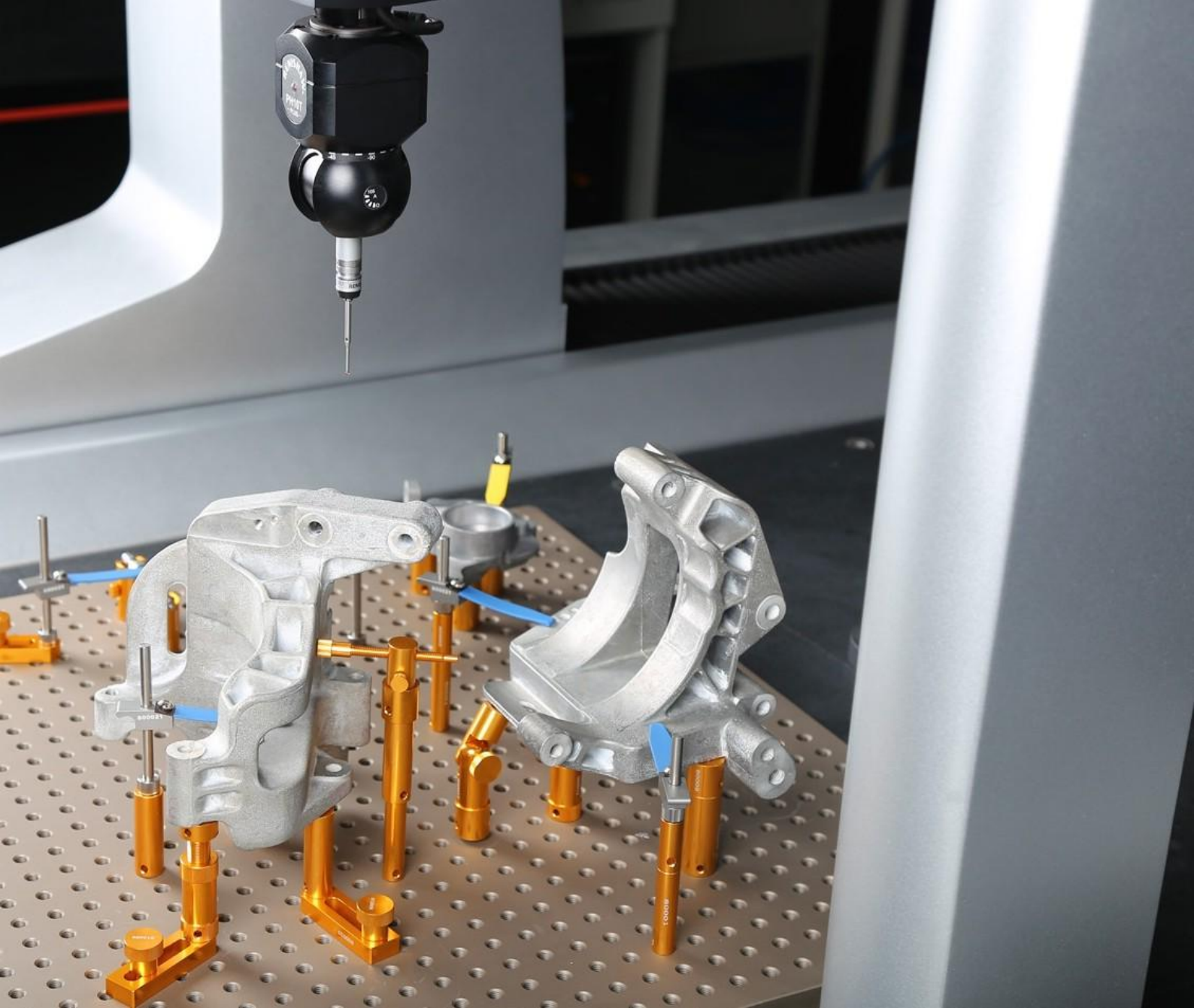




## Coordinates Measuring Machine

**UNIMETRO**

UNIVERSAL METROLOGY

# Company Profile

The Metrology Expert around you, Quality and Safety Management Consultant!

-----UNIMETRO METROLOGY

Since its establishment in 2008, UNIMETRO has been focusing on the research, development and manufacturing of Coordinate measurement technology, especially 3D composite measurement technology, which is at the leading level in the industry!

We have a group of professionals who love the measurement business and have worked in the vision measurement industry, 3D-CMM detection industry and non-standard online detection field for 10-20 years. With the professional technical knowledge and rich application experience of the team, we can ensure to provide you with a complete solution: from understanding the selection of application demand measurement system to perfect after-sales technical service, on-site technical support and continuous training!

UNIMETRO also cooperates with many measurement technology companies to diversify and enrich product lines, provide users with more perfect one-stop procurement requirements, and meet the testing programs in different fields.

Our customers are widely distributed in hardware, mold, circuit board, electronic components, plastic / rubber products, stamping parts, clocks, connectors, automobile inspection tools, automobile manufacturing, touch screen detection, bottle blank detection and other industries. UNIMETRO has become a reliable partner in many famous enterprises in quality assurance, product design, process control and other important links.

UNIMETRO will continue to operate enterprises with the concept of excellence, integrity and professionalism, serve users and China's manufacturing industry!



# UNIMETRO CMM Coordinate Measuring Machine

- Helium Series

Compact, cost-effective type.

- Argon Series

It is more suitable for automobile and aviation field, and can adapt to a variety of probes.

- Krypton Series

Large range, high precision, strong stability.

- Neon Series

Full ceramic, super precision.

- Xeon Series

Large range, high precision.



# Helium Series Coordinates Measuring Machine

Bridge CMM adopts the most simplified design, which is a high cost-effective one in the current market. It is especially suitable for the inspection of finished products such as electronic products, molds, household appliances, small auto parts and aviation parts.



## Performance characteristics :

### ❖ Working platform - high quality granite platform :

Granite working platform is the support of the whole machine, and its good quality affects the performance of the whole machine. The three shafts are made of granite material and processed as a whole. They are stress-free, anti rust and anti-corrosion, easy to maintain, low coefficient of thermal expansion and small deformation affected by temperature. Effectively reduce the vibration of the measuring machine and improve the performance of the whole machine.

### ❖ Transmission system - friction type "self correcting" transmission:

All the three-axis transmission adopts friction transmission and adopts "self correcting deviation" stable transmission system. The transmission system adopts the structure of "fixed + micro suspension" to ensure that it is parallel to the guide rail during transmission! It can keep the stability of precision and the smoothness of movement while moving at high speed. Moreover, it improves the self-protection of the machine tool in case of collision and makes it safer to use.

❖ Grating ruler Renishaw high precision grating ruler :

Grating ruler is an important part of three-dimensional coordinate system. Renishaw is the giant of three-dimensional coordinate system in the world. It has the best market reputation and guarantee in quality and after-sales. All our machines adopt Renishaw high-precision grating ruler with resolution from 0.1 micron to 20 nm.

Typical Applications :

- ✓ Machining parts and stamping parts
- ✓ Plastic mould
- ✓ Castings and Forgings
- ✓ Trigger detection and non-contact detection
- ✓ Scanning and reverse engineering
- ✓ Automotive engine and gearbox components
- ✓ General precision engineering

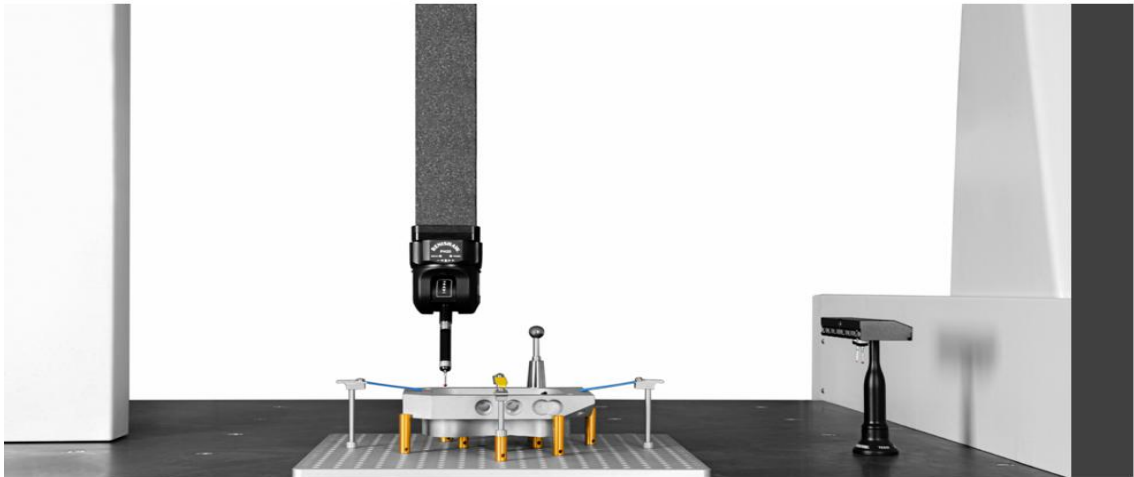


Technical Parameter :

Helium series is specially designed for small and medium-sized products, molds, electronic products and other industries. The size can be selected according to the customer's needs.

Our design of small and medium-sized coordinate light fast, fast installation, no foundation.

|    | Measuring Range (mm) |           |         | Accuracy (um) |         |
|----|----------------------|-----------|---------|---------------|---------|
|    | X                    | Y         | Z       | MPEe          | MPEp    |
| He | 500                  | 500-1000  | 400,500 | 1.3~2.3+L/350 | 1.3~2.3 |
|    | 600,700              | 600-1000  | 600     | 1.3~2.3+L/350 | 1.3~2.3 |
|    | 800                  | 800-1500  | 600,700 | 1.5~2.5+L/350 | 1.5~2.5 |
|    | 1000                 | 1000-3000 | 800     | 1.5~2.5+L/300 | 1.5~2.5 |



# Argon Series Coordinates Measuring Machine

It is especially suitable for the requirements of high precision parts detection in automobile and aviation fields. Argon series CMM is a unique and unique CMM which can be equipped with a variety of probes. Its performance is excellent and incomparable.



## Performance characteristics :

### ❖ High rigidity air bearing

The unique air bearing design makes the machine running fast and stable, positioning is very accurate.

### ❖ Zero hysteresis friction drive

All the three-axis transmission adopts friction transmission and adopts "self correcting deviation" stable transmission system. The transmission system adopts the structure of "fixed + micro suspension" to ensure that the transmission is parallel to the guide rail! It can keep the stability of precision and the smoothness of movement while moving at high speed. Moreover, it improves the self-protection of the machine tool in case of collision and makes it safer to use.



## -- Scanning Function

### ❖ Zero hysteresis friction drive

All the three-axis transmission adopts friction transmission and adopts "self correcting deviation" stable transmission system. The transmission system adopts the structure of "fixed + micro suspension" to ensure that the transmission is parallel to the guide rail! It can keep the stability of precision and the smoothness of movement while moving at high speed. Moreover, it improves the self-protection of the machine tool in case of collision and makes it safer to use.

### ❖ Technical Parameter

Argon series is specially designed for large and medium-sized high-precision workpiece processing enterprises, the size can be selected according to customer needs.

Good overall bridge, good openness and high precision. Quick installation without foundation.

|           | Measuring Range (mm) |           |           | Accuracy (um) |
|-----------|----------------------|-----------|-----------|---------------|
|           | X                    | Y         | Z         | MPEe          |
| Ar Series | 900,1000             | 1000-5000 | 700,800   | 1.2~2.8+L/350 |
|           | 1200                 | 1500-5000 | 800,1000  |               |
|           | 1500                 | 1500-5000 | 1200,1300 |               |
|           | 1500,1600            | 1500-5000 | 1500      |               |
|           | 1800,2000            | 2000-5000 | 1500      |               |

# Krypton Series Coordinates Measuring Machine

KR Series coordinate measuring machine is a high performance automatic CMM with large travel. Thanks to the advanced design, finite element analysis, dynamic features and mechanics analysis, error detecting and compensation, the KR series is with outstanding rigidity and stability.

The krypton series CMM supports a variety of measurement methods, including triggered digital probe measurement, continuous contact analog probe scanning and laser probe scanning. All of these probe options are completely interchangeable, which helps to measure geometric parts and free shape parts.



## Technical Parameter :

|    | Measuring Range (mm) |           |                | Accuracy(um) |
|----|----------------------|-----------|----------------|--------------|
|    | X                    | Y         | Z              | MPEe         |
| Kr | 1000                 | 1000-5000 | 800            | 1.5~3+L/350s |
|    | 1200                 | 1000-5000 | 1000           |              |
|    | 1500                 | 2000-5000 | 1200,1300,1500 |              |
|    | 1600,1800,2000,2500  | 2000-5000 | 1500           |              |
|    | 2500                 | 2500-6000 | 1800           |              |
|    | 2500                 | 2500-8000 | 2000           |              |

## Performance characteristics

- ❖ The integral granite workbench make the machine characterized with the good rigidity, strong bearing capacity, wide workpiece placing space and convenient loading and unloading;
- ❖ The KR series is compatible with Renishaw all series of the trigger and contacting scanning probe, also with the LS series laser scanning probe, high accuracy laser point scanning probe, to achieve the complicated curve high speed scanning. (Reverse engineering)
- ❖ The main guide rail is designed to be longer to increase the span of guiding air bearing, and substantially improve the guiding precision of the main guide rail;
- ❖ The KR Series coordinate measuring machine use high accuracy L type standing structure, ensures the stability, smooth driving, and large measuring space, also offers fast measuring speed, minimizing the angle swinging and vertical offset during the running process, achieve high measuring accuracy.
- ❖ Z-axis adopts the adjustable pneumatic balance device , which can adjust the counterbalance with facility although equipped with different probe systems, so that it can reach the best state.



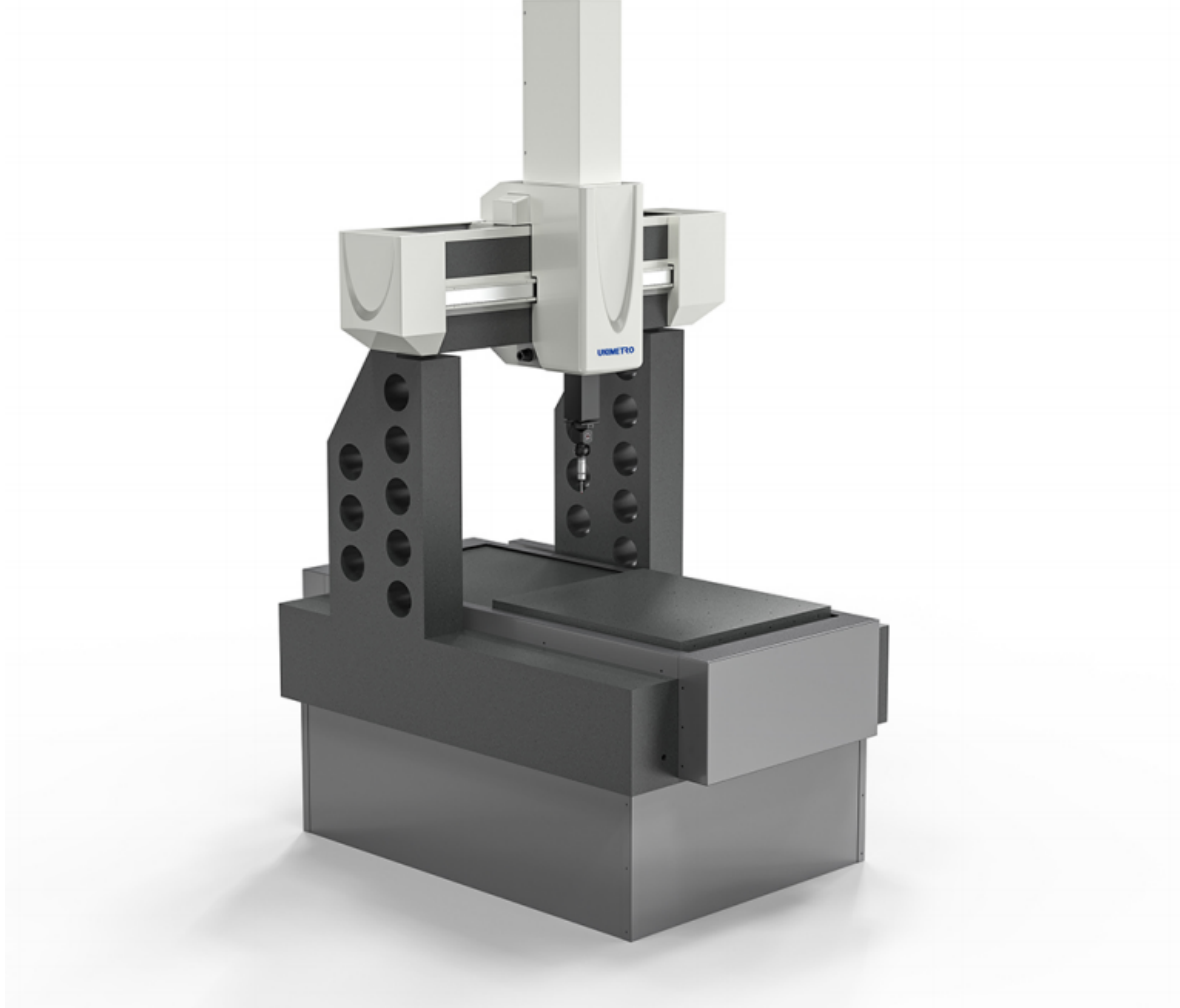
## Typical Applications :

- ✓ Large engine and gearbox parts
- ✓ Aviation parts and structures
- ✓ Large gear
- ✓ Large steam turbine in power station
- ✓ Marine engines and propellers
- ✓ Train parts
- ✓ General precision engineering parts



# Neon Series Coordinates Measuring Machine

NE series coordinate measuring machine adopts innovative ceramic design to achieve ultra-high-precision scanning and detection capabilities on the current market. Particularly suitable for the application needs of high-precision products in the electronics, automotive and aerospace fields.



## Technical Parameter :

Neon ceramic series is a machine designed for high-precision product processing, and the size can be selected arbitrarily according to customer needs. The unique design of the overall bridge ensures the openness of the machine space and high stability.

| Ne | Measuring Range (mm) |           |      | Accuracy (um) |       |
|----|----------------------|-----------|------|---------------|-------|
|    | X                    | Y         | Z    | MPEe          | MPEp  |
|    | 600,700              | 600-1000  | 600  | 0.9~2+L/350   | 0.9~2 |
|    | 800                  | 800-1500  | 700  |               |       |
|    | 1000                 | 1000-3000 | 800  |               |       |
|    | 1200                 | 1500-4000 | 1000 |               |       |



## Performance characteristics :

- ❖ Working platform High-quality granite platform, precise dovetail guide rail:

The granite working platform is the support of the whole machine, and its quality affects the overall performance of the machine. The platform is made of granite material, coupled with precise dovetail guides, which effectively reduces the vibration of the measuring machine and improves the whole machine performance.

- ❖ Three-axis guideway fully enclosed, ceramic beam, spindle:

Both X and Z axis are ceramic, corrosion-resistant, good rigidity, and have a smaller thermal expansion coefficient and higher accuracy

- ❖ Base support-dual passive damping structure:

The use of the coordinate measuring machine is basically in the production plant, so it is inevitable that there will be vibration 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 structure to prevent the influence of low-frequency vibration, which greatly guarantees the accuracy of the measurement and reduces the trouble of making earthquake-proof foundation measures.

## Typical Applications :

- ✓ Automobile engine and gearbox parts
- ✓ General precision engineering of aviation blades, engines and aircraft parts
- ✓ Pharmaceutical Manufacturing

# Xeon Series Coordinates Measuring Machine

XE series gantry type 3D coordinate measuring machine series is fit for accurate inspection of enormous parts, such as automobile, aviation, vessels and big molds.

The advanced structure of the XE series 3D coordinate measuring machine offers high accuracy, stable, high rigidity reliable performance of the machine frame, even used in the work shop the series can remain the outstanding application and measuring experience.

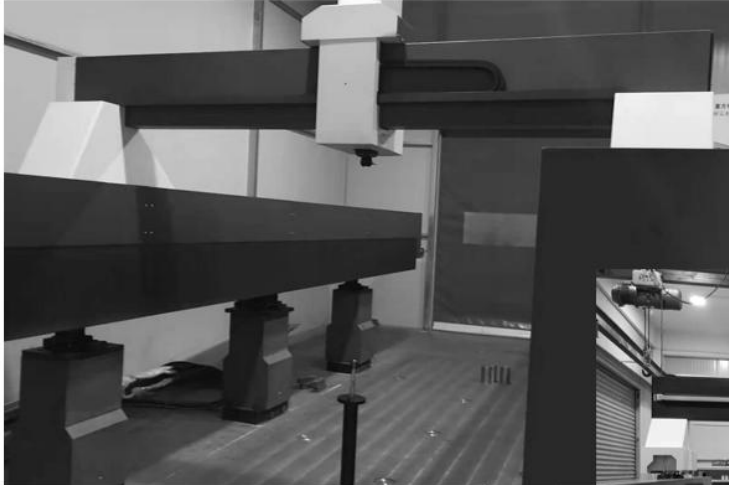


## Technical Parameter :

The XE series is designed for companies that need to measure the size of very large workpieces. The size can be selected arbitrarily according to customer needs. The unique design of UNIMETRO landing gantry type makes the machine high stability, high positioning accuracy, and higher accuracy.

| Xe | Measuring Range (mm) |           |      | Accuracy (um) |       |
|----|----------------------|-----------|------|---------------|-------|
|    | X                    | Y         | Z    | MPEe          | MPEp  |
|    | 1800, 2000, 2500     | 2000-4000 | 1500 | 2.0~5+L/300   | 2.0~5 |
|    | 3000, 4000, 5000     | 2500-6000 | 1800 |               |       |
|    | 2500, 3000, 4000     | 2500-6000 | 2000 |               |       |
|    | 2500, 3000, 4000     | 2500-8000 | 2500 |               |       |
|    | 3000, 4000, 5000     | 3500-8000 | 3000 |               |       |
|    | 5000, 6000           | 5000-8000 | 4000 |               |       |

## Workshop



### Performance characteristics :

- ❖ Three-axis guideway-fully enclosed, all granite material:

We are equipped with enclosed guide rails on all machines, which can prevent damage to the track caused by external dust erosion, and are protected from pollution and temperature. This is especially important for harsh environments. All three axes are made of granite, which is corrosion-resistant and has exactly the same coefficient of thermal expansion, so the accuracy is higher!

- ❖ Grating ruler-Renishaw high-precision grating ruler:

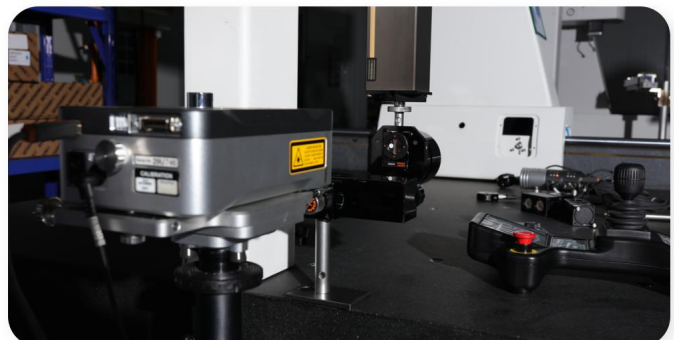
The grating ruler is an important part of the three-axis coordinate system. Our landing gantry machine adopts Renishaw's latest high-precision Tonic grating ruler.

- ❖ Air-floating guide rail-embracing design on all sides:

Adopting four-sided air-floating guide rail structure, it 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 surrounding air bearing design ensures the stability of the instrument during the movement.

### Typical Applications :

- ✓ Car body
- ✓ Large gear
- ✓ Aerospace aircraft fuselage



# Sensor System

As a manufacturer of coordinate measuring machine, we thoroughly understand each of your measuring demand. We can provide various types of survey system for you to really improve the production and survey efficiency according to your actual needs. As the official cooperative partner of British company Renishaw, Lead Metrology imports all the survey systems it furnishes with original packages from Renishaw Company.



## MCP Probe Head

MCP probe head is a probe head with high price/performance ratio, and a high precision electronic trigger probe with high precision, low fault rate and long lifespan.



## MH20i Manual Double Rotary Indexing Probe

A manual adjustable indexing probe stand, professionally manufactured by Renishaw, integrates with TP20 probe head to achieve indexing positioning in two directions. It can achieve 168 repeatable positioning with an indexing of every 15 degrees.



## RTP20 Probe

RTP20, assembled with TP20 integrated trigger probe, has the function of economic mechanical probe stand with a larger survey scope and more flexibility.



## MH8 Manual Double Rotary Indexing Probe Stand

MH8 is a manual rotary repeatable positioning probe stand with connection of M8 thread probe, which can be connected with probe of M8 connection type and probe lengthening bar and used for medium and small measuring machines.



## PH10 Automatic Rotary Probe

PH10 probe stand series products add the function of probe positioning control through program for full automatic coordinate measuring machine and thus increase the measuring efficiency of the equipment. They can achieve feature measuring in different angles and do not require the frequent and time-consuming changing of measuring thread unit.



## PH20 High-Speed 5-Axis Trigger Probe

PH20 can gather measuring points only through movable measuring stand but not the structure of coordinate measuring machine with its unique "stand contact". It can gather measuring points in a faster manner and improve the precision and repeatability. Moreover, 5-axis movement can save the time of the rotation of probe stand. In combining the fore-mentioned factors, the significant improvements in speed improve the measuring efficiency of the new system by two times compared to the traditional system.



## REVO High-Speed 5-Axis Scanning Measuring System

REVO is the first revolutionary product with 5-axis measuring ability released by Renishaw, which cannot only fulfill the highest measuring efficiency, but also can guarantee an extremely high system precision.



## SP80 Super-High Precision Scanning Probe Head

SP80 is a super high precision scanning probe head, which also supports 800mm super long measuring thread, and is an ideal choice for high precision scanning or deep hole measuring. Rapid changing of measuring thread improves productivity to the largest extent.

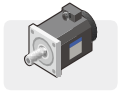
# CMM Control Systems

## Measuring Machine Control System

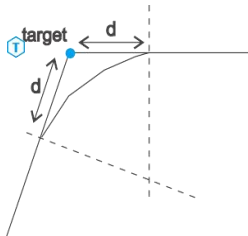
Control system is one of the core parts of coordinate measuring machine, whose major functions are reading of spatial coordinates, real-time response and handing of probe signals, achievement of necessary movement through controlling of mechanic system, real-time supervision of CMM status to guarantee the safety and reliability of the whole system, and geometric deviation and temperature deviation compensation for CMM in order to improve the measuring accuracy of CMM.

### Control system and software connection are designed in compliance with I++ standard.

Support the exchanging utilization of various measuring software.  
3-axis driving system applies high precision DC servo motor for driving and can achieve non-vibration driving.



Utilize high precision DC servo motor



More stable variable motion

### Advanced Motion Path Interpolation technology

Control system does not only support normal straight-line interpolation and arc interpolation, but also support spiral path interpolation and spheroidal path interpolation in path planning.

The application of this internationally advanced motion control technology greatly improves the measuring efficiency of measuring machine, especially in cylinder, circular hole, sphere and curved surface measuring, which can better demonstrate its performance of high efficiency.

## Humanized Design of Control Box

Control box is furnished with buttons and control stick for simpler, more convenient and reasonable controlling and speed adjustment rotary knob, which supports linear adjustment for motion speed in CNC model and manual mode. Emergency switch layout conforms to human ergonomics.

## CMM Control System

32-bit special controlling core designed with large-scale integrated electricity circuit technology has higher execution efficiency compared to other control systems using common CPU, achieves low power consumption and low heat and extends the lifespan of control system.



Control stick with Ergonomics Design

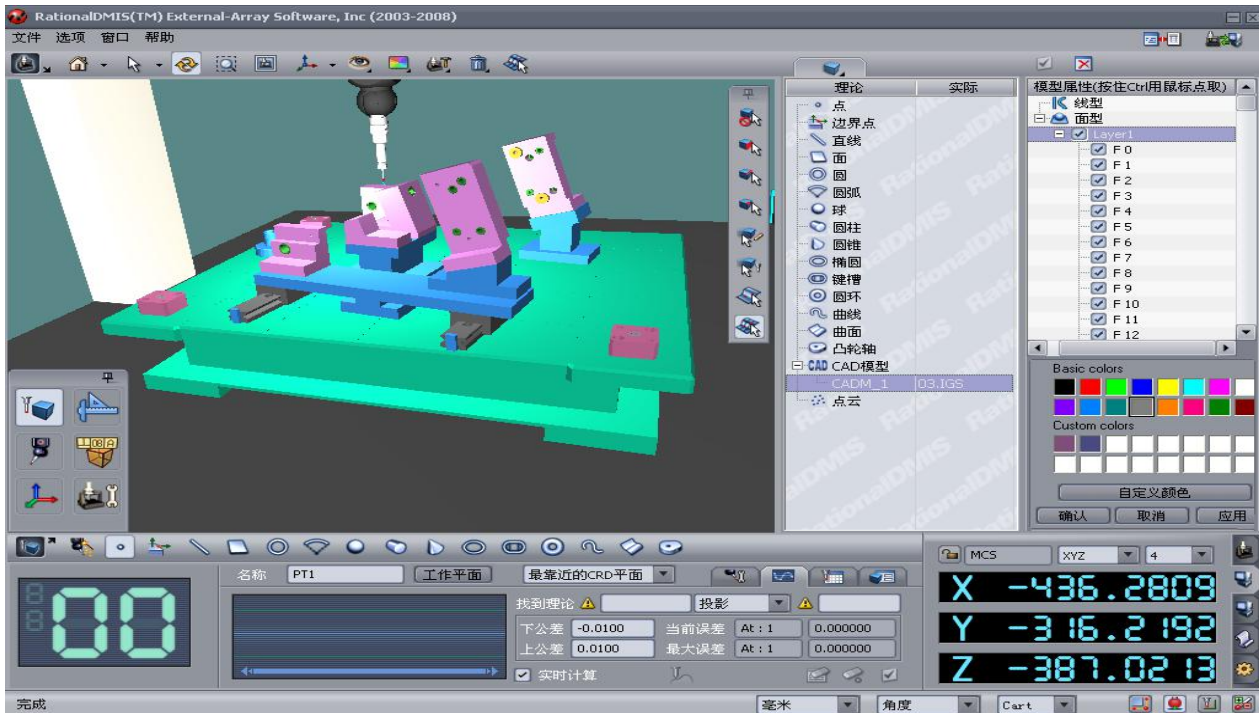


- Import form international famous brand
- Utilization of 32-bit high-speed central processing unit to achieve the stability and high speed of machine
- High integration to guarantee high reliability
- Support of 3-axis continuous motion mode and higher efficiency
- High-performance DC motor for driving to achieve non-gap and non-vibration driving



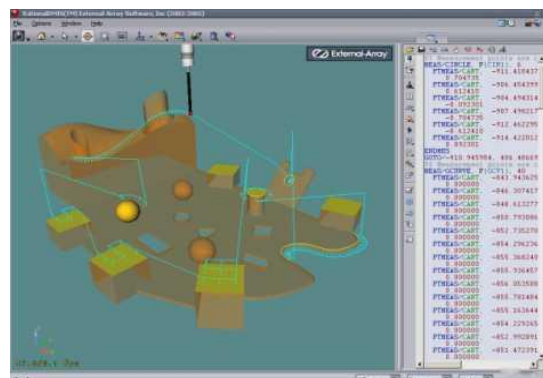
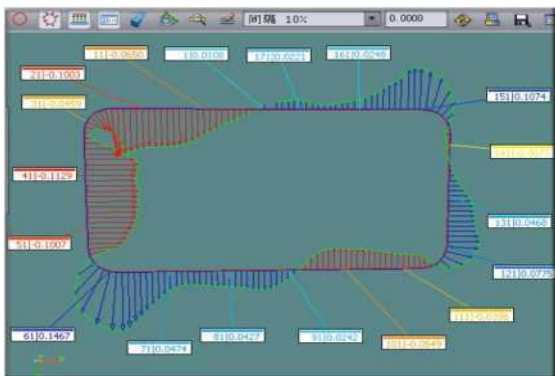
## ExternalArray Rational DMIS Measuring Software

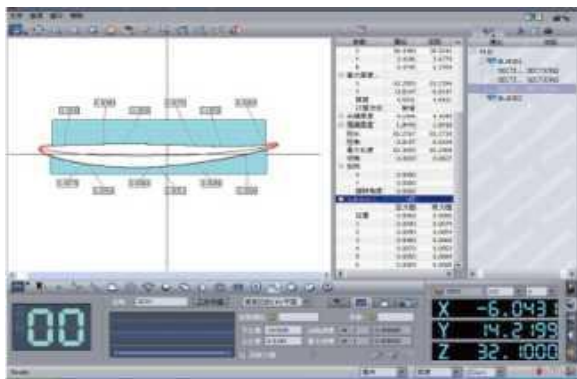
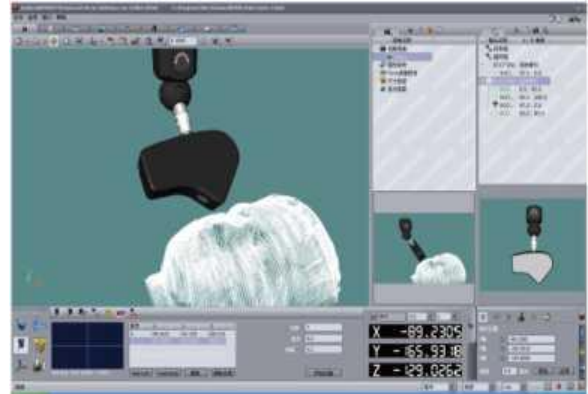
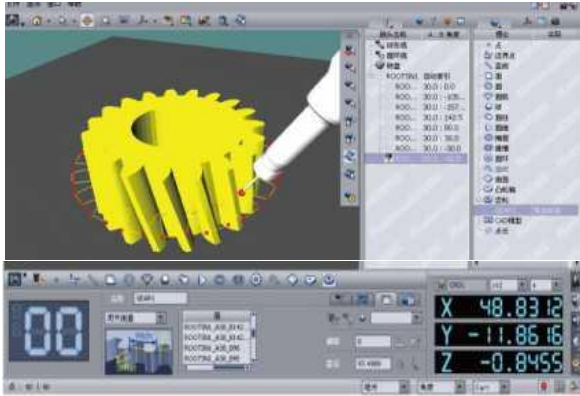
So intuitive, easy to use, intelligent CMM software in just a few days of training, even if the user did not have much experience, you can easily grasp!



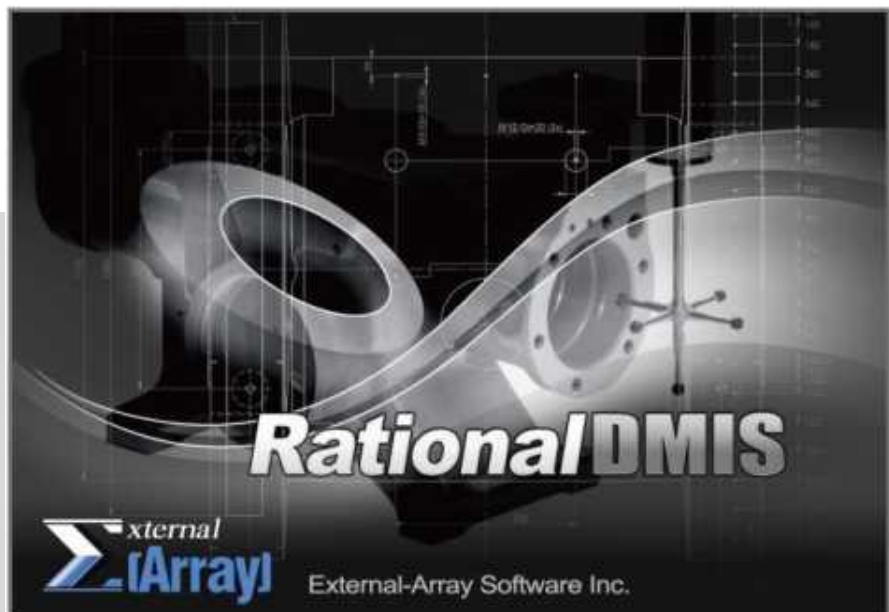
### Features :

- Rational-DMIS measurement software has been developed and used for more than 20 years. Its unique features include:
- Online and offline programming, real-time display of measurement path and provide collision warning.
- Full DMIS kernel, DMIS 3.0, 4.0 and 5.0 measurement languages can be applied. Compatible with any software using DMIS.
- Various CAD interface formats are supported, including CATIA ® V4, CATIA V5, Pro / E ®, UG ®, Parasolid ®, hoops ®, step ® and IGES ® "





- Graphics engine is ACIS, one of the most powerful engines in the world. It can easily control large-scale CAD digital and analog files through CATIA professional verification.
- Algorithm is PTB certified (Level 1)
- The fastest point-to-point scanning, with scanning interval of 0.002mm
- The processing speed of "point cloud level" of laser scanning data can reach 20000 points / second, so it can expand the function to use laser probe to detect and reverse.
- Built in all Renishaw product data models, it can realize analog assembly, automatic calibration and temperature compensation of probe probe.



## Our service

UNIMETRO is devoting to offer the best metrology products and solution, also offer the best after sales service.

Free on-line support, free software upgrade and fast reaction of after sales service ensure the satisfaction of our customers and dealers.

## Global market

Dealers or distributors all over the world are welcome and we will offer full support in commercial and technical phase.

UNIMETRO is always providing products with the best price performance ratio and the best service.

## OEM and special measuring solution

UNIMETRO is available for OEM service for our distributors.

Thanks to the professional technical team of UNIMETRO, we are also capable for various kinds of special measuring solution or device development, please consult to our engineer if you have such kind of requirement.

# UNIMETRO



UNIMETRO PRECISION MACHINERY CO., LTD.

UNIMETRO AUTOMATION SHANGHAI

UNIMETRO INTERNATIONAL TRADING CO., LTD. HONGKONG