



Auto Focus Video Microscope
VM-500
Operation Manual

Sinowon Innovation Metrology Manufacture Limited
www.sinowon.com

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Preface

Thank you for purchasing our video microscope. Our company focuses on improving the quality of our products and constantly updating the structure. If the contents of the instruction manual are slightly different from the structure of the product, please forgive us without prior notice.

Preface(A Must for Safe Using)

If users don't follow the operation manual, it's both dangerous for users and damaging microscope. Please follow Operation Manual from start to finish. There're following marks to highlight concerning text.



DANGER: It represents if users don't follow this step in manual or give wrong operation, it's highly possible to get injured or dead.



WARNING: It represents if users don't follow this step in manual or give wrong operation, it's possible to get injured or dead.



NOTICE: It represents if users don't follow this step in manual or give wrong operation, it's possible to get injured and instrument damaged.



PROHIBIT: It represents to prohibit this action



: It represents to make you aware of the action



: It represents notes for operation and maintenance.

Safety Attention



DANGER 1: Install video microscope on solid and flat working stage. Don't put it on surface that deforms easily, for it will make air get hot, even cause a fire.



DANGER 2: When you find video microscope gets hot, begins smoking or get bad smell, please pull the plug immediately. If you continue to operate, it will cause a fire. Please take care of yourself not to get burnt, call authorized agent or headquarter for service.



WARNING 3: Keep power cord away from microscope light source. When you operate microscope for a long time, once power cord get closed to light source, the surface of power cord may melt and leak electricity.



WARNING 4: Please make sure the earth terminal of the microscope is firmly connected, otherwise safety and instrument performance is not guaranteed.



WARNING 5: Use specified power adapter, if not, it will result in fire or electric shock.

Notice Before Operation



NOTICE 1: Video microscope is precision instrument. Please handle and operate with care, avoid sudden and violent vibration.



NOTICE 2: Don't operate in environment like direct sunlight, high temperatures or dust, and where vulnerable to vibrate. (Operation condition refers to the 3rd section)



NOTICE 3: Carefully grasp the base and column parts when moving the microscope. If you hold the focusing knob or lens during transportation, it will damage the video microscope.



PROHIBIT 4: Do not disassemble, repair, or alteration by yourself, otherwise it will cause electric shock, fail and lead to injuries.



PROHIBIT 5: Do not violently touch LCD or lens with a sharp object, otherwise it cannot display.

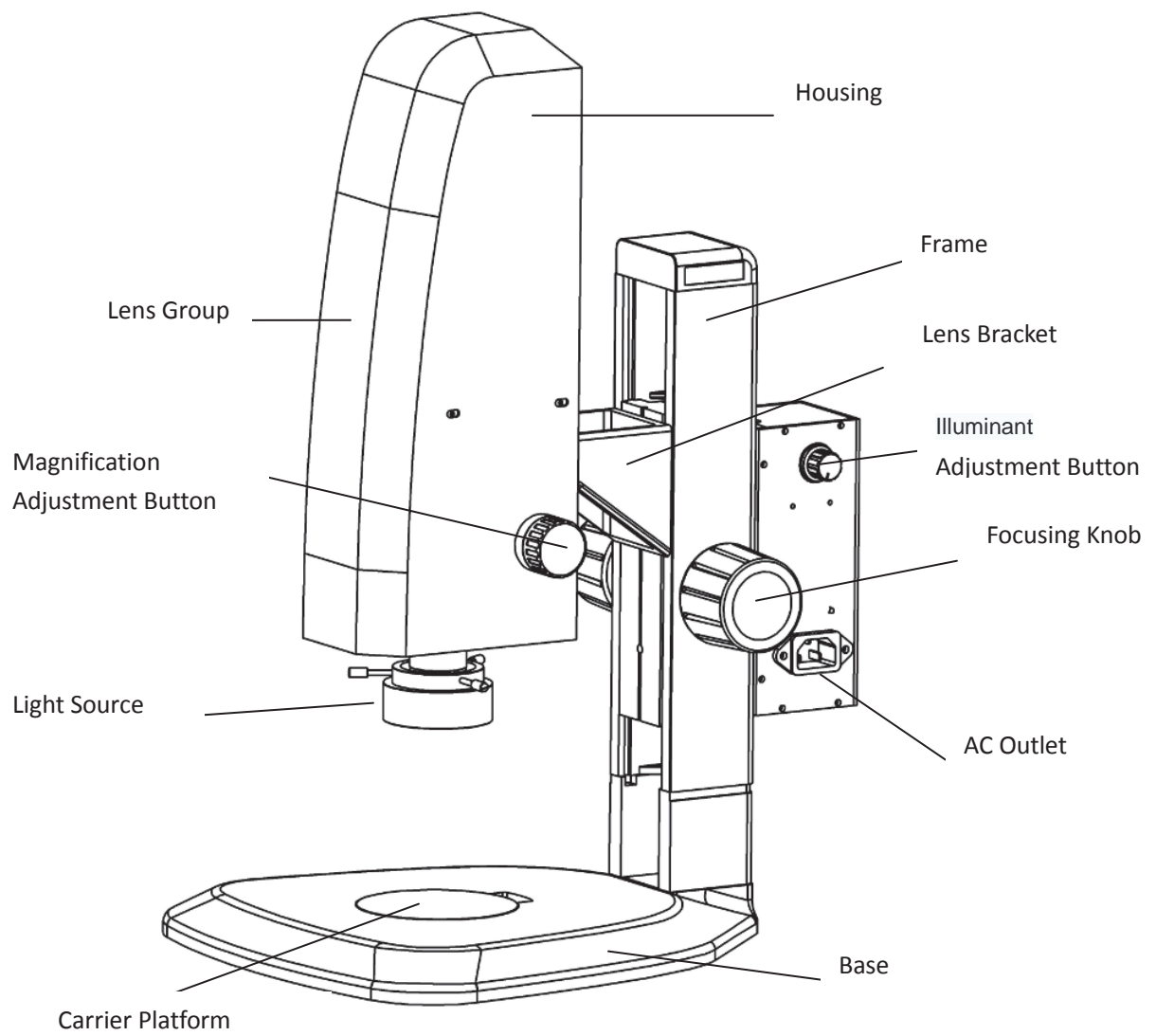


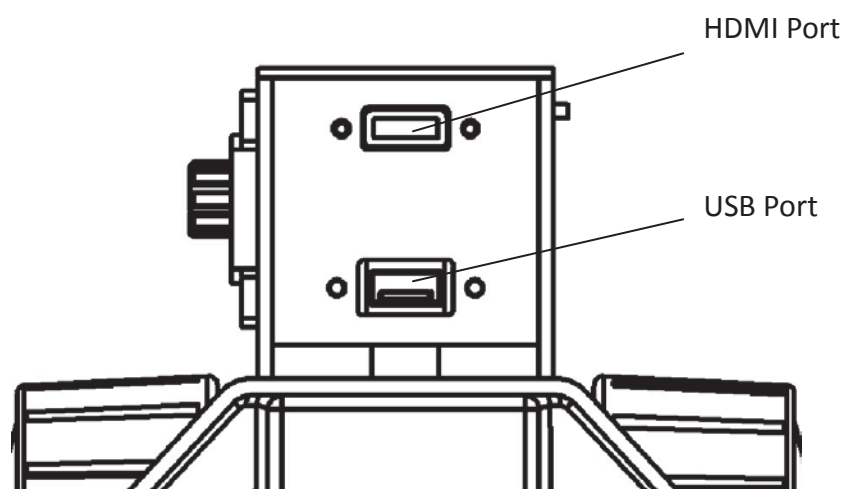
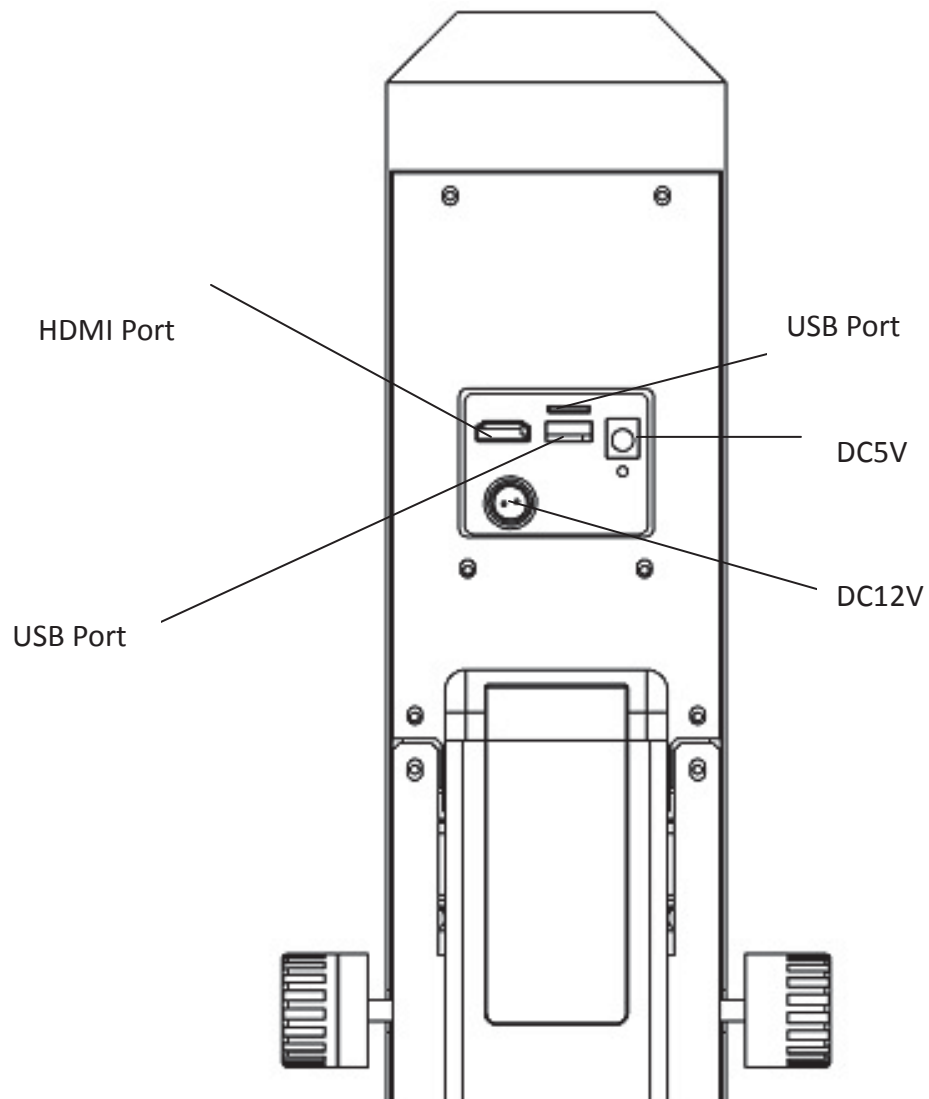
PROHIBIT 6: This product is not waterproof, not immersed in water or exposed to water or rain soaked.

Care and Maintenance

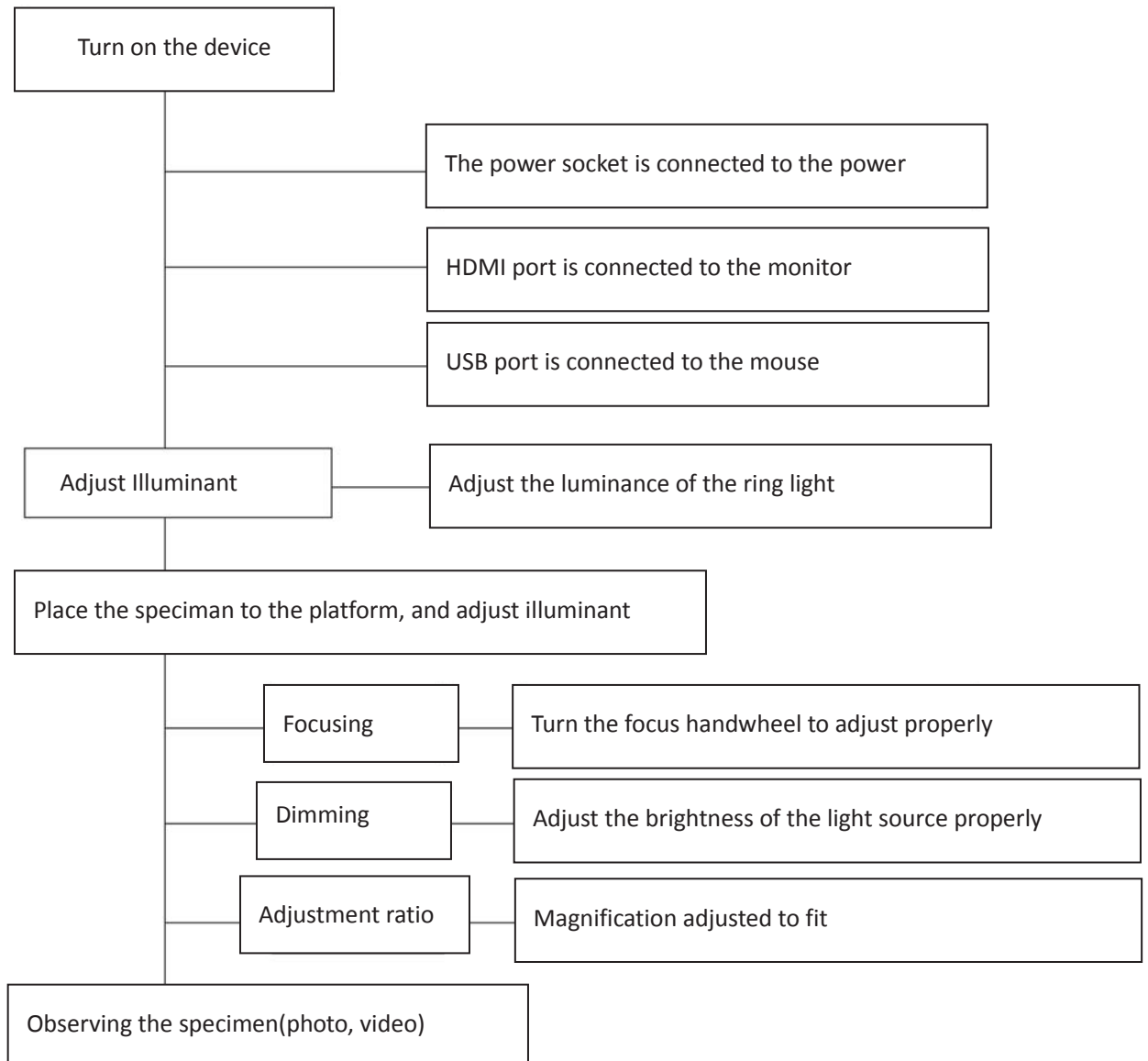
1. When cleaning glass parts, please gently wipe by screen cloth. When removing oil of fingerprints, use a small amount of ether (70%) and alcohol (30%) mixed to wipe.
2. Do not use organic solvents to clean the microscope except glass, If you want to clean these parts, use a soft cloth without furry moistened with a small amount of neutral detergent to clean.
3. When not in use, power supply of parts should be closed, main power supply should be turned off.
4. Dust cover should be taken on when not in use

1. Instrument Parts





2. Steps of Observation



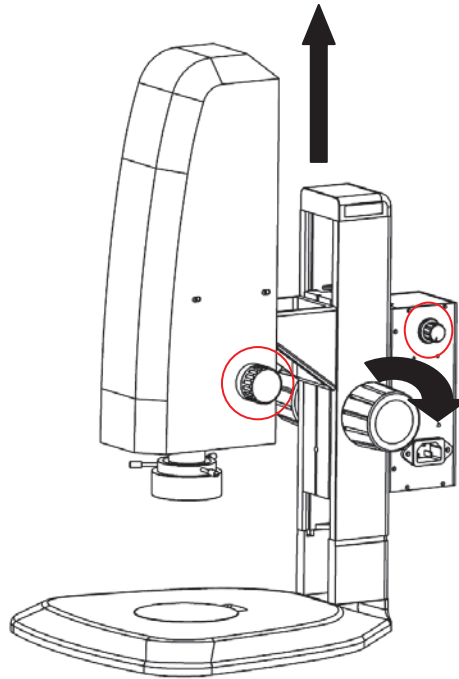
3. Technical Parameters

Electronic Magnification	8X~206X(16:9 21.5" Monitor)
Optical Objective	0.7X~4.5X Horizontal Zoom Lens
	Zoom ratio: 6.5:1
	0.5X C-mount Camera Adapter
Camera Parameters	3 million pixel (1920*1080)
	Image Size: 1/2.8"
	Frames Per Second : 1080P@60fps/1080P@50fps
Camera Function	Auto Focus, Photograph and Video Record
	HDMI Output
	White Balance; Brightness Control; Digital Noise Reduction
Microscope Stand	Z-axis Travel: 100mm/ Coarse Lifting System
Electrical Parameters	AC90~240V; 50~60HZ
Dimension	375*285*500mm
Gross/Net Weight	7.5/6.5 Kg

4.Adjusting Setting



Attention: Every operation need be careful.



According to the specimen to adjust the knob as picture, It will be auto focus when the test sample picture clear.(the focus frame is green) Focusing done. Users could choice suitable magnification to observe samples by adjusted knob as red circle. Or not focusing please adjust the light source and focus again.

▲ Image may be blurry after enlargement, user needs to subtle focus adjustment.

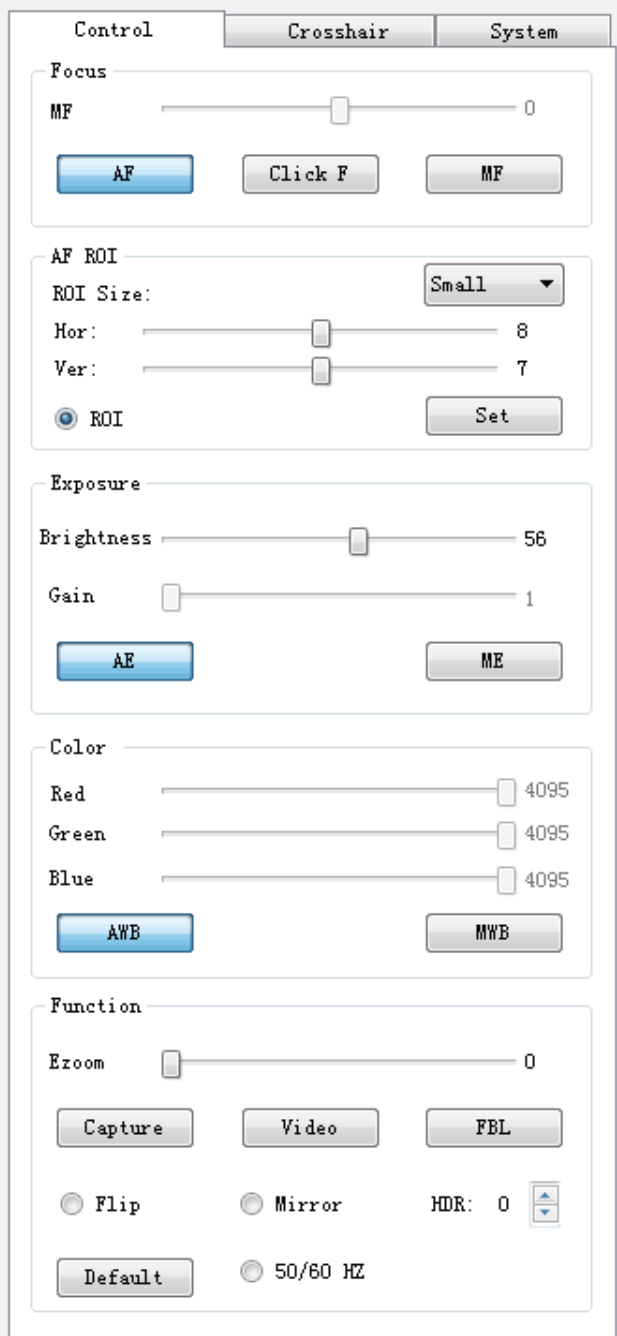
▲ Hear "clicking" sound means it is in the right position of magnification during switching.

▲ When the knob in place of 0.7 or 4.5, do not continue to rotate backward or forward, otherwise it will damage zoom lens.

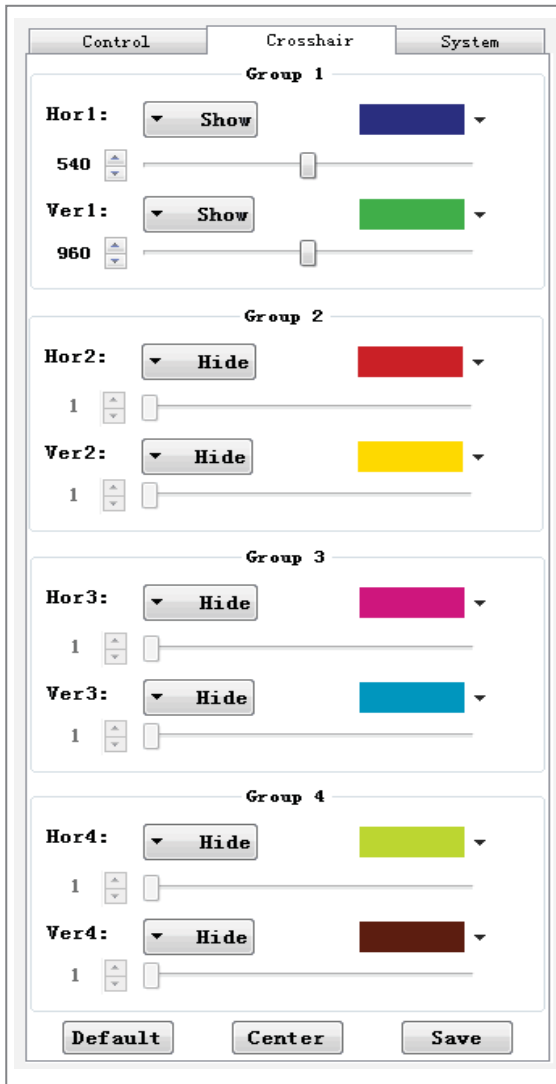
5.Parts of Controller

5-1 Introductions for Controller

5-1-1. Control menu bar function introduction:



1. When you select "manual focus", you can adjust the "focus position".
2. When the focus frame is selected, you can select the focus frame size, the AF frame position, and save settings.
3. When selecting "auto exposure", the brightness can be adjusted.
4. When you choose "manual white balance", you can adjust the "red green blue" color value.
5. Inversion: image vertical flip; flip: image horizontal flip.
6. 50/60HZ: anti screen flicker. black and white :black and white color mode.
7. Reset: restore the factory setting.



1. Crosshairs can be choose "show" or "hide".
2. Crosshairs can choose color.
3. Tick mark:measuring size.
4. Reset line: restore factory setting.
5. Center line: displays a set of crosshairs, located at the center.
6. Save: Save settings.



1. You can change and save the time after the change.
2. You can choose the language of the menu.
3. You can see the version information.

5-1-2.Operation Precautions

1. Use only DC5V power supply
2. Under AF mode, the program will automatically adjust the focus to provide a clear image; Switching to "Click F" mode, it will lock the focus after the system performed autofocus on the required image; Even if the image is blurry, with focus being locked, it will not trigger autofocus again; When "MF" (Manual Focus) is set, the MF can be adjusted .
3. If autofocus cannot operate under special circumstances (e.g. Smooth reflect surface). Move the focus frame to objects with details, change to "Click F" mode to perform one-off auto focus operation, or switch to "MF" mode for manual focus operation.
4. It needs to wait for a period of time When "Save Image" is selected, icons appear in the center of the screen and are automatically saved to U disk in jpg format.
5. When pressing "Video" button to start recording, **•Rec** will appear at the lower right hand corner of the camera screen. By pressing "Video" button again, video recording will be stopped and automatically saved to U disk with H.264 format
6. When saving the image / video, the folder and files will be named according to date and time respectively.
7. When you need to correct the rear focus of the lens, select the "motor in the middle" and then adjust the mechanical rear focus to make the image clear.
8. Support pedal and controller operation.

6.Frequently Trouble Problems

NO.	Problems	Cause	Solutions
1	Poor visibility Image is not obvious	Some dirt on the lens or dirty Surface dust or dirty Focus is not correct	Clean the lens (see manual and maintenance) Cleaning surfaces Adjust the focus
2	In the process of observation, the mirror itself slides down, the image is not clear	Focus wheel is too loose	Appropriately lock tension link (see 4-3)
3	Power light does not light	Power supply connection is bad	Check the power connections
4	No image on the monitor	VGA cable	Check the VGA cable connection
5	Incorrect image zoom	Monitor resolution settings	Moving the mouse pointer to the edge of the underside of the monitor (middle) button, select the appropriate resolution.
6	Image confusion	Samples are not placed correctly on the loading table/sample surface is not vertical to the lens	Put samples right in loading platform by fixture.
7	Coarse focus adjustment	Tension link becomes very tight	Relax tension link (see 4-3)

7.After-sales Service

7-1 Regular maintenance procedures

- Cases of non-artificial damage, we sold equipment to promise free 1 year-warranty (other Accessories not within the scope of free warranty), and provide lifetime maintenance service.
- When there are other abnormal phenomenon with video microscope, please do not remove or adjust any assembled parts, after you fill out the warranty card, hand over to the company maintenance department, implementation of the warranty. Instruments generally do not stay for more than a week in my company.

7-2 User Guide

- After the user has purchased products, please fill in the warranty registration card with stamp of the user unit.
- Please send 1st part of Warranty Card and copies of invoices to the customer service center of the company, may also delegate units for sale to send. 2nd part send (save) local branch service station registering. The user in no maintenance region return 1st and 2nd to the customer service center of the company. While incomplete, only repair no warranty.
- Products from enjoy two-year free maintenance, replacement and return with Warranty Card, from start of the purchasing day. During the warranty period, if user could not present (warranty card or) copy of the purchase invoice, the company calculate warranty period according to the date when instrument is out of factory, the warranty period is one year. Products out of warranty period requires maintenance fee. When damage is caused by disassemble products on your own, transportation, inappropriate storage and wrong operations, etc is not subject to warranty.

8.Storage Condition, Transport and Points for Attention

- Storage should stay away from vibrations, strong magnetic fields, humidity, dust, corrosive medium, it should be stored at normal temperature.
- Avoid rough handling in transit, so as not to cause damage to the instrument.
- Transportate under the guaranteed status of the original packaging, in three levels of normal transport on the road.



Sinowon Innovation Metrology Manufacture Limited

Address: A1, KaiSong Park, 2# Baima Xianfeng
Road, South District, DongGuan, China (523080)

Tel: 0086-769-23184144 Fax: 0086-769-22854144

Web: www.sinowon.com E-mail: sinowon@188.com

Hotline: 0086-137-2828-8444

Authorized Distributors: