Contents

1 Before use 注意事项

1-1 *NOTICE*

1) Microscope ought to be placed in a dry and clean place. Do not expose the microscope in the sun directly. Avoid high temperature and violent vibration.

2) As microscope is a precision instrument, handle with care, avoiding impact or abrupt movement during transportation.

3) To keep the image clear, do not leave fingerprints or stains on the surfaces of the lens.

4) Never turn the left and right focusing knob in the adverse direction at the same time, otherwise the microscope will be damaged.

5) Hold the camera with one hand for fearing of falling when you take the films out of the big camera.

1-1 *操作*

（一）不应让部件直接暴露在阳光下，应放置在干燥、清洁的环境中，避免高温和剧烈振动。

（二）显微镜是一种精密仪器，应小心轻放，在运输过程中避免冲击和碰撞。

（三）为了不影响像的清晰度，避免污物或手指印留在镜片表面。

（四）不能用相反方向转动左右变焦手轮，否则会发生故障。

（五）从大型摄影机上取出胶片时，应用单手扶住摄影机，以免它倾倒。

1-2 *MAINTENANCE*

1) All lenses must be kept clean. Fine dust on the surface of the lens should be blown off with hand blower or wiped off gently with a soft lens tissue; Fingerprints or oil marked on it should be wiped off with a tissue moistened with a small amount of xylene or a 3:7 mixture of alcohol and ether.

2) Never use the organic solution to clean the other surface (especially the plastic surfaces). If necessary, please choose the neutral detergent.

3) Do not take the microscope apart for fearing that it is damaged.

4) After using, cover the microscope with the dust-cover provided and store it in a dry and clean place free from moisture to prevent rust.

5) To keep the performance of the microscope, please check it periodically. The detail can be gotten from the agent nearby.

维护和保养

（一）所有的镜片都应保持清洁。若有细小灰尘，可用吹气球吹去或棉纱轻轻抹去；若有油迹和手指印，可用蘸有少量比例为3：7的乙醇乙醚混合液的棉纱轻轻抹去。
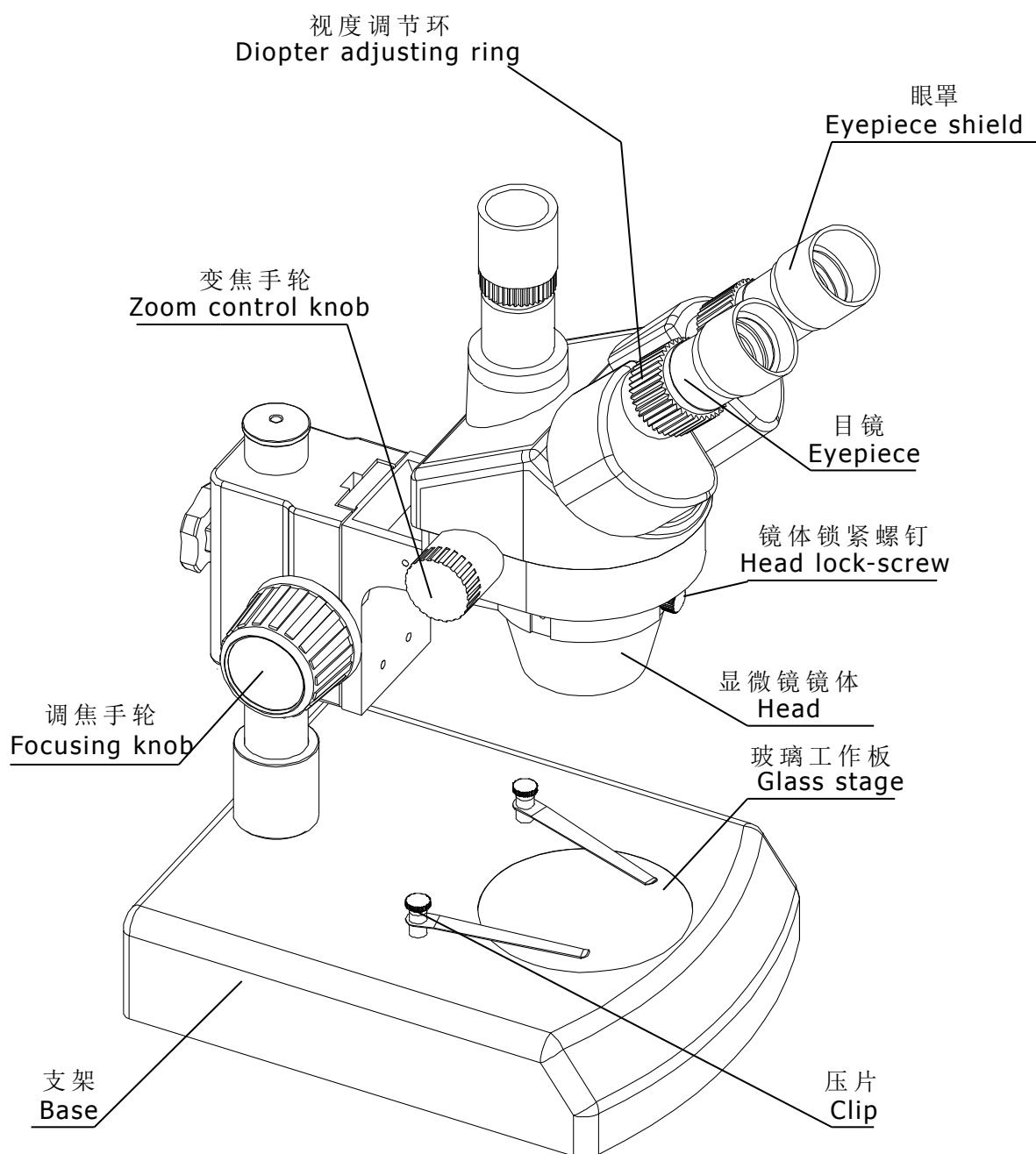
（二）不能用有机溶剂去擦拭显微镜的其余表面，特别是塑料制品的表面，应用中性洗涤剂进行清洁。

（三）不应自行拆装显微镜，以免使显微镜性能受到影响。
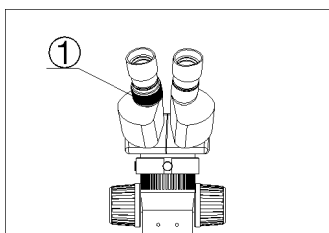
（四）显微镜不使用时，应用防尘罩盖好，使之不与灰尘接触，并贮藏在隔绝湿气的地方，以免生锈或发霉。

（五）为保持显微镜的性能，建议进行定期检查（详情可与就近的代理商联系）。

2 Nomenclature 各零部件名称

MC75T

视度调节环
Diopter adjusting ring

眼罩
Eyepiece shield

变焦手轮
Zoom control knob

目镜
Eyepiece

镜体锁紧螺钉
Head lock-screw

显微镜镜体
Head

调焦手轮
Focusing knob

玻璃工作板
Glass stage

支架
Base

压片
Clip

3 Operation 操作

3-1 Place the specimen

Place the specimen in the middle of the glass workbench. If it is necessary to hold down the specimen, choose a suitable lighting method to illuminate the specimen.

放置标本

将试样放在玻璃工作台的中间。 如果需要按住标本，请选择合适的照明方式来照亮标本。

3-2 Viewing adjustment and focus

Observe through the eyepiece on the right, rotate the focusing handwheel to make the specimen image clear observe through the left eyepiece, rotate the left diopter adjustment ring to see the specimen clearly

观看调整和聚焦

通过右侧目镜观察，旋转调焦手轮，使标本图像清晰　　通过左侧目镜观察，旋转左侧屈光度调节环，使标本清晰可见

3-3 Adjust interpupillary distance

Hold the left and right prism boxes with your hands, and rotate the left and right prism boxes in the direction shown by the arrow until you feel comfortable in binocular observation.

调整瞳距

双手握住左右棱镜盒,按箭头方向转动左右棱镜盒,直至双目观察舒适为止。

3-4 Use of eye mask

For people who do not wear glasses, hold the diopter adjustment ring with your hands so that it does not rotate. By rotating the eyepiece, the eyecup can fit the observer's eye better.

For people with glasses, you can take off the goggles and observe

眼罩的使用

对于不戴眼镜的人，用手握住屈光度调节环，使其不转动。 通过旋转目镜，眼罩可以更好地贴合观察者的眼睛。戴眼镜的人，可以摘下护目镜观察.
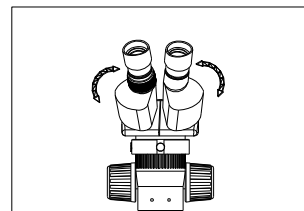
3-5 Installing and removing the reticle

Unscrew the reticle holder from the eyepiece. Clean the reticle, place the engraved side of the reticle down, and install it into the reticle holder. Screw the reticle holder with the reticle into the eyepiece holder until it is tightened. To disassemble the reticle, unscrew the reticle holder from the eyepiece, take out the reticle, wrap it in clean paper, and store it

安装和拆卸分划板

从目镜上拧下分划板支架。 清洁分划板，将分划板有刻字的一面朝下，装入分划板支架中。 将带有十字线的十字线支架拧入目镜支架，直到拧紧。 要拆卸分划板，从目镜上拧下分划板支架，取出分划板，用干净的纸包起来，然后存放

3-6 choose the optical system

You can alternate the binocular observation and video capture by pushing or pulling the pole.

You can attain binocular observation by pushing the pole inside, or attain video capture by pulling it outside. No matter what optical system is chosen, push or pull the pole thoroughly.

选择光学系统
你可以通过推或拉杆子交替进行双目观察和视频捕捉。
你可以通过把杆子推到里面来实现双目观察，或者通过把它拉到外面来实现视频捕捉。无论选择哪种光学系统，都要彻底推或拉杆子。
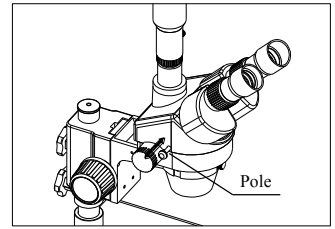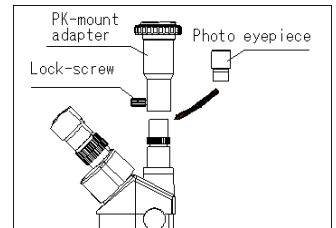
3-7 Mount the photo eyepiece and the PK-mount adapter

Put the photo eyepieces socket of the trinocular.
Connect the PK-mount adapter with the photo eyepiece, and then tighten the lock-screw.

安装照片目镜和PK接口适配器
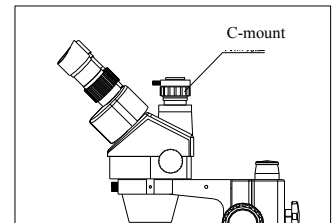放置三目镜的光目镜插座,将PK卡口适配器与照片目镜连接，然后拧紧锁紧螺钉。

3-8 Adjust the CTV

Adjust the CTV to a suitable position by rotating C-mount.
Note: The range of the adjustment: 1~2mm in general.

调整 CTV
通过旋转 C 接口将 CTV 调整到合适的位置。
注：调整范围：一般1~2mm。

3-9 Connect the Digital head With the Monitor or TV set

1)Plug one end of the PVA cable into the socket of the digital head.
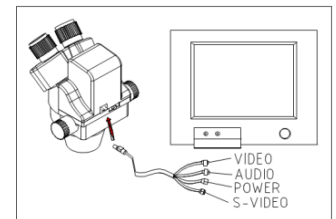2)Plug the C-VIDEO or S-VIDEO of the PVA cable into the correct socket of Monitor (TV set).
3) Connect the 12V DC power with the power socket of the PVA cable.

将数字头与显示器或电视机连接
1.将PVA电缆的一端插入数码头的插座
2.将PVA电缆的C-VIDEO或S-VIDEO插入显示器（电视机）的正确插座。
3.将 12V 直流电源与 PVA 电缆的电源插座连接。

3-10 Appear the image on the Monitor or TV

1) Connect the power supply and then turn on the Monitor or TV.

2) For the monitor, the connect sign model must be chosen (C-video or S-video) and for TV, the channel must be set to the video channel.

3) Pull pole out and adjust the focusing knob and then the image will appear on the screen clear

3-10 在显示器或电视上显示图像
1)连接电源，然后打开显示器或电视
2) 对于显示器，必须选择连接标志型号（C-视频或S-视频），对于电视，必须将通道设置为视频通道。
3)拉出杆子并调整对焦旋钮，然后图像将清晰地出现在屏幕上

3-11 Connect with the computer

1) Plug one end of the PVA cable into the socket of the digital head.

2)Plug one of the C-VIDEO or S-VIDEO into the A/D board.

3)Plug the USB of the A/D board into the USB socket of the computer.

4)If your computer is mounted capture card, you can connect the C-VIDEO or S-VIDEO with the computer directly.

5) Connect 12V DC power with the power socket of the PVA cable.
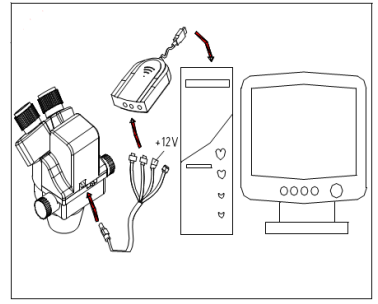
3-11 连接电脑

1) 将PVA电缆的一端插入数码头的插座。

2) 将其中一个C-VIDEO或S-VIDEO插入A/D板。

3) 将A/D板的USB插入计算机的USB插座。

4) 如果您的计算机安装了采集卡，您可以将C-VIDEO或S-VIDEO直接与计算机连接。

5) 将12V DC电源与PVA电缆的电源插座连接。

3-12 Appear the image on the computer

1)Turn on the power supply and let the computer work.

2)Install the software and the driver of the A/D board.

3)Double click the icon of the software, and then the video window will appear. You can set the size of the window according to your linking

4)Draw out the pole and adjust the focusing knob, and then the image will appear on the computer screen clearly.

5)If no image or the image without color, it may be because the model of the input signal does not match the output signal of CCD or the model of C-VIDEO/S-VIDEO is not correct. The detail of operation refers to 《Software operation manual》

在计算机上显示图像

1) 打开电源，让电脑工作

2) 安装软件和A/D板的驱动程序

3) 双击软件的图标，然后会出现视频窗口。您可以根据自己的链接设置窗口的大小

4) 拉出杆并调整对焦旋钮，然后图像将清晰地出现在计算机屏幕上。

5) 如果没有图像或图像没有颜色，可能是因为输入信号的型号与CCD的输出信号不匹配或C-VIDEO/S-VIDEO的型号不正确。操作细节参考《软件操作手册》。

3-13 Appear the image on the computer and the Monitor synchronously

1) Do step 4-12 and step 4-14 to connect the computer and the Monitor.

2) Operate step 4-13 and step 4-15, we can make the image appear on the computer and Monitorat the same time.

在计算机和监视器上同步显示图像

1) 做步骤4-12和步骤4-14连接电脑和显示器

2) 操作步骤4-13和步骤4-15，我们可以使图像同时出现在电脑和显示器上。

3-14 Adjust the image

1)Put the base, stand and digital head correctly, then fix the lock-screw tightly.

2)Put the object on the base stage.

3)Observe the object through the eyepiece and adjust the focusing knob to make the image of the object clearly.

4)Move the digital head or the object gently to adjust the image agreeing with observer.

调整图像

1) 正确放置底座，支架和数码头，然后紧紧固定锁螺丝

2) 将物体放在底座载物台上

3) 通过目镜观察物体并调整对焦旋钮，使物体的图像清晰。

4) 轻轻移动数码头或物体以调整与观察者一致的图像。

3-14 Brief instruction for the software

1)The program design of the software is up to date, and the Chinese/English interface can berth powerful delineation bar which be used much conveniently and rapidly. You can finish most of analyze work only to click the mouse.

2) Can afford many powerful area choosing tools which can analyse any area your linking at will, such as adjusting hue and image, dealing with mathematical morphology, image matching, texture analyses, character identify and so on.

3) Geometry character measuring function, automatically analyzing function such as slightness body, grain body, line body and so on. The outcome can be kept in data and can be made into chart and so forth.

软件使用说明
1）软件程序设计最新，中英文界面可设置强大的划定栏，使用方便快捷。您只需单击鼠标即可完成大部分分析工作。
2）可以提供许多强大的区域选择工具，可以随意分析您的链接的任何区域，例如调整色调和图像，处理数学形态，图像匹配，纹理分析，字符识别等。
3）几何字符测量功能，自动分析轻体、纹体、线体等功能。结果可以保存在数据中，也可以制作成图表等。

3-15 Use the white balance

1)The CCD has auto white balance when the white balance switch is on "ON".

2)Please put the switch on "ON" in general. Let the switch be "OFF" only in special, for example, observing the red cell, otherwise the color of red cell will be adjusted into white.

3) If you want to observe another single color, please let the switch be "ON" again when you finish the observation, and put the switch on "OFF" again after auto balance, or the color of the image will be distortion.

使用白平衡
1）当白平衡开关开启"ON"时，CCD具有自动白平衡功能。
2）请将开关一般打开"ON"。只在特殊情况下让开关"OFF"，例如观察红细胞，否则红细胞的颜色会调整为白色。
3）如果要观察另一种单色，请在观察完成后再次让开关"ON"，自动平衡后再次将开关打开"OFF"，否则图像的颜色会失真。
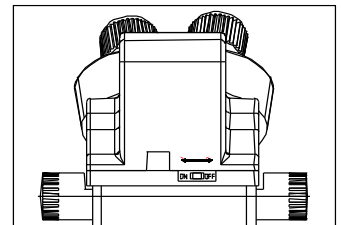
3-16 Use of Base work board

You can lift the base working plate directly from the recess with your fingertips.

底座工作板的使用
可以用指尖直接从凹槽中提起底座工作板。

3-17 Tuning tightness

To adjust the tightness, you can hold one of the wheels with your hand and rotate it. The degree of tightness depends on the direction of rotation of the wheel: clockwise tight, counterclockwise loose. The tightness is suitable to prevent the microscope body from sliding down during the observation process, and it also makes the hand feel comfortable

调整松紧度
要调整松紧度，您可以用手握住其中一个轮子并旋转它。松紧程度取决于车轮的旋转方向：顺时针松紧，逆时针松动。松紧性适合防止显微镜机身在观察过程中滑落，也使手感舒适
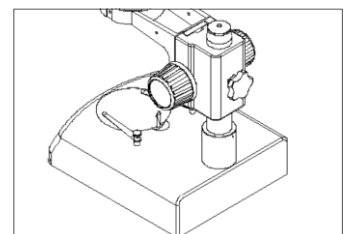
4 configuration 配置表

4-1 MC75 series configuration

Note: The items marked"O"included and others for option

配置表格	Specification 规格	75T-B1	75T-B3	75T-iMatX	75T-iSlide	75T-iMat mini	75T-iMatPRO	75T-L1	75T-L2	75T-L3
	pics 图片									
Eyepieces 目镜	10X20	O	O	O	O	O	O	O	O	O
	10X22									
	10X23									
	20X10									
Tri-ocular 三目	75T	O	O	O	O	O	O	O	O	O
Auxiliary objective 辅助物镜	MCN-0.3X									
	MCN-0.5X									
	MCN-0.7X									
	MCN-2X									
focusing arm 托架	A1	O	O	O	O	O	O	O	O	O
Base 底座	B1	O								
	B3		O							
	iMatX			O						
	iSlide				O					
	iMat mini					O				
	iMatPRO						O			
	L1							O		
	L2								O	
	L3									O

MCN-0.3X   MCN-0.5X   MCN-0.7X   MCN-2X

B1   B2   L1   L2   L3

iMat mini   iMatPRO   iMatX   V56   iSlide
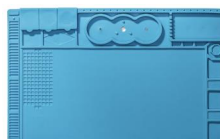
5Technical parameter 技术参数

5-1 MC75T

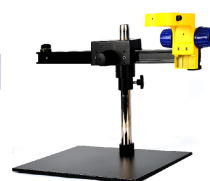| MC75T			Auxiliary objectives 辅助物镜					
Standard configuration 标准配置			0.5X		1.5X		2X	
Eyepiece 目镜	Working distance 工作距离 100mm		Working distance 工作距离 165mm		Working distance 工作距离 45mm		Working distance 工作距离 30mm	
Type 型号	Magnification 放大倍率	Field of view 视场范围	Magnification 放大倍率	Field of view 视场范围	Magnification 放大倍率	Field of view 视场范围	Magnification 放大倍率	Field of view 视场范围
20X/10	14X	14.3	7X	28.6	21X	9.5	28X	7.1
	90X	2.2	45X	4.4	135X	1.5	180X	1.1
10X/20	7X	28.6	3.5X	57.2	10.5X	19	14X	14.2
	45X	4.4	22.5X	8.8	67.5X	3	90X	2.2
10X/22	7X	31.46	3.5X	62.92	10.5X	20.9	14X	15.62
	45X	4.84	22.5X	9.68	67.5X	3.3	90X	2.42
10X/23	7X	32.89	3.5X	10.12	10.5X	21.85	14X	16.33
	45X	5.06	22.5X	65.78	67.5X	3.45	90X	2.53

20*10MM   10*20MM   10*22MM   10*22MM   10*23MM

★Working distance is fixed regardless of the magnification factor.
★这个工作距离是固定的，不随倍率的改变而改变。

★Total mag.= Zoom mag. X Eyepiece mag. X Auxiliary objective mag.
★使用辅助物镜后，总放大率=物镜放大率 X 目镜倍率 X 辅助物镜倍率

$$\text{Diameter of field of view（mm）物方视场（mm）} = \frac{\text{Field number of eyepiece 目镜视场}}{\text{Zoom mag.X Auxiliary objective mag. 物镜放大率 X 辅助物镜倍率}}$$

★Photo adaptor mag.= Zoom mag.(×Auxiliary objective mag.)×Eyepiece mag.
★摄影装置上底片的放大率=物镜放大率（X辅助物镜放大率）X 摄影目镜放大率

6 Troubleshooting

The performance of the microscope can't be made fully because of unfamiliar using, this table will give some advices.

Trouble	Cause	Remedy
1、Double images	Interpupillary distance is not correct	Readjust it
	Diopter adjustment is not correct	Readjust it
	Magnification of each eyepiece is not the same size	Mount the same size eyepiece
2、Dirt appears in the field of view	Dirt on the specimen	Clean the specimen
	Dirt on the surfaces of eyepiece	Clean the surface
3、Image is not clear	Dirt on the surfaces of the objectives	Clean the objectives
4、Image is not clear while the focus changing	Diopter adjustment is not correct	Readjust the diopter
	Focus is not correct	Readjust the focus
5、The focusing knob is not smooth	The focusing knob is too tight	Loosen it to a suitable position
6、The image is obscure because of the head slipping down by itself during observation	The focusing knob is too loose	Tighten it to a suitable position
7、Incision image appears in the field of view or of video view	The pole is not in correct position	Pull or push it to the correct position
8、The image on the monitor is not clear when the focusing knob is turned.	The focus of video is not correct	Readjust the focus of video to a correct position
9、Eyes fell tired easily	Diopter adjustment is not correct	Adjust the diopter
	Brightness of light is not correct	Adjust the brightness
10、Bulb does not work when the switch is on	No power supply	Check the connection with the power supply
	The bulb was not inserted correctly	Insert it correctly
	Bulb is wrong	Replace with a new one
11、Bulb is burned out suddenly	Use the wrong bulb	Replace with a correct one
	The voltage is too high	Control the voltage Eg: use voltage regulator
12、Brightness is not enough	Use a wrong bulb	Replace with a correct one
	The voltage is too low	Increase the input voltage
13、The bulb flickers or the brightness is unstable	The bulb will burn out soon	Replace with a new one
	The bulb was not inserted correctly	Insert it correctly

6 故障处理

问 题	原 因	解 决 办 法
1、双像不重合	瞳距调节不正确	修正瞳距
	视度调节不正确	重新进行视度调整
	左、右目镜倍率不同	安装相同的目镜
2、视场内有脏东西	标本上有脏物	清洁标本
	目镜表面有脏物	清洁目镜
3、像不清晰	物镜表面有赃物	清洁物镜
4、变焦时像不清晰	视度调整不正确	重新进行视度调节
	调焦不正确	重新进行调焦
5、调焦手轮不灵活	调焦手轮锁得太紧	适当放松
6、在观察过程中，显微镜镜体自行下降，使像不清晰	调焦手轮太松	适当锁紧
7、观察目镜或摄影摄像的视场内有切割	拉杆移动未到位	将拉杆移动到位
8、当变焦时，视频监视器上图像不清晰	摄像焦深调节不当	利用摄像接筒上的调焦环重新进行摄像焦深调节
9、眼睛很容易疲劳	视度没有调节正确	正确调节视度
	照明亮度不合适	调整调光旋钮
10、开关接通时灯泡不亮	无电源	检查电源线的连接
	灯泡未插入	正确地插入
	灯泡坏了	更换
11、灯泡突然烧坏	使用了非指定的灯泡	用指定灯泡更换
	电压过高	控制电压（如使用稳压器）
12、照明亮度不够	使用了非指定的灯泡	用指定灯泡更换
	电压太低	增加电压
13、灯泡闪烁或不稳定	灯泡快要坏了	更换
	灯泡安装不稳定	检查并稳固地插入