STEINDORFF®

Digital LCD Biological Microscope

S-1260/S-1261

Instruction Manual

- **Thanks for purchasing this digital LCD biological microscope. This user's manual is for item number S-1260 & S-1261. In order to operate the microscope properly and safely, and to know all the features which will help prolong the microscope's service life, please must read this manual thoroughly before using the microscope. Please keep this manual in save place for regular reference.**
- **We suggest that before snapping important images, please make a few trial snaps, making sure you can operate the microscope properly.**
- **LCD screen was made by precision technology, 99.99% of its pixels are up to specifications. 0.01% of the pixels may have problems, or become black, red or green dots. It will not affect the image's video quality, and it is not a performance defect.**

Exemption Declaration

- **We tried our best to insure this manual's content correct and complete, but do not guarantee there is any mistake or omission. We reserve the rights to modify any of our products software or hardware without further declarations.**
- **We are not responsible for any products defect caused by mishandling or by not using the original storage card**

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Contents

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Use Notices

Digital compound LCD biological microscope are high-tech products ,integrated in microscope, digital LCD screen, high-resolution professional digital cameras and high-capacity memory card. Our LCD Microscope can be used both traditional eyepieces and an 9inches HD LCD Screen for easy and comfortable viewing for yourself and to share with others. This patented microscope thoroughly resolves dizziness and fatigue caused by using a traditional microscope at work for a long time. It is not only features high resolution of LCD display to reverting genuine photo and video, but also features for quick and easy snapshots or short videos. This unit integrates magnification, digital enlarge, imaging, display, capture photo and video, sarchiving and printing for easy exchange, store captured photos and clips on the optional SD card or transfer them to your personal computer via included USB cable. All of which achieve a more convenient and effective breakthrough.

I. Safety note

1. **Carefully open the box, avoid the accessories, like lens, dropping to ground and being damaged.**
2. **Do keep the instrument out of direct sunlight, high temperature or humidity, dusty and easy shaking environment. Make sure the stage is smooth, horizontal and firm enough.**
3. **When moving the instrument, please use two hands to grip with the two sides of the microscope body.**
4. **If the bacterium solution or the water splash to the stage, objective or viewing tube, pull out the power cord at once, and wipe up the microscope. Otherwise, the instrument will be damaged. When running, the lamp house and nearby parts will be very hot. Please ensure there is enough cooling room for them.**
5. **Make sure the instrument is earthed, to avoid lighting strike.**
6. **For safety, be sure the main switch is in "O" (off) state before replace the halogen lamp or the fuse, then cut off the power, and do the operation after the lamp bulb and the lamp house completely cool.**
7. **Check the input voltage: be sure the input voltage which signed in the back of the microscope is consistent with the power supply voltage, or it will bring a serious damage to the instrument.（Note; Use the factory supplied power cord 12v for binocular LCD display please.）**
8. **The mechanical stage is distortion and damage ,when it places on overweight object**

II. Maintenance

1. **All the lenses have been well checked and adjusted. It is forbidden to disassemble them yourself.**
2. **The nosepiece and coarse/fine focus unit have a compact and precise frame, please don't disassemble them as possible as you can.**
3. **Keep the instrument clean, wipe dust regularly, and be attention to avoid contaminating the optical elements especially.**
4. **The contaminations on the prism, as finger mark and oil, could be gently wiped with a piece of soft cloth or tissue paper, gauze which has been immersed in pure alcohol or xylene. (note that the alcohol and the xylene are all burned easily, do not let them near the fire, and use them in a drafty room as**

possible as you can.)

Use Notices

1. Don’t use organic solvent to wipe the non-optical elements, when you need to clean, use the soft detergent, please.

2. When using, if the microscope is splash by liquid, cut off the power at once, and wipe up the moisture.

3. Place the instrument in a cool, dry position. After using the microscope, remember to cover it with dust helmet. Do wait for the lamp house cooling completely before cover.

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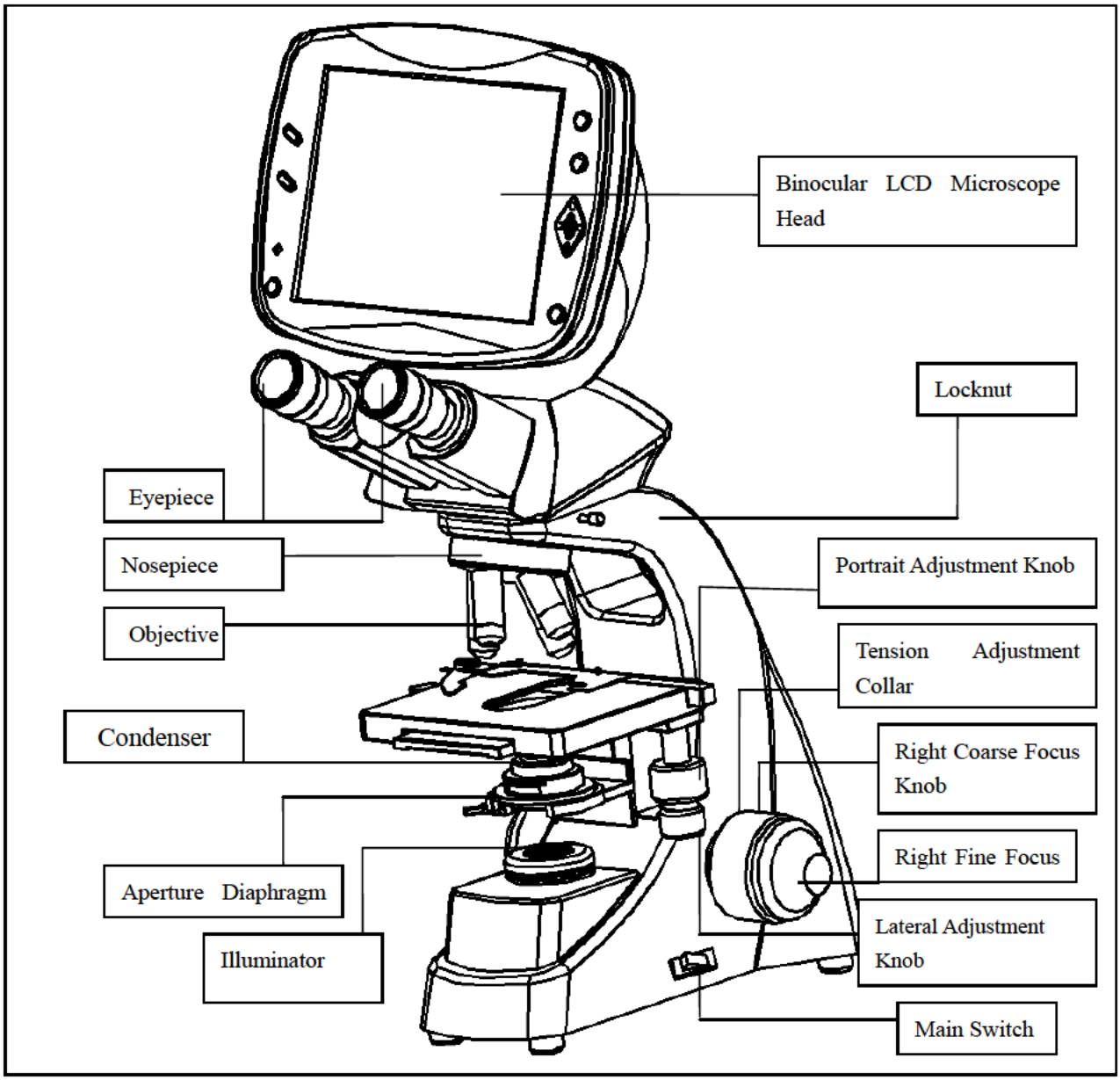
1. NAME OF COMPONENTS



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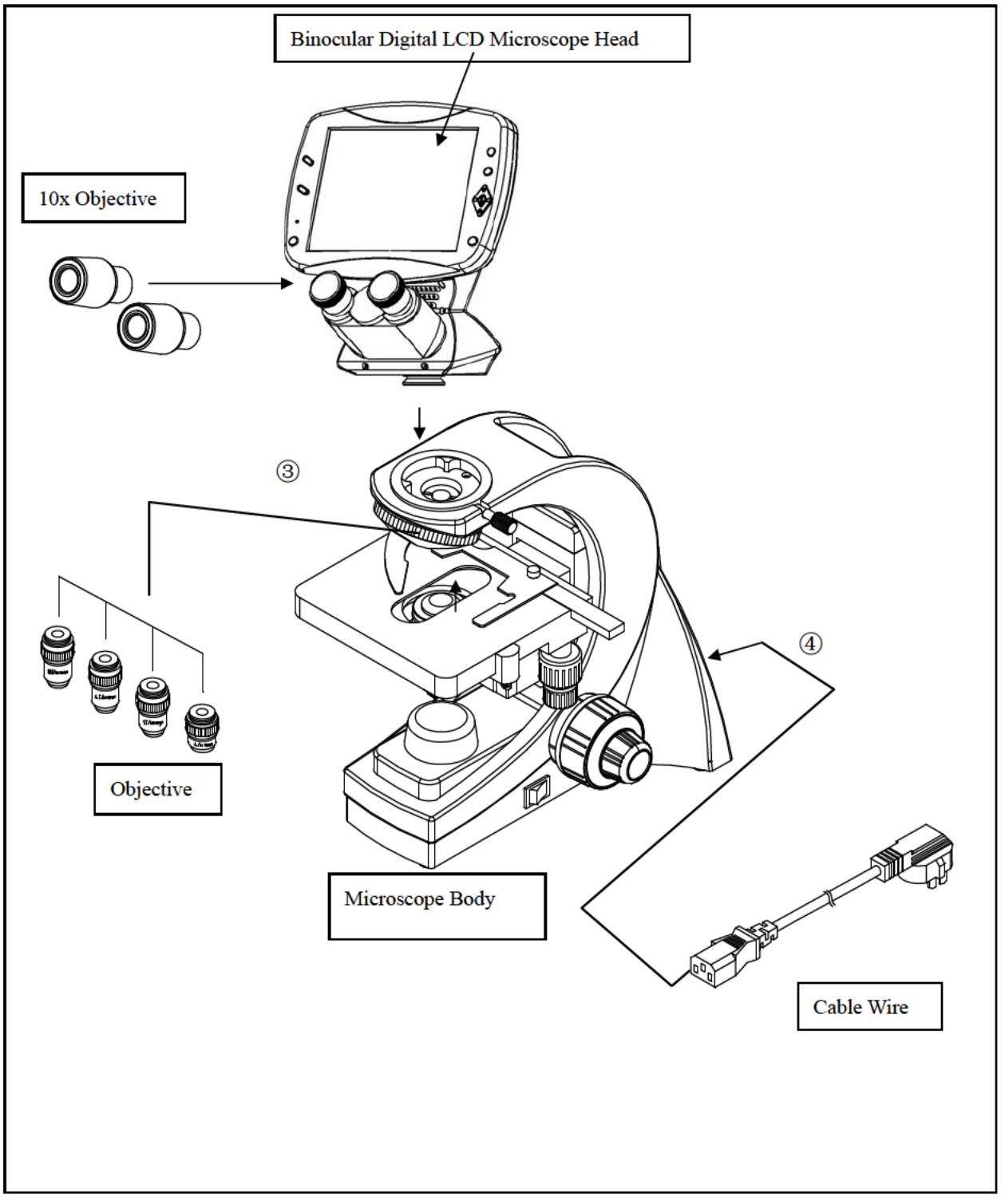
2. Installation

2.1 Installing Illustration

The following shows the installing order of the spare parts. The number express the installing process.

- ★ **Before the installing ,make sure there is no dust and stain on the spare parts . No marks by outside force on the surface of the spare parts or glass.**
- ★ **Keeping the offered spanner well, when change the spare parts, you will use it .**



2.2 Installing Steps

2.2.1 Install the binocular viewing head

Insert the binocular viewing head in the head of the body , turn to the right place ,then fix up it by bolts.。

2.2.2 Install the eyepiece

Take off the dust cover on the eyepiece tube, insert the eyepiece in the eyepiece tube till end. after the installing .

2.2.3 install the objective（picture No.2）

1. Adjust the coarse &fine focus knob, till the mechanical stage to the low limited place, take off the plastic dust cover on the quadruple nosepiece
2. Screw down the objective to nosepiece from left or right side, low magnification objective first. Install all the objective form low to high magnification following the clock hand.

✧ According to this way to install the objective will make it easier to change magnification in operation.

★Clean the objective frequently.

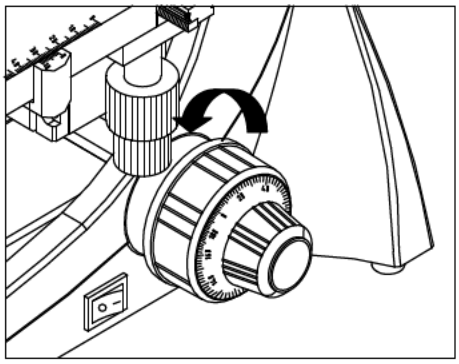
★At first, use the 10X objective to looking for image, then change another one.

★Turn the objective till hear the "kaka" sound, make sure the objective enter the objective center.

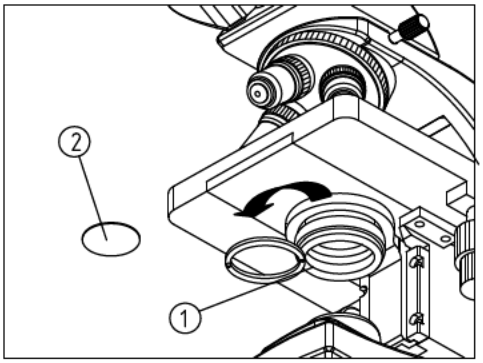
2.2.4 Install the filter (picture No.2)

1. Swing out the condenser holder①
2. Put the filter in the holder. Then swing the holder in.

★ There is two type of color filter. The color is blue and green.



Picture 1



Picture 2

Installation

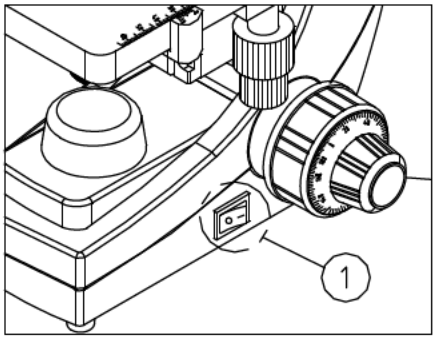
2.2.5 Link cable wire (picture No.3、4)

★ **Do not force on the Power Cord. The cable and wire are easier to be damaged when bended or wrapped.**

1. Before connecting the power cord, switch the main On-Off □ to "O"(off).
2. Plug the power cord□ into the socket□ on microscope safely. Make sure be connected.
3. Plug the power cord□ into the power source socket□ safely. Make sure be connected.
4. Plug the power cord□ into the power source socket□ safely. Make sure be connected.

★ **Do use the supplied power cord all the time. If lost or damaged, select the same standard cord, please.**

★ **This machine has High-Band voltage. It can adapt any voltage between 100V and 240V.**

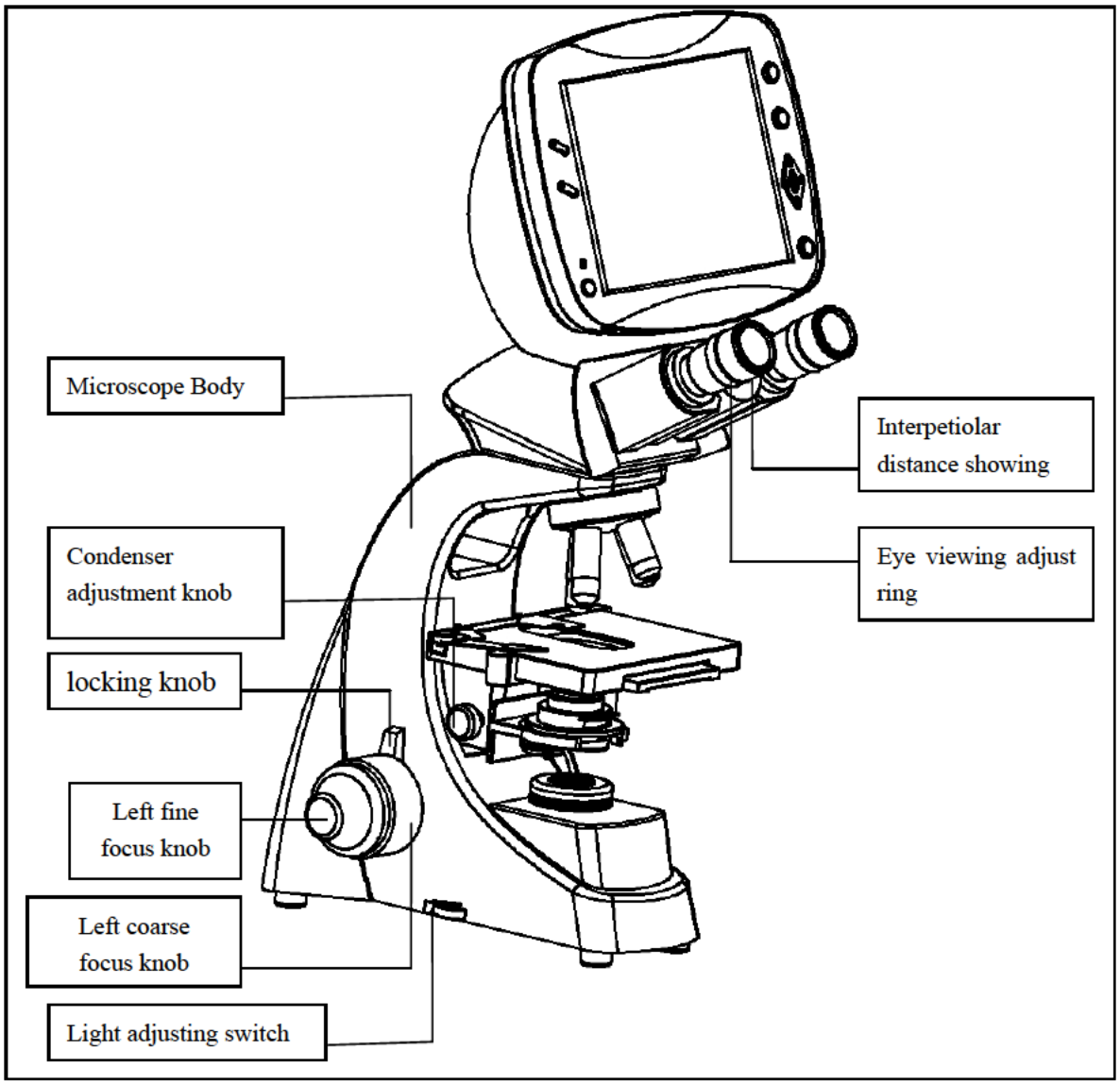


PIC 3

Picture 4

3. Adjustment& Operation

3.1 Adjustment system installing illustration



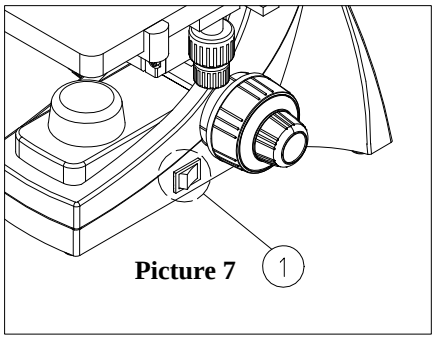
Adjustment& Operation

3.2 Operation

3.2.1 Adjusting the Illumination (picture No.7,8)

1. Connect the power, turn on the main switch to "-" (on).
2. Turning the brightness adjustment knob anti-clockwise, the voltage raise, and the brightness strengthen; turning it clockwise, the voltage decline, and the brightness weaken.

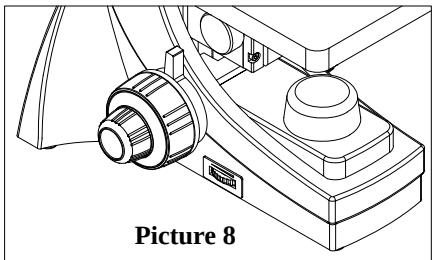
Using the lamp in a low voltage condition, will prolong the use life.



Picture 7

3.2.2Placing Specimen (picture No.9)

1. Place the slide on the mechanical stage. Use the stage clips to clamp the slide gently.
2. Turn the portrait and lateral adjustment knob of the mechanical ruler, move the specimen onto the required position.
3. When the objective lens is on highest magnification, the slide thickness should be 0.17±0.01mm, otherwise it is not on good imaging

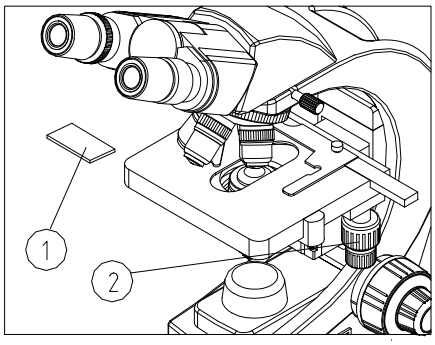


Picture 8

Be careful when changing the objective. If you finish the observation with the short working distance objective, and want to change another one, be careful of not letting the objective touch the specimen.

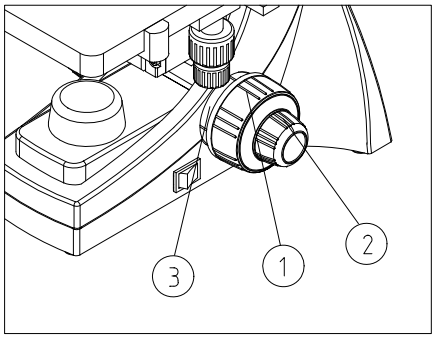
3.2.3Focusing (Picture No.10)

1. Use the 10×objective focus, to avoid the objective touch with the specimen, you should raise the mechanical stage at first, let the specimen close to the objective, then slowly separating them to focus.
2. The operator can converse turn the coarse focus knob① to get the specimen down ,and search images in the 10×ocular simultaneously, then use the fine knob② to focus. At this moment, you can replace other magnification objectives safely, and focus without the risk of destroying the specimen.



Picture 9

★ If you need to fix the stage on a vertical position to make the observation become more convenience, take use the of the locking set.



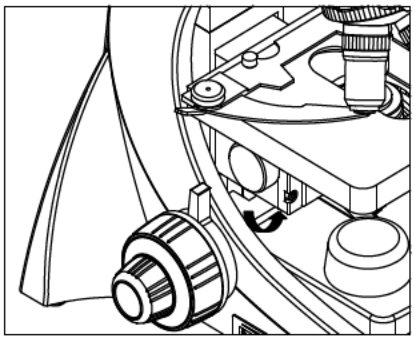
Picture 10

3.2.4 Adjusting the Condenser (Picture No.11)

Turn the condenser focus knob to shift the condenser. It needs to raise the condenser when using the high magnification objective, and to decline when using the low magnification one.

★ **The center of the condenser and the light axes of the objective are coaxial. It has been adjusted before leaving factory, so the user needn't to adjust them by self.**

★ **The highest position of the condenser has been adjusted too. It also needn't any user's operation.**

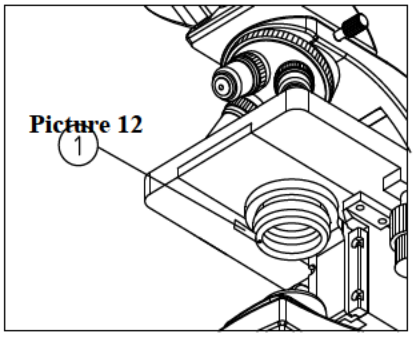


Picture 11

3.2.5Adjusting the Aperture Diaphragm (Picture No.12)

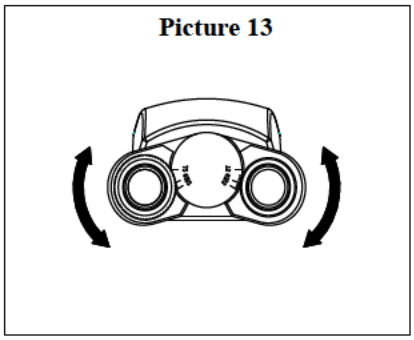
Turn the Aperture Diaphragm Lever①, to adjust the aperture size.

★ **Aperture Diaphragm is designed for adjusting the aperture size, not for adjusting brightness.**
Generally, reducing the diaphragm opening to 70- 80% of the N.A. value of the respective objective will provide an image of acceptable quality. If you want to observe the image of the aperture diaphragm, remove one eyepiece and look through the tube. You will see a dark circle encroaching on the bottom of the tube.



3.2.6Adjusting the Interpetiolar Distance (Picture No.13)

The interpetiolar distance range:55mm～75mm. When observing with two eyes, hold on the left and right prism holder, turn around the axis, adjust the interpetiolar distance until the left and right fields of view coincide completely.



3.2.7 Adjusting the diopter

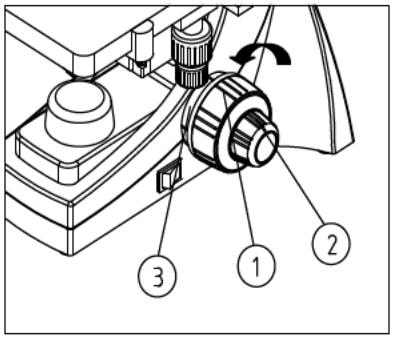
1. Observe the right ocular tube with your right eye. Turn the Coarse & Fine Focus Knob to focus the specimen.
2. Observe the left ocular tube with your left eye. If not in focus just adjust the diopter Ring① to make it in focus.

★ **the range of diopter Ring is ±5, as the value align the reticle② of the ring.**

3.2.8 Adjusting the Tension Adjustment Collar (Picture No.14)

★The tightness of the tension adjustment collar has adjusted before leaving factory, if finding it's loosing (the mechanical stage drop itself because of deadweight), please turning the tension adjustment collar① until the tightness is in order. Turn it along the direction show in the picture, the Coarse Focus Knob② will become tighter. Turn anti-direction will become loosen.

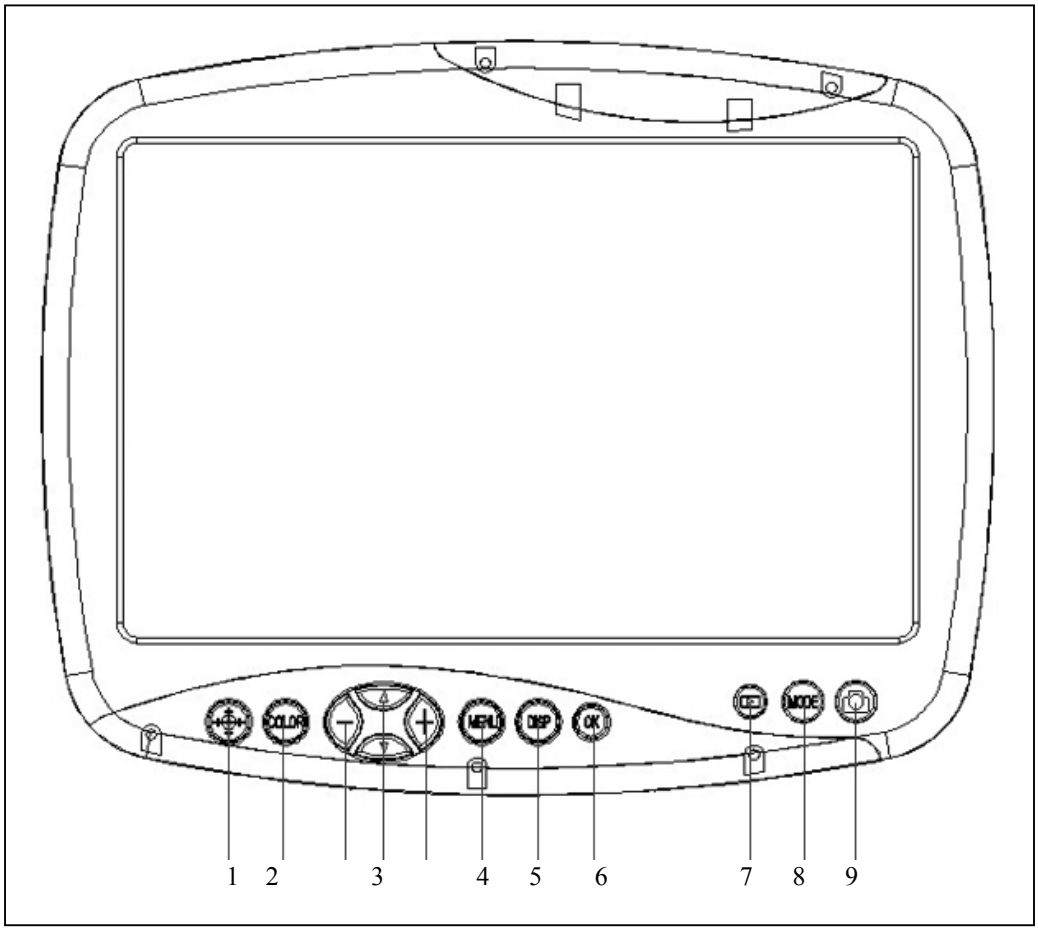
If the mechanical stage drop itself, or even lose focus just after adjusting the fine focus knob③. Mean the tightness of the Coarse Focus Knob② is too low. You should turn the tension adjustment collar along the direction show in the picture to make it tighter.



Picture 14

Adjustment & Operation

3.3 Operation for digital parts



3.3.1 Operation buttons and functions

1、Crosshair & Coordinate

2、Color: White、Black、Red、Purple、Green

3、Direction key

4、Menu: Setting & Exit

5、Display button：Only display image and remove kinds of characters, symbols

6、Confirm Button

7、Snapshot & Video Playback View

8、Snapshot & Video Switch

9、Snapshot & Video

3.3.2 Power on

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A. Before power on, please take out the SD card from the card reader firstly. Insert SD card into SD slot in the right of the microscope head completely until it is locked. Push softly the inserted SD card, it will eject out, then take it out (When the card is under reading or writing, do not pull it out. Better power off first before pulling out the SD card).

B. Connect the DC plug of the power adapter to the "DC" jack on the the microscope. Press the power switch on microscope base, "WELCOME" should appear on the LCD screen. After 3 seconds, the microscope system will be in the preview in the real time automatically when you can snap.

C. Adjust microscope's definition: according to its imaging focal length, make images sharp from LCD display screen, and then the adjustment is done.

3.3.3 Introduction of display on the LCD screen

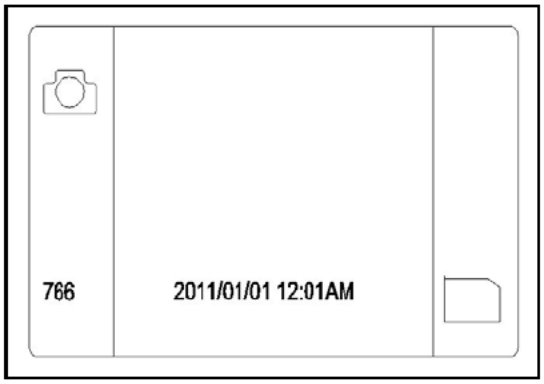

Fig.15

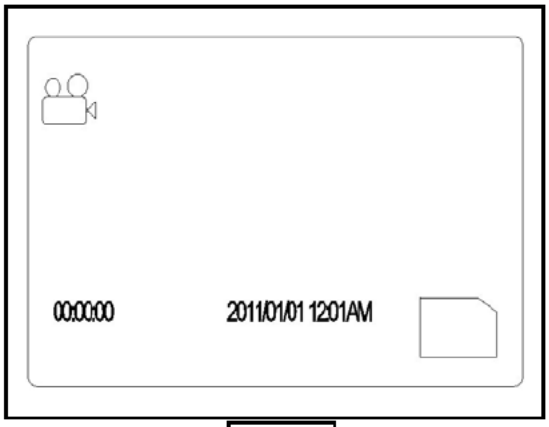

Fig.16

Icons of upper left corner of Fig.15 and Fig.16 (&) indicate snap(photo) mode and video mode.

On the snap mode:

Shown on the below left corner is the Nos of photos that can be taken or the video recording time("766" means in the current setup mode, it still can shoot 766pcs photos) Fig.8. ("00: 00: 00" means in current setup mode it still can record 00min 00sec) Fig.16.

When you insert SD card, the below right corner will show this mark .

3．3．4 Function menu control

With the help of the MENU button, it is able to carry out the setting of the whole system. The direction key allows you to choose the following functions:

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On the snap model,press 

menu button to enter menu interface. Use direction key to select a setting from the above 3 items.

A：Resolution /　　B：Camera function setting /　　C：Display setting/

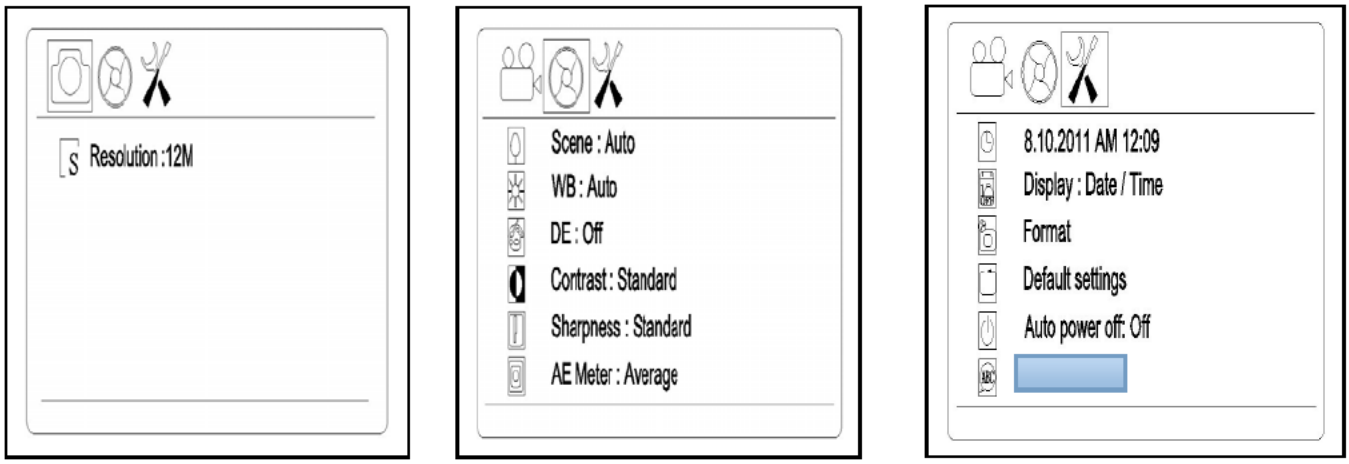


Fig.17

A. Photo Resolution

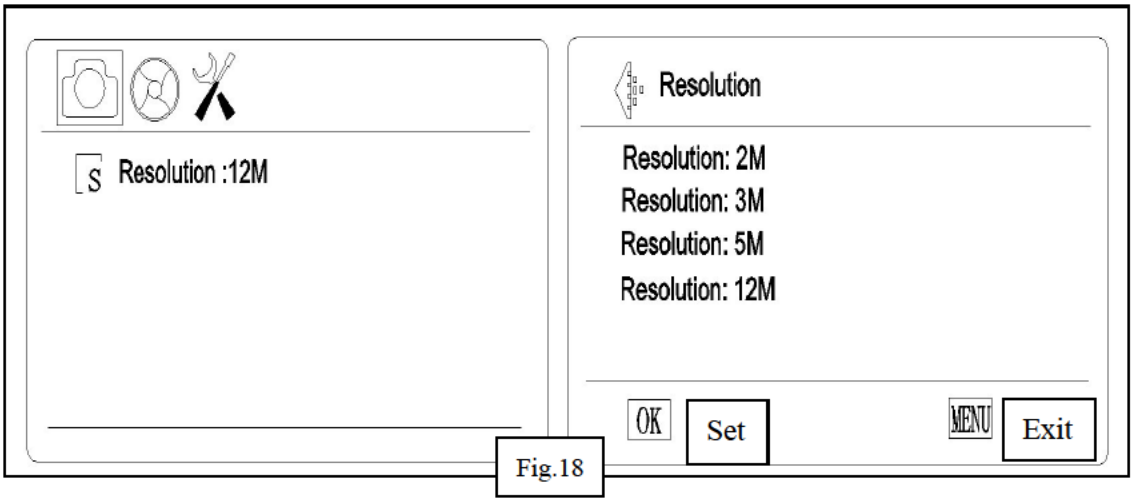


Fig.18

Select photo resolution

On snap model, press **MENU** 

button as shown the "Resolution:12M"(12M means the pixels has selected now), then press the **OK** 

key to select the pixels for photo taken base on 2M/3M/5M/ 12M use by up & down keys (**Fig.11**). Press **OK** 

button to save your selection, the model comes back to **Fig.17**.then you press **MENU** 

button again, the model comes back to snap model.

A. Video Resolution

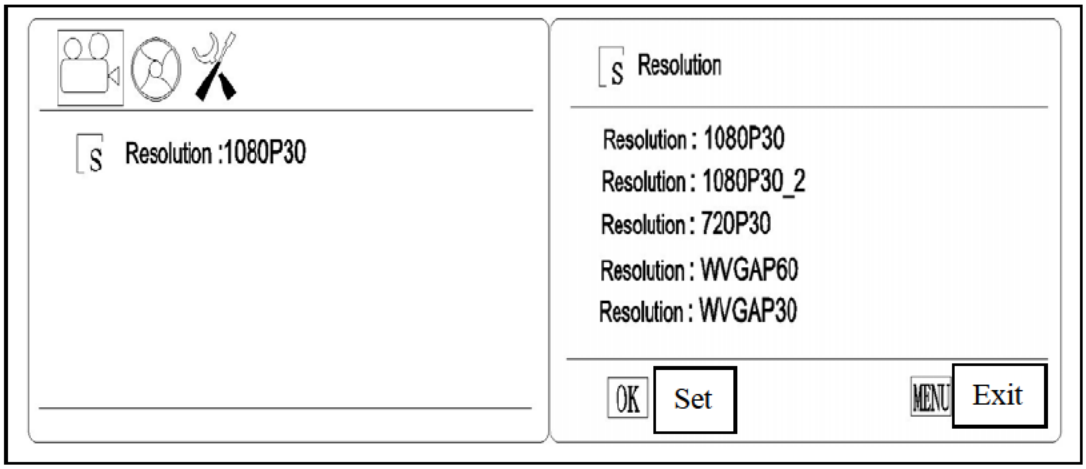


Fig.20

Select video resolution

On video model, press **MENU** button as shown the "Resolution:1080P30"(1080P30 means the pixels has selected now), then press the **OK** key to select the pixels for video taken base on 1080P30/1080P30-2/720P30/ WVGAP60/WVGA P30 use by up & down keys (**Fig.20**). Press **OK** button to save your selection, the model comes back to **Fig.19**.then you press **MENU** button

Fig.19

B. Camera function setting

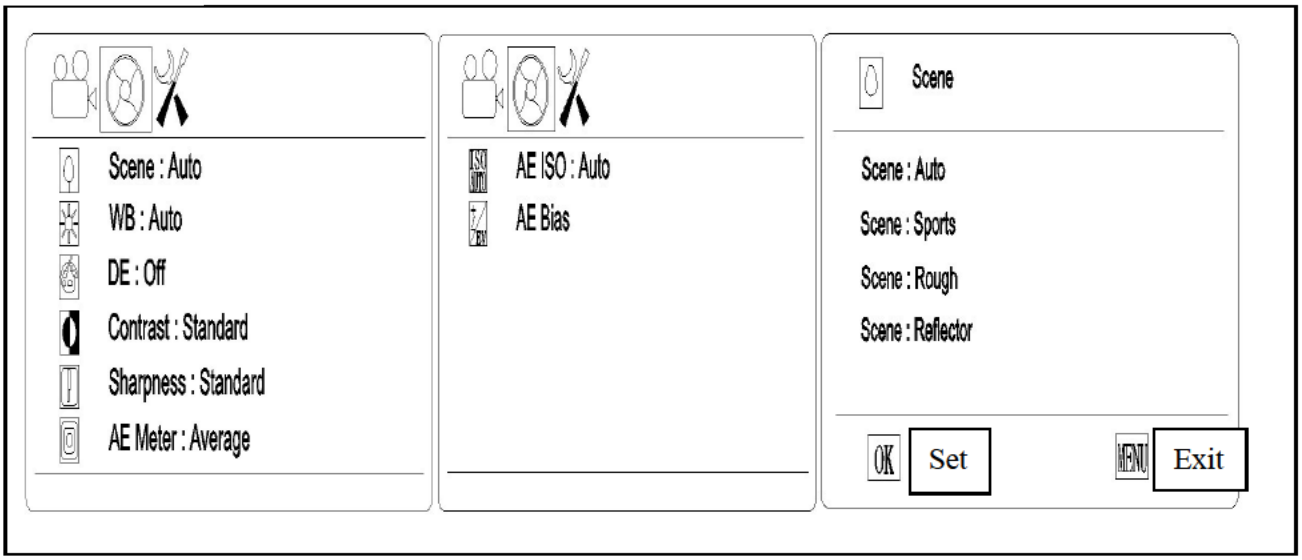


Fig.21 Fig.22 Fig.23

Camera function setting: Setting up each item.

On snap model, press MENU **MENU** button as show the "Resolution", then press the left & right key to enter the "Camera Function Setting" **(Fig21)**.Then press up&down key to select as Scene/ WB/ DE/ Contrast/ Sharpness/ AE Meter/ AE ISO/ AE Bias. **(Fig.21&22).**For example: **Fig.21** You can press the **OK** OK key to enter the Scene setting and choose by up & down keys **(Fig.23)**. Press **OK** botton again to save your selection or exit by MENU **MENU** button. Once confirmed, the model comes back to **Fig21**, press MENU **MENU** again, you can come back to snap model .

On video model, the operation is same.

C. Display setting

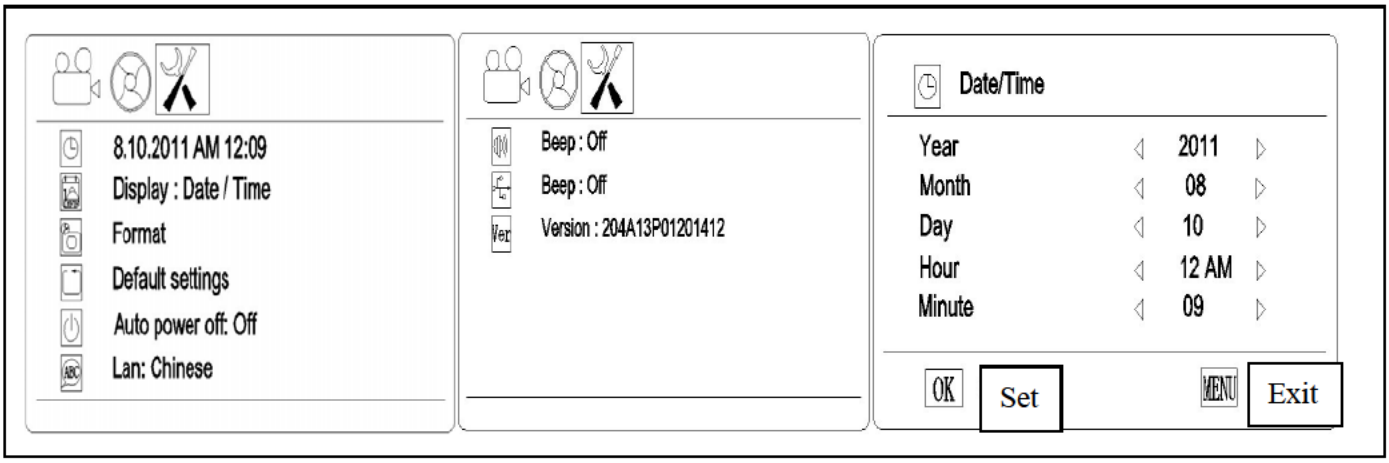
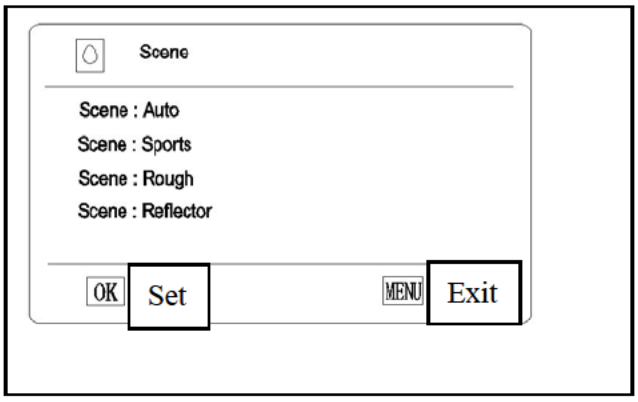


Fig.24 Fig.25

Display Setting: Setting up each item.

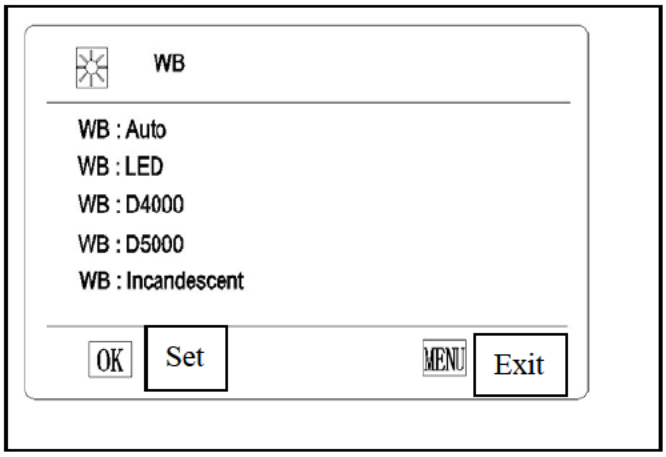
On snap model, press MENU **MENU** button as show the "Resolution", then press the left & right key to enter the "Display Setting" **(Fig24)**.Then press up&down key to select as Date/Time、Display、Format、Default settings、Auto power off、Langue、Beep、USB、Version. **(Fig.24&25).**For example: **Fig.24** You can press the **OK** key to enter the Date/Time setting and change by direction keys **(Fig.26).** Press **OK** botton again to save your selection or exit by MENU **MENU** button. Once confirmed, the model comes back to **Fig24**, press MENU **MENU** again, you can come back to snap model.

On video model, the operation is same.



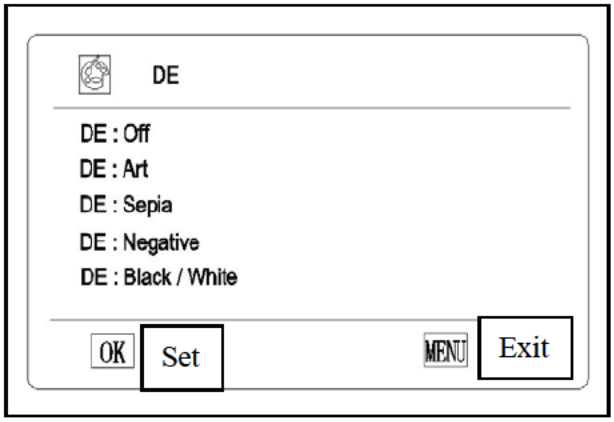
You can choose different Scene by **MENU** button according to the objects observed so that help you to get perfect performance.

B. WB (White Balance)

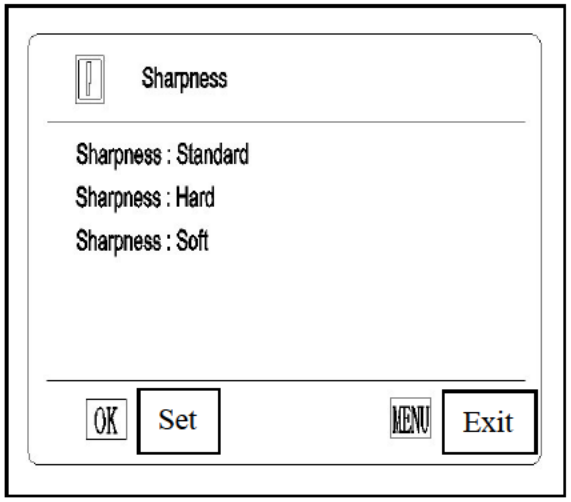


WB will help you to obtain superb color when observing.

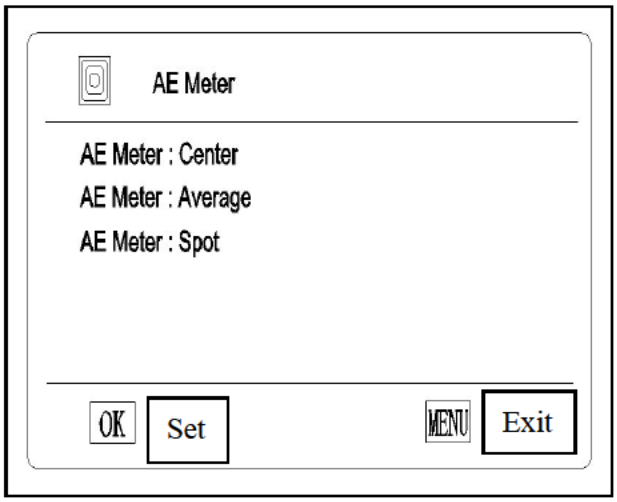
C DE (Color effects)



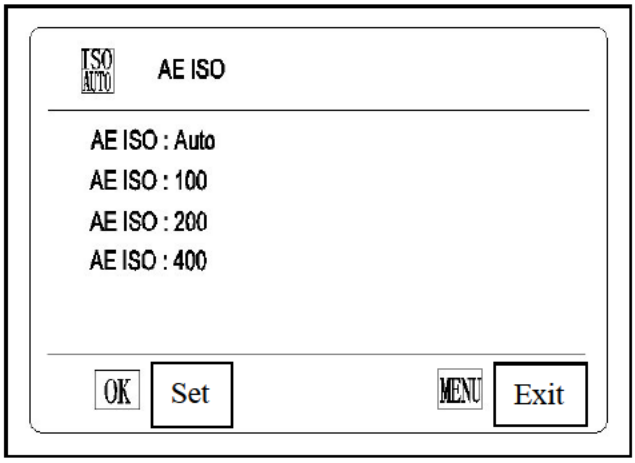
D. Sharpness



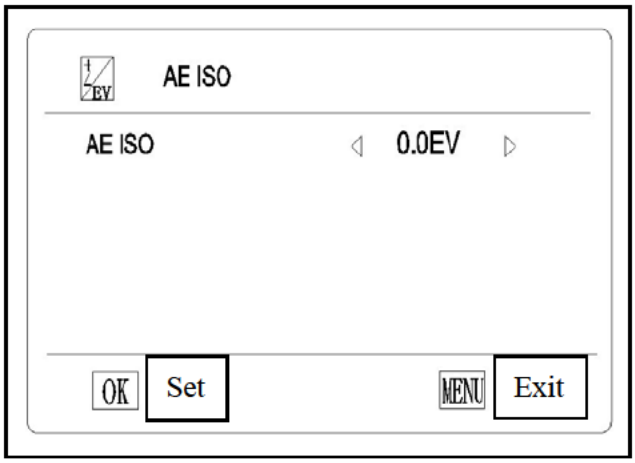
E. AE Meter



F. AE ISO

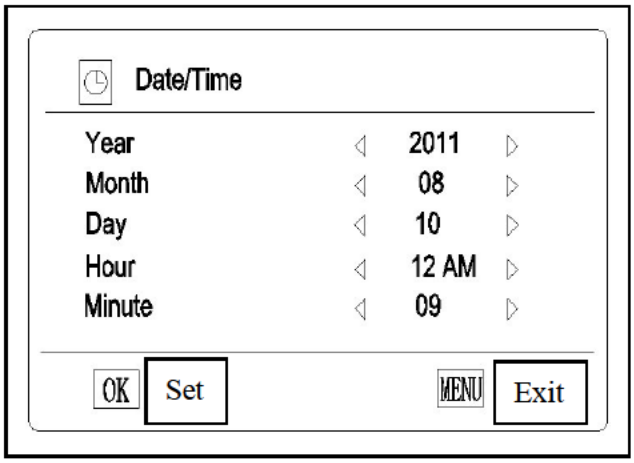


G. AE Bias



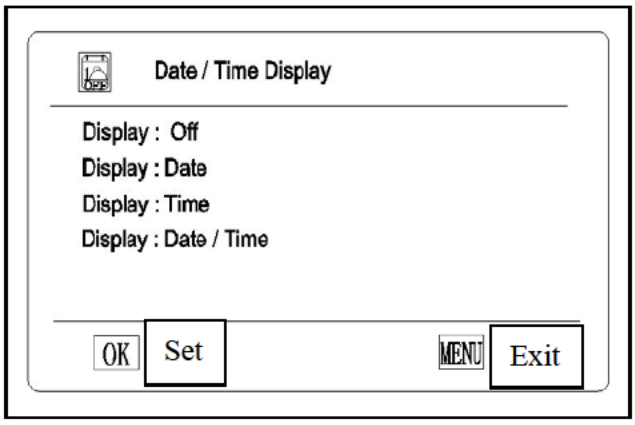
3．3．6 Display setting details

A. Date/Time



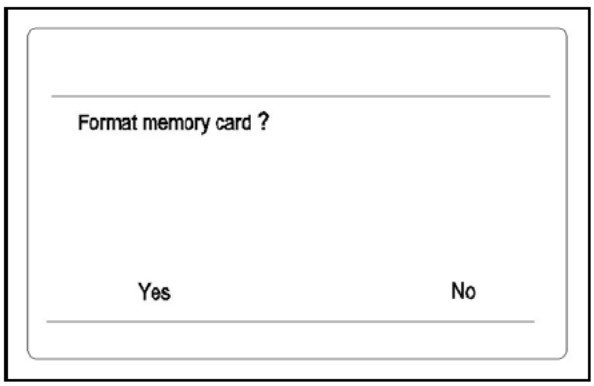
You can use left and right keys of direction button to change the time. After fixed,you can save the time.

B. Display



Date and time information can be stored together with photo taken in SD card. File names also contain date and time information. Before using this camera, please set the date and time properly. You can choose what display you want. If you want to display "Date", you can choose the second option.

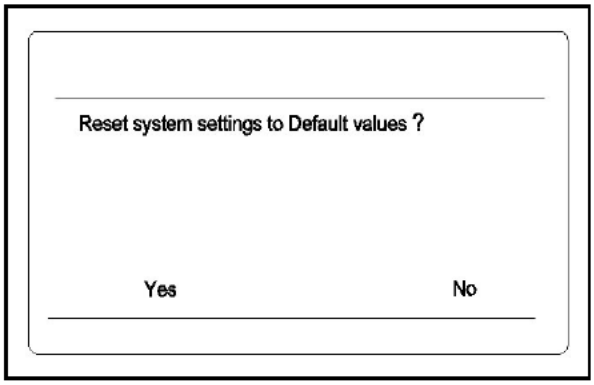
C. Format



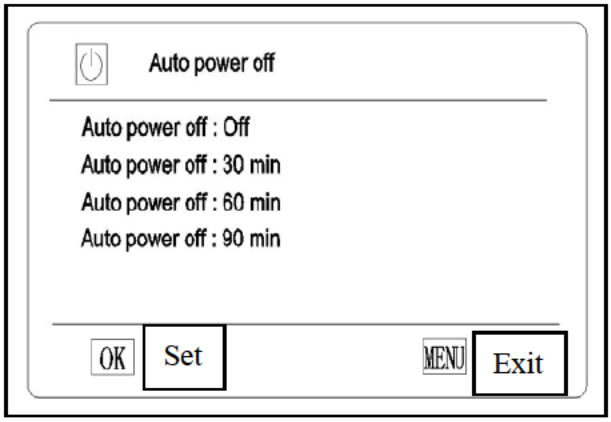
Select "Yes" can format all the SD card inserted; (Attention: Even the protected content will be deleted when formatting, can not be resumed again.) Select "No"

and press menu botton , the model comes back to the snap modlel.

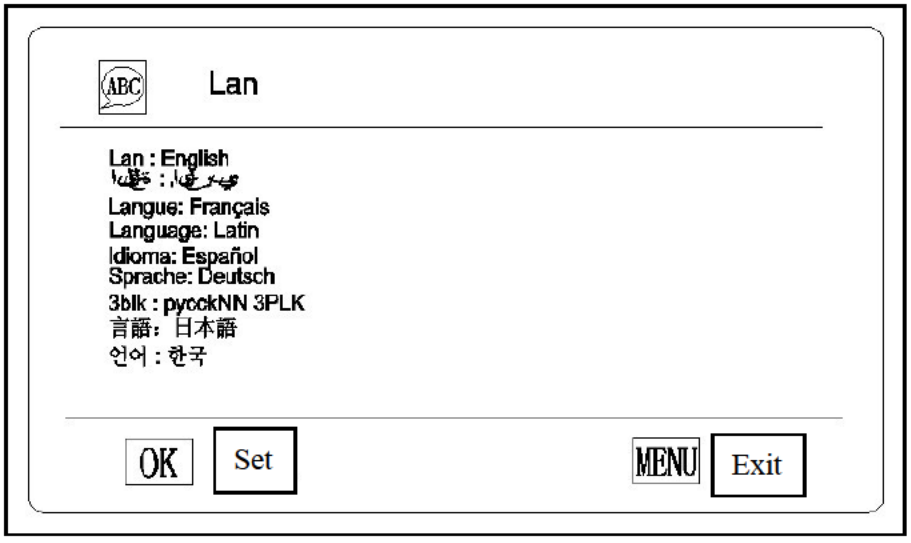
D. Reset system settings to default values ?



E. Auto power off

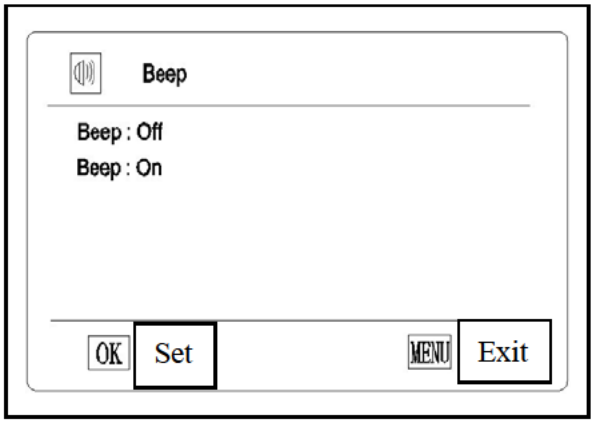


F. Langue

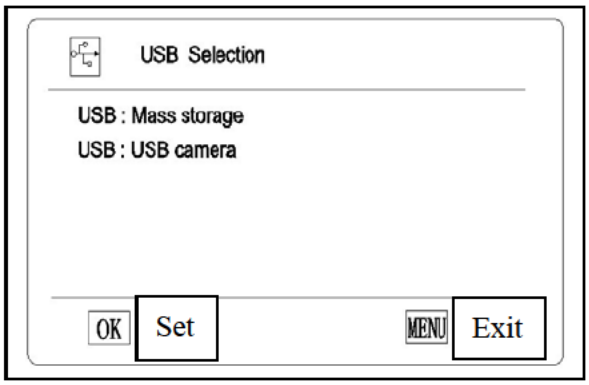


We developed 9 languages according to your demand.

G. Beep



H. USB Selection



3．3．7 Snapshot & Record

A. Snapshot On the snap model, press  button to snapshot pictures and meantime  icon of upper left of LCD screen will show. The pictures automatically stored in SD card. When the card is full,the LCD screen will show "Card full"

B. Record On the snap model, you can enter video model by pressing  button. Meantime the image will show full screen and you can press  button to start recording and  will show on the LCD screen. Press  button again,the video is over and automatically stored in SD card . When the card is full,the LCD screen will show "Card full"

C. Playback Press  button to select playback model.

Press up & down keys to browse every photo and video which is taken and stored in the SD card.

Press left key, the screen will display multi photos and videos. Index display helps to find target photo or video quickly in many pictures and videos.

On the snap model, you can review pictures but can't review videos.

On the video model, you can review videos but can't review pictures.

4. Technical Specifications

1. Main specifications

Viewing Head	**Inclined at 30, interpetiolar distance: 55-75mm**
LCD Screen	**9 inches HD LCD Screen, Resolution is 1280×800**
Sensor	**5Mega Pixels COMS**
Imaging Output	**HDMI OUT**
Eyepiece	**View field line 18mm**
Nosepiece	**Forward Quadruple Nosepiece**
Objective	**Achromatic :4×, 10×, 40×, 100×**
	Plan Achromatic Objective 4X, 10X, 40X, 100X. (Optional)
Focus System	**Coaxial Coarse and Fine Focusing System, Sensitivity and Graduation of Fine Focus: 0.002mm. Coarse & fine focus range:23mm**
Condenser	**Abel, NA=1.25**

Stage	**Double layer mechanical stage, area: 140×140mm, movement range: 75×50mm**
Lamp-House	**halogen lamp 6V20W/3W LED**

2. Eyepiece & Objective

1. Objective

Magnification	Numerical Value Aperture Diaphragm (N.A)	Thickness of Cover Slip (mm)	Working Distance Achromatic Objective Lens	Working Distance Plan Achromatic Objective Lens (Optional)	Working Mode
4×	0.10	0.17	15.2mm	25.4mm	Dry
10×	0.25	0.17	6.5mm	11.22mm	Dry
40×	0.65	0.17	0.52mm	0.6mm	Dry
100×	1.25	0.17	0.2mm	0. 21mm	Oil

2. Eyepiece

Sort	Magnification	Focus(mm)	View field line(mm)
Plan Eyepiece	10×	24.95	Ø18

3. Total magnification with Objective plus Eyepiece：

Objective	**10×**	**10×**	**10×**	**10×**
Eyepiece	**4×**	**10×**	**40×**	**100×**
magnification	**40×**	**100×**	**400×**	**1000×**
Total magnification	**63.5×**	**158×**	**635×**	**1580×**

5. Configuration table

Name of Components	Specifications	Amount	S-1260	S-1261
Body	Main Frame	1	○	○
	Double Layer Mechanical Stage	1	○	○
	Condenser Bracket	1	○	○
Observation System	Compensation Free binocular Head	1	○	○
Condenser	N=1.25 Abel Condenser	1	○	○
Nosepiece	Quadruple Nosepiece	1	○	○
Lamp-house	6V20W Halogen Lamp	1	○	○

	Spare Lamp	2	O	O
	Spare Fuse BGX-1-20(0.5A)	2	O/2	O
Eyepiece	Plan Eyepiece 10×	2	O	O
Objective	Achromatic Objective 4×/10×/40×/100×（Oil, Spring ）	4	O	
	Plan Achromatic Objective 4×/10×/40×/100×（Oil, Spring ）	4		O
Condenser	Bright Field Condenser with Changeable Raster	1	O	O
Filter	Baby Blue ,Green	1	O	O
Power Supply	DC 12V 3A	1	O	O
Cedar Oil		1	O	O
SD Card & Reader		1	O	O
USB Cable		1	O	O
Video Cable		1	O	O
Operation Manual		1	O	O
Application Software		1	O	O
Inspection Certificate		1	O	O
Warranty Card		1	O	O

6. Trouble Shooting

1. Optical Part:

Problems	Reason for problems	Solution
The edge of the field of view has shadow or the brightness is asymmetry	The nosepiece is not in the located position	Adjust it into the located position
	The filament Imaging not in center	Adjusting it to center
	Stains on the lens (Condenser, Objective, Eyepiece)	Wipe up by pledget with ethanol and aether mixture
	Aperture Diaphragm size is too small	Make the aperture Diaphragm size larger properly

	Condenser position is not correct	Turn the condenser focus knob to shift the condenser. raise and decline to the proper position
	Brightness adjustment is not exact	Turning the brightness adjustment knob to proper position
Stains in View Field	Stains on the lens (Condenser, Objective, Eyepiece)	Wipe up
	Stains on the specimen	Wipe up
	The Condenser position is too low.	Loose the condenser locking bolt. Adjust the position of condenser. Screw down the locking bolt.
Low image quality (Low resolution and low contrast)	No cover slip on the specimen	Cover the slip
	The cover slip is too thick or too thin.	Use standard cover slip. Thickness:0.17mm
	The specimen is reversed	Reverse back.
	The dry objective is stained with oil (Especially 40X)	Wipe up
	Stains on the lens (Condenser, Objective, Eyepiece)	Wipe up
	The oil objective is not in oil.	Use oil
	There is air bubble in oil	Remove oil
	Not use the appointed oil	Use the appointed oil
	The opening of Aperture diaphragm is too large	Properly make it smaller
	Stains on the incidence lens in the binocular drawtube.	Wipe up
	The opening of Aperture diaphragm is too small	Properly make it larger
	Condenser position is too low	Adjust the position
One side of image is dark.	The condenser is not in center of the view field, or the condenser is inclined.	Reinstall the condenser and adjust the center carefully by using the condenser adjusting bolt.
	The nosepiece is not in the located position	Turn it into the required position
	The specimen is floating on the stage.	Reinforce it reliably.
The image moved when focusing.	The specimen is floating on the stage.	Reinforce it reliably.
	The nosepiece is not in the located position	Turn it into the required position
The image takes the yellow slightly.	Not use the color filter.	Use the blue filter.

The bright degree is not enough	**The opening of Aperture diaphragm is too small**	**Properly make it larger**
	Condenser position is too low	**Adjust the position**
	Stains on the lens (Condenser, Objective, Eyepiece)	**Wipe up**

2. Mechanical Part:

Problems	Reason for problems	Solution
Can't focus when use high magnification objective.	**Slice put reversed. Cover slice is too thick.**	**Reverse back Using standard cover slice. Thickness: 0.17 mm**
Touch the slice when switch the objective from low magnification to high one.	**Slice put reversed. Cover slice is too thick.**	**Reverse back Using standard cover slice. Thickness: 0.17 mm**
The specimen move not flowing	**The slice holders not nip the slice firmly.**	**Make it firmly**
Two eyes image not in superposition	**The interpetiolar distance is not correct**	**Adjust the interpetiolar distance correctly**
Can't observe the imaging	**Mechanical stage location is too low**	**Adjust the stage and tension adjustment collar higher**
The cover slice often crack caused by the objective lens impact	**Mechanical stage location is too high**	**Adjust the stage and tension adjustment collar higher**
The eyes are uncomfortable	**The diopter is not right**	**Adjust the diopter according your sight**
	The bright degree is not properly	**Adjust the voltage of bulb.**
	The interpetiolar distance adjustment is not properly	**Adjust the interpetiolar distance until the left and right fields of view coincide completely.**

3. Electric Part:

Problems	Reason for problems	Solution
The lamp can't light	**No power supply**	**Check the power cord, and connect them exactly**

	the installation of the bulb is wrong	**Install the bulb correctly**
	The bulb burn out	**Change a new bulb**
The bulb burn out in a high frequency	**Not use a appointed lamp High voltage**	**Use a appointed lamp. If the circumstance still not change , please contact the maintenance part.**
LCD Screen doesn't work	**Power supply doesn't connect well**	**Check the power cord and plug**
The rightness degree is not enough	**Not use a appointed lamp Low voltage**	**use a appointed lamp Turn up the voltage**
There is noisy line on the microscope LCD screen	**It's not enough for the base light**	**Increase the brightness, open the aperture diaphragm larger**
Operating button don't work well	**Chance to microscope system halt**	**Turn off and restart the microscope**
The light glimpse	**The bulb is going to spoil**	**Change the bulb**
	The power cord have a poor contact	**Check the power cord, and connect them exactly**