

COMPREHENSIVE CATALOG

SHAWAHED

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04

5-axis Machining Center

شركة شواهد المتقدمة الصناعية
Shawahed Advanced Industrial Co.

INTELLIGENT 5-AXIS MACHINE TOOL BENCHMARKING

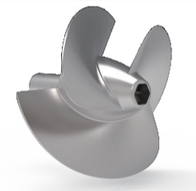
1.Universal milling/turning/planing/grinding/hobbing/metal 3D printing.
2.Machine tools are widely used in high-end manufacturing industries such as new energy vehicles, aerospace, medical equipment, and semiconductors.
3.High precision, high-speed, efficient, and stable intelligent manufacturing equipment technology machine tools



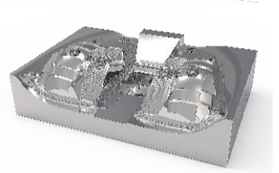
New energy



Medical equipment



Ship industry



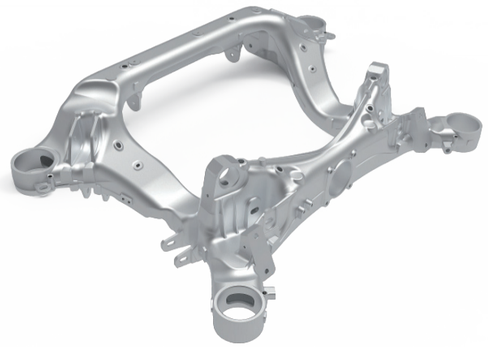
Mold industry



Machinery manufacturing



Aerospace

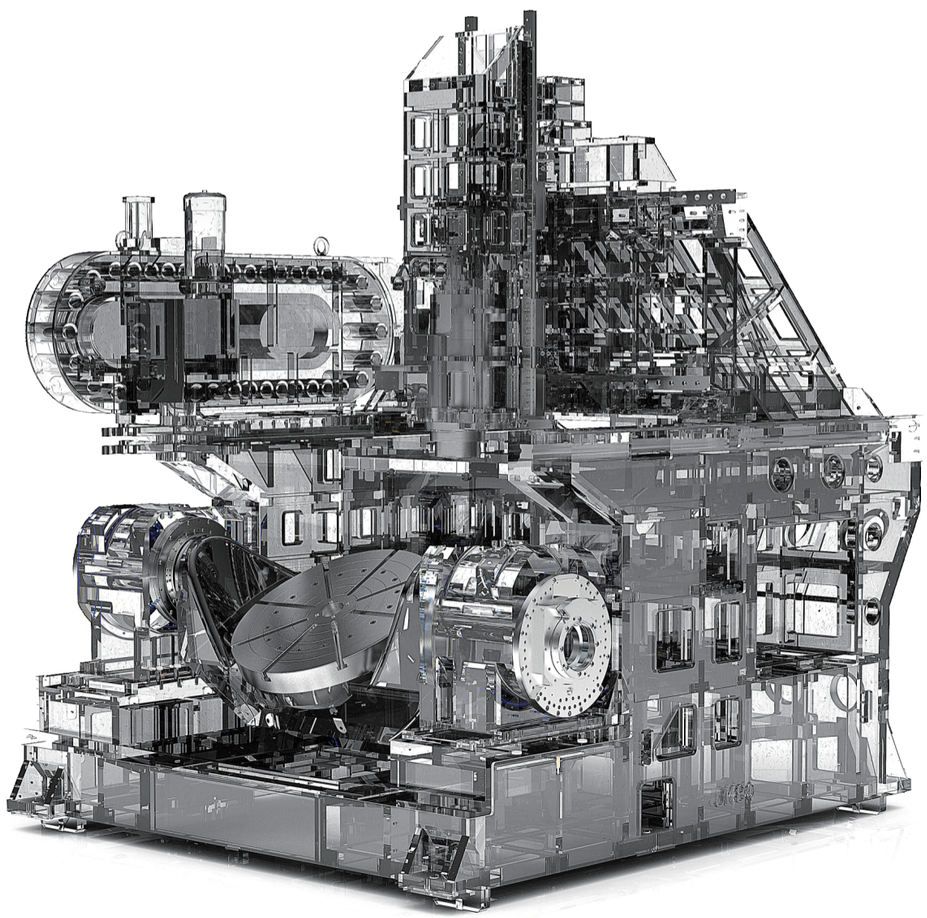




Automobile industry

EXCELLENT PROCESSING EFFECT

The integral casting bed + moving beam Y axis + high rigidity cradle constitute a new generation of high-end five-axis machine tools. The five-axis CNC machine tool achieves maximum milling efficiency, highest processing performance and extreme precision, while being extremely rigid and stable. Such powerful performance comes from its highly stable body and meticulous FEM analysis.



BRING UNPARALLELED STABILITY AND CONTINUOUS ACCURACY

The overall casting bed has unparalleled stability; the moving beam Y-axis + high-rigidity cradle makes the machine have extraordinary cutting rigidity; the weight of the moving parts of the fuselage is optimized to achieve extremely high dynamic performance.



Tk20
2.3T





Tk80
18.5T

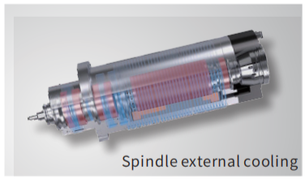


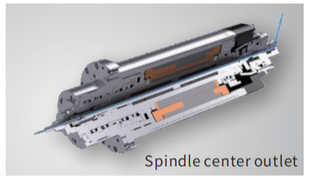
Tk10
0.9T

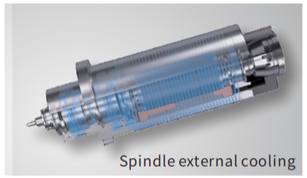
DIVERSIFIED COLLOCATION TO MEET VARIOUS NEEDS

Spindle


Spindle

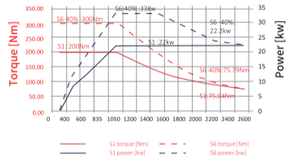

Spindle external cooling


Spindle center outlet

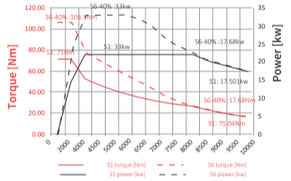

Spindle external cooling

10000 rpm HSK A100 22KW electric spindle
Rated torque 200Nm Maximum torque 300Nm

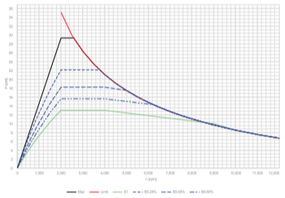
Y connection characteristic curve



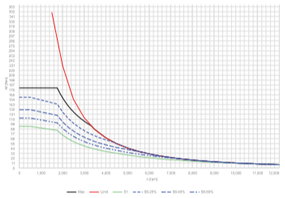
△ connection characteristic curve

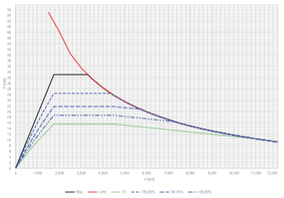


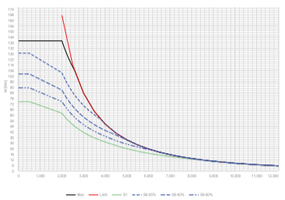
12000 rpm HSK A63 13KW mechanical spindle
Rated torque 62Nm Maximum torque 140Nm

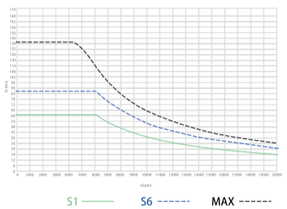


12000 rpm HSK A63 14KW mechanical spindle
Rated torque 89Nm Maximum torque 180Nm



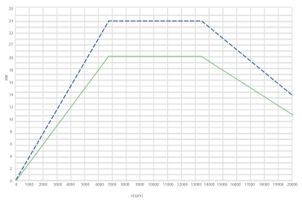




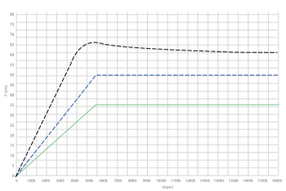


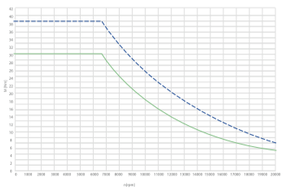
S1 S6 MAX

20000 rpm HSK A63/20KW electric spindle
Rated torque 31Nm Maximum torque 36.8Nm



20000 rpm HSK A63 22KW electric spindle
Rated torque 61.3Nm Maximum torque 73.5Nm





S1 S6 MAX S1 S6

Worktable Specifications



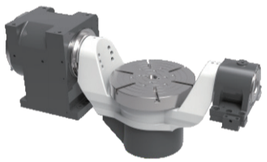
Tk10 Worktable

B-axis travel range		+20°-125°
C-axis travel range		n×360°
B-axis rapid traverse speed	(rpm/min)	50
C-axis rapid traverse speed	(rpm/min)	100
Worktable size	mm	Φ100
Max Workpiece Size	mm	Φ100*100
Max Workpiece Weight	kg	10
Optional turning C-axis maximum speed	(rpm/min)	2000



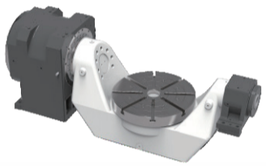
Tk20 Worktable

A-axis travel range		±125°
C-axis travel range		n×360°
A-axis rapid traverse speed	(rpm/min)	50
C-axis rapid traverse speed	(rpm/min)	100
Worktable size	mm	Φ200
Max Workpiece Size	mm	Φ200*200
Max Workpiece Weight	kg	30
Optional turning C-axis maximum speed	(rpm/min)	2000



Tk35 Worktable

A-axis travel range		±120°
C-axis travel range		n×360°
A-axis rapid traverse speed	(rpm/min)	50
C-axis rapid traverse speed	(rpm/min)	100
Worktable size	mm	350
Max Workpiece Size	mm	Φ350*250
Max Workpiece Weight	kg	100
Optional turning C-axis maximum speed	(rpm/min)	1600



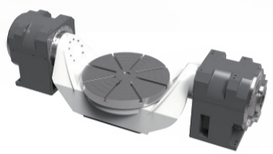
Tk50 Worktable

A-axis travel range		±120°
C-axis travel range		n×360°
A-axis rapid traverse speed	(rpm/min)	30
C-axis rapid traverse speed	(rpm/min)	80
Worktable size	mm	Φ500
Max Workpiece Size	mm	Φ520*410
Max Workpiece Weight	kg	400
Optional turning C-axis maximum speed	(rpm/min)	1200



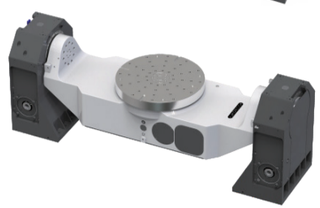
Tk65 Worktable

A-axis travel range		±120°
C-axis travel range		n×360°
A-axis rapid traverse speed	(rpm/min)	30
C-axis rapid traverse speed	(rpm/min)	100
Worktable size	mm	Φ500
Max Workpiece Size	mm	Φ650*410
Max Workpiece Weight	kg	500
Optional turning C-axis maximum speed	(rpm/min)	1200



Tk80 Worktable

A-axis travel range		±120°
C-axis travel range		n×360°
A-axis rapid traverse speed	(rpm/min)	30
C-axis rapid traverse speed	(rpm/min)	50
Worktable size	mm	Φ700
Max Workpiece Size	mm	Φ800*500
Max Workpiece Weight	kg	500
Optional turning C-axis maximum speed	(rpm/min)	600



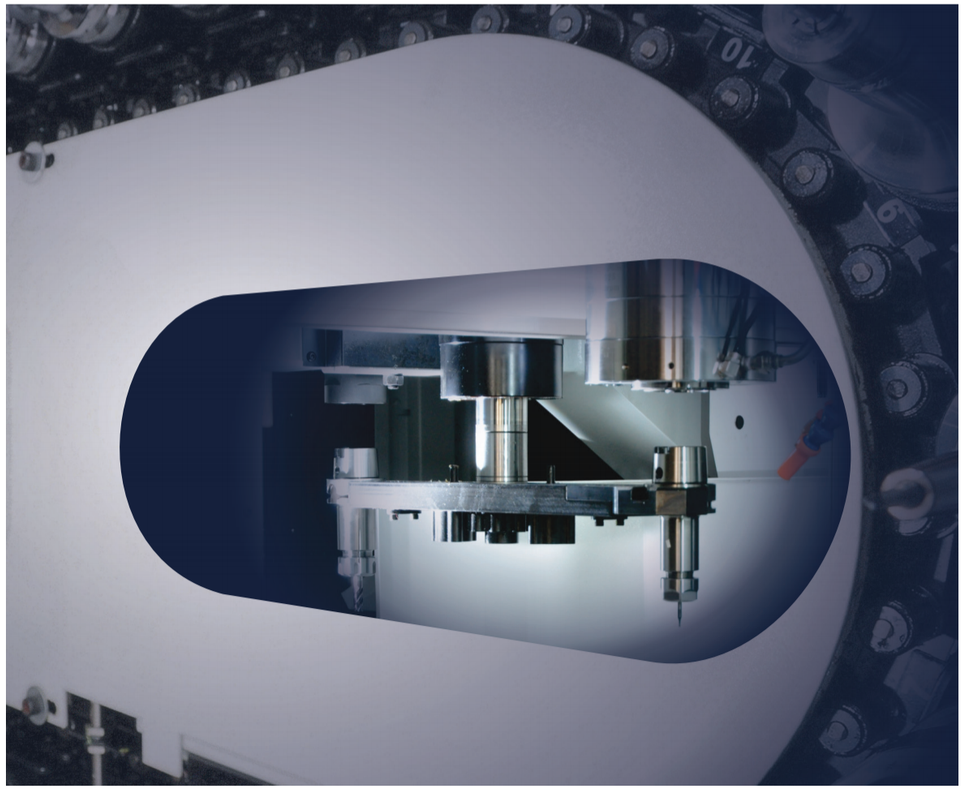
TKG1600 Worktable

A-axis travel range		-140°~+20°
C-axis travel range		360°
A-axis rapid traverse speed	(rpm/min)	20
C-axis rapid traverse speed	(rpm/min)	20
Worktable size	mm	Φ800
Max turning diameter	mm	Φ1600
Max Workpiece Weight	kg	1000

EFFECTIVELY MEET COMPLEX PROCESSING REQUIREMENTS

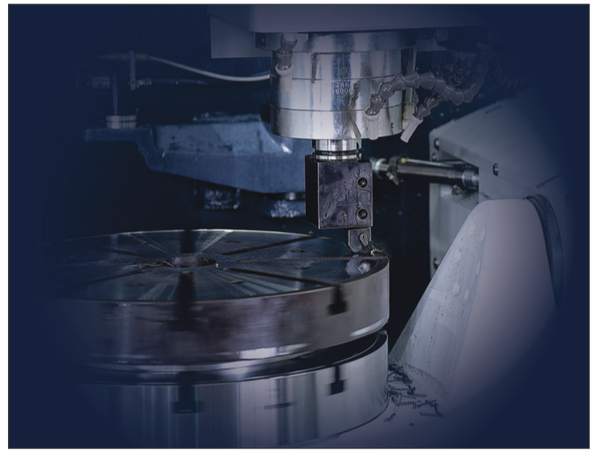
Up to 100 large-scale chain tool magazines, flexible tool management, and a spare tool function, effectively shorten downtime, increase production capacity, and the fastest tool change time is 0.6 seconds, which is extremely fast.

- The one-shaped tool magazine door is simple and practical, and the cutting area and the tool magazine are strictly isolated



MILLING/TURNING COMPOUND PROCESSING TECHNOLOGY REALISE COMPLETE PROCESSING

Perform complete machining on a single machine tool,including milling and turning complete and turning,with only set up required equipped with direct drive technology, and a maximum speed of 40,000/min. The processing speed is fast and the logistics cost is low, which is due to the lack of auxiliary time and additional operations, resulting in low single piece production costs and high processing accuracy.





3D PRINTING FOR ADDING AND REDUCING MATERIALS

3D

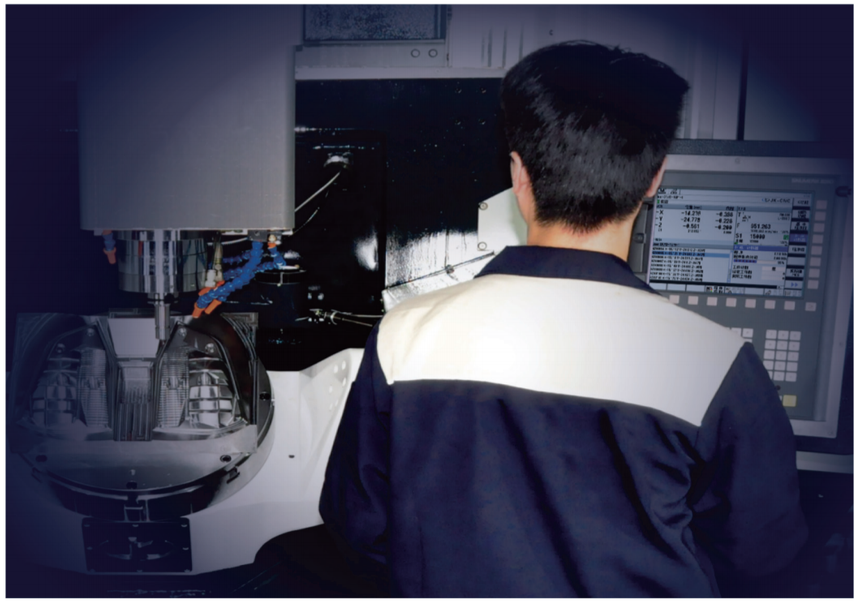


THE BIRTH OF A CONTROL PLATFORM WITH PERFECT COMBINATION OF HUMAN AND MACHINE

Humanized control platform design, with good spindle accessibility, reduces the burden on operators and improves work efficiency. The spacious processing area and excellent visibility of the tool tip allow for easy processing of large workpieces.



Door width 1200mm//Wide operating space for easy lifting



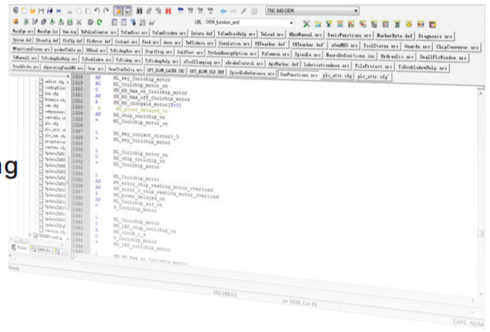
SELF-CREATED COMPOSITE SPINDLE WITH HIGH EFFICIENCY AND EASY OPERATION

Spindle patented technology

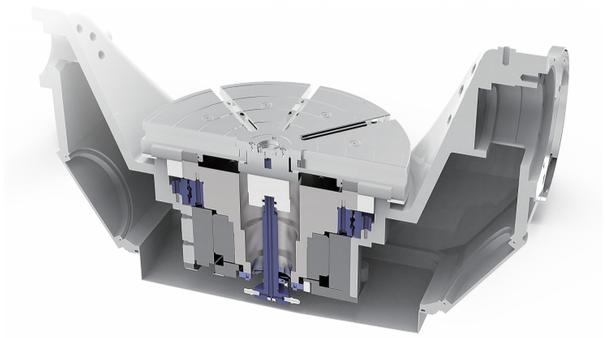


CNC INTELLIGENT DEVELOPMENT TECHNOLOGY

Years of industry five-axis application technology precipitation has independent control of mechatronics, making machine tools more stable and developing industry-leading functions



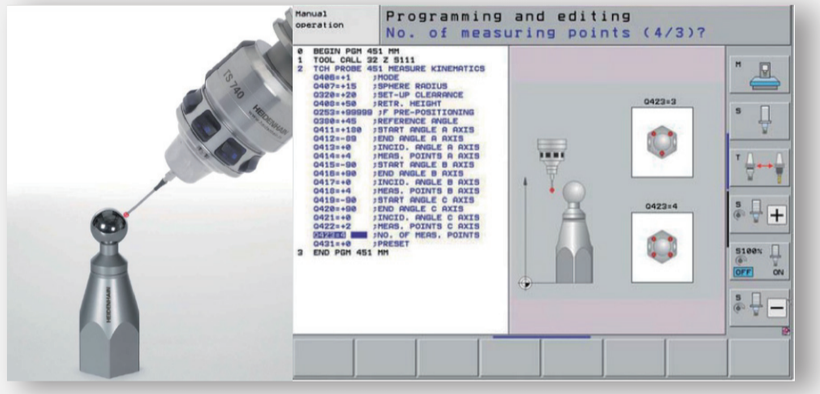
CORE FUNCTIONAL COMPONENTS



EASY OPERATION SEAMLESS CONNECTION

German HEIDENHAIN TNC640 manipulator, Siemens SIEMENS 840D/ONE manipulator, high-end CNC system ensure safe processing and higher precision, make production more optimized, and handle production tasks systematically.

Widely used in high-end fields

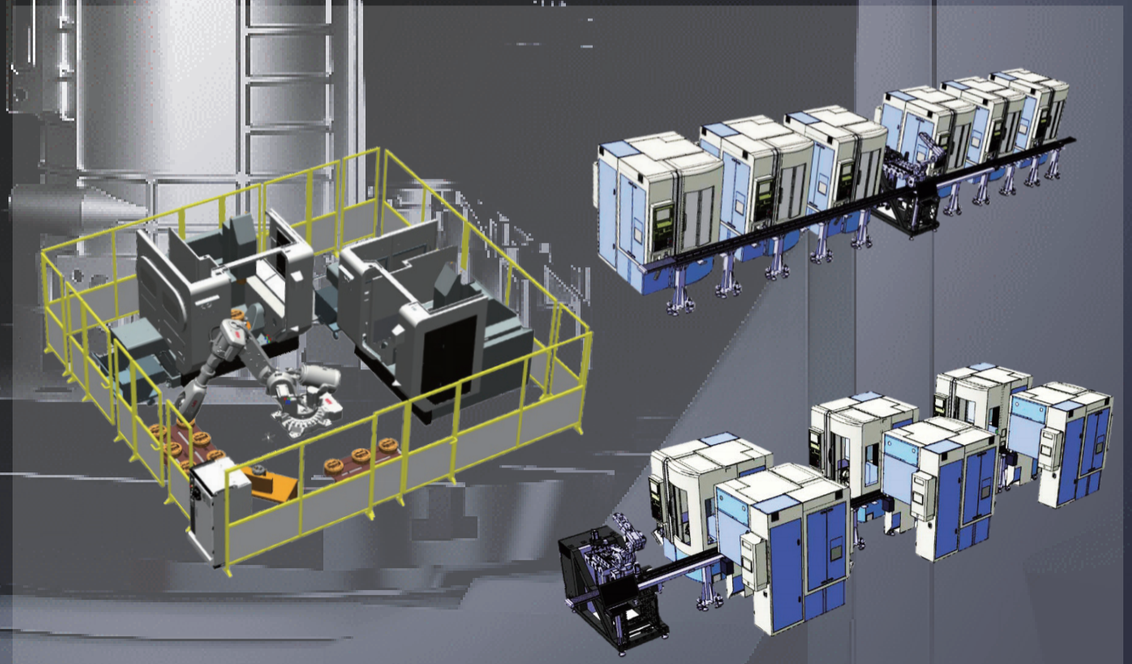


Easily align rotary axes for optimum accuracy



CUSTOMIZED AUTOMATION SOLUTIONS

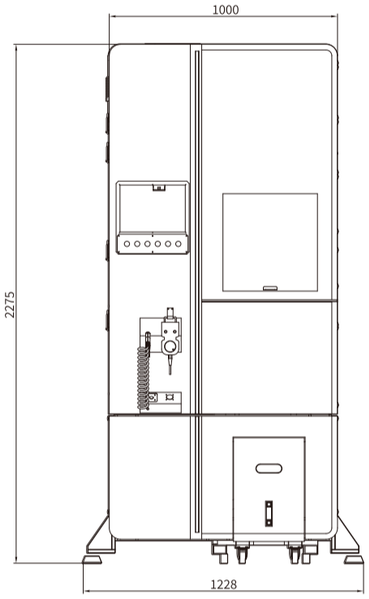
Machine tool automation processing belongs to the "metal processing" industry. Its customized automation solutions for various enterprises are based on the combination of high-end CNC milling machines and CNC milling cars, integrating elements such as robots, automation systems, high-precision positioning systems, and incorporating flexible and intelligent design concepts to develop automated workstations and production lines suitable for various specifications of products. This is a modern high-tech product in the metal processing industry that is transitioning towards automation and intelligence. This technology is widely used in the automotive industry and has assisted more production enterprises in upgrading to intelligent manufacturing.

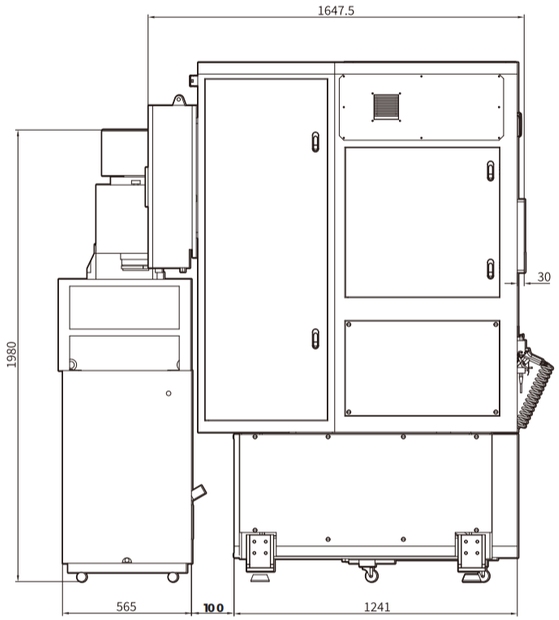


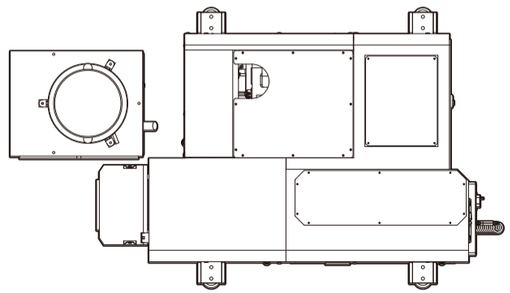
Shawahed Advanced Industrial CO.

TK10-5AXIS

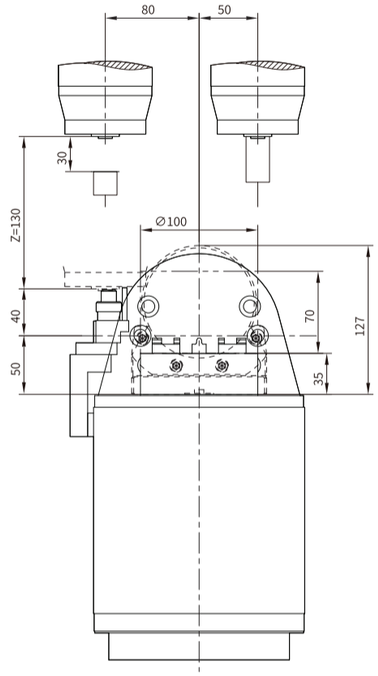
Outline Dimensional Drawing

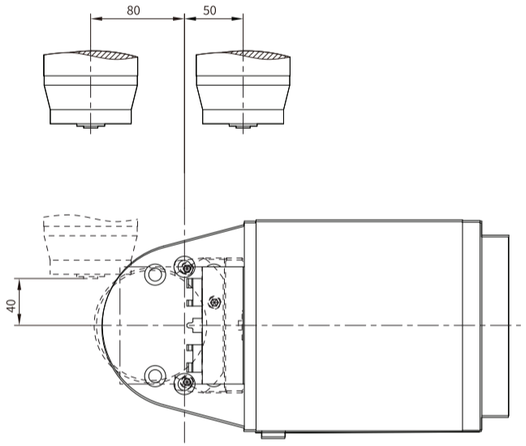


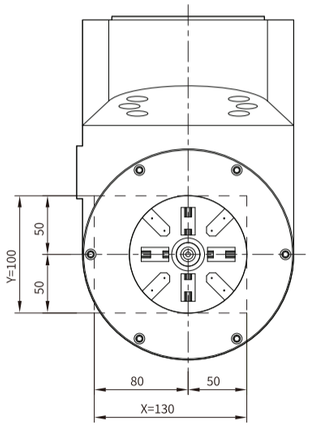


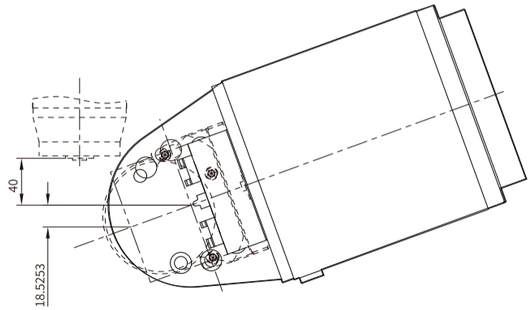


Application Space



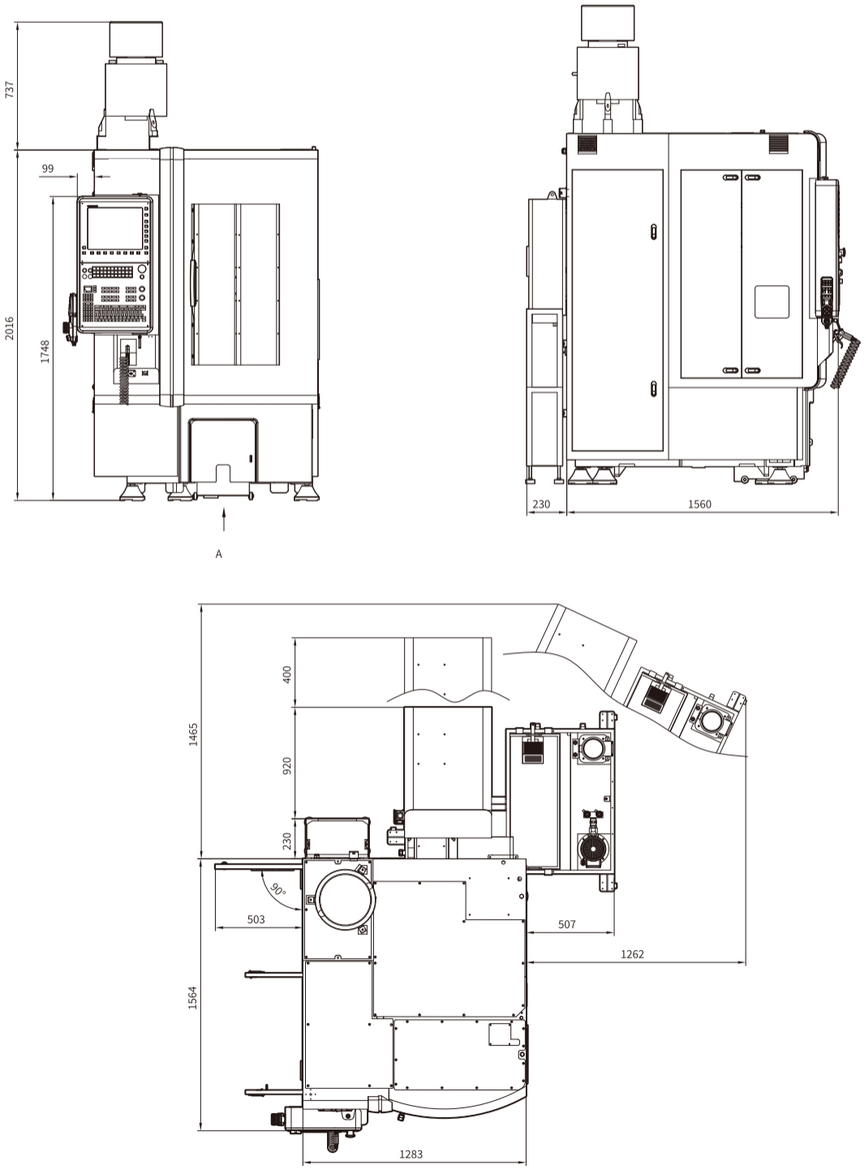




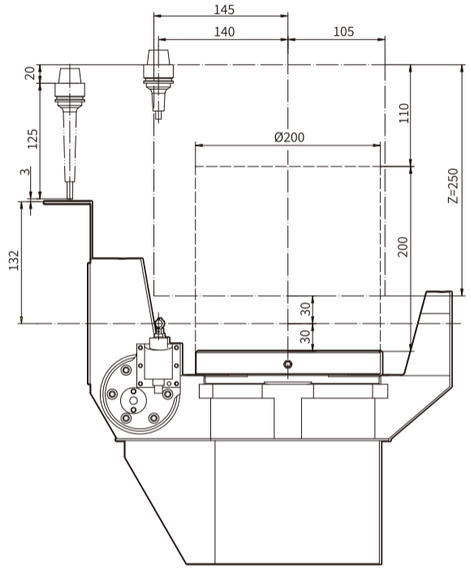


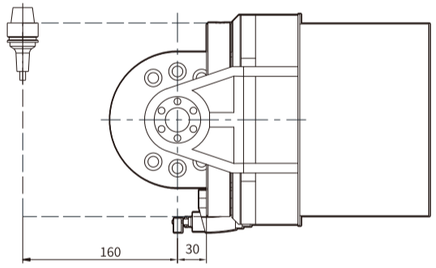
TK20-5AXIS

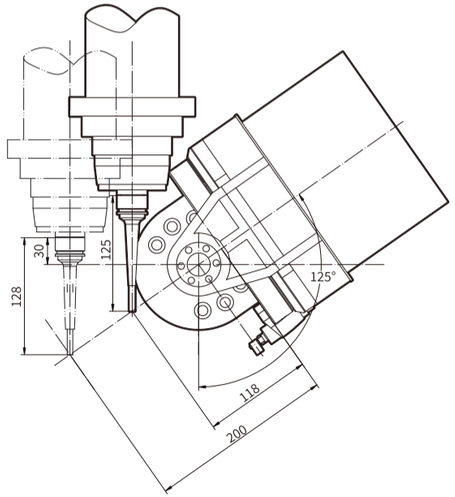
Outline Dimensional Drawing

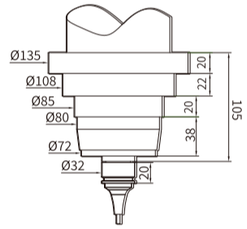


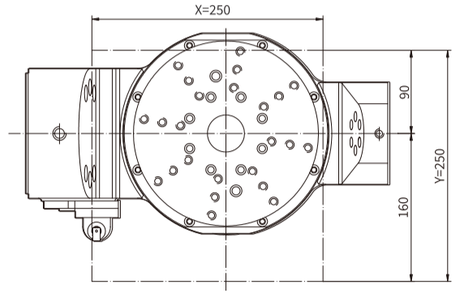
Application Space





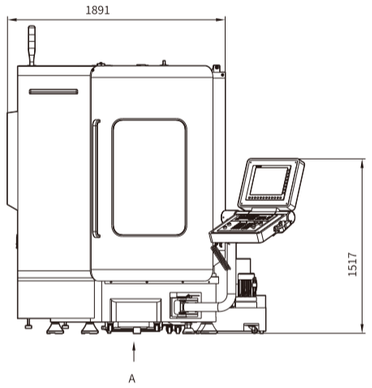


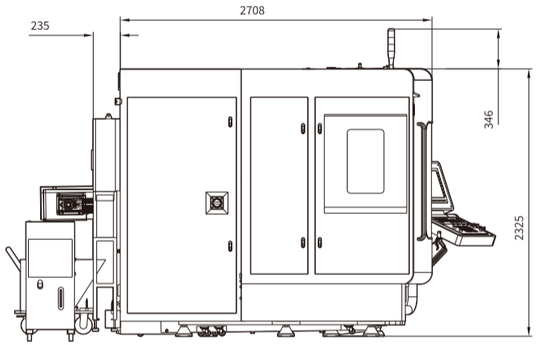


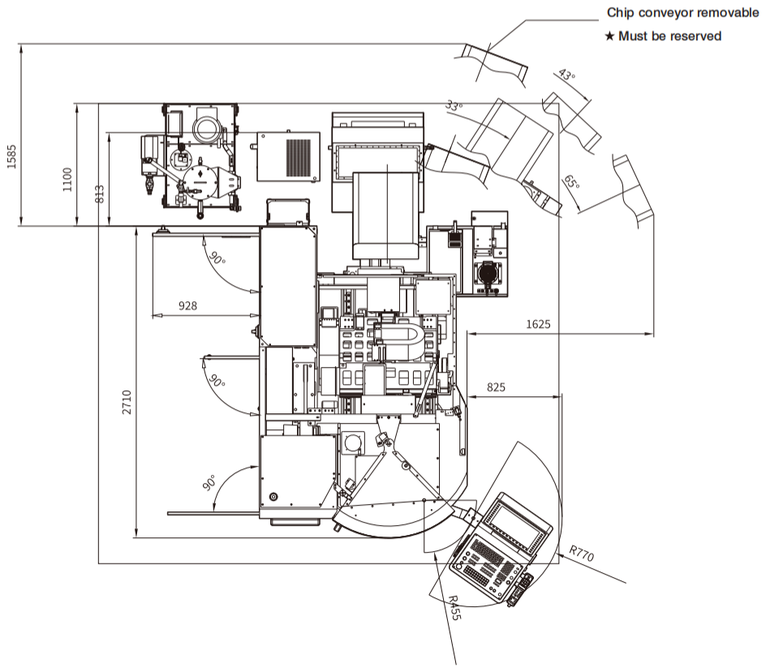


TK35-5AXIS

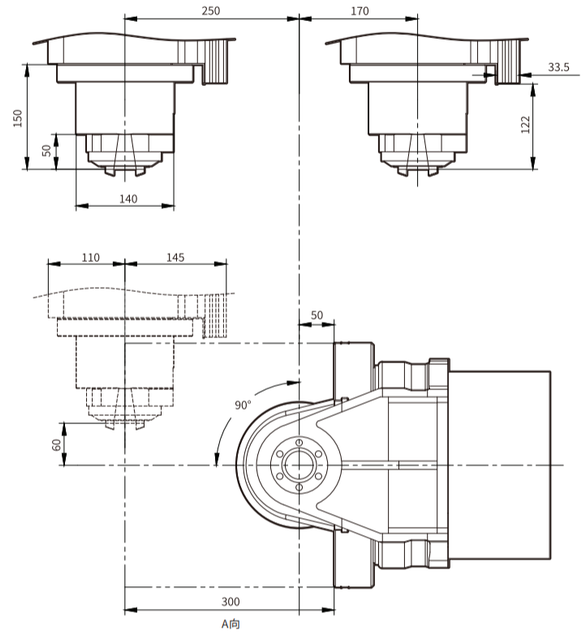
Outline Dimensional Drawing

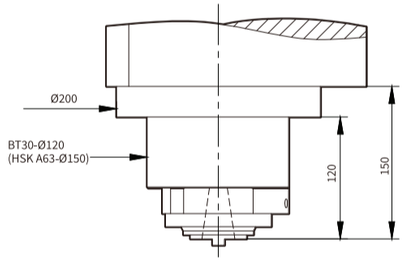


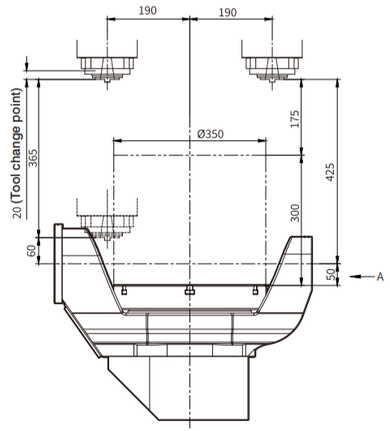


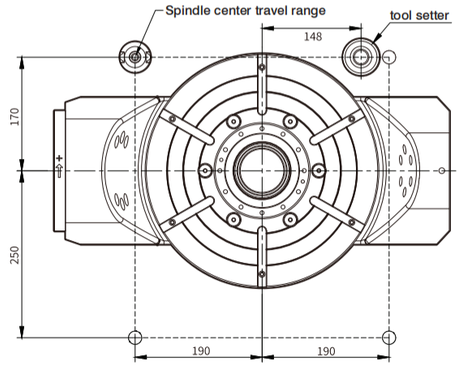


Application Space



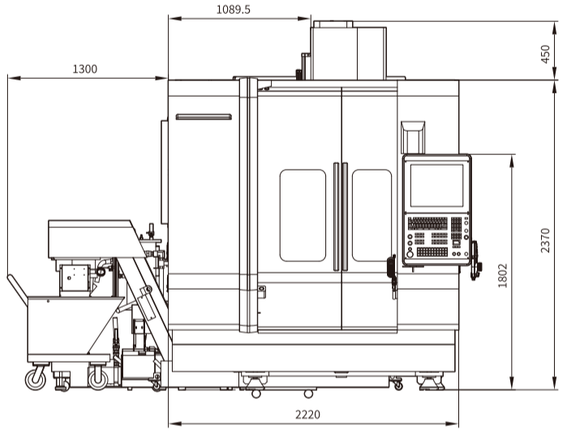


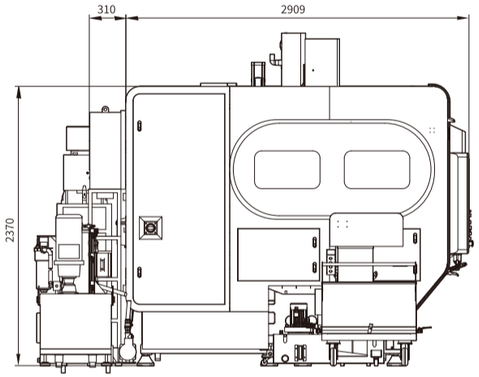


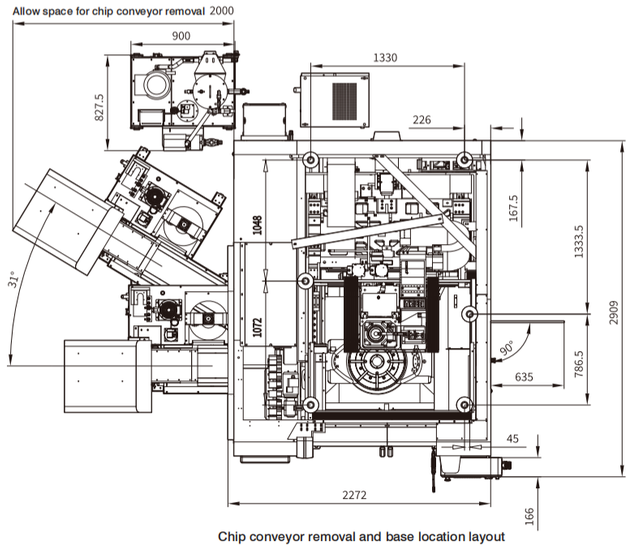


TK50-5AXIS

Outline Dimensional Drawing



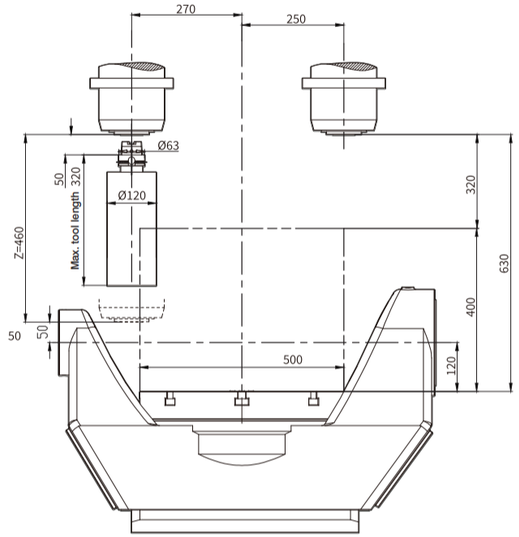


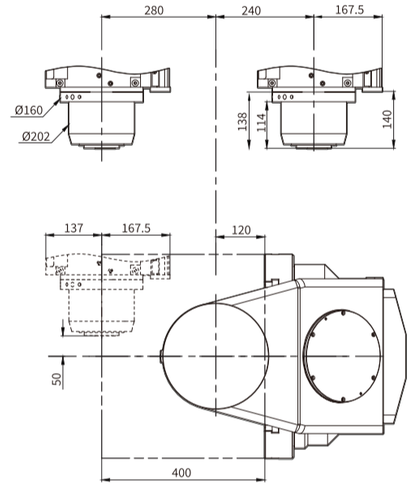


Chip conveyor removal and base location layout

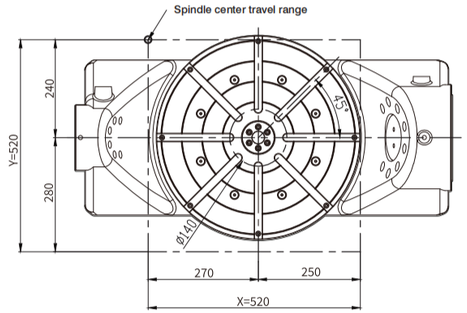
For optional rear chip removal, please consult for drawings

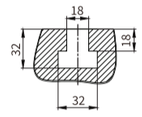
Application Space





A-90°

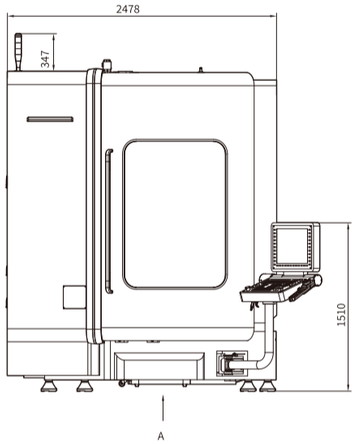


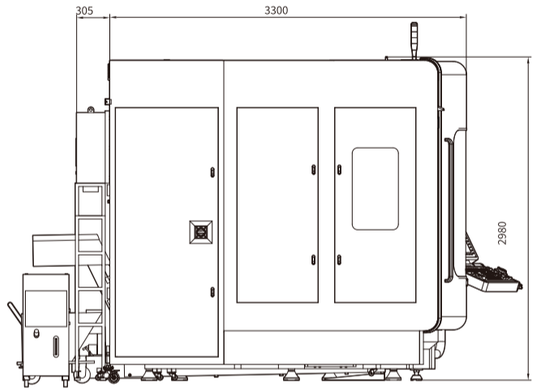


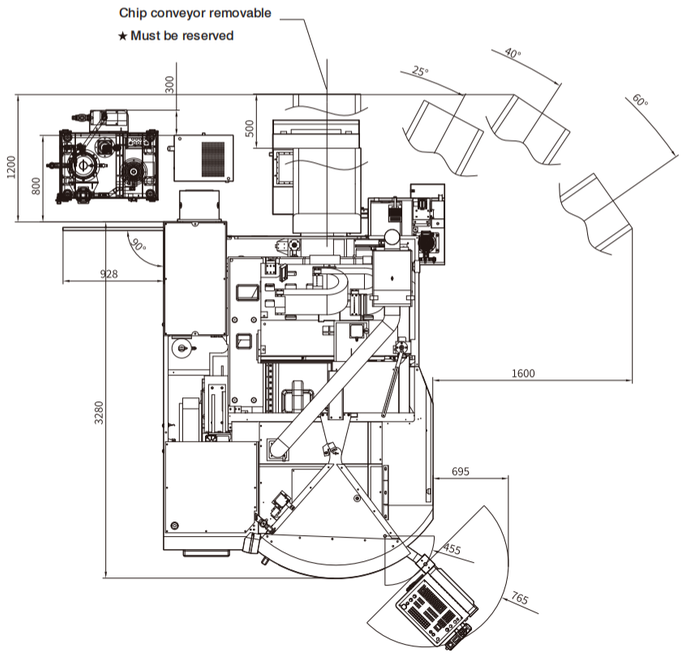
T-slot

TK65-5AXIS

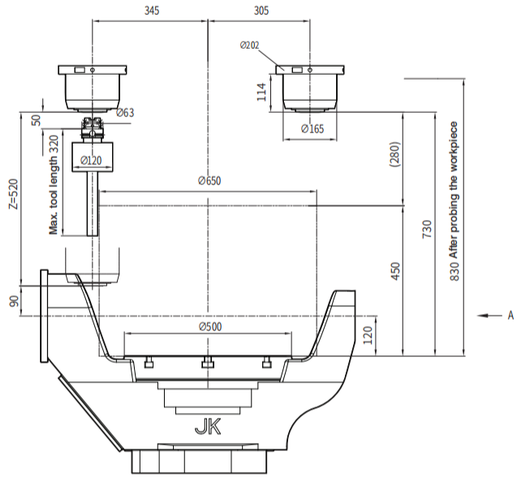
Outline Dimensional Drawing

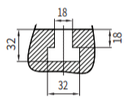


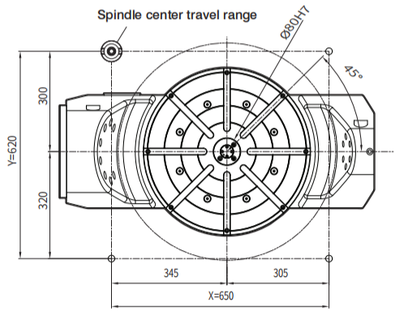


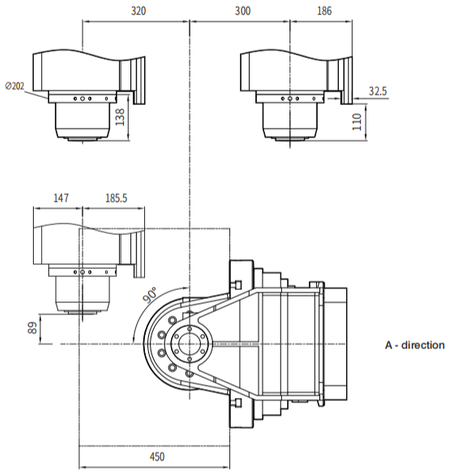


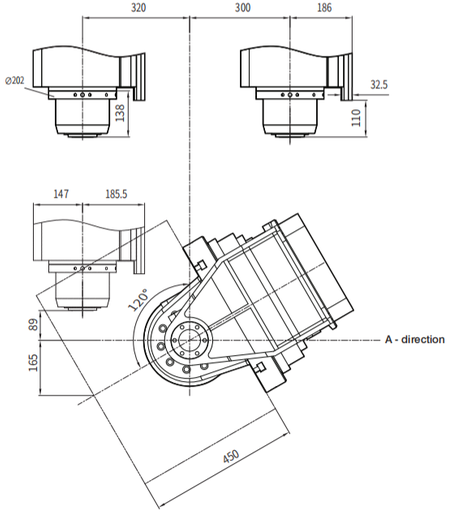
Application Space





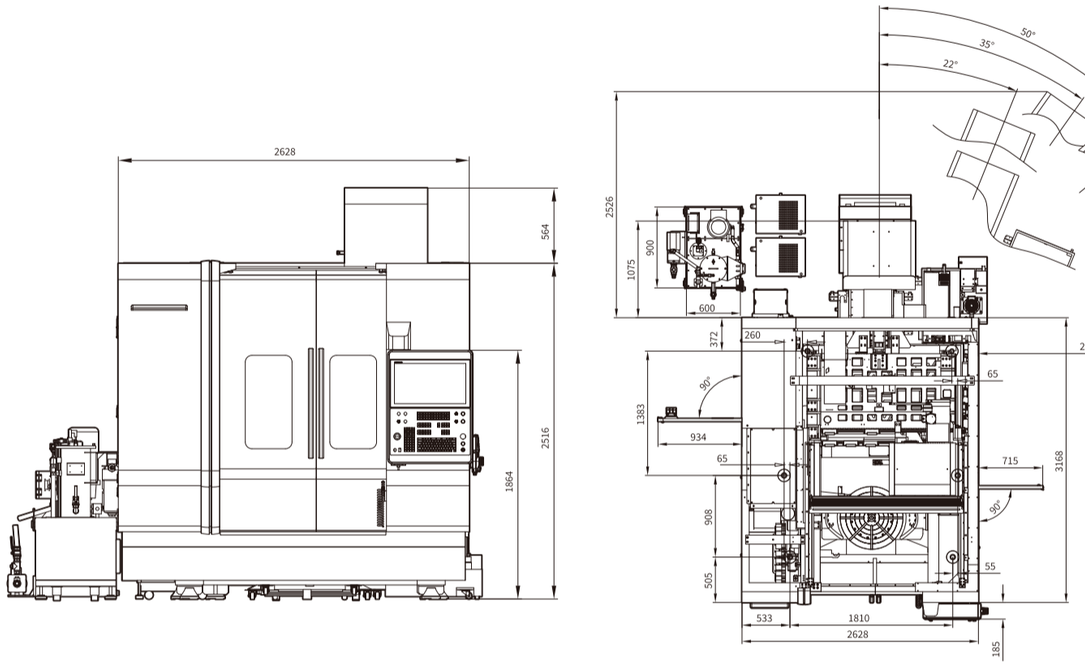


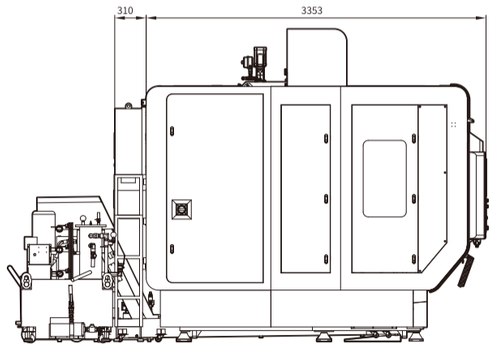




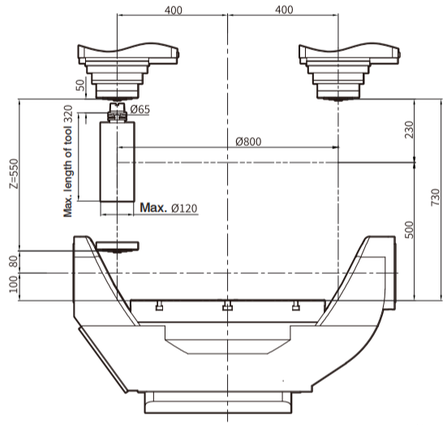
TK80-5AXIS

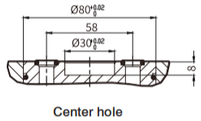
Outline Dimensional Drawing



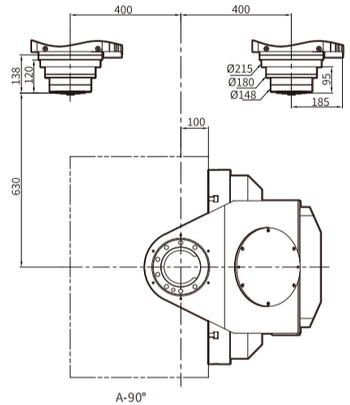


Application Space

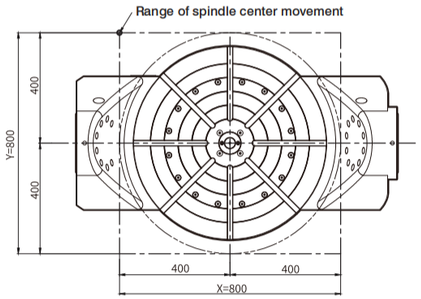


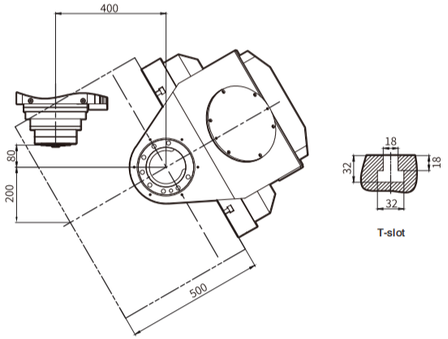


Center hole



A-90°





T-slot

A - direction (-120°)

TK10 TECHNICAL

Parameters

1、Rinear Axis Parameters		
1	X/Y/Z -axis travel range (mm)	130/100/130
2	X/Y/Z Positioning precision seat (mm)	0.008
3	X/Y/Z Repeat positioning accuracy (mm)	0.005
4	X/Y/Z -axis rapid traverse speed (m/min)	15
5	X/Y/Z -axis max cutting speed (m/min)	10
2、Rotary Axis Parameters		
1	B-axis travel range	+ 20°-125°
2	C-axis travel range	n×360°
3	B/C positioning accuracy	8″
4	B/C repeated positioning accuracy	5″
5	B-axis rapid traverse speed (rpm/min)	50
6	C-axis rapid traverse speed (rpm/min)	100
3、Machine Parameters		
1	Machine tool height (mm)	2000
2	Footprint (mm)	1000*1200
3	Machine net (T)	0.9T
4、Worktable Parameters		
1	Worktable size (mm)	Φ100
2	Max workpiece size (mm)	Φ100*100
3	Max workpiece weight (kg)	10
4	Spindle end face to table distance (mm)	90-220
5、Tool Magazine Parameters		
1	Tool magazine capacity (piece)	20
2	T-T tool change time (s)	3
3	Max Tool length(mm)	60
4	Max Tool diameter(mm)	φ20
5	Max Tool weight (kg)	0.5
6、Basic Configuration		
1	5-axis 5-linkage, tool tip follow	√
2	Tool setting instrument	Contact Tool Setter
3	X/Y/Z axis grating ruler	×
4	B/C axis grating ruler	√
5	B/C cradle turntable drive mode	DDMotor Direct Drive
6	B/C axis brake system	Circle around
7	Spindle	40000 rpm HSK E25 electric spindle
8	Spindle Cooling System	√
9	Spindle air curtain dustproof system	√
10	Tool magazine	Umbrella tool magazine
11	Fully enclosed cutting room	√
12	Metal Recovery System	√
13	Cutting Cooling System	√
14	Processing blowing device	√
15	Automatic lubrication system	√
16	working lamp	√
17	Electrical box heat exchanger	√
18	Heavy duty base	√
7、System		
1	JK220	√

Optional

1. 3D probe
2. Self-calibration and matching of five-axis rotary center
3. 60,000 rpm T11 spindle
4. Three-axis 0.01μ resolution grating ruler (repeated positioning accuracy 0.002, positioning accuracy 0.003)
5. Zero point fixture
6. Pneumatic/hydraulic pressure enters the workbench to realize automatic clamping
7. Φ25 hollow back pull fixture
8. Turning function and turning tools
9. Five-axis linkage surface curve scraping function
10. Five-axis linkage curved surface T slightly shallow shading function
11. Six-axis linkage cross-stitching function
12. Five-axis linkage automatic polishing function (automatic waxing of polishing wheel)
13. Various software applications and training
14. Safety door lock function
15. Refrigerated air compressor and coarse and fine filter
16. Compressed air moisture detection device
17. Automatic chip removal function
18. Customized solutions

TK20 TECHNICAL

Parameters

1、Linear Axis Parameters		
1	X/Y/Z -axis travel range (mm)	250/250/250
2	X/Y/Z Positioning precision seat (mm)	0.008
3	X/Y/Z Repeat positioning accuracy (mm)	0.005
4	X/Y/Z -axis rapid traverse speed (m/min)	15
5	X/Y/Z -axis max cutting speed (m/min)	10
2、Rotary Axis Parameters		
1	A -axis travel range	±125°
2	C -axis travel range	n×360°
3	A/C positioning accuracy	8″
4	A/C repeated positioning accuracy	5″
5	A -axis rapid traverse speed (rpm/min)	50
6	C -axis rapid traverse speed (rpm/min)	100
3、Machine Parameters		
1	Machine tool height (mm)	2010
2	Footprint (mm)	1750*1290
3	Machine net (T)	2.3
4、Worktable Parameters		
1	Worktable size (mm)	φ200
2	Max workpiece size (mm)	Φ200*200
3	Max workpiece weight (kg)	30
4	Spindle end face to table distance (mm)	60-310
5、Tool Magazine Parameters		
1	Tool magazine capacity (piece)	16
2	T-T tool change time (s)	3
3	Max Tool length(mm)	125
4	Max Tool diameter(mm)	40
5	Max Tool weight (kg)	1
6、Basic Configuration		
1	5-axis five-linkage, tool tip follow	√
2	3D probe	√
3	Tool setting instrument	Contact Tool Setter
4	A/C axis grating ruler	√
5	Five-axis rotary center standard matching	√
6	A/C cradle turntable drive mode	DDMotor Direct Drive
7	A/C axis brake system	Circle around
8	Spindle	30000 rpm HSK E40 electric spindle
9	Spindle Cooling System	√
10	Spindle air curtain dustproof system	√
11	Tool magazine	Umbrella tool magazine
12	Fully enclosed cutting room	√
13	Cutting Cooling System	√
14	Processing blowing device	√
15	automatic lubrication system	√
16	working lamp	√
17	Electrical box air conditioner	√
7、System		
1	HEIDENHAIN TNC640 controller	√
2	Siemens 840D	
3	JK220	

Optional

1. Turning function
①The maximum speed of C-axis is 2000/min
③Professional handle for turning/scraping
④Contact tool setting instrument with tool length and tool diameter
2. Laser tool setting instrument
3. Five-axis machine tool anti-collision
4. Oil mist absorption and oil mist recovery
5. Spindle center water outlet function
6. The C-axis rotary joint is convenient for gas/liquid to enter the workbench for automatic clamping
7. Compressed air moisture detection device
8. X/Y/Z axis grating ruler repeat positioning accuracy 0.003, positioning accuracy 0.004
9. Customized plan

TK35 TECHNICAL

Parameters

1、Linear Axis Parameters		
1	X/Y/Z -axis travel range (mm)	380/420/365
2	X/Y/Z Positioning precision seat (mm)	0.004
3	X/Y/Z Repeat positioning accuracy (mm)	0.003
4	X/Y/Z -axis rapid traverse speed (m/min)	30
5	X/Y/Z -axis max cutting speed (m/min)	15
2 Rotary Axis Parameters		
1	A-axis travel range	±120°
2	C-axis travel range	n×360°
3	A/C positioning accuracy	8″
4	A/C repeated positioning accuracy	5″
5	A-axis rapid traverse speed (rpm/min)	50
6	C-axis rapid traverse speed (rpm/min)	100
3、Machine Parameters		
1	Machine tool height (mm)	2300
2	Footprint (mm)	1800*3200
3	Machine net (T)	6
4、Worktable Parameters		
1	Worktable size (mm)	ϕ350
2	T-slot	6-M10
3	Max workpiece size (mm)	ϕ350×250
4	Max workpiece weight (kg)	100
5	Spindle end face to table distance (mm)	110-475
5、Tool Magazine Parameters		
1	Tool magazine capacity (pcs)	24
2	T-T tool change time (s)	3
3	Max length of tool (mm)	200
4	Max diameter of adjacent positions without tools (mm	ϕ110
5	Max diameter of adjacent cutting tools (mm)	ϕ65
6	Max weight of cutting tool (kg)	6
6、Basic Configuration		
1	5-axis five-linkage, tool tip follow	√
2	3D probe	√
3	Tool setting instrument	Contact Tool Setter
4	X/Y/Z axis grating ruler	√
5	A/C axis grating ruler	√
6	Five-axis rotary center standard matching	√
7	A/C cradle turntable drive mode	DDMotor Direct Drive
8	A/C axis brake system	Circle around
9	Spindle	20000 rpm HSK A63 electric spindle
10	Spindle Cooling System	√
11	Spindle air curtain dustproof system	√
12	Tool magazine	Robotic tool changer
13	Chip removal system	√
14	Debris car	√
15	Cutting Cooling System	√
16	Oil mist mixing processing air blowing device	√
17	automatic lubrication system	√
18	working lamp	√
19	Electrical box air conditioner	√
7、System		
1	HEIDENHAIN TNC640 controller	√
2	Siemens 840D	
3	Jk220	
4	Siemens 828D (five-axis four linkage)	

Optional

1. Turning function
① The maximum speed of the C-axis is 1600 (r/min)
②HSK A63 special tool holder for turning and scraping
③Contact tool setting instrument with tool length and tool diameter
2. Laser tool setting instrument
3. Grinding function
①Sand repairing roller
②Sand dressing roller spindle
③Automatic sand repair: (1) outer circle repair (2) end face repair (3) programmable special-shaped grinding wheel
④ Automatic compensation
⑤Grinding plane, outer circle, end face of inner hole, curved surface, curve, special-shaped grinding
4. Oil mist absorption and oil mist recovery
6. HSK E40 or BT30 40-bit chain tool magazine
6. A-axis gear heavy-duty transmission
7. Spindle center water outlet function
8. The C-axis rotary joint is convenient for gas/liquid to enter the workbench for automatic clamping
9. Safety door lock function
10. Refrigerated air compressor and coarse and fine filter
11. Compressed air moisture detection device
12. Customized plan

TK50 TECHNICAL

Parameters

1、Linear Axis Parameters		
1	X/Y/Z -axis travel range (mm)	520/520/460
2	X/Y/Z Positioning precision seat (mm)	0.004
3	X/Y/Z Repeat positioning accuracy (mm)	0.003
4	X/Y/Z -axis rapid traverse speed (m/min)	30
5	X/Y/Z -axis max cutting speed (m/min)	15
2 Rotary Axis Parameters		
1	A-axis travel range	±120°
2	C-axis travel range	n×360°
3	A/C positioning accuracy	8″
4	A/C repeated positioning accuracy	5″
5	A-axis rapid traverse speed (rpm/min)	30
6	C-axis rapid traverse speed (rpm/min)	80
3、Machine Parameters		
1	Machine tool height (mm)	2800
2	Footprint (mm)	3600*3220
3	Machine net (T)	10
4、Worktable Parameters		
1	Worktable size (mm)	Φ500
2	T-slot	8-M16
3	Max workpiece size (mm)	Φ520*410
4	Max workpiece weight (kg)	400
5	Spindle end face to table distance (mm)	170-630
5、Tool Magazine Parameters		
1	Tool magazine capacity (pcs)	24
2	T-T tool change time (s)	3
3	Max length of tool (mm)	320
4	Max diameter of adjacent positions without tools (mm)	Φ140
5	Max diameter of adjacent cutting tools (mm)	ϕ80
6	Max weight of cutting tool (kg)	6
6、Basic Configuration		
1	5-axis five-linkage, tool tip follow	√
2	3D probe	√
3	Tool setting instrument	Contact Tool Setter
4	X/Y/Z axis grating ruler	√
5	A/C axis grating ruler	√
6	Five-axis rotary center standard matching	√
7	A/C cradle turntable drive mode	DDMotor Direct Drive
8	A/C axis brake system	Circle around
9	Spindle	20000 rpm HSK A63 electric spindle
10	Spindle Cooling System	√
11	Spindle air curtain dustproof system	√
12	Tool magazine	Robotic tool changer
13	Chip removal system	√
14	Debris car	√
15	Cutting Cooling System	√
16	Processing blowing device	√
17	automatic lubrication system	√
18	working lamp	√
19	Electrical box air conditioner	√
7、System		
1	HEIDENHAIN TNC640 controller	√
2	Menzi 840D	
3	JK220	
4	Siemens 828D (five-axis four linkage)	

Optional

1. Turning function
①The maximum speed of C-axis is 1200/min
②Hydraulic locking of main shaft gear
③HSKT63 spindle taper hole, 12000 or 15000 milling and turning compound mechanical direct-coupled spindle
④Contact tool setting instrument with tool length and tool diameter
2. Laser tool setting instrument
3. Grinding function
①Sand repairing roller
②Sand dressing roller spindle
③Automatic sand repair: (1) outer circle repair, (2) end face repair, (3) programmable special-shaped grinding wheel
④ Automatic compensation
⑤Grinding plane, outer circle, end face of inner hole, curved surface, curve, special-shaped grinding
4. Oil mist absorption and oil mist recovery
5. 40-bit chain tool magazine
6. A-axis gear heavy-duty transmission
7. Spindle center water outlet function
8. The C-axis rotary joint is convenient for gas/liquid to enter the workbench for automatic clamping
9. Automatic door or safety door lock function
10. Refrigerated air compressor and coarse and fine filter
11. Compressed air moisture detection device
12. Customized plan

TK65 TECHNICAL

Parameters

1、Linear Axis Parameters		
1	X/Y/Z -axis travel range (mm)	650/620/520
2	X/Y/Z Positioning precision seat (mm)	0.005
3	X/Y/Z Repeat positioning accuracy (mm)	0.004
4	X/Y/Z -axis rapid traverse speed (m/min)	30
5	X/Y/Z -axis max cutting speed (m/min)	15
2 Rotary Axis Parameters		
1	A-axis travel range	±120°
2	C-axis travel range	n×360°
3	A/C positioning accuracy	8"
4	A/C repeated positioning accuracy	5"
5	A-axis rapid traverse speed (rpm/min)	30
6	C-axis rapid traverse speed (rpm/min)	100
3、Machine Parameters		
1	Machine tool height (mm)	3300
2	Footprint (mm)	2480*4390
3	Machine net (T)	11
4、Worktable Parameters		
1	Worktable size (mm)	Φ500
2	T-slot	8-M16
3	Max workpiece size (mm)	Φ650*410
4	Max workpiece weight (kg)	500
5	Spindle end face to table distance (mm)	170-690
5、Tool Magazine Parameters		
1	Tool magazine capacity (pcs)	24
2	T-T tool change time (s)	3
3	Max length of tool (mm)	320
4	Max diameter of adjacent positions without tools (mm)	Φ140
5	Max diameter of adjacent cutting tools (mm)	Φ80
6	Max weight of cutting tool (kg)	6
6、Basic Configuration		
1	5-axis five-linkage, tool tip follow	√
2	3D probe	√
3	Tool setting instrument	Contact Tool Setter
4	X/Y/Z axis grating ruler	√
5	A/C axis grating ruler	√
6	Five-axis rotary center standard matching	√
7	A/C cradle turntable drive mode	DDMotor Direct Drive
8	A/C axis brake system	Circle around
9	Spindle	20000 rpm HSK A63 electric spindle
10	Spindle Cooling System	√
11	Spindle air curtain dustproof system	√
12	Tool magazine	Robotic tool changer
13	Chip removal system	√
14	Debris car	√
15	Cutting Cooling System	√
16	Processing blowing device	√
17	automatic lubrication system	√
18	working lamp	√
19	Electrical box air conditioner	√
7、System		
1	HEIDENHAIN TNC640 controller	√
2	Menzi 840D	
3	JK220	
4	Siemens 828D (five-axis four linkage)	

Optional

1. Turning function
① The maximum speed of the C-axis is 1200, and the rated speed is 600
②Hydraulic locking of main shaft gear
③HSKT63 spindle taper hole, 15000 rpm or 12000 rpm direct-coupled mechanical spindle
④Contact tool setting instrument with tool length and tool diameter
2. Laser tool setting instrument
3. Grinding function
① Automatic sand repair, automatic radius compensation
② Grinding code designation soft function
③Grinding internal and external circles, sections, arbitrary curved surfaces, curves, vertical and horizontal oblique grinding
4. Oil mist absorption and oil mist recovery
5. 40-bit chain tool magazine
6. A-axis gear transmission (15r/min)
7. Spindle center water outlet function
8. Safety door lock
9. The C-axis rotary joint is convenient for gas/liquid to enter the workbench for automatic clamping
10. Refrigerated air compressor and coarse and fine filter
11. Compressed air moisture detection device
12. Customized plan

TK80 TECHNICAL

Parameters

1、Linear Axis Parameters		
1	X/Y/Z -axis travel range (mm)	800/800/550
2	X/Y/Z Positioning precision seat (mm)	0.005
3	X/Y/Z Repeat positioning accuracy (mm)	0.004
4	X/Y/Z -axis rapid traverse speed (m/min)	30
5	X/Y/Z -axis max cutting speed (m/min)	15
2 Rotary Axis Parameters		
1	A -axis travel range	±120°
2	C -axis travel range	n×360°
3	A/C positioning accuracy	8"
4	A/C repeated positioning accuracy	5"
5	A -axis rapid traverse speed (rpm/min)	30
6	C -axis rapid traverse speed (rpm/min)	50
3、Machine Parameters		
1	Machine tool height (mm)	3060
2	Footprint (mm)	4530*2630
3	Machine net (T)	18.5
4、Worktable Parameters		
1	Worktable size (mm)	Φ700
2	T-slot	8-M18
3	Max workpiece size (mm)	Φ800*500
4	Max workpiece weight (kg)	500
5	Spindle end face to table distance (mm)	180-730
5、Tool Magazine Parameters		
1	Tool magazine capacity (pcs)	24
2	T-T tool change time (s)	3
3	Max length of tool (mm)	320
4	Max diameter of adjacent positions without tools (mm)	Φ140
5	Max diameter of adjacent cutting tools (mm)	80
6	Max weight of cutting tool (kg)	6
6、Basic Configuration		
1	5-axis five-linkage, tool tip follow	√
2	3D probe	√
3	Tool setting instrument	Contact Tool Setter
4	X/Y/Z axis grating ruler	√
5	A/C axis grating ruler	√
6	Five-axis rotary center standard matching	√
7	A/C cradle turntable drive mode	DDMotor Direct Drive
8	A/C axis brake system	Circle around
9	Spindle	15000 rpm HSK A63 electric spindle
10	Spindle Cooling System	√
11	Spindle air curtain dustproof system	√
12	Tool magazine	Robotic tool changer
13	Automatic sunroof	√
14	Chip removal system	√
15	Debris car	√
16	Cutting Cooling System	√
17	Processing blowing device	√
18	automatic lubrication system	√
19	working lamp	√
20	Electrical box air conditioner	√
7、System		
1	HEIDENHAIN TNC640 controller	√
2	Menzi 840D	
3	JK220	
4	Siemens 828D (five-axis four linkage)	

Optional

1. Turning function
① The maximum speed of the C-axis is 600 (r/min)
②Hydraulic locking of main shaft gear
③HSKT63 spindle taper hole, 12000 or 15000 milling and turning compound mechanical direct-coupled spindle
④Contact tool setting instrument with tool length and tool diameter
2. Laser tool setting instrument
3. Grinding function
①Sand repairing roller
②Sand dressing roller spindle
③Automatic sand repair: (1) outer circle repair, (2) end face repair, (3) programmable special-shaped grinding wheel
④ Automatic compensation
⑤Grinding plane, outer circle, end face of inner hole, curved surface, curve, special-shaped grinding
4. 40-bit chain tool magazine
5. A-axis gear heavy-duty transmission
6. Spindle center water outlet function
7. The C-axis rotary joint is convenient for gas/liquid to enter the workbench for automatic clamping
8. Automatic door or safety door lock function
9. Refrigerated air compressor and coarse and fine filter
10. Compressed air moisture detection device
11. Customized plan

TK1000 TECHNICAL

Parameters

1、Linear Axis Parameters		
1	X/Y/Z -axis travel range (mm)	1100/1100/700
2	X/Y/Z Positioning precision seat (mm)	0.006
3	X/Y/Z Repeat positioning accuracy (mm)	0.005
4	X/Y/Z -axis rapid traverse speed (m/min)	30
5	X/Y/Z -axis max cutting speed (m/min)	15
2 Rotary Axis Parameters		
1	A-axis travel range	±120°
2	C-axis travel range	n×360°
3	A/C positioning accuracy	8"
4	A/C repeated positioning accuracy	5"
5	A-axis rapid traverse speed (rpm/min)	30
6	C-axis rapid traverse speed (rpm/min)	100
3、Machine Parameters		
1	Machine tool height (mm)	4000
2	Footprint (mm)	3200*4200
3	Machine net (T)	25
4、Worktable Parameters		
1	Worktable size (mm)	Φ800
2	T-slot	M18T type straight slot
3	Max workpiece size (mm)	Φ1100*700
4	Max workpiece weight (kg)	2500
5、Tool Magazine Parameters		
1	Tool magazine capacity (pcs)	40
2	T-T tool change time (s)	4
3	Max Tool length(mm)	450
4	Max ool diameter(mm)	Φ200
5	Max Tool weight (kg)	20
6、basic Configuration		
1	5-axis five-linkage, tool tip follow	√
2	3D probe	√
3	Tool setting instrument	Contact Tool Setter
4	X/Y/Z axis grating ruler	√
5	A/C axis grating ruler	√
6	Five-axis rotary center standard matching	√
7	A/C cradle turntable drive mode	DDMotor Direct Drive
8	A/C axis brake system	Circle around
9	Spindle	10000 rpm HSK A63 electric spindle
10	Spindle Cooling System	√
11	Spindle air curtain dustproof system	√
12	Tool magazine	Robotic tool changer
13	Automatic sunroof	√
14	Chip removal system	√
15	Debris car	√
16	Cutting Cooling System	√
17	Processing blowing device	√
18	automatic lubrication system	√
19	working lamp	√
20	Electrical box air conditioner	√
7、system		
1	HEIDENHAIN TNC640 controller	√
2	Menzi 840D	
3	JK220	
4	Siemens 828D (five-axis four linkage)	

Optional

1. Oil mist absorption and oil mist recovery function
2. Five axis anti-collision function
3. Laser knife alignment instrument
4. 18000 rpm HSK A63 electric spindle
5. Milling car composite function or milling car grinding composite function
6. Spindle center water outlet function
7. C-axis rotary joint, air/liquid enters the workbench for automatic operation Clamping or palletizing system
8. Automatic door or safety door lock function
9. Refrigerated air compressor and coarse and fine filter
10. Compressed air moisture detection device
11. Customized solutions