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Coordinate Measuring Machine

JT-565 MH20i

Main Parameters

Model	JT-565
Measuring Range	x=510mm, y=610mm, z=508mm
Max Load Weight	900kg
Net Weight	1950kg
Linear Scale Resolution	0.5 μm
Max 3D moving speed	500mm/s
Max 3D Acceleration：	700mm/s²
Length Accuracy	$\leq 1.7+L/350$ µm
Detecting ball accuracy	≤ 2.3µm
Dimension	1250*1400*2600mm

Configuration List

Item		Details	Specifications	Qty	Note
Main Machine	1	CMM	JT-565 Gantry CMM Measuring Range:X=510mm,Y=610mm,Z=508mm, MPEe=(1.7+L/350)µm, MPEp$\leq$ 2.3µm	1	The key components original imported
	2	Calibration ball	Renishaw Dia:Ø20	1	
	3	Manual	User and system manual (CD format)	1	
Software	1	Measuring Software	Rational-DMIS measurement software advanced version (with CAD)	1	original imported
	2	Manual	Software manual (CD format)	1	
Control System & Probe system	1	Control System With joystick	RENISHAW UCC control system With MCU joystick	1	original imported
	2	Probe head	RENISHAW manual MH20i probe head	1	
	3	Probe set	RENISHAW TP20SF	1	
	4	Stylus	RENISHAW M2 Styli Set	1	
Computer	1	Computer	DELL high-end business computer (the actual delivery is no less than the configuration): Core I7 3.0G processor, 32G memory, 24" LCD monitor, 2G discrete graphics card/hard disk 128SSD+1TB, keyboard/mouse	1	
	2	Printer	HP A4 Black and White Laser Printer	1	
	3	Computer dedicated operating desk		1	
Warranty	The measuring machine will be guaranteed for 12 months free of charge after the buyer adjusts and accepts it.				

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Main Advantages

- **Base bracket — dual passive damping mechanism**

The use of the coordinate measuring machine is basically in the production plant, so it is inevitable that there will be vibrations caused by the machine tool or transport vehicle next to it, which has a fatal impact on the accuracy of the three-dimensional coordinate. Making earthquake-proof foundation is a basic idea, and this will increase additional costs and troubles. Our three-coordinate bracket adopts a dual passive damping mechanism to prevent the influence of low-frequency and small vibrations, which greatly guarantees the accuracy of the measurement.

- **Work platform — high-quality granite platform:**

The granite working platform is the support of the whole machine, and its quality affects the overall performance of the machine. Our three-dimensional granite material is integrally processed, stress-free, anti-rust and anti-corrosion, easy to maintain, low thermal expansion coefficient, and small deformation affected by temperature. Effectively reduce the vibration of the measuring machine and improve the performance of the whole machine.

- **Three-axis guideway-fully enclosed, all granite material**

We are equipped with closed guide rails on all CNC machines, which can prevent damage to the rail caused by external dust erosion, and avoid pollution and temperature. This is especially important for harsh environments. The three shafts are made of granite, which is corrosion-resistant and has exactly the same thermal expansion coefficient, with higher accuracy!

- **Transmission system-friction type "self-correcting" transmission**

All three-axis transmission adopts friction transmission and adopts "self-correcting" smooth transmission system. The transmission system adopts a "fixed + micro-suspension" structure to ensure that it is parallel to the guide rail during transmission! High-speed movement can maintain the stability of precision and smoothness of movement. In addition, the self-protection of the machine tool in collision is improved, making it safer to use.

- **Key components — imported with original packaging**

Internal accessories are an important part to ensure the overall stability of the machine. Only reasonable design and the use of high-quality accessories can ensure the long-term stability of the machine. All the key components of our machine (servo motor, transmission system, air system, etc.) are imported with original packaging, which can ensure the accuracy and service life of the machine to the greatest extent

- **Grating ruler----Renishaw high precision grating ruler**

The grating ruler is an important part of the three-axis coordinate system. Renishaw is the global leader in the three-axis coordinate system. The quality and after-sales service have the best market reputation and guarantee. All our machines use Renishaw high-precision grating rulers. The resolution is as high as 0.02 um

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- **Air-floating guide rail — embracing design on all sides**

Adopting four-sided air-floating guide rail structure is the embodiment of stability and high quality! We are equipped with multiple air pressure regulating valves and air bearings in different directions for each axis. The enveloping air bearing design ensures the stability of the instrument during the movement.

- **Small hole vent technology:**

The air consumption of the machine is 180NL/Min: The principle of small hole air outlet technology, which forms a condensation area in the bearing gap, offsets the micro heat caused by the bearing movement friction, increases the overall thermal stability of the equipment, and improves the long-term stability of the equipment.
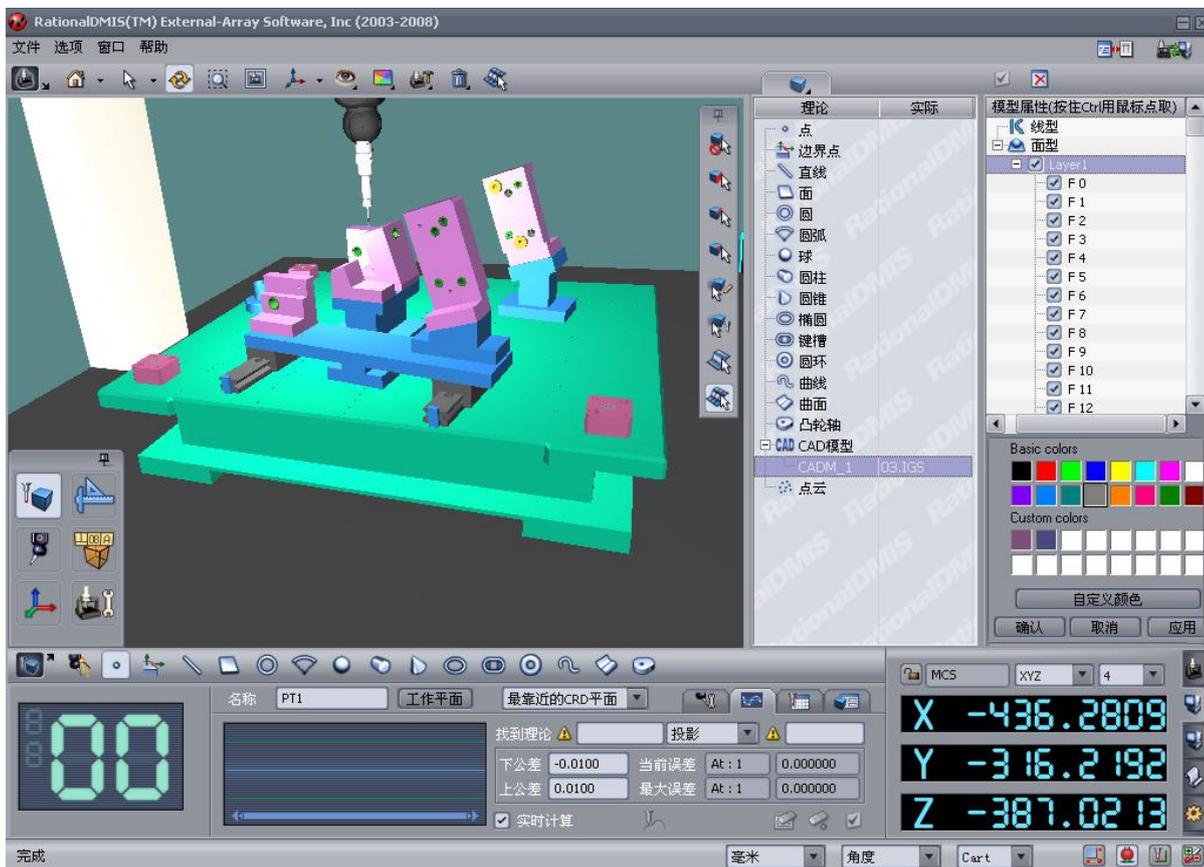
Room Required Specifications	
Average Room Temperature	18 - 22°C
Maximum Thermal Gradients	2 °C/day, 1°C/hour, 1°C/meter surrounding the machine.
Humidity	20% to 70%
Air supply system	
Minimum supply pressure	5.5bar(0.55MPa)
Air consumption	150 NL/min
Electrical Requirements	
Voltage	220V ± 10%
Frequency	50/60 Hz
Current	15 A
Power	< 1100W
Earth resistance	< 4Ω

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SOFTWARE

Rational-DMIS software package

Rational-DMIS is the newly developed large-scale comprehensive 3D measurement software package. In addition to the development and design of the software, the beginner's requirements for easy learning and easy use of the software and the high-level user's functional requirements for the software are taken into account. More importantly, it has become a model of CMM measurement software standardization.

The program of Rational-DMIS adopts the design of Full and Native DMIS until DMIS 5.0, which is completely different from the so-called "support DMIS" (the kernel is not DMIS). As we all know, DMIS has become an ISO standard (ISO 22093:2003)

The functions of the Rational-DMIS software package include:

Rational-DMIS measurement software, more than 20 years of development and use history, its uniqueness includes:

To

Online and offline programming, real-time display of measurement path and provide collision warning.

Full DMIS core, can apply DMIS 3.0, 4.0 and 5.0 version measurement language. Compatible with any software that uses DMIS.

Support multiple CAD interface formats including CATIA® v4, CATIA v5, Pro/E®, UG®, Parasolid®, HOOPS®, STEP® and IGES®."

The graphics engine is ACIS, one of the most powerful engines in the world. It is professionally verified by CATIA and can easily manipulate large-scale CAD digital model files.

The algorithm is certified by PTB (Level 1)

The fastest point-to-point scanning, the scanning distance can reach 0.002mm.

The "point cloud level" processing speed of laser scanning data can reach 20000 points/second, so it can expand the function to use the laser probe to detect and reverse.

Built-in data models of all RENISHAW products, which can realize the analog assembly of the probe stylus, automatic calibration, and temperature compensation.

The basic functions of the software include:

Based on Windows operating system, graphical interface, and user-defined, convenient and intuitive operation

Measurement function of all 2D and 3D geometric elements

Has a Chinese page and online Chinese help

Tolerance evaluation of geometric elements conforming to ISO standards, including: straightness, flatness, roundness, cylindricity, parallelism, perpendicularity, angle, symmetry, position, coaxiality, concentricity, axial runout, Radial runout, full runout, etc.

Calculation of geometric relations, including functions such as construction, projection, parallelism, intersection, perpendicularity, tangency, best fit and correction.

Coordinate system translation, rotation, conversion, mirroring function.

Feature quantity wizard, self-recognition and rapid measurement of geometric element features, and the measurement program is automatically generated by clicking the mouse.

The DMIS programming language can be expressed in common languages   (including Chinese). It is very easy for the operator to interpret the meaning of DMIS statements. It has the same program interface as the WINDOWS browser, and can realize drag-and-drop program modification. Program mirroring can be performed.

There are various ways to establish a coordinate system, including geometric method, 3-2-1 method, RPS method, best fit method, etc., and provide manual and guided alignment methods. Suitable for all industries such as machining, automobiles, mold inspection tools, blades, etc.

"Template" function, which can conveniently call ready-made benchmarks, calibrations, measurement procedures, etc. to compile new programs.

To "Self-learning" way to compile part programs.

To Real-time graphical display of actual measurement results

Various 2D/3D graphics reports, including PDF, EXCEL, IGES, HTML and other formats

Control System

The UCC S3 controller is the latest achievement of RENISHAW in the CNC system. It adopts an integrated modular design and is conventionally configured for three-axis linkage scanning. Scan controller specially

- Independent CPU processor, 32-bit high processing capacity, real-time control

  19-inch chassis, weight 8 kg

- Directly connected to 220 volts 50/60 Hz, single phase, connected load 800 watts

- Integrated line filter, in line with EN50082, EN50081 regulations

- Temperature range operation: 10 degrees Celsius to 45 degrees Celsius

- Relative humidity: 10% to 95% non-condensing

- Performance: The fastest positioning speed with a resolution of 1 micron is 5 m/s

  Forward-looking control, acceleration distribution graph, S-distribution graph

- "Rectangle with corners and arcs" interpolation feedback system, incremental RS422, 1/T sub-count interpolation

- Counting frequency, max. 10 MHz

- Incremental sensor connection facility (5V-TTL) safety equipment/diagnosis/setting, integrated monitoring

Multi-element light-emitting diodes, used to display the operating status of all important components on the panel

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Joystick MCUlite-2

Joystick, including 10 function keys and speed control system,

multi-function three-coordinate control handle.

PROBE SYSTEM

Divided into three parts: probe base, probe, stylus

Probe head: PH10M plus electric rotatable/swing automatic head

Renishaw PH10M plus electric rotating/swinging This system can quickly, complete, and

repeatedly measure workpieces with more complex structures. Due to the flexibility of the

machine to rotate, the machine can be operated more quickly and conveniently

Measurement repeatability	0.5 μm
Positioning steps	15°
Rotating axis	+/-180°
Swing axis	0°- 90°
Maximum extension with EM2	140mm
Operational environment temperature	10-40℃

Probe: TP20 SF

M2 stylus assembly

A-5004-7585	Stylus extension rod	2
A-5004-7586	Stylus extension rod	2
A-5000-2280	Stylus extension rod	1
A-5000-7806	Ball stylus	1
A-5000-3603	Ball stylus	2
A-5000-3604	Ball stylus	2
A-5000-4161	Ball stylus	1
A-5000-2286	Ball stylus	1
	Styli Wrench	2

CALIBRATION BALL

Calibration ball Ø20, directly, with thread M10. The spherical reference gauge can be probed from all six semi-axes.

Sphere diameter	20 mm
Roundness	≤0.3 um

COMPUTER SYSTEM

CPU: Core I5 class 3.0GHz processor

Physical memory: 8G

Hard Disk: 1TB

Optical drive: DVD-RAM

Mouse, keyboard: DELL suit

Display: 24 inch LCD

Operating system: Windows Win10

CD burner CD-R

HP A4 Black and White Laser Printer

Three-coordinate dedicated computer desk

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