3D VIDEO MEASURING SYSTEM (Z IN FRONT)

MODEL: VMM-250; VMM-300; VMM-400; VMM-500

Product Introduction

VIEW MASTER 3D Video Measuring System is new transmission system of Z axes in front, convenient to operate.

With step zoom orientation lens, needs no linear calibration at fixed multiple with the software.

Multi-use calibration flake is as attachment of the machine, used both for teach drilling and precision calibration.

OVM video measuring software used to operate the system.

RENISHAW touch probe can be chosen to match, Ø1mm and Ø2mm probe being matched, can do measuring on tridimensional workpiece with TPM measuring software.

Applied Fields

It is suitable to be put in the production field or the quality-control room, to measure arbitrary dimension of the workpiece. It is widely used on the mobile phone fitting, precision fixture, precision pressing, linker, circumjacent fields of the computer, mould, rubber production, electron production, hardware production, metal work, PCB, plate work pressing, terminal connector, household appliance, electronic parts and so on.

Technology Parameters

Model No	VMM-250	VME-300	VME-400	VME-500
X/Y/Z Measuring range	250 x 150 x 200mm	300 x 200 x 200mm	400 x 300 x 200mm	500 x 400 x 200mm
Machine dimension	800 x 500 x 1,650mm		980 x 650 x 1,650mm	1,160 x 800 x 1,650mm
Operation mode	Manual			
Optical magnification	0.7x – 4.5x			
Image magnification	28x – 180x			
Measuring system	OVM measuring system			
Lens work distance	95mm			
X/Y optical resolution	1µm			
X/Y measuring accuracy	(3+L/200)µm			
Repeatability	2µm			
CCD resolution	410,000pixel			
Machine load capacity	30kg			
Power supply	110V/220V, 50Hz/60Hz, ± 10%			
Suitable environment	Temperature: 20 ± 5°C; Humidity: 45% - 75%			

Software Functions

The measuring software, OVM is sophisticated GUI and powerful functions. The interactive interface is friendly, makes operation easily and conveniently, the training time also is shortened. Powerful measuring functions make measurement more efficiency.

Including all that functions, intelligent edge detection tool, box area measuring, elimination of abnormal data, SPC, depth measuring, measurements program, crosshair measuring, DXF-import, size marking (plus function in CNC: motor zoom, stage navigation, 4-quadrant programming illumination).

1 = X Y Z axes display
2 = measuring object
3 = graphic display
4 = measuring units
5 = light control (only for CNC)
6 = results list object data
7 = video image window
8 = focusing indicator
9 = measuring tool
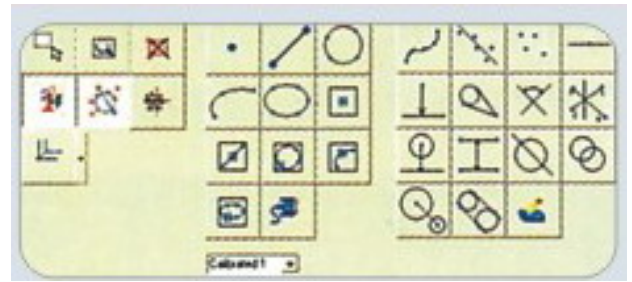10 = measuring function
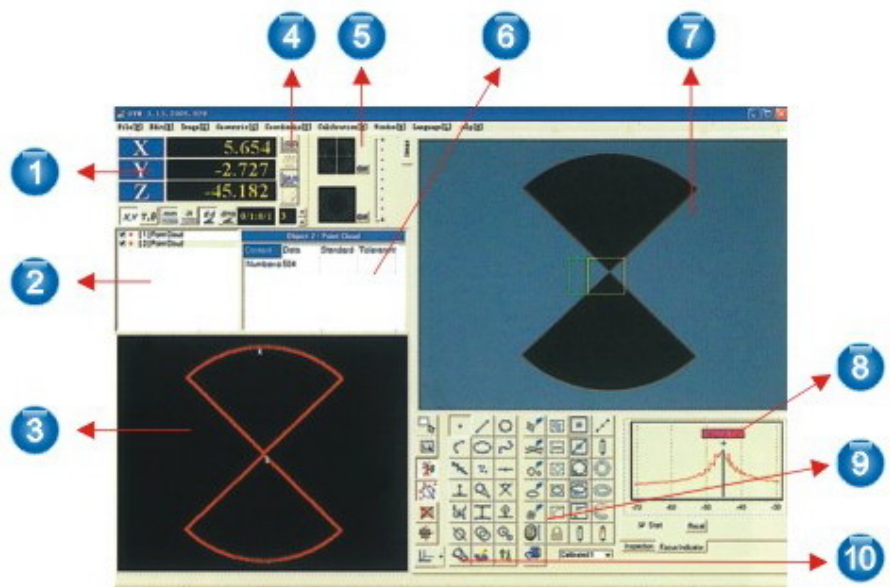
Point-Clicked Measuring

Geometrical cells: point, line, circle, ellipse, arc, angle, etc.

Complex geometry: distance between cells, vertex, intersection point, tangent, etc.

Shape & position tolerance: length tolerance, diameter tolerance, squareness tolerance, tilt tolerance, etc.

Coordinate Setup

This function allows a new XY origin to be set. The coordinates of the elements being measured after this resetting are expressed based on the new origin. There are so many setting methods that it is very convenient for coordinates processing.
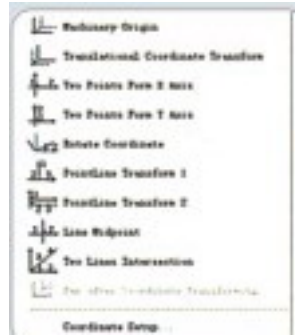
Data Export

The measuring data can be exported into Word and Excel so that the statistical calculation and printing report can be processed. Thus, it can reduce the time and cost of inspection report creating dramatically over conventional methods. Graphics is also exported and can do copy/paste function.

Word format   Excel format

DXF Export

The graphics after measuring can be stored with DXF format so that it can be redesigned by general CAD software (AutoCAD, UG, PRO/E, Solidworks etc)
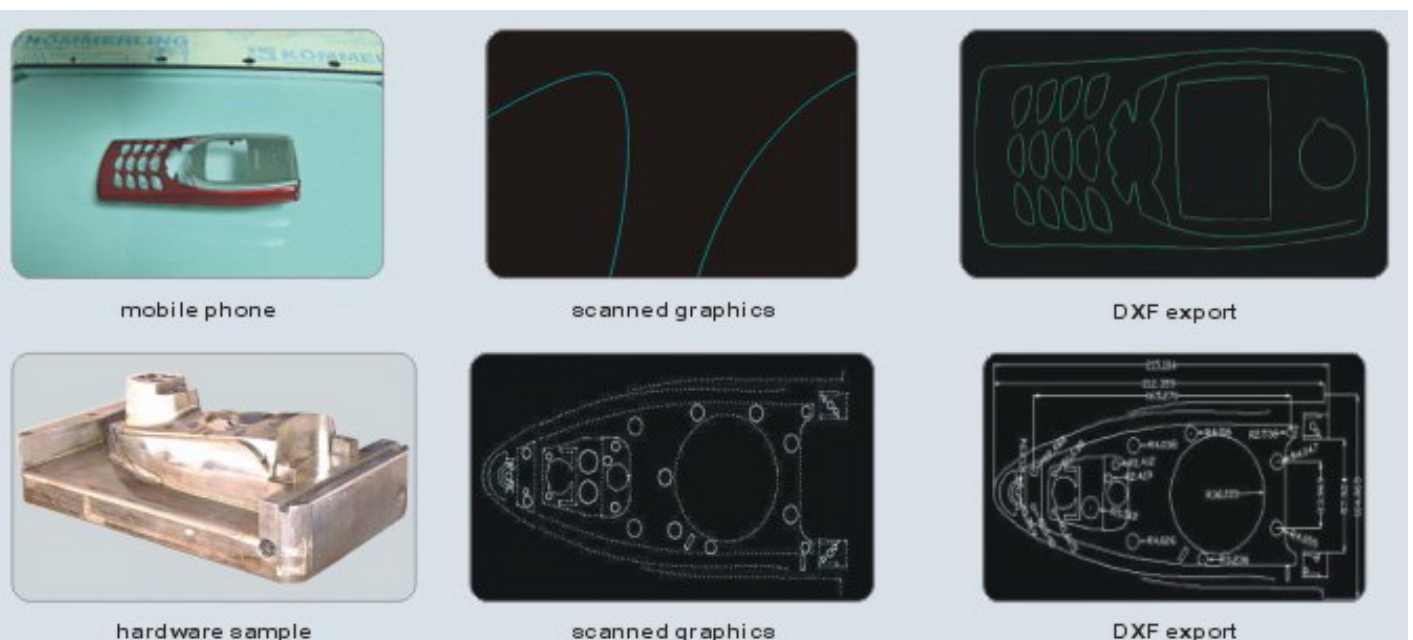
mobile phone   scanned graphics   DXF export

hardware sample   scanned graphics   DXF export

OVM provide many powerful video measuring tools such as intelligent edge detection, box area measuring, elimination of abnormal data and quick edge-finding. Other useful functions include SPC, depth measuring with focusing indicator, measurements program, crosshair measuring, DXF-import, size marking etc.
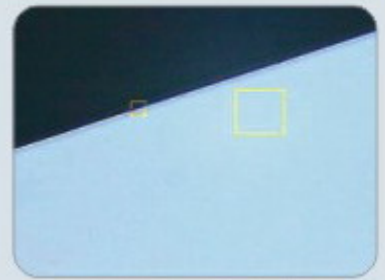
Auto-point-detecting measurement

The points on the edge can be automatically detected while just clicking the edge areas. Many geometric measurements, for example point, line, circle, arc, angle and complicated graphics etc., can be obtained by this function.
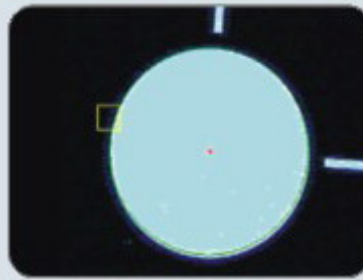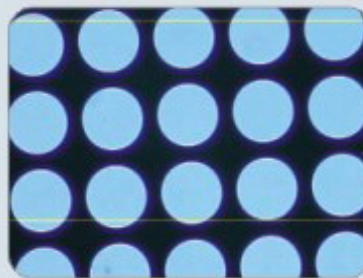
point measuring by auto-point-detecting

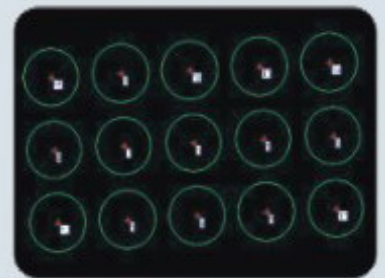line measuring by auto-point-detecting

Box area measurement

All the measurements can be accomplished by box-selecting. Thus, it can greatly improve the efficiency of multi-data measurement.
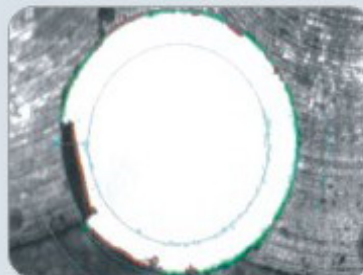
box area selecting

all measurements obtained immediately

Elimination of abnormal data

The function eliminates any point data that is not consistent with the majority of measured data, and is especially suitable for blind-hole, chamfer and workpieces with burrs, nicks and other flaws.

Auto-line-detecting

With the single click of a mouse button while measuring, the image can detect the graphics automatically.
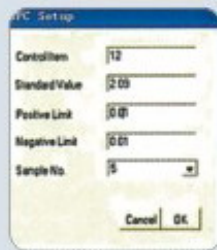
circle measuring

other sample

Statistical process control (SPC)

Statistical Process Control is about identifying process changes quickly, but not overreacting to normal part-to-part variation.

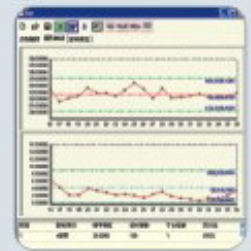| Object 12 : Circle			
Content	Data	Standard	Tolerance
Center X	2.009		
Center Y	1.004		
Diameter	0.811		
Radius	0.405		
Large Rac	0.429		

Measuring data report

Controlled object
and its variation SPC

SPC

SPC chart

4 quadrant automatic adjustable LED illumination

The 4-quadrant automatic LED ring light, both equipped in surface and profile illumination, offers effective illumination if the workpieces from desired directions, preventing unwanted shadows. The surface illumination function is used for the measurement and observation of surface patterns, and the profile one is mainly for the measurement of frame shape, hole pitch and similar features, Since the light intensity in each of four-quadrants is independently controlled, You can customize part illumination to maximize its effectiveness.
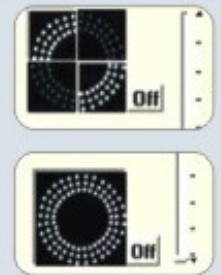
depth measurement

Manual version: a powerful focusing indicator can be used to measure depth. With this indicator, you can take multiple in-focus Z-stack images and combine the images into one in-focus composite image, thereby ensuring depth measurement accuracy and repeatability.
CNC version: automatic focusing to measure depth or height.

X	-45.895
Y	-25.386
Z	2.875

setting reference
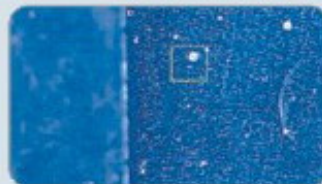
measured surface
selecting

focusing indicator
to focus

result in Z

Programmable function

It is possible to automate a measuring program. In training mode, all the measuring processes are entirely remembered by the system and these measuring steps can be called for batch measurements as required. Then the geometric measurement is carried out automatically. To manual version, OVM can suggest operator the stage-moving direction.
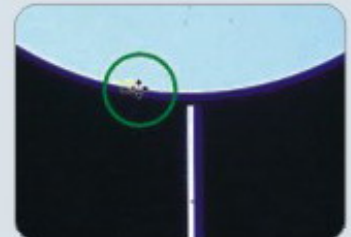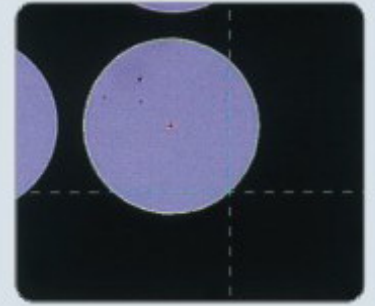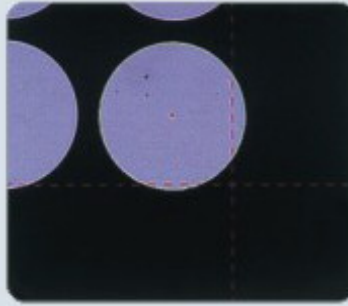
training mode

measuring
process log

measurement
position hint

automatic profile
detecting measurement

crosshairs function

The crosshairs can not only measure on the screen directly, but also detect the profile by color changing.

powerful coordinates transform

Compared with coordinates transform function in OVM Lite, this counterpart in OVM is much more powerful and processing operation is rather more convenient. It can be completed by just right-clicking the reference and choosing the "coordinates transform" in the dialog box.
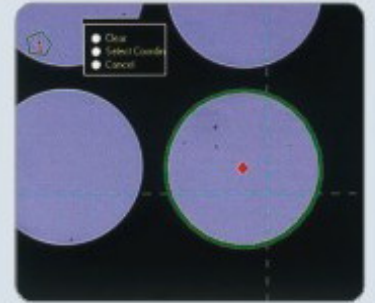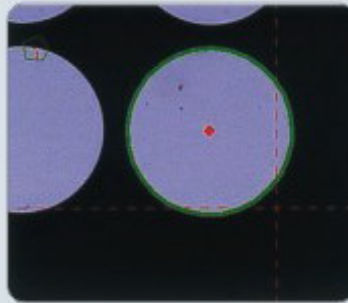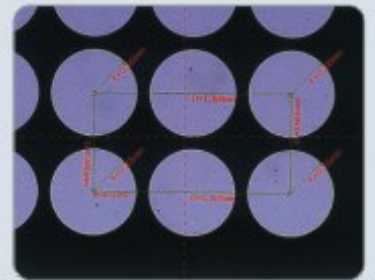
CAD import

This function allows CAD file such as DXF format to be imported in system, thereby ensuring the dramatic time reduction in part programming and stage navigation. The XY table can be quickly moved to a desired position via the drawing on the graphic window, and tolerance judgment is immediately obtained by comparison with CAD data.
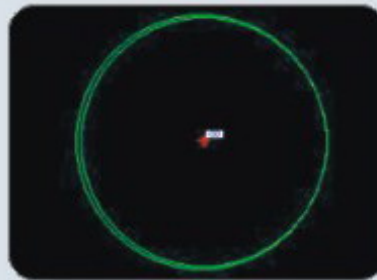
CAD import

size marking

More intelligent interface

All the geometric cells are provided with instant hints. And more information and help can be obtained by the mouse operation. For example:
Point – right double clicking can show the coordinates of this point
Line – right double clicking can show the length of this line and the coordinates of its end point
Circle – right double clicking can show the radius of this circle and the coordinates of its center

Size Marking

The size of measured features can be marked in the screen image directly, thereby avoiding the size marking in CAD data by file export. Thus, the reporting efficiency greatly improves.