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OPERATION MANUAL

**Model ISM-PM200S
DIGITAL MICROSCOPE WITH STAND**



1. Description of each part

1.1 Stand



- ① Focus adjustment
- ② Lock screw
- ③ Fix ring

1.2 Digital microscope



1.3 Focus support ring



- ① Focus support ring for 80X/150X magnification
- ② Focus support ring for 60X/200X magnification

1.4 Calibration rule



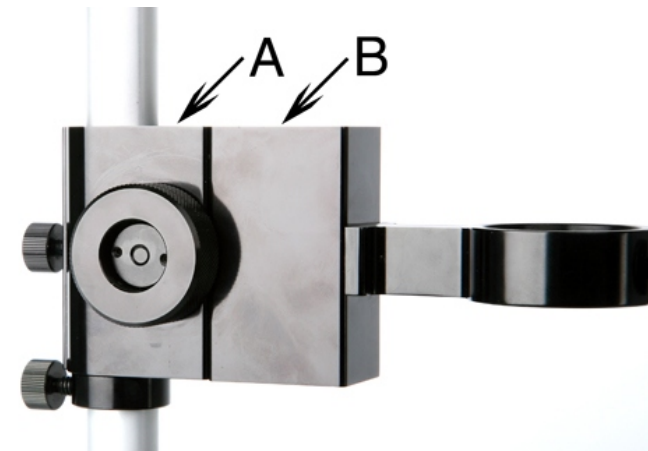
- ① Calibration rule graduation 0.1mm
- ② Calibration rule graduation 1mm

2. Install software

System required: Windows XP or Vista.
The installation program starts automatically after the disk is put into CD-ROM. Click "install software" to install the software.

3. Use digital microscope with stand

3.1. Make the surface A and B in the same level as below picture.



3.2. Install the stand, Fig.1 is shown for fine adjustment by left-hand. Fig.2 is shown for fine adjustment by right-hand.



3.3. Take off the focus support ring. Insert the digital microscope into the hole and fix it with the screw ①. Make sure the magnification indication ② faces to you as below picture.



3.4. Connect the microscope to USB port and turn on it (see Fig.3). Run ISM-PM200 partner, you can see the video on the screen.



Fig.3

3.5. Rotate Magnification Adjustment ③ of microscope to adjust the magnification of the picture on the screen (see Fig.4). Hold the microscope with hand during adjustment. Rotate the Focus adjustment ① of the stand to focus.



Fig. 4

3.6. Read magnification. For example, the magnification is 42X in Fig.5. The magnification is 70X in Fig.6. The magnification is 200X in Fig.7.



Fig. 5



Fig. 6



Fig. 7

3.7. When the magnification is larger than 60X, set magnification at 60X first and focus in order to capture the picture on the screen, then set magnification at desired times. The below table shows the relation between the magnification and the working distance (see Fig.4).

Magnification	Working distance	Magnification	Working distance
10X	125mm	80 X	13mm
20X	62mm	90 X	11mm
30X	32mm	100 X	9mm
40X	28mm	120 X	12mm
50X	25mm	150 X	13mm
60X	18mm	200 X	18mm
70X	15mm		

4. Use digital microscope without stand

Install the focus support ring. Set the magnification at 60X or 200X with focus support ring marked 60X/200X. Set the magnification at 80X or 150X with focus support ring marked 80X/150X. Let the focus support ring contact the surface of the object, rotate the "Magnification Adjustment ③" to focus.



5. Measurement with ISM-PM200 partner software

5.1 Take picture



Read the magnification and input it into the "Scale" box (see Fig.8), take a picture by pressing the "Snapshot Button ①" on the microscope or click  at the upper-left corner of screen. The picture will appear in the left hand column.



Fig.8

5.2 Measurement

Double click on the picture in the left hand column. The magnification will appear in the "Scale" box. Click  to make measurement. **Note: The accuracy is not good when the magnification is less than 60X.**



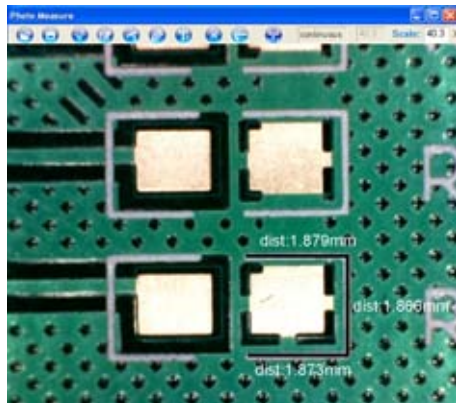
5.2.1 Line Length Measurement

- ① Click at the start point.
- ② Draw a line to the end point and click.



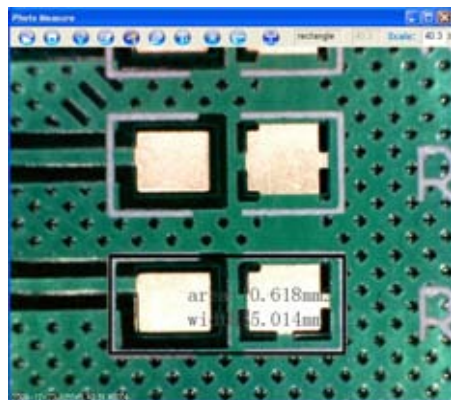
5.2.2 Continuous Line Length Measurement 

- ① Click at the start point.
- ② Draw a line to the second point and click.
- ③ Draw a line to the next point and click....
- ④ Double click at the end point.



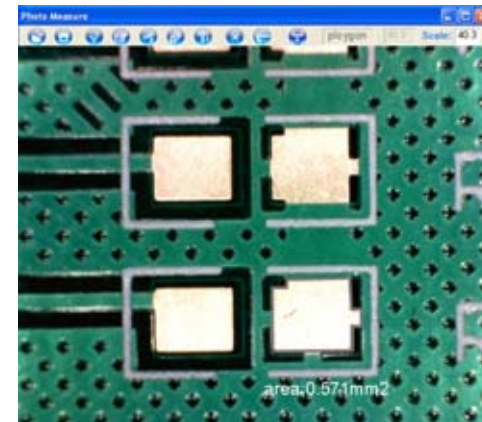
5.2.3 Rectangle Area Measurement 


- ① Click at the corner of the rectangle.
- ② Draw a rectangle to cover the region and click.



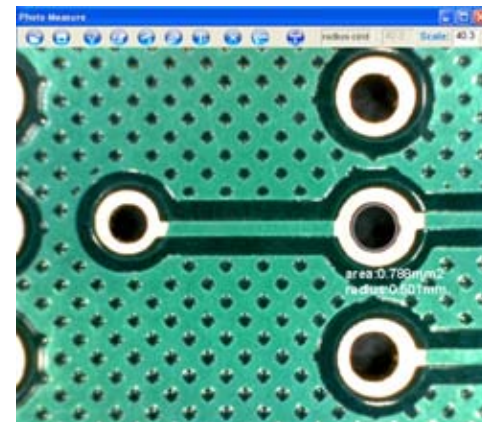
5.2.4 Polygon Area Measurement 

- ① Click at a corner.
- ② Draw a line to the second corner and click.
- ③ Draw a line to the next corner and click...
- ④ Come back to the start corner and click



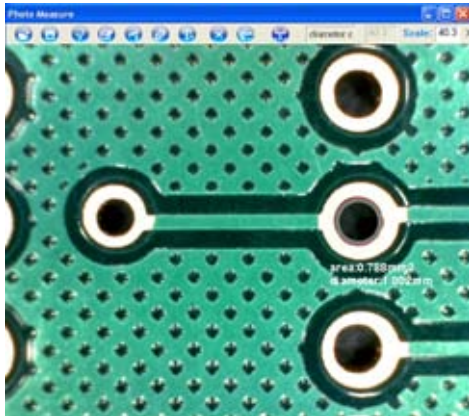
5.2.5 Circle Radius Measurement 


- ① Click at the center of a circle.
- ② Draw a circle to cover the region and click.



5.2.6 Circle Diameter Measurement 


- ① Click at a point of circumference.
- ② Draw a circle to cover the circumference and click.



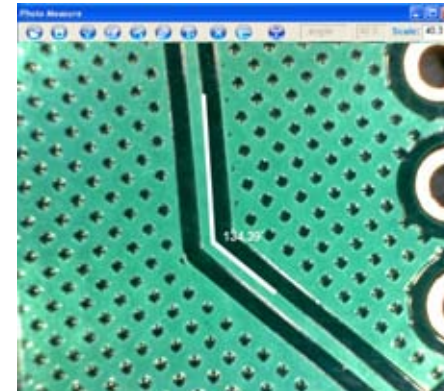
5.2.7 Circle Measurement With Three Points 


- ① Choose the first point on the circumference and click.
- ② Choose the second point on the circumference and click.
- ③ Choose the third point on the circumference and click.



5.2.8 Angle Measurement 

- ① Click at a point of one side of the angle.
- ② Draw a line to cross point and click.
- ③ Draw a line to a point of another side of the angle and click.



5.2.9 Angle Measurement With Four Points 

- ① Click at a point of one side of the angle.
- ② Draw a line to the second point of this side and click.
- ③ Click at a point of another side of the angle.
- ④ Draw a line to the second point of that side and click.



5.2.10 Unit 

This function allows change the unit in mm, mil or inch.

6. Calibration

In order to get the high accuracy, calibration should be made before measurement.

6.1. Put the object under the microscope. Set the magnification and focus as chapter 3.5, 3.7 or 4. Read the magnification as chapter 3.6 and input it into the "Scale" box. For example, the magnification is 200X in Fig.8.

6.2. When the magnification is less than 60X, select the calibration rule graduation 0.1mm for calibration. When the magnification is larger than 60X, select the calibration rule graduation 1mm for calibration.

The side with graduation should face up and a white paper should be put under the rule to make the graduation visible.

6.3. If necessary, rotate the "Focus adjustment ①" of stand to focus (**Note: do not turn the Magnification Adjustment ③ of the microscope**).

6.4. Take a picture as chapter 5.1. Double click the picture.

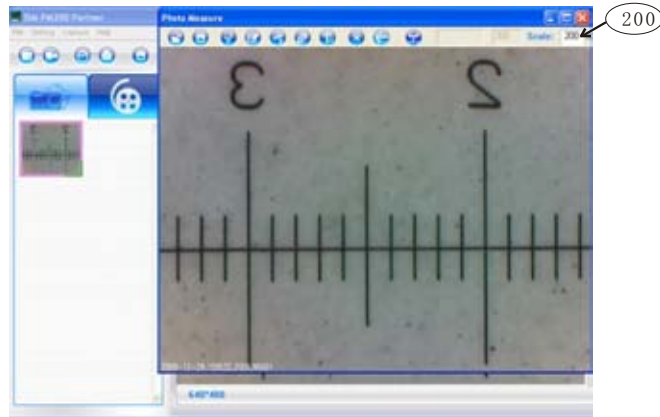

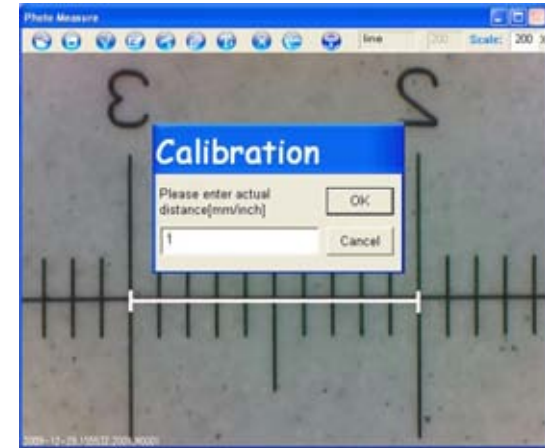
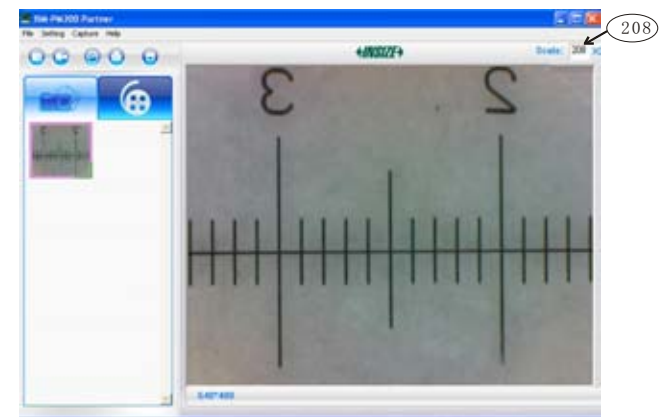


Fig.8

6.5. Click the calibration button , draw a line(such as 1mm in the below picture). Input the exact value of the line (1mm in the below picture) and then click "OK". Close the picture.



6.6. The magnification in the "scale" box is adjusted according to the calibration. The previous magnification is 200X in Fig.8. Now it is 208X in below picture.



6.7 Remove the rule and put the object under the microscope. Now you can take picture and measure the object.

6.8 If the magnification in the "scale " box is not changed and the "Magnification Adjustment" ③ is not turned, you can make measurement without new calibration. If necessary, rotate the "Focus adjustment" ① of stand to focus.

For more information. You can refer to the manual on the CD.