

5-Axis machining center

5-轴加工中心

DMTC



DAHUI MT Machine Tool Cutting Tools

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Our vision: Duty . honest . team
公司愿景: 本分 诚实 团队



Conventional Lathe Workshop



Slant Bed CNC Lathe Workshop



Flat Bed CNC Lathe Workshop



VMC Workshop



Enterprise profile

Dalian Dahui Machine Tool Co., Ltd. was established in 2007 and has been devoted to the design, development, production and sales of standard and non-standard mechanical equipment. Meanwhile we also research and sales of drills, taps, milling cutters and other metal cutting tools. DAHUI obtained CE certification, BV certification, and SGS certification in 2011. We have own brand "DAHUI MT". From 2007 to 2021, we pay more attention to technological innovation, in which we have possessed more than 10 patents. After 12 years of technical precipitation, Dahui can produce its own boring machine, lathe and machining center. The machines have exported home and abroad due to good quality, competitive price and considerate after-sales provided. DAHUI MT has formed strategic partnerships with more than 20 domestic first-class industrial equipment manufacturers and signed in-depth cooperation agreements to form a complete supply chain. According to the different needs of customers, we can provide standardized and customized lathes, gear hobbing machines, vertical machining centers, horizontal machining centers, gantry machining centers, grinders, and various metal milling tools with various structures and styles. At the same time, we acts as an agent for the sales of large castings, large forgings, mining machinery, petrochemical equipment, metallurgical machinery, construction machinery, construction machinery, coal mining machinery, power station equipment, environmental protection equipment, etc., We provide guests with a comprehensive one-stop convenient service. Our customers are located in more than 60 countries and regions around the world, The annual turnover exceeds 10 million U.S. dollars. We continue to seek technological breakthroughs, in the customer to bring more high value-added products, but also pay more attention to energy conservation and environmental protection, by reducing carbon emissions, for the healthy development of the earth's ecology to make greater contributions. Welcome partners from all over the world to cooperate with us to create a better future.

company profiles 企业介绍

Our vision: Duty . honest . team
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It is widely used in many fields such as aerospace, energy nuclear power, automobile industry, ship heavy industry, mold medical treatment, etc.

DMTC
DAHUI MT

Application



航空航天业 / 机匣

Aerospace industry / gearbox



能源行业 / 大叶轮

Energy Industry/Large Impeller



汽车行业 / 变速器壳体

Automotive Industry/Transmission Housing



模具制造业 / 轮毂模具

Die Manufacturing Industry/Hub Dies



刀具制造业 / 铣刀

Tool Manufacturing/Milling Cutter



医疗器械行业 / 人体腕关节

Medical Device Industry/Human Joints

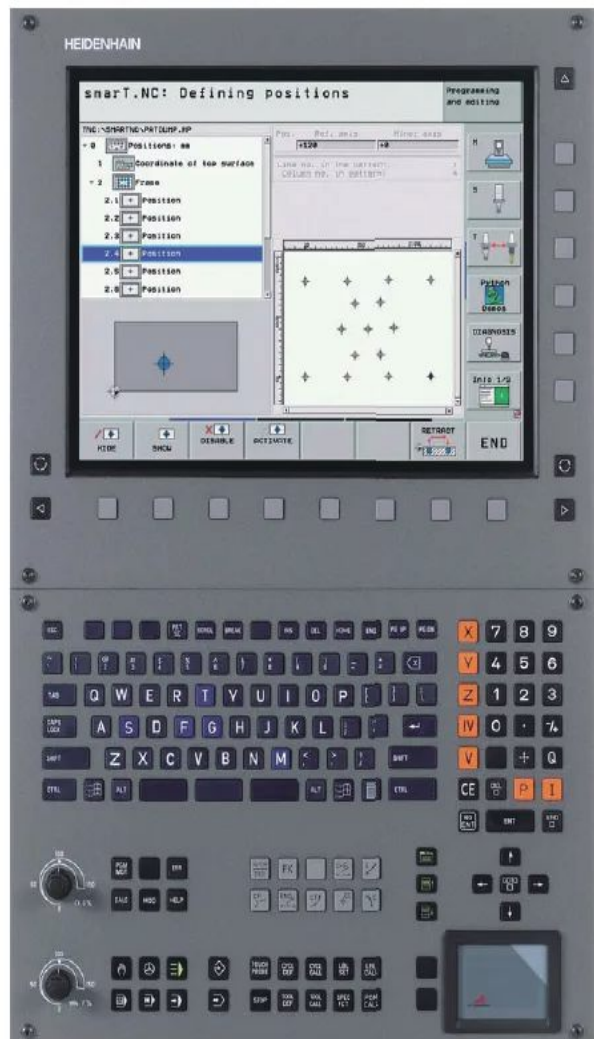
About CNC system

Concentrating on the improvement of machine tool accuracy, the complete CNC solution creates value for users.

Huazhong CNC
DAHUI MT
SIEMENS
HEIDELMAN
Four CNC System Options

Highlights of five axis CNC system

- +Segment Spline Transfer
- +Thread synchronous cutting
- +Conical Interpolation
- +Cylindrical interpolation
- +Perfect five-axis technology (RTCP, bevel machining)
- +System supports wireless probe and knife alignment access
- +Error compensation function - bidirectional pitch compensation, straightness compensation (including deflection compensation in all directions) and verticality compensation, etc.
- +Secondary development and offline 3-D simulation system
- +High-speed information interaction
- +High resolution, accurate high frequency control scheduling
- +Precise position/angle sensing
- +Multi-channel control technology
- +High-speed and high-precision machining
- +Variable pitch thread
- +Polar coordinate interpolation
- +Spline Curve Interpolation



Three basic technologies

+ High-speed information exchange - GLNK optical fiber motion control fieldbus

Using 100Mbps high-speed optical fiber medium, the control system of the CNC system is delivered to each servo drive device, and strict synchronous operation is ensured; and physical quantities including the coordinate position of the machine tool, load rate, temperature, etc. are sent back to the CNC system.

+ Sophisticated position/angle perception - sensor subdivision technology

The signal from the line/angle sensor is further subdivided, and the position/angle information containing effective precision in the 1vpp signal is further extracted, and the maximum physical resolution is increased by 16384 times. The subdivision processing process is completed instantly within 1/5,000,000 seconds . The unique laser interference closed-loop control technology improves the length feedback detection accuracy to 0.2um and the resolution to 1nm. It provides basic technical guarantee for precision machine tool control.

+ Accurate high-frequency control scheduling - GRTK time kernel

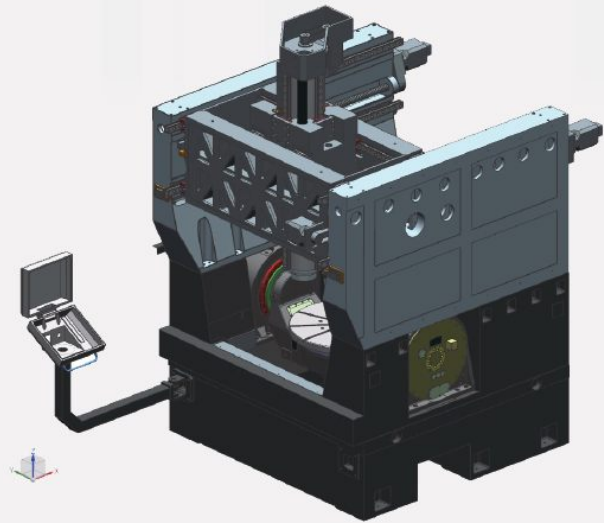
Support multi-core CPU, realize precise control task scheduling thousands of times per second, make motion control operation, logic control operation, human-computer interaction run efficiently and orderly, delay 1/100,000 second in response to real-time clock, and maximize the use of high-performance CNC System processor computing resources.



Charateristics

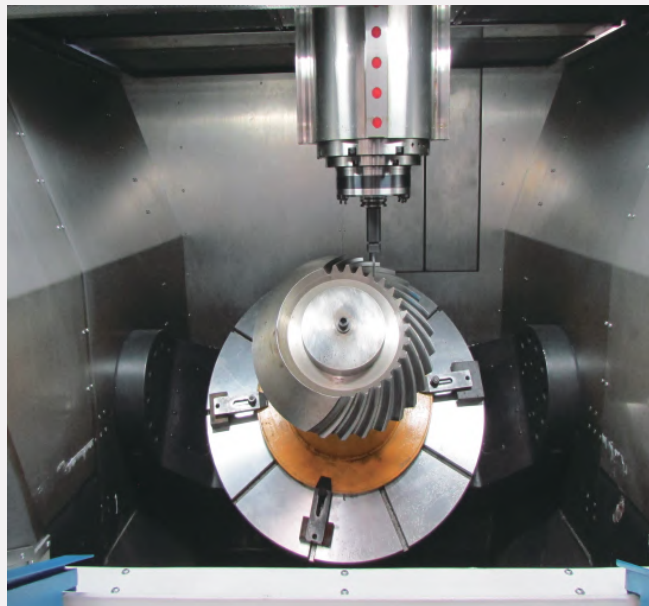
Compared with the layout of two guide rails, the x-axis planar three guide rail structure has short force arm, small deformation and strong rigidity.

Three-point positioning support structure, T-shaped integral structure of the lathe body, 5% higher than the conventional one, can reduce the deformation of the lathe body, and ensure long-term and stable machining accuracy.

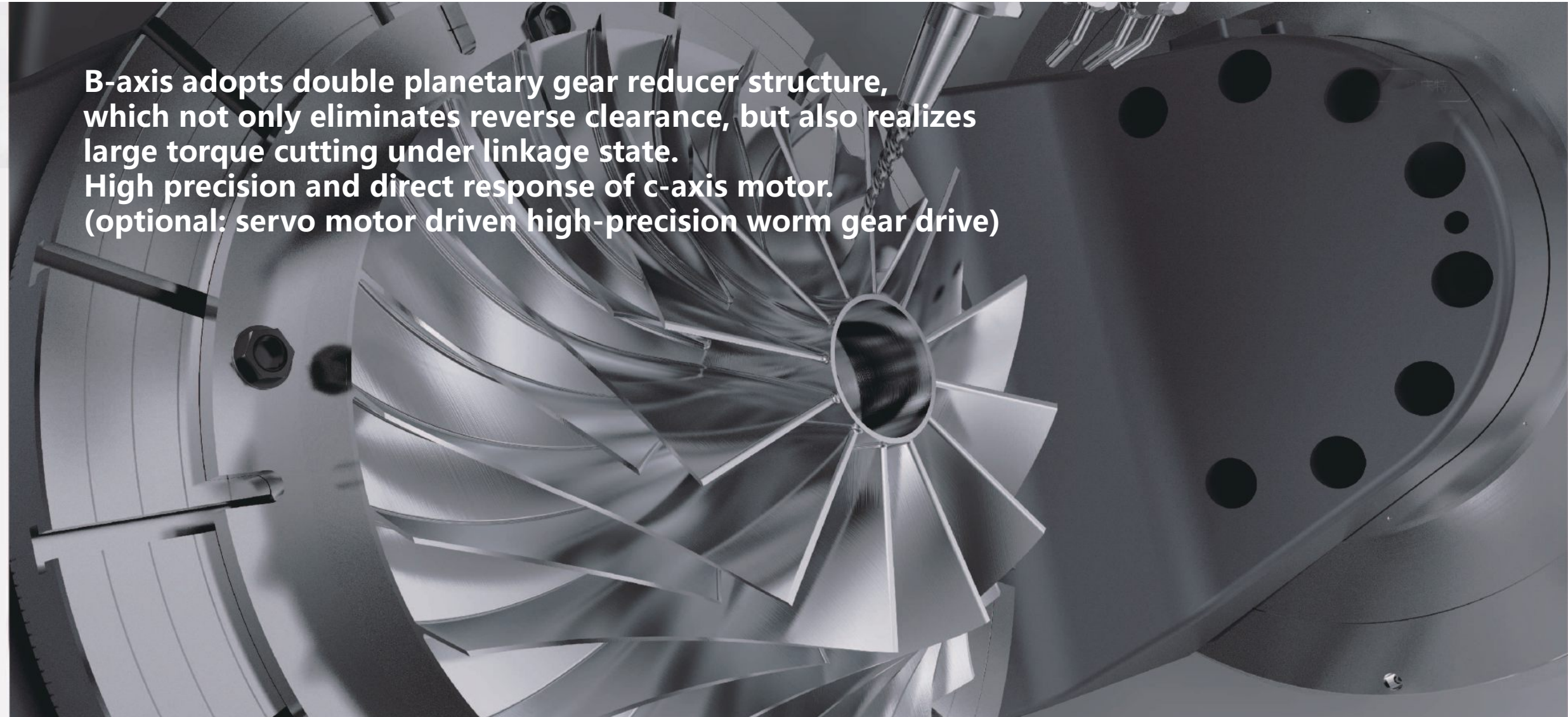


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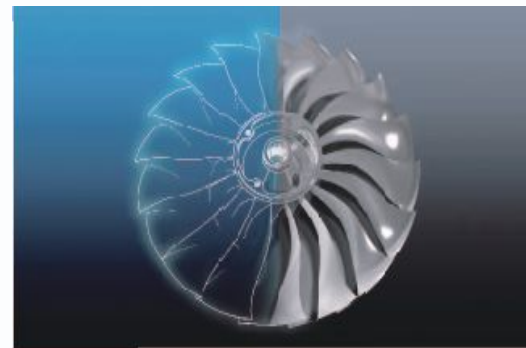
Three-point positioning support structure, T-shaped integral structure of the lathe body, 5% higher than the conventional one, can reduce the deformation of the lathe body, and ensure long-term and stable machining accuracy.



**B-axis adopts double planetary gear reducer structure, which not only eliminates reverse clearance, but also realizes large torque cutting under linkage state.
High precision and direct response of c-axis motor.
(optional: servo motor driven high-precision worm gear drive)**



High Dynamic Response Technology



- +Dynamic performance optimization of moving parts in machine tool design;
 - +Attention to high rigidity, lightweight design and mechanical components
- Dynamic matching;
- +Multiple functional components can be selected to optimize motion coordinate parameters;
 - + Make the dynamic performance of the machine tool meet the needs of users.

Center of gravity drive



- +stronger, smoother drive;
- +Center of gravity drive of cradle-type turntable;
- +effectively suppress vibration and eliminate reverse clearance;
- + Provide users with ideal processing performance.

Direct Drive Technology



- + Good dynamic response capability;
 - +No reverse clearance, no mechanical wear of drive;
 - +Torque motor is used as the main drive in rotary coordinate;
 - +U/UMT type C-shaft with low/high speed torque respectively;
- Motor, high-precision milling.

Diversified turntable

VGW400s / 600s / 800s series can be equipped with standard turntable and turntable with turning function.

VGW12500 is equipped with turntable with turning function as standard.

- +Customized service
- +Three axis or five axis free selection
- +Accurate and efficient processing
- +A / C axis adopts torque motor direct drive technology
- +Compact structure, large output torque and high precision



VGW400S U

Item	Specification
worktable diameter	370*φ450
Central hole	φ32H7
T-slot (star)	12H7
Motor rated torque axis A / axis C	1200/314
Clamping torque axis A / axis C	750/1000
Clamping mode axis A / axis C	Pneumatic clamp / disc spring clamping



VGW400S UMT

Item	Specification
worktable diameter	φ370
Central hole	φ32H7
T-slot (star)	8-12H7
Motor rated torque axis A / axis C	1200/379
Clamping torque axis A / axis C	750/750
Clamping mode axis A / axis C	Pneumatic clamp



VGW600S U

Item	Specification
worktable diameter	540*φ650
Central hole	φ32H7
T-slot (star)	14H7
Motor rated torque axis A / axis C	3760/860
Clamping torque axis A / axis C	4600/3990
Clamping mode axis A / axis C	Pneumatic clamp / disc spring clamping



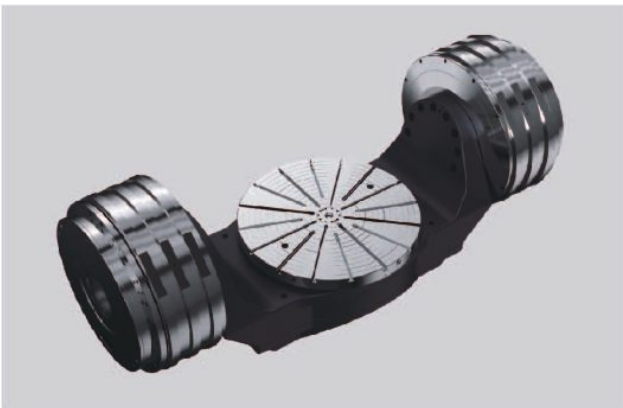
VGW600S UMT

Item	Specification
worktable diameter	φ600
Central hole	φ32H7
T-slot (star)	14H7
Motor rated torque axis A / axis C	3760/700
Clamping torque axis A / axis C	4600/4000
Clamping mode axis A / axis C	Pneumatic clamp / Hydraulic clamping



VGW800S U

Item	Specification
worktable diameter	630-φ800
Central hole	φ32H7
T-slot (star)	14H7
Motor rated torque axis A / axis C	5380/1210
Clamping torque axis A / axis C	6600/8000
Clamping mode axis A / axis C	Pneumatic clamp / Spring clamping



VGW800S UMT

Item	Specification
worktable diameter	φ750
Central hole	φ32H7
T-slot (star)	14H7
Motor rated torque axis A / axis C	5380/1488
Clamping torque axis A / axis C	6600/5000
Clamping mode axis A / axis C	Pneumatic clamp / Hydraulic clamping



VGW1250S UMT

Item	Specification
worktable diameter	φ1200
Central hole	φ32H7
T-slot (star)	22H7
Motor rated torque axis A / axis C	12680/4458
Clamping torque axis A / axis C	16800/20000
Clamping mode axis A / axis C	Pneumatic clamp / Hydraulic clamping

Electrospindle

Guarantee of high quality processing
Milling electro-spindle is one of the key components on the machining center.

Serialized electro-spindle is a high-speed, high-precision and high-rigidity high-power electro-spindle (milling turning compound spindle with configurable spindle locking).
It is suitable for high-efficiency and precision machining of integral leaf disc, complex box parts, aero-engine gate parts, spiral bevel gear parts and mold parts in aerospace field.



主轴装配/Spindle assembly



主轴精度检测/Spindle assembly

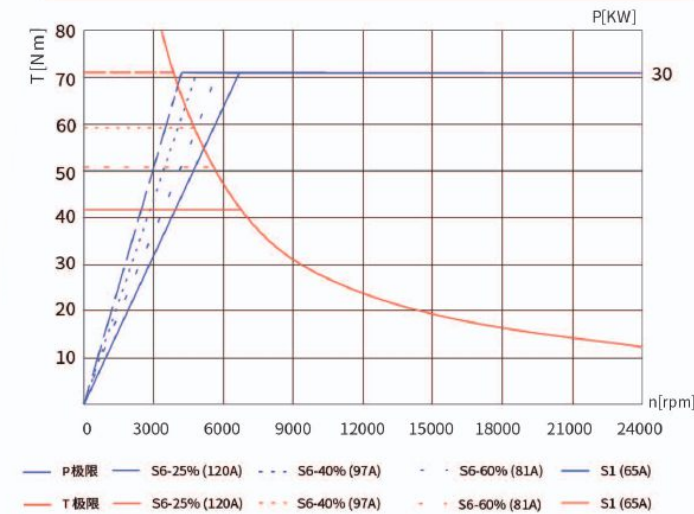


Milling motorized

The milling motorized spindle supports the original achievements with independent intellectual property rights. With the help of the research achievements made by Dalian Guangyang Technology Group Co., Ltd. in relevant fields: spindle motor, spindle encoder and rotary joint for high-speed spindle, it focuses on the reliability and accuracy stability of high-speed spindle of machine tool.

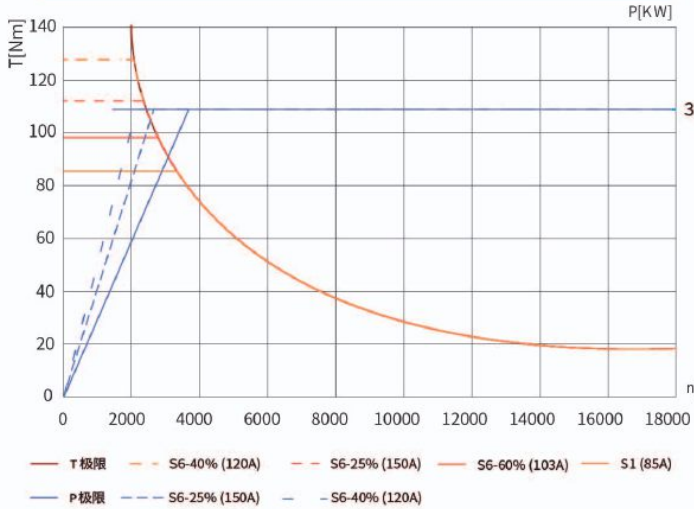
VGW400S spindle series

最大转速	刀具接口	额定功率	额定扭矩
20000rpm	HSK A63	30KW	42Nm



VGW800S spindle series

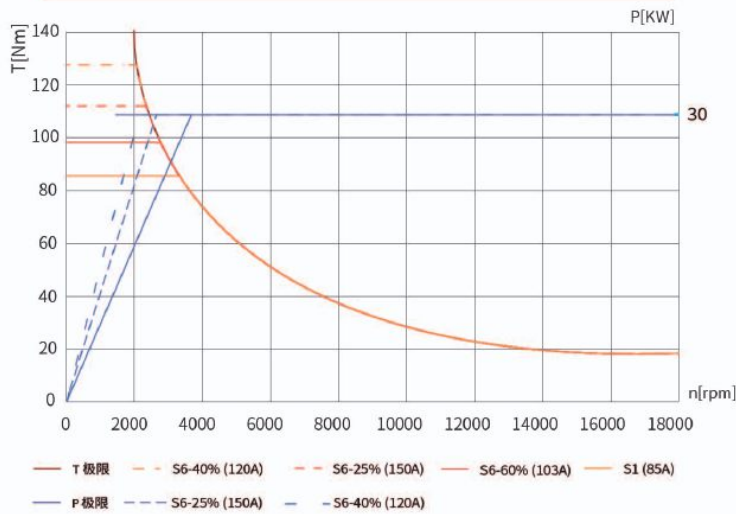
最大转速	刀具接口	额定功率	额定扭矩
18000rpm	HSK A63	30KW	84Nm



Key research: high speed synchronous motorized spindle can compensate elongation technology, motorized spindle cooling lubrication and other structural optimization design; HSK tool clamping mechanism reliability technology; Precision control and precision maintenance technology; Key technologies of single and comprehensive performance detection of motorized spindle; Key manufacturing technologies such as precision machining and assembly that can realize mass and stable production.

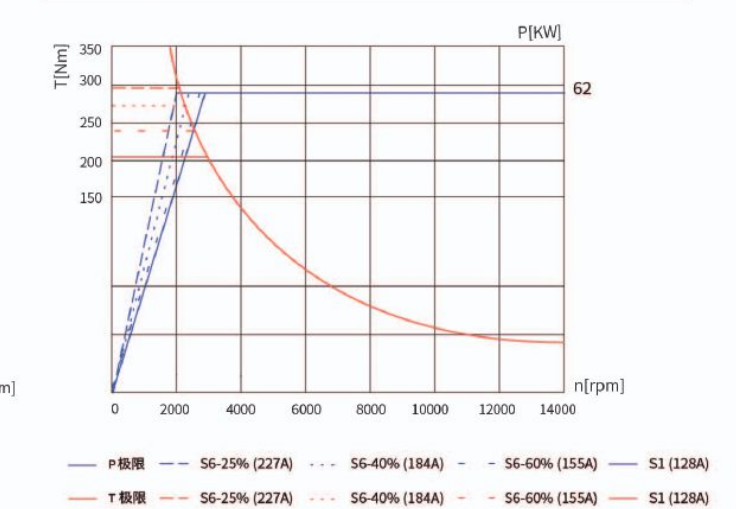
VGW600S spindle series

最大转速	刀具接口	额定功率	额定扭矩
18000rpm	HSK A63	30KW	84Nm



VGW1250S spindle series

最大转速	刀具接口	额定功率	额定扭矩
12000rpm	HSK A100	62KW	204Nm



Five axis vertical turn milling compound machining center

VGW400S series



Main parameters of VGW400s series

Item	parameters	VGW400S U	VGW400S UMT (With turning function)
Processing range	Maximum turning diameter of workpiece (mm)	φ580	φ580
	Diameter of worktable (mm)	370*φ450	φ370
	Maximum weight of worktable (kg)	300	150(Turning)/300(Milling)
Trip	X / Y / Z axis movement (mm)	450/460/350	450/460/350
	Rotation range of A-Axis	-130° - +130°	-130° - +130°
	Rotation range of C-Axis	unlimited	unlimited
	Distance from spindle end face to worktable (mm)	150-500	150-500

Align your dreams with our machines

Item	parameters	VGW400S U	VGW400S UMT (With turning function)
Tool spindle	Maximum torque S1 / S6 (25%) Nm	42/62	42/62
	Maximum speed	20000	20000
	Rated power	30	30
	Tool Shank	HSK-A63	HSK-A63
	Tool center water outlet	Not supported / supported	Not supported / supported
	Spindle orientation	supported	supported
	Positioning locking	Not supported	supported
A-axis drive	A-axis drive mode	Torque motor direct drive	Torque motor direct drive
	Rated torque Nm	1200	1200
C-axis drive	C-axis drive mode	Torque motor direct drive	Torque motor direct drive
	Rated torque Nm	314	314
Maximum speed of feed	X-axis/Y-axis/Z-axis m/min	50	50
	A-axis rpm	30	30
	C-axis rpm	80	2000
Control resolution	X-axis/Y-axis/Z-axis mm	0.0001	0.0001
	C-axis	0.0001°	0.0001°
Full closed loop control	X-axis/Y-axis/Z-axis	Standard configuration	Standard configuration
	A-axis/C-axis	Standard configuration	Standard configuration
Positioning Accuracy	X-axis/Y-axis/Z-axis mm	0.008/0.005	0.008/0.005
	A-axis/C-axis	8/5	8/5
Repeat positioning accuracy	X-axis/Y-axis/Z-axis mm	0.005/0.003	0.005/0.003
	A-axis/C-axis	5/3	5/3
Tool library	Tool storage capacity (double layer)	First floor: 30; Second floor: 29	First floor: 30; Second floor: 29
	Maximum tool diameter (mm)	φ80(φ 125 adjacent is empty)	φ80(φ 125 adjacent is empty)
	Maximum tool length (mm)	200	200

Five axis vertical turn milling compound machining center

VGW600S series



Align your dreams with our machines

Item	parameters	VGW600S V	VGW600S U	VGW600S UMT (With turning function)
Tool spindle	Maximum torque S1 / S6 (25%) Nm	84/125//84/125//141/186	84/125//84/125//141/186	84/125//84/125
	Maximum speedrpm	14000/18000/10000	14000/18000/10000	14000//18000
	Ratedpowerkw	30//30//26.5	30//30//26.5	30
	ToolShank	HSK-A63	HSK-A63	HSK-A63
	Tool center water outlet	Not supported / supported	Not supported / supported	Not supported / supported
	Spindle orientation	supported	supported	supported
	Positioning locking	Not supported	Not supported	supported
A-axis drive	A-axis drive mode	-	Torque motor doubledirect drive	Torque motor doubledirect drive
	Rated torque Nm	-	3760	3760
C-axis drive	C-axis drive mode	-	Torque motor direct drive	Torque motor direct drive
	Rated torque Nm	-	860	700
Maximumspeedoffeed	X-axis/Y-axis/Z-axis m/min	48	48	48
	A-axisrpm	-	30	30
	C-axisrpm	-	80	800/1200
Control resolution	X-axis/Y-axis/Z-axismm	0.0001	0.0001	0.0001
	C-axis	-	0.0001°	0.0001°
Full closed loop control	X-axis/Y-axis/Z-axis	Standardconfiguration	Standardconfiguration	Standardconfiguration
	A-axis/C-axis	-	Standardconfiguration	Standardconfiguration
Positioning Accuracy	X-axis/Y-axis/Z-axismm	0.008,0.005	0.008/0.005	0.008/0.005
	A-axis/C-axis	-	8/5	8/5
Repeat positioning accuracy	X-axis/Y-axis/Z-axismm	-	0.005/0.003	0.005/0.003
	A-axis/C-axis	-	5/3	5/3
Toollibrary	Tool storage capacity (double layer)	36	36	36
	Maximum tool diameter (mm)	φ80(φ 125 adjacent is empty)	φ80(φ 125 adjacent is empty)	φ80(φ 125 adjacent is empty)
	Maximum tool length (mm)	300	300	300
	Maximum tool weight (kg)	8	8	8
Attachment	Wireless workpiece probemmm	Repetition accuracy ±0.003	Repetition accuracy ±0.003	Repetition accuracy ±0.003

Main parameters of VGW600s series

Item	parameters	VGW600S V	VGW600S U	VGW600S UMT (With turning function)
Processing range	Maximum turning diameter of workpiece (mm)		Φ800	φ800
	Diameter of worktable (mm)	1000*650	650*Φ540	Φ600
	Maximum weight of worktable (kg)	1000	1000	500(Turning)/1000(Milling)
Trip	X / Y / Z axis movement (mm)	700/650/450	650/650/450	650/650/450
	Rotation range of A-Axis		-130° - +130°	-130° - +130°
	Rotation range of C-Axis		unlimited	unlimited
	Distance from spindle end face to worktable (mm)	90-540	90-540	90-540

Five axis vertical turn milling compound machining center

VGW800S series



Main parameters of VGW800s series

Item	parameters	VGW800S V	VGW800S U	VGW800S UMT (With turning function)
Processing range	Maximum turning diameter of workpiece (mm)	-	Φ1100	Φ1100
	Diameter of worktable (mm)	1140*838	Φ800*630	Φ750
	Maximum weight of worktable (kg)	1400	1400	700(Turning)/1400(Milling)
Trip	X / Y / Z axis movement (mm)	800/800/550	800/800/550	800/800/550
	Rotation range of A-Axis	-	-130° - +130°	-130° - +130°
	Rotation range of C-Axis	-	unlimited	unlimited
	Distance from spindle end face to worktable (mm)	115-665	115-665	115-665

Align your dreams with our machines

Item	parameters	VGW800S V	VGW800S U	VGW800S UMT (With turning function)
Tool spindle	Maximum torque S1 / S6 (25%) Nm	84/125//84/125//141/186	84/125//84/125//141/186	84/125//84/125
	Maximum speedrpm	14000/18000/10000	14000/18000/10000	14000//18000
	Ratedpowerkw	30//30//26.5	30//30//26.5	30
	ToolShank	HSK-A63	HSK-A63	HSK-A63
	Tool center water outlet	Not supported / supported	Not supported / supported	Not supported / supported
	Spindle orientation	supported	supported	supported
	Positioning locking	Not supported	Not supported	supported
A-axis drive	A-axis drive mode	-	Torque motor doubledirect drive	Torque motor doubledirect drive
	Rated torque Nm	-	5380	5380
C-axis drive	C-axis drive mode	-	Torque motor direct drive	Torque motor direct drive
	Rated torque Nm	-	1210	1488
Maximumspeedoffeed	X-axis/Y-axis/Z-axis m/min	48	48	48
	A-axisrpm	-	20	20
	C-axisrpm	-	70	800
Control resolution	X-axis/Y-axis/Z-axismm	0.0001	0.0001	0.0001
	C-axis	-	0.0001°	0.0001°
Full closed loop control	X-axis/Y-axis/Z-axis	Standardconfiguration	Standardconfiguration	Standardconfiguration
	A-axis/C-axis	-	Standardconfiguration	Standardconfiguration
Positioning Accuracy	X-axis/Y-axis/Z-axismm	0.008,0.005	0.008/0.005	0.008/0.005
	A-axis/C-axis	-	8/5	8/5
Repeat positioning accuracy	X-axis/Y-axis/Z-axismm	-	0.005/0.003	0.005/0.003
	A-axis/C-axis	-	5/3	5/3
Toollibrary	Tool storage capacity (double layer)	42	42	42
	Maximum tool diameter (mm)	φ80(φ 125 adjacent is empty)	φ80(φ 125 adjacent is empty)	φ80(φ 125 adjacent is empty)
	Maximum tool length (mm)	300	300	300
	Maximum tool weight (kg)	8	8	8
Attachment	Wireless workpiece probemmm	Repetition accuracy ±0.003	Repetition accuracy ±0.003	Repetition accuracy ±0.003

Five axis vertical turn milling compound machining center

VGW1250S series



Main parameters of VGW1250s series

Item	parameters	VGW1250S U	VGW1250S UMT (With turning function)
Processing range	Maximum turning diameter of workpiece (mm)	Φ1400	Φ1400
	Diameter of worktable (mm)	Φ1350*1100/900	Φ1200
	Maximum weight of worktable (kg)	3000	2000(Turning)/ 3000(Milling)
Trip	X / Y / Z axis movement (mm)	1200/1425/1000	1200/1425/1000
	Rotation range of A-Axis	-130° - +130°	-130° - +130°
	Rotation range of C-Axis	unlimited	unlimited

Align your dreams with our machines

Item	parameters	VGW1250S U	VGW1250S UMT (With turning function)
Tool spindle	Maximum torque S1 / S6 (25%) Nm	200/300	200/300
	Maximum speed rpm	12000	12000
	Rated power kw	62	62
	Tool Shank	HSK-A100	HSK-A100
	Tool center water outlet	Not supported / supported	Not supported / supported
	Spindle orientation	supported	supported
	Positioning locking	Not supported	supported
A-axis drive	A-axis drive mode	Torque motor double direct drive	Torque motor double direct drive
	Rated torque Nm	6340*2	6340*2
C-axis drive	C-axis drive mode	Torque motor direct drive	Torque motor direct drive
	Rated torque Nm	4458	4458
Maximum speed of feed	X-axis/Y-axis/ Z-axis m/min	50	50
	A-axis rpm	30	30
	C-axis rpm	40	400
Control resolution	X- axis/Y-axis/Z-axis mm	0.001/0.0001	0.001/0.0001
	C-axis	0.001/0.0001	0.001/0.0001
Full closed loop control	X-axis/Y-axis/ Z-axis	Standard configuration	Standard configuration
	A-axis/C-axis	Standard configuration	Standard configuration
Positioning Accuracy	X-axis/Y-axis/ Z-axis mm	0.008/0.005	0.008/0.005
	A-axis/C-axis	8/5	8/5
Repeat positioning accuracy	X-axis/Y-axis/ Z-axis mm	0.005/0.003	0.005/0.003
	A-axis/C-axis	5/3	5/3
Tool library	Tool storage capacity (double layer)	50	50
	Maximum tool diameter (mm)	Φ125(Φ250 adjacent is empty)	Φ125(Φ250 adjacent is empty)
	Maximum tool length (mm)	500	500
	Maximum tool weight (kg)	30	30

Optional part

Top unit configuration



Hydraulic interface

Provide diversified hydraulic interface configuration; Fully meet the needs of customers for automatic chemical clamping.

Use C-Axis parameters with center unit

Item	Unit	C-Axisparameter
Table diameter	mm	Φ370
Eccentricity	mm	Eccentricity between axis A and table center Y0
	mm	Eccentricity between axis A and table center Z95G
Peak torque	Nm	581.2
Rated torque	Nm	314.2
Maximum speed	rpm	80
clamping system		Spring clamping
Top Linear Driving Mode		Cylinder
Top rotation Driving Mode		Pneumatic indexing turntable
Total top stroke	mm	305(Position of the top 100-405 from the table top)
Maximum feed speed	m/min	10
Center clamping force	N	1000
Center rotation accuracy	”	±6
Available a-axis swing angle range of tool setting instrument	°	+15°-50
Top clamping mode	-	Pneumatic clamping
Applicable machine model	-	VGW600S

Extended tool library parameters



Extended tool library parameters

Item	Parameter
Extended tool number	41 PCS
Extended Tool Base Maximum Load	336kg
overall dimension	1900*1900*2400mm
Extended tool holder weight	1.5T

Dahui MT CNC provides users with diversified options to achieve more accurate and efficient processing

KLTE laser tool setting instrument

Item	Parameter
Power supply	12Vdc-30Vdc(24Vdc is recommended)
Open/close mode	Mcode
Laser type	Red visible, focused laser
Laser wavelength	630-700nm
Laser safety level	Secondary, <1.5mW
Measuring range	Split type 1000mm; 1500mm; 2000mm (customizable)
	Integral 150mm; 300mm (customizable)
Airtight seal system pressure	about 1.9bar (0.19MPa)
Shutter structure pressure	about4-6bar (0.4-0.6Mpa)
Signal output	Relay SSR signal output
Laser wavelength	640-670nm
Environment	Degree of protection:IP67; working temperature:0°C-50°C



Le series laser grating ruler

Item	Parameter
Laser wavelength	632.8nm
Laserpower	<1mw
Precision	±0.5um/m
Resolution	1nm/0.001nm(option)
Measuringrange	Standard:60m; Enhance:100m
Supplypower	24V
Maximum measuring speed	4m/s
Communication interface protocol	GHB、BISS(customizedbycustomer)



Receiving unit KRMI-10 (radio set interface)

Item	Parameter
Transmission type	Radio 2.4GHz-2.485GHz
power	12Vdc-30Vdc(24Vdc is recommended)
Installation mode	Magnet adsorption or mounting bracket
Signal output	Relay SSR signal output, including side head status, error, low side head battery voltage, etc.
Response output	The fixed delay is 20ms ± 10 μ s
Environment	Degree of protection:IP67; working temperature:0°C-50°C

Transmitting unitKRM(Wireless motor bed probe)

Item	Parameter
Transmission type	Radio 2.4GHz-2.485GHz
Open/close mode	Radio M code
Spindle speed(Max	1000 rpm
Dimension	The length is about 125mm (excluding tool handle / measuring needle) and the diameter is about 62.5mm
Induction direction	±X,±Y,±Z
Probe overtravel	XY plane (polarization) max ± 15 °
	+Z plane (telescopic) max-4mm
battery	2*AA 1.5V Alkaline cell
Environment	Degree of protection:IP67
	working temperature:0°C-50°C

