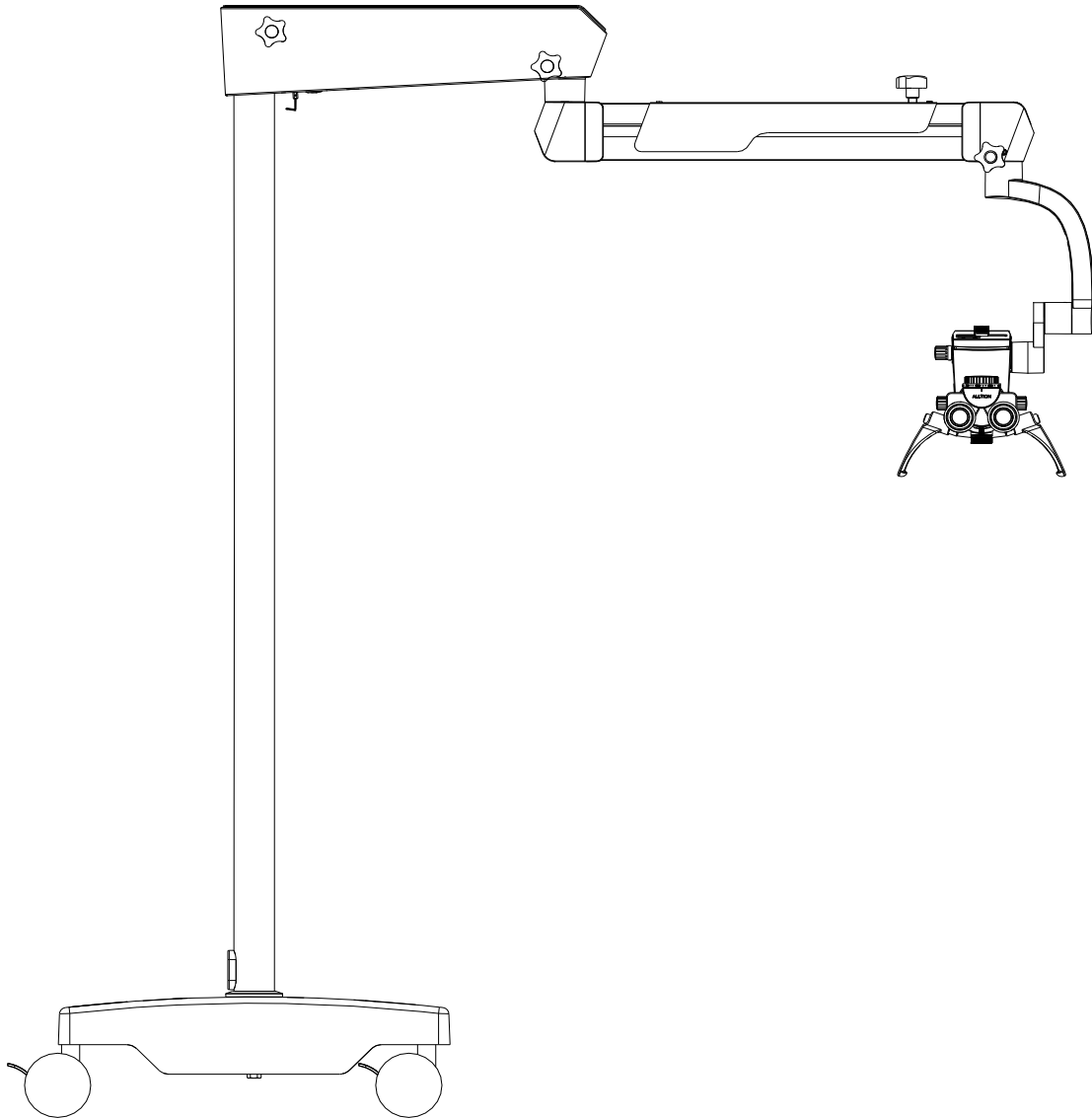


MODEL 1 Surgical Microscope



User's Manual

(Please read the instruction carefully before using it)



PA1910-UM03-EN

Version: A1

2022-08-01

Prosidio Inc.

Product Information:

Name: Surgical Microscope

Model: MODEL 1

Production Date: See the instrument label for details

Manufacturer:

Prosidio

Headquarters:

Prosidio Inc

168a Irving Ave

Suite 302C

Port Chester, NY

E-mail: service@prosidio.com

Tel: + 1 (914) 510-2314

Website: www.prosidio.com

Contents

Safety Information	1
Warning Symbols	1
Information Symbols	1
The Meaning of Other Figures, Symbols and Contractions	1
Structure and Composition	2
Range of Application	2
Contraindication	2
Service Life	2
Working Environment	2
Storage Environment	3
Safety Characteristics	3
Safety Requirements on Installation and Use	3
Safety Requirements	3
Requirements on Installation	3
Operating Requirements	4
Safety Signs on the Device	4
Product Assembly	6
Standard Configuration	6
Supporting Components	8
Inspection before Assembly	11
Installation of Support System	12
Installation of Mobile Floor Stand	12
Installation of Fixed Floor Stand	13
Installation of Ceiling Mount	14
Installation of Low-Position Wall Mount	15
High-Position Wall Mount	16
Installation of Cross Arm System	17
Upright Installation of Cross Arm	17
Suspending of Ceiling Mount	18
Installation of Objective Lens	19
Installation of Control Handle	19
Installation of Binocular Head Barrel	20
Wiring	21
Installation Confirmation	22
Installation of Supporting Components	23
Installation of 180° Binocular Head and 45° Binocular Head	23
Installation of Objective Lens	23
Installation of Other Parts	23
Product Functions	24
Product Components	24
Main Body Lens of Microscope	25
Straight Binocular Head and Eyepiece	26
Objective Lens	27
Hanger Bracket	28
Cross Arm and Mobile Floor Stand /Fixed Floor Stand /Low-position Wall Mount Stand	29
Cross Arm and Ceiling Mount Stand /High-position Wall Mount Stand	31
Operation of the Microscope	33

Check before Use	33
Optical Adjustment of Surgical Microscope	34
Performance Parameters	35
Basic Dimension	35
Microscope Parameters	36
Optical Parameters	36
Electrical Parameters	36
Electromagnetic Compatibility	37
Requirements on Wire Installation	37
Key Components for Electromagnetic Compatibility	37
Guidance and Manufacturers Declaration–electromagnetic Emission	37
Guidance and Manufacturer's Declaration – electromagnetic environment – for all Equipment and Systems	38
Guidance and Statement from Manufacturer - Electromagnetic Immunity– for Equipment and System that are not life-supporting	39
Recommended Separation Distances between Portable and Mobile RF Communications Equipment and the MODEL 1	40
Cleaning and Maintenance of the Device	41
Preventive Maintenance and Inspection	41
Clean the Optical Surface	41
Clean the Mechanical Surface	41
Disposal of Waste	41
Maintenance Related Information	42
Troubleshooting	42
After-sale Service	42

Safety Information

Prior to using this device, you must read the safety info and understand the meanings of these symbols:

Warning Symbols

The following safety information has been incorporated into the user manual. Please note these symbols and pay particular attention to the information associated with them.



Warning, indicating that there is potential hazard, failure to follow the instructions may pose a risk of harming users or product failure.



Note, promoting the user of the device, or providing the useful information to the user.

Information Symbols

The item symbols used in this User's Manual are defined as follows:

- Bullet points.
- ✓ Indicates preconditions that must be met prior to the operating the device.
- ▶ Indicates that there is a sequential relationship between items listed, and the next step can be carried out only after the previous step has been completed.
- Indicates the result that occurs after a step or procedure has been completed.

The Meaning of Other Figures, Symbols and Contractions



Please refer to the User's Manual.



Manufacturer

PD Date of manufacture



Authorized representative in the European Community



CE label



Power Switch



No pushing



Keep upright



Keep dry



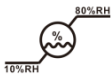
Handle With Care



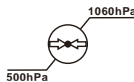
The number of stacked layers must not exceed 2 layers



Ambient temperature range: -40°C~55°C



Relative humidity range: 10%~80%



Atmospheric pressure range: 500 hPa~1060 hPa

Structure and Composition

Prosidio's Model 1 Surgical Microscope consists of support bracket (floor-mounted mobile bracket (standard)/optional floor-mounted bracket, ceiling bracket, high wall-mounted bracket and low wall-mounted bracket (optional)), cross arm bracket (including electric installation) and microscope head (including visual optical component, microscope body, objective lens and illuminating system).

Range of Application

The Model 1 is a surgical microscope that can be used within the fields of Otorhinolaryngology and Dentistry in both the clinical and surgical setting. It is used to illuminate and magnify objects within its field of view to assist licensed users in medical and surgical treatments of the head and neck excluding use for ophthalmology.

Contraindication

- Wet environments
- Shall not be used in ophthalmology
- Do not directly expose light to the human eye.

Service Life

8 years.

Working Environment

- Ambient temperature range: 5°C ~ 40°C
- Relative humidity range: 10% RH ~ 80% RH

- Atmospheric pressure range: 700hPa ~ 1060hPa

Storage Environment

- Ambient temperature range: -40°C ~ 55°C
- Relative humidity range: 10% ~ 60% RH
- Atmospheric pressure range: 500hPa ~ 1060hPa
- Well ventilated indoor environment free of corrosive gas or other harmful substances.

Safety Characteristics

- Adaptor: Input: AC100~240V, 50-60Hz / 1A Output: DC 12V / 3A
- Classification according to the degree of protection of the liquid: IPX0;
- Standard IEC60601-1 Type II Equipment.

Safety Requirements on Installation and Use

Safety Requirements

- ✓ This device can be used only for the purposes described in the User's Manual.
- ✓ Only trained and instructed personnel are allowed to use this device. The customer or the organization operating the equipment has the responsibility to train and guide all personnel using the equipment.
- ✓ Before starting the device, please read the User's Manual, including the User's Manual for accessories and other system components.
- ✓ Keep the User's Manual in order to facilitate the operator to read at any time.
- ✓ Please observe all symbols and labels of the device!
- ✓ The modification and repair of this device can only be performed by PROSIDIO service personnel or others authorized by PROSIDIO.
- ✓ Do not place any container filled with liquid over the device. Confirm that no liquid can penetrate into the device.



No modification of this equipment unless authorized by the manufacturer.



Although the equipment conforms to the intent of the standard IEC 60601-1-2 in relation to electromagnetic compatibility, electrical equipment may produce interference. If interference is suspected, move equipment away from sensitive device or contact us.



Do not store or use the device in a damp room. Do not expose the device in the place with splashing, dropping or water mist.



When the device is generating smoke, electric spark or a strange noise, please immediately cut off power supply of the device. Do not use this device until it has been repaired by our service agent.



Please note that local regulations take precedence over the requirements of the above mentioned criterions. If you have any enquiry, please contact the local PROSIDIO dealer.

Requirements on Installation



The installation of the product will be completed by our service representative or by professional personnel authorized by us. Please make sure that the following operational requirements have been met:

- ✓ All the safety-related mechanical connections (please find the Manual for details) are properly connected and all screws have been tightened.
- ✓ All wires and plugs work normally.
- ✓ The adopted power cables meet the design requirements of this device.



Please do not place the equipment in a place where it is difficult to access and operate.

Operating Requirements

- ✓ Please pay special attention to the PROMPT symbols on the device (especially the warning sign).
- ✓ Avoid looking at the light source of the microscope directly
- ✓ Do not disassemble and assemble the binocular head barrel and objective lens during use to prevent falling and injuring the patient.
- ✓ Do not disassemble or assemble the supporting components during use to prevent the damage to the components or hurting the patient.



This surgical microscope cannot be used for ophthalmic examination and surgery.

Safety Signs on the Device



1 Product label: contains basic information of the product.



2 Warning

Make sure that the binocular tube is safely installed and the screw has been tightened, otherwise the binocular tube has the risk of falling.



3 Warning

Make sure that the safety screw has been tightened, otherwise the arm support has the risk of falling.



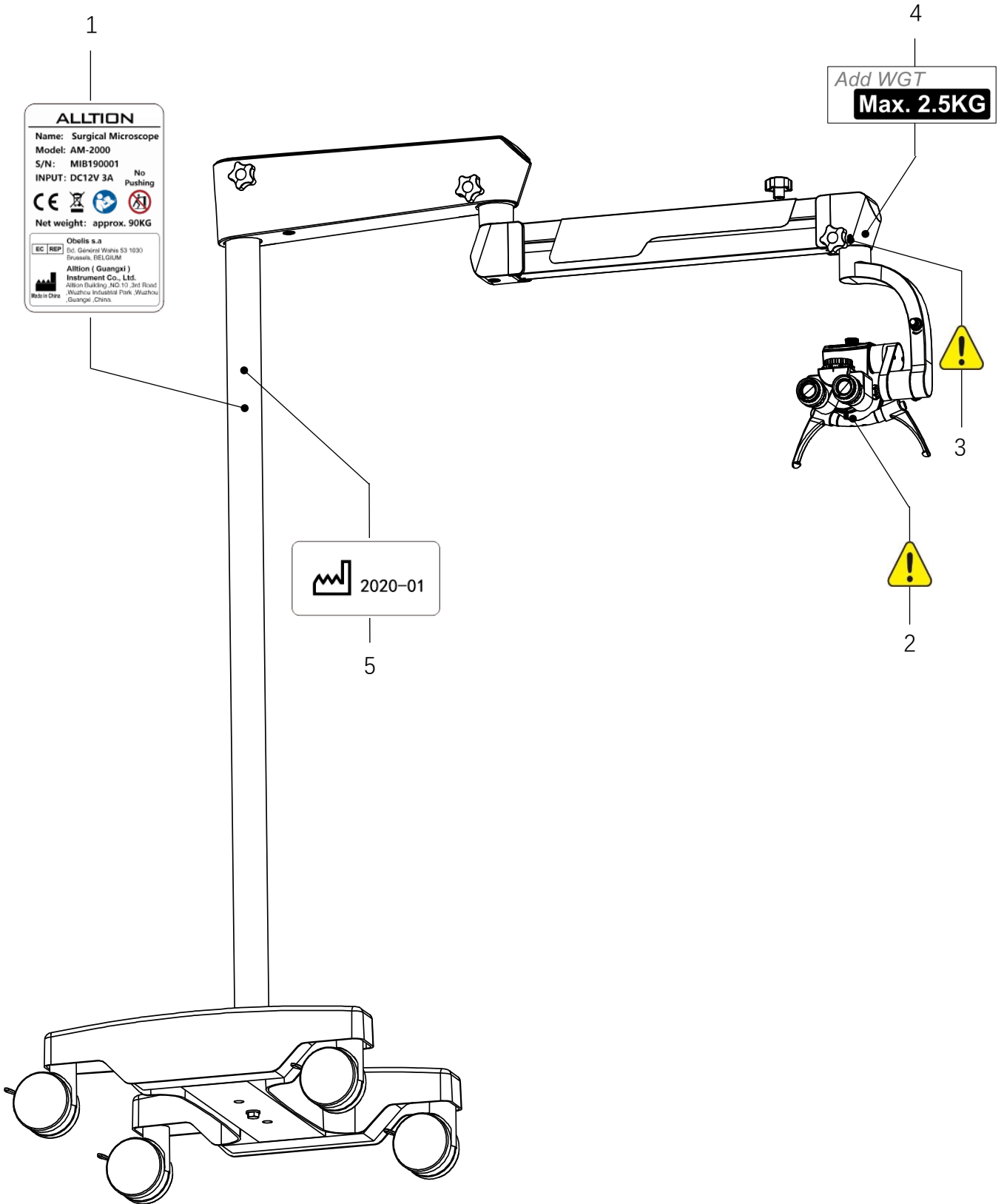
4 Load-bearing tip of cross arm bracket

The balance arm would fail in case of an added weight of greater than 2.5 kg.



5 Product Date

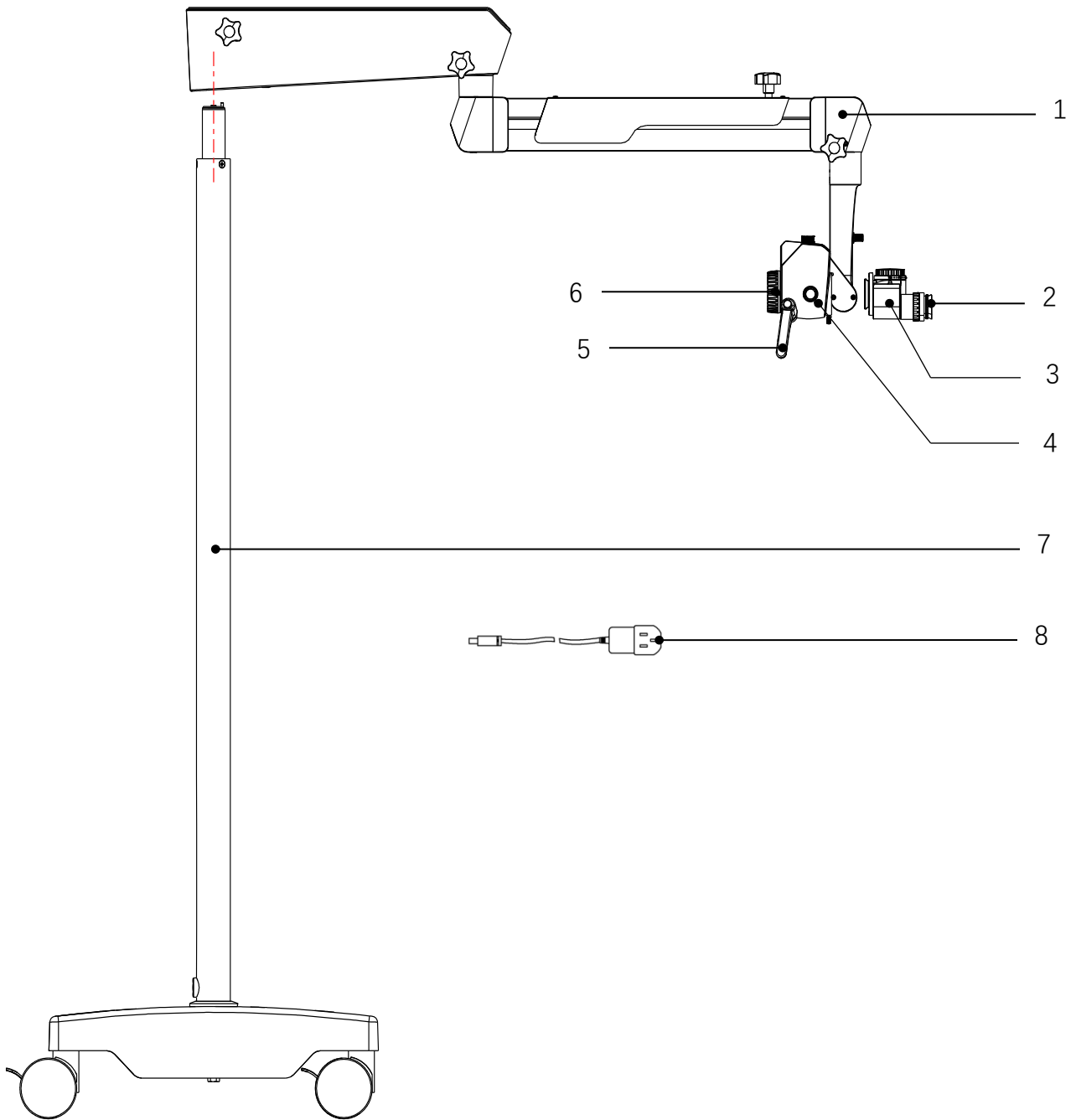
The production date is changed according to the actual date.



Product Assembly

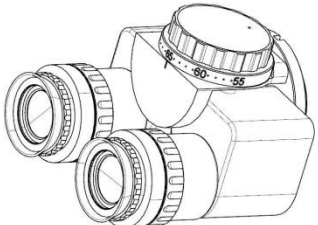
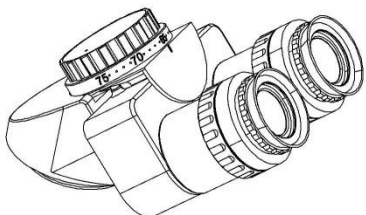
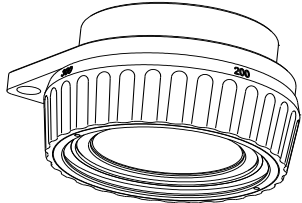
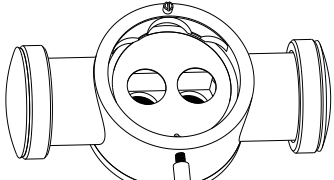
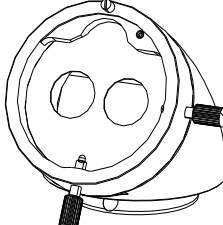
Standard Configuration

	Name of Components	Specification	Quantity
1	Cross arm bracket	Length:650mm	1
2	Binocular tube	Available in 180° variable-angle, straight or 45° bevel.	1
3	Eyepiece	12.5X or 10X	2
4	Magnification pod	five-range zooming	1
5	Control handle		1
6	Objective lens	F250 objective lens, optional F300 objective lens (please find the Optional Accessories List)	1
7	Floor stand	Other installation modes are available for option, please find the Optional Accessories List	1
8	Power adapter	Chinese standard, USA standard and Europe standard are available for option, subject to the order	1

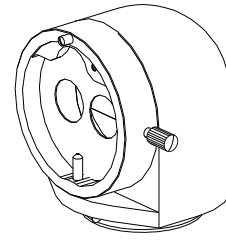


Supporting Components

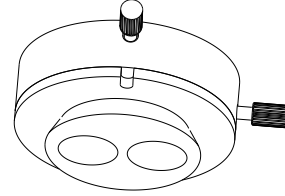
Supporting Components List

Name	Specification	Picture
1 Straight Tube Binocular Head	Straight Tube	
2 45° binocular head	45°inclined	
3 200-300 Variable Objective Lens	Continuous zoom from 200mm to 300mm	
4 F200 objective lens	F200	
5 F250 objective lens	F250	Recommended for standard otologic examination in Otolaryngology.
6 F300 objective lens	F300	
7 F350 objective lens	F350	
8 F400 objective lens	F400	
9 Beam splitter	2:8 beam splitting, optional 5:5 beam splitting	
10 30° Binocular Extender	30°angle	

11 90° binocular extender 90° angle

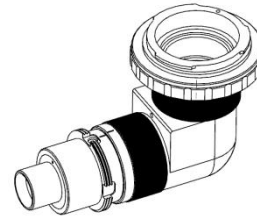


12 Angle Rotation Device

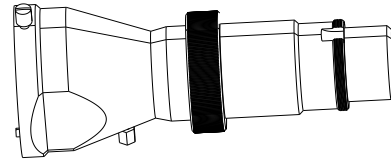


13 Camera adapter

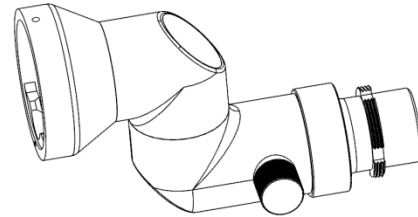
Interfaces with Sony,
Canon, Nikon cameras
optional



14 2-D Rotation Binocular
Assistant Scope
Connector



15 3-D Rotation Binocular
Assistant Scope
Connector



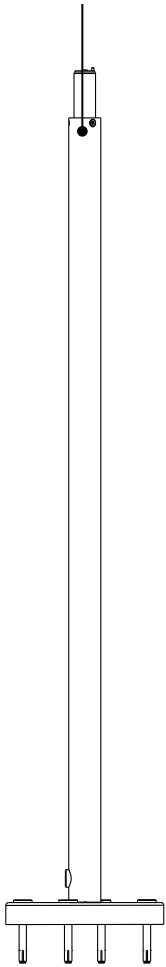
16 Fixed Stand Mount

17 Ceiling mount stand

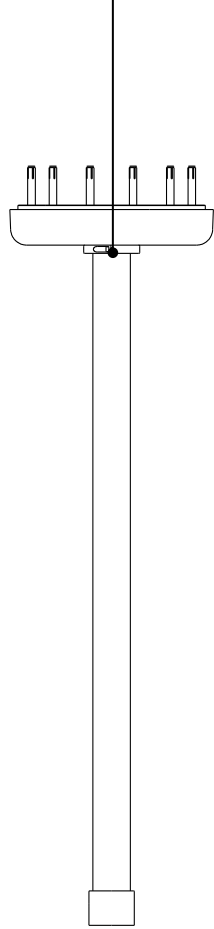
18 Low-position wall mount
stand

19 High-position wall mount
stand

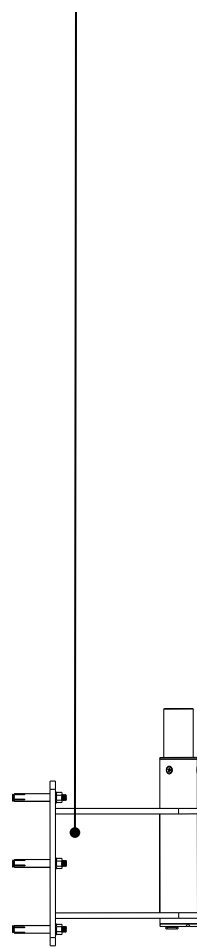
16



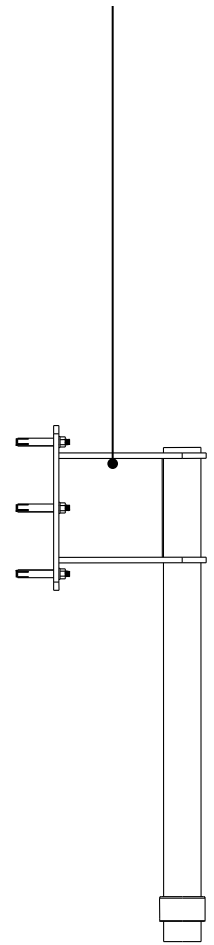
17



18



19



Inspection before Assembly



After opening the packaging box, find the packaging list, check the parts list with the provided equipment one by one according to the package list, check if any component is not provided; if any component is not provided, please contact the local dealer.



Please check the product if there's any damage, especially the optical components, if any, please contact the local dealer.



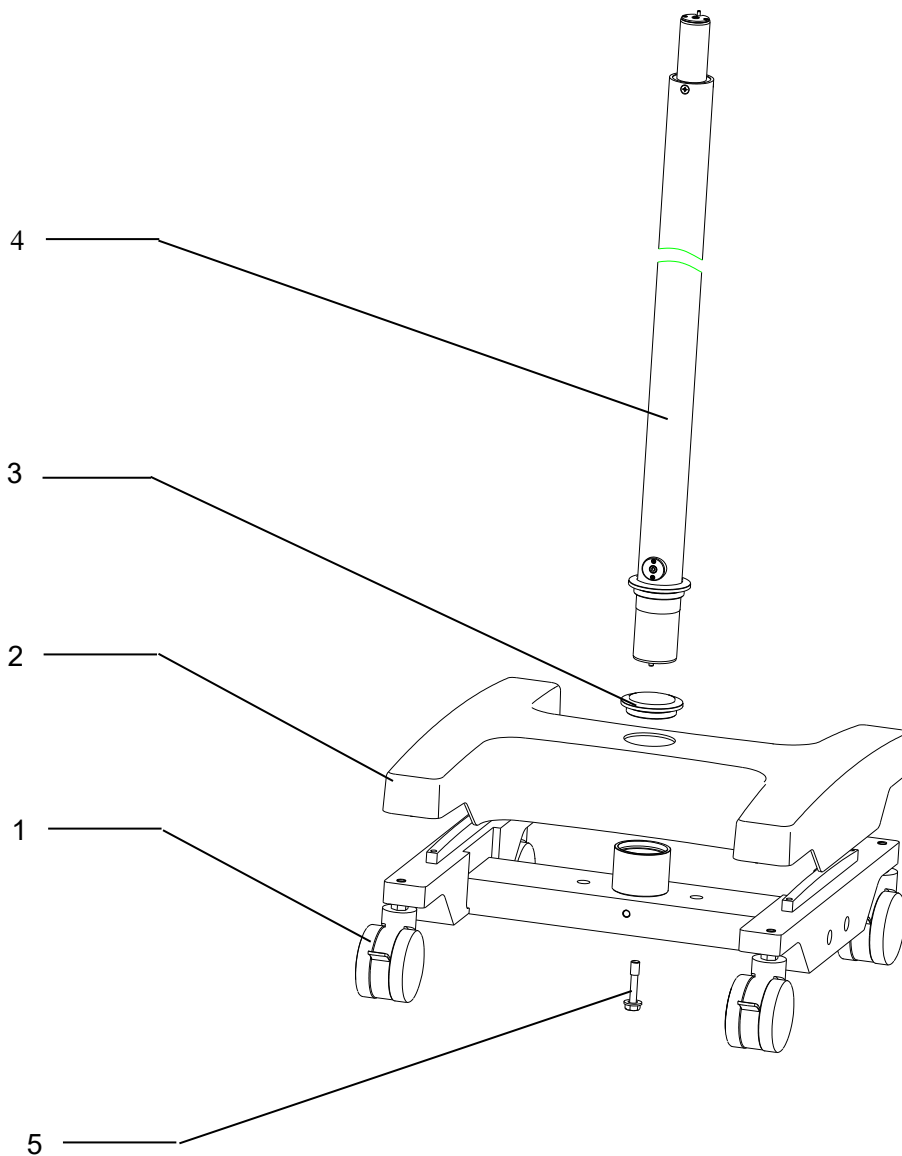
The product is a high delicate device, please handle with care when taking it out, and make sure the components are put at the safe place.

✓ Before assembly, make sure all users have carefully read the User's Manual and understand the assembly steps.

Installation of Support System

Installation of Mobile Floor Stand

- ✓ Move the base (1) from the wood pallet, take away the plastic cover and the compression ring (3) firstly and put it aside;
- ▶ Put base (1) on the horizontal ground and lock four casters;
- ▶ Fit the plastic cover (2) onto the base (1) and tighten the compression ring (3);
- ▶ Insert the upright post (4) in the installation hole of base (1), the positioning pin and the positioning hole need to be aligned to ensure that the upright post is installed in place;
- ▶ After the upright post is installed in place, tighten the screw (5) ;
- ▶ Finish the assembly of the mobile floor stand.



Installation of Fixed Floor Stand

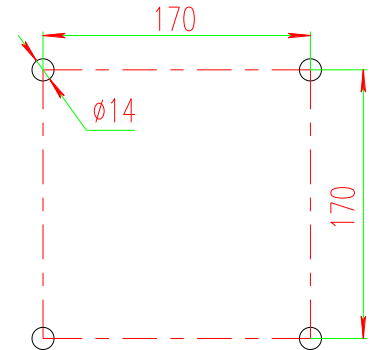


The fixed floor stand must be secured into flooring made of concrete or material with higher hardness than concrete. Otherwise, it will be risk of tipping over.



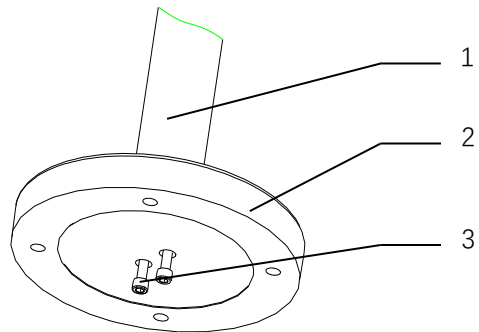
The ground to install the fixed floor stand must be horizontal and flat, otherwise, it will cause the product to tilt after installation.

- ▶ Drill 4 holes in the ground with $\Phi 14$ drill, the hole depth is 75mm, and the hole position is as shown on the right diagram.

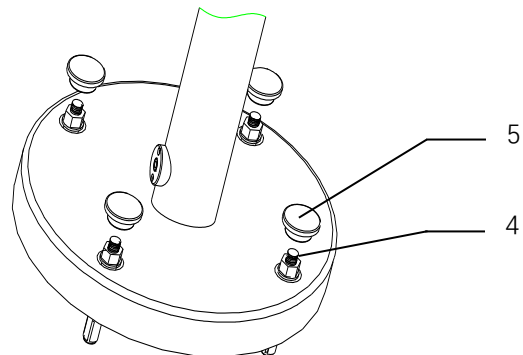


If the position and dimension of the installation hole are incorrect, the stand can't be installed.

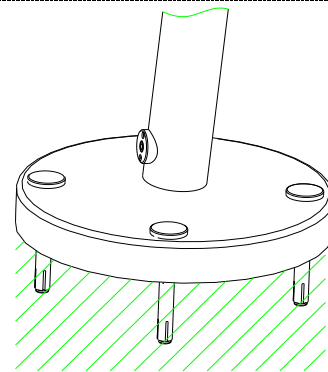
- ▶ Install the pole assembly (1) into the installation hole of the ground fixing plate (2), lock it with two M10 screws (3), and the positioning pin must align with the positioning hole during assembly;



- ▶ Take out the socket spanner from the tool box, insert the M10 expansion bolt (4) in the installation hole, align the stand with the bolts, and tighten, assemble the decorative cover (5);



- ▶ Finish the installation of the fixed floor stand.

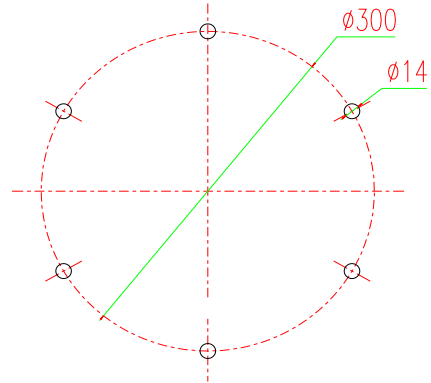


Installation of Ceiling Mount



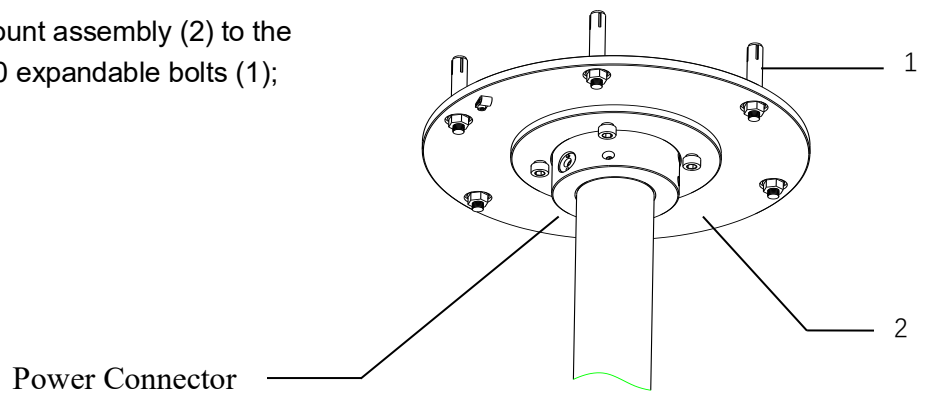
The ceiling to assemble the ceiling mount must be made of concrete or material with higher hardness than concrete. Otherwise, it will be risk of falling down.

- ▶ Drill 6 holes in the ground with $\Phi 14$ drill, the hole depth is 75mm, and the position dimension of the hole is as shown on the right diagram;

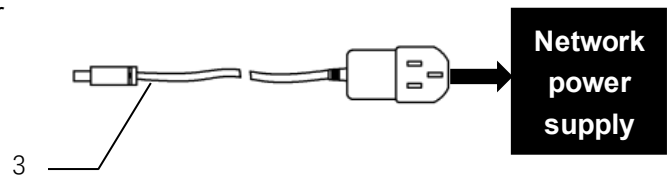


When drilling, please note the direction of power cord connection, The power connector is along same direction with the pre-installed socket on the ceiling.

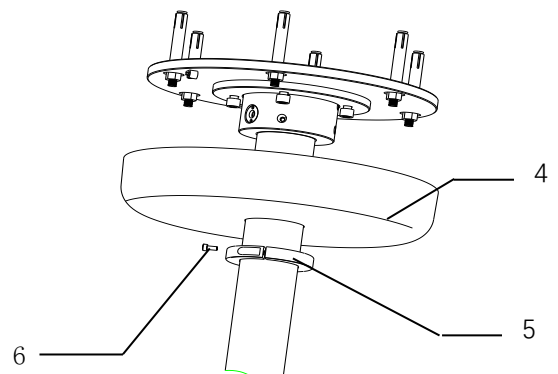
- ▶ Lock the ceiling mount assembly (2) to the ceiling with six M10 expandable bolts (1);



- ▶ Connect the power cable (3) to the power connector, and then plug it into an externally installed power socket.



- ▶ Install the decorative cover(4) from the bottom of the pole and bottom cover limit block(5), tighten the bolts(6)of the locking limit block after installation.



- ▶ Finish the installation of the ceiling mount.

Installation of Low-Position Wall Mount

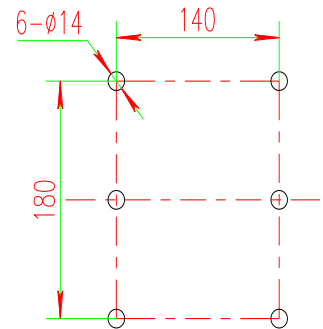


The wall to install the low position wall mount must be made of concrete or material with higher hardness than concrete. Otherwise, it will be risk of falling down.



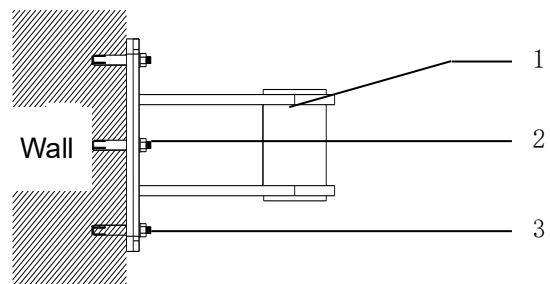
The wall to install the low-position wall mount shall be smooth enough, otherwise, it will cause the product to be tilted after installation.

- ▶ Drill 6 holes in the wall with $\Phi 14$ drill, the hole depth is 75mm, The position and dimension of the hole is as shown on the right diagram;

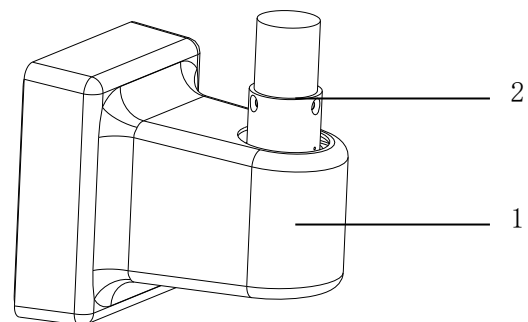


If the position and dimension of the installation hole are incorrect, the installation could not be done.

- ▶ Install the low-position wall mount (1) to the wall with hole by M10 expandable bolts (2), then tighten the nuts (3).



- ▶ After the appearance cover, load the column into the bracket.



- ▶ Finish the installation of the low-position wall mount.

High-Position Wall Mount



The wall to install the high-position wall mount must be made of concrete or material with higher hardness than concrete. Otherwise, it will be risk of falling down.

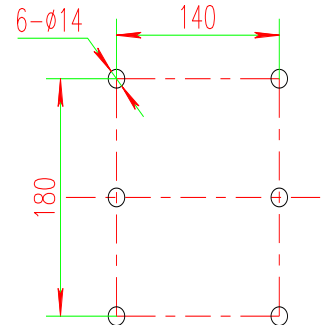


The wall to install the high-position wall mounted support shall be smooth enough, otherwise, it will cause the product to be tilted after installation.

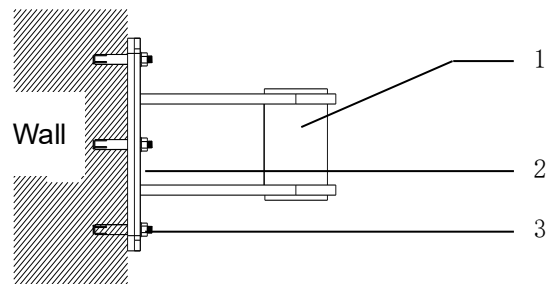
▶ Drill 6 holes in the wall with $\Phi 14$ driller, the hole depth is 75mm, The position and dimension of the hole is as shown on the right diagram;



If the position and dimension of the installation hole are incorrect, the installation could not be done.

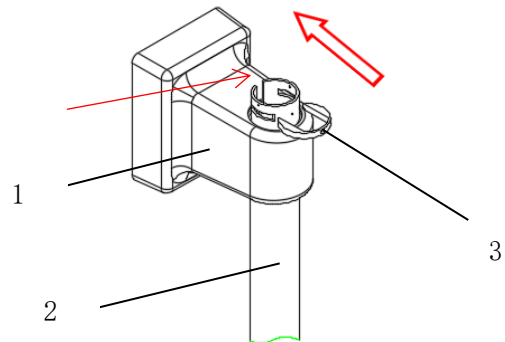


▶ Install the high-position wall mount (1) to the wall with hole by M10 expandable bolts (2) and tighten the nuts (3).

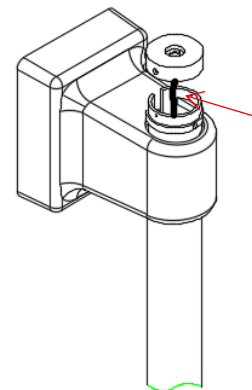


▶ After the appearance cover, put the column (2) from the bottom of the bracket, pay attention to the direction of the column (Refer to the right).

▶ Insert the anti-pendant copper circle (3) according to the specified such as shown on the right, fixed the anti-pendant copper circle with M3X6 hexagon lobular socket countersunk head screws.



▶ Put the cover into the column. After the cover is installed in place, lock with 2 M3x6 hexagon lobular socket countersunk head screws.



▶ Finish the installation of the high-position wall-mount.

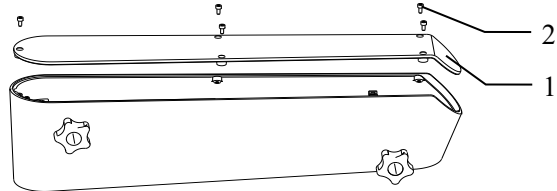
Installation of Cross Arm System

Upright Installation of Cross Arm

i The upright installation of cross arm is applicable to mobile floor stand, fixed floor support and low-position wall mount.

! Because the cross arm is heavy and long, please install by two operators for safety.

- ▶ Loosen five fastening bolts (2) on the cross arm, remove the plastic cover (1) and put it aside;

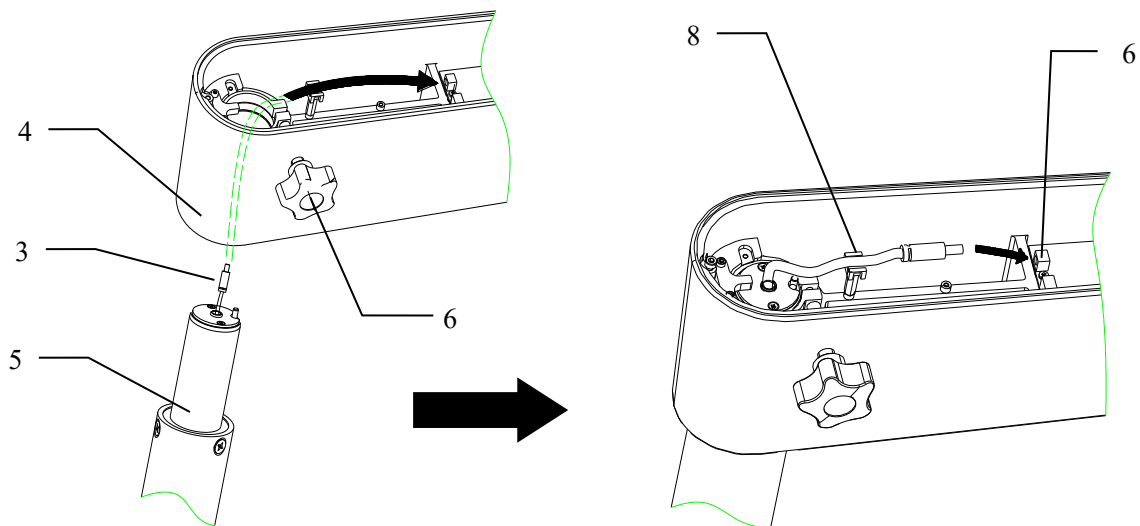


- ▶ Lift the cross arm over the pole, cross the power cable (3) from the mounting hole of cross arm (4), as shown by the bellow arrow.

- ▶ Install the cross arm (4) to the pole (5)

i In order to install it in place, completely loosen the locking knob (6) before inserting the cross arm into the pole.

- ▶ Once the cross arm bracket is installed in place, insert the power plug into the power connector (7) and fix the cable to the cable holder (8).



- ▶ Install the plastic cover (1) on the cross arm (3), finish installation.

Suspending of Ceiling Mount

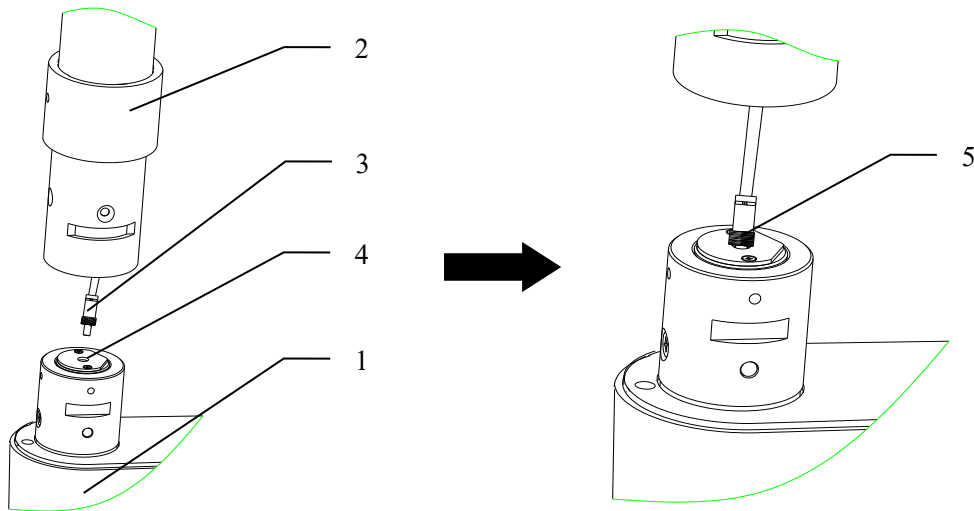


The suspending installation of first arm is applicable to ceiling mount System and high-position wall mount system.

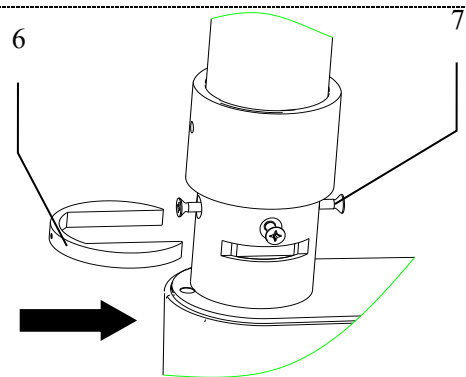


Because the first arm has certain weight and is long, please install by two operators together for safe installation.

- ▶ Lift the cross arm bracket (1) to a position under the column, insert the decorative ring (2) into the column, insert the power plug (3) on the column into the power connector (4), Tighten with the nut (5) on the power plug.

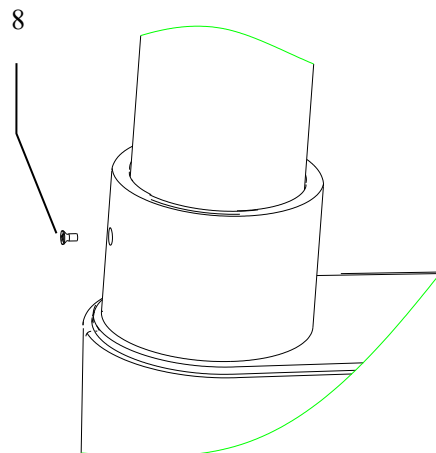


- ▶ Insert the connecting shaft on the first arm support into the upright post, align at the clamping groove and insert the limit block (6); tighten four M6 × 16 hexagon socket countersunk head screws (7) around four sides.



After the limit block (6) is inserted in place, the first arm support can be loosened;

- ▶ Put the decorative ring (2), lock the side edge with M3 × 6 hexagon socket countersunk head screws (8), finish installation.

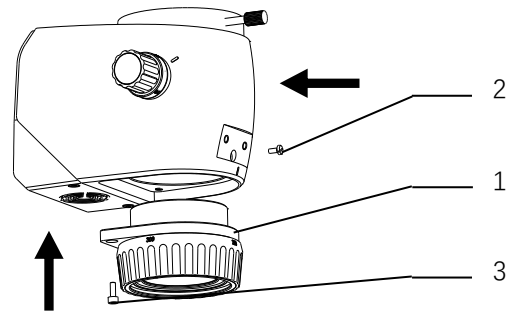


Installation of Objective Lens



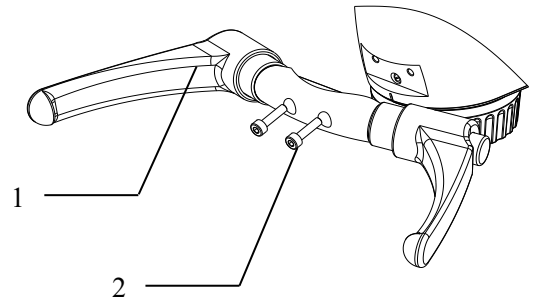
The installation methods for the 200mm objective lens, 250mm objective lens, 300mm objective lens, 350mm objective lens, 400mm objective lens and 200-300mm objective lens are the same.

- ▶ Mount the large objective (1) into the microscope mount with two M4 screws (3).
- ▶ Install the safety screws (2).



Installation of Control Handle

- ▶ Mount the control handle (1) into the microscope mount with two M4 screws (2).

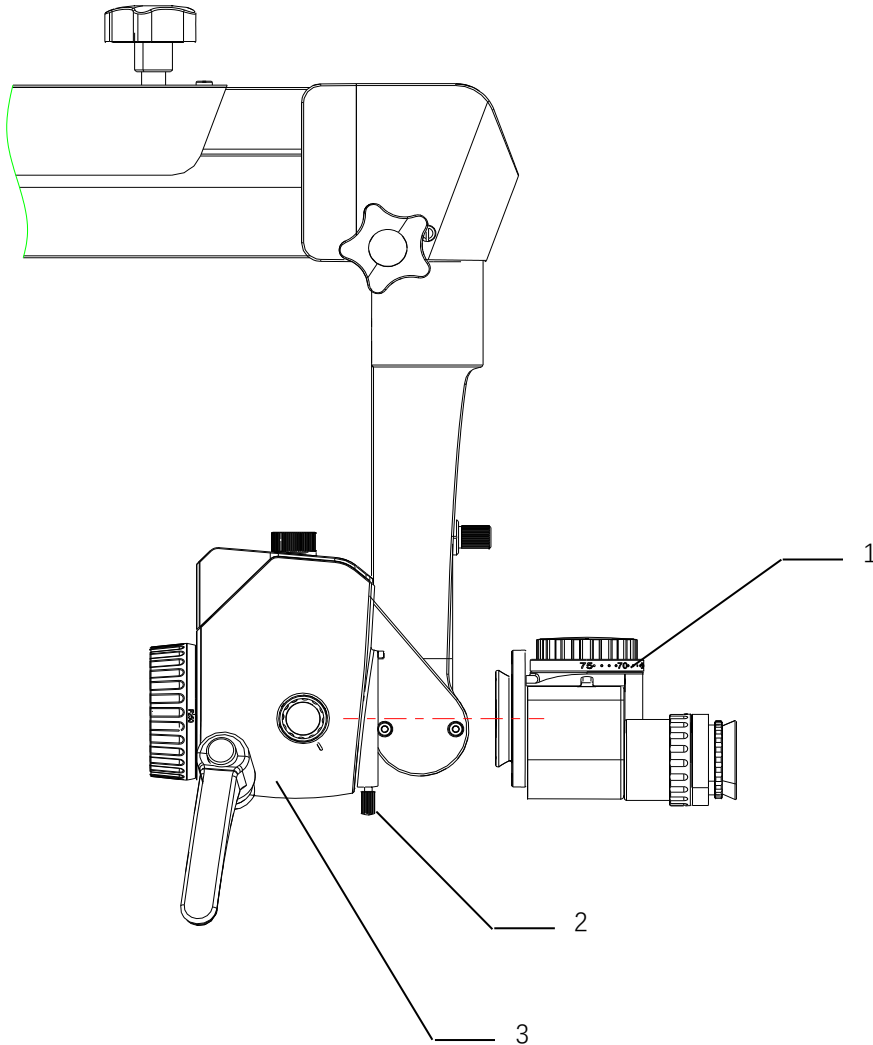


Installation of Binocular Head Barrel

- ✓ Make sure that the locking screw (2) is completely loosened before installation;
- ▶ Align the binocular tube (1) at the positioning pin, and install it in the bayonet of microscope body (3);
- ▶ Tighten the locking screw (2);



Before loosening the grip, please make sure: ① the binocular head barrel has been fully installed in place and has been completely clamped in the bayonet; ② the locking screw has been tightened. Otherwise, the binocular head barrel will be at risk of falling.

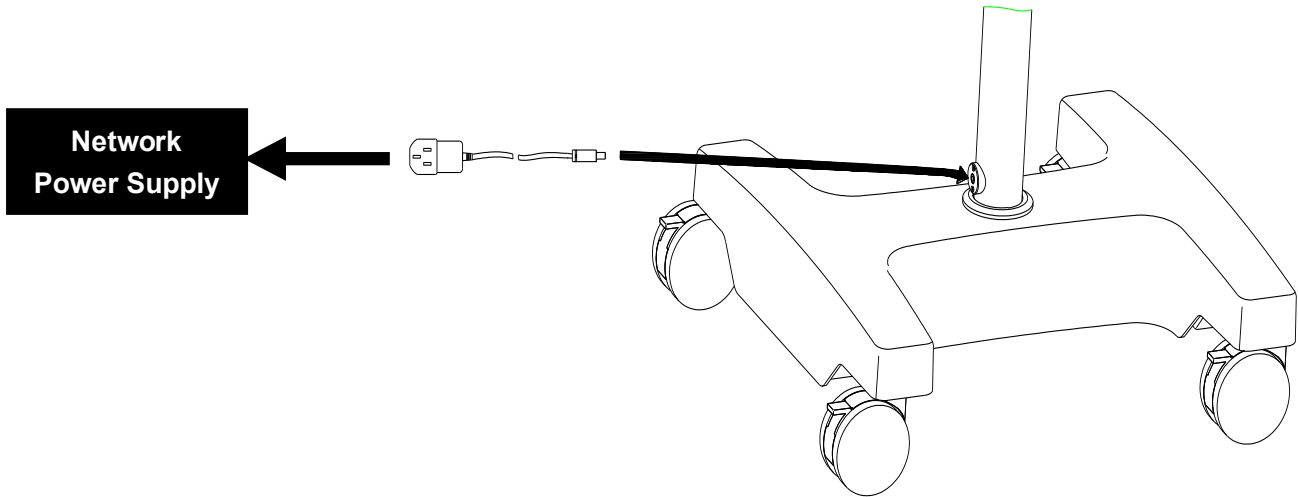


Wiring

▶ Connect the attached power wire according to the following picture;



If the specification of power cord plug does not match the local socket standard, please contact your local dealer or store for replacement.



Installation Confirmation

- Check whether the threaded connection of all assembled positions have been tightened, judge whether the whole machine has completed installation;
- Loosen all locking knobs, check if the rotation and movement of all joints of the whole machine are smooth, judge whether the mechanical function is normal;
- Check whether the locking knob of each joint is valid, judge whether the locking function is normal;
- Turn on the power switch, observe whether the indicator of the power switch turns on, whether the light is illuminated from the microscope body, judge whether the power is supplied;



When the suspension arm moves to the highest point, there is no illumination light; when the dimming knob is adjusted to the minimum, there is no illumination light;

- Turn the dimming knob to observe whether the lighting spot changes bright and dark, judge whether the dimming function is normal;

If the above functions are normal, the product installation is complete.

Installation of Supporting Components

Installation of 180° Binocular Head and 45° Binocular Head

The installation method is the same as the Installation of Binocular Head Barrel, see Page 20.

Installation of Objective Lens

For objective lens of other specifications, the installation methods are the same as “Large Objective Lens Installation”, as shown in Page 19.

Installation of Other Parts

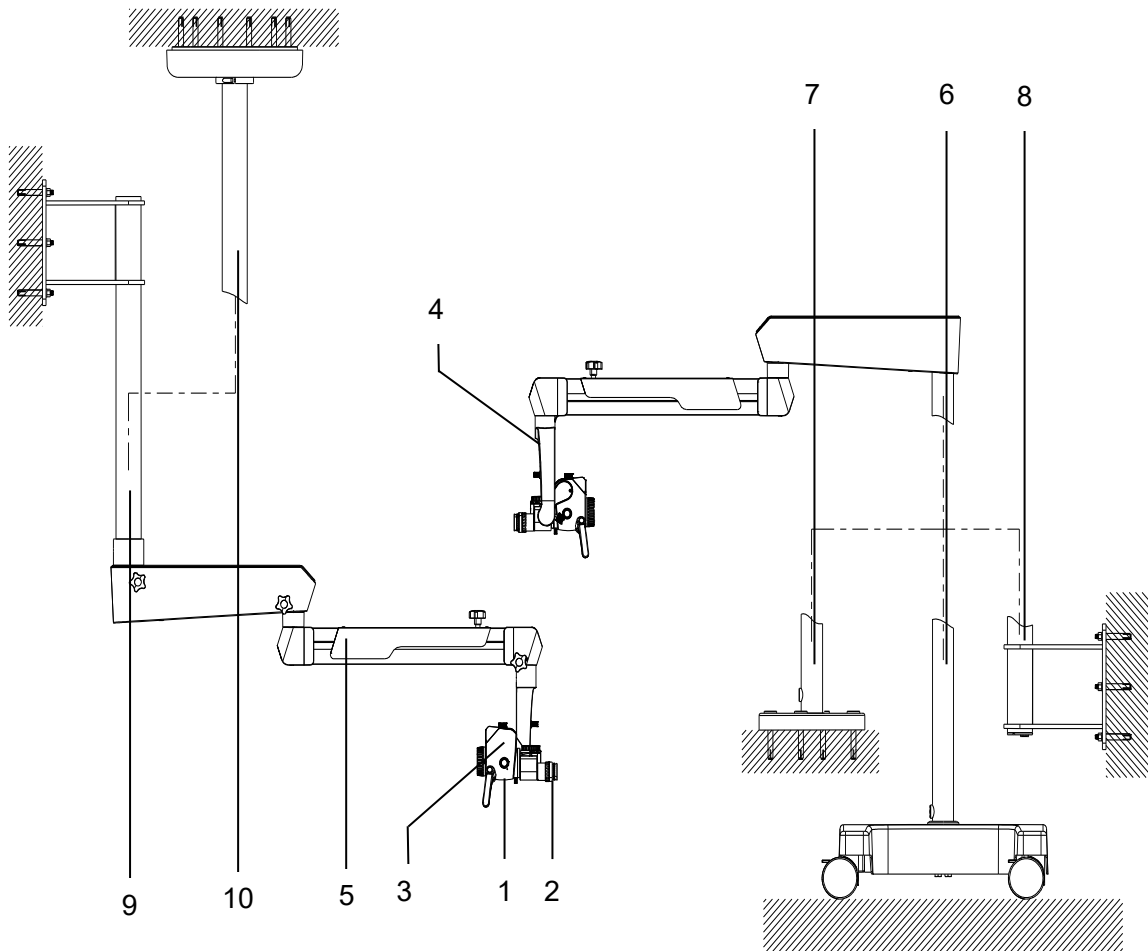


For the installation methods of other accessory parts, please refer to the user manual of corresponding component.

Product Functions

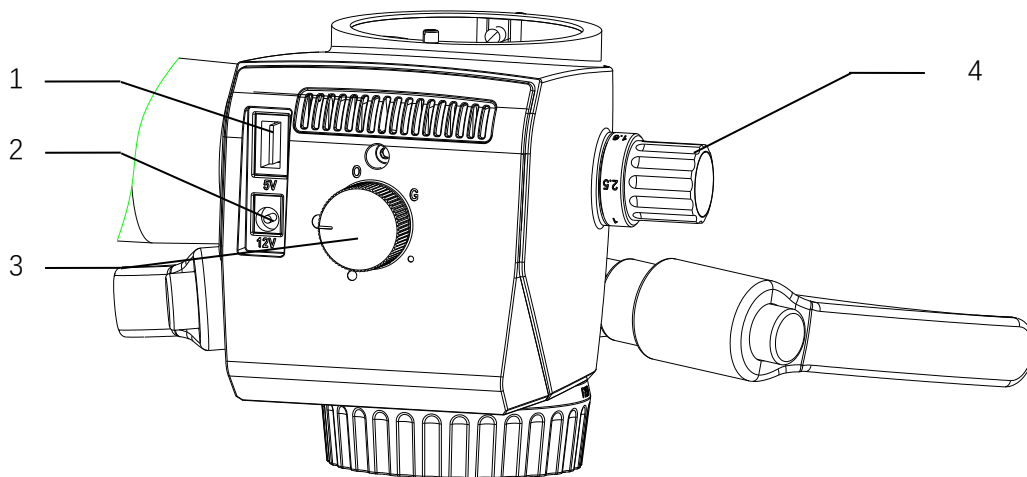
Product Components

1	Main body of microscope
2	Straight Binocular Head
3	Objective lens
4	hanger bracket
5	Cross arm bracket
6	Mobile floor stand
7	Fixed Stand Mount
8	Low-position wall mount stand
9	High-position wall mount stand
10	Ceiling mount stand



Main Body Lens of Microscope

- | | |
|--------------------------|---|
| <p>5V</p> | <p>1 USB 5V power supply interface
For 5V/1.5A DC output.</p> |
| <p>12V</p> | <p>2 12V power supply interface
For 12V/1.0A DC output.</p> |
| <p>G ●
O ●
●</p> | <p>3 Lighting shift knob
For switching different illumination, "●" means large spot without color filter, "●" means medium spot without color filter, "●" means small spot without color filter, "G" means green filter, "O" means orange filter.</p> |
| | <p>4 Optical zoom knob
For manual adjustment of the optical magnification, and the numbers on the knob are magnification factors.</p> |



Straight Binocular Head and Eyepiece

1 Pupillary distance adjustment

Adjust the interpupillary distance to make two images through both of eyepieces into one. The number on the knob is the pupillary distance.

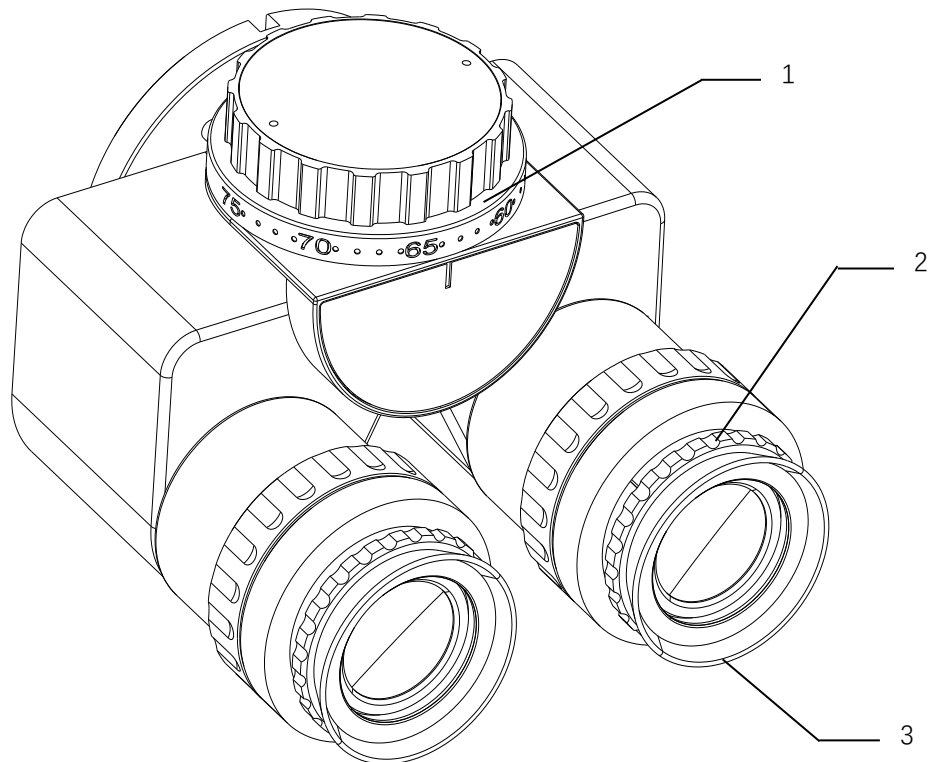
2 Diopter adjustment

The eyepieces provide diopter compensation at -6D and +6D. Set the diopter adjustment at 0D if the operator does not wear glasses. For operators who normally wear glasses, rotating the diopter adjustment allows you to adjust the diopter to match your prescription. The built-in brake can keep the diopter adjustment still.

3 Eyecup

Adjust the eyecup to the right place till you can see the whole field of view.

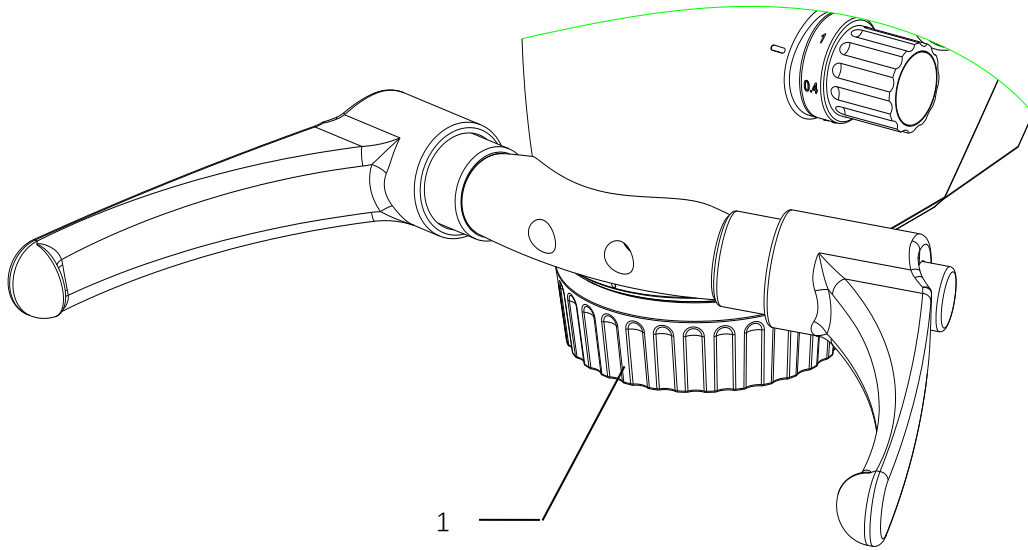
- View with glasses: turn the eyecup inwards
- View without glasses: turn the eyecup outwards until you see the whole field of view.



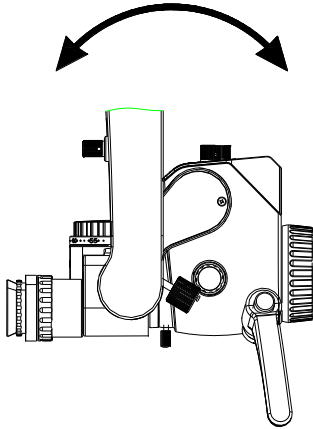
Objective Lens

1 Focusing knob

It is used for manually setting the image definition (focusing, working distance).



Hanger Bracket



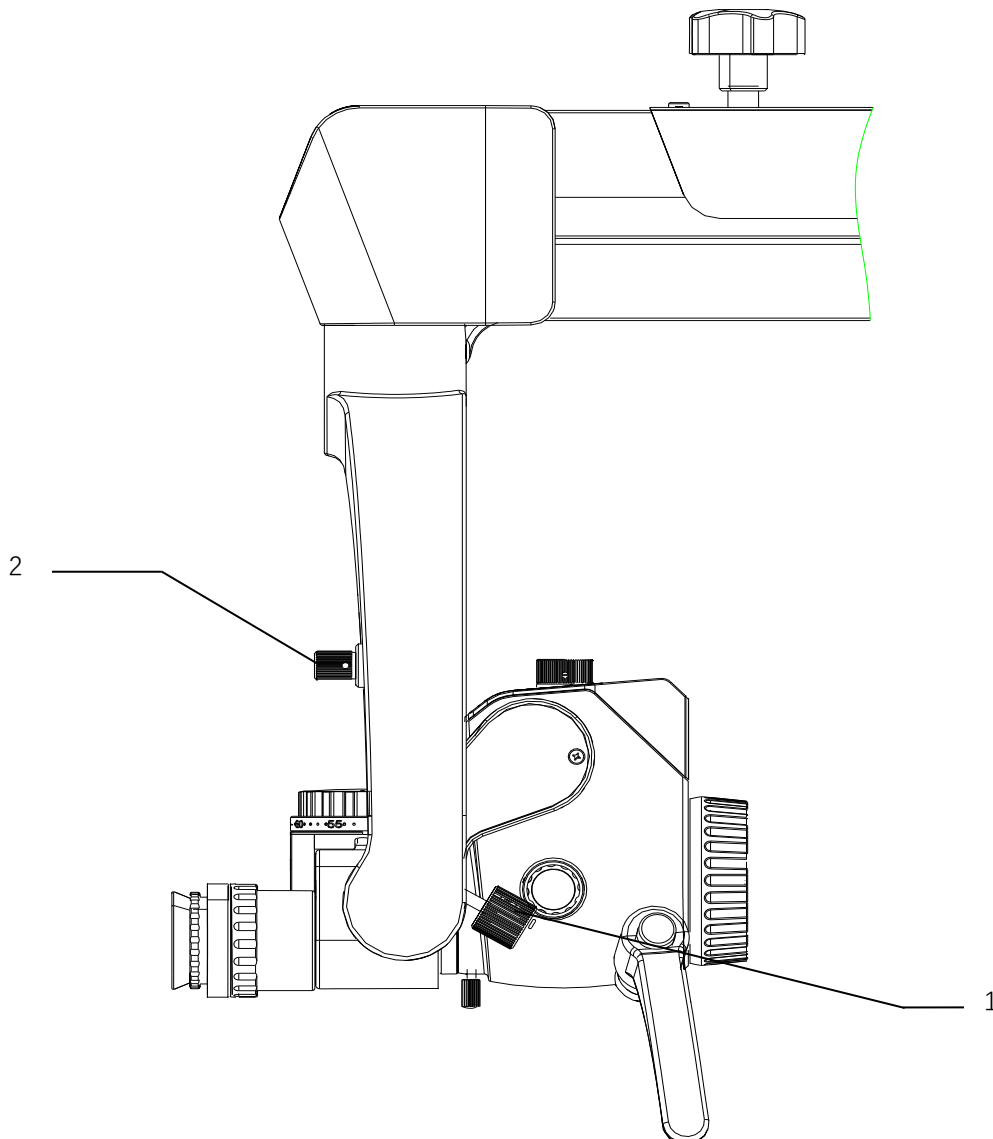
- 1 Friction adjustment knob for tilting motion (forwards/backwards) of the main lens of the microscope

Used to adjust the friction of the pitching rotation of the main lens of the microscope (as indicated by the arrow on the left).

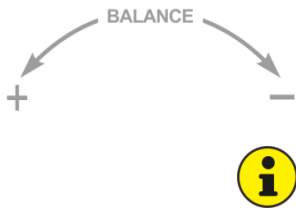


- 2 Dimming knob

For adjusting the brightness of the illumination, The dimming identification as the one in the left picture.



Cross Arm and Mobile Floor Stand /Fixed Floor Stand /Low-position Wall Mount Stand



- 1 Rotation friction adjustment of hanger bracket
For adjusting the rotation friction of hanger bracket.

- 2 Friction adjustment of balance arm
For adjusting the rotation friction when moving the balance arm up and down.

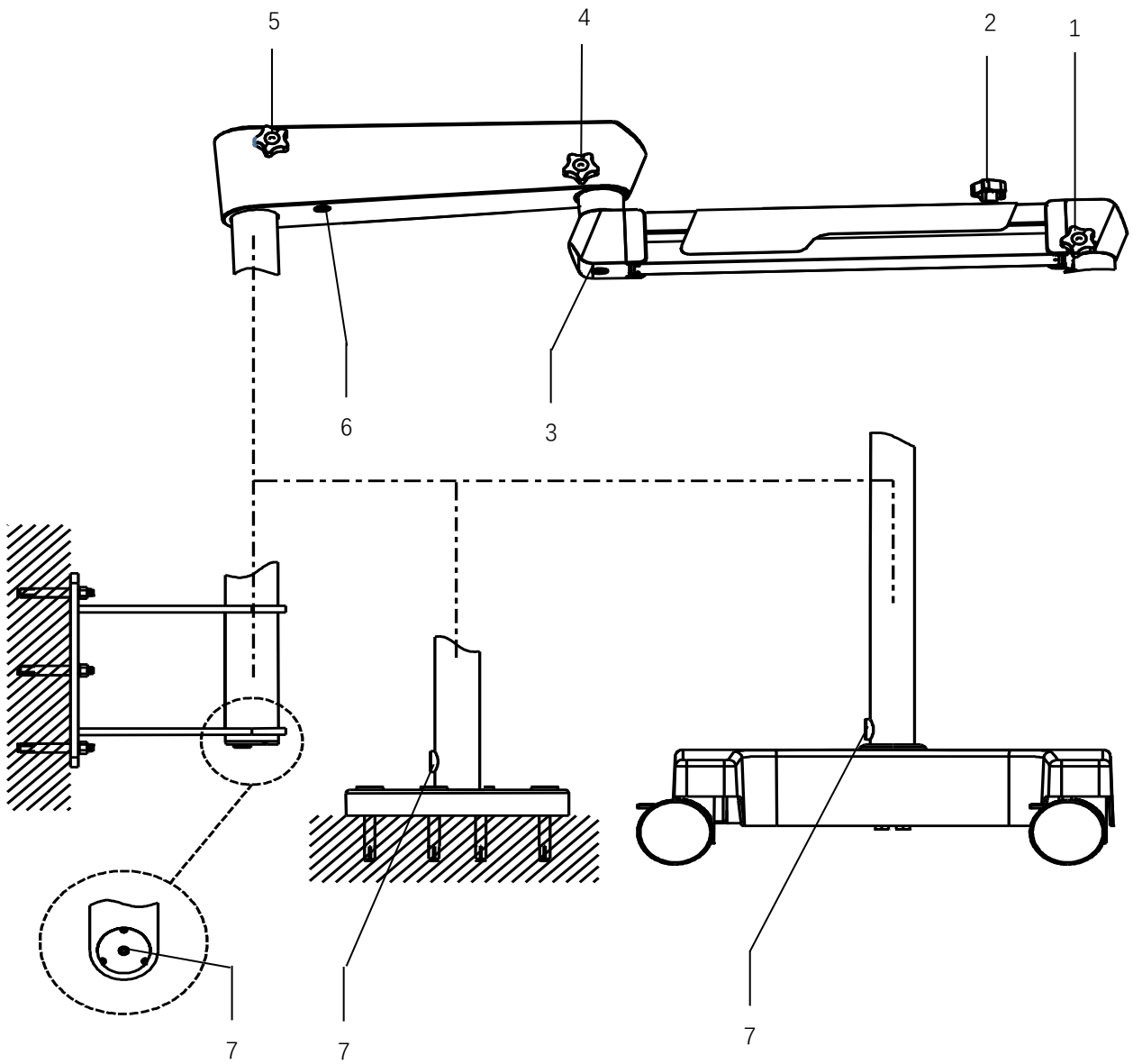
- 3 Balance adjusting knob
For adjusting the spring force for balancing. After installing the surgical microscope with all accessories, adjust the balance of the balance arm with the knob, the adjusting identification as the one in the left picture.
For rotating the knob easily, the balanced arm shall be in the horizontal position when adjusting balance.

- 4 Balanced arm rotation friction adjusting knob
It is used for adjusting the rotation friction of the balanced arm.

- 5 Load-bearing arm rotation friction adjusting knob
It is used for adjusting the rotation friction of the load-bearing arm.

- 6 Power switch with green indicator
It is used for starting and stopping the power supply of the device, when the device is started, the green indicator of the power switch turns on.

- 7 Power interface
Power supply interface.



Cross Arm and Ceiling Mount Stand /High-position Wall Mount Stand

- 1 Rotation friction adjustment of hanger bracket
For adjusting the rotation friction of hanger bracket.

- 2 Friction adjustment of balance arm
For adjusting the rotation friction when moving the balance arm up and down.

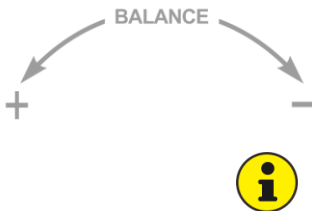
- 3 Balance adjusting knob
For adjusting the spring force for balancing. After installing the surgical microscope with all accessories, adjust the balance of the balance arm with the knob, the adjusting identification as the one in the left picture.
For rotating the knob easily, the balanced arm shall be in the horizontal position when adjusting balance.

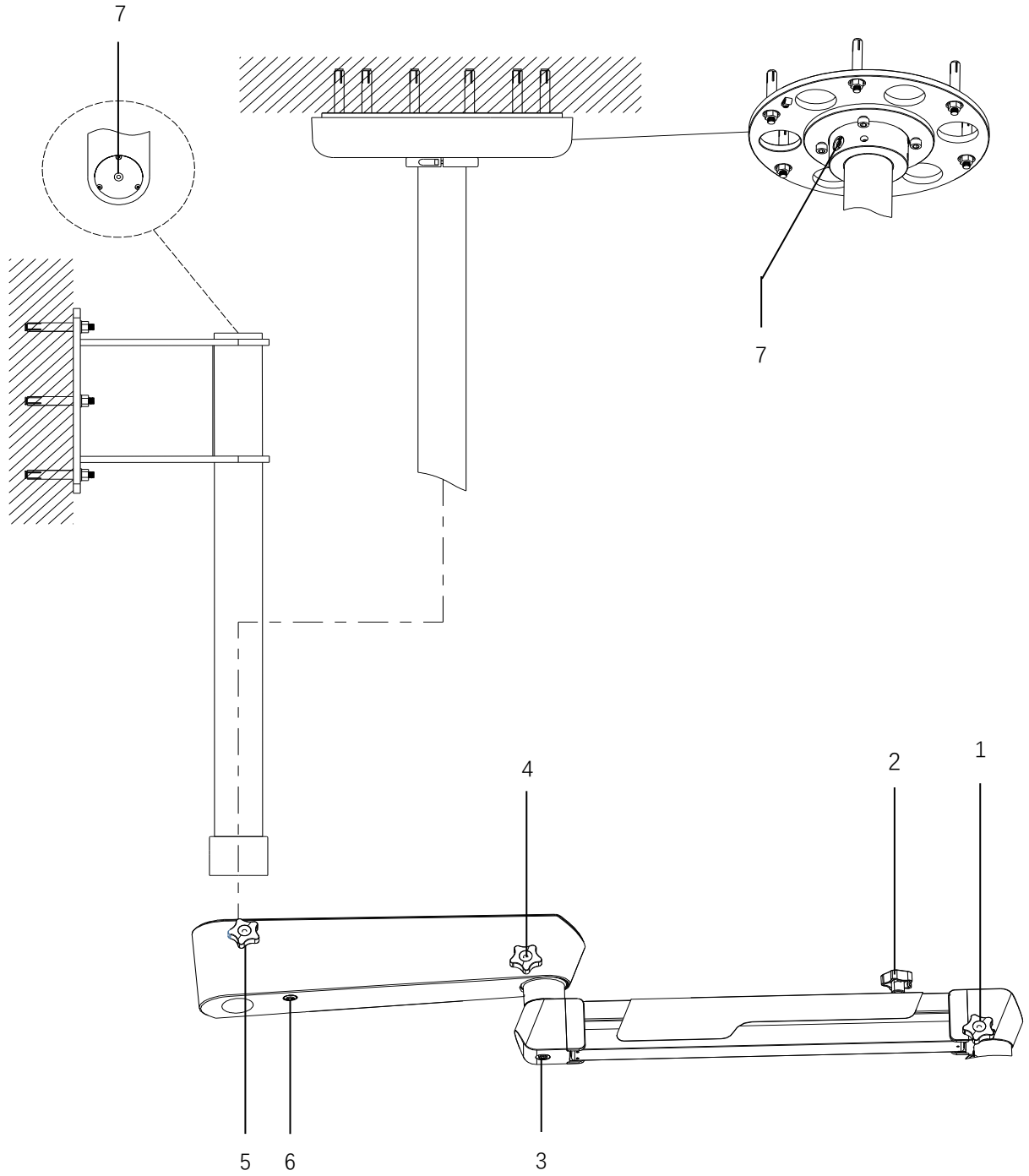
- 4 Balanced arm rotation friction adjusting knob
It is used for adjusting the rotation friction of the balanced arm.

- 5 Load-bearing arm rotation friction adjusting knob
It is used for adjusting the rotation friction of the load-bearing arm.

- 6 Power switch with green indicator
It is used for starting and stopping the power supply of the device, when the device is started, the green indicator of the power switch turns on.

- 7 Power interface
Power supply interface.





Operation of the Microscope

Check before Use



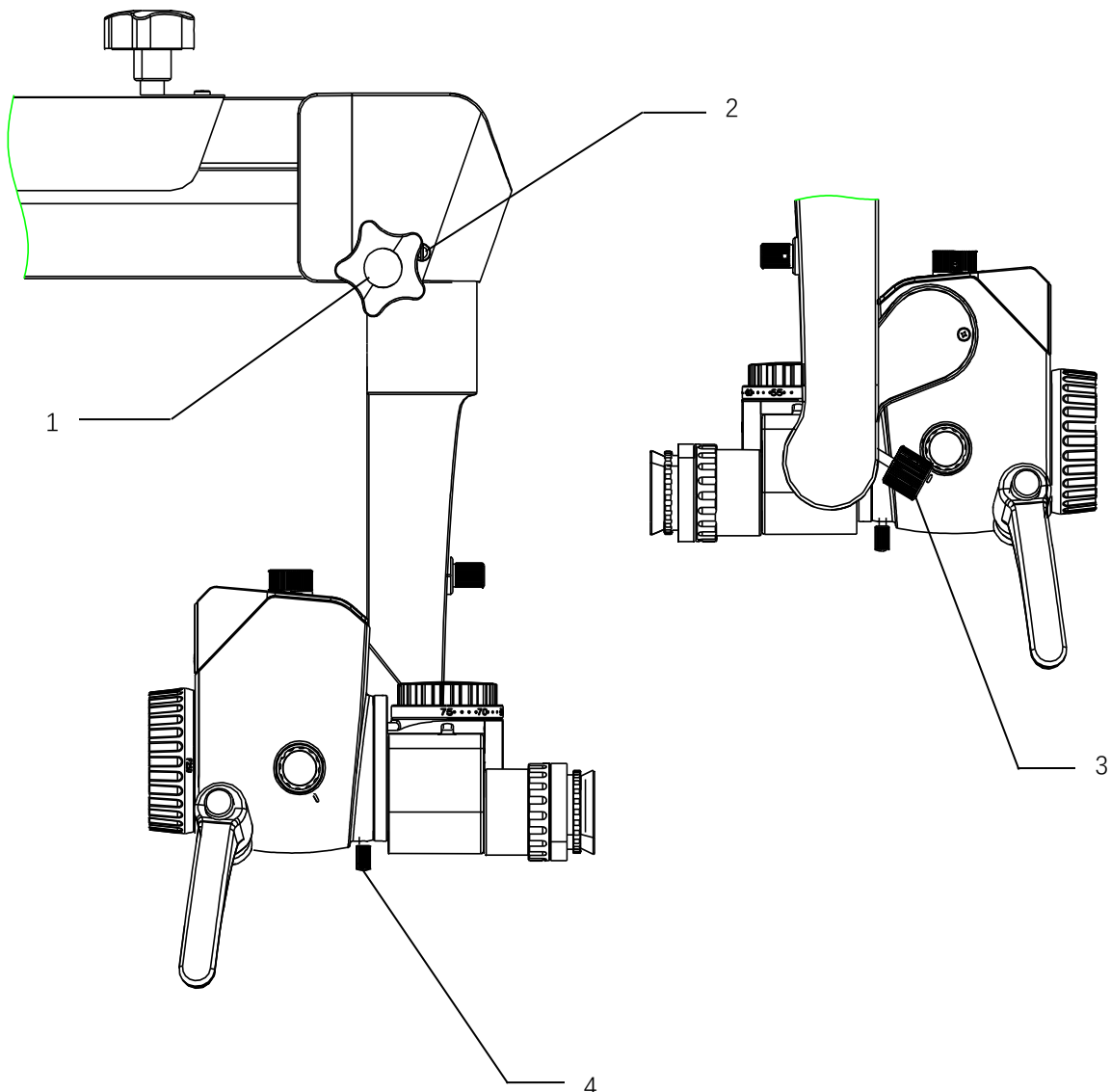
There must be no patient when checking the microscope!



To terminate the operation of the equipment, please turn off the power switch or disconnect from the network power supply!

✓ Check if the bolts (1, 2, 3) have been locked;

✓ Check whether the objective lens (4) has been safely installed.



Optical Adjustment of Surgical Microscope

▶ Adjust the surgical microscope to the minimum magnification, move the surgical microscope to the chosen position till the object is observed clearly.

▶ Adjust the pupillary distance of the binocular barrel until a single image is viewed through the eyepiece.

▶ Adjust the surgical microscope to the maximum magnification.



Clearer image can be obtained by fine adjustment of the focus knob on the objective lens.

▶ Change the surgical microscope to the minimum magnification, and adjust the knob of diopter on the eyepiece until the clearest image is observed.

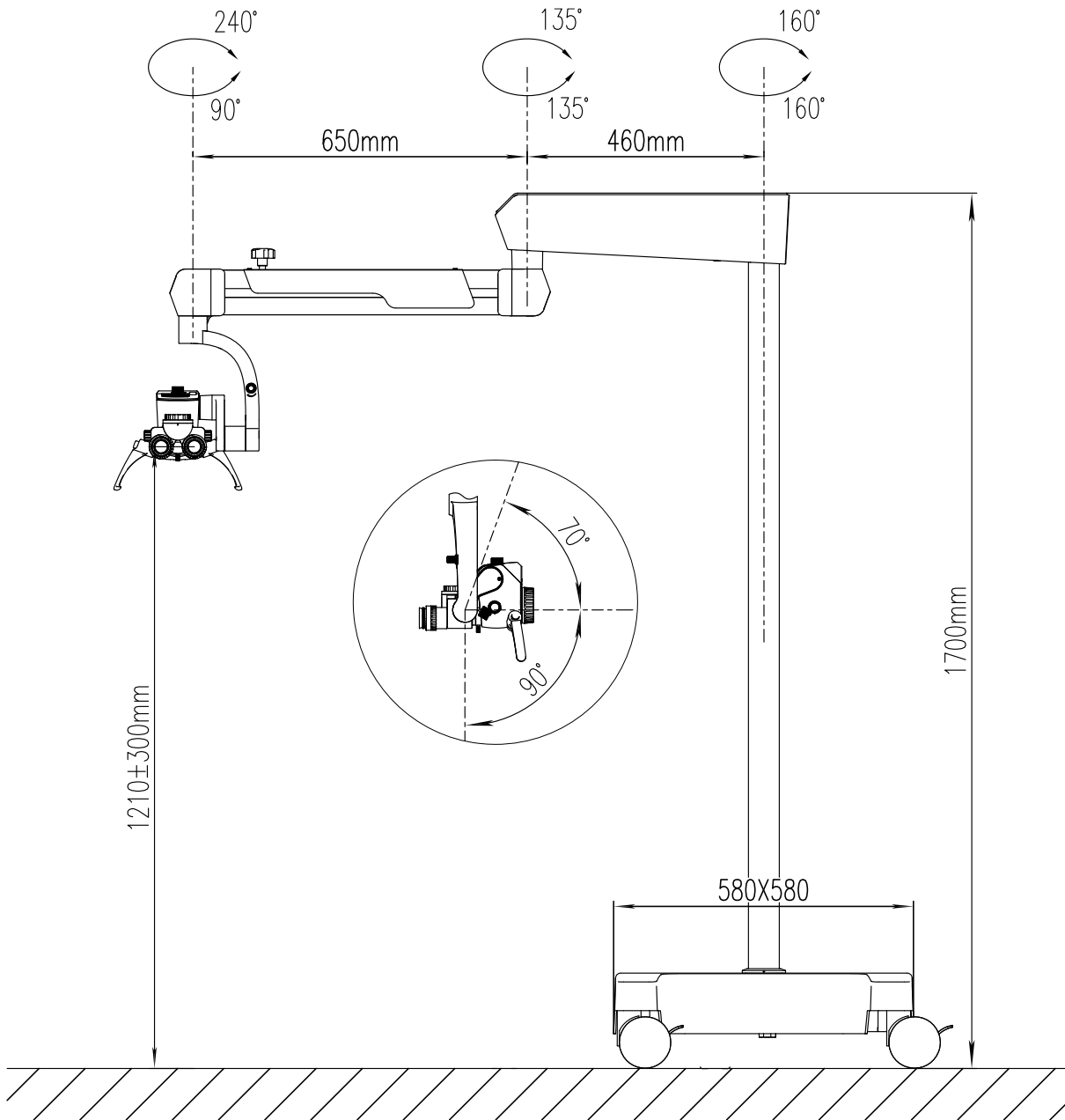
- User with normal vision or contact lens wearers: keep the diopter to 0;
 - User that require corrective lens but who are not wearing glasses: adjust the diopter till the clearest image is seen.
-

▶ Finish optical adjustment.

Performance Parameters

Basic Dimension

The basic dimensions of the whole machine and the motion range of the joint are shown in the following figure:



Microscope Parameters

Magnification rate	Manual five-range zooming
Large objective lens	Standard configuration: F250 large objective lens (with fine focus mechanism), optional: 200,300,350,400 large objective lens and 200-300 variable objective lens.
Binocular barrel	Straight binocular barrel , f=170mm Rang of Pupillary distance:: 50mm~75mm
Eyepiece	12.5X/Φ18mm, diopter adjustment range: ±6D
Object surface illumination (Ix)	Maximum illumination > 80000 lx (with F250 large objective lens)
Diameter of illumination spot	Φ72mm (with F250 large objective lens)
Illumination shift	Orange filter, green filter, large spot without filter, medium spot without filter, small spot without filter

Optical Parameters

Large objective lens	F200		F250		F300		F350		F400	
	Total magnification rate[A]	Diameter of the view(mm) [B]	A	B (mm)	A	B (mm)	A	B (mm)	A	B (mm)
0.4	4.3X	51.5	3.4X	64.3	2.8X	77.2	2.4X	90.1	2.1X	102.9
0.6	6.4X	34.3	5.3X	42.9	4.4X	51.5	3.6X	60.0	3.2X	68.6
1	10.6X	20.6	8.5X	25.7	7.1X	30.9	6.1X	36.0	5.3X	41.2
1.6	17X	12.9	13.6X	16.1	11.3X	19.3	9.7X	22.5	8.5X	25.7
2.5	26.6X	8.2	21.3X	10.3	17.7X	12.4	15.2X	14.4	13.3X	16.5

Electrical Parameters

Rated voltage	DC12/3A (Adapter:Input:AC100-240V 50/60Hz,output:DC12V 3A)
Input power	25-60VA
Electrical safety standard	IEC60601-1:2005 + A1: 2012 IEC60601-1-2:2014
Lighting system	LED bulb, life time is over 50,000 hours
Noise	≤65dB
Running mode	Continuous running

Electromagnetic Compatibility



Only used parts approved by PROSIDIO. Use of none approved equipment may result in damage to the device and will void the warranty.



The design and test of MODEL 1 surgical microscope comply with relevant operating instructions on electromagnetic compatibility.



The equipment or system shall not be adjacent to or stacked together with other equipment. If it is required, observe and verify whether it can operate correctly in such a configuration.

Requirements on Wire Installation

Name of Wire	Type	Length (m)
The adapter power cord	Non-shielded parallel wire	3m

Key Components for Electromagnetic Compatibility

The electromagnetic compatibility key components of the product include the power adapter and dimming circuit board. Use or replacement of any accessories with non-approved parts may result in the device to operate outside listed parameters.



Do not replace the components without authorization.

Guidance and Manufacturers Declaration—electromagnetic Emission



The MODEL 1 surgical microscope is intended for use in electromagnetic environments specified below. The customer or the user of the MODEL 1 surgical microscope should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic Environment - Guidance
RF emissions CISPR11	Group 1	MODEL 1 surgical microscope uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR11	Class A	MODEL 1 surgical microscope is suitable for use in establishments, including domestic establishments 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	Complies	

Guidance and Manufacturer's Declaration – electromagnetic environment – for all

Equipment and Systems



The MODEL 1 surgical microscope is intended for use in the electromagnetic environment specified below. The customer or the user of the MODEL 1 surgical microscope should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment -guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 8 kV contact ± 15 kV air	± 8 kV contact ± 15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrostatic transient / burst IEC 61000-4-4	± 2 kV for power supply lines	± 2 kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV differential mode	± 1 kV differential mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5 % U_T ; for 0.5 cycle,(On U_T , > 95% of the drop) 40 % U_T ; for 0.5 cycles, (On U_T , 60% of the drop) 70 % U_T ; for 0.5 cycles, (On U_T , 30% of the drop) <5 % U_T ; for 0.5s,(On U_T , > 95% of the drop)	<5 % U_T ; for 0.5 cycle,(On U_T , > 95% of the drop) 40 % U_T ; for 0.5 cycles, (On U_T , 60% of the drop) 70 % U_T ; for 0.5 cycles, (On U_T , 30% of the drop) <5 % U_T ; for 0.5s,(On U_T , > 95% of the drop)	Mains power quality should be that of a typical commercial or hospital environment. If the user of the MODEL 1 surgical microscope requires continued operation during power mains interruptions, it is recommended that the MODEL 1 surgical microscope be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

U_T is the a. c. mains voltage prior to application of the test level

Guidance and Statement from Manufacturer - Electromagnetic Immunity- for Equipment and System that are not life-supporting



The MODEL 1 surgical microscope is intended for use in the electromagnetic environment specified below. The customer or the user of the MODEL 1 surgical microscope should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3Vrms 150kHz ~80MHz	3Vrms	<p>Portable and mobile RF communications equipment should be used no closer to any part of the MODEL 1 surgical microscope, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance</p> $d = \left[\frac{3.5}{V_1} \right] \sqrt{p}$ $d = \left[\frac{3.5}{E_1} \right] \sqrt{p} \text{ 80MHz} \sim \text{800MHz}$ $d = \left[\frac{7}{E_1} \right] \sqrt{p} \text{ 800MHz} \sim \text{2.5GHz}$
Radiated RF IEC 61000-4-3	3V/m 80MHz~ 2.5GHz	3V/m	<p>where p 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 metres (m).^b 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. Interference may occur in the vicinity of equipment marked with the following symbol:</p> <div style="text-align: center;"> </div>



- At 80 MHz and 800 MHz, the higher frequency range applies.
- These guidelines may not apply in all situations. Electromagnetic is affected by absorption and reflection from structures, objects and people.
- 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 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 MODEL 1 is used exceeds the applicable RF compliance level above, The MODEL 1 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the MODEL 1.
- Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3V/m.

Recommended Separation Distances between Portable and Mobile RF Communications Equipment and the MODEL 1



The MODEL 1 surgical microscope is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the MODEL 1 surgical microscope can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the MODEL 1 surgical microscope as recommended below, according to the maximum output power of the communications equipment

Rated maximum output of transmitter W	Separation distance according to frequency of transmitter		
	150kHz~80MHz $d = \left[\frac{3.5}{V_1}\right] \sqrt{P}$	80MHz~800MHz $d = \left[\frac{3.5}{E_1}\right] \sqrt{P}$	800MHz~2.5GHz $d = \left[\frac{7}{E_1}\right] \sqrt{P}$
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 transmitters rated at a maximum output power not listed above the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

- At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.
- These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

MODEL 1 surgical microscope has been tested in accordance with YY 0505-2012/ IEC 60601-1-2:2014, which cannot be guaranteed against electromagnetic interference in any way, and should avoided to be in a high electromagnetic environment.

Cleaning and Maintenance of the Device



If possible, the equipment and accessories shall be cleaned immediately after use. Contaminants cannot be dried on the object as this will make it more difficult to clean and disinfect.

Preventive Maintenance and Inspection

Operator of preventive inspection, maintenance and calibration: User

Maintenance cycle: 3 months.

Parts for preventive inspection and maintenance: eyepiece and Objective

Clean the Optical Surface



The optical component has a multi-layer laminating (e.g., eyepiece, objective) to ensure optimum image quality, the contaminants attached to the surface of the optical component will reduce the image quality. The internal optical equipment shall be protected from dust, the equipment shall not be stored without objective lens, binocular and eyepiece. After use, cover the dust cover on the surface of the system to avoid dust on the equipment. When the optical components and accessories are not in use, they are always kept in the dust-free box.



Do not use any chemical cleaning agent, corrosive solvent or detergent with scratching effect, which will damage the surface of the optical device.

▶ The stain (blood stains, etc.) on the surface of the optical part shall be removed with distilled water having added an appropriate amount of washing-up liquid or soap. The surface can only be wiped with humid cloth, and the surface of the component must not be scrubbed with wet cloth;

▶ After removing the stains from surface, use a clean cloth to dip 75% \ alcohol for further cleaning.

Clean the Mechanical Surface

All mechanical surfaces of the device can be cleaned by wiping with humid cloth. Do not use any irritative or corrosive cleaning agent. The residual dirt shall be wiped off with the mixture of 50% of normal alcohol and 50% of distilled water and a small amount of household tableware cleaning liquid.



Disconnect the power supply when wiping the device.

Disposal of Waste

The wastes generated during use include the sight glass wiping paper or absorbent cotton. Please don't throw it at will. If there is special garbage disposal facility near you, use it as much as possible.

The scrapped devices shall be handled according to the provisions of local environmental protection laws for avoiding polluting the environment.

Maintenance Related Information

Troubleshooting

Faults	Possible Reasons	Solutions	Refer to
Lighting failure	Power cable is not connected	Connect the power wire	
	Power switch is not turned on	Turn on the power switch	
	The dimming knob is adjusted to minimum position	Adjust the dimming knob	See Page 28
	The device is in the non-working area and the balanced arm is at high position	Move the balanced arm to the working area	
	Device electrical failure	Contact the local dealer or after-sales service agent	
	LED bulb failure	Contact the local dealer or after-sales service agent	
Illumination fails intermittently during use	The cooling window and the air inlet are covered or blocked by external object	Remove the foreign object and clean the cooling window	
	Failure of cooling fan	Contact the local dealer or after-sales service agent	
	Device electrical failure	Contact the local dealer or after-sales service agent	
The device cannot stop at any time when it moves up and down	Balanced arm is not adjusted to balance after adding or decreasing accessories of the microscope	Balance the balanced arm	See Page 29/30
	Spring failure	Contact the local dealer or after-sales service agent	
The device is running stiffly	The friction adjustment knob is adjusted too tight.	Loosen the friction adjusting knob, and moderately adjust the friction.	See Page 28/29/31
Optical magnification switching failure	Mechanical failure of the device	Contact the local dealer or after-sales service agent	

After-sale Service

Any unauthorized maintenance or repair of the device can no longer be guaranteed. The duration and scope of the warranty are detailed in the **PROSIDIO Operating Microscope Warranty Clause**. In order to safely transport the device back to PROSIDIO company during repairing, please keep the original packing box and packing material of the device.