

Phenix PH50 monoculaire microscoop
4503000



MS Schippers

Passion for Farming

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- Although the design of our product provided the best safety for your usage. But, inaccuracy of operation method or neglect the usage elucidation probably cause body hurt and the prop-erty lose. For your safety. Before using this instrument ,please carefulness reading the instructions.
- Don' t lose the instruction manual, please saving it at near the instrument, in order to consult at any time.
- In this instructions, the safety hint is expressed the follow sign. Please you must obey the sign, insure the right safety operation.



Warning

Neglect this sign probably cause the body injury or instrument damage.



Notice

Neglect this sign probably affect the microscope observation effect.



Hint

Hint the operation technique of the user microscope.

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1. Main Features

PH50 series biological microscope have Mono Viewing and Bino Viewing for choice. And can be built-in CMOS or CCD camera system equipped with USB output ports, making use of computer image processing software and computer multimedia technology, so that you have observed show for variety of video figures , can capture images of static and dynamic video, with Objective measurement and a variety of image processing functions.

2. Usage and Coverage Area

PH50 is an ideal instrument for use in clinic and hospital laboratory, research institution, university in the research of biology, pathology, bacteriology, also for educational laboratory sessions.

3. Electrical Capability

3.1 Using the specified power supply:

- For Domestic market: input Voltage: AC. 220V 50Hz.
- For overseas market: input voltage: AC. 110V 60Hz ~ AC. 230V 50Hz



Warning

Confirm the instrument input electric voltage in accordance with you the power supply electric voltage .If inconformity, please don't use the microscope, and get touch with theagent .If the microscope is used the improper input electric voltage of the mistake, would cause the electric circuit short-circuit or a fire, thus damage the microscope.

3.2 Using Specified Light bulb, Power wire, and Fuse

- Halogen light: 12V/20W Fuse: 0.5A
- Power wire: with earthed wire



Warning

Please using the power cable, the bulb that we rule and provide. Any wrong light bulb, power cord can cause damage, even demolish the instrument.

4. Working Circumstance of Microscope

This microscope is a precise optical instrument, if the usage or safekeeping isn't appropriate, it will cause the instrument damaged or influence precision. While choose to use the place, please consider the following condition

- The place for this microscope should not be too bright, and direct sun shine on the instrument should be avoided.
- The working temperature: 0°C-- 40°C. The maximum relative humidity: 85%, the heat and humidity can stimulate the growth of mildew, which will cause the damage to Microscopes and shorten its using life.
- Dust can deteriorate the optical performance, avoid to use under such circumstance.
- Using the microscope On the steady and aclinic workbench.

5. Structure and Nomenclature

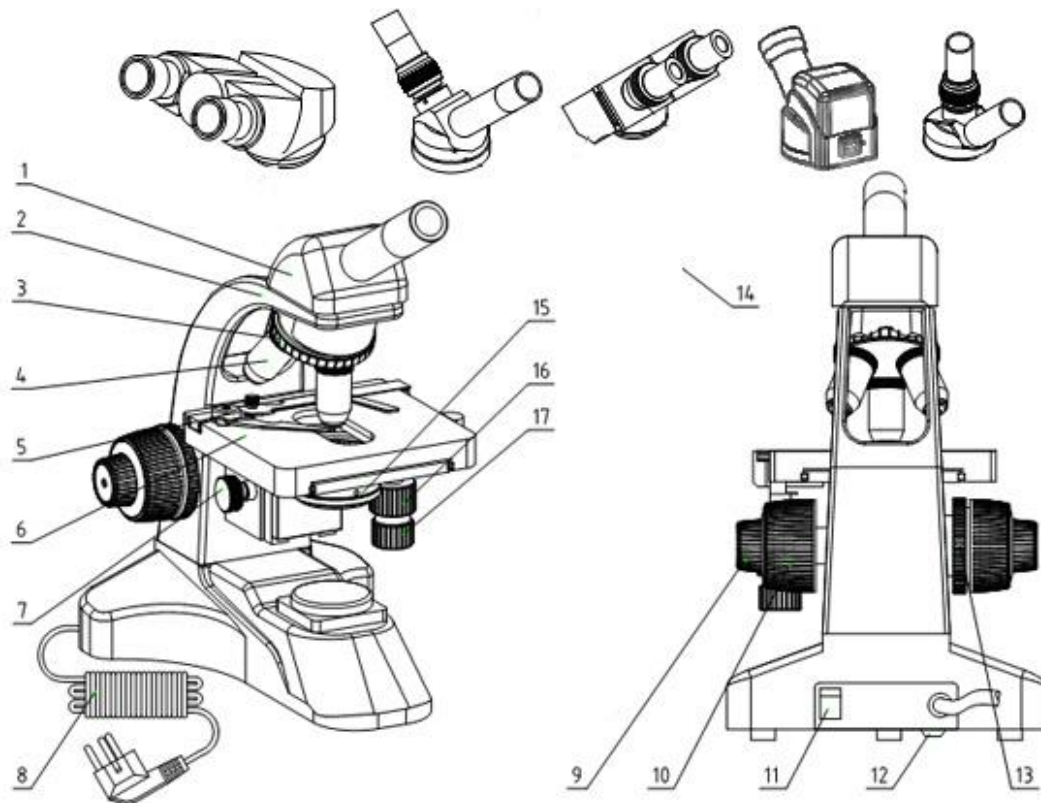


Fig.1

- (1) Viewing head : Viewing components.
- (2) Stand: The microscope' s main body.
- (3) Revolving nosepiece : Used to select objectives needed(Locate with sound).
- (4) Objective : Magnify specimen for the first time.
- (5) Slide clip : Clip specimen.
- (6) Mechanical stage : Lay specimen
- (7) Condenser moving knob : Adjust the height of condenser.
- (8) Power plug : Connect power supply.
- (9) Fine focusing knob : Tiny focusing.
- (10) Coarse focusing knob : Large focusing.
- (11) Power switch : Overall power switch of an instrument.
- (12) Fuse : fixup fuse.
- (13) Elasticity accommodable ring.
- (14) Eyepieces: Magnify specimen for the second time, put up observation.
- (15) Condenser screw bolt: Fixup condenser.
- (16) Axis Y moving knob : Adjust working stage transverse motion.
- (17) Axis X moving knob : Adjust working stage lengthways motion.

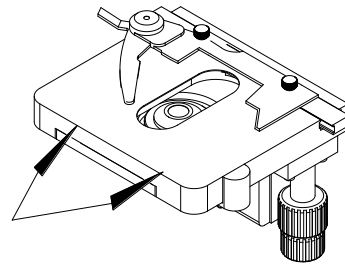
6. Instrument' s Installation



Notice

Before install microscope, please reading " safe common sense" careful and according to the following step operation. In order to against an electric shock, please do not connect power and close power switch.

- 6.1 Place the microscope on a flat and stable working table, while moving the instrument, especially the optical parts, make sure to avoid to contact the lenses surface with hand or artic with grease.6.2 On the way to transport carry the objective table, it's surface will be covered with the protection film, before use please tear up the protected film (Fig.2) 。



PROTECTION FILM

Fig.2

- 6.3 Place gently the viewing head into the Installation hole. Then use one hand to press the viewing head from above while other hand fastens the screw located at the both sides of view head.(Fig.3)

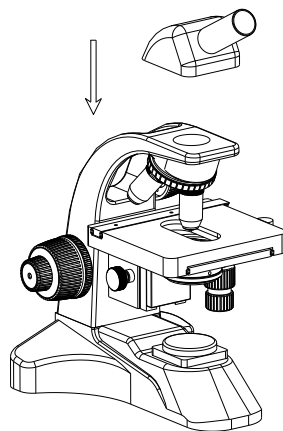


Fig.3

- 6.4 Turn on the power: after all above procedures, please insert the Power plug on the wall outlet, and turn on the Power switch , make sure you are using the right voltage.
- 6.5 Insert the Eyepiece: slide the eyepiece into the Eyepiece tube. (Fig.4)

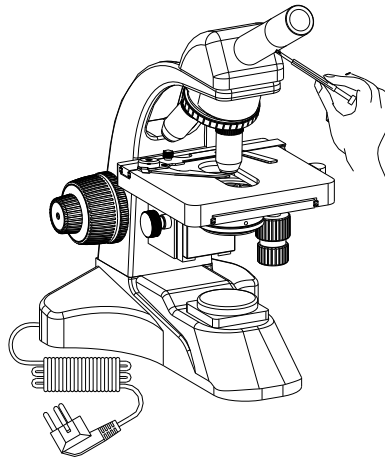


Fig.4

7. Operation Procedure



Warning

Confirm the instrument input electric voltage in accordance with you the power supply electric voltage .If inconformity, please don't use the microscope, and get touch with the agent .If the microscope is used the input electric voltage of the mistake, would cause the electric circuit short-circuit or a fire, thus damage the microscope.

7.1 Turn on the power

8.1.1 Turn the power switch(turn switch to "-"), make the bulb give out light.

8.1.2 Then revolve the handwheel of brightness regulates to regulate the brightness of filed .

7.2 Restoration to adjust diopter of tube

To adjust diopter of tube on the R/L eyepiece tube, Make its bottom edge with engrave the line to align, use the same method, adjust the left diopter .

7.3 Adjusting pupil distance

By adjusting pupil distance and Diopter ring on eyepiece, to eliminate the Parallax, and to get the sharp and comfortable viewing. While using bino head, And field of view is two intersectant circles, by rotating the eyepiece tube, the Eye Relief has been changed, the field of view became a round view completely coincided. (Fig.5)

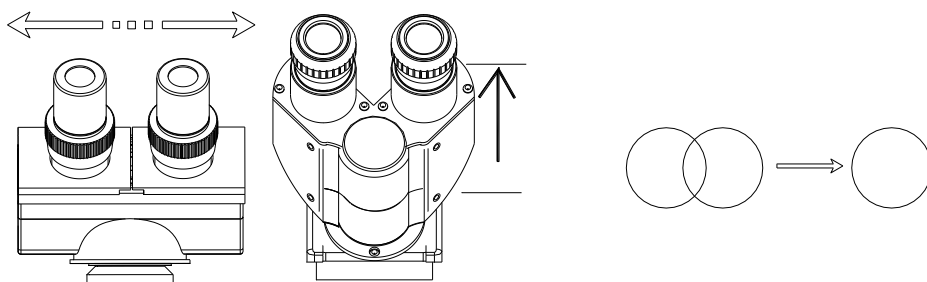


Fig.5

7.4 Mounting on the specimen

7.4.1 Turn apart the Specimen Clips, put into the Specimen, and use slide clip to hold it. Release the fingers ; make sure that the viewing area right in the middle of stage.(Fig.6)

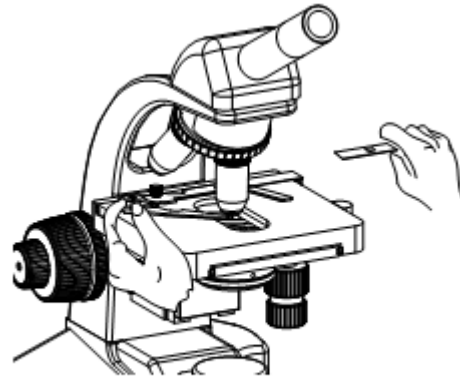


Fig.6

7.4.2 Adjust the stage hand wheel make sure that viewed field locates objec -tive under. (Fig.7)

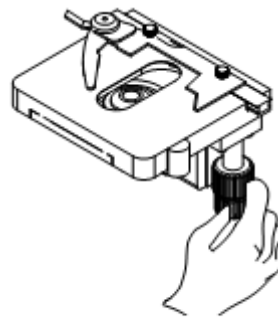


Fig.7

7.5 Using 10X objective focusing

7.5.1 By rotating the Revolving nosepiece , make sure that lower magnification objectives(4X or 10X) are in the optical center, and get a wide field of view.(Fig.8).

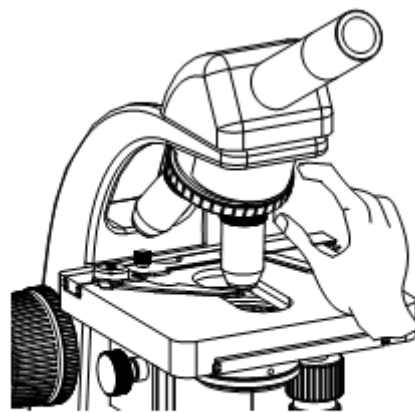


Fig.8

7.5.2 Rotating Coarse Focusing wheel ,
moving the stage to the tiptop (Fig.9).

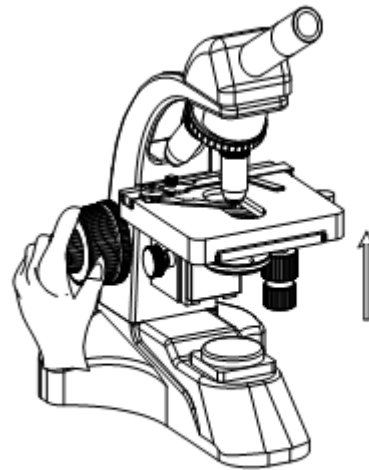
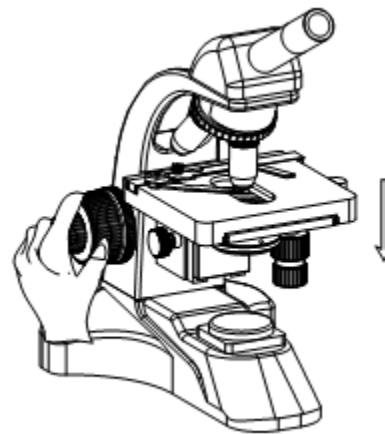


Fig.9

7.5.3 Adjust Coarse focusing knob to find
sharp image. Adjust the diopter ring on
the diopter eyepiece until the image is
clear.(Fig.10)



7.6 Adjust fine focusing knob to find clear image. (Fig.11)

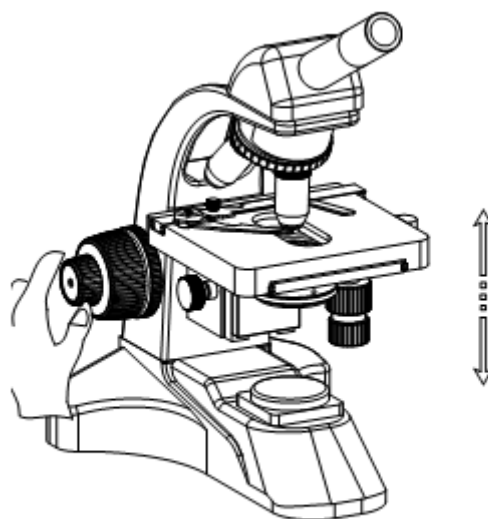


Fig.11



Hint

For 10X and 4X work distance is longer, that you should use standard thickness slide and slide cover (thickness 1.1mm and 0.17mm), when the stage was moved highest, objective can't hit specimen.



Hint

If you want to view image by the higher magnification objectives, first of all, please using 10× or 4× objectives focusing, then replacing the higher magnification objectives and accurate focusing.



Notice

- ✧ When rotating Coarse Focusing wheel focusing, please make sure that you must rotate along the way of falling the stage.
- ✧ When rotating Coarse Focusing wheel focusing, please notice that you keep a little distance between slide up surface and objectives down surface.

7.7 Rotating the Condenser moving knob, make condenser move highest and a little lower. If you observe dispersion image in view field, please adjust condenser(Fig.13).

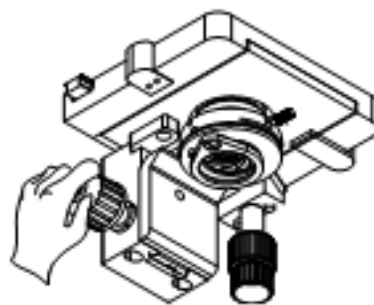


Fig.13

7.8 Rotating Revolving nosepiece , choose magnification that you need.

7.9 Adjust the Viewing head setscrew, in order to objective easy. (Fig.14)

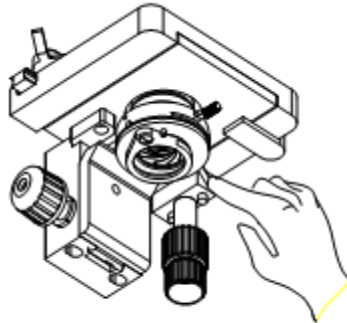


Fig.14

7.10 If objective selected is 100X oil (spring), use oil as observing medium.

By this the quality of image can be improved and the specimen is observed clear. (Fig.15)

7.10.1 Then move the specimen into the view filed and rotate the nosepiece to view field.

7.10.2 Extrude a little oil from oil bottle. Dip oil onto the pot to observe.

7.10.3 Then move the specimen into the view filed and rotate the nosepiece to view field. The interspace between top objective and coverglass must be full of oil. Only this can the observation be done..

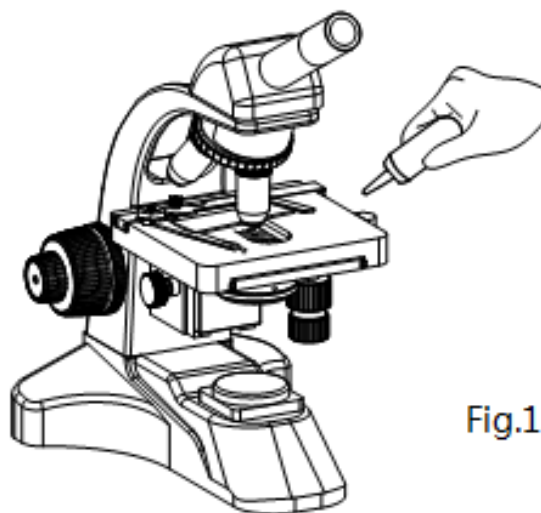


Fig.15



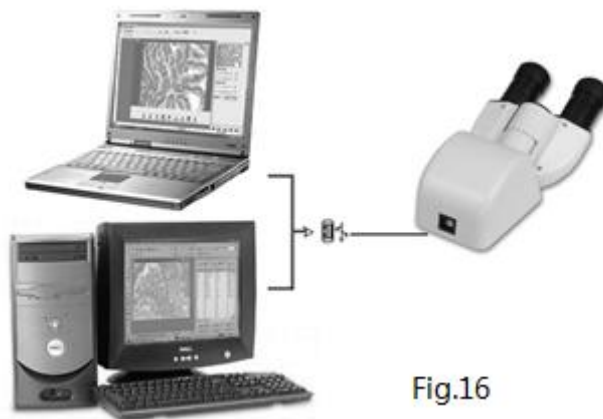
Notice

- * Oil must be used as little as possible. If the oil is very much and flows into condenser, the microscope's performance will be affected.
- * The specimen that adhibit oil can't use again the 40 X observation, otherwise it pollute the 40 X and affect using.
- * Before replacing objective, you cleaned the oil in time ,in order to prevent dirty other lenses, and the dried oil is hard cleaned.

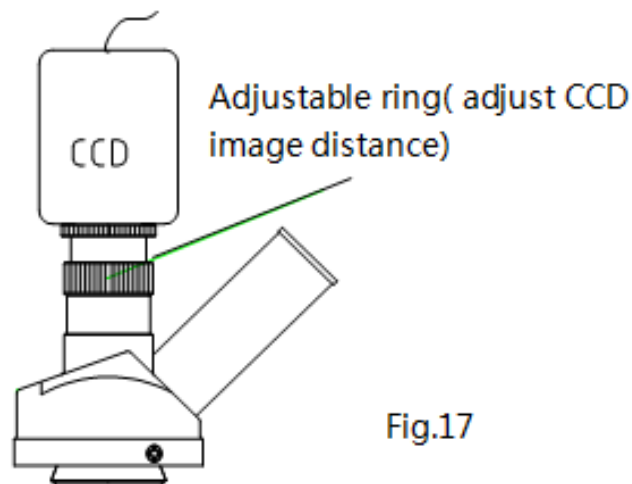
7.11 When the microscope is not needed, turn off the power switch.

8. Digital Part, Installation and Useage of Parts

- 8.1 Take out the digital observation, Place the pin at locating hole of the observation, Load the observation lightly, Press the upper observation softly by one hand , Fixing the screw on both sides of the body. At the time of installation to ensuret digital head tight.
- 8.2 Put the end of USB cable into USB port of the back of the computer, the other end into USB port of the back of equipment, software installation see "PHMIAS family of software instruction manual" (Fig 16).



- 8.3 The installation of an external CCD (for TV observation or trinocular head) firstly adjusting microscope to clear field of view, Connecting CCD base with CCD moving into TV tube, "TV / Video" (TV / AV) is set to "AV", as video display, rotating adjustment ring (Fig 17), the video will be clear.



9. Care and maintenance

- 9.1 The power switch at the back side of Base is main power control. If the microscope is no longer in use, please switch off the power to avoid the electronic elements in working status. If the microscope will not be used for a long period, please unplug the power wire from socket. Also keep various accessories in safe places.
- 9.2 Using leaning gauze (or Silk, absorbent cotton) soaked with some ethanol to clean the microscope body. After cleaning, cover it with dust cover.
- 9.3 Cleaning the Lenses : Use blower or soft cloth to wipe the surface dust. The contaminated dust, finger prints can be wipe off by lens paper or soft clothe soaked with blending (20-30% alcohol – 70-80% ether).
- 9.4 Cleaning the Microscope Surface : Clean with soft cloth, for severe stain, please clean with neutral detergent.



Notice

Do not use any type of solvent (alcohol, thinner, ether), as this may damage the finish or the painting.

- 9.5 Microscope Storage : If the microscope will not be used for quite a long period of time, please turn off the power, cool down the light bulb, mask it with dust cover and then put it back into packaging case. Store it in a cool, dry, clean place free of Acid or Alkali steam. As this will cause mildew on the lenses.
- 9.6 Routine Inspection : In order to maintain the performance of microscope, please conduct routine inspection and maintenance.



Notice

- * While put it back into its packaging case, make sure to place it even and stable.
- * Store the eyepiece and objective into a container with some desiccant.
- * While putting down the packaging case, make sure to lie down the case as per the arrow direction marked on the case.

10. Replacing light bulb and fuse

10.1 Replacing light bulb

10.1.1 Turn off the microscope ,unplug the power cord from socket.

10.1.2 Waiting for 30min, until it cools down.

10.1.3 Screw off the light base, and pull out the light base board, and rotate at some angel until the light base comes out. Take out the damaged bulb, and replace with a new one. While inserting the new bulb, please make sure to get the good contact and solid connection between light bulb and Base. While taking bulb with hand, make sure to wear a glove to avoid the finger print being left on the bulb. (Finger print will erode the bulb surface, lower the brightness, shorten the bulb working life).(Fig.18)

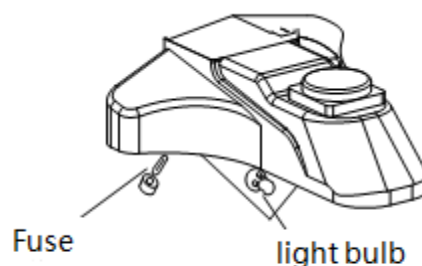


Fig.18

10.2 Replace the fuse : Pull out the Fuse compartment cover, take out the damaged fuse, and replace the new fuse and then build in on the Compartment cover.



Warning

In order to prevent occur get an electric shock or a fire, before replacing the lamp bulb and the fuse, must close the power switch and pull out the power cable. Close the power switch, need to stir switch to "0" only.



Notice

- * Please don't directly touch glass surface of the lamp bulb by hand, lest to leave the fingerprint in the lamp bulb surface, while installing the lamp bulb to put on the gloves please .
- * To wipe to the fingerprint or stains of the lamp bulb surface, can use the clean soft cloth dipping the alcohol, because the fingerprint will stay in the lamp bulb surface, make it the bright degree die down, the life span lower.
- * Install the lamp bulb must be carefully, any vibration will damage the lamp bulb or lower its life span.
- * Replacing the lamp bulb, please confirm the lamp bulb touch is all right, if the touch could be damage, the lamp bulb will not bright or short-circuit.
- * While replacing the lamp bulb, put the light feet possibly and deeply into the light, if the light feet looses, the lamp bulb may put out or get in touch with badly, cause short-circuit or destroy by fire.

11. Troubleshooting and Handling

Symptom	cause	Handling
Optical Parts		
Uneven brightness inside Field of view	Bad nosepiece positioning (Different stalk of light road)	Revolving the nosepiece, make it into right position
	Condenser position too low	Adjust the height of
	Not centering with Condenser	Readjust the condenser
	Wrong installation of light bulb	Check if the light bulb has been mounted correctly
	There are dirty vestige or dusts on the specimen, condenser, objective, eyepiece.	Wipe the relevant parts
	Iris diaphragm opened too small	Make diaphragm larger
Dirty field of view	Dirty lens surface	Clean the surface
	Slide cover dirty	Clean the surface
Resolution is not so good Image is not sharp	Slide has not been applied with slide cover	Apply with slide cover
	Slide cover is too thin or too thick	Use standard (thickness 0.17mm) slide cover
	Slide has been put on with the wrong side up.	Reverse it.
	Oil on the dry objective	Wipe oil off
	Oil objective without oil immersion	Immerse with oil
	Dirty lenses surface (on eyepiece and objective)	Clean the surface
	There is a air bubble inside immersed oil.	Remove the air bubble
	Wrong immersion oil	Using standard oil
	Iris diaphragm has been opened too small	Enlarge the diaphragm
The single side of picture is dark	Condenser position too low	Adjust the height of
	Bad nosepiece positioning	Revolving the nosepiece, make it into right position
The image is the thin yellow	The slide is higher mechanical stage	The slide should be tight on the stage
	The light bulb electric voltage is lower	Revolve to adjust the light knob, regulate the bright degree
The image is very bright	Without using the blue filter	Using the blue filter
	The light bulb electric voltage is higher	Revolve to adjust the light knob, regulate the bright degree
Don' t focusing at using the higher magnification objectives.	Slide has been put on with the wrong side up.	Reverse it.
	Slide cover is too thick	Use standard (thickness 0.17mm) slide cover
	Objective is not hard up	Screw down objective
the left and right image is not superposition by the double eyepiece viewing.	Without adjusting the Pupil distance	Adjusting the Pupil distance
	The Diopter adjuster is not good	Adjusting the Diopter
Light can not turned on	Power was not turned on	Check if the power was switched on ,if the supplied voltage same with specified voltage
	Bad contact between power socket and outlet	Check if the connection between power cord and power
	Light bulb have been melted	Replace light bulb
	Fuse have been melted	Replace fuse
Light blink	Bad contact between light bulb or bulb socket	Re-screw the bulb securely
	Power_wire contact is bad	Check Power_wire contact

12. Configuration table

PH50 Biological Microscope : Specification		PH50 Series						
	Product sequence number	1	2	3	4	5	6	7
Name	Specification	1A31 R-A	1A32 H-A	1A4 2L-A	1B4 3L-A	2A42 H-A	2A4 3L-A	3A4 3L-A
Total Magnification	40X-640X	•	•					
	40X-1600X			•	•	•	•	•
Eyepiece	Wide Field WF10X/18mm	•	•	•	•	•	•	•
	Wide Field WF16X/13mm	•	•	•	•	•	•	•
Lens Tube	Monocular , Inclined 45 degree , 360 deგრ Rotatable	•	•	•				
	Monocular TV , Inclined 45 degree , 360 degree Rotatable				•			
	Monocular , Inclined 45 , 360°Rotatable							
	Dual Observing , Inclined 45 degree , 360 Rotating							
	genel-style binocular head , Inclined 30 degree , Interpupillary Distance55 - 75mm					•	•	
	sliding-style binocular head , Inclined 45 degree , Interpupillary 55 - 75mm							
	Genel-style monocular head, Inclined 30 degree, Interpupillary Distance 55-75mm(w/push-and-pull rod)							•
Nosepiece	Triplicate	•	•					
	Quadruple			•	•	•	•	•
Achromatic Objectives	4X , 10X , 40X (S)	•	•	•	•	•	•	•
	100X (O,S)			•	•	•	•	•
Plan Achromatic Objectives	PL4X , PL10X , PL40X (S) , PL100X (O,S)							
Focusing System	Coarse and Fine with Different Axis Coarse Adjustment:22mm, Fine Adjustment:1.8m							
	Coarse and Fine Focusing Coaxial Coarse Range:22mm, Fine Precision Scale:0.004mm	•	•	•	•	•	•	•
Working Stage	Monolayer Working Stage with Clips Area:120mmX110mm	•						
	Monolayer Working Stage with Sliding stage Area:120mm×110mm Distance : 60×30mm		•	•		•		
	Double Layers with Mechanical Sliding Stage 120mm×115mm , 50mm×35mm				•		•	•
Condenser	Single lens , N.A=0.65 with Iris Diaphragm and Filter stand	•						
	Abbe Type , N.A=1.25 with Iris Diaphragm and Filter stand		•	•		•		
	Abbe Type , N.A=1.25 with Iris Diaphragm and handwheel stand				•		•	•
Illumination	Critical Illumination		•	•	•	•	•	•
Lamp-house	Plan-concave mirror , φ50mm	•						
	Halogen lamp , 12V/20W , Brightness Adjustable							

	LED 1W , rechargeable, brightness adjustable			•	•		•	•
	LED 1W , non-rechargeable,brightness adjustable							
Power	Onoff power , suitable for AC 96V-246V							
	Power adapter		•	•	•	•	•	•
Package	Carton box with inner foam	•	•	•	•	•	•	•
	Aluminium Metal box							
Others	TV viewing head with simple CCD adapter							

PH50 Digital Microscope

Specification for parts		PH50 Series			
Name	Specifiaction	DM048U	DB048U	DB130U	DB200U
Main optical machine part					
Total Magnification	40X-1600X	•	•	•	•
Eyepiece	Wide field eyepiece:WF10X/18mm	•			
	Wide field eyepiece:WF16X/15mm	•			
	Wide field eyepiece::F10X/18mm , diopter adjustable		•	•	•
	Wide field eyepiece: WF16X/15mm Diopter adjustable		•	•	•
Digital viewing head	monocular , Inclined 45 degree CMOS Camera Integrated	•			
	genel-style binocular head Inclined 30 degree Interpupillary distance:55-75mm CMOS Camera Integrated		•	•	•
Nosepiece	Quadruple	•	•	•	•
Achromatic Objectives	4X	•	•	•	
	10X	•	•	•	
	40X (S)	•	•	•	
	100X (S,O)	•	•	•	
Plan Achromatic Objectives	PL4X				•
	PL10X				•
	PL40X (S)				•
	PL100X (S,O)				•
Stand Focusing system	Coarse and Fine Focusing Coaxal system:22mm , Minimal Graduation : 0.004mm	•	•	•	•
Working stage	Double layers with mechanical sliding stage 140mm×132mm , 50mm×30mm	•	•	•	•
Condenser	Abbe type , N.A=1.25 with Iris Diaphragm and handwheel stand	•	•	•	•
Lamp-house	LED 1W , rechargeable,	•	•	•	•

	brightness adjustable				
Power	transformer	•	•	•	•
Package	Aluminium Metal box	•	•	•	•
Dividing ruler	0.01mm	•	•	•	•
Slides	Plant slides	•	•	•	•
CCD & CMOS					
CCD Camera	470K Pixels , 480 TV Line				
CMOS Camera	480K Pixels , 800×600	•	•		
CMOS Camera	1300K Pixels , 1280×1024			•	
CMOS Camera	2000 Pixels , 1600×1200				•
Image processing	AV-USB , 720×576				
Signal Output port	Video Output port				
	USB port	•	•	•	•
Signal Output Line	Video cable				
	USB signal cable	•	•	•	•
Micro Image Processing and Analyzing Software					
Micro Image Software	PHMIAS2006 Ver2.1(English Edition)	•	•	•	•

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