USER MANUAL

LCD BIOLOGICAL MICROSCOPE

PCE-PBM 100

ENGLISH



User manuals in various languages (français, italiano, español, português, nederlands, türk, polski) can be found via our product search on:
www.pce-instruments.com

ATTENTION

This manual gives a minute description of the structure, principle, configuration, operating guide, troubleshooting, maintenance and some attention for PCE-PBM 100 microscope. Please read it carefully before you use, and keep it for long time. In particular, the following notes must be understood thoroughly and obeyed strictly:

Permitted us
This microscope is just only used for biological microscop y observation. Don't misuse it for other purpose.

No dismantle the equipment
Unless you are a microscopic expert, or there is a special guide about doing so in the manual, please don´t dismantle your microscope. Otherwise, it will damage the microscope seriously, and reduce greatly it´s accuracy and using life.
When you identify some troubles, and can´t troubleshoot them by yourself according the manual please contact us or our representative in you area

Safety
Before change a bulb, or need to open the base , ensure that the microscope has been disconnected with the power source. The new bulb must be the same specifications as the old one
When the illuminator is halogen lamp or incandescent lamp, the base near the lighting source may be very hot. Don´t worry about it, but it must be treated carefully. Please take the combustible material such as gasoline, paper, plastic and cloth far away from the microscope.
When change incandescent bulb or halogen bulb, wait until it is cool enough, otherwise the hot bulb will burn your fingers

Use the correct power supply voltage
The power supply voltage must be fitted to the microscope otherwise it will damage the circuit and bulb even lead to insecurity.

Protecting optical parts:
Never try to contact directly the optical surface of objectives, eyepieces and other optical parts with your finger. Fingerprints will seriously affect your observation results.

Don´t leave any dust and fingerprints on the bulb, otherwise it may affect its life and illuminating efficiency

Working surroundings requirements:
Room temperature: 0°C ... 40°C
The highest relative humidity: 85%
High temperature and humidity can cause mildew and damage the instrument.

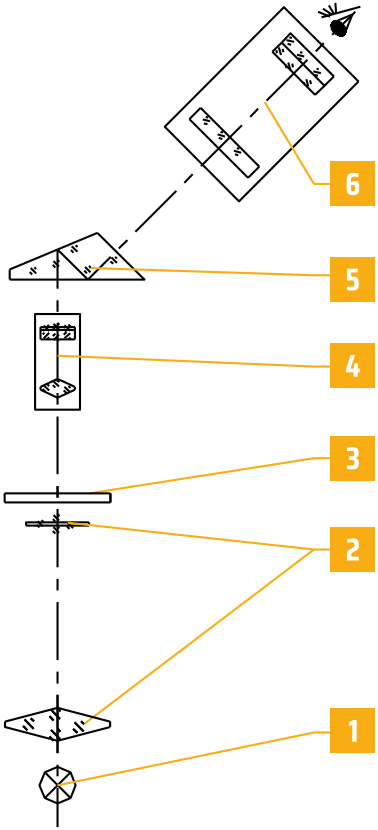
Microscope is a precision instrument, soft and gentle operation is necessary.
Any rude action or hard shake may damage it.

APPLICATION

This microscope is a high precision instrument. It is specially designed for clinical examination and teaching demonstration in medical and health establishments, laboratories, agricultural science and technology field, research institutes. It is used for routine work and research in biology, bacteriology cytology and pharmacology. Providing with some optional accessories, the microscope will be enlarged its functions in demonstrating, collecting, saving and analyzing of the miro-image.

PRINCIPLE

The principle of the microscope is showed below. The lamp (1) illuminates. The light from lamp is introduced to the condenser (2) and then converged on the specimen (3) by the condenser. The image of the specimen (3) is first magnified by the objective (4) and then further magnified by the eyepiece (6). The prism (5) is used to change the direction of the light.
Total magnification = (magnification of objective) multiply (magnification of eyepiece)



STRUCTURE AND MAIN SPECIFICATIONS

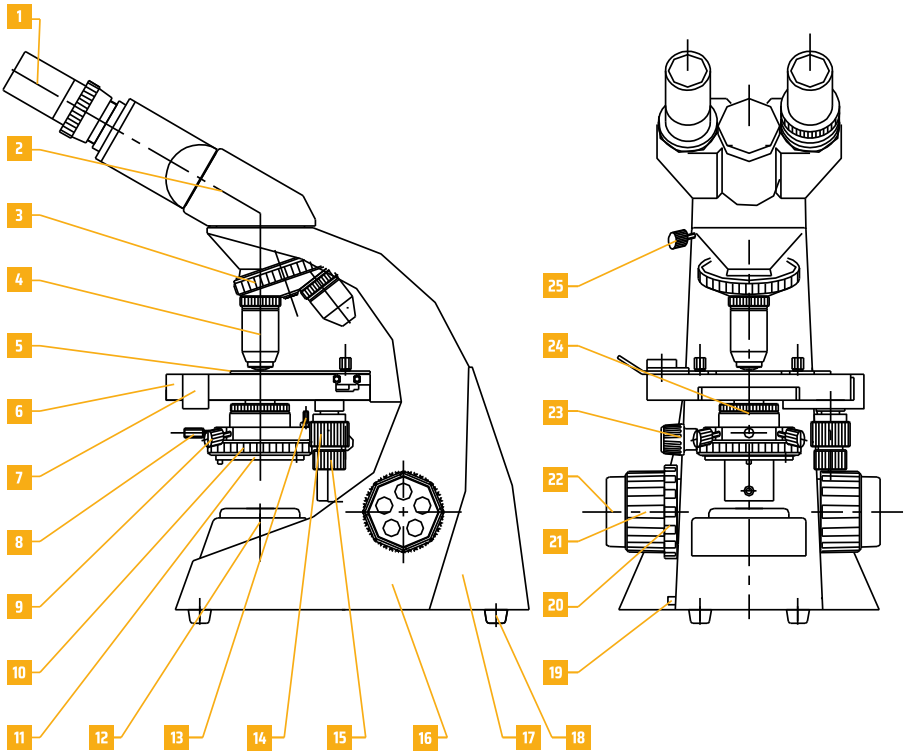
The structure of microscope is showed below.

Eyepiece (1)
Usually, the microscope is only equipped with wide-field and plano-scope eyepiece WF10X. The specifications of WF10X are showed as following:

Wide Field Planescope Eyepiece	Magnification	Diameter of Viewing Field	Working Distance	Remark
WF10X	10	18mm	24.95mm	with point

Objective (4)
In this microscope, the standard outfit of the objective system is DIN achromatic objectives which are 4X, 10X, 40X (spring loaded), 100X (spring loaded, oil immersion). The objective 100X is a immersion lens. When the 100X objective is used, between its top and the cover glass, should drop some immersion oil and be sure to make the air bubble out. If there is some air bubble in oil, you may rotate the nosepiece once more, or add more oil again. After finish observing, the top of the objective (100X and 40X) and the cover glass should be cleaned at once. Otherwise the remained dry oil will impair the imaging quality in the next observing. According to your requirement, we can also provide you infinity system plane-scope achromatic objectives, infinity system achromatic objectives, plane-scope achromatic objectives, and semi-plan achromatic objectives.
The specifications of the DIN achromatic objective system are showed as following:

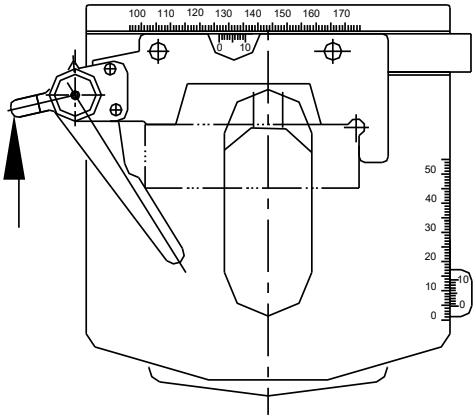
DIN Achromatic Objective	**Magnification**	**Numerical Aperture**	**Focal Distance**	**Working Distance**	**Cover Glass Thickness**	**Remark**
4X	4	0.10mm	31.04mm	37.5mm	0.17mm	
10X	10	0.25mm	17.13mm	7.316mm	0.17mm	
40X	40	0.65mm	4.65mm	0.632mm	0.17mm	Spring
100X	100	1.25mm	2.906mm	0.198mm	0.17mm	Spring, Oil



1 - Eyepiece
2 - Viewing Head
3 - Nosepiece
4 - Objective
5 - Specimen Clamp
6 - Mechanical Stage
7 - Vernier for Stage Moving Lengthwise
8 - Screw for Fixing the Condenser
9 - Screw for Centring the Condenser
10 - Iris Diaphragm Plate
11 - Filter Holder
12 - Light Collector
13 - Screw for Condenser Height
14 - Knob for Moving Stage Lengthwise(Y)
15 - Knob for Moving Stage Crosswise(X)
16 - Body
17 - Plastic Back
18 - Rubber Foot
19 - Plate for Adjusting Brightness
20 - Tensioner
21 - Coarse Focusing Knob
22 - Fine Focusing Knob
23 - Knob for Condenser Up or Down
24 - ABBE Condenser
25 - Screw for Fixing Viewing Head

Nosepiece (3)
The advanced and precise construction of the nosepiece guarantees smooth rotation, clear and positive location, and meets the requirement of par-focal and par-centred objectives.

Mechanical stage (6)
The stage of this microscope is double layers mechanical stage showed below. Its size is 125x125mm. Push the rod of the clamp in the arrow direction showed below, and insert the apecimen into the clamp carefully. Leave your finger away from the clamp, the clip will turn back slowly, and then the specimen will be holded and moved with the clamp. Rotate the knob (14) to move the clamp lengthwise in 40mm. Rotate the knob (15) to move the clamp crosswise in 60mm. The moving precision is 0.1mm in both directions.



ABBE condenser (24)
The numerical aperture (N.A.) is 1.25. The screw (8) is used to fix the condenser easily on the microscope without any tools. The center of the condenser in microscope can be adjusted by rotating the black-head screws (9) without any tools as following steps:

- turn the objective 4X or 10X in working;
- turn the plate (10) to make the diaphragm diameter smaller;
- lower the condenser to make the image of the diaphgram sharp by rotating the knob (23);
- rotate the screws (9) to concentre the image of the diaphragm with the eyepiece viewing field. The condenser has been adjusted coaxial with the objective before the microscope is finished.

If not, there will be large different in the veiwing field: one side may be dark and another side may be bright. Rotate the knob (23), built-in rack and pinion mechanical system controls the condenser up or down.

Usually, raise the condenser higher when 100X or 40X objective is used; Down the condenser lower when 10X or 4X objective is used. The highest position of the condenser raising up is limitted to lower 0.2mm below the stage surface before the microscope is finished.

When it is necessary to readjust, do as following steps:

- loose the nut on the screw (13);
- put a slide on the stage;
- raise the condenser up to 0.2mm about lower below the slide;
- rotate the screw (13) to touch the bottom of the stage;
- fix the screw (13) with the nut.

Turn the diaphragm plate (10) to adjust the diameter of the iris diaphragm from ?2 to ?30mm to match with the numerical aperture of objective in using. When the diameter of the iris diaphragm is 70 ... 80% of the objective's numerical aperture, the image observed is sharp in contrast. Look into the tube without eyepiece, you can see the image of the iris diaphgram. The filter holder (11) can be turned out to insert the filter when you need. The color of the filter may be blue, or green, or yellow.

Focusing system

It is a coaxial coarse and fine focusing system with rack and pinion mechanism. Itsfocusing range is 14mm, and its precision of fine focusing is 0.01mm. Rotate the coarse focusing knob (21) to raise the stage up or down quickly. Rotate the fine focusing knob (22) to raise the stage up or down slowly. The knob (20) is used to adjust the focusing moment. It will avoid the stage dropping automatically and provide comfortable operating.

Illumination system

Usually, the illuminator of this series microscope is 3.5V/1W LED lamp. Turn theplate (19) to adjust the brightness. So the image backdrop will be not too bright under the lower-powered objectives, or too weak under the higher-powered objectives. LED lamp is soft in light to suit the operator for a long time micro-observation. When the current and voltage don't overstep their limits, its average life can reach to 100000 hours. It is very securely because the bulb's temperature is lower than 30°C even in a long time using. Equiped with rechargeable and high-capacity NiMH batteries, it can avoid the trouble of power supply shortage.

The position of the bulb in microscope is very import to the imaging quility. When the lighting centre is not coaxial with the objective, there will be large different in the eyepiece veiwing field: one side may be dark and another side may be bright. The bulb has been placed correctly in our factory. When change the bulb, please keep it centring.

Caution:

- Before change a bulb, ensure that the microscope has been disconnected with the power source.
- The new bulb must be the same specifications as the old one.
- When the illuminator is halogen lamp or incandescent lamp, the base near the lighting source may be very hot. Don't worry about it, but it must be treated carefully. Please take the combustible material(such as gasoline, paper, plastic and cloth) far away from the microscope.
- When change incandescent bulb or halogen bulb, wait until it is cool enough, otherwise the hot bulb will burn your fingers .
- Don't leave any dust and fingerprints on the bulb, otherwise it may affect its life and illuminating efficiency.

Loose the sub-collector (12) screw on the left side of the body (16), push the collector to the left, and then pull it out of the body (16) to change the bulb.

HOW TO USE AND ASSEMBLE

- Unpack the microscope and its parts carefully. Check and sort out all parts according to the packing list;
- For the convenience of packaging and delivering, the components and parts may be separated from the mainframe. Before using, please assemble them together according to the structure draft.

Install the viewing head:
The viewing head of model YJ-2005M, or YJ-2005S, or YJ-2005V is fixed on the mainframe. But the binocular head of model YJ-2005B and the trinocular head of model YJ-2005T are usually separated from the mainframes. Loose the screw (25) and take off the plastic plate cover on the body (16). Take the plastic plate cover on the viewing head.
Finally install the viewing head on the body (16) and fix it with the screw (25). Don't try to loose another two screws for centring the viewing head on the body (16).

Install the objectives (4):
Usually, the objectives are fixed stably on the nosepiece by us. Sometimes, they are separated from the mainframe. Screw the plastic dust cover out off the nospiece (3) and take the objectives out off their plastic bottles. Screw them on the nospiece (3) by their maganification order from low to high.

Install the eyepiece (1):
Take off the plastic dust cover from the eyepiece tube and insert the eyepiece needed.

The operating steps:

» Select a position to work where little direct light falls on the instrument. Keep the microscope far away from a large window and not to face the window, because the direct light may adversely affect the contrast and resolution of the image.

» The following working surroundings are required:
Room temperature: 0°C ... 40°C
The highest relative humidity: 85%
High temperature and humidity can cause mildew and damage the instrument.
Keep the microscope away from dust. When it is not used, please put the dust cover over it.
Keep the microscope away from vibration.

» Insert the micro-slide specimen into the clamp (5). Be sure that the cover glass is facing towards the objective. Otherwise you will not be able to focus your specimen at using higher powered objective (40X, or 100X).

» Place a lower powered objective (4X, or 10X) into position and simply turn on the illuminator.

Caution: The power supply voltage must be fitted to the microscope; Otherwise it will damage the circuit and bulb, even lead to insecurity.

» Rotate the knobs (12,13) to move the specimen so that it is centred over the in-stage condenser.

» Focus the objective on the specimen by turning the coarse focusing knob (21) until the image of your specimen is bright and clear. You can find the focal plane and focusing upwards by using the lower powered objective, and then you can bring the specimen into sharp focus by turning the fine focusing knob (22).

» The specimen now is in sharp focus. Rotate the nosepiece (3) to the other objectives and focus using only the fine focusing knob (22). Since the optics on the microscopes are Par-focal and Par-centered, only slightly turn the fine focusing knob (23) to make the image bright and clear.

Note: It is important to note that the 4X and 10X objectives can never come into contacting with your micro-slide specimen because of our built-in stop. The 40X and 100X objectives may occasionally touch the micro-slide specimen. But because they have retractable mounts, the micro-slide specimen will not be damaged.

» To make the image clearer, you can adjust diameters of the iris diaphragm to match with the numerical aperture of objective in use.

TROUBLE SHOOTING

If there are some troubles in oberating, recheck the instrument carefully as the following describing before connect us or our representative in you area.

Troubles in operating

Troubles	Causes	Remedies
The specimen goes out of focus.	The stage is limitted too low.	Adjust the the upper focusing limit.
The slide is often broken by objective.	The stage is limitted too high.	Adjust the the upper focusing limit.
Can't focus in using high powered objective.	The specimen is mounted on the stage upside down or the cover glass is too thick.	Reverse the specimen or choose the standard cover glass (0.17mm).
The objective always touches with the slide when changing.	The cover glass is too thick.	Choose the standard cover glass (0.17mm).
Move the specimen no smoothly.	The clamp is not fixed stably.	Fix the clamp stably on the stage.
Incomplete binocular vision.	Interpupillary distance is not correctly adjusted.	Correct the interpupillary distance .
	Dioper adjusting is incomplete.	Complete the dioper adjusting.
	The brightness is not suitable.	Check the illuminator and adjust its brightness.

Troubles in optical system

Troubles	Causes	Remedies
Field of view is cut off, or illuminated irregularly.	The nosepiece is not changed properly.	Slightly rotate the nosepiece until it clicks into position.
	The centre of the bulb is not coincidence with the centre of the objective.	Position the bulb correctly.
	There are dust or dirt on the glass surface of the lenses.	Remove the dust and dirt.
Dust and dirt is visible in the field of view.	There are dust or dirt on the glass surface of the lenses.	Remove the dust and dirt.
	There are dust or dirt on the specimen surface.	Remove the dust and dirt.
	The condenser is too low.	Raise the condenser up.
Image quality is poor: insufficient contrast and image details lack definition.	There is no cover glass on the slide.	Put the cover glass on the slide.
	The cover glass is too thick or thin.	Choose the cover glass 0.17mm thick.
	The specimen is mounted on the stage upside down.	Reverse the specimen.
	The top lens of the objective is dirty.	Clean it.
	There are dust or dirt on the glass surface of the lenses.	Remove the dust and dirt.
	Immersion objective is used without immersion oil.	Apply immersion oil.
	There are bubbles in the immersion oil.	Drive the bubbles out.
	Special immersion oil is not used.	Use the special immersion oil.
	There are dust or dirt on the surface of the prisms.	Remove the dust and dirt.
	The diameter of the iris diaphragm is too large or small.	Adjust the diameter of the iris diaphragm.
	The condenser is too low.	Raise the condenser up.

Troubles	Causes	Remedies
One side of the viewing field is dark.	The condenser is not correctly positioned in the light path or inclined.	Position the condenser.
	The objective is not correctly positioned in the light path.	Slightly rotate the nosepiece until it clicks into position.
	The clamp is not fixed stably.	Fix the clamp stably on the stage.
Image moves while focusing	The specimen is not caught stably by the clamp.	Catch the specimen stably.
	The objective is not correctly positioned in the light path.	Slightly rotate the nosepiece until it clicks into position.
The image is yellow.	Blue filter is not used.	Apply the blue filter.
The viewing field is too dark.	The diameter of the iris diaphragm is too small.	Adjust the diameter of the iris diaphragm larger.
	The condenser is too low.	Raise the condenser up.
	There are dust or dirt on the glass surface of the lenses.	Remove the dust and dirt.

Troubles in electric system

Troubles	Causes	Remedies
The bulb does not light when turn on.	Loose electric connection.	Secure the connection.
	No insert the bulb.	Insert the bulb correctly.
	Bulb is burned out.	Replace the bulb.
	Fuse is burned out.	Replace the fuse.
Reduced bulb life.	Bulb is not a standard one.	Use a standard bulb.
	Bulb is voltolized.	Reduce bulb voltage.
Illuminator is too dark.	Bulb is not a standard one.	Use a standard bulb.
	Mains voltage is too low.	Adiust the mains voltage.
Light flickers and the intensity is unstable.	Mains voltage is unstable.	Use a voltage stabilizer.
	Bulb‘s filament is likely to burn out	Replace the bulb.
	Loose electric connection	Secure the connection.

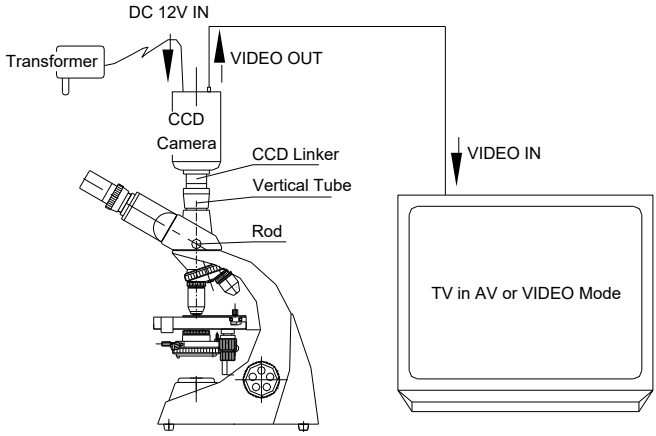
MAINTENANCE AND CARE OF YOUR MICROSCOPE

- Unpack the microscope carefully to prevenet the accessories as lenses from falling down and damaging.
- All lenses are calibrated, don't try to dismantle them apart by yourself.
- Nosepiece and focusing system is advanced and precise in construction, and don't try to dismantle them apart by yourself. Please connect with an authorized technician when they are in trouble.
- Keep the mechanical parts from dust, and add a few no corrosiveness lubricating grease into the sliding sections at regular intervals. Keep the optical elements clean when wipe the instrument.
- Keep the instrument in dry and cool place. Disconnect it with the power source and put the dust cover over it after use. If it will be not used for a longer time, it is the best way to screw the objectives out and place them into the lens-bottles, and screw the dust covers on the nosepiece.

MICROSCOPE WITH CCD CAMERA

See figure below and connect the CCD camera with the microscope as following steps:

- Take the plastic dust cover off from the viewing head and screw the vertical tube in;
- Screw the plastic dust cover off from the CCD camera and screw the CCD Linker in it;
- Connect **VIDEO OUT** terminal in the CCD camera to **VIDEO IN** terminal in colour TV with a singal line. Plug the DC12V power supply line into the power socket of CCD camera. Switch the power source on and the **PL** pilot lamp lights. Set the exposure mode to AUTO position (to MANU position, need a auto-iris joint) for auto exposing;
- Switch on the TV and select **AV** or **VIDEO** mode;
- Push the rod of trinocular head in completely and adjust the microscope in the best working state according to the manual. Then pull the rod out completely. Wait a moment, the micro-picture will be showed in the TV screen. Focus slightly by the fine focusing knob and adjust the position of the condenser and the diameter of the iris diphragm to make the picture clearer.



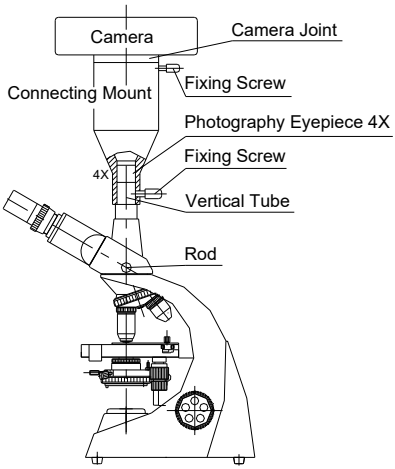
Trouble shooting:
While the microscope is fuctioning normally, but on TV there is no picture, or the picture is not high in quality, please check the instrument as following describing:

- Whether the **VIDEO OUT** terminal of the CCD camera is connected correctly to the **VIDEO IN** terminal of Color TV by a signal line, or not?
- Whether the CCD camera is powered, and its **PL** pilot lamp is lighting?
- Whether the TV is turned on the mode **AV** or **VIDEO**?
- Whether the rod on the right of trinocular head is pushed out?
- Whether the microscope is focused correctly? At this time, you can see a clear image in the eyepiece viewing field. Now, if the image showed in the TV screen is not clear, you can adjust the height of the vertical tube by rotating it. If the change is not obvious, focus slightly by the fine focusing knob and adjust the position of the condenser and the diameter of the iris diphragm
- If the picture is disturbed seriously, please adjust the microscope illuminator brighter.

MICROSCOPE WITH CAMERA

See figure below, and connect the camera with the microscope as following steps:

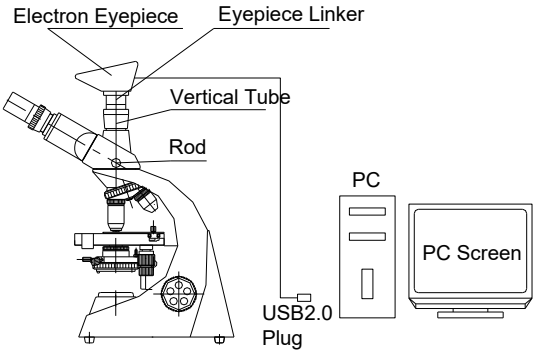
- Take the plastic dust cover off from the viewing head and screw the vertical tube in;
- Take the lens away from the camera, and put the camera joint on;
- Insert the photography eyepiece 4X into the camera mount (Sometimes there is not a photography eyepiece 4X as the customer's requirement). Join the camera with the mount and fix it stably.
- Push the rod of trinocular head in completely and adjust the microscope in the best working state according to the manual. Then pull the rod out completely. A micro-image will appear in the camera previewing window. Focus slightly by the fine focusing knob and adjust the position of the condenser and the diameter of the iris diphragm to make the image clearer.
- Take a picture.



MICROSCOPE WITH ELECTRON EYEPIECE

So you can observe by using common eyepiece at the same time of showing the micro-image in the PC screen. See figure below, and connect the camera with the microscope as following steps:

- Prepare a PC required:
  Hardware: USB2.0 Connecting Socket;
  CPU: Intel P4;
  EMS Memory: 256M;
  Hard Disk: 512M;
  PC Screen Resolution: 1024*768
  Software: win2000 (with Mend sp4);
  or winxp (with Mend sp2) and directx 9.0;
- Insert the driver CD into your PC and run the installing program as the promating information;
- Prepare the microscope for using. Inser the electron eyepiece into the microscope tube, and connect it correctly with your PC;
- Adjust the microscope in the best working state according to the manual and find a clear image in the eyepiece viewing field. (When a trinocular wiewing head is used, first push the rod of the head in completely and adjust the microscope in the best working state. Then pull the rod out completely.) Wait a moment, the micro-picture will be showed in the PC screen. Focus slightly by the fine focusing knob and adjust the position of the condenser and the diameter of the iris diphragm to make the picture clearer. User-friendly sophisticated micro-image process software help you to preview, measure, compare, count, save and delete.



DITIGAL MICROSCOPE

» Prepare a PC required:
Hardware: USB2.0 Connecting Socket;
CPU: Intel P4;
EMS Memory: 256M
Hard Disk: 512M;
PC Screen Resolution: 1024*768
Software: win2000(with Mend sp4);
or winxp (with Mend sp2) and directx 9.0;

» Insert the driver CD into your PC and run the installing program as the promating information;

» Prepare the microscope for using. Connect it correctly with your PC;

» Push the rod of the viewing head in completely and adjust the microscope in the best working state. Then pull the rod out completely. Wait a moment, the micro-picture will be showed in the PC screen. Generally, when low-powered objective (4X, or 10X) is used, the picture in the PC screen will be too bright to observe after the rode of the viewing head is pulled out.

You can adjust the microscopeto get a satisfied picture in the PC screen as the following ways:

» Turn the plate (19) to make the illuminator darker;

» Turn the plate (10) to make the diameter of the iris diaphragm smaller;

» Rotate the knob (23) to lower the ABBE condenser.

When high-powered objective(40X, or 100X) is used, adjust the microscope to get a satisfied picture as the opposite way:

» Turn the plate (19) to make the illuminator brighter;

» Turn the plate (10) to make the diameter of the iris diaphragm larger;

» Rotate the knob (23) to lift the ABBE condenser higher. Finally, focus slightly by the fine focusing knob to make the picture clearer. User-friendly sophisticated micro-image process software help you to preview, measure, compare, count, save and delete.

APPENDIX A: EYEPIECES AND OBJECTIVES FOR OPTION

Eyepieces for Option:

Name	Specifications
Wide-field and plano-scope eyepiece	WF5X, WF6X, WF10X, WF12.5X, WF15X, WF16X, WF20X
Huygenian eyepiece	5X, 6X, 10X, 12.5X, 15X, 16X

Objectives for Option:

Name	Specifications
DIN Achromatic Objective	4X, 10X, 20X(S), 40X(S), 60X(S), 100X(S,Oil)
Infinity System Planecope Achromatic Objective	4X, 10X, 20X(S), 40X(S), 60X(S), 100X(S,Oil)
Infinity System Achromatic Objective	4X, 10X, 20X(S), 40X(S), 60X(S), 100X(S,Oil)
Planecope Achromatic Objective	4X, 10X, 20X(S), 40X(S), 60X(S), 100X(S,Oil)
Semi-Planecope Achromatic Objective	4X, 10X, 20X(S), 40X(S), 60X(S), 100X(S,Oil)

APPENDIX B : DIGITAL CAMERA HEAD

The digital camera head is an advanced micro imagery tool. It may be a viewing head with a digital camera built in or an electron eyepiece. All common microscopes can be fitted with it. Connecting with your PC, the micro image will be displayed on your PC, and you will be relax ed from the tired traditional micro observation.

Features and Specifications:

- High Quality Color Digital Image System
- Resolution: 1280(H)*1024(V) (1.30MP)
- CMOS Chip: 1/2" Micron MT9M001
- USB2.0 Connection
- Magnification of Optical System: 0.39X
- Capturing microscope images and showing live video on PC screen
- Saving Still Images as BMP JPG Files
- User friendly Sophisticated Micro image Process Software Included for Previewing, Measuring, Comparing, Counting, Saving and Deleting

» PC System Required:
Hardware: USB2.0 Connecting Socket;
CPU: Intel P4;
EMS Memory: 256M
Hard Disk: 512M;
PC Screen Resolution: 1024*768
Software: win2000 (with Mend sp4), or winxp (with Mend sp2) and directx 9.0

HOW TO USE THE DIGITAL CAMERA HEAD

» Insert the driver CD into your PC

» Connect the digital camera head to your PC with the USB2.0 digital line to run the guiding program of the new hardware found.

» Choose the correct button according to the information of your PC - NEXT - NEXT - CONTINUE - FINISH

» Find the **etAMCAP** on the desktop and open it.

» Choose **ET USB 2750 Camera** in Devices; Choose **Preview** in Options

» How to reach resolution of **1280 X 1024;** Choose Option - Choose Video Capture Pin - Choose YUY2 in C, and Choose 1280X1024 in S

How to make the picture more clear.

» Choose Option - Choose Video Capture Filter

» Click **Photo Control** to choose the zoom m ultiple

» Adjust the parameters in **Proc Amp** as you need;

» Open Video Image. Choose **Light** as your microscope used;

» Choose **Flip Vertical** or **Flip Horizontal** to change the direction of the image.

» Adjust White and Exposure as you need;

How to record video

» After the image has been displayed on the PC screen, you should choose **Set Capture File** in File first, and then give a name of the capture file. Put it in your desktop or other files and open. Enter the capture file size, because AVI file will take big space, so 1M ... 5M bytes is the best amount you can set, which also have satisfied quality

» Choose the Capture - Start Capture, then **Stop Capture**. In it, you can Set Frame Rate and Set Time Limit

How to take pictures

» Open My Computer

» Find a logo as right and open it. Then you can take pictures or delete them.

HOW TO USE MEASURING SOFTWARE

» Install the measuring software: Double click **Digiciever1.35.exe** in the driver CD and open it. Choose the correct button step by step according to the information showing in your PC - NEXT - NEXT - FINISH

» During the installing process, there may be a mend program to be installed.

» Don t worry about it. It does no harm to your PC.

» Restart your PC.

» Click start-program-Yujieviewer-yujieviewer 1.35

Preview: Click it to preview. If it doesn't work, please check the camera, and then restart the software again.
Stop: Click it to stop previewing.
Video: Click it, a pop window let you choose if you confirm to start videoing.
Stop: Click it to stop videoing.
Zoom: Click it, and the mouse point area will be zoom+ You can choose the zoom multiple by the right scroll bar.
Zip: Choose different compress
Capture: Capture a photo.
Right and left arrow: You can choose the picture you have captured. Double click the small picture to open it with the application
X: You can delete the picture you have captured

WINDOWS OF THE MEASURING PROGRAM
Resolution: Click it to choose different resolution.
Comparing: Click it to choose four pictures in same windows to compare with each other.
Brown: Click it to choose the different pictures for comparing.
Measuring: Click it to go to the measuring window.

AREA 1: BASIC FUNCTION OPEN OR SAVE THE PICTURE.
Open: Open a picture
Paste: If you have copied a picture in other software, you can paste it in the measuring window.
Save: save the picture. If you have some mark in picture the change will be saved at the same time
Save as: Save the picture as you required
Exit: Exit from the measuring mode

AREA 2: MEASURE AND CALIBRATION FUNCTION
Manual calibration: You can input the calibration data by yourself
Name: You will give this calibration reference a name, we advice you can give the name with camera name and objective (such 1.3 mega pix 10 times), because you will choose different calibration when you will measure the object in the microscope.
Resolution: Enter the original resolution of your calibration picture. When measuring, the resolution must be same as the calibration reference.
Pixel: 1 unit will be how much pixel
Millimeter: 1 unit will be how much millimeter
Auto Cal: Insert a standard micro ruler into the microscope and adjust it to find the ruler image in PC screen. Click **Auto cal** to be √ and click **Cal length.** Choose one point on a line in the image - Draw a vertical line of another line through the chosen point. A window of calibration setting will jump out.
Choose a position in the **Name -** Input the calibration name and input the standard distance between the two chosen lines in **Millimeter** - Click - Save - OK. The auto calibration has been finished.

MEASURE:
Count: Count the number of something in image
Length: Measure the distance directly between two chosen points after choosing the right parameter
Circle area: Calibrate the area by drawing a circle around the chosen part
Initial: Delete all mark in the picture
Move picture: Move the picture

DISPLAY INTRODUCTION

8"LCD display has clear and bright image,more efficient operating and more comfortable observing. According to user's requirement to choose special connector for the trinocular tube of biological or stereo microscope. After assembling,user can observe the specimens and objects, especially for checking the industrial parts, it can reduce visual fatigue and improve the efficiency.

SPECIFICATION

CCD Technical Data	
Device Dimension	1/3"
Horizontal Resolution	700T Vline
Pixels	976(H)x582(V)
Display Data	
Resolution	800x600
Color	16,777,216 colores
Highest Mode	1024x768@75Hz
Color System	PAL/NTSC4.43/NTSC3.58/SECAM

HOW TO ASSEMBLE AND USE

- Remove the microscope and unscrew the electronic eyepiece connector of the trinocular head.
- Screw the display connector to the trinocular tube instead of electronic eyepiece one.
- Install the display with the connector and tighten the screw.
- Pull out the trinocular head rod.
- Connect with the power.
- Observe the display to be on, if not, please push POWER-button to turn on.
- Turn on the display and observe if it is in **BNC channel**, if not, please push CHANNEL-button to switch.

LANGUAGE SWITCHING WAY

- Turn on the display, in the BNC channel to push MENU-button, get the menu bar
- Then push DOWN-button, get the menu options
- Push RIGHT-button as confirm, then choose the option 1 **language** and push LEFT or RIGHT-button to switch

DISPOSAL

For the disposal of batteries in the EU, the (EU) 2023/1542 directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose. In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law. For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations. If you have any questions, please contact PCE Instruments.

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Subject to change without notice