



MEASUREMENT SOLUTION PROVIDER

# **CMM** **COORDINATE** **MEASURING** **MACHINES**

CATALOGUE NO. CMM-E21







# 01

## CMM

CMM-LM/LE Series

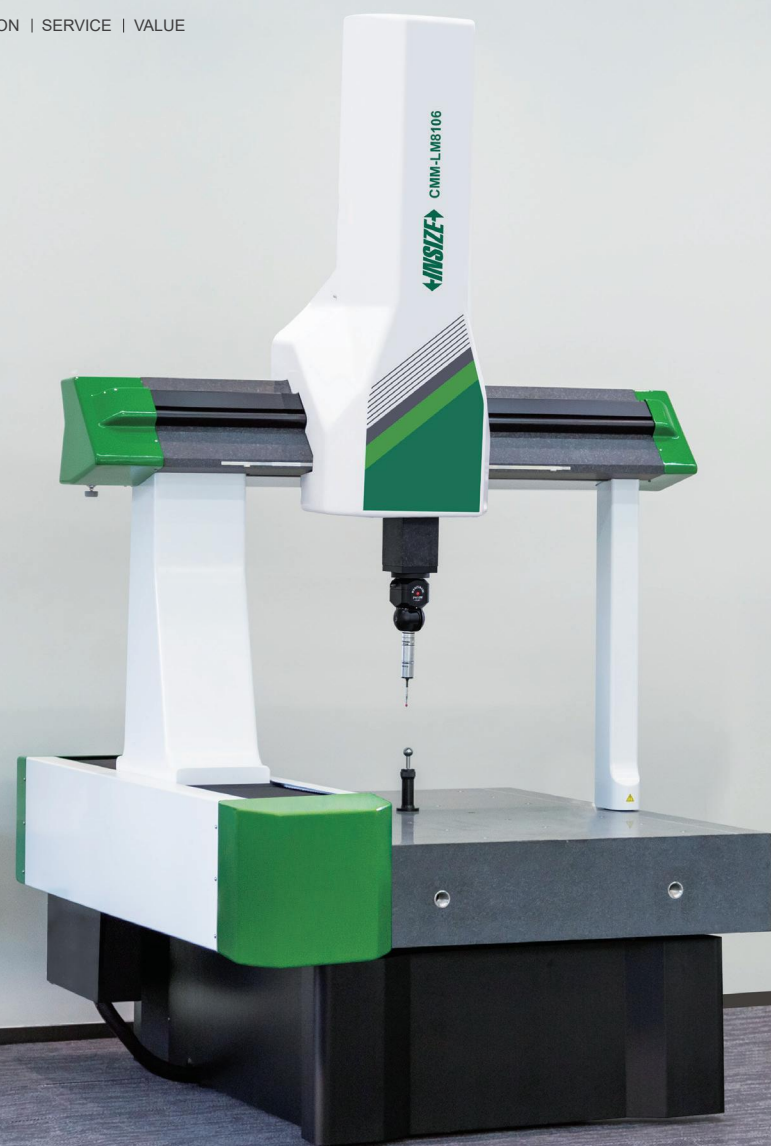
CMM-LM/LE series CMM are flexible, high-precision measuring machines capable of performing any measuring and inspection task quickly and efficiently. A variety of touch-trigger and scanning probes can be configured to meet a wide range of metrology needs, making it a simple, fast, efficient and highly accurate measurement system.



CMM-LM564







## Product Advantages

### Features

- Classic bridge structure, integrated workbench •
- High precision air bearing •
- Unique Z-axis anti torque design to reduce rotation error •

### Renishaw systems

- Precision grating system, including grating and data acquisition device •
- UCC control system, including control box and manual operator •
- Probe system, including probe head, probe body and styli •

01



### Circumferential bearing design

Adoption of high-precision air bearings, ring-type bearing layout design improves the rigidity and stability of the machine, even for long-term operation, can maintain high precision, and to ensure that the machine's excellent dynamic characteristics.

02



### Crossbar

Mobile bridge structure, integral table, so that it has a strong load-bearing capacity, wide space for workpiece placement, easy loading and unloading characteristics.

03



### Guide rail triangular structure

The crossbeam adopts a unique guideway structure with triangular shape, which is the shape with the largest cross-section circumference in the same area, and improves the anti-rotation accuracy of the guideway.

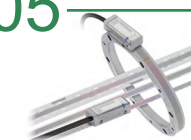
04



### Integral dovetail guide

Professional granite producers jointly developed a new style of granite guide machining inspection process, the granite guide machining precision to a new level.

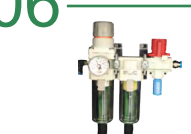
05



### Renishaw optical encoders

The optical encoder is an important part of the CMM. We use 0.1μm resolution scales and can also supply scales with a resolution of 0.05μm.

06



### Germany festo precision filtration

FESTO precision filters ensure that the compressed air entering the air-bearing is pure, removing impurities such as oil, moisture and dust. This ensures the normal operation of the air bearings.



## 07

The use of high-performance synchronous belt drives in all three axes not only achieves high motion speeds for improved measurement efficiency, but also minimises drive inertia for increased motion acceleration.

## 09

The specially designed and improved Z-axis anti-rotation air float provides better anti-rotation capability for the Z-axis, thus reducing the rotational error of the Z-axis at different height positions.

## 11

All-digital gas source detection device, to enhance the sensitivity of the detection of gas source fluctuations, to reduce the impact of the gas source on the accuracy.

## 08

The vibration isolation design of the transmission system reduces the impact of mechanical vibration on measurement accuracy even at high machine speeds.

## 10

Advanced non-linear spring system, the use of imported parts, more effective in reducing the impact of small errors in the guide rail on the accuracy of the machine.

## 12

The Z-axis and carriage are all made of aircraft-grade aluminium alloy, ensuring the same coefficient of expansion and the ability to work in harsher temperature environments.

## Technical Parameter

Code	LM/LE Series	564	686	8106	8126	8156
Measuring range (mm)	X-axis	500	600	800	800	800
	Y-axis	600	800	1000	1200	1500
	Z-axis	400	600	600	600	600
External dimension (mm)	LX-axis	1135	1420	1620	1620	1620
	LY-axis	1420	1740	1940	2140	2440
	LZ-axis	2350	2760	2760	2760	2760
Accuracy (μm L:mm)		1.9+L/330 ~ 2.3+L/250	1.6+L/330 ~ 2.6+L/250	1.7+L/330 ~ 2.7+L/250	1.7+L/330 ~ 2.7+L/250	1.7+L/330 ~ 2.7+L/250
Max. load (kg)		500	800	1000	1000	1000
Net weight (kg)		900	1300	1700	1900	2200
Movement speed (mm/s)		450				
Moving acceleration (mm/s²)		1300				

### STANDARD DELIVERY

Main unit		1 pc
Probe system	probe head	1 pc
	probe body	1 pc
	styli	1 set
Control system		1 set
Calibration sphere		1 pc
Universal sphere seat		1 pc
Computer		1 pc
Printer		1 pc
Software		1 set
Table and chair		1 set

### OPERATION ENVIRONMENT

Air pressure	0.6-0.8MPa
Air supply	200L/min
Temperature	20°C±2°C; <0.5°C/h, <1°C/24h
Humidity	30%~70%
Max. power	1000W
Power supply	220V±5%, 50Hz

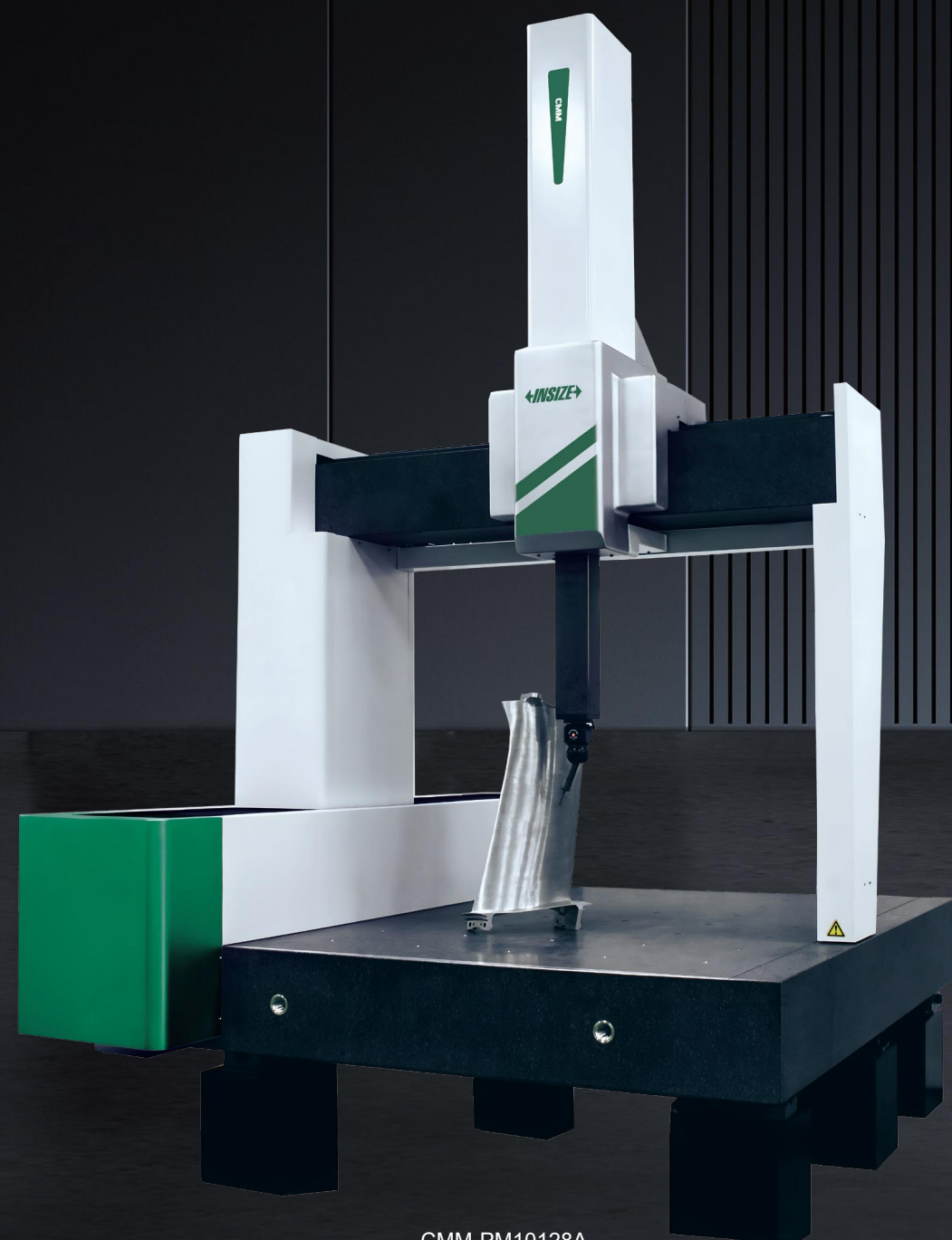


## 02

## CMM

CMM-PM/PE Series

The CMM-PM/PE series of CMMs combine high accuracy and environmental suitability for a wide range of measurements, from small to large scales, with a classic moving bridge structure that provides open loading and unloading space, and an adaptive metal friction drive system that enhances the dynamic performance and positioning accuracy of the machine, making it particularly suited to scanning measurement systems.



CMM-PM10128A

## Features

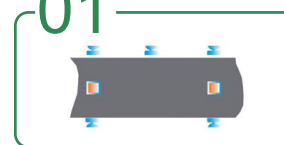
- Classic bridge structure, integrated workbench
- High precision air bearing
- Special non-linear spring system to minimize guide way error

## Renishaw systems

- Precision grating system, including grating and data acquisition device
- UCC control system, including control box and manual operator
- Probe system, including probe head, probe body and styli

## Product Advantages

01

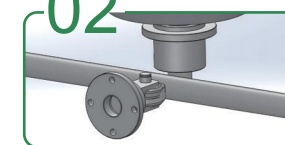


## Rectangular guideway

All three axes adopt the well-designed rectangular guideway, giving up all kinds of so-called "unique", "patented" or even weird polygonal guideway structure design, back to the basics.

The rectangular guideway error correction model is simple and practical, and is a common form of guideway for high-precision measuring machines.

02

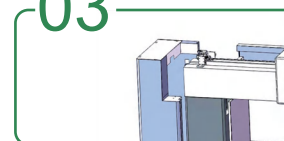


## Metal friction

The long axis uses metal friction transmission, which is recognised as the ideal coordinate drive system in the industry.

Metal friction completely eliminates the toothing effect compared to common toothed drives such as timing belts and rack and pinion drives, resulting in a smoother transmission and eliminating the vibration caused by the elasticity of timing belts, which improves the drivability of the measuring machine, resulting in better starting, stopping, and positioning capabilities, and making it an ideal choice for high-precision scanning.

03



## Two-tier design

Both columns of the measuring machine adopt double-layer design, which effectively reduces the influence of external temperature changes or air-conditioning system on the accuracy of the measuring machine, and makes the measuring machine have a stronger ability to adapt to the environment.

The new base design of the measuring machine is fully compatible with highly efficient passive vibration isolation systems or active airborne vibration isolation systems for use in plants with strong vibration sources and in-line measurements.





# Technical Parameter

Code	PM/PE Series	686	8127	8157	10128	10158
Measuring range (mm)	X-axis	600	800	800	1000	1000
	Y-axis	800	1200	1500	1200	1500
	Z-axis	600	700	700	800	800
External dimension (mm)	LX-axis	1485	1685	1685	1885	1885
	LY-axis	1800	2200	2500	2200	2500
	LZ-axis	2730	2930	2930	3130	3130
Accuracy (μm L:mm)		1.2+L/350 ~ 2.1+L/300	1.4+L/350 ~ 2.3+L/300	1.4+L/350 ~ 2.3+L/300	1.7+L/350 ~ 2.7+L/300	1.7+L/350 ~ 2.7+L/300
Max. load (kg)		800	1000	1000	1500	1500
Net weight (kg)		1650	2600	3000	2900	3300
Movement speed (mm/s)		430				
Moving acceleration (mm/s²)		1300				

Code	PM/PE Series	10228	10258	10308	121510	122210
Measuring range (mm)	X-axis	1000	1000	1000	1200	1200
	Y-axis	2200	2500	3000	1500	2200
	Z-axis	800	800	800	1000	1000
External dimension (mm)	LX-axis	1885	1885	1885	2085	2085
	LY-axis	3580	3880	4380	2500	3580
	LZ-axis	3130	3070	3070	3530	3530
Accuracy (μm L:mm)		1.7+L/350 ~ 2.7+L/300	1.7+L/350 ~ 2.7+L/300	1.7+L/350 ~ 2.7+L/300	2.1+L/350 ~ 3.1+L/300	2.1+L/350 ~ 3.1+L/300
Max. load (kg)		1800	1800	1800	2000	2000
Net weight (kg)		4200	5200	5900	3600	4600
Movement speed (mm/s)		430				
Moving acceleration (mm/s²)		1300				



Code	PM/PE Series	122510	123010	152210	152510	153010
Measuring range (mm)	X-axis	1200	1200	1500	1500	1500
	Y-axis	2500	3000	2200	2500	3000
	Z-axis	1000	1000	1000	1000	1000
External dimension (mm)	LX-axis	2085	2085	2385	2385	2385
	LY-axis	3880	4380	3580	3880	4380
	LZ-axis	3470	3470	3470	3470	3470
Accuracy (μm L:mm)		2.1+L/350 ~ 3.1+L/300	2.1+L/350 ~ 3.1+L/300	2.5+L/350 ~ 3.5+L/300	2.5+L/350 ~ 3.5+L/300	2.5+L/350 ~ 3.5+L/300
Max. load (kg)		2000	2000	2200	2200	2200
Net weight (kg)		5500	6500	5900	6500	7500
Movement speed (mm/s)		430				
Moving acceleration (mm/s²)		1300		1000		

Code	PM/PE Series	182510	183010	183510	184010
Measuring range (mm)	X-axis	1800	1800	1800	1800
	Y-axis	2500	3000	3500	4000
	Z-axis	1000	1000	1000	1000
External dimension (mm)	LX-axis	2685	2685	2685	2685
	LY-axis	3880	4380	4880	5380
	LZ-axis	3470	3470	3470	3470
Accuracy (μm L:mm)		2.9+L/350 ~ 3.9+L/300	2.9+L/350 ~ 3.9+L/300	2.9+L/350 ~ 3.9+L/300	2.9+L/350 ~ 3.9+L/300
Max. load (kg)		2500	2500	2500	2500
Net weight (kg)		7300	8500	9700	10800
Movement speed (mm/s)		430			
Moving acceleration (mm/s²)		860			

## STANDARD DELIVERY

Main unit		1 pc
Probe system	probe head	1 pc
	probe body	1 pc
	styli	1 set
Control system		1 set
Calibration sphere		1 pc
Universal sphere seat		1 pc
Computer		1 pc
Printer		1 pc
Software		1 set
Table and chair		1 set

## OPERATION ENVIRONMENT

Air pressure	0.6-0.8MPa
Air supply	200L/min
Temperature	20±2°C; <0.5°C/h, <1°C/24h
Humidity	30%~70%
Max. power	1000W
Power supply	220V±5%, 50Hz



# 03

## CMM

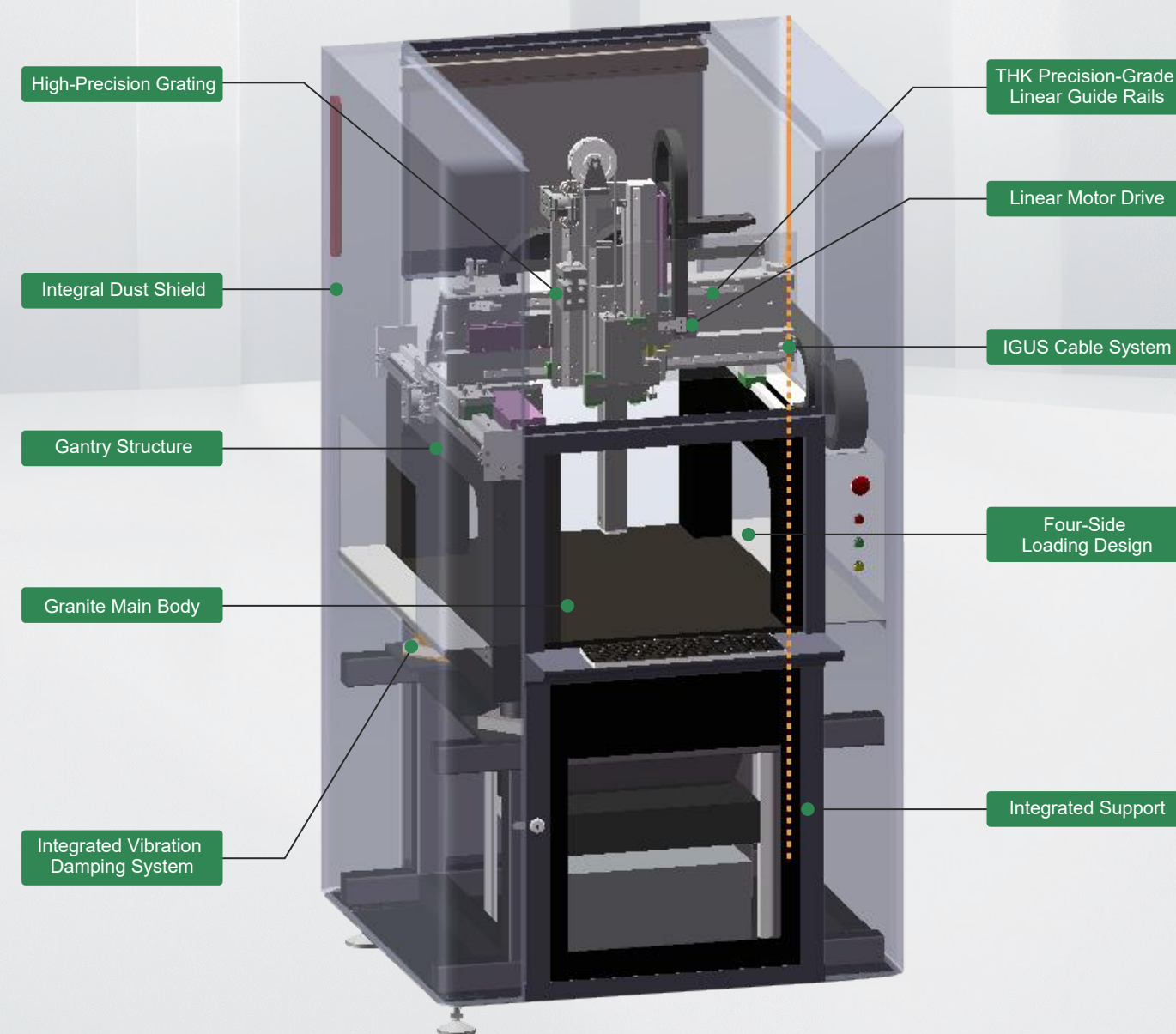
CMM-WM Series

CMM-WM Series Workshop-Grade Ultra-High-Speed CMM Requires no compressed air supply, operates across a wide temperature range, delivering high precision, rapid speed, and stable performance with straightforward operation and maintenance. Driven by high-precision linear guides and ultra-high-speed linear motors, featuring integrated temperature sensors, it is particularly suited for workshop environments. It can function as an automated production line inspection unit or serve as a comprehensive workshop inspection station.



CMM-WM342A

- Measurement efficiency is three times of ordinary CMM.
- Built-in temperature sensor, real-time temperature compensation.
- No need to wait for a constant temperature to use.
- Ready to use when connected to the power supply, no compressed air required.
- Can be connected with automated production lines, data management systems, intelligent control systems, etc.
- Easy to move, small footprint.





Workshop-Specific CMM Software: Featuring “Ease of Operation” and “Permission Security”

The software has a concise interface that allows even users with no operational experience to get started. Simply clamp the workpiece as required and click the corresponding measurement project icon to complete fully automatic measurement. Meanwhile, through hierarchical permission management, administrators can compile and assign measurement programs, while ordinary users can only use authorized programs with their exclusive accounts, thus preventing misoperations.



workshop specific software (included)

SPECIFICATION					
Code		CMM-WM342A	CMM-WM342B	CMM-WM565A	CMM-WM565B
Range		300×400×200mm		500×600×500mm	
Probe system	head	MH20i	PH10T	MH20i	PH10T
	body	TP20		TP20	
Accuracy (L:mm)	MPEE	±(2.7+L/200)μm		±(3.1+L/200)μm	
	MPEP	2.8μm		3.2μm	
Max. load		50kg		150kg	
Overall dimension (L×W×H)		1130×1010×1990mm		1480×1250×2540mm	
Net weight		800kg		1500kg	
Movement speed		860mm/s			
Moving acceleration		5000mm/s²			

STANDARD DELIVERY		
Main unit		1 pc
Probe system	probr head	1 pc
	probe body	1 pc
	styli	1 set
Control system		1 set
Calibration sphere		1 pc
Universal sphere seat		1 pc
Computer		1 pc
Software		1 set
Temperature sensor		1 set
Automation module		1 set

OPERATION ENVIRONMENT			
Working environment	temperature	10℃~40℃; <1℃/h, < 4℃/24h	
	humidity	30%~70%	
Calibration environment	temperature	20℃±2℃; <0.5℃/h, < 1℃/24h	
	humidity	30%~70%	
Power supply		220V±5%, 50HZ	
Max. power		1000W	
Shock		no source within 200 metres	

# 04

## CMM PROBE SYSTEM

CMM probe system, with high-precision sensing elements and intelligent algorithms, quickly and accurately capture the coordinates of complex workpiece surfaces, building a solid foundation for dimensional accuracy control and quality inspection in industrial production.

As a professional manufacturer of CMMs, we are aware of every detail of your measurement needs. We have a wide range of probing systems designed to maximise the efficiency of your measurement work, with your needs at the heart of what we do. It's worth noting that all our probing systems are imported from Renishaw in the UK and are of guaranteed quality.





## MH20i manual head

MH20i manual probe head: A manually adjustable indexing head manufactured by Renishaw in the UK, which incorporates the TP20 probe to allow indexing in both directions, at 15 degrees for 168 repeatable indexes.



### MH20i specification

Angular movement with horizontal axis	0°~90° in 15 steps
Angular movement with vertical axis	±180° in 15 steps
Number of positions	168
Steering mode	manual
Max. extension length	75mm
Net weight	210g



**PH10T**

Renishaw's PH10T head is compact enough to fit on space-constrained machines, with automatic cornering for increased measurement flexibility.

The PH10M probe head is a standard model with a wider range of applications, and also supports auto-turn to meet a wide range of measurement requirements.

Scanning probe support extends measurement capabilities.



**\*PH10M**



### PH10T and PH10M specification

Angular movement with horizontal axis	0°~105° in 7.5 steps
Angular movement with vertical axis	±180° in 7.5 steps
Number of positions	720
Steering mode	motorized
Max. output torque	0.45N.m
Max. extension length	300mm
Net weight	649g
PH10T configure	TP20 (one force module)
PH10M configure	SP25M (one force module)

\* PH10M only for CMM-LM/CMM-PM/CMM-LE/CMM-PE series

## Optional Accessories



### PH20 head

The PH20 probe head features infinite indexing, which breaks through the minimum indexing limitations of traditional mechanical indexing probes to achieve fine angular positioning, and eliminates the unlocking and locking processes of traditional mechanical indexing probe rotation, increasing probe rotation speeds by a factor of several. The PH20 is particularly suited to applications that require frequent changes in probe angle during measurement, as well as applications where high measurement efficiency is required.



### SP80 head

The SP80 is an ultra-high accuracy scanning probe that ensures optimum performance through the use of styli up to 1000mm long and 500g in weight, including a balance-independent star configuration, and the M5 stylus for use with the SP80.

Key Benefits:

- Ultra-high scanning accuracy is achieved with a digital readhead with a resolution of up to 0.02µm.
- Can be fitted with large diameter/offset styli up to 1000 mm long and weighing up to 500g (unbalanced).
- Fast dynamic response due to low suspended mass within the probe.
- Repeatable stylus changing for fast and flexible inspection of workpieces.



### FCR25 switching frame

Renishaw's FCR25 change rack, designed as a three-port rack unit, is also available as a six-port standalone rack. It offers excellent flexibility when it is necessary to quickly and automatically change SM25 probe modules, SH25 stylus chucks, and the FCR25 requires no electrical connections.



### MCR20 switching frame

The Renishaw MCR20 module changing rack is designed to hold up to six TP20 probe modules in place, allowing them to be changed automatically and protected from airborne contamination. The MCR20 can be easily fitted to any CMM, allowing it to be changed automatically and protected from airborne contamination.



## Optional Accessories



**TP20 touch probe**

This is a five- or six-way mechanical touch-trigger probe system, with a choice of stylus modules, a wide range of forces to suit different measurement requirements, and a stylus mounting thread to match Renishaw's M2 range of styli. The probe can be used to manually or automatically change stylus configurations, eliminating the need to re-calibrate the stylus tip and saving inspection time. It can also be easily retrofitted and is compatible with existing touch-trigger probe interfaces, extensions and adapters.



**TP20 probing module**

A key component of Renishaw's TP20 ultra-compact touch-trigger probe, it is securely attached to the probe body by means of a highly repeatable magnetic coupling. Its wide range of force measurement options greatly extends the range of applications for which the probe can be used.

## EWL-Effective length



**TP200 touch-trigger probe**

The Renishaw TP200 touch-trigger probe is a high accuracy strain gauge based touch-trigger probe with sub-micron repeatability for accurate 3D form measurement and a stylus module life of over 10 million triggers.



**SP25M scanning probe**

Renishaw's SP25M is a state-of-the-art scanning probe, measuring just 25mm in diameter, making it the world's smallest and most versatile scanning probe system.

It combines two sensors in one, and its compact size and self-triggering mounting capabilities allow it to be adapted to head sizes such as the PH10M and PH10MQ for high accuracy scanning and touch-trigger probing.

## UCC control system

As a specialised CMM manufacturer, Renishaw's UCC range of CMM control systems are used to build CMMs. Using advanced algorithms to control axis motion, the system is seamlessly compatible with Renishaw's full range of sensors, and interacts with a wide range of metrology software in accordance with industry standard protocols. With this system, our CMMs are highly accurate and adaptable, providing efficient and reliable measurement solutions for a wide range of industries, including mechanical engineering, aerospace and others. We can provide efficient and reliable measurement solutions for various industries, such as machinery manufacturing, aerospace and aviation, to meet diversified measurement needs.



Our interfaces are designed in accordance with the I++ standard, which was developed by the 7 major European automotive manufacturers and is very forward-looking in the field of co-ordinate metrology and is the industry standard for the future. It establishes and defines a common interface specification between different inspection devices, making it easy to connect hardware control devices to measurement software in a convenient and efficient way. Our interfaces can be used with a wide range of measurement software. This not only saves time, but also avoids the costly redevelopment of interfaces. Only software that has been developed in accordance with industry standards guarantees the universality of programmes and the free interchangeability of hardware control systems.



# 05 CMM CONTROL SYSTEM

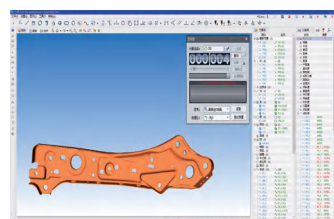
The control system is a key component of the CMM. It bears a number of important responsibilities: reading spatial coordinate values, real-time response and processing of probe signals, manipulation of mechanical systems to complete the measurement of the required movement, real-time monitoring of the CMM operating status, to ensure the safety and reliability of the system.



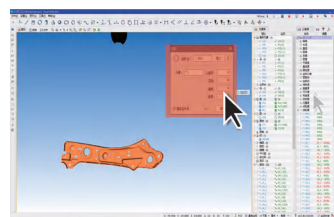
## 06

**MEASUREMENT SOFTWARE**

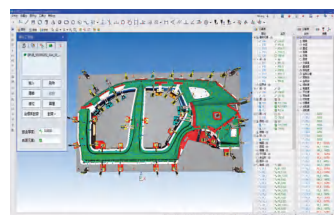
**INSIZE DMIS** measurement software, the right partner for CMMs, combines a wealth of industry experience with leading-edge. It is a versatile solution that meets most of our customers measurement needs and is used in a wide range of companies of all sizes. Whether it's routine dimensional measurements or complex shape and tolerance inspections, the software can handle it all. From the measurement of simple box components to the measurement of complex surfaces, **INSIZE DMIS** is able to carry out accurate and efficient measurement tasks, providing reliable support for quality control and production processes.

**Software****Simple interface**

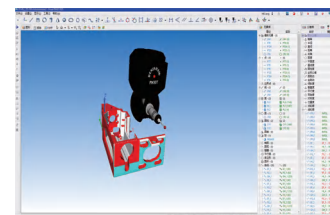
Clear measurement interface integrated with the measurement, the interface is always consistent without cumbersome confirmation and output processes.

**Drag-and-drop operation**

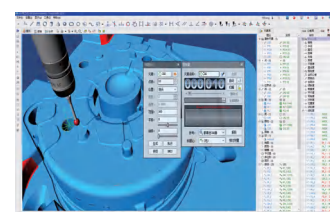
Quick drag and drop with the left mouse button, quick function selection with the right mouse button, effectively increasing the efficiency of operation. Easy to learn, easy to use, simple operation.

**Graphical display**

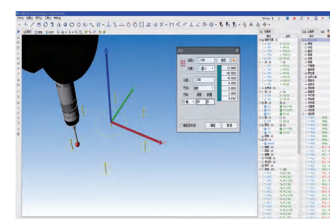
Real-time display of the measuring machine's movement status during the measurement process. The user can easily turn the position of the mouse to adjust the scale of the viewing angle, so that it is convenient to observe the real-time measurement process.

**Standard DMIS kernel**

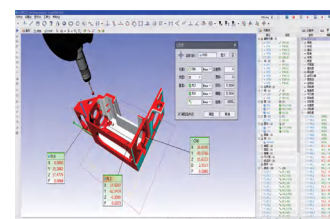
Conforms to DMIS 5.0 standard, supports bi-directional transmission in DMIS format. Compatible with various standard DMIS software. No need to use DMIS conversion tools, powerful DMIS self-learning programme function, fast programming mode based on CAD graphic objects.

**Elemental measurement**

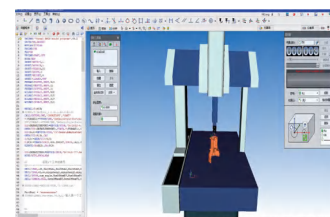
Measurement of geometric elements: points, straight lines, planes, circles, ellipses, cylinders, cones, balls, arcs, keyways, etc.

**Elemental construction**

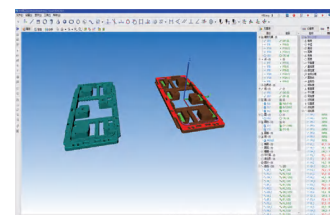
Geometric elements are constructed with support for: Intersect, Centroid, Projection, Fit, Tangent, Parallel, Perpendicular, Translation, Offset, Mirror, Extract, Constrain, Rotate and more. Rotation, etc.

**Tolerance ratings**

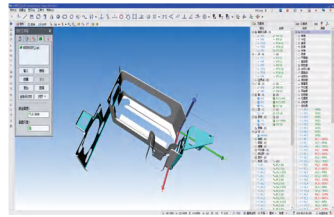
Straightness, flatness, roundness, cylindricity, distance, angle of intersection, parallelism, perpendicularity, inclination, coaxiality (concentricity), symmetry position (2D and 3D), contouring, circular runout, full runout.

**Coordinate system**

Includes translational coordinate system, rotational coordinate system, quick 3-2-1 creation of coordinate system, two-point offset coordinate system, three-point fitted coordinate system, fitted coordinate system, reference point system RPS, merged coordinate system, and more.

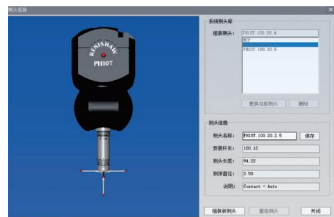
**Edit function**

The convenient self-learning programming function allows the entire measurement process to be automatically programmed as a measurement programme. The entire programme can be edited and simulated offline. Offline programming is also possible using CAD models. Separation of programming and measurement work improves efficiency and safety.



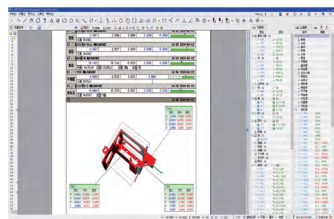
### CAD function

Supports a wide range of CAD file formats, imported models can be read directly from the theoretical values and compared with the measured values. Offline simulation and programming of measurements on CAD models. The measurement results can be output to CAD system in IGES format. Realisation of reverse engineering.



### Probe assembly function

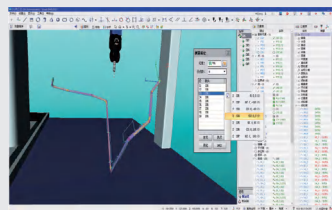
Real-time probe display for easy definition of probe angles Continuous scanning with touch-trigger probes makes it possible to measure curves and surfaces accurately, improving measurement efficiency and reducing purchase costs.



### Reporting function

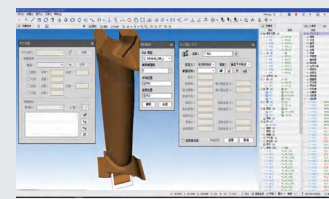
Easily achieve multiple report style output, such as: PDF, Word, Excel, TXT, HTML and other forms of presentation. And can customise the content of the graphic report part of the region, such as corporate logo title style to achieve beautiful, generous personalised report.

## Dedicated Module



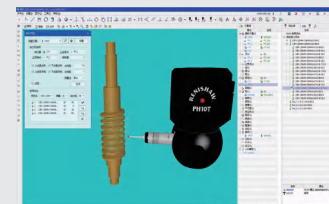
### Pipeline Module

Pipeline Inspection Module is a special measurement module developed for pipeline measurement based on CMM, which is used for inspection, analysis and quality control of various types of pipelines such as automotive pipelines and oil pipelines.



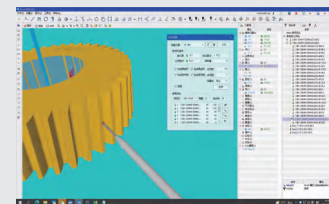
### Blade module

The blade measurement module is mainly used for blade inspection and analysis, with fast coordinate system establishment and digital model alignment function, can complete the blade measurement with high efficiency. It can evaluate the characteristics of the blade, such as leading edge profile, trailing edge profile parameters, suction surface profile, pressure surface profile and other parameters, and output the inspection report graphically.



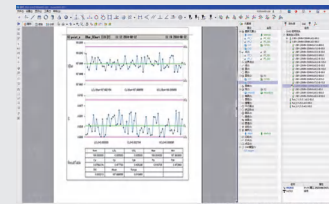
### Worm module

The Worm Measurement Module evaluates both involute cylindrical and Archimedean cylindrical worm gears. The output worm results are informative .



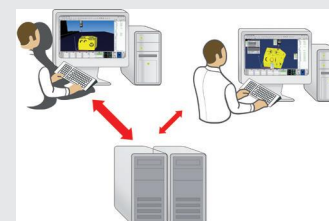
### Gear module

The Gear Measuring Module is designed to measure involute cylindrical gears, including internal, external, straight, helical and their variants, without the need for a rotary table. Gear parameters are output and the results are automatically graded according to different standards (e.g. ISO, DIN, JIS, AGMA, GB, BS).



### Statistical analysis module

The mathematical and statistical analysis module supports R charts, histograms, run charts and other charts, as well as CP, CPK deviation performance analysis, providing users with the most direct analysis functions for quality analysis and control.



### Web reporting module

The Network Reporting Module allows programmers to work on DMIS offline programming of parts on other computers via a LAN. The Network Reporting Module uses the DMIS 5.0 kernel, which supports human-computer interaction, variable declarations, macro definitions, calls to external programmes, input/output control, and programme structure selection.



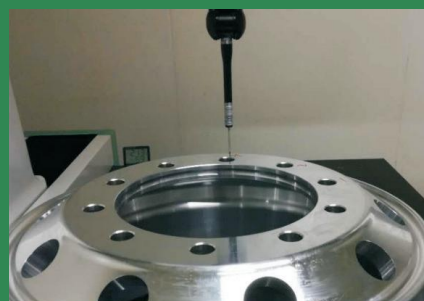
# 07

## AREAS OF APPLICATION

Coordinate Measuring Machines are widely used in a number of key areas due to their high accuracy and intelligence.

### Automobile Manufacturing

In the field of automotive manufacturing, CMMs with their high precision and intelligence, are used throughout the entire process. It assists in design optimisation during research and development. In the production of components, the dimensional accuracy is strictly controlled. At the stage of car body assembly, it ensures the precise alignment of components. In the mould manufacturing process, it ensures that the quality of the mould meets the standard, and becomes an indispensable precision inspection tool for automobile manufacturing.



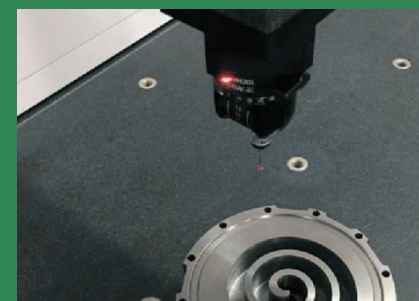
Wheel measurement



Gauge measurement



Camshaft measurement



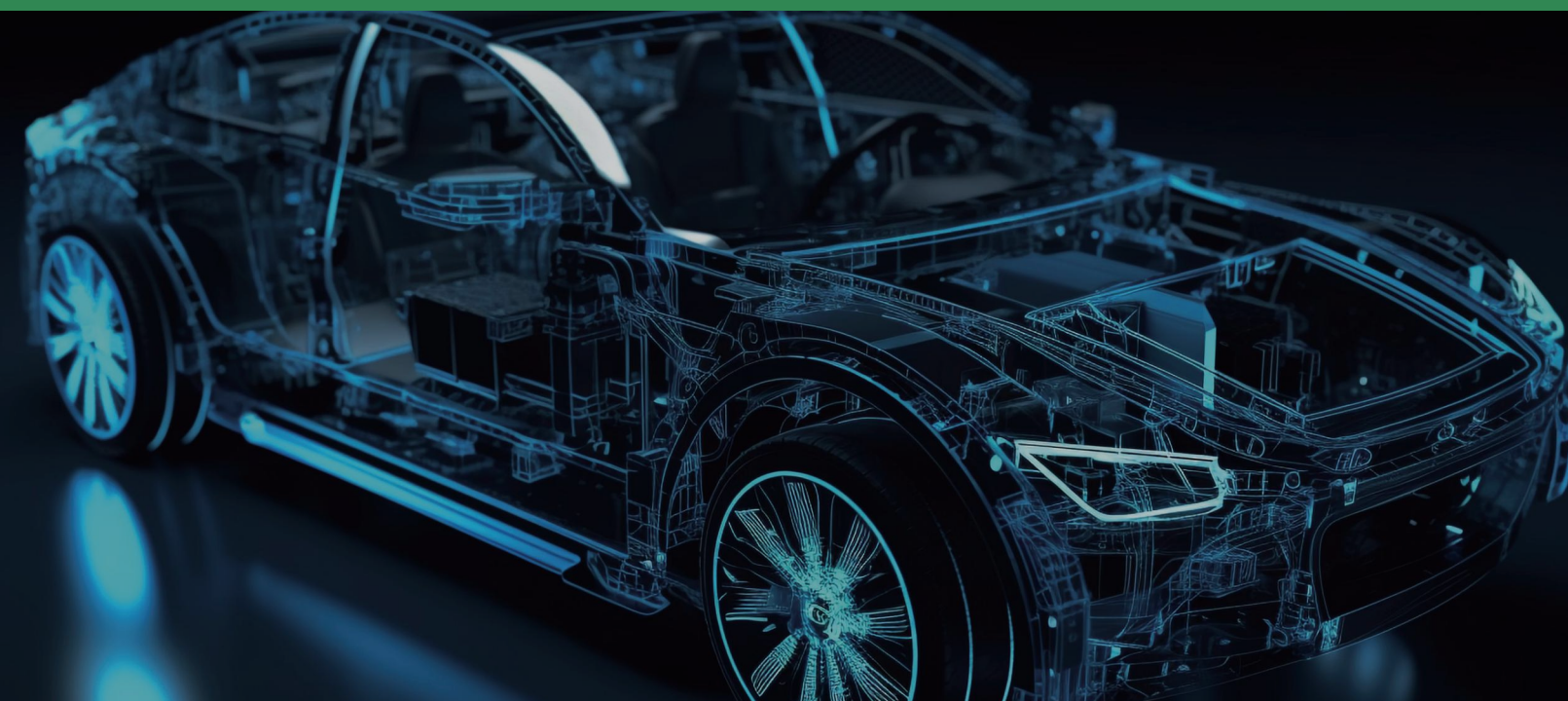
Worm disc measurement



Rack Measurement



Blade Measurement



### Aerospace

In the aerospace industry, CMMs are central to product quality and performance. It can carry out high-precision dimensional inspection and form and positional tolerance analysis of aero-engine blades, complex structural components and other parts. In the aircraft assembly process, accurate positioning of the fuselage, wings and other components, to ensure the installation accuracy. At the same time, it can also carry out non-destructive testing and performance evaluation of aerospace composite materials, effectively control the quality of the whole production process, and provide solid technical support for the safety, reliability and advancement of aerospace products.



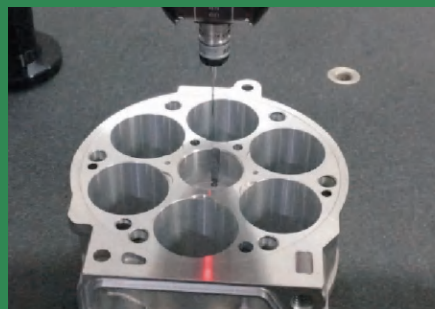


## Precision Machining

In the field of precision machining, the CMM is a key tool in controlling product quality. It can carry out micron-level precision inspection on precision moulds and high-precision mechanical parts, accurately measure complex surfaces and key dimensions, and strictly control processing errors. Through intelligent data analysis, it can quickly find processing defects and feedback corrections to optimise the processing technology. At the same time, in mass production, efficiently complete the parts quality sampling and full inspection, to ensure that precision machined products meet the stringent standards, helping the industry to high precision, high quality direction.



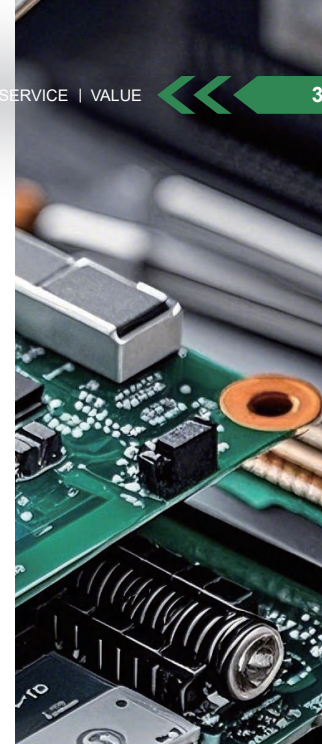
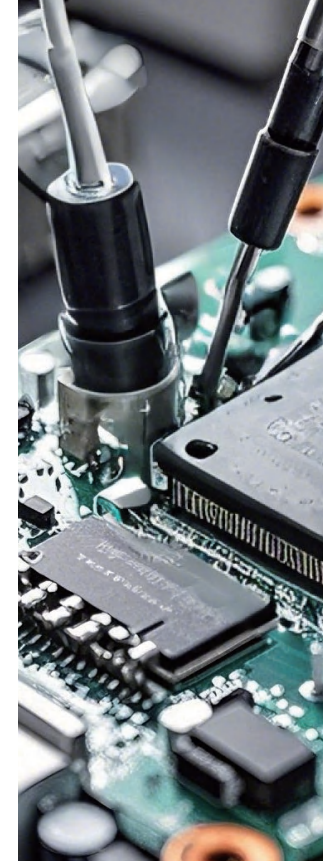
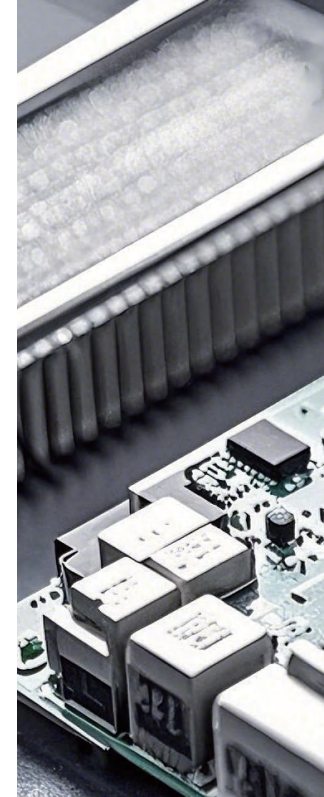
Circular arc measurement



Cylinder measurement



Surface measurement



## Electronic Industry

In the Electronic Industry, CMMs are the core equipment to ensure product quality and productivity. It can measure the shell, motherboard and internal precision components of mobile phones, computers and other electronic products with high precision, and strictly control the shape and position tolerances of the components. In the stage of new product development, it can quickly collect data to assist in the optimisation of design, and in the production process, it can detect processing defects in time through intelligent inspection, and help to adjust process parameters. At the same time, it can also efficiently complete the quality sampling of batch products to ensure that the appearance, assembly accuracy and functionality of 3C products meet the standards, to meet consumer demand for high-quality electronic products.



Bracket measurement



Mould measurement



Enclosure measurement





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