Mikrosize®

VMQ-3020

Instant Video Measuring System

Contact us

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Product Advantages and Applications

●VMQ-3020 Composite Stitching Measuring Instrument has many advantages; it is efficient, and the large platform stitching can measure multiple or super-large products at one time; it has strong adaptability and can measure various complex dimensions; it is extremely simple to operate, calibration only requires one function key, the software is humanized and intelligent, and it can automatically match and measure, and can cooperate with the mechanical arm to achieve fully automatic measurement; it has rich measurement functions, supports a variety of two-dimensional dimension measurements, and data is automatically saved; its measurement software is powerful, with functions such as compensation, calibration, and calculation, supports a variety of data presentation formats, and can also connect to the production line to meet diversified needs;

Product Advantages

●High measurement efficiency: The large-platform stitching design allows for measuring multiple products at one time or completing the size measurement of super-large products with one key, which greatly improves the detection speed;

●Strong adaptability: It can accurately measure various complex shape dimensions such as complex surface dimensions, without being restricted by the shape of the workpiece;

●Convenient automatic matching: Programs for products of the same category can be permanently saved after one-time programming, and automatically matched during measurement to reduce repetitive operations;

●Simple and efficient calibration: Only one functional calibration key is required to achieve multi-angle, all-round and full-field calibration, ensuring measurement accuracy;

●Simple software operation: Humanized and intelligent software design, simple operation, easy to learn and use, reducing learning costs;

●Rich measurement functions: It has various 2D dimension measurement functions such as point, line, circle, etc., to meet different measurement needs;

●Intelligent data management: Measurement results are automatically saved to the computer, including information such as measurement date and product batch number, facilitating data management;

Product Applications

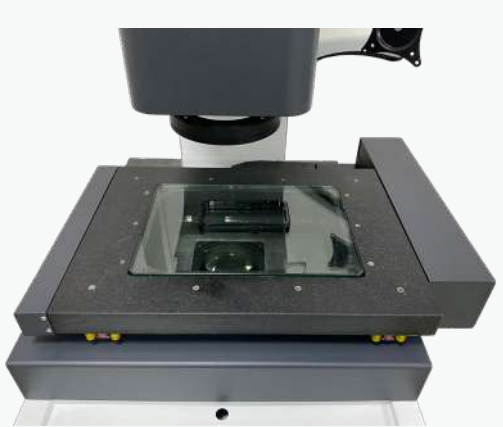
●Mechanical manufacturing field: Suitable for dimensional measurement of mechanical components such as shaft parts and gears to ensure production accuracy;

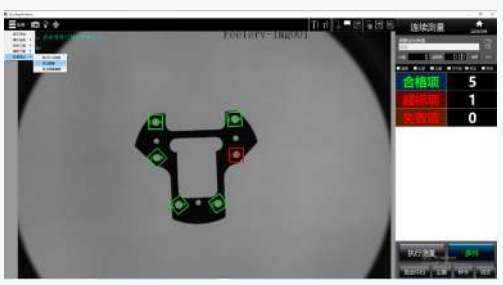
●Electronic industry: It can perform precise measurement on semiconductors, mobile phone covers, printed circuit boards, etc., to ensure the quality of electronic products;

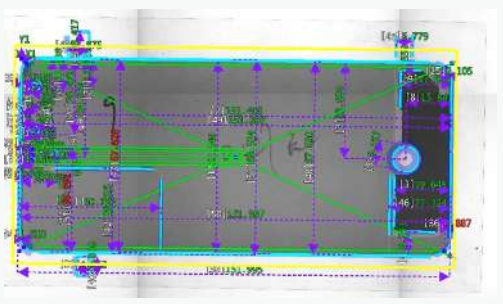
●Mold injection molding industry: Used for dimensional inspection of molds and injection molded parts to help improve product molding quality and production efficiency;

●Hardware and rubber industry: Capable of measuring the dimensions of hardware parts and rubber rings to meet the diversified measurement needs of the industry;

●Medical device and watch industry: Provides high-precision measurement for medical device and watch components to ensure product fineness;



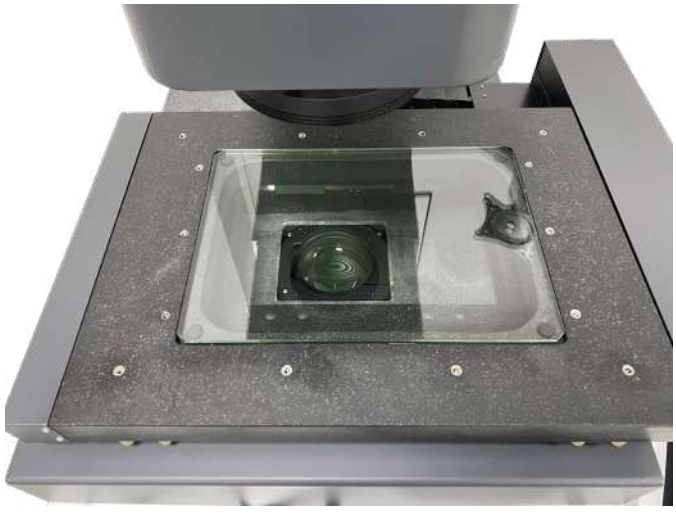




Product Structure

1.Light Source **2.Operating indicator light** **3.Emergency button**

4.Work platform



Hardware Advantages

Intelligent program-controlled light source system

●Equipped with a 1000-level program-controlled light source, integrating ring surface light and telecentric parallel profile light (coaxial light optional), which can adjust brightness and angle as needed to adapt to high-precision imaging of workpieces with complex surfaces and solve the edge blur problem caused by single traditional light sources;

High-precision motion control scheme:

●Adopting a combination of servo motor drive and precision linear guide rails, the motion range reaches 500*400*200mm, the positioning accuracy is ±(3+L/100)um, and it supports high-speed and stable movement and micron-level fine adjustment;

●Combined with the low distortion characteristics of the double telecentric lens, it ensures the positional consistency during stitching measurement;

Professional-grade optical hardware configuration:

●Equipped with a 20-megapixel industrial camera and a double telecentric optical lens (0.088X magnification) to achieve high-resolution imaging and distortion-free measurement within the depth of field;

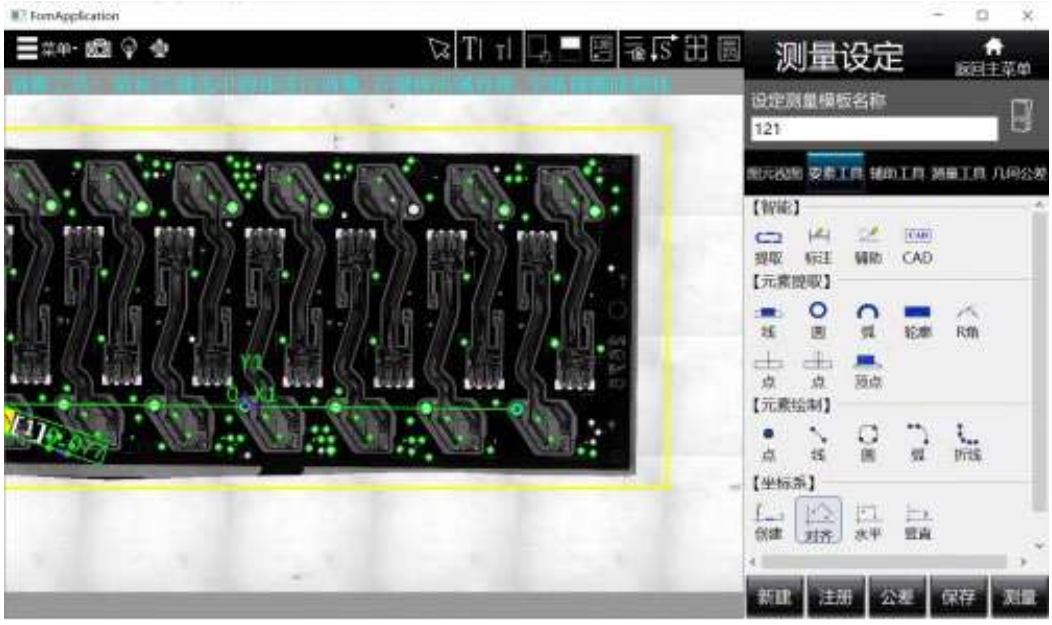
●Effectively reducing parallax errors, improving the capture accuracy of tiny dimensions and complex contours, and meeting the strict requirements of precision hardware, semiconductors and other fields;

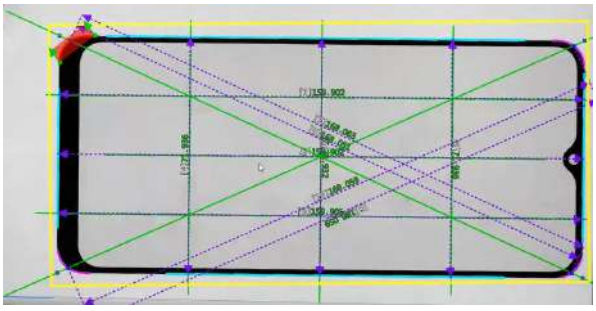
High-compatibility structural design:

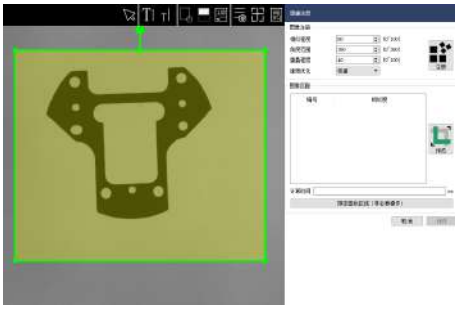
●A worktable with a load-bearing capacity of 20kg and a Z-axis working distance of 200mm supports large-size workpiece and multi-layer stacking measurements;

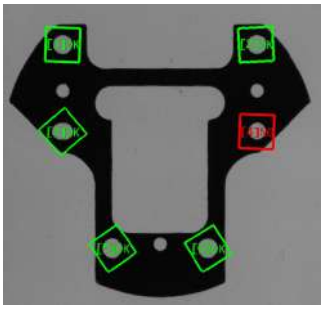
●Combined with 10:1 sub-pixel processing technology and the motion stage stitching compensation algorithm, it can seamlessly stitch images of oversized workpieces;

Software Interface









● Professional interface layout: The programming and measurement interfaces are separated with clear division of labor, avoiding misoperations, ensuring machine stability, and improving comprehensive inspection efficiency;

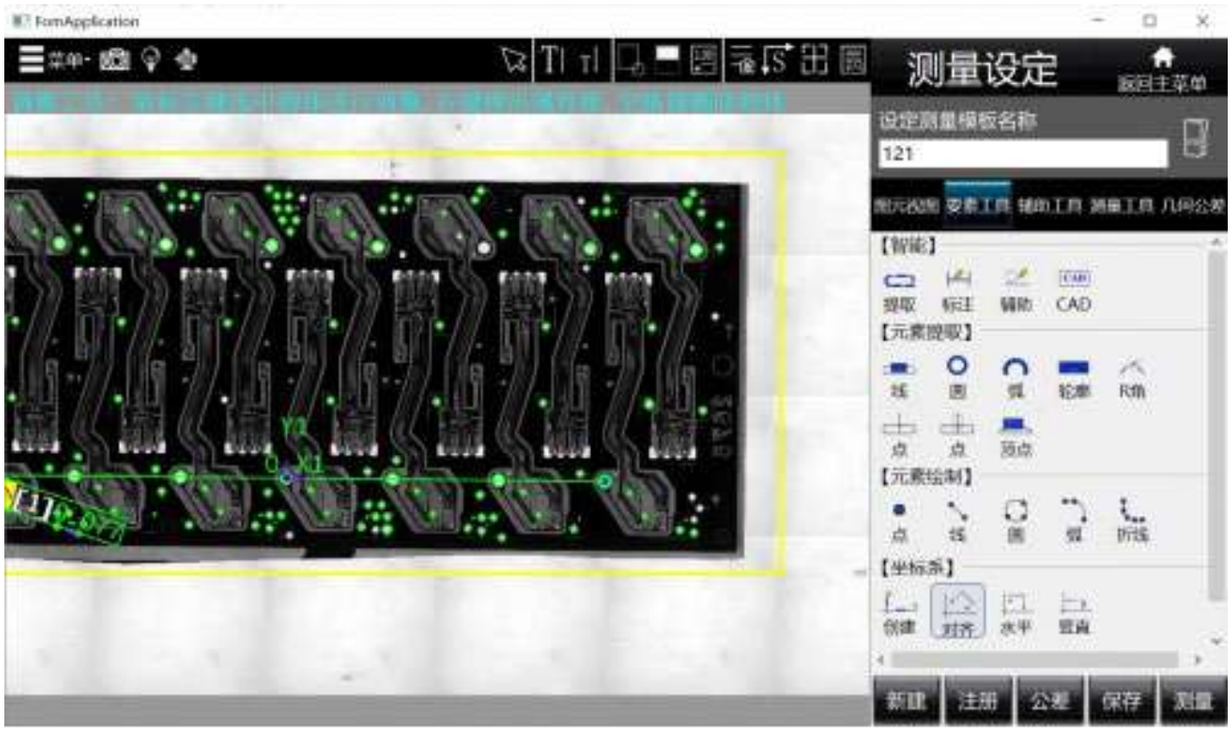
● Powerful compensation calibration: integrating various algorithms, supporting one-click calibration, lens distortion compensation and mobile stage stitching compensation to improve accuracy and stability;

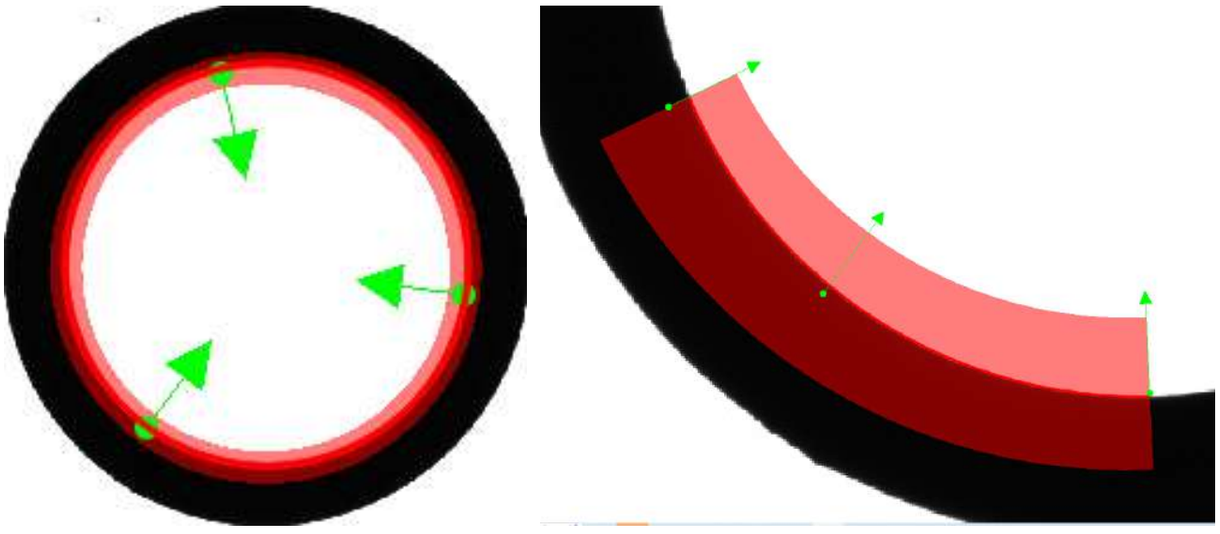
● Complete geometric measurement: capable of measuring various geometric elements with multiple measurement methods, directly obtaining coordinates, length, area and other data after edge finding;

● Efficient feature matching: rich in matching methods, high in efficiency, supporting complex feature matching and meeting diversified measurement needs;

● Flexible measurement of multiple workpieces: supports one-key measurement of multiple workpieces, intuitive viewing of stitched images, and zooming in on non-stitched images to examine details of NG workpieces;

Software Advantages





The software has two typical working interfaces: programming interface and measurement interface.

●The programming interface is mainly for users to prepare the preparation of measurement programs, and the measurement interface is specially for users to run measurement programs and display measurement results.

●The software places the main and commonly used functions in the core area of the measurement interface in the form of buttons. Users can complete almost all measurement actions only by simply clicking and dragging the mouse.

●It can measure geometric elements such as points, lines, arcs, circles, and rectangles; according to the actual characteristics of the elements, each element can be measured by a variety of different methods; once the edge finding is completed, data such as the coordinate values, length, and area of the elements can be directly obtained.

●It can capture very weak edges, arbitrarily set the edge-finding direction to avoid edge-finding errors, flexibly set edge-finding parameters, and eliminate the influence of noise and burrs.

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Technical Parameters

Model	VMQ-3020
Motion range	300×200×200（mm）
External dimensions	900×800×1650（mm）
Weight(kg)	380
Load-bearing(kg)	20
Image sensor	20-megapixel industrial camera
Lens	Double telecentric optical lens
Accuracy(um)	±(3+L/100)
Minimum Display Unit	0.0001mm
Z-axis working distance	200mm
Light source	1000-level programmable light source/surface light: ring-shaped surface light source contour light: telecentric parallel light source (optional surface light: external coaxial light)
Image processing	IVT advanced image analysis method, 256 grayscale levels, 10:1 sub-pixel processing technology
Software	Mikromea
Working environment	Temperature: 22℃±2℃ Humidity: 30～80% Vibration:＜0.002mm/s,＜15Hz
Power supply	220V/50Hz

Packing List

Name	QTY	Remark
Host	1set	
Motion Controller	1pc	Standard
Servo motor	3pcs	Standard
Workbench glass	1pc	Standard
Telecentric lens	1pc	Standard
Industrial camera	1pc	Standard
Ring surface light source	1pc	Standard
Telecentric Parallel Light Source	1pc	Standard
Camera Cable, Serial Port Cable	Each 1 pc	Standard
Calibration Plate	1pc	Standard
Computer	1pc	Including the mainframe, a 24 - inch monitor, and a keyboard - mouse set.
Mikromea Software	1pc	With Encryption Lock
Software Instruction Manual	1pc	Standard
Certificate of Conformity, Warranty Card	Each 1 pc	Standard