125
Spindle	Servo Motor Drive Mode	-	Belt- Drive	Belt- Drive	Belt- Drive
	Spindle Rpm	r/min	50-6000	50-6000	50-8000
	Main Motor Power	kW	15/18.5	15/18.5	11/15
	Spindle motor torque (rated/Max)	N·m	143/236	143/236	52.5/118
Servo Axis	X/Y/Z Fast Moving Speed	m/min	36/36/20	36/36/20	36/36/24
	X/Y/Z Servo Motor Drive Mode	-	Direct - Drive	Direct - Drive	Direct - Drive
	X/Y/Z Servo Motor Rpm	rpm	3000/3000/2000	3000/3000/2000	3000/3000/2000
	X/Y/Z Ball Screw Diameter	mm	Φ40/Φ40/Φ40	Φ40/Φ40/Φ40	Φ45/Φ45/Φ45
	X/Y/Z Ball Screw Pitch	mm	12/12/12	12/12/12	12/12/12
	Feed Rate	mm/min	1-10000	1-10000	1-8000
	Minimum Feed Rate	mm	0.001	0.001	0.001
ATC	ATC Capacity	No.	24	24	24
	ATC Form	-	ATC	ATC]	ATC]
	Tool Handle Specifications	-	BT-50	BT-50	BT-40
	Pull Studs	-	45°	45°	45°
	Max. tool diameter (adjacent)	mm	Φ105	Φ105	Φ80
	Max. tool diameter (Nonadjacent)	mm	Φ200	Φ200	Φ150
	Max. Tool Length	mm	300	300	300
	Max. Tool Weight	Kg	15	15	8
	Tool Change Time(tool to tool)	Sec	4.5/7	4.5/7	2.5/3.5
Others	Machine Weight	(约)Kg	6500	7200	7800
	Covered Area	mm	3060*2400	2500*3200	3400*2600
	Machine Height	mm	3000	2900	3200
	Power Capacity	kVA	30	30	30
	Lubricant Capacity	L	4	4	4
	Cutting Fluid Capacity	L	286	286	286
	Air Pressure	Bar	6~8	6~8	6~8
	CNC control systemt		FANUC - 0iMF PLUS		

The final parameters are subject to the technical agreement*

			EM 1300B	EM 1500B	EM 1570
Machining Range	X axis	mm	1300	1500	1500
	Y axis	mm	700	800	700
	Z axis	mm	700	700	700
	Spindle nose to table surface	mm	120-820	150-850	130-830
	Spindle center to column rail suiface	mm	750	900	750
Work table	Work Table Size	mm	1400*700	1700*800	1600*700
	Work Table Load	Kg	1000	1200	1000
	T Slot quantity	Num	5	5	5
	T Slot size/space	mm	18*125	18*140	18*125
Spindle	Servo Motor Drive Mode	-	Belt- Drive	Belt- Drive	Belt- Drive
	Spindle Rpm	r/min	50-6000	50-6000	50-8000
	Main Motor Power	kW	15/18.5	15/18.5	11/15
	Spindle motor torque (rated/Max)	N·m	143/236	143/236	52.5/118
Servo Axis	X/Y/Z Fast Moving Speed	m/min	24/24/24	20/20/20	24/24/20
	X/Y/Z Servo Motor Drive Mode	-	Direct - Drive	Direct - Drive	Direct - Drive
	X/Y/Z Servo Motor Rpm	rpm	3000/3000/2000	2000/2000/2000	2000/2000/2000
	X/Y/Z Ball Screw Diameter	mm	Φ45/Φ45/Φ45	Φ50/Φ50/Φ50	Φ45/Φ45/Φ45
	X/Y/Z Ball Screw Pitch	mm	12/12/12	10/10/10	12/12/12
	Feed Rate	mm/min	1-8000	1-8000	1-8000
	Minimum Feed Rate	mm	0.001	0.001	0.001
ATC	ATC Capacity	No.	24	24	24
	ATC Form	-	ATC	ATC	ATC
	Tool Holder Specifications	-	BT-50	BT-50	BT-40
	Pull Studs	-	45°	45°	45°
	Max. tool diameter (adjacent)	mm	Φ105	Φ105	Φ80
	Max. tool diameter (Nonadjacent)	mm	Φ200	Φ200	Φ150
	Max. Tool Length	mm	350	350	300
	Max. Tool Weight	Kg	15	15	8
	Tool Change Time(tool to tool)	Sec	5.5/9	5.5/9	2.5/3.5
Others	Machine Weight	(约)Kg	8000	104000	9000
	Covered Area	mm	3670*2800	4300*3250	3700*2800
	Machine Height	mm	3150	3610	3300
	Power Capacity	kVA	30	30	30
	Lubricant Capacity	L	4	4	4
	Cutting Fluid Capacity	L	286	300	300
	Air Pressure	Bar	6~8	6~8	6~8
	CNC control systemt		FANUC - 0iMF PLUS		