

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 property 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.

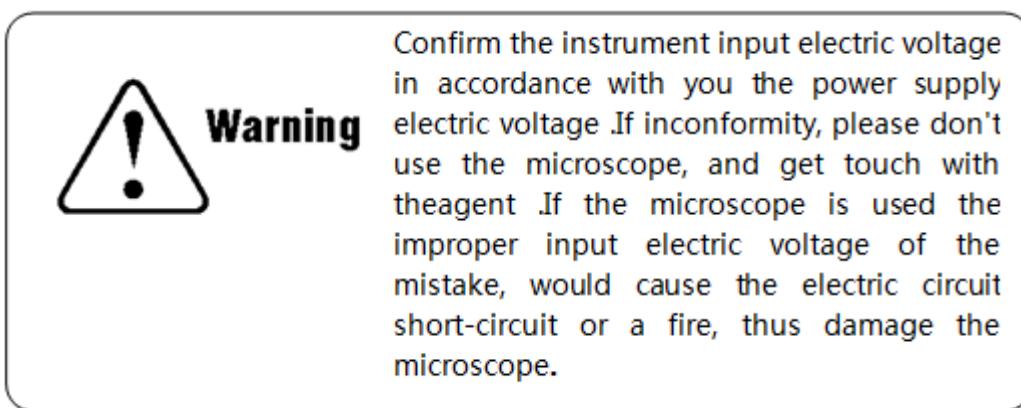
2. Usage and Coverage Area

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

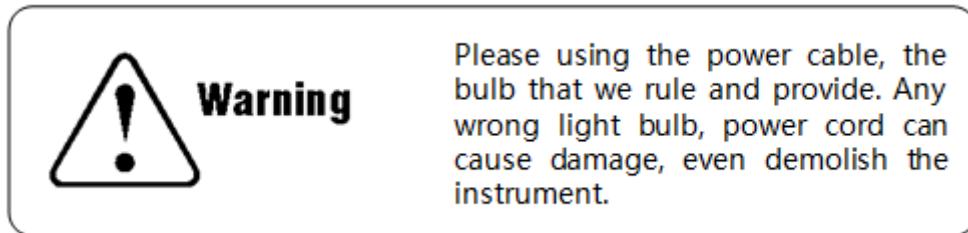
3.1 Using the specified power supply:

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



3.2 Using Specified Light bulb, Power wire, and Fuse

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



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

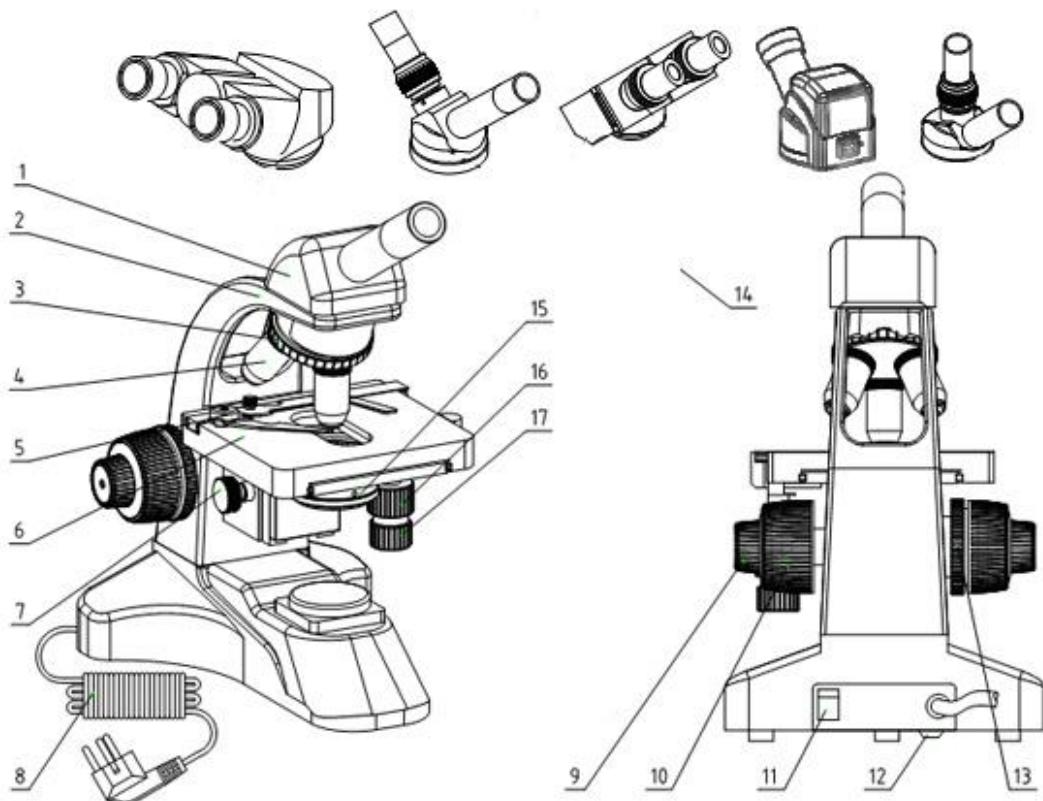


Fig.1

- (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.

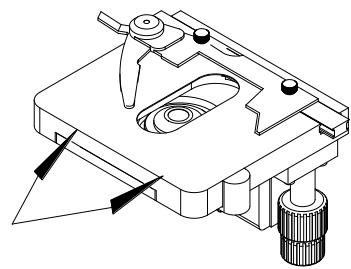
6. Instrument's Installation



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)

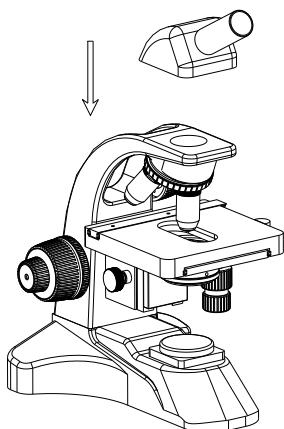


Fig.3

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)

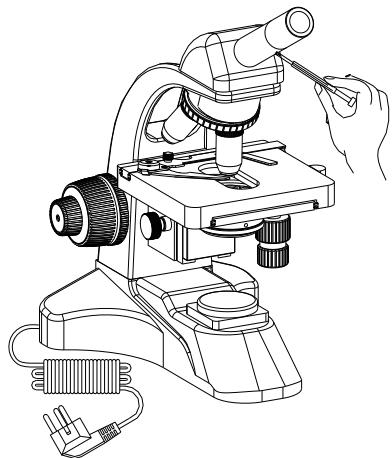


Fig.4

7. Operation Procedure



Warning

Confirm the instrument input electric voltage in accordance with your power supply electric voltage. If in conformity, 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 field.

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)

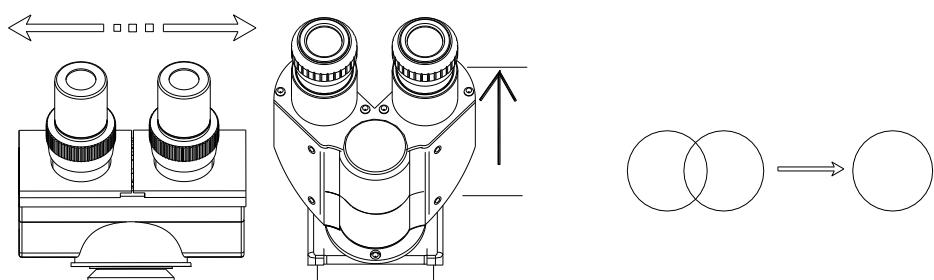


Fig.5

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)

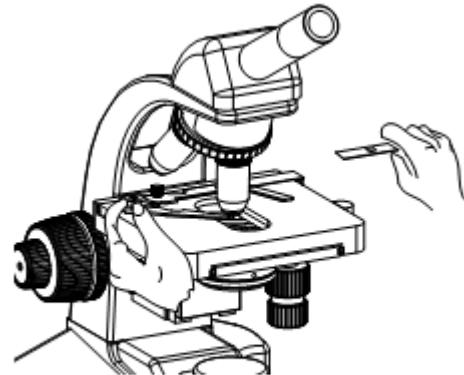


Fig.6

7.4.2 Adjust the stage hand wheel

make sure that viewed field locates objective under. (Fig.7)

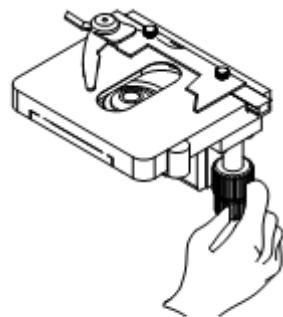


Fig.7

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).

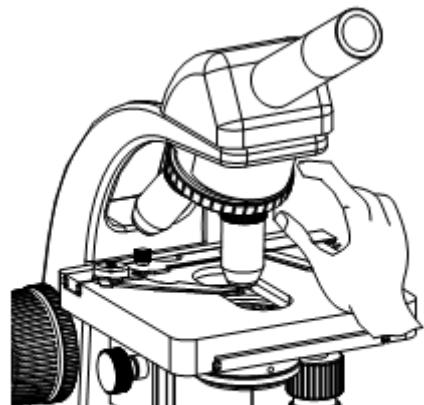


Fig.8

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

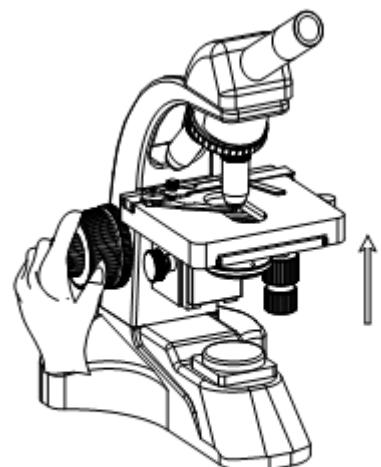
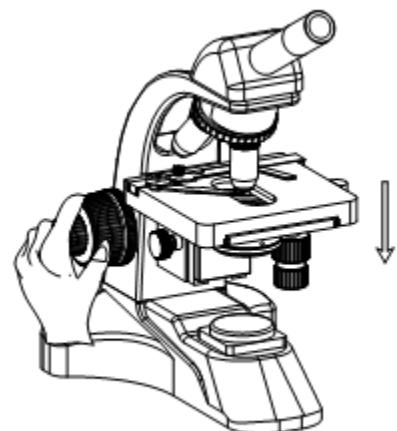


Fig.9

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)

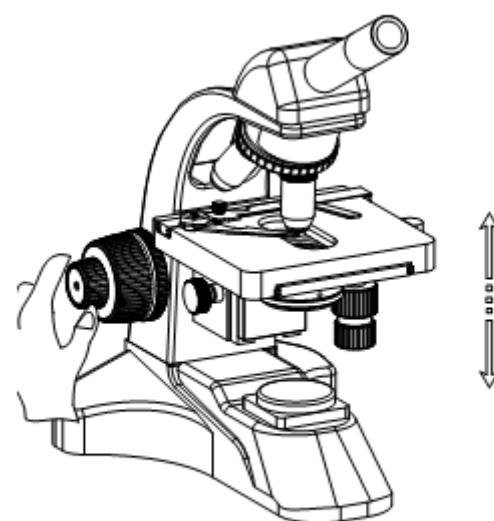


Fig.11

**Hint**

For 10X and 4X work distance is longer, that your 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, fist of all, please using 10 \times or 4 \times 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 orating 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 obverse dispersion image in view field , please adjust condenser(Fig.13).

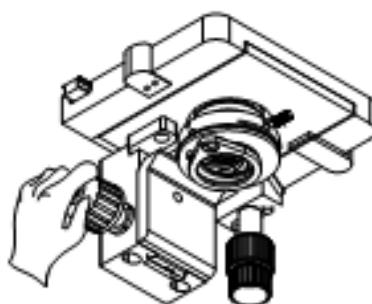


Fig.13

7.8 Rotating Revolving nosepiece , choose magnification that you need.

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

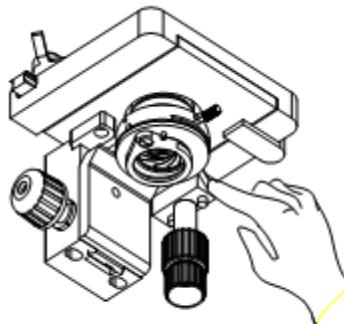


Fig.14

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..

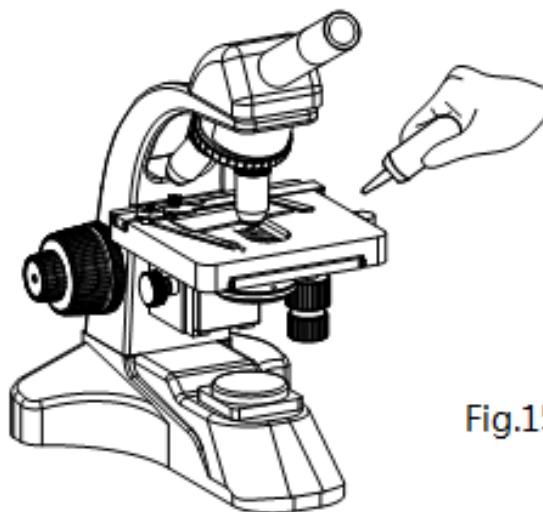


Fig.15



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 ensure 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).

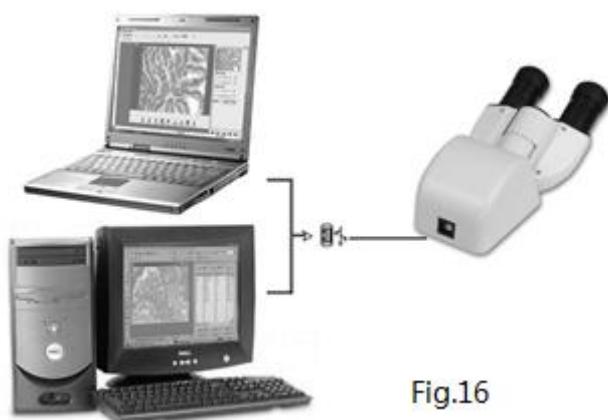


Fig.16

- 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.

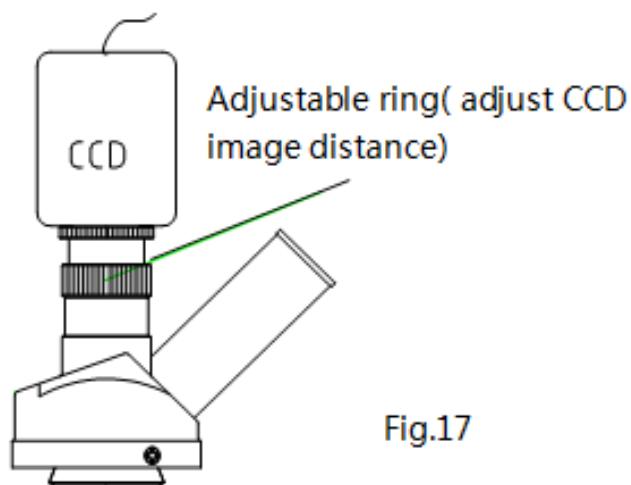


Fig.17

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)

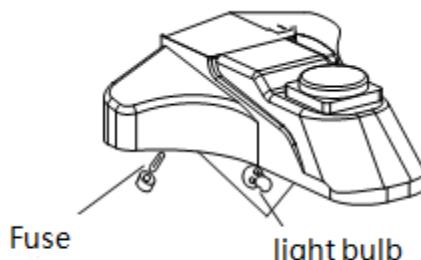


Fig.18

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 |
| Dirty field of view | Iris diaphragm opened too small | Make diaphragm larger |
| | Dirty lens surface | Clean the surface |
| Resolution is not so good Image is not sharp | Slide cover dirty | Clean the surface |
| | 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 degree 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 | Tripligate | ● | ● | | | | | |
| | 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 Coaxal 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 | Specifiaktion | 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) | ● | ● | ● | ● |

MS Schippers

Passion for Farming

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