COXO®

C-CLEAR-1



USER MANUAL

Operating Microscope

C-CLEAR-1

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the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the device is used exceeds the applicable RF compliance level above, the instrument should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the instrument.

b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than3 V/m.

Recommended Isolation Distances Between Portable and Mobile RF Communication Equipment and operating Microscopes			
operating microscopes are intended for use in electromagnetic environments where radiated RF disturbances are controlled. Depending on the maximum output power of the communication equipment, the purchaser or user of the surgical microscope can prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communication equipment (transmitters) and the surgical microscope as recommended below.			
Rated maximum output power of transmitter(W)	Corresponding to the isolation distance of different frequencies of transmitter/m		
	150 kHz ～ 80 MHz d = $1.2\sqrt{P}$	80 MHz ～ 800MHz d = $1.2\sqrt{P}$	800 MHz ～ 2.5GHz d = $2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23
For transmitter rated maximum output power not listed in the table above, the recommended isolation distance d, in meters (m), can be determined using the formula in the corresponding transmitter frequency column, where P is provided by the transmitter manufacturer Transmitter maximum output power rating in watts (W). NOTE 1: At 80 MHz and 800 MHz, the formula for the higher frequency range applies. NOTE 2: These guidelines may not be suitable for all situations, and electromagnetic propagation is affected by absorption and reflection from buildings, objects and people.			

14.The machine accessories

Please refer to the packing list

Catalog

1. Function and scope of application
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4. Use, transport, storage environment requirements
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Warning:

1. Before installing and using the equipment, make sure that the installation and use environment meet the requirements for the installation and use environment in this manual.
2. The installation, commissioning, use and maintenance personnel of this equipment need to undergo professional training, and shou ld fully read and understand the documentation attached to the equipment to ensure that the personnel and equipment will not be injured due to errors operation during each operation.
3. The equipment is a precision optical equipment. The equipment should be effectively protected during transportation, storage, installation and use to avoid damage to the equipment or affect the use of the equipment due to excessive external force.
4. The equipment should be installed and used on a level ground. The tilt of

the ground will cause the rotating joints of the equipment to automatically rotate due to the action of gravity, which will affect the use and cause serious injury to personnel or equipment. The ground slope is greater than 5° , which may cause equipment damage fall over, resulting in serious equipment or personal injury.

5. This device has movable joints, please do not stand under the device or put your hands or other objects within the moving range of the movable joints to avoid injury to personnel or equipment.
6. Don t lean on the device, otherwise it will cause the device to fall over. Move the device gently to ensure that the device is effectively protected.
7. Don t hang and cover other objects on the device, otherwise it will affect the use of the device or damage the device.
8. Don t lift the balance arm forcefully under any circumstances, otherwise it will cause damage to the balance arm.
9. The power input to the machine should meet the requirements of this manual.
10. This equipment is a precision instrument with high-voltage power input.-Non professional maintenance personnel should not disassemble and repair the equipment to avoid injury to personnel or equipment.
11. Be sure to cut off the power supply before replacing the wearing parts of the equipment.
12. This instrument belongs to Class I electrical equipment, and it is required that the power grid power supply should meet the requirements of this manual, and there should be a good grounding wire; the power supply connection line of the equipment is only used for power transmission, and should not be used as load-bearing parts; prevent the equipment from entering water or working in a humid environment to avoid safety hazards.
13. Do not touch the outer shell of heating components such as lighting systems (except handles), otherwise there is a risk of burns. If contact is possible, the contact time should not exceed 10 seconds.
14. Please do not place or hang heavy objects on the rotatable balance arm, otherwise there is a risk d the balance arm sliding down and causing damage to the equipment or injuring people. If heavy object are hung, the total weight of the hanging objects must be equal to or less than 6KG.
15. The power cord plug is a device that disconnects from the mains power supply. Do not place the power cord socket where it is difficult to operate the disconnect device.
16. Disposal of operating microscopes: Dispose of old equipment in accordance with the laws, regulations and standards of your country (region). Ensure that all parts do not cause contamination during the disposal process.

Radiated RF IEC 61000-4-3	150 kHz to 80 MHz 6 Vrms in ISM bands 3 V/m 80 MHz to 2.7 GHz 385MHz-5785MHz Test specifications for ENCLOSUREPORT IMMUNITY to RF wireless communication equipment(Refer to table 9 of IEC60601-1-2: 2014+A1: 2020	150 kHz to 80 MHz 6 Vrms in ISM bands 3 V/m 80 MHz to 2.7GHz 385MHz-5785MHz Test specifications for ENCLOSUREPORT IMMUNITY to RF wireless communication equipment(Refer to table 9 of IEC60601-1-2: 2014+A1: 2020	equipment should be used no closer to any part of the device, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d=1.2\times P^{1/2}$ $d=1.2\times P^{1/2}$ 80 MHz to 800 MHz $d=2.3\times P^{1/2}$ 800 MHz to 2,5 GHz where is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol:
Note 1: At 80MHz and 800MHz, the formula for the higher frequency band is used. Note 2: These guidelines may not be suitable for all situations, and electromagnetic propagation is affected by absorption and reflection from buildings, objects and people.			
a Field strengths from fixed transmitters, such as base stations for radio (cellular/ cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess			

	±0.5 kV, ±1 kV & ±2 kV Line-to-ground	±0.5 kV, ±1 kV & ± 2 kV Line-to-ground	typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	0% U_T (100% dip in U_T.) for 0.5 cycle 0 % U_T (100% dip in U_T.) for 1 cycle 70% U_T (30% dip in U_T) for 25/30 cycles 0% U_T (100% dip in UT.) for 250/300 cycle	0% U_T (100% dip in U_T.) for 0.5 cycle 0% U_T (100% dip in U_T.) for 1 cycle 70 % U_T (30% dip in U_T) for 25/30 cycles 0 % U_T (100% dip in U_T.) for 250/300 cycle	Mains power should be of the quality used in a typical commercial or hospital environment. If the user of the operating microscope requires continuous operation during power interruptions, it is recommended that the operating microscope be powered by an uninterruptible power supply or battery.
Power frequency (50/60Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	The power frequency magnetic field shall have the power frequency magnetic field level characteristics of a typical location in a typical commercial or hospital environment.
Note: UT refers to the AC mains voltage before applying the test voltage			

Guidance and Manufacturer's Declaration-Electromagnetic Immunity			
The operating microscope is intended to be used in the electromagnetic environment specified below, and the purchaser or user of the surgical microscope should ensure that it is used in this electromagnetic environment:			
Immunity test	Test level	conformity level	Electromagnetic Environment Guidelines
Conducted RF IEC61000-4-6	3 Vrms	3 Vrms	Portable and mobile RF communications

1. Function and scope of application:

1.1 The operating microscope uses the principle of optical magnification to magnify and image the tiny lesions of the patient. The doctor can observe the tiny lesions of the patient through the eyepiece on the operating microscope, which is convenient for the operation.

1.2 Scope of application: It is used to enlarge the details of the surgical area during non-ophthalmic surgery, excluding fluorescence modules and other special spectral purposes.

1.3 Contraindication: Disabled for patients or doctors with pacemakers; Pregnant women should use it with caution.

2. Structural principle

Operating Microscope consists of four basic parts: optical system, rack, lighting system, and electrical installation

Figure 1 and Figure 2:

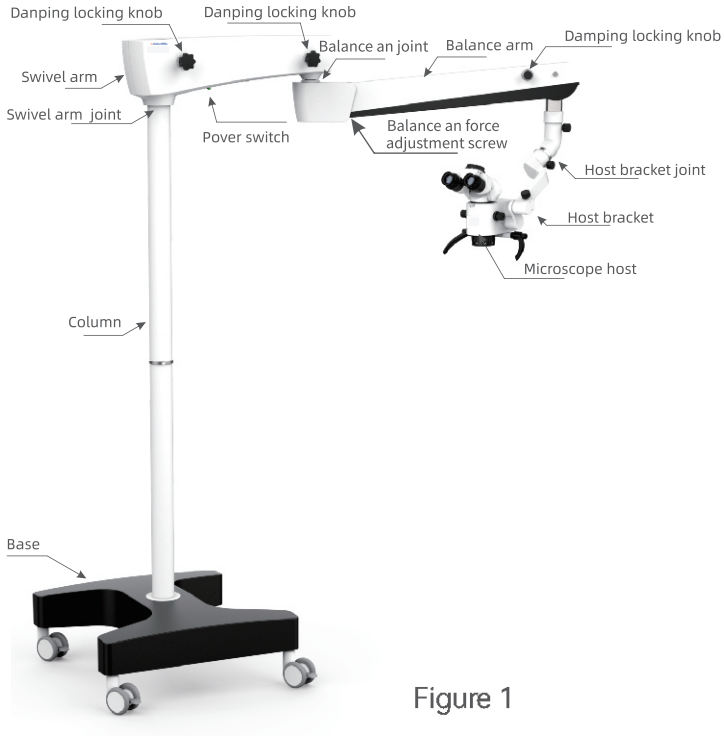


Figure 1

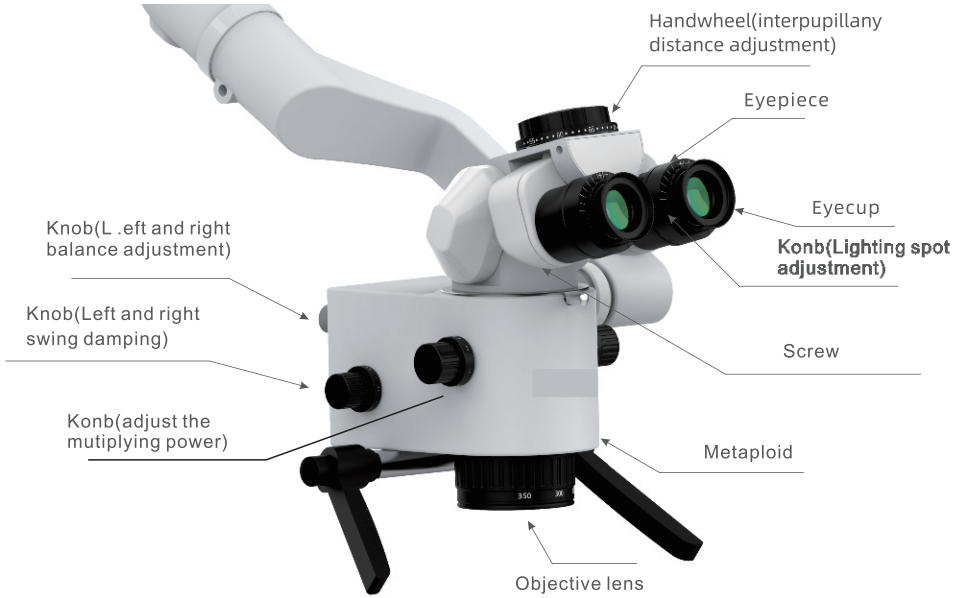


Figure 2

3. Technical parameters

3.1 Optical parameters

Magnification system: 5-level magnification factor 0.4, 0.6, 1, 1.6, 2.5

Total magnification: 1.8X--19.1X

Field of view diameter: 11.5mm--121.9mm

Microscope working distance: 200mm--415mm ±10%

Stereo-base：22 mm

Eyepiece (standard)：12.5 × 17.5（Field stop17.5mm）

Interpupillary distance adjustment range: 55-75mm

Guidelines and Manufacturer's Statement – Electromagnetic Emissions		
The Operating microscope is intended to be used in the electromagnetic environment specified below, and the purchaser or user of the Operating microscope should ensure that it is used in this electromagnetic environment:		
launch test	**conformity**	**Electromagnetic Environment – Guidelines**
RF emissions CISPR 11	Group 1	Operating microscope use RF energy only for their internal functions. Therefore, its RF emissions are low and may not cause any interference in nearby electronic equipment.
RF emission CISPR 11	Class A	Operating microscope is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	conform	

Guidelines and Manufacturer's Declaration - Electromagnetic Immunity			
The operating microscope is intended to be used in the electromagnetic environment specified below, and the purchaser or user of the operating microscope should ensure that it is used in this electromagnetic environment:			
Immunity test	**Test level**	**conformity level**	**Electromagnetic Environment Guidelines**
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±2 kV, ±4 kV,± 8kV,±15 kV air	±8 kV contact ±2 kV, ±4 kV,± 8kV, ±15 kV air	Floors should be wood, concrete or tile, and if covered with synthetic materials, the relative humidity should be at least 30%.
Electrical Fast Transient Burst IEC 61000-4-4	±2kV for power supply lines	±2kV for power supply lines	Mains power should be of the quality used in a typical commercial or hospital environment.
Surge IEC 61000-4-5	±0.5 kV & ±1 kV Line-to-line	±0.5 kV & ±1 kV Line-to-line	Mains power should be of the quality used in a

Guidelines and manufacturer's declarations are detailed in the annex.

⚠ Warning:

The operating microscope should not be used close to or stacked with other equipment. If it must be used close to or stacked, it should be observed and verified that it can operate normally in the configuration it is used in.

The basic functions are:

Name	specific description
Operating microscope illumination	1 The power switch indicator light is on 2 The illumination of the operating microscope is normal, without flickering .

The use of unspecified accessories and cables, other than cables sold by the manufacturer of the Operating microscope as spare parts for internal components, may result in an increase in the emission of the Operating microscope or a decrease in the resistance.

The cables and accessories provided with this device must be used, the cable information is as follows:

No.	Name	Cable length	Whether to block
1	power cable	3	No

Diopter adjustment range: ±6D

Formula for calculating total multiples：

$$\frac{170}{\text{Large objective focal length } f'} \times \text{magnification factor} \times \text{Eyepiece}$$

Field of view diameter calculation formula：

$$\frac{\text{Number of eyepiece fields} \times \text{large objective focal length } f'}{170 \times \text{magnification factor}}$$

The value of the field of view of the eyepiece in the equation is 12.5 × Eyepiece is 17.5, 10 × Eyepiece is 20.5

3.2 Lighting parameters

Light source: 1 long life LED lamp for direct lighting, with an average service life of 100000 hours and a brightness of only 40% of the initial brightness, which meets the scrap standard

Illuminance: greater than 65000 LX

Color rendering index: greater than 90%

Color temperature: 5700K

Amplitude illumination: less than 1000 W/㎡

Luminance adjustment: Use the technical specifications of the knob on the main mirror

3.3 Electrical parameters

Power supply:100-240 V AC，50/60 Hz

Rated input power：65 VA

Fuse specification：F2AL 250V Φ5×20

Safety class: class I

3.4 Structural parameters

The maximum external dimension of the whole machine：1749×590×1804 mm

Maximum rotational diameter(after full extension)：1655 mm

The up and down range of the balance arm：520 mm

Arm rotation angle：360°

Balance arm rotation angle：± 150°

Rotation angle of the host bracket：360°

Height of the underside of the objective lens from the ground：780~1300 mm

Base size：590×590 mm

Net weight of the whole machine：105 kg

4. Use, transport, storage environment requirements

The operating microscope is a precision optical instrument. It should be used, transported, and stored in a cool, dry and tidy environment to avoid the product being subjected to high-intensity vibration, impact, extrusion, rain, sun exposure during use, transportation and storage. The requirements for ambient temperature and humidity are as follows:

4.1 Use environment:

Temperature: +5℃~+40℃

Relative humidity: ≤80%

Atmospheric pressure: 860hpa~1060hpa

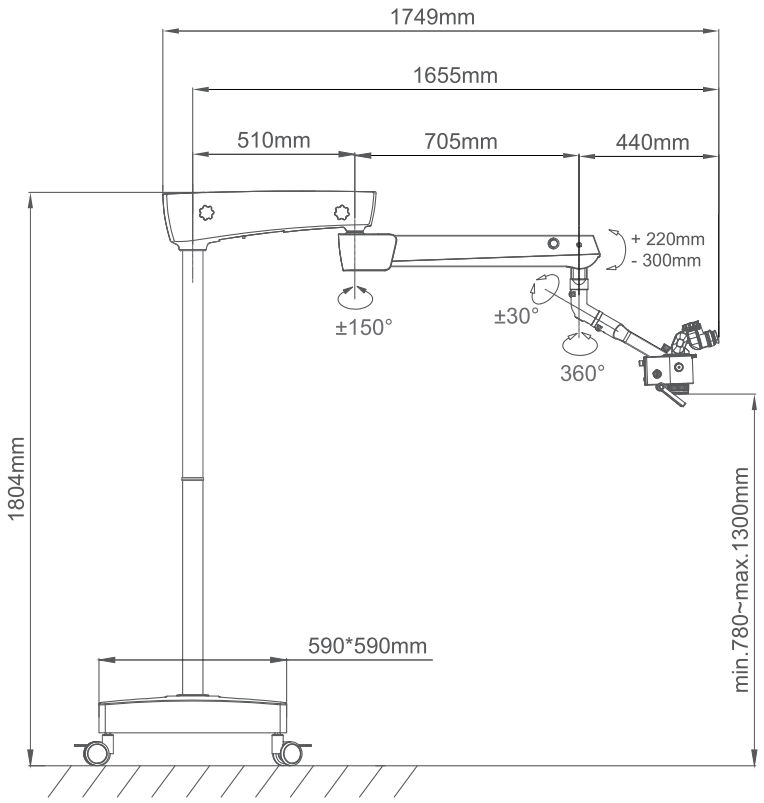
4.2 Transportation and Storage Environment:

Temperature: +10℃~+55℃

Relative humidity: ⩽80%

Atmospheric pressure: 500hpa~1060hpa

12. Product size



13. Electromagnetic Compatibility Instructions

Notices:

The operating microscope meets the requirements of IEC 60601-1-2 "Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral Standard: Electromagnetic disturbances - Requirements and tests".

The user should install and use it according to the electromagnetic compatibility information provided in the random file.

Portable and mobile radio frequency communication equipment may affect the performance of the Operating microscope, avoid strong electromagnetic interference when using, such as close to mobile phones, microwave ovens, etc.;



"Tilt warning" sign, the ground on which the equipment is installed should be kept level, and the inclination angle is greater than 5° , the equipment is in danger of tipping.



Counterweight label, hanging weight less than or equal to 6KG



Brightness adjustment indicator, clockwise increases the brightness, counterclockwise decreases the brightness.



"|" means that the power switch is on; "0" means that the power switch is off

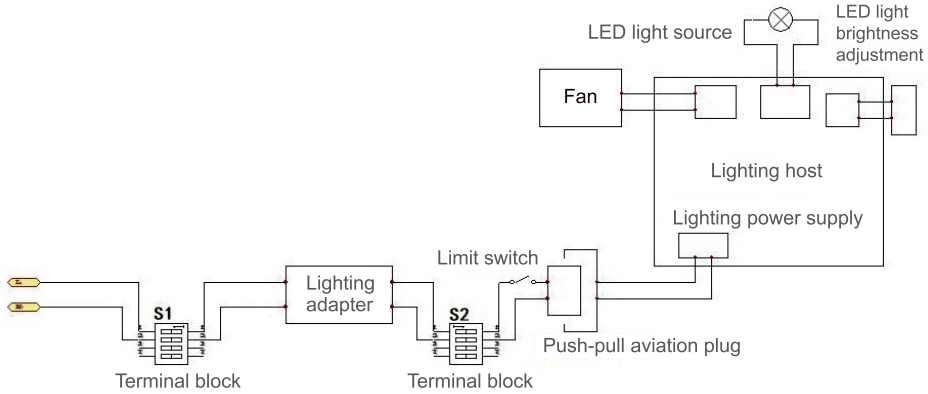
10. After-sales service

The equipment is guaranteed for two years free of charge and maintained for life. Please refer to the warranty card for the scope of free warranty.

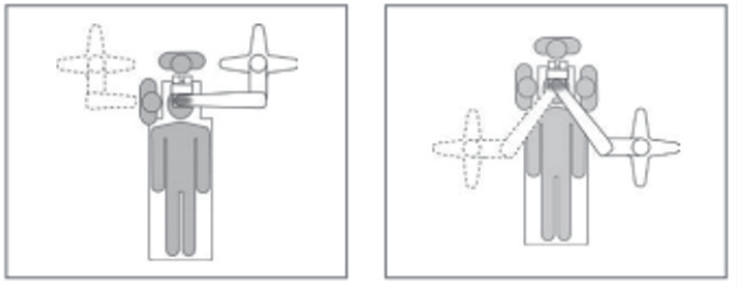
The recommended service life for this device is ten years.

After-sales service center telephone

11. Circuit diagram



Positioning suggestion:



5. Installation

For the installation of the operating microscope, please refer to the "operating Microscope Installation Guide" that comes with the equipment.

6. How to use

Before using the operating microscope, it is necessary to adjust the position of the microscope and the clarity of the optical imaging. The specific methods are as follows:

6.1 Adjustment of operating position of operating microscope

6.1.1 Before adjustment, loosen the four caster locking devices of the operating microscope, adjust the damping adjustment knobs to ensure that the rotating joints rotate flexibly, and can stay at any position without external force ,the size of the damping of the rotating joint is adjusted according to the doctor's usage habits.

6.1.2 Remove the protective cover from the host of the operating microscope, and align the magnification factor 0.4 on the magnification adjustment knob with the scale line "—".

6.1.3 Adjust the position of the operating microscope according to the position of the lesion tissue that needs to be observed by the operating microscope and the position of the doctor when performing treatment It is recommended that the distance between the bottom surface of the objective lens and the lesion tissue is about 300mm, and adjust the angle of the binocular tube (recommended parallel to the horizontal plane), adjust the height of the doctor's chair so that the height of the eyes of the doctor is consistent with the center of the eyepiece while the doctor maintains a correct and comfortable sitting posture, as shown in Figure 3



Figure 3

6.1.4 After adjusting the position of the operating microscope, lock the four caster brake pads of the operating microscope.

6.2 Adjustment of optical imaging clarity or operating microscopes

6.2.1 Turn on the power, turn on the main power switch, (the main power switch is located on the power box).

6.2.2 Align the scale line " | " on the diopter adjustment knob of the eyepiece with the " | " between "+" and "-" on the eyepiece holder, as shown in Figure 4,



Figure 4

6 .2.3 Adjust the height of the eyecup according to the customer's usage habits. It is recommended that users who wear glasses screw all the eyecups into the eyepiece. For users who do not wear glasses, unscrew all the eyecups (as shown in Figure 5) When screwing in or out, the action should be gentle, and the screw in or out should not reach the limit position, so as to avoid the eye cup being stuck due to excessive screw-in or screw-out force .

Blurred or abnormal imaging	Interference with stray light	Check the source of stray light and shield the influence of stray light
	Optical lens is loose	Replace the faulty optical component and return it to the manufacturer for repair
No image or visible image area is missing in the eyepiece (normally visible image area is a circular area)	The magnification adjustment knob is not adjusted in place, causing the image to be occluded or partially occluded	Rotate the magnification adjustment knob
The balance arm has insufficient support and cannot hover freely	The load of the balance arm is increased, such as adding new accessories to the microscope host	Readjust according to the requirements of 6.3.2 of this manual
	Attenuation of gas spring support force caused by long-term use	

9. Symbol Definition

The number on the magnification adjustment handwheel: "0.4 0.6 1.0 1.6 2.5" represents the magnification factor of the magnification.

Do not push hard

Keep dry

This way up

carefully before use.

Fragile, handle with care

General Warning Signs

Stacking limit by number

Grounding identification.

Consult instructions for use or consult electronic instructions for use

CE Marking

EU REP Authorized representative in the European Community/European Union

Manufacturer

SN Serial number

Date of Manufacture

Do not dispose of the product into the ordinary municipal waste or garbage system

8. Troubleshooting

problem	Fault reason	solution
No lighting	No power input	Check whether the power plug is inserted properly, turn on the main power switch and lighting switch, check whether the fuse is in good condition, and replace the damaged fuse
	The balance arm is in the upper limit position, triggering the illuminated convenience switch	The balance arm is pulled down to release the illuminated convenience switch
	The light spot adjustment knob is not adjusted properly, causing the illumination light to be blocked	Turn the spot adjustment knob
	Damaged lighting circuit connecting wire or damaged circuit components and LED lamp beads	Contact professional technicians to check and repair
Inadequate lighting	Lighting adjustment knob not fully open that in low brightness mode	Turn the lighting adjustment knob as shown on the device
	The circuit board is faulty or the LED lamp bead is damaged	Contact professional technicians to check and repair
Missing illuminated area in the field of view (normal illuminated area is circular)	The light spot adjustment knob is not adjusted properly, causing the illumination light to be partially blocked	Turn the spot adjustment knob
	Optical parts are not installed properly	Check whether each connection part is normal
	Optical lens contamination	Check and clean the optics.
	Imaging clarity of the surgical microscope is not adjusted correctly	Adjust according to the requirements of 6.2 of this manual

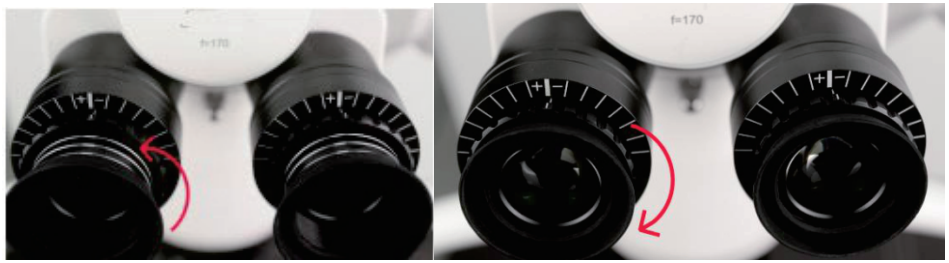


Figure 5

6.2.4 Check whether the center of the observed object is in the center of the user's field of vision through the eyepiece. If the image of the observed object is not clear at this time, please turn the zoom adjustment knob of the objective lens to the left or right (Figure 6) until the image is clear.



Figure 6

6.2.5 Turn on the lighting adjustment knob (as shown in Figure 7), and adjust the brightness to a suitable level according to the user's habits. It is recommended to place the lighting adjustment knob in the middle of its engraved line.



Figure 7

6.2.6 Interpupillary distance adjustment is to adjust the distance between the exit pupils of the two eyepieces on the operating microscope and the pupil distance of the user to be consistent to ensure that the user sees a three-dimensional geometric image. The specific method is to align the value on the interpupillary distance adjustment handwheel with the scale line (as shown in Figure 8). The size of the value should be consistent with the user's pupillary distance. Turn the wheel to the maximum value. At this time, the user's eyes are observed through the two eyepieces at the same time, and the interpupillary distance adjustment handwheel is rotated from large to small. It will be found that two objects are observed. Continue to rotate the interpupillary distance adjustment handwheel. The distance between them is gradually reduced until it becomes an object. At this time, the user keeps the observation position unchanged, and can observe the same image with the left and right eyes through the corresponding eyepieces; is an image (if it is two images, it means that the eyepiece's exit pupil distance is greater than the user's pupillary distance; if one eye can see the image and the other eye cannot, it means the eyepiece's exit pupil distance is smaller than the user's pupil distance distance, need to be adjusted again). After completing the interpupillary distance adjustment, record the position of the interpupillary distance adjustment handwheel. When using it next time, it can be adjusted to this position and then fine-tuned. Since the human eye is equivalent to a precise optical instrument, it can perceive subtle differences. Therefore, for users who use microscopes for the first time, they need to be gentle and slow when adjusting, but also need patience and a process of adaptation. Some users need a certain amount of training to complete the interpupillary distance adjustment, and very few users cannot complete the interpupillary distance adjustment due to the special conditions of the eyes.

outside. The movement should be gentle to avoid damage to the lens due to excessive force. Please do not wipe the lens with water, detergents and other chemicals to avoid damage to the lens film and affect its optical performance. For minor lens stains, if it does not affect the use, it is recommended to use air blowing or a special cleaning brush for the lens to remove the dust on the surface to reduce the frequent wiping of the lens and prolong the service life of the lens.

7.2.3 After cleaning, cover the protective cover provided with the device to protect the device in time, fold the rotating parts of the device, and lock the damping adjustment knob. If it is not used for a long time, please cover it with a dust cloth.

7.3 Daily maintenance of the equipment

7.3.1 This equipment is a precision optical instrument, and its daily storage, transportation, and maintenance should meet the relevant requirements of optical precision instruments. Except for the requirements of 7.1 and 7.2, it is recommended that the equipment be inspected and maintained every three months.

7.3.2 The use, storage and transportation environment of this equipment should meet the requirements of 3.2 of this manual, pay attention to dust-proof, moisture-proof, acid-base and other corrosion-prone substances or the air contains corrosive gases, The instrument should be covered with a dust cover after use, especially to avoid humidity and large changes in indoor temperature difference. It is recommended that the indoor temperature be 23~26℃, and the humidity should be less than 60%.

7.3.3 When the device moves from a lower temperature environment to a higher temperature environment, don’t open the protective cover immediately to avoid fogging of the lens.

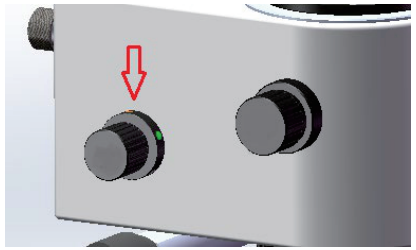
7.3.4 Check the flexibility of each rotating joint of the device and the reliability of each function knob (please do not adjust the balance adjustment knob unless necessary).

7.3.5 Check whether the balance force of the balance arm and the host computer bracket is in the best state of use.

7.3.6 Check optical imaging whether in abnormalities.

7.3.7 Clean up the surface stains in time to avoid the residual stains causing plaque and affecting the use.

Large white spot, medium white spot, and small white spot are selected by the user according to the situation, and the smaller illumination area can effectively reduce the influence of the reflection of illumination light on the imaging effect of the operating microscope, so that the imaging effect is better.



7. maintenance

7.1 Inspection before use.

7.1.1 Check whether each rotating part rotates smoothly and flexibly, and whether any screws are loose.

7.1.2 Check whether the power line is entangled or damaged.

7.1.3 Check whether there are obstacles that affect the work of the equipment within the working range of the equipment.

7.1.4 Check whether the use environment of the equipment meets the use requirements and whether there are pollution sources such as dust.

7.2 Cleaning and maintenance after use.

7.2.1 After use, cut off the power supply, clean the device, the cleaning of structural parts can be wiped with a non-fiber damp cloth and then dried with a dry cloth; The paint surface is forbidden to be wiped with alcohol, and the handle silicone sleeve and the adjustment knob silicone sleeve can be wiped and disinfected with medical alcohol.

7.2.2 Cleaning of the lens: First, use air blowing or a special cleaning brush for lenses to remove the dust on the surface of the lens, to avoid scratching the lens due to tiny particles in the dust when wiping the lens; Then use a absorbent cotton swab dipped in 99.9% ethanol, starting from the middle of the lens, and wipe the mirror surface clockwise from the inside to the



Figure 8

6.2.7 Turn the magnification adjustment knob to align the magnification factor "2.5" with the scale line "—" (if the object being observed deviates from the field of view, you can fine-tune the position of the operating microscope again) .Adjust the zoom adjustment knob of the objective lens until the image is clear. During the adjustment process, please determine a certain point on a certain surface of the object as the adjustment reference point. The reference point can be adjusted clearly. The reference point should be located within the range of the lesion tissue to be observed during the treatment.

6.2.8 Turn the magnification adjustment knob, align the magnification factor "0.4" with the scale line "—", and observe whether the image of the reference point is clear, If it is not clear, adjust the diopter adjustment ring of the left eyepiece (or the right eyepiece) separately to the left eye (or the right eye) and observe the reference point through the left eyepiece (or the right eyepiece) to see that the image is clear. Adjust the nearsightedness to the "-" direction and the farsightedness to the "+" direction. After completing the adjustment, use both eyes to see if the image is clear. If it is not clear, please repeat the operation of this step.

6.2.9 Turn the magnification adjustment knob, align the magnification factor "2.5" with the scale line "—", and observe whether the image of the reference point is clear. If it is not clear, please repeat the steps 6.2.7~6.2.8. If it is clear, turn the magnification adjustment knob Go to other magnification factor to check whether the reference point is clear. Under normal circumstances, the magnification factor is "2.5" and "0.4". The imaging is clear, and other gears should also be clear. The reference point is after all the gears are clear, that the adjustment of the imaging sharpness of the operating microscope is completed.

6.2.10 During use, due to the needs of treatment, the position of the operating microscope may be adjusted. After adjustment, the clarity of the operating microscope needs to be re-adjusted, but the adjustment at this time only needs to be adjusted according to 6.2.7, and there is no need to perform 6.2.8. adjustment steps. If the user is changed, the imaging sharpness adjustment of the operating microscope needs to re-execute the steps 6.2.2~6.2.9.

6.2.11 The operating microscope has a total of 5 magnifications. The "0.4" file is used for position adjustment because of its larger field of view. The "2.5" file has the largest magnification, but the relative depth of field is small. It is recommended to be used for inspection before and after treatment. " 0.6", "1", "1.6" three gears have the best combination of magnification and depth of field, and are suitable for use in the treatment process.

6.3 Other Use and Adjustment Methods

6.3.1 Adjustment of the balance force of the operating microscope: The operating microscope reserves the interface for users to upgrade and select other optical components. The unbalanced force on certain positions of the equipment due to the addition of optical components or other reasons will affect the comfort of the equipment. Therefore, The equipment has added a balance force adjustment system, and the specific use methods are as follows:

Adjustment of balance arm support force: Use a 4mm hex wrench to loosen the M5 screw at the center of the balance arm cover (as shown in Figure 9), move the balance arm to a position at a 95 degree angle to the horizontal plane (as shown in Figure 10), and use a 7mm socket wrench to rotate the balance force adjustment screw of the balance arm left and right.

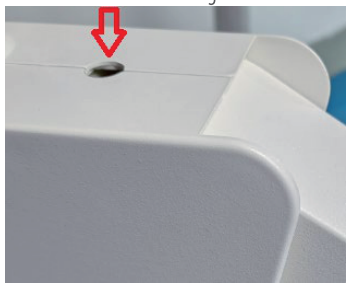


Figure 9

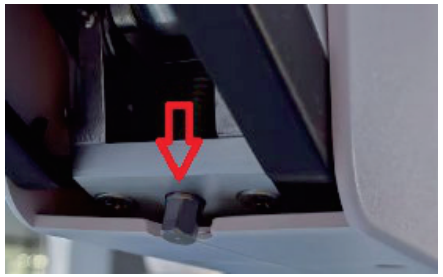


Figure 10

6.3.2 The mobile casters of this equipment have a locking device (as shown in Figure 11), When moving, the locking device should be released, when stationary, the device should be locked. To be avoided equipment sliding due to ground inclination, the locking piece is downward for locking, upwards is for releasing

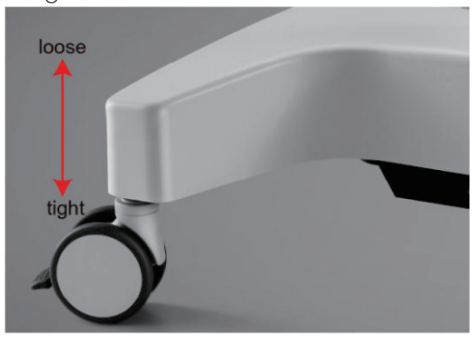


Figure 11

6.3.3The use of damping adjustment knob: The damping adjustment knob has two functions: one is to lock the relevant rotating joints when the operating microscope is stored; the other is to adjust the damping of the relevant rotating joints when the operating microscope is in use. In order to meet the comfort and reliability of the operating microscope in clinical use, the rotation of each rotating joint of the operating microscope is flexible, However, in actual use, due to the insufficient level of the ground, the rotating joint may rotate under the action of gravity, so rotate the damping adjustment knob to appropriately increase the rotational damping of the rotating joint, so that the rotating joint can stay at any position according to the user's needs within its rotation range. At the same time, the user can also rotate freely as needed. After using the operating microscope, all rotating parts of the operating microscope should be folded and placed, and the damping adjustment knob should be locked to prevent it from rotating due to gravity and causing accidents.

6.3.4 Adjustment and use of illumination spot : The device is equipped with 5 kinds of lighting spots for users to choose, namely: orange spot, green spot, white large spot, white medium spot, white small spot, The orange light spot is suitable for resin repair treatment. The light wavelength of the orange light spot can effectively delay the curing time of the resin, allowing the doctor to have more operation time; the blood vessels appear black under the green light spot, which is convenient for the doctor to identify;