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VMG
CNC Automatic Video Measuring System
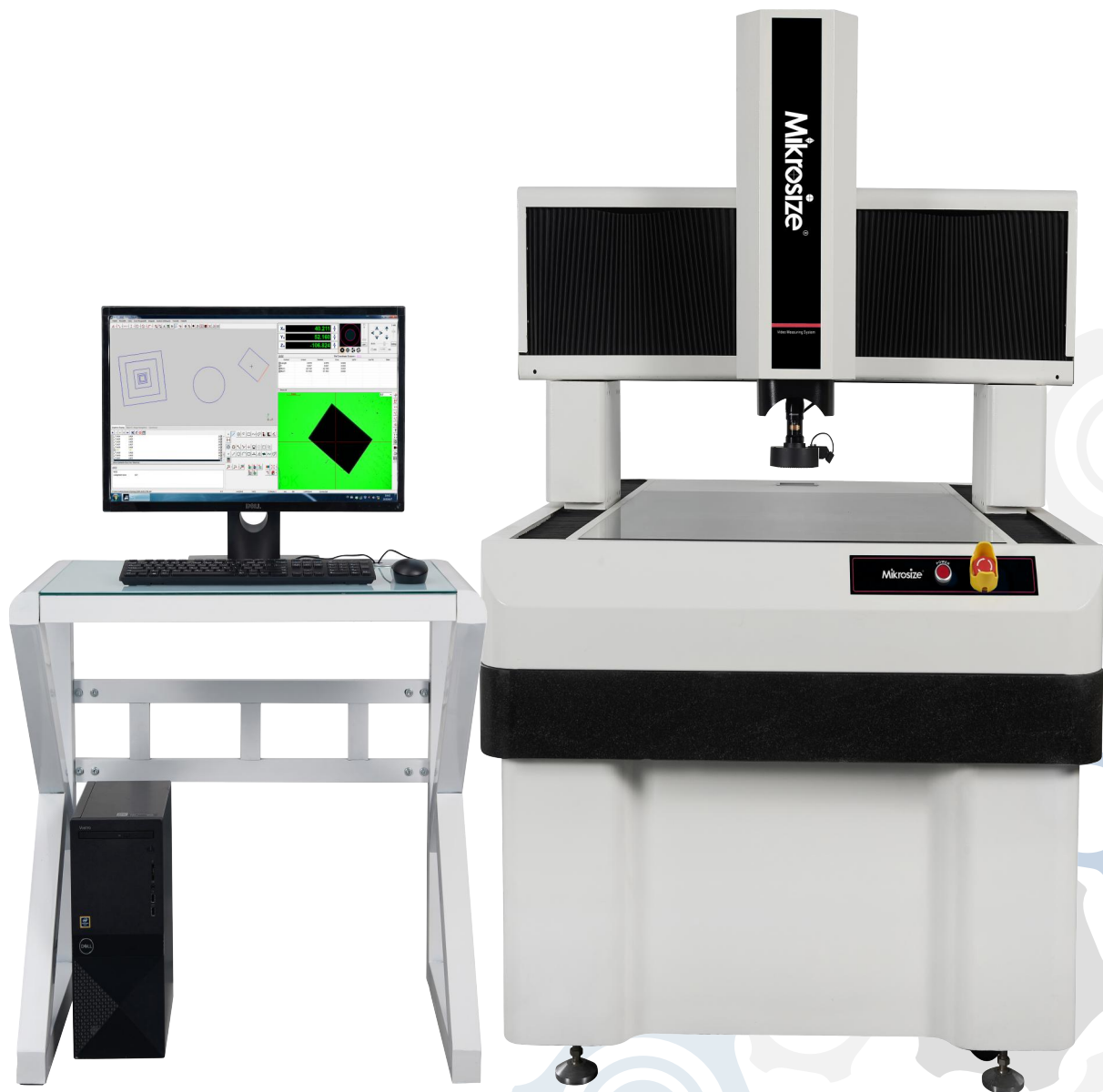
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VMG Automatic Gantry CNC Video Measuring System Description

- Moving gantry structure,measuring specimen fixed on stage.
- CNC fully auto close loop control, auto measurement.
- Precise "00" grade "JINANQING" marble base and pillar ensures corrosion resistant,and working stability.
- Automatic zoom lens with electronic position, easily to change magnification.
- CNC fully automatic precisely control X-Y-Z-axis movements.
- Linear scale, resolution is 0.5um, high accuracy, great stability.
- Precise linear guide, grinding ball screw and AC servo motor, ensure accuracy stability of system position.
- Programmable 5-ring 8-division LED surface illumination, contour parallel LED illumination, can realize 256 grade brightness adjustment intelligently.
- Microsize measuring software, with fast focus, auto Edge finding, diverse reports output. SPC data analysis on line. Auto measuring can be set.
- High definition color industry camera, ensure clear observation and stable measurement requirement.

VMG CNC Automatic Video Measuring System Application

- It is widely used in machinery manufacturing, electronics, automobile, hardware, plastic, mold and other industries.
- It can accurately measuring workpiece size,shape,position tolerance, so as to complete the tasks of components inspection, shape measurement, process control and so on.

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VMG Automatic Gantry CNC Video Measuring System Specification

Product Name		Fully Auto Video Measuring System	
2.5D Model		VMG-8010	VMG-1012
3D Model		VMG-8010P	VMG-1012P
Stage Travel(mm)X/Y/Z		800x1000x200	1000x1200x200
Machine Dimensions(mm)		1890X1362X1620	2090X1562X1620
Accuracy(μm)		E1(x/y)=(3.5+L/100) , L=length to be measure in mm	
Load weight of worktable		30kg	
Net Weight(KG)		1000	1200
Optical system	Image Sensor	1/2" color CCD camera	
	Objective	Auto Coaxial Zoom Lens	
	Magnification	Optic:0.7x~4.5x, Video:20x~148x	
	Working Distance	92mm(standard)	
Object field of view		11.1~1.7mm(standard)	
Resolution		0.5μm	
Driving System		X,Y,Z-axis Screw Driving	
Movement Control		CNC-servo Movement Control System	
Speed	X.Y-axis	300(mm/s)	
	Z-axis	50(mm/s)	
Illumination	Contour	Adjustable 256-grade LED Cold illumination	
	Surface	Adjustable 256-grades 5-Ring & 8-Division LED Cold illumination	
Measuring Software		Mikrosize	
Working Environment		Temperature: 20℃±2℃, Temperature Variation<2℃/hr,Humidity:30~80% Vibration<0.002g,15Hz	
Power Source		AC 100~220V 50/60HZ 10A	

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VMG Automatic Gantry CNC Video Measuring System Standard Delivery

| Product Name	Product Name	Product Name
Measuring Software	CCD Camera/Video Capture Card	Motorized Coaxial Zoom Lens
Mainframe/Dell PC System	Scale Transfer /Movement Control Card	8 –Division LED Illumination
Linear Scale/Calibration Block	100mm Length Block(3D)	Renishaw Probe (3D)

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• The Mikrosize 3D-M software with simple interface, intuitive operation, easy operation and powerful functions, users can complete the measuring task quickly and efficiently.

1.Simple and friendly interface

• The commonly functions are in the main interface , which is easy to be familiar with.
• Users can complete almost all measurement task by simply clicking and dragging the mouse.
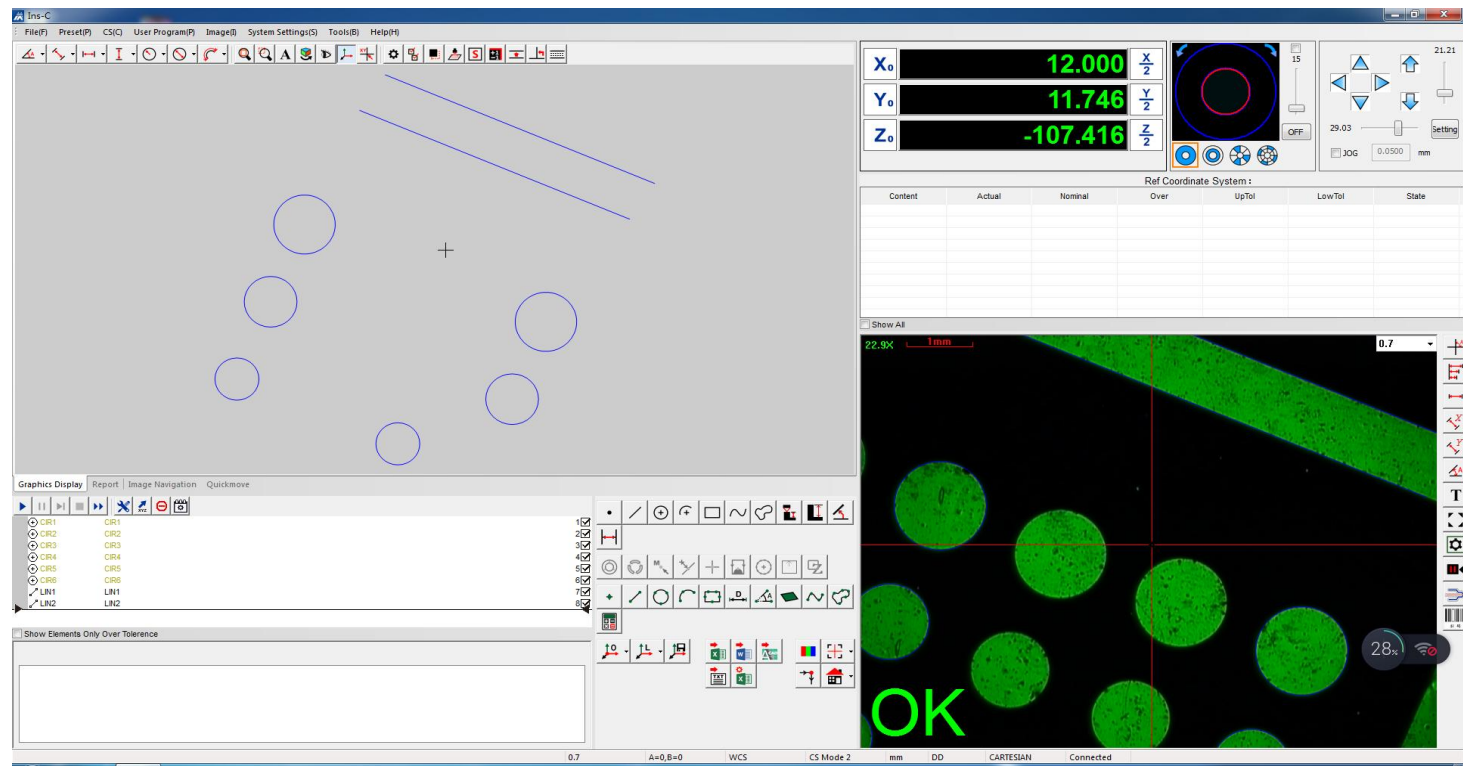
## 2.Powerful geometric measurement function

2.1. Complete geometric measurement function

• Measurement of points, lines, arcs, circles, rectangles, ellipses, bond length (waist features), open curves, closed curves, planes, cylinders, cones, balls and other geometric elements.
• When a probe or laser displacement sensor is added to the z-axis, 3D graphic elements such as cylinder, cone, sphere and surface of 3D space can be measured. According to the actual characteristics of elements, each element can be measured by a variety of different methods.
• The coordinate value, length, area, volume and other data of the element can be obtained directly after edge searching.
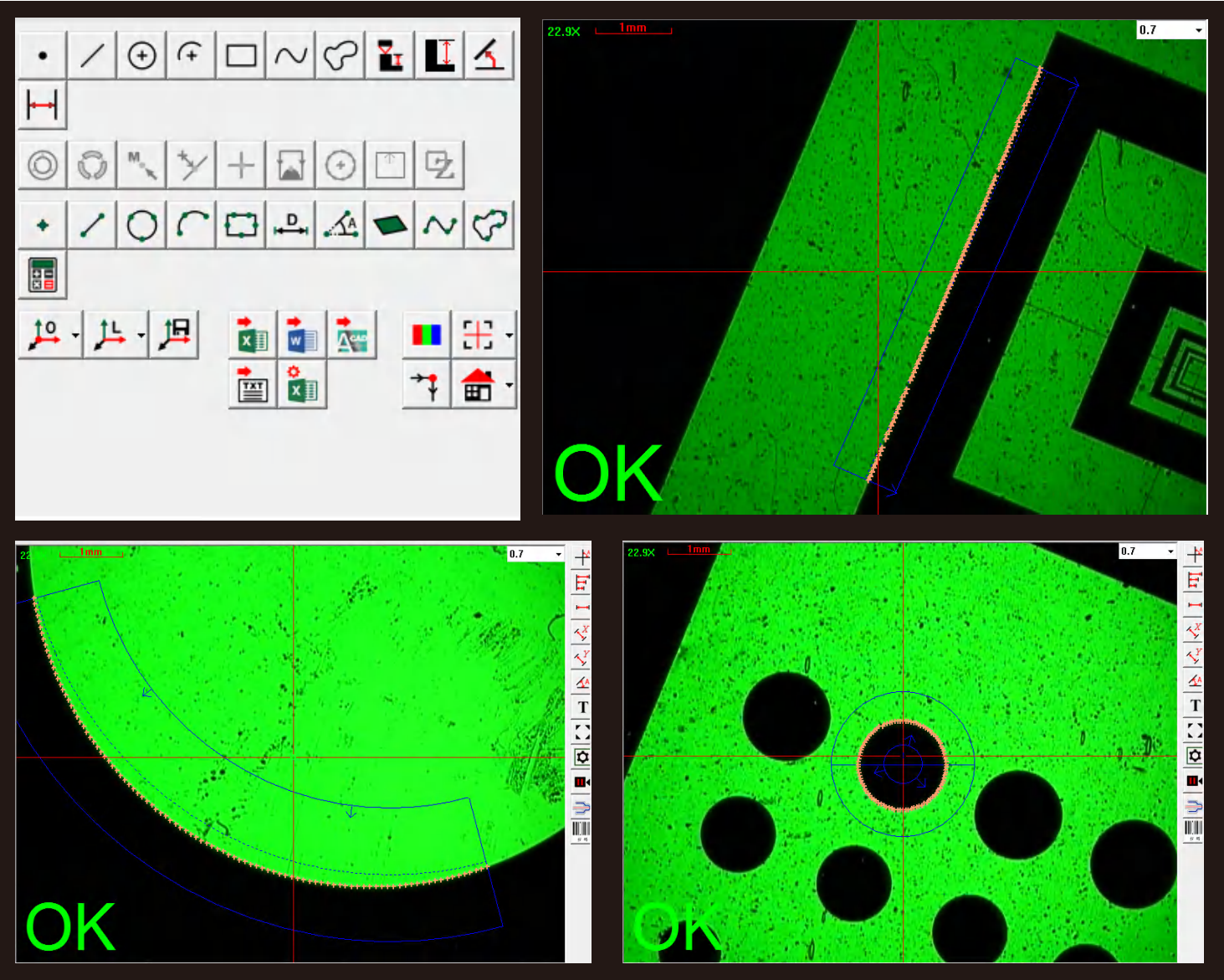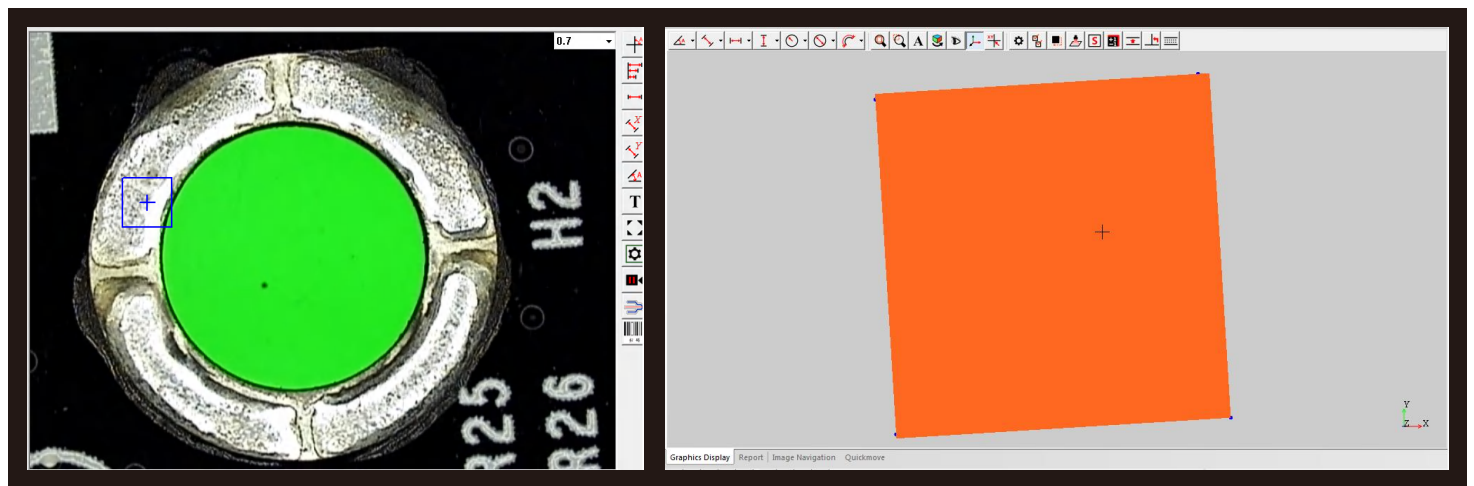
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Mikrosize3D Measuring Software

• It can grasp the weak edge, set the edge searching direction arbitrarily, avoid the edge selection error, set the edge searching parameters flexibly, and remove the influence of the rough selvedge.
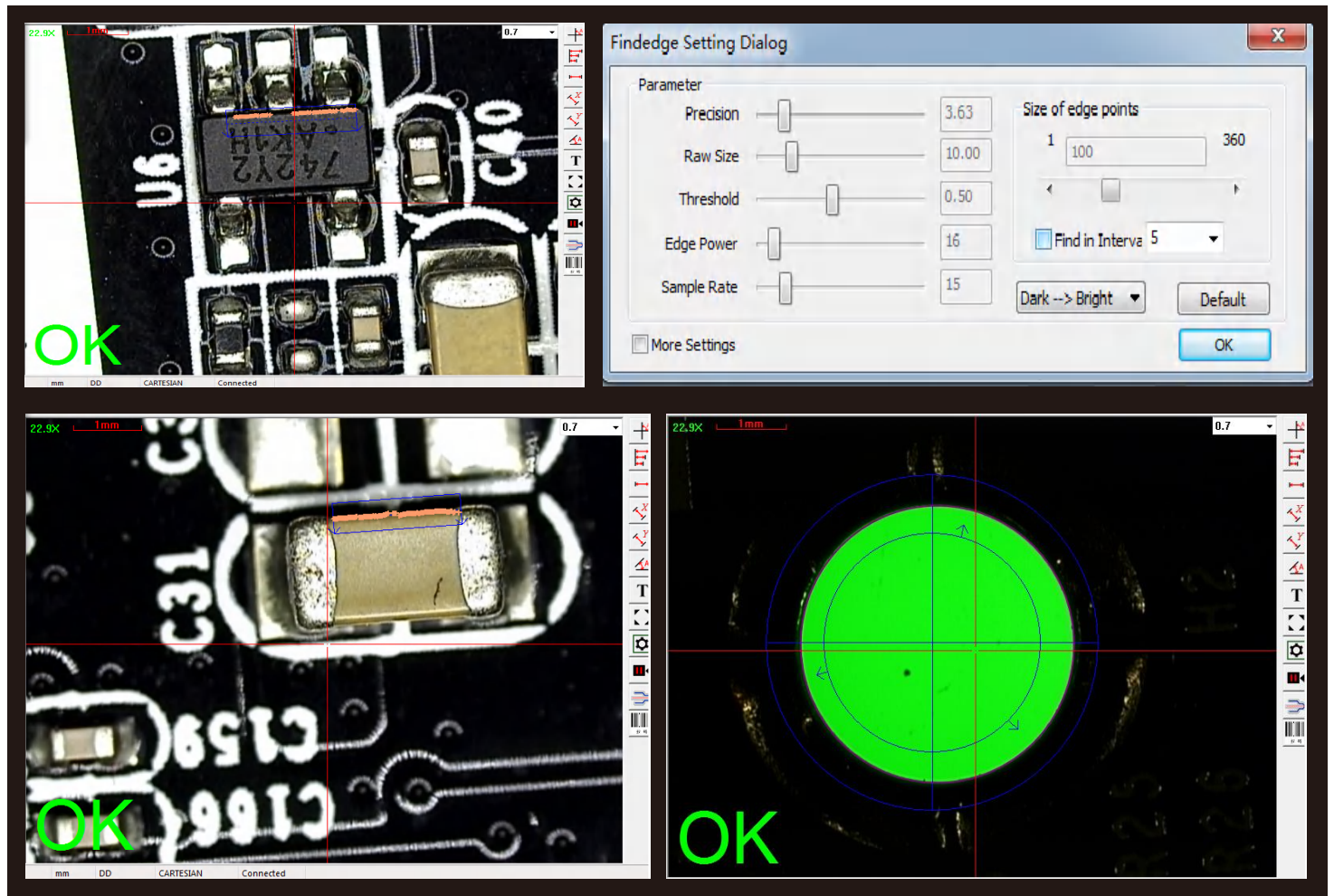
3. Auto focus function and focus measurement function

• The software can automatically determine whether the focus is the clearest or not. This function can also be used to measure height and flatness.

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Mikrosize3D Measuring Software

4.Fast response to measurement of complex shape workpiece and mass workpiece (special function of automatic machine)

4.1.Translational array measurement of elements

• For equidistant feature elements, only one element needs to be measured manually, and then all elements can be measured automatically through the translation array function, which is very convenient to measure array features.
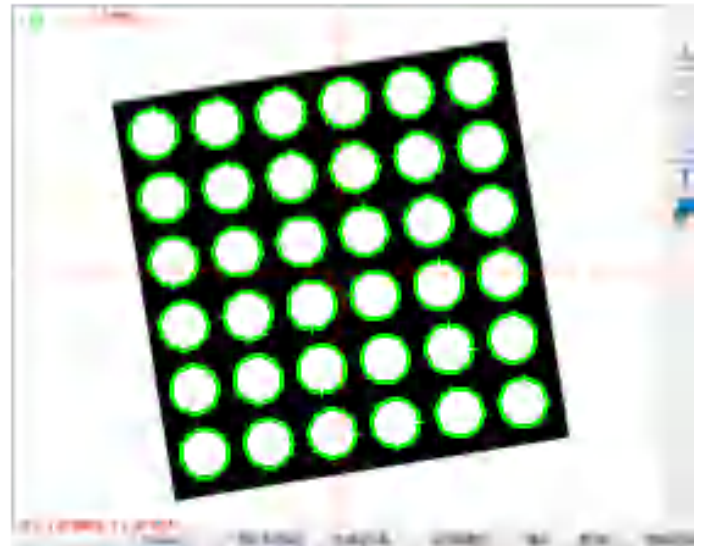
### 4.2.Workpiece array and array macro measurement (special function of automatic Machine)

• When a large number of workpieces are measured, only one workpiece can be measured manually, and all workpieces can be measured automatically through the workpiece array and array macro function.

• Whether a single fixture or multiple fixtures can deal with it at the same time. It can save time and improve measurement efficiency.
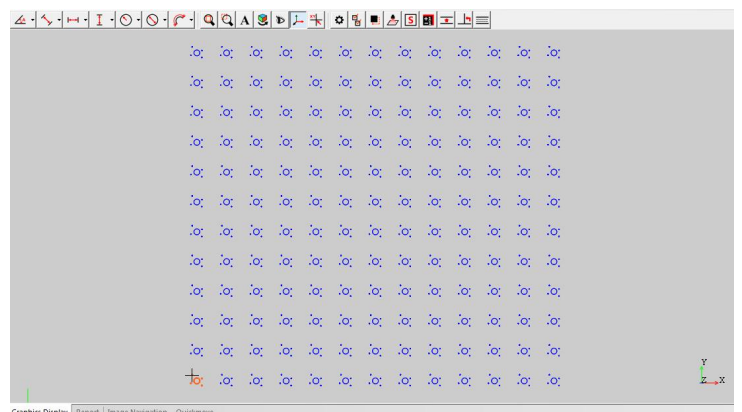
4.3.Import CAD drawing function measurement

• The dimension drawing can be done directly by CAD software, and the automatic measurement can be realized after importing the software, and there is no need to collect points for edge searching.

• It is very convenient for coordinate measurement and contour contrast measurement of complex or irregular shapes.
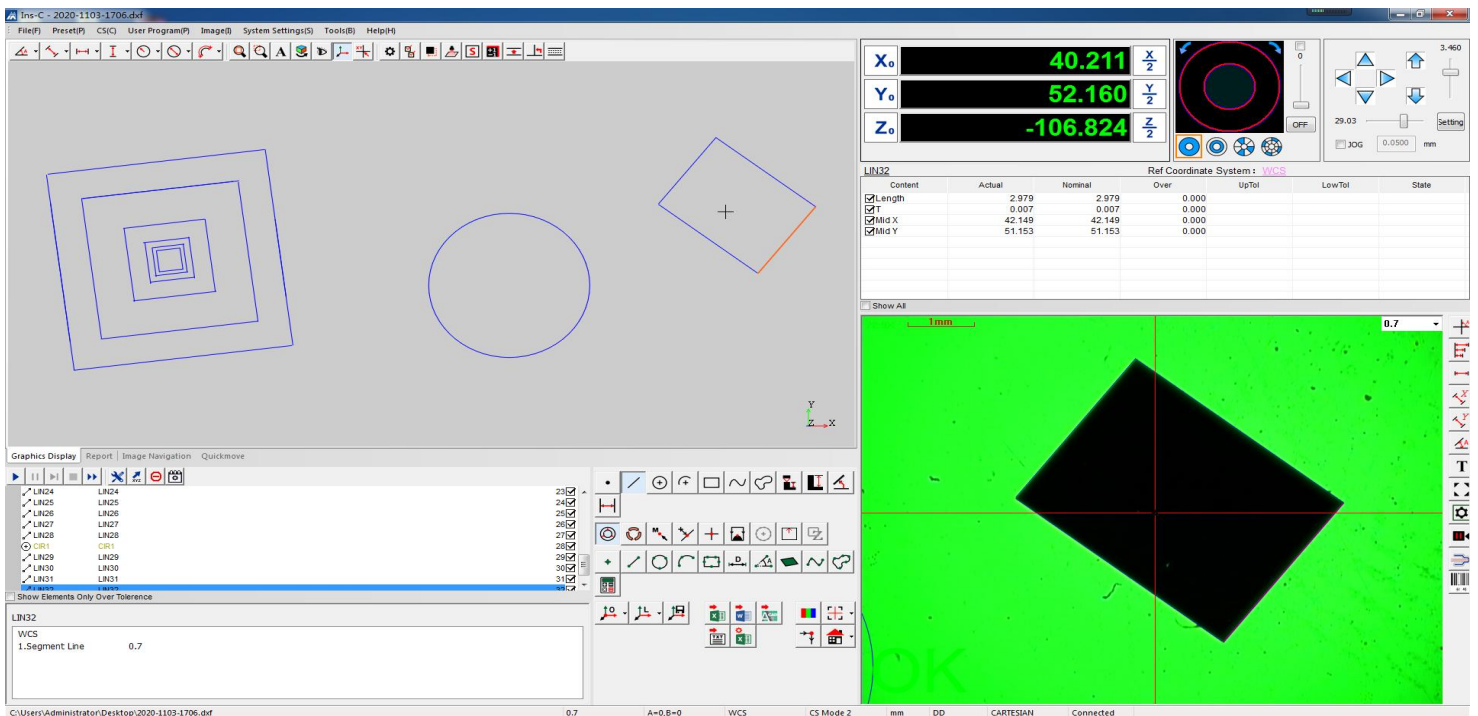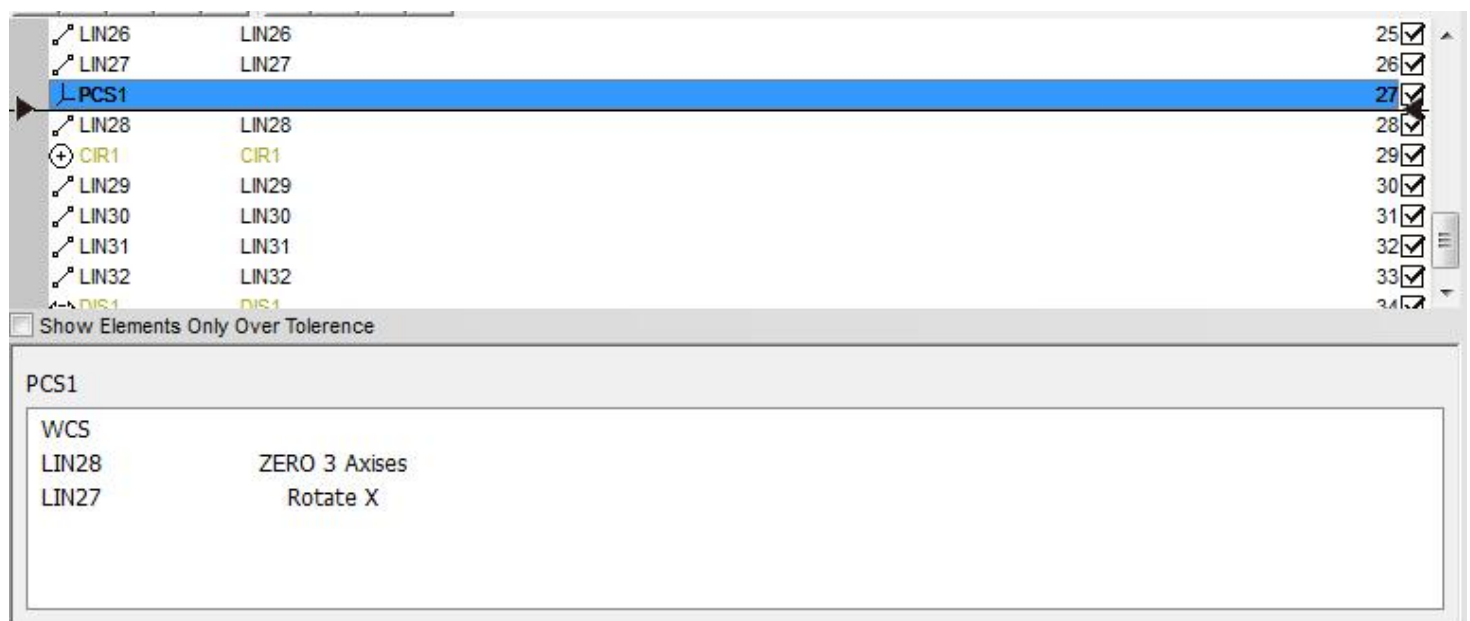

4.4.Comparative measurement function

• The scale line, angle line and standard circle can be preset for comparative measurement of workpiece.

• The dimension line or angle line can also be drawn directly on the image outline,observe the length, angle, step height and diameter of the workpiece dynamically.
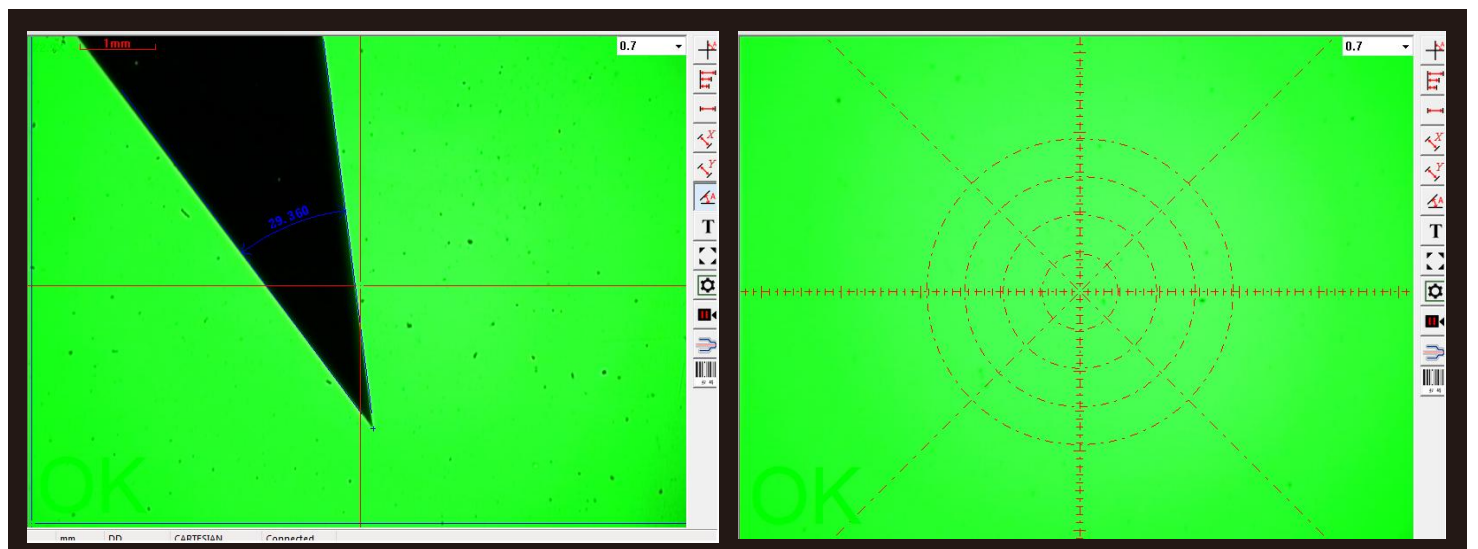
5.Flexible user program

• The software automatically compiles the user program according to the sequence of user measurement steps. And control the program running, stop.

• The user program and each step can be edited, sorted, inserted, deleted , which can adapt to various complex and changeable measurement steps.

• When measuring a large number of workpieces, only one edge finding measurement is needed.

LIN26	LIN26	25 ☑
LIN27	LIN27	26 ☑
PCS1		27 ☑
LIN28	LIN28	28 ☑
⊕ CIR1	CIR1	29 ☑
LIN29	LIN29	30 ☑
LIN30	LIN30	31 ☑
LIN31	LIN31	32 ☑
LIN32	LIN32	33 ☑
DIS1	DIS1	34 ☑

☐ Show Elements Only Over Tolerence

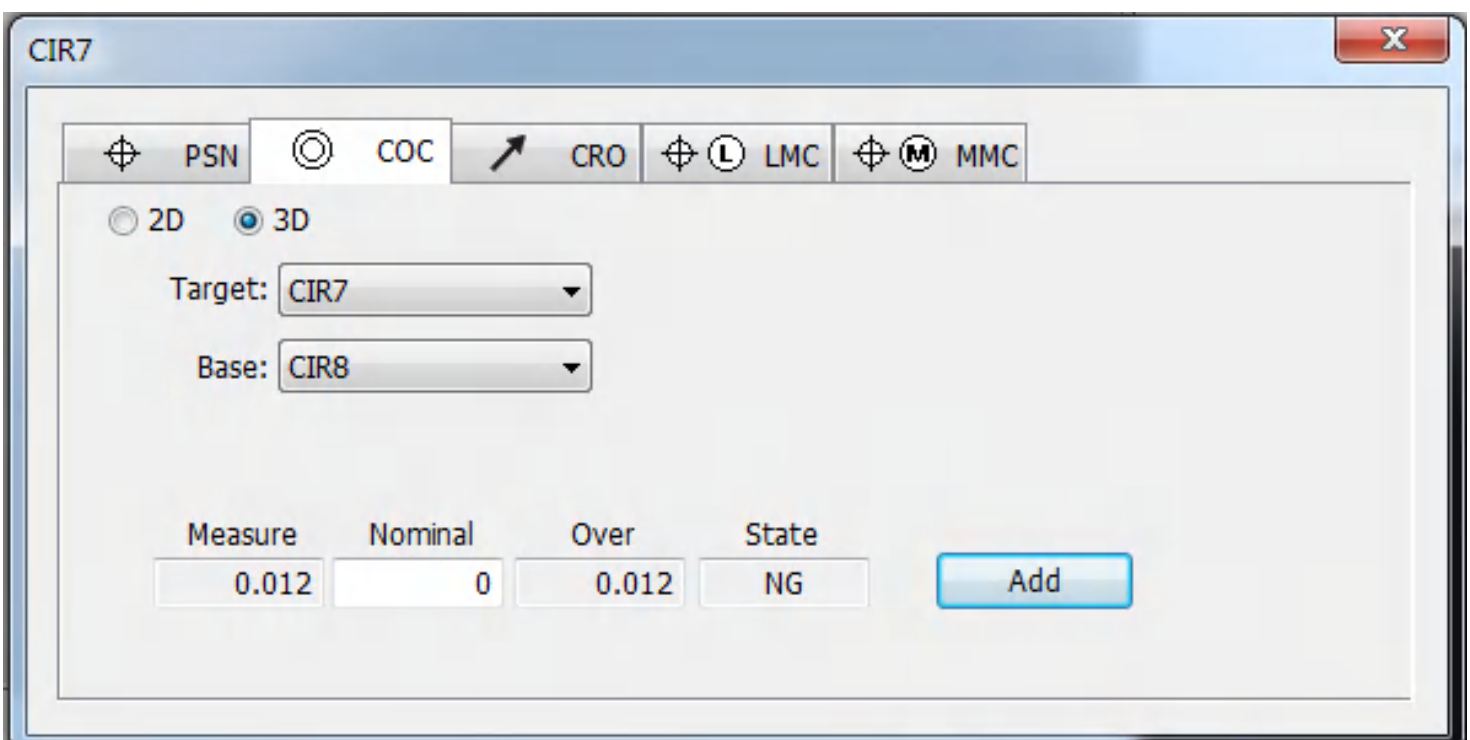| PCS1		
WCS		
LIN28	ZERO 3 Axises	
LIN27	Rotate X	

6.Automatic calculation of geometric tolerance of elements

• The software provides complete tolerance setting and calculation functions, which can set and calculate geometric tolerances such as straightness, roundness, flatness, cylindricity, profile, position, parallelism, perpendicularity, concentricity, circle runout, etc.

• It can automatically judge whether the tolerance is OK or NG, and has NG warning and prompt function. The visualized tolerance chart enables users to know the specific out of tolerance position and find out the cause of out of tolerance conveniently.

CIR1   Ref Coordinate System : PCS1

Content	Actual	Nominal	Over	UpTol	LowTol	State
☑ Center X	10.527	10.527	0.000			
☑ Center Y	-2.613	-2.613	0.000			
☑ Diameter	5.088	5.088	0.000	0.030	-0.030	OK
☑ T	0.000	0.000	0.000			
☑ Circularity %	100.000	0.000	100.000			

CIR5   Ref Coordinate System : PCS1

Content	Actual	Nominal	Over	UpTol	LowTol	State
☑ Center X	44.624	44.624	0.000			
☑ Center Y	-34.724	-34.724	0.000			
☑ Diameter	3.987	3.987	0.000	0.030	-0.030	OK
☑ T	0.031	0.031	0.000			
☑ Circularity %	99.201	0.000	99.201			

☐ Show All

CIR7

⊕ PSN   ◎ COC   ↗ CRO   ⊕ Ⓛ LMC   ⊕ Ⓜ MMC

○ 2D   ● 3D

Target: CIR7 ▾

Base: CIR8 ▾

|	Measure	Nominal	Over	State	
	0.012	0	0.012	NG	Add

7. Diversified data report and graphic data leading-out function

• The software can lead-out the result data in a variety of report formats, EXCEL,WORD, TXT , and support the excel report format setting function.

Content	CIR2-Diameter	CIR3-Diameter	CIR4-Diameter	CIR5-Diameter	CIR6-Diameter	CIR7-Diameter	CIR8-Diameter	CIR1-Diameter	DIS1-平面距离	OK/NG	Time
Nominal	2.98	2.534	3.987	3.987	3.987	3.987	4.006	5.088	5.148		
Up Tolerence	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03		
Low Tolerence	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03		
Up Value	3.01	2.564	4.017	4.017	4.017	4.017	4.036	5.118	5.178		
Low Value	2.95	2.504	3.957	3.957	3.957	3.957	3.976	5.058	5.118		
#1	2.98	2.534	3.987	3.987	3.987	3.987	4.006	5.088	5.148	OK	20201103-17:22:11
#2	2.98	2.534	3.987	3.987	3.987	3.987	4.006	5.088	5.148	OK	20201103-17:22:37
#3	2.98	2.534	3.987	3.987	3.987	3.987	4.006	5.088	5.148	OK	20201103-17:22:38
#4	2.98	2.534	3.987	3.987	3.987	3.987	4.006	5.088	5.148	OK	20201103-17:22:50
#5	2.98	2.534	3.987	3.987	3.987	3.987	4.006	5.088	5.148	OK	20201103-17:22:51

• The software can lead-out DXF and IGS format graphics data, and can be directly used in reverse engineering.
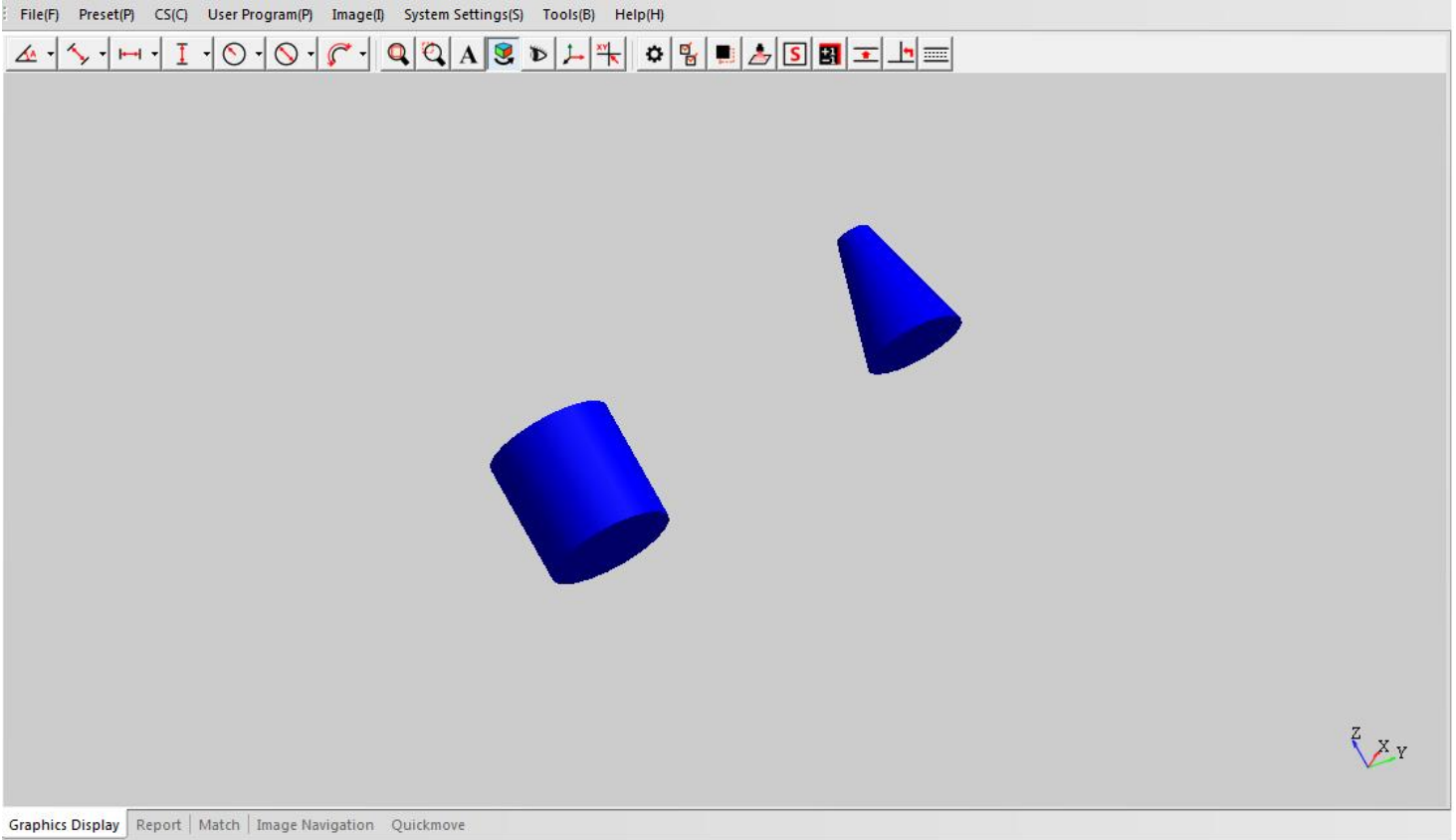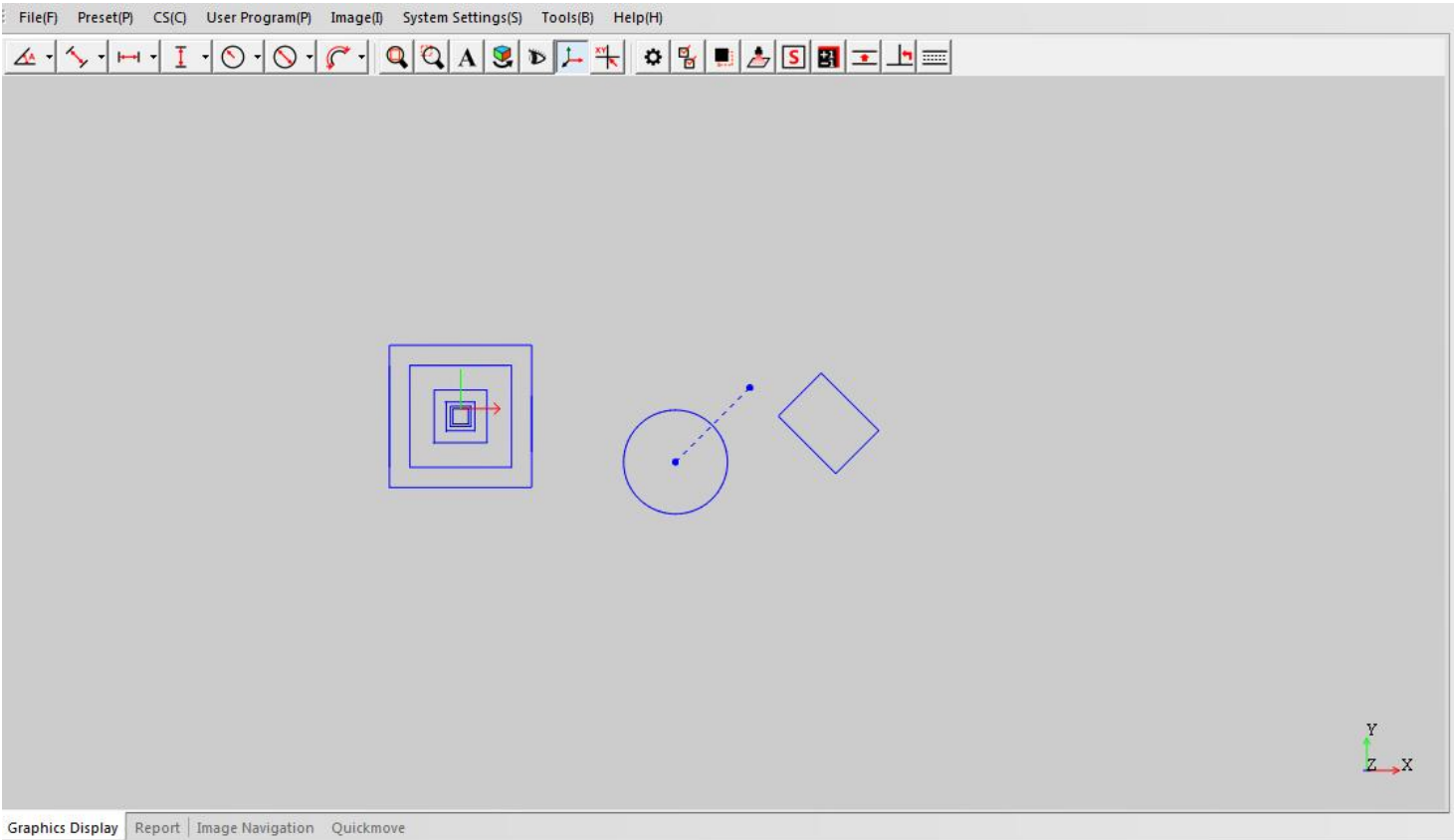
8.Peripheral connection function(optional)

• The software supports the connection of probe, laser sensor, white light sensor, manipulator and other external devices, and can integrate these devices to measure the height and 3D size of workpiece more accurately.