+INSIZE+

www. insize. com

**ISM-PRO SOFTWARE
DIGITAL MICROSCOPE
OPERATION MANUAL**

+INSIZE+

Description

① ISM-PRO software is for ISM-PM200SA, ISM-PM600SA, ISM-PM160L digital microscopes. It contains many functions, such as taking picture, taking video, measuring and so on.

② Operating system: Windows XP, Vista, Win7.

③ The below table shows relationship between magnification and accuracy.

ISM-PM200		ISM-PM600		ISM-PM160L	
Magnification	Accuracy	Magnification	Accuracy	Magnification	Accuracy
50X	30µm	450X	6µm	50X	30µm
100X	15µm	500X	6µm	100X	15µm
150X	10µm	550X	5µm	160X	10µm
200X	8µm	600X	5µm		

Software Installation

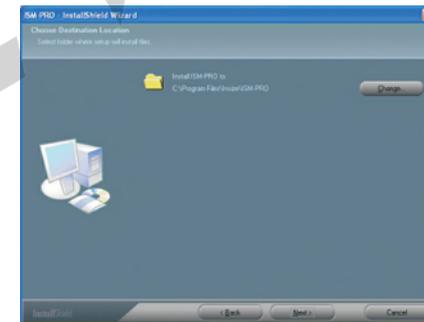**Note: When installing the software, login computer as administrator.**

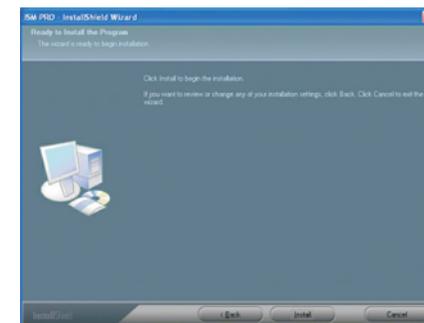① Put ISM-PRO software disc into CD ROM, and then launch "ISM-PROsetup.exe". As the following picture:
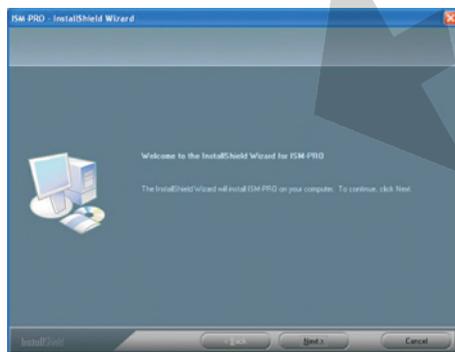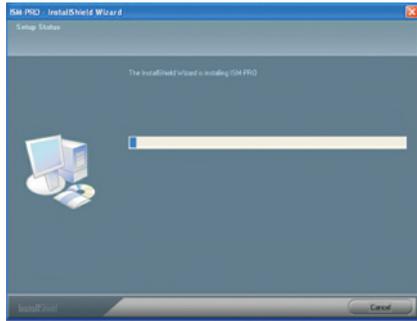

② Click "Next". As the following picture:

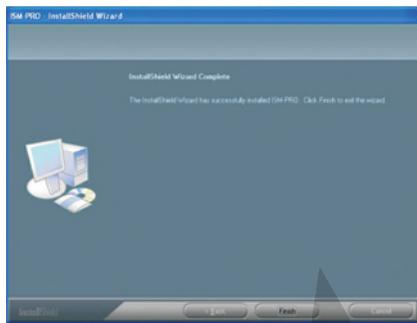③ Select the "I accept the terms of the license agreement", and click "Next". As the following picture:

④ Click "Change", change the installed path if needed. Click the "Next". As the following picture

⑤ Click "Install", run "ISM-PRO Install Shield Wizard". As the following picture:

⑥ Click "Finish", finish the software installation.
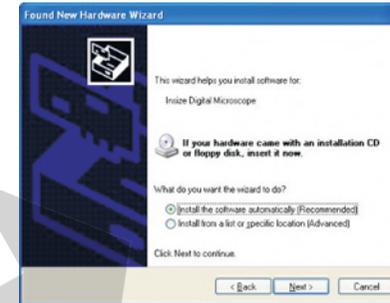

⑦ After installation, a software icon is shown on the desktop. Double-click the icon to run the software.

⑧ Connect the microscope to the computer USB port, turn on the power of microscope. The following picture will be shown on desktop.

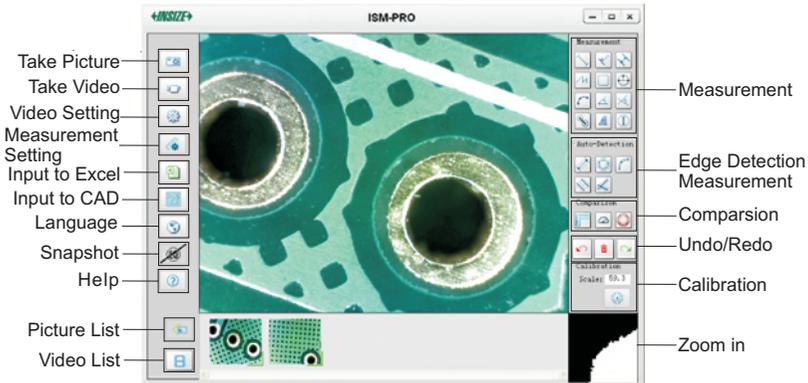⑨ Select "No, not this time". Click the "Next". As the following picture:

⑩ Select "Install the software automatically (Recommended)". Click the "Next". As the following picture:

⑪ Click "Continue Anyway", and then wait for a second. Click "Finish", finish installation.

Software Introduction

Labels (left side): Take Picture, Take Video, Video Setting, Measurement Setting, Input to Excel, Input to CAD, Language, Snapshot, Help, Picture List, Video List

Labels (right side): Measurement, Edge Detection Measurement, Comparsion, Undo/Redo, Calibration, Zoom in

① Take Picture

Take a picture by pressing the button in the software. The picture appears in the bottom column. Double-click the picture into "Image Process". Right-click the picture, the picture can be saved, deleted, etc.

② Take Video

Set "Frame rate", "Time limit", "Resolution". Click "OK", and then take video. The video appears in the bottom column. Double-click the video into "ISM-PRO Play". Right-click the video, the video can be saved, deleted, etc.
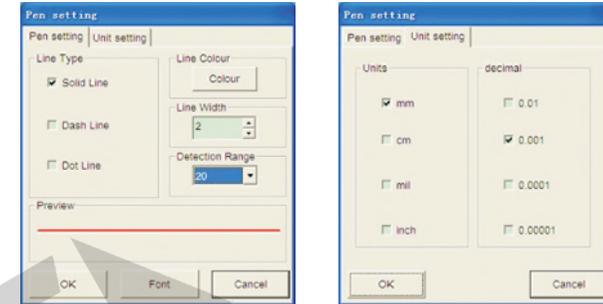
Frame Rate: The number of images display per second. The higher the number of frames play per second, the smoother the video playback appears to the user.

③ Video Setting

Set "Video Capture Device", "Device Setting", "Video Properties" and "Change Save Path".
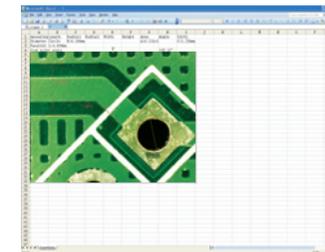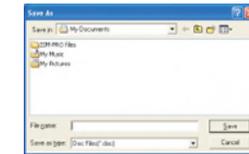
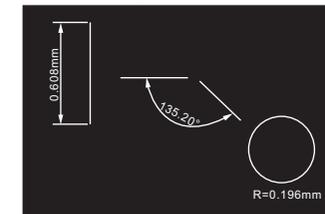**④** Measurement Setting
Set "Line Type" , "Font" and "Unit".

⑤ Input Operation

The picture can be saved as different file types, such as Word, Excel and CAD. Select the function, click "Save", save the file.

Note: If Microsoft Office Starter is installed, the file cannot be saved as Excel.

Input to Excel

Input to CAD

6 Set Language

Set language: English, Japanese, Korean, German, Turkey, Portuguese, Chinese. When installing the ISM-PRO software, it can be set the same language as operating system automatically.

7 Snapshot

Enable or disable snapshot function on the digital microscope. When using the button on the microscope to take picture, the microscope may shake and the picture may be blurred.

8 Help

Click "Help", select "ISM-PRO Help", read user manual. Select "ISM-PRO Update", download the latest software from website. Select "About ISM-PRO ", check software version and copyright .
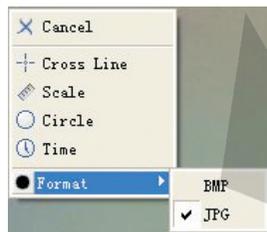
9 Picture/Video List

Click [icon] , picture list is shown in the bottom side. Click [icon] , video list is shown in the bottom side.

10 Undo or Redo

Click [icon] , delete last step. Click [icon] , undo last step. Click [icon] , detect all steps before .

11 Right-click Function: There are several functions , as the following picture.

✕ Cancel
┼ Cross Line
◢ Scale
○ Circle
◷ Time
● Format ▶ | BMP
                 ✓ JPG

a Cancel : End the current operation.

b Cross Line: Click "Cross Line", cross line is shown in the interface, click it again to eliminate cross line.
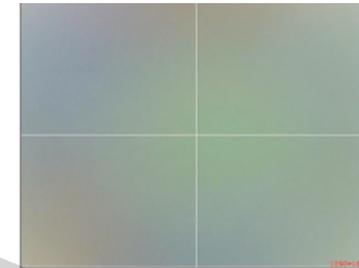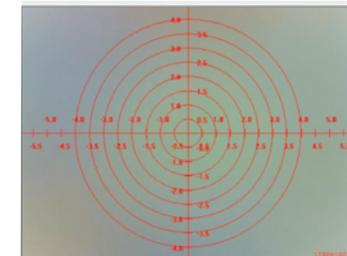
c Scale: Click "Scale", scale is shown in the interface, click it again to eliminate scale.

Note: Before using scale, do calibration.

d Circle: Click "Circle", concentric circles is shown in the interface, click it again to eliminate concentric circles.

Note: Before using circle, do calibration.

e Time: Click "Time", the current time is shown in the bottom of interface, click it again to eliminate time.

f Format : Select photo format, JPG or BMP.

⑫ Zoom in

The partial image is magnified through this window. You can select the points more precise with the help of this function.

ⓐ Put the object under digital microscope, rotate magnification adjustment, and rotate focus adjustment to focus the object.

ⓑ Press any measurement key to make this window display the image where the mouse arrow is positioned.

Note: Please click any measurement key again if you have moved the object or changed the magnification.

ⓒ You can magnify the image by clicking left button in this window and clicking right button to recover.

ⓓ Move the mouse arrow to the target site and use the center point of the window to select points.

Calibration

In order to get the high accuracy, calibration should be done before measurement or comparison.

① Put the object under digital microscope, rotate magnification adjustment, and rotate focus adjustment to focus the object.
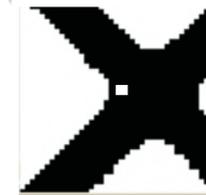
Focus Adjustment

Magnification Adjustment

② When the magnification is larger than 60X, select the calibration rule 0.1mm for calibration. When the magnification is less than 60X, select the calibration rule 1mm for calibration.

③ Remove the object. Put calibration rule on the white side of white/black plate, rotate focus adjustment to focus it.

④ Click 🔘 key, choose a scale mark in the left of interface and get a point at the intersection, then choose a scale mark in the right of interface and get another point at the intersection with same position like before.

Note: The distance of two scale mark shoud be as long as possible.

⑤ Input the exact value of line. Click "OK", the software will display accurate magnification.
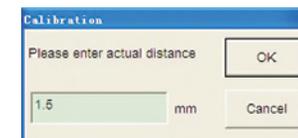
Notes:

ⓐ **The screen will display a prompt window in the lower right corner after you launched the software.**

please calibrate before
measurement.

ⓑ **After calibration, rotate focus adjustment to focus the object. If rotating the magnification adjustment, do calibration again.**

ⓒ **The software remembers the last time calibration results. If the magnification is the same as the last time, you need not do calibration again.**

Measurement On-line

Notes:

ⓐ **Confirm to do calibration before doing measurement.**

ⓑ **Measure different objects in same magnification after doing calibration.**

ⓒ **After calibration, rotate focus adjustment to focus the object. If rotating the magnification adjustment, do calibration again.**
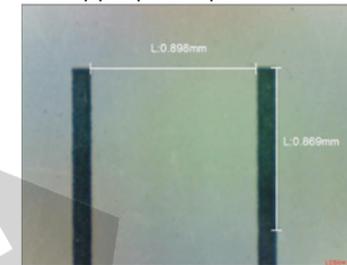
The measurement tool is at the upper-right of screen.
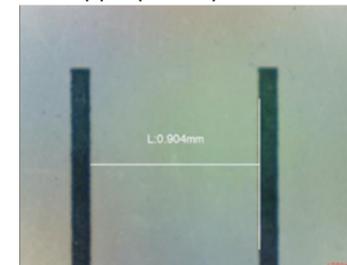
❶ Measure Length of Line or Distance Between Two Points ◺
  ⓐ Click at the start point, draw a line to the end of line and click.
  ⓑ Put result in the appropriate position.

❷ Measure Distance Between Point And Line
  ⓐ Click at the start point, draw a line to the end of line and click.
  ⓑ Click at the point.
  ⓒ Put result in the appropriate position.

❸ Measure Distance Between Two Parallel Lines
  ⓐ Click at the point of one line, draw a line to the other line and click, make sure reference lines and parallel lines in superposition.
  ⓑ Put result in the appropriate position.
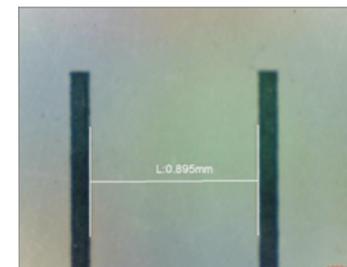
4 Measure Length of Continuous Line ⟋

a Click at the start point, draw a line to the second point and click.
b Put result in the appropriate position.
c Draw a line to the third point and click…
d Double click at the end point.
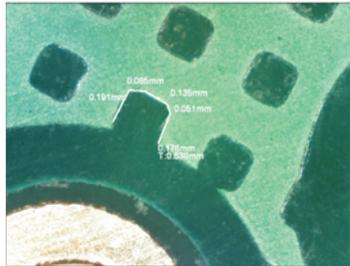
T: Total length of continuous line.

5 Measure Area of Rectangle ▢

a Click at the corner of rectangle.
b Draw a rectangle to the across corner and click.
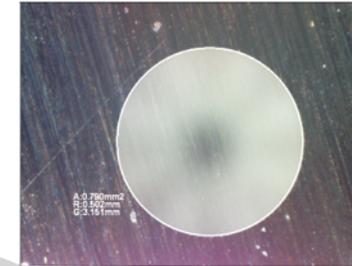**c** Put result in the appropriate position.
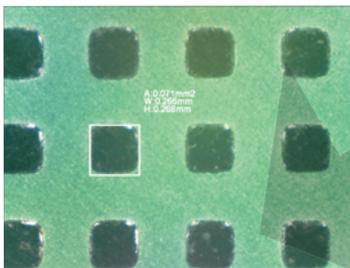
A: Area
W: Length
H: Width

6 Measure Radius, Girth And Area Of Circle ⊕

a Choose the first point on the circumference and click.
b Choose the second point on the circumference and click.
c Choose the third point on the circumference and click.
d Put result in the appropriate position.

A: Area
R: Radius
G: Girth

7 Measure Radius, Angle, Length of Arc ⌒

a Choose the first point on the Arc and click.
b Choose the second point on the Arc and click.
c Choose the third point on the Arc and click.
d Put result in the appropriate position.
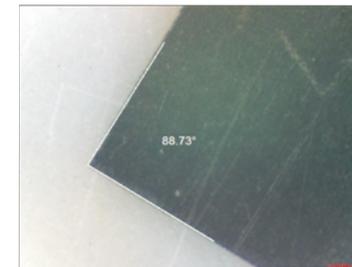

R: Radius
Arc: Length of arc

8 Measure Angle With Three Points △

a Click at a point of one side of the angle, draw a line to cross point and click.
b Draw a line to a point of another side of the angle and click.
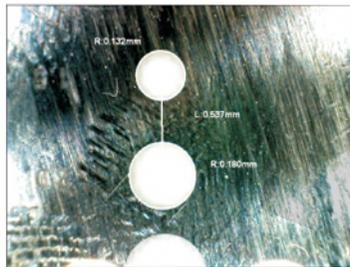**c** Put result in the appropriate position.

9 Measure Angle With Two Lines ⊠

   a Click at a point of one side of the angle, draw a line to the second point of this side and click.

   b Click at a point of the other side of the angle, draw a line to the second point of this side and click.

   c Put result in the appropriate position.

10 Measure Distance Between Two Circles ⊘

   a Click at a point of the first circle. And draw a circle just like Measure Three Points Circle .

   b Put result in the appropriate position.

   c Draw the second circle like the first one.

   d Put result in the appropriate position.

11 Add Number With Circle ①

12 Add Text **A**

   Input text. You can change the font style, click "Font". Click "OK", put words in the appropriate position.

13 Detect Line Automatically And Calculate Length ⊿

   a Automatically searches the highest black-white contrast value by means of image processing.

   b You can select multi points then click the right button to display the length of line.

   c Put result in the appropriate position.

14 Detect Circle Automatically And Calculate Area, Radius, Girth ◎

   a Automatically searches the highest black-white contrast value by means of image processing.

   b You can select multi points then click the right button to display the result. A: Area, R: Radius, G: Girth.

   c Put result in the appropriate position.

15 Detect Arc Automatically And Calculate Radius, Angle, Length ⌒

   a Automatically searches the highest black-white contrast value by means of image processing.

   b You can select multi points then click the right button to display the result. R: Radius, Angle, Arc: Length of arc.

   c Put result in the appropriate position.

16 Detect Two Lines Automatically And Calculate Distance ⊠

   a Automatically searches the highest black-white contrast value by means of image processing.

   b You can select two lines along the edges then click the right button to display the distance.

   c Put result in the appropriate position.

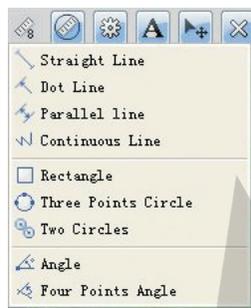**17** Detect Two Lines Automatically And Calculate Angle ⊠

   a Automatically searches the highest black-white contrast value by means of image processing.

   b You can select two lines along the edges then click the right button to display the angle.

   **c** Put result in the appropriate position.

Picture Measurement

Take a picture, double-click the picture into "Image Process". In order to get high accuracy, you can select picture measurement. Measurement on-line is more convenient.

Notes:

ⓐ **Confirm to do calibration before doing measurement.**

ⓑ **Measure different objects in same magnification after doing calibration.**

ⓒ **After calibration, rotate focus adjustment to focus the object. If rotaing the magnification adjustment, do calibration again.**

❶ Measurement Tool : Functions in "Image Process" are the same as measurement on-line.

Straight Line
Dot Line
Parallel line
Continuous Line
Rectangle
Three Points Circle
Two Circles
Angle
Four Points Angle

❷ Edge Detection Measuring Tools : Find the image edge automatically. The working methods are same to measurement on-line.

Auto distance of lines Measurement
Auto Circle Measurement
Auto Angle Measurement
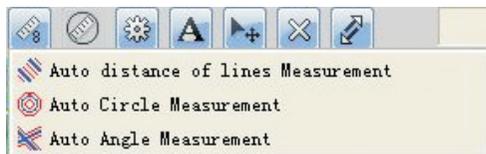
Comparison

Notes:

ⓐ **Confirm to do calibration before doing comparison.**

ⓑ **Measure different objects in same magnification after doing calibration.**

ⓒ **After calibration, rotate focus adjustment to focus the object. If rotating the magnification adjustment, do calibration again.**

Create line, angle or circle with disired size to be compared with workpieces.

❶ Create Line

ⓐ Click at a point, draw a line and click.
ⓑ Input the length of line, click "OK".

ⓒ Press the head of the line and hold the mouse, move the mouse, adjust the line position. Press the tail of the line and hold the mouse, move the mouse, adjust the line length.

Head   Tail
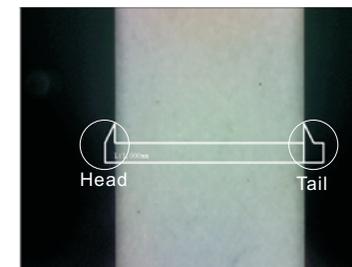
❷ Create Angle

ⓐ Input angle vertex coordinates, click "OK".

ⓑ Press the angle vertex and hold the mouse, move the mouse, adjust the angle position. Press the angle edge and hold the mouse, move the mouse, adjust the angle.
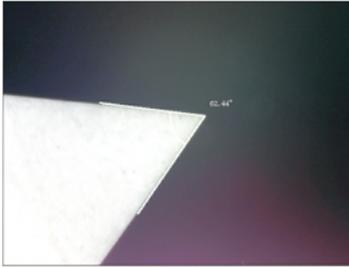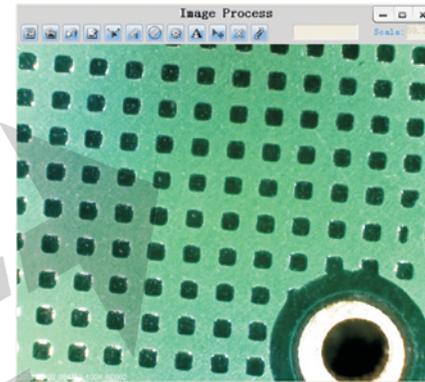
3 Create Circle With Tolerance
  a Input radius and tolerance values, click "OK".
  b Press the center of circle and hold the mouse, move the mouse, adjust the tolerance circle position.
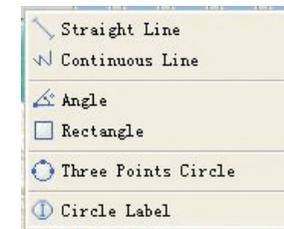

Circle
Radius: 0.5 mm
Tolerance: 0.05 mm   OK
Tolerance: 0.05 mm
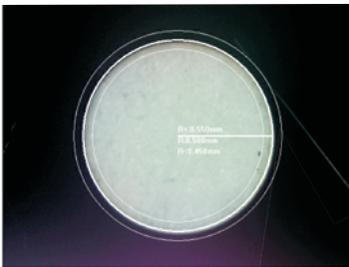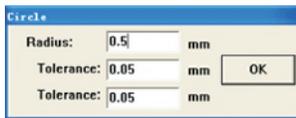
Image Process

1 Double-click the picture into "Image Process".

2 Image Process
   Click [icon] to make image process tool(as below picture).

Horizontal Mirror
Vertical Mirror
Negative
Brightness (+)
Brightness (-)
Median value filter
Average value filter
Export to excel
Export to CAD

3 Paint
   Click [icon] to make paint tool(as below picture).

Straight Line
Continuous Line
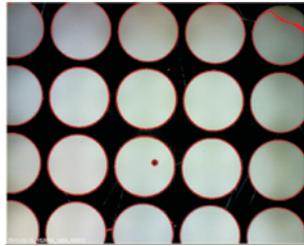Angle
Rectangle
Three Points Circle
Circle Label

⑤ Edge Detection

Edge detection can draw the outline of the image automatically. Local edge detection can draw the outline of the selected area. Overall edge detection can draw the outline of the image.
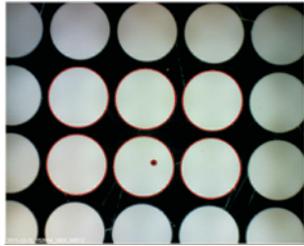
Local Edge Detection   Overall Edge Detection

⑥ Select, Delete, Move

Click , select the element, the element turns red. Click , delete it. Click , move it and click.