

Fluorescence Biological Microscope

Instruction Manual



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Product instruction

Thank you for choosing Fluorescence Biological Microscope of Dezhou Guoke Medical Technology Co.,Ltd.The product consists of observation system, illumination system and carrier table. Observation system is an optical microscope system with eyepieces and objective lenses, excluding digital magnification display system, which can be connected to an external image acquisition and display system. Utilizing the principle of microscopic magnification to observe the details of objects. Does not have the image scanning and analyzing function.

This instruction is applicable to model GK-23 and is in accordance with the actual operation.



Whose single Authorized EU-Representative

Company: RIOMAVIX SOCIEDAD LIMITADA.

Add.: Calle de Almansa 55, 1D, Madrid 28039 Spain

Tel.: +34 658 396 230

E-mail: riomavix@gmail.com

Manufacturer Company: Dezhou Guoke Medical Technology Co.,Ltd.

Add.: 28-31 axis.1 and 2 span.No.2 workshop, (Zhongyuan Science and Technology Innovation Park) No.6596 Dongfanghong East Road, Yuanqiao Town, Economic and Technological Development Zone, Dezhou City, Shandong Province, China

Tel. : +86 534 7057266 **E-mail:** office@guoke-medical.com

Warnings, Precautions

This product should only be operated by well-trained and authorized medical personnel.

Fluorescent biomicroscopes should not be placed in locations that could affect the operation and performance of the biomicroscope.

The operator must be well trained, certified or authorized for use by medical personnel.

When the excitation light is irradiated for a long period of time, attenuation and quenching of fluorescence will occur, so the observation time should be shortened as much as possible, and a baffle should be used to cover the excitation light when it is not observed for a while.

For oil microscopy, use “non-fluorescent oil”.

The power supply is equipped with a voltage regulator, otherwise voltage instability will not only reduce the life of the mercury lamp, but also affect the effect of the mirror.

To ensure the safety of the user, be sure to use the equipment in the manner specified in this manual, and keep the manual on an easily accessible workbench so that it can be read at any time.

This instruction manual uses the following symbols to indicate safety, Be sure to follow the instructions with these symbols to prevent injury to you and others as well as damage to property.

The following symbols are used to explain the meaning in the operating instructions	
 warnings	Failure to comply with the contents shown in this manual may result in serious personal injury or property damage.
 note	Failure to comply with the contents shown in this manual may affect the effectiveness of the equipment.



Warnings Prevention of infection and measures

If observing specimens with infectious properties, use protective gloves to prevent direct skin contact with the specimens; if contacting instruments with specimens with infectious properties, strictly implement the hospital's aseptic operation procedure system

to prevent cross-infection. For specimens and equipment with infectious properties, handle them in accordance with relevant laws and regulations.

 Warnings Instrument installation and handling

Microscopes are precision instruments and care should be taken when unpacking to prevent damage to the eyepieces, color filters and other accessories from falling;

All optical parts, mechanical structure components have been installed and adjusted, it is strictly prohibited to disassemble and install, so as not to cause failure and affect the use.

Avoid placing the microscope in direct sunlight, high temperature or humidity, acidic or alkaline gases, dusty places, and places susceptible to strong vibrations.

When installing and placing the microscope, assess whether the indoor use environment is well ventilated and whether the table is sturdy, level and has sufficient operating space for safe and effective use and maintenance by the operator.

When lifting or moving the microscope, remove the specimen first to prevent it from slipping and being damaged; if the specimen is damaged, take preventive measures against infection; when lifting, grasp the arm of the scope with one hand, and drag the bottom of the instrument with the other hand, flat against your chest, to prevent bumping. Do not use one hand to lift diagonally and rock back and forth.

Electrical Safety Instructions:

It must be ensured that the supply voltage corresponds to the input voltage indicated on the back of the microscope, otherwise serious damage to the microscope will result. It is forbidden to place the unit in a position where it is difficult to operate the disconnecting device, so that the power cord can be quickly unplugged in case of an emergency.

 Warning light system

 Remove the power plug or turn off the main power supply if contacting hazardous electrically charged parts, otherwise personal injury or property damage will result.

Requirements for the use of LED lights: Looking directly at or observing the light emitted from the LED lamp for a long period of time may result in eye damage and dizziness, do not look directly at or observe the light emitted directly from the LED lamp for a long period of time (the specified bulb is an LED lamp).

To ensure that your eyes are not harmed, please adjust to a soft light to observe the specimen; if you feel that the light emitted by the LED light is too bright when observing the specimen, you can use the brightness adjusting knob to reduce the intensity of the light or narrow the aperture diaphragm.

 Warnings environmental protection

Please dispose of the microscope packaging (e.g., cardboard boxes, foam, plastic products, etc., after sorting them out properly), and the electrical parts are handled

separately as electronic products.

 Warnings Biohazard:

Microscope use process, the pathogenic specimens and test reagents and other waste generated in accordance with the medical waste disposal methods for disposal, can be concentrated into the designated medical waste disposal bag centralized treatment.

 Warnings safety sign

notation	Logo Meaning
	Attention, a reminder of your safety, easily avoidable hazards / Attention to consult the randomized documentation in order to clarify the nature of the potential hazards and the measures that must be taken to counter them.
	Protective grounding, to avoid the risk of electric shock caused by leakage of the instrument to make the shell electrically charged
	Biohazard, a reminder to beware of biohazards and take precautions when observing specimens
I	Indicates the power switch is "on".
O	Indicates power switch "off" status.

I .Product information

1、 Product structure composition

The product consists of observation system, illumination system and carrier table. Observation system is an optical microscope system with eyepieces and objective lenses, excluding digital magnification display system, which can be connected to an external image acquisition and display system. Utilizing the principle of microscopic magnification to observe the details of objects. Does not have the image scanning and analyzing function.

2、 Product application range

This product is intended to be used for microscopic magnification of clinical specimens; where necessary, images are captured for observation and processing for use in further analysis.

3、 Inspection Principle

Fluorescence biomicroscopy is the use of a certain wavelength of light to stimulate the specimen to emit fluorescence, through the objective lens and eyepiece system magnification in order to observe the fluorescence image of the specimen.

4、 Sample Request

Tissue sections or other specimens can not be too thick, such as too thick excitation light is largely consumed in the lower part of the specimen, and the upper part of the objective lens directly observed can not be fully excited.

5、 Software Information

1) Control-type software (software for use with microscopic camera units)

1.1) Software name

Graphic reporting software.

1.2) Software ReleasesV1.0

2) Embedded software (embedded software built into the microscope camera unit)

2.1) Software name

Microsoft Windows USB video

2.2) Software ReleasesV6.1

6. Functions

Microscopic magnification. Photographic camera function (image acquisition, image display), microscope control (focusing, objective lens converter positioning control), fluorescence observation.

II .Name and function of each component

1、Fluorescent Biological Microscopy Description

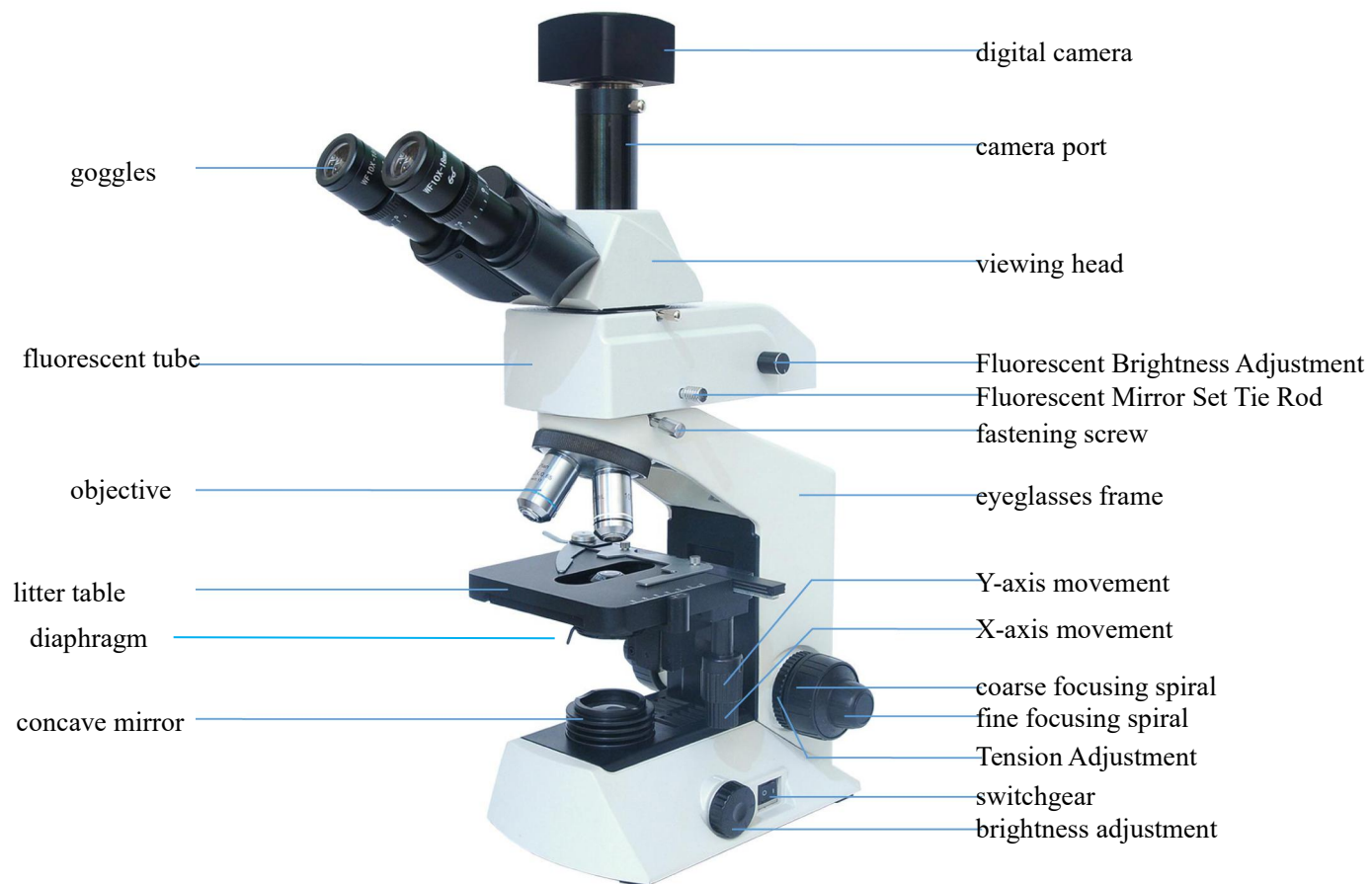


图 1-1

⚠ Note: These parts are fixed to the body of the microscope and cannot be removed.。

III. Technical indicators

1、 Each type of objective lens should be corrected for the corresponding aberration.

Flat-field achromatic objective lenses should be well corrected for field curvature of the objective lens in addition to having to meet the requirements of an achromatic objective lens.

Flat-field semi-complex achromatic objective lens must meet the requirements of flat-field achromatic objective lens, in addition to the secondary spectrum of the objective lens should be better corrected.

2、 The clear area of the image in the field of view should be concentric with the field of view, without the phenomenon of one side being clear and the other being blurred.

3、 There should be no fluorescent material in the optical path of the microscope, and the field of view should be dark when the filter sets are matched as specified and no specimen is placed in the optical path.

4、 The structure of the microscope light source should consider radiation safety measures, and the human body should not be damaged by UV radiation.

IV.Parameter introduction**GK-23M Fluorescence Biological Microscopy**

Designed for fluorescence detection system, it adopts high liner infinity optical objective lens with high transmittance fluorescence filter assembly to produce high quality fluorescence image, which meets the observation needs of professional medical treatment, teaching and other fields.

Microscopy Main Parameters

optical system	Infinity Optical System
focusing system	Vertical movement of the stage, coarse and fine co-axial focusing with locking and limiting device, fine grid value: 2 μ m
Carousel of Mirrors	Fixed 4-well objective turntable
observation tube	Trinocular barrel with 30°inclination, 48-75 mm pupil spacing, eye point adjustment: 377.8 - 427.7 mm
Carrier platforms	Double-layer mechanically movable, range of motion X-axis 76mm × Y-axis 30mm, single-piece specimen holder
spotting scope	Abbey Spotting Scope, N.A. 1.25 Lifting up and down, internal aperture diaphragm
objective (optics)	Flat-field achromatic objective lens 4× N.A.0.1, W.D. 18.5mm 10× N.A.0.25 W.D. 10.5mm 40× N.A.0.65 W.D. 0.56mm 100× N.A.1.25 W.D. 0.13mm
Eyepiece (10×)	Field of view F.N. 20 (mold resistant)
Rated voltage/current	AC 100–240 V 50/60 Hz 0.4 A
connector	0.5x CCD interface

GK-33M Fluorescence Biological Microscopy



More configurations are available for more professionalism. The usual achromatic objective lens, together with the high transmittance fluorescent filter assembly, produces higher quality fluorescent images to meet the observation needs of professional medical and other fields.

Microscope body parameters

optical system	Infinity Optical System
focusing system	Vertical movement of the stage, coarse and fine co-axial focusing with locking and limiting device, fine grid value: 2μm
Carousel of Mirrors	Fixed 4-well objective turntable, tilted inwards
observation tube	Trinocular viewing tube (anti-fungal), tube inclination 30°, optical path selector: eyepiece/camera port = 100/0 or 0/100, pupil spacing 48-75mm, eye point adjustment: 375.0-427.9mm
Carrier platforms	Linear mechanical fixed load table, (W×D): 211mm×154mm Stroke (X×Y): 76mm×52mm Single sample holder (optional: double specimen holder, plate holder) XY load table moving stop
spotting scope	Abbey Spotting Scope, N.A. 1.25 can be raised and lowered, built-in aperture adjustment
objective (optics)	Flat-field achromatic objective (anti-fungal) 4× N.A.0.1, W.D. 18.5mm 10× N.A.0.25 W.D. 10.5mm 40× N.A.0.65 W.D. 0.56mm 100× N.A.1.25 W.D. 0.13mm (Optional) 20× N.A.0.65 W.D. 0.56mm
Eyepiece (10×)	10 x Field of View F.N. 20 (mold resistant) / 15X Field of View (FN): 16 (optional)
Rated voltage/current	AC 100–240 V 50/60 Hz 0.4 A
connector	0.5x CCD interface

GK-500DM Fluorescence Biological Microscopy



Observation tube

- >Eyepieces integrated with the barrel to prevent detachment
- >Preset diopter adjustment to avoid possibility of incorrectly setting the diopter
- >Other barrels available

Safe rotation

- >Screws for safe rotation of the viewing cylinder

Microscopy body parameters

optical system	Infinity Optical System
Carousel of Mirrors	Fixed 4-well objective turntable, tilted inwards
spotlight	Low focus control, self-adjusting focus mechanism, 300 micron/precision focus rotation, 3 micron incremental calibration
observation tube	45° EZ barrel with pointer
hosts	GK- DM500 RH Microscope Mainframe with Spotting Scope
spotting scope	Spotting Scope 0.9 dry/1.25 oil type
objective (optics)	Flat-field achromatic objective (antifungal) 4x/0.10 NA,26.2mm W.D 10x/0.22 NA,7.8mm W.D 40x/0.65 NA,0.31 mm W.D 100x/1.25 NA,0.10 mm W.D., oil type
litter table	Table surface 185mm (front 150mm) wide x 140mm deep, rounded table edges, X/Y coordinate vernier scale, abrasion-resistant table surface, 26mm x 76mm table travel

GK-750DM Fluorescence Biological Microscopy



Convenient for overview observation

>Various barrels can be rotated freely while securely fastened to the main microscope unit.

>Standard barrel with eyepiece locking screw prevents eyepieces from falling out

Ultra-stable focus, contrast and illumination

>The rebalanced focusing handle provides inertia to very precise positioning for focusing

>Optional Koehler field diaphragm to further optimize illumination and contrast.
further optimize illumination and contrast

Microscope body parameters

optical system	Infinity Optical System	
Carousel of Mirrors	Fixed 4- or 5-port objective turntable, tilted inwards	
spotlight	Low focus control, self-adjusting focus mechanism, 300 micron/precision focus rotation, 3 micron incremental calibration, rebalanced focus handle	
observation tube	45° EZ barrel with pointer, 52mm-75mm pupil spacing	
hosts	GK- DM500 RH Microscope Mainframe with Spotting Scope	
spotting scope	Spotting Scope 0.9 dry/1.25 oil type	
objective (optics)	High contrast flat field objective (anti-fungal)	
	4x/0.10 NA,18.0 mm W.D.	10x/0.25 NA,12.0mm W.D.
	40x/0.65 NA,0.36 mm W.D.	100x/1.25 NA,0.10 mm W.D.
litter table	Table surface 185mm (front 150mm) wide x 140mm deep, rounded table edges, X/Y coordinate vernier scale, abrasion-resistant table surface, 26mm x 76mm table travel	

Required Accessories

Fluorescent module



Multi-band modules available

To meet the needs of different testing programs in hospitals, we provide a variety of wavelength fluorescence modules: 365nm, 385nm, 455nm, 470nm, etc., and according to different programs there are single-channel (UV) or multi-channel (UV + B) to choose from

Microcamera



Adopting a large target surface high-performance imaging chip with USB3.0 data transmission interface, it has the performance characteristics of large field of view, clear image, rich color performance, high sensitivity, high dynamic range and high frame rate, which is an ideal tool for collecting high-quality microscopic pictures and conducting microscopic image analysis.

- Advanced color reproduction algorithm and precise detail processing technology and USB3.0 interface: better observation and comparison of samples, really get the same image effect as under the mirror, showing the real and reliable results. It can make the experiment more effective and fast, reduce the time used for shooting, and greatly improve the work efficiency. Can clearly see every detail of the sample, can see the bright field, can also see fluorescence, to achieve a more comprehensive application.

- USB3.0 Hi-Speed Fluorescence Microscope Camera: 5 megapixels, 6.3 megapixels.

V. Configuration table of product structure components (see table 1)

Table1 Configuration table for each specification model of the product

parts model number	microc amera	vie win g hea d	gogg les	obje ctive (opti cs)	litter table	Objec tive Lens Conv erter trans ducer	open- field spotti ng glass	Lighti ng syste ms	Graphi c reporti ng softwar e	powe r adapt er	fluore scent tube	
	○	●	●	●	●	●	●	●	○	●	●	
● denotes standard equipment ○ denotes optional × means not configured												

VI.Mounting

(1) Installation of fluorescent device

Insert the fluorescence unit into the head of the microscope body, turn it to the proper position, secure it with the fastening screws and plug in the power adapter. (2) Installation of observation head

Remove the dust cover, insert the viewing head into the head of the unit, turn it to the proper position, and secure it by tightening the screws with an allen wrench.(3)Installation of eyepieces

Remove the eyepiece cover and insert the eyepiece into the eyepiece barrel until the end faces rest against each other.

Attention:Do not tilt the microscope when mounting the viewing head and eyepieces or they will slip and be damaged.

(4) Mounting Objective Lens

1、 The objective lenses are mounted at the factory, and the magnification is mounted on the converter of the objective lenses in the order from low to high, and it is easy to change the magnification of the objective lenses in the process of using them in this way.

2、 Clean the objective lens regularly. The objective lens is very sensitive to dust.

3、 To operate, first use the 10 × objective lens and WF10 × eyepiece to search for samples and focus, and then switch to other magnification objective lenses for observation as needed, rotating the objective converter until a "click" is heard to ensure that the desired objective lens enters the center of the optical path.

(5)Installing the Color Filter Assembly

1 、 Rotate the spotting scope bracket to the right in the direction shown in the illustration;

2. Put the desired color filters into the corresponding holes of the spotting scope bracket, and then turn the bracket back to its original position.

(6) Connecting Power Cord

1、 Before connecting the power cord, turn the main switch to the "O" (OFF) position.

2、 Insert the power cord plug securely into the microscope's electrical outlet and the other end into the outlet of the power supply to ensure good contact.

3、 The power cord supplied by us should always be used, and if it is lost or damaged, a power cord with the same specifications should be selected.

Attention: Ensure that the contact is good, otherwise it will affect the performance of the equipment; do not apply strong force to the power cord, when bending and winding, cables and wires are easy to damage the replacement fuse.

(7) Before replacing the fuse, you must turn the main switch to the "O" (off) position, unplug the power cord, spin the fuse block out of the fuse holder by hand, replace the fuse with a new one, and then spin it back into the fuse holder.

 Attention: The new replacement fuse should have the same voltage and current as the original fuse used.

(8) Installation and replacement of light bulbs

The light bulbs for the illumination of the microscope and fluorescence unit are LED bulbs, which have been calibrated for the field.

(9) Installation of microcamera

The lower end of the microscope camera unit interface, screwed onto the observation device, the upper end of the interface connects to the microscope camera unit and secures it with screws.

VII.Manipulate

(1) Adjustment of lighting

1.The adjustment of the microscope: turn on the power, the main switch on the microscope body to "I" (on) position, turn the dimmer knob counterclockwise, the field of view becomes bright; turn the dimmer knob clockwise, the field of view becomes dark.

2.the fluorescent device on the right side of the face of the rear of the adjustment knob, rotate counterclockwise to open, continue to rotate counterclockwise for the fluorescence brightness increases, clockwise rotation of the dimmer knob, fluorescence brightness decreases, rotated to the lowest, "click" sound for the closure. Fluorescence device on the right side of the lever for the fluorescence light path and microscope bright field light path switching lever, pull out the bright field, cut in the fluorescence light path.

 Attention: Using the bulb in a low-current state extends the life of the bulb; fluorescent and microscope light sources are not used at the same time.

(2) Placement of specimens

1.Place the slide (specimen) in the center of the mechanical carrier and gently hold the specimen with a specimen holder.

2.Rotate the horizontal and vertical adjustment handwheels on the mechanical moving ruler to move the specimen to the desired position.

 Note: Be careful when switching objectives; the objective lens may touch the specimen

when it needs to be rotated after observing the specimen.

(3) Focusing

1、 with 10 × objective lens focusing, in order to prevent the specimen and the objective lens touch, should first make the mechanical stage rise, so that the specimen and the objective lens close to each other, and then make the specimen and the objective lens away from each other, in the process of away from each other to achieve the purpose of focusing.

2、 The operator can slowly rotate the coarse handwheel in the reverse direction to make the specimen drop, while searching the image in the 10X eyepiece, and then use the microfocus handwheel to adjust the focus finely when the fuzzy image is seen, and then switch to the other magnification objective lenses, so as to achieve a flush focal plane without the risk of touching the specimen.

 Attention: The looseness and tightness of the coarse-action focusing handwheel has been adjusted at the factory.

(4) Spotting lens center and height adjustment

1.Turning the focusing handwheel of the spotting lens can make the spotting lens move up and down, when the high-magnification objective lens, the spotting lens rises, and when the low-magnification objective lens, the spotting lens can fall.

2. the center of the focusing lens should be coaxial with the optical axis of the objective lens, the product has been calibrated at the factory, the user does not have to self-adjustment.

3.the highest position of the spotting scope, factory has been calibrated, the user does not have to self-adjustment (the top of the spotting scope should be lower than the surface of the carrier table 0.03mm-0.4mm).

(5) Adjustment of aperture diaphragm

Turn the aperture diaphragm lever to adjust the size of the aperture diaphragm.

1.If the aperture diaphragm is reduced, brightness and resolution will decrease, while contrast and depth of field will increase. Conversely, if the aperture diaphragm is enlarged, brightness and resolution will increase, while contrast and depth of field will decrease.

2.Adjust the aperture diaphragm to a position approximately 80% of the numerical aperture of the objective lens to obtain a high quality image. Readjust the aperture diaphragm each time the objective lens is changed.

3.The numerical aperture is marked on each objective lens sleeve. For example, the marking of 10/0.25 means that the magnification is 10X and the numerical aperture is N.A0.25.

4.Take the eyepiece out of the observation lens barrel, eyes to the barrel and rotate the aperture diaphragm handle operation lever, you can observe the aperture diaphragm image.

(6) Binocular observation head adjustment

a) Interpupillary Adjustment

Interpupillary distance range of 55-75mm (translating) or 48-75mm (hinged) for binocular viewing heads.The operator translates or rotates up and down according to his/her interpupillary distance, and the scale corresponding to the engraved line is the operator's pupillary distance.The interpupillary adjustment is the distance between the two observation tubes so that a single microscope image can be observed, which reduces fatigue during observation.

b) Sight Adjustment

Observe first with the fixed eyepiece barrel and rotate the coarse or fine adjustment handwheel to bring the specimen into focus; then use the other eye to observe the other side of the eyepiece barrel with the dioptic adjustment ring, the Straightly rotate the visual adjustment ring to bring the specimen into focus (the visual acuity difference has been compensated for, and the best results are achieved when both eyes see the specimen image at the same time).

(7) Use of 100× oil mirror

When using the oil lens must be immersed in cedar oil between the oil lens and the specimen, taking care not to mix air bubbles into the oil, otherwise the image quality will deteriorate, and the lens will be cleaned with alcohol or xylene after use.

VIII.Troubleshooting**(1) Optical section**

concern	rationale	method settle an issue
1.Dark edges or uneven light and darkness in the field of view	Transducer not in position for positioning (objective lens not in the center of the optical path)	Turn to the position of positioning (turn the objective lens so that it enters the optical path correctly)
	The filament looks like it's not in the center.	Centre
	Dirt on the lens (spotting scope, objective lens, eyepiece, collector lens)	clean
2.Dirt in the field of view.	Dirt on the lens (spotting scope, objective lens, eyepiece, collector lens)	clean
	Spoils on the slide.	clean
3.Poor image quality (low resolution, low contrast)	No coverslip on the specimen.	Additional Coverslips
	Coverslip too thick	Use of standard thickness (0.17 mm) coverslips
	The bottom of the specimen is reversed.	Turn over.
	Oil immersion on dry objective (especially 40X prone)	clean
	Dirt on the lens (spotting scope, objective lens, eyepiece, collector lens)	clean
	Oil immersion objective lens not immersed	Use of oil immersion
	Air bubbles in oil immersion	bubble elimination
	Used unspecified immersion oil	Use of standard immersion oil
	Aperture diaphragm too wide open	Close down properly
	Dirt on the incident lens of the binocular tube	clean
	Aperture diaphragm too small open	appropriate size
	Concentrator positioned too low	Adjust the spotting lens position up and down
4.Darkening on one side of the image	Concentrator not in the center of the field of view or concentrator tilted	Reinstalling the spotting scope
	Converter not in position	Turn it to position it.
	The specimen is floating.	Reliable reinforcement
5.Image shift during focusing	The specimen floats on the surface of the carrier	Should be securely placed
	Converter not in position	Turn it to position it.
6.Slightly	Blue filter not used	Using Blue Filters

yellowish image		
7.Insufficiently bright lighting	Aperture diaphragm opened too small	recalibration
	Concentrator positioned too low	Correcting the position
	Dirt on the lens (spotting scope, objective lens, eyepiece, collector lens)	clean

(2)Mechanical component

concern	rationale	method settle an issue
1.High-power objective touches specimen before focusing	The slides are reversed.	Place the sample with the coverslip up
	Coverslip too thick	Use of standard thickness (0.17 mm) coverslips
2.Coarse focus handwheel is not flexible	Coarse focus handwheel too tight	Proper relaxation
3.During observation, the stage does not maintain a clear image due to its own gravitational degradation or by fine-tuning the acquisition position.	Coarse focus handwheel too loose	Proper locking
4.Binocular images do not overlap	Optical pupil spacing is not adjusted correctly	Adjust the optical pupil spacing appropriately
	No compensation for double vision	Correct Adjustment
5.Excessive eye strain	No visual adjustment	Adjustment of diopter
	Inappropriate brightness of lighting	Adjusting the dimmer knob

(3) Electrical part

concern	rationale	method settle an issue
1.Bulb does not light up when switch is on	powerless	Checking wire connections
	The bulb's out.	change
2.Suddenly burnt out bulbs	High or unstable voltage	Possible aging of the power supply
3.Insufficiently bright lighting	Adjustment knob in low brightness position Voltage too low	Turn counterclockwise to dim Increase voltage
4.Flickering or highly erratic lights	The bulb's going out.	change
	Power cord not properly plugged into outlet	Checked and securely inserted

 Attention:If the above operation does not solve the problem or if a problem other than the one described in this table occurs, contact the manufacturer.

IX.Maintenance and upkeep

- 1.The power switch of the main unit is the power supply control, when you finish the observation or suspend the use, put the switch in the "O" (disconnect) state, so as to avoid the internal electric components being in the working state. When not in use for a long time, the power plug should be pulled out.
2. In order to maintain the best performance of the microscope, the instrument should be regularly checked and maintained.
- 3.All optical components, mechanical focusing mechanism are installed and adjusted, it is strictly prohibited to disassemble and install, so as not to cause failure and affect the use.
- 4.Use protective gloves when maintaining instruments with infectious specimens or take effective cleaning, disinfecting and sterilizing measures before use.
- 5.The microscope should be kept clean and dust should be removed frequently, and special care should be taken not to contaminate the optics when cleaning.
- 6.When in use, if the microscope is wet with liquid, cut off the power immediately and wipe it dry.
- 7.The instrument should be placed in a cool, dry place, and when the microscope is not in use, it should be covered with a dustproof cloth cover.

Attention:Always make sure the main switch is in the "O" (off) before covering, and always wait for the light chamber to cool down completely.

- 8.The biological microscope should be placed in a dry and cool place to prevent the lens and mechanical parts from moisture; the microscope should not be placed together with corrosive chemicals.

X.Cleaning/disinfection

Cleaning of optical surface smudges of cleaning: such as fingerprints, grease can be used clean soft cotton cloth, lens paper or gauze dipped in ether, alcohol (1:1) mixture gently wiped away. When cleaning the oil mirror after use (100 ×) with lens paper or soft cotton cloth dipped in dimethyl stupid gently wipe off the objective lens on the tip of the immersion oil.

Cleaning of paint and plastic surfaces: Stubborn stains can be cleaned with a soft detergent, a clean soft cotton cloth is recommended; ordinary stains can be cleaned with

a soft cotton cloth dipped in water.

 Attention:Both ether and alcohol are extremely flammable; do not bring these chemicals near open flames and try to use these chemicals in a well-ventilated environment.

【Registrant/Manufacturer】 Dezhou Guoke Medical Technology Co.,Ltd

【After-sales service unit】 Dezhou Guoke Medical Technology Co.,Ltd

【Residence/production address】 28-31 axis.1 and 2 span.No.2 workshop,(Zhongyuan Science and Technology Innovation Park)No.6596 Dongfanghong East Road, Yuanqiao Town, Economic and Technological Development Zone, Dezhou City, Shandong Province, China

【contact details】 0534-7057266

【operating environment】

- 1、Indoor use
- 2、Ambient temperature range: 5℃～ 30℃;
- 3、Relative humidity range: 45%～ 70%;
- 4、Atmospheric pressure range: 70kPa～ 106kPa;
- 5、Voltage: AC 220V 50Hz

【Storage conditions and methods】

Store in a dry environment at room temperature, protected from light

【Product Contraindications】 not have

【Product Number】 see the label

【date of manufacture】 See product label for details

【Term of Use】 six year



Dezhou Guoke Medical Technology Co.,Ltd.

Add.: 28-31 axis,1 and 2 span.No,2 workshop, (Zhongyuan Science and Technology innovationPark)No,6596 Dongfanghong Fast Road,Yangiao Town, Economic and TechnologicalDevelopment Zone, Dezhou City, Shandong Province. China

Tel.: +86 534 7057266

E-mail: office@ guoke-medical.com

Web: www,guokemedical.com

