

**INSTRUCTION MANUAL  
OPERATION MICROSCOPE**

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# **OMS-800**

# INTRODUCTION

Thank you for purchasing the TOPCON **OMS-800** Operation Microscope.

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This product is an operation microscope for operations, treatment or observation.

This product is classified in five types according to the difference in the combination of the microscope unit with the base unit. Each of five types is classified into two different types: one type is equipped with a beam splitter of the fixed spectral ratio and the other with a changeable beam splitter which can alternate two spectral ratios to each other.

- **OFFISS** : The microscope unit with the front lens is combined with the inverter and the base unit with the electromagnetic lock and the rough focusing unit.
- **OFFISS Lite** : The microscope unit with the front lens is combined with the inverter and the base unit with the electromagnetic lock and without the rough focusing unit.
- **Pro** : The microscope unit without the front lens is combined with the base unit with the electromagnetic lock and the rough focusing unit.
- **Pro Lite** : The microscope unit without the front lens is combined with the base unit with the electromagnetic lock and without the rough focusing unit.
- **Standard** : The microscope unit without the front lens is combined with the base unit without the electromagnetic lock and the rough focusing unit.

This product has the following features.

- **OFFISS\*** is mounted to greatly enhance the glass body operation. (Only in OFFISS, OFFISS Lite.)
- Compact base and long arm provide a comfortable and extensive operation area.
- Electromagnetic lock is used to set it correctly at the required position. (Only in OFFISS, OFFISS Lite, Pro and Pro Lite.)
- The 45°~90° variable eyepiece lens is used to set the optimum operation position.

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This Instruction Manual describes the TOPCON OMS-800 Operation Microscope, and includes outline, operations, troubleshooting, maintenance and cleaning.

To get the best use from the instrument, read "DISPLAY FOR SAFE USE" and "SAFETY CAUTIONS". Keep this manual at hand for future reference.

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## **[Warning]**

Before using this instrument, make sure that the components are set and fixed securely.

[Falling components may cause injury or death.]

Before using this instrument, adjust the balance of the 2nd arm.

[The microscope may move up and down suddenly, leading to injury.]

When using the coaxial illumination in the ophthalmic operation, use the minimum illumination sufficient for operation.

[Exposing the patient's retina to excessive light may lead to retinal trouble.]

To reduce or prevent retinal trouble, use the front lens within 40 minutes (illumination light intensity display: 0.7)/within 70 minutes (illumination light intensity display: 0.4).

[Using the front lens for a long time may lead to retinal trouble.]

When using the front lens, make sure it does not come into contact with the patient.

[Injury may result from a unit coming into contact with a patient.]

\*OFFISS is an abbreviation of Optical Fiber Free Intravitreal Surgery System.

## **CAUTIONS FOR USE**

### **Basic caution**

Before using, sterilize the sterilized cap, the front lens unit, the peripheral observation prism and the anterior eye section observation lens.

### **Disposal**

Dispose of the instrument according to the local government's laws regarding disposal and recycling.

## **ENVIRONMENT FOR USE**

Temperature : 10°C~40°C

Humidity : 30%~75% (without dew condensation)

Air pressure : 700~1060hPa

## **STORAGE, PERIOD OF USE AND OTHERS**

### 1. Environmental conditions

Temperature: 10°C~40°C

Humidity: 30%~75% (without dew condensation)

Air pressure: 700~1060hPa

### 2. Storage requirements.

(1) Do not splash this instrument with water.

(2) Make sure this instrument is stored under safe conditions with regard to air pressure, temperature, humidity, ventilation, sunlight or salty/sulfurous air.

(3) This instrument must be kept stable, without inclination, vibration or shock (not only in storage, but also during transportation).

(4) Do not store this instrument in a location where chemicals are stored or gas is generated.

### 3. Limit of period of use

8 years following delivery, only if regular inspection and maintenance have been carried out (according to self-certification [Topcon's data]).

## **POINTS FOR INSPECTION AND MAINTENANCE**

1. After using this instrument, immediately remove any remaining blood, body fluids, tissues, etc., and clean and sterilize it.
2. Check the instrument and its parts periodically.
3. When using the instrument again after a long time in storage, make sure beforehand that it is operating safely and normally.
4. Do not soil the objective lens and the eyepiece lens with fingerprints or dust.
5. Cover the instrument when not in use.
6. If the objective lens or the eyepiece lens is soiled, clean it according to the instructions under "CLEANING THE OBJECTIVE LENS / THE EYEPIECE LENS" in the instruction manual.

The terms below apply to this manual as follows.



Term	Application
OFFISS	: Applies to OFFISS only.
OFFISS Lite	: Applies to OFFISS Lite only.
Pro	: Applies to Pro only.
Pro Lite	: Applies to Pro Lite only.
Standard	: Applies to Standard only.
OFFISS, OFFISS Lite	: Applies to OFFISS and OFFISS Lite.
OFFISS, OFFISS Lite, Pro, Pro Lite	: Applies to OFFISS, OFFISS Lite, Pro and Pro Lite.
OFFISS, Pro	: Applies to OFFISS and Pro.
OFFISS Lite, Pro Lite, Standard	: Applies to OFFISS Lite, Pro Lite and Standard.
Pro, Pro Lite	: Applies to Pro and Pro Lite.
Pro, Pro Lite, Standard	: Applies to Pro, Pro Lite and Standard.
Common	: Applies to OFFISS, OFFISS Lite, Pro, Pro Lite and Standard.

# DISPLAY FOR SAFE USE




In order to encourage the safe use of the product and prevent any danger to the operator and others or damage to properties, important warnings are placed on the products and included in the instruction manuals.

We recommend everyone to grasp the meaning of the following displays and icons before reading the "SAFETY CAUTIONS" and text.

## DISPLAY

Display	Meaning
 <b>WARNING</b>	Ignoring or disregarding this display may lead to death or serious injury.
 <b>CAUTION</b>	Ignoring or disregarding this display may lead to personal injury or physical damage.
<ul style="list-style-type: none"><li>• Injury refers to cuts, bruises, burns, electric shocks, etc.</li><li>• Physical damage refers to extensive damage to the building and/or the equipment and furniture.</li></ul>	

## ICON











Icon	Meaning
	This icon indicates a Prohibition: The specific contents are expressed with an icon or with words, either inserted in the icon itself, or located close to the icon.
	This icon indicates a Mandatory Action. The specific contents are expressed with an icon or with words, either inserted in the icon itself, or located close to the icon.
	This icon indicates a Hazard Alert (Warning). The specific contents are expressed with an icon or with words, either inserted in the icon itself, or located close to the icon.

# SAFETY CAUTIONS



## WARNING

Icons	Prevention Item	Page
	Make sure no-one is too close to the instrument before moving the arm. Anyone touching the instrument may be injured.	32 59 83
	Use only the specified lamp. Otherwise, overheating may cause a fire.	8 33 79 97
	Before installing the accessories, make sure all the arms are securely locked. The 2nd arm may move suddenly, causing an injury.	34 36 41 42 44 48 50
	Release the 2nd arm lower limit lock while holding it at the end. The 2nd arm may move up and down suddenly, causing an injury.	34 36 48 50
	Before using this instrument, adjust the balance of the 2nd arm. The 2nd arm may move up and down suddenly during an operation, causing an injury.	34 36 42 44 48 50 67 70 103
	Do not install/remove the accessories above the patient. An accessory falling off could cause injury or even death.	34 36
	After installing/removing the accessories, make sure that handles, levers, knobs and rings are securely tightened. Any of these falling off could cause injury or even death.	34 36
	Hold the microscope operation handle while pressing the electromagnetic lock release switch to unlock it. The arm may rotate or move up and down suddenly, causing an injury.	41 42 48 70 83
	The gas spring in the 2nd arm contains high-pressure gas. Do not disassemble the 2nd arm or expose it to fire. You may be injured.	42 44 48 50 103
	Always hold the microscope operation handle when loosening either the 2nd arm vertical movement fixing handle, the 2nd arm rotation fixing handle or the 1st arm rotation fixing handle. The arm may rotate or move up and down suddenly, causing an injury.	44 50 85
	If you need to use the coaxial illumination during an ophthalmic operation, make sure you use the minimum illumination sufficient for the operation. Exposing the patient's retina to excessive light may lead to retinal trouble.	55 68 69 76
	To reduce or prevent retinal trouble, use the front lens within 40 minutes (illumination light intensity display: 0.7)/within 70 minutes (illumination light intensity display: 0.4). Using the front lens for a long time may lead to retinal trouble.	55

Icons	Prevention Item	Page
	When installing the front lens unit, make sure that the front lens unit fixing lever is fixed securely at the LOC side. An injury may be caused by the front lens unit falling off.	57
	Before setting the front lens, move the microscope at least 200mm upwards. Otherwise, the components may come into contact with each other and cause an injury.	70
	Adjust the front lens and the treatment section, taking care not to hit the patient with the front lens. This could injure the patient.	70
	When setting/storing the front lens unit, make sure that the front lens unit fixing lever is fixed securely at the LOC side. An injury may be caused by the front lens unit falling off.	70
	Make sure that the front lens unit is securely attached to the optical unit after connecting the two. The front lens may move suddenly, causing an injury.	70
	Before moving the instrument, make sure that no-one is near. Then, move it carefully. Injury could be caused by the instrument touching anything.	83 85
	Before using this instrument, make sure that the handles, levers, knobs and rings with red marks are securely tightened. Any of these falling off could cause injury or even death.	103
	Make sure no error code is displayed in the light intensity display window. If errors are displayed, the instrument may not operate normally, causing problems during an operation.	103
	While the anterior eye section observation lens is in use, do not operate the front lens IN/OUT lever and the front lens connecting/disconnecting knob. The anterior eye section observation lens may fall off, causing an injury.	77
	While the peripheral observation prism is in use, do not operate the front lens IN/OUT lever and the front lens connecting/disconnecting knob. The peripheral observation prism may fall off, causing an injury.	77



## CAUTION




Icons	Prevention Item	Page
	Handle the lamp house with care during and immediately following operation. The lamp house heats up while in operation and can cause burns.	8 33 79 97
	Before moving the instrument, make sure there is no-one and nothing within collision range. Injury may result from the instrument colliding with anyone/anything.	46 47
	Take care when moving this instrument through a door or in a room with a low ceiling. If the top of this instrument collides with something, it could break.	83 85
	Watch out for devices, beds, walls, etc. in the room. If the instrument collides with anything, serious breakage could result.	83 85
	Watch out for stairs and uneven floors. The instrument may tip over.	83 85
	Watch out for slopes. Due to its increased speed, the instrument may get away from you on a slope.	83 85
	Do not open the instrument as an electric shock may ensue. Ask qualified service personnel to repair the instrument.	—
	Do not open the instrument, as this may lead to an electric shock.	8 34 36 79 98 102 103
	Do not install this instrument on an incline. This may cause it to move unexpectedly.	83 85
	Do not use a strong cleaning agent, etc. This may damage the instrument.	102
	The lamp is still hot just after turning off the illumination. Therefore, use heat-resistant gloves, etc. to replace a lamp. Otherwise, you may be burned.	87 97



# MAINTENANCE

## USER MAINTENANCE

In order to maintain the safety and performance of the equipment, never attempt to carry out maintenance of parts other than those specified herein: all other maintenance should be carried out only by our service personnel. The parts that can be repaired by users are displayed below; for details, refer to the proper text in this manual.

 <b>WARNING</b>	Use only the specified lamp. Otherwise, overheating may cause a fire.
 <b>CAUTION</b>	Do not open the instrument, as this may lead to an electric shock.
 <b>CAUTION</b>	Handle the lamp house with care during and immediately following operation. The lamp house heats up while in operation and can cause burns.
<b>NOTE</b>	Ask your distributor or the Topcon offices stated on the back cover to repair the instrument.

### Replacing with the spare lamp

The illumination lamp can be replaced. (Refer to "REPLACING WITH THE SPARE LAMP" on P.79 in this manual.)

### Operating the circuit breaker

The circuit breaker can be reset. (Refer to "OPERATING THE CIRCUIT BREAKER" on P.98 in this manual.)

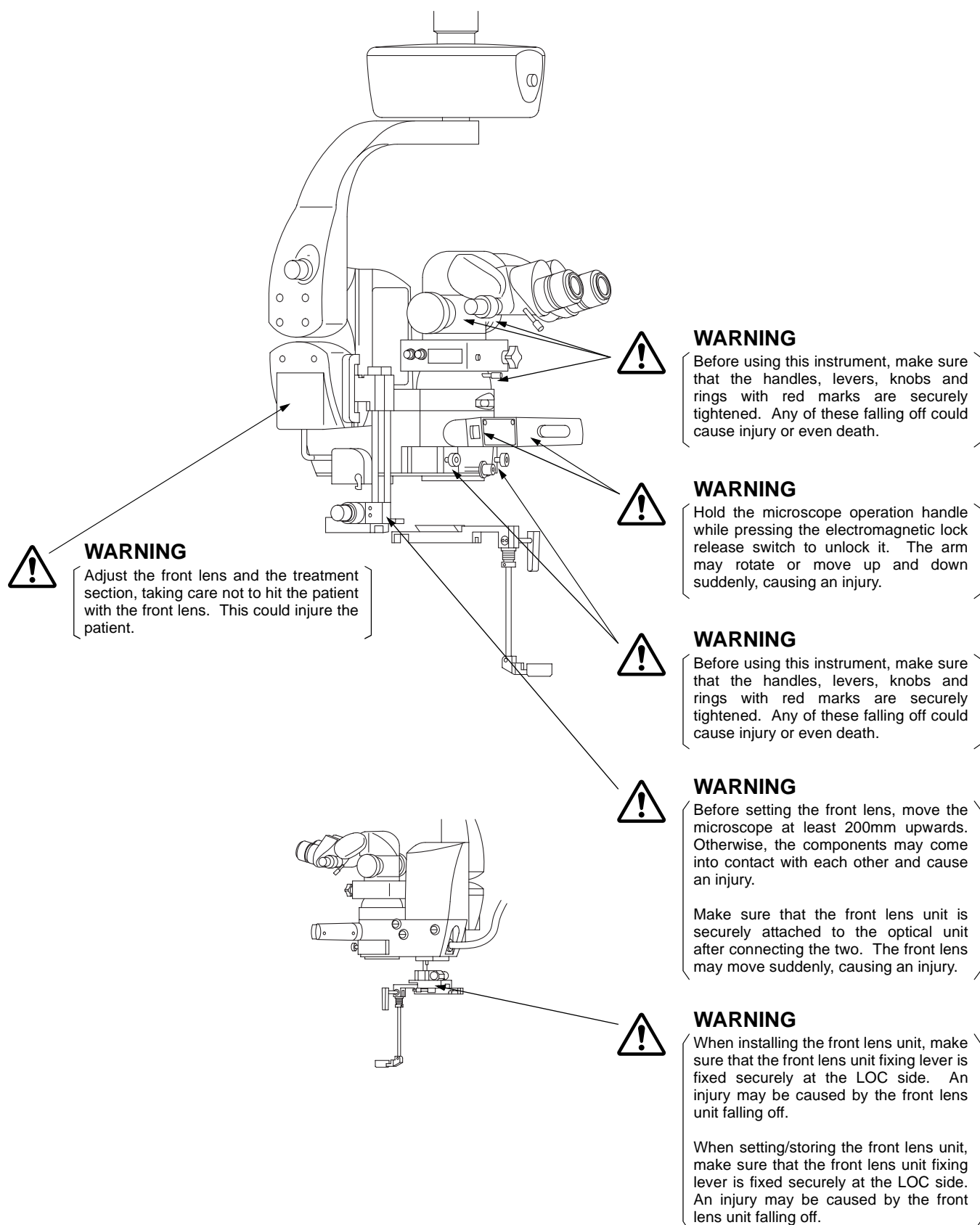
## ESCAPE CLAUSE

- TOPCON shall take no responsibility for damage due to fire, earthquakes, actions by third persons and other accidents, or the negligence and misuse of the user and use under unusual conditions.
- TOPCON shall take no responsibility for damage resulting from the inability to use this equipment, such as a loss of business profits or the suspension of business.
- TOPCON shall take no responsibility for damage caused by operations other than those described in this instruction manual.

# WARNING INDICATIONS AND POSITIONS: OFFISS

This instrument provides warnings to ensure safety.

Use this instrument correctly, following those warning instructions. If any of the following marking labels are missing, contact your distributor.



**WARNING**

Use only the specified lamp.  
Otherwise, overheating may  
cause a fire.

**CAUTION**

Handle the lamp house with care  
during and immediately following  
operation. The lamp house heats  
up while in operation and can  
cause burns.

**WARNING**

Before using this instrument,  
adjust the balance of the 2nd arm.  
The 2nd arm may move up and  
down suddenly during operation,  
causing an injury.

**WARNING**

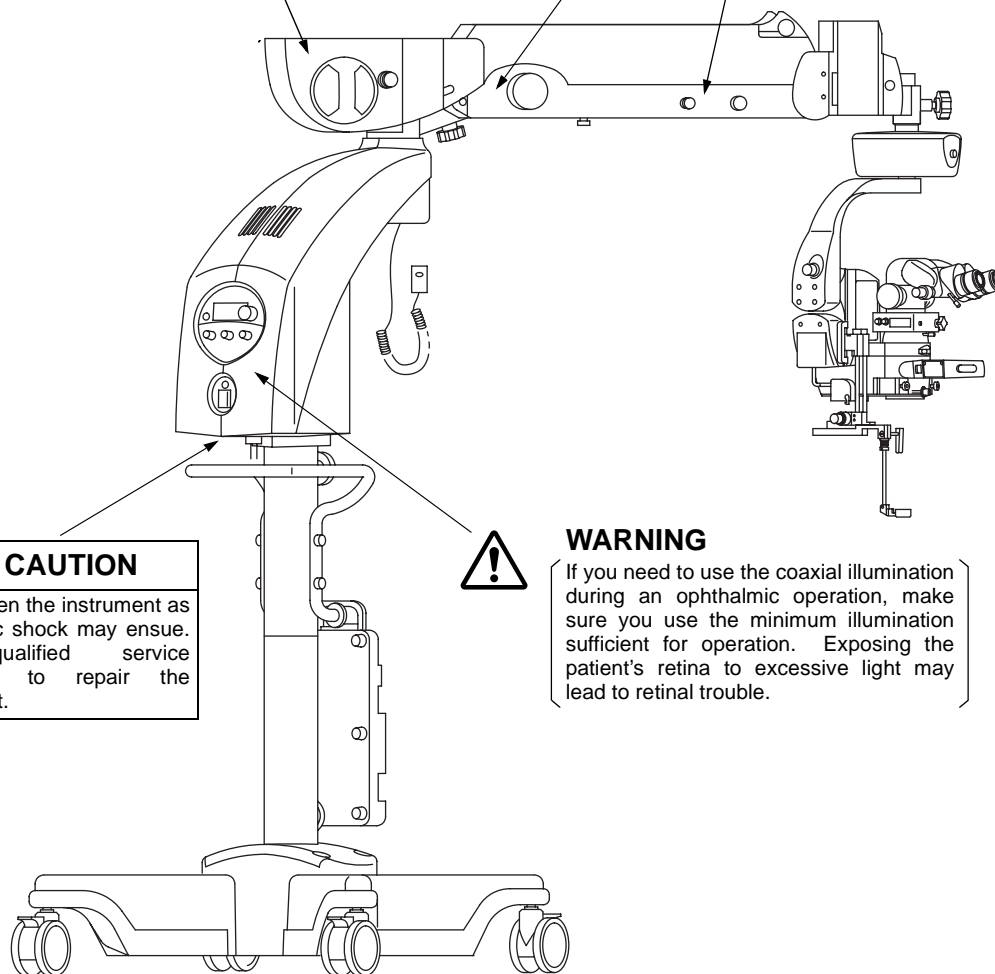
Release the 2nd arm lower limit lock  
while holding it at the end. The 2nd arm  
may move up and down suddenly,  
causing an injury.

**CAUTION**

Do not open the instrument as  
an electric shock may ensue.  
Ask qualified service  
personnel to repair the  
instrument.

**WARNING**

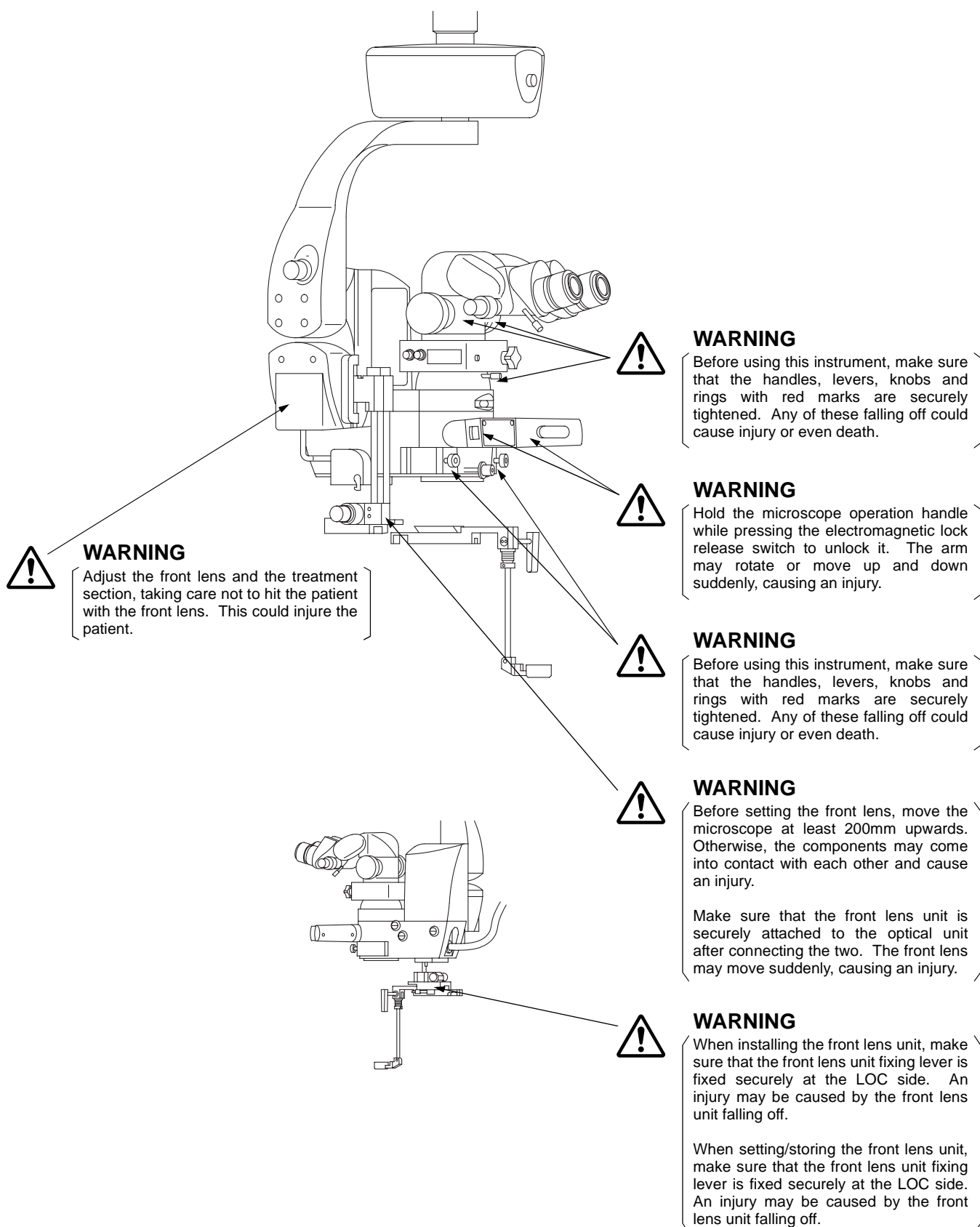
If you need to use the coaxial illumination  
during an ophthalmic operation, make  
sure you use the minimum illumination  
sufficient for operation. Exposing the  
patient's retina to excessive light may  
lead to retinal trouble.



# WARNING INDICATIONS AND POSITIONS: OFFISS Lite

This instrument provides warnings to ensure safety.

Use this instrument correctly, following those warning instructions. If any of the following marking labels are missing, contact your distributor.



**WARNING**

Use only the specified lamp.  
Otherwise, overheating may  
cause a fire.

**CAUTION**

Handle the lamp house with care  
during and immediately following  
operation. The lamp house heats  
up while in operation and can  
cause burns.

**WARNING**

Before using this instrument,  
adjust the balance of the 2nd arm.  
The 2nd arm may move up and  
down suddenly during operation,  
causing an injury.

**WARNING**

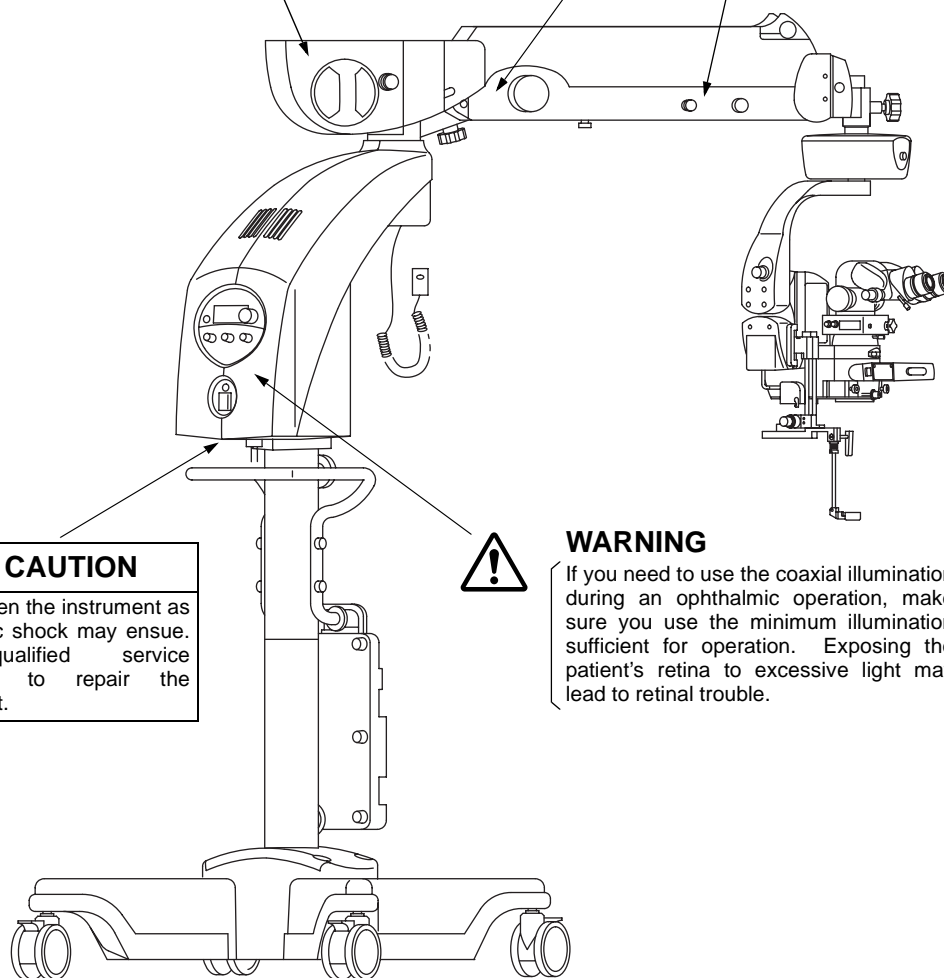
Release the 2nd arm lower limit lock  
while holding it at the end. The 2nd arm  
may move up and down suddenly,  
causing an injury.

**CAUTION**

Do not open the instrument as  
an electric shock may ensue.  
Ask qualified service  
personnel to repair the  
instrument.

**WARNING**

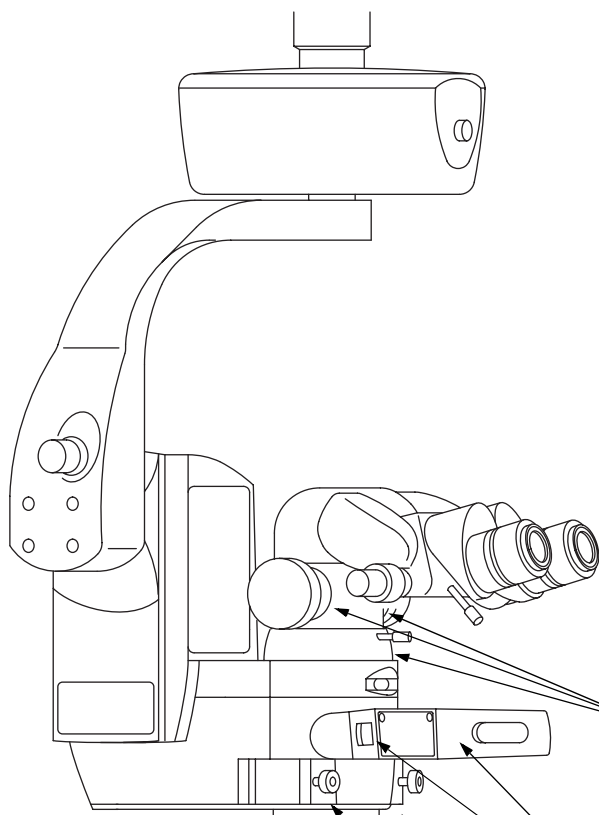
If you need to use the coaxial illumination  
during an ophthalmic operation, make  
sure you use the minimum illumination  
sufficient for operation. Exposing the  
patient's retina to excessive light may  
lead to retinal trouble.



# WARNING INDICATIONS AND POSITIONS: Pro

This instrument provides warnings to ensure safety.

Use this instrument correctly, following those warning instructions. If any of the following marking labels are missing, contact your distributor.



## WARNING

Before using this instrument, make sure that the handles, levers, knobs and rings with red marks are securely tightened. Any of these falling off could cause injury or even death.



## WARNING

Hold the microscope operation handle while pressing the electromagnetic lock release switch to unlock it. The arm may rotate or move up and down suddenly, causing an injury.



## WARNING

Before using this instrument, make sure that the handles, levers, knobs and rings with red marks are securely tightened. Any of these falling off could cause injury or even death.

**WARNING**

Use only the specified lamp.  
Otherwise, overheating may  
cause a fire.

**CAUTION**

Handle the lamp house with care  
during and immediately following  
operation. The lamp house heats  
up while in operation and can  
cause burns.

**WARNING**

Before using this instrument,  
adjust the balance of the 2nd arm.  
The 2nd arm may move up and  
down suddenly during operation,  
causing an injury.

**WARNING**

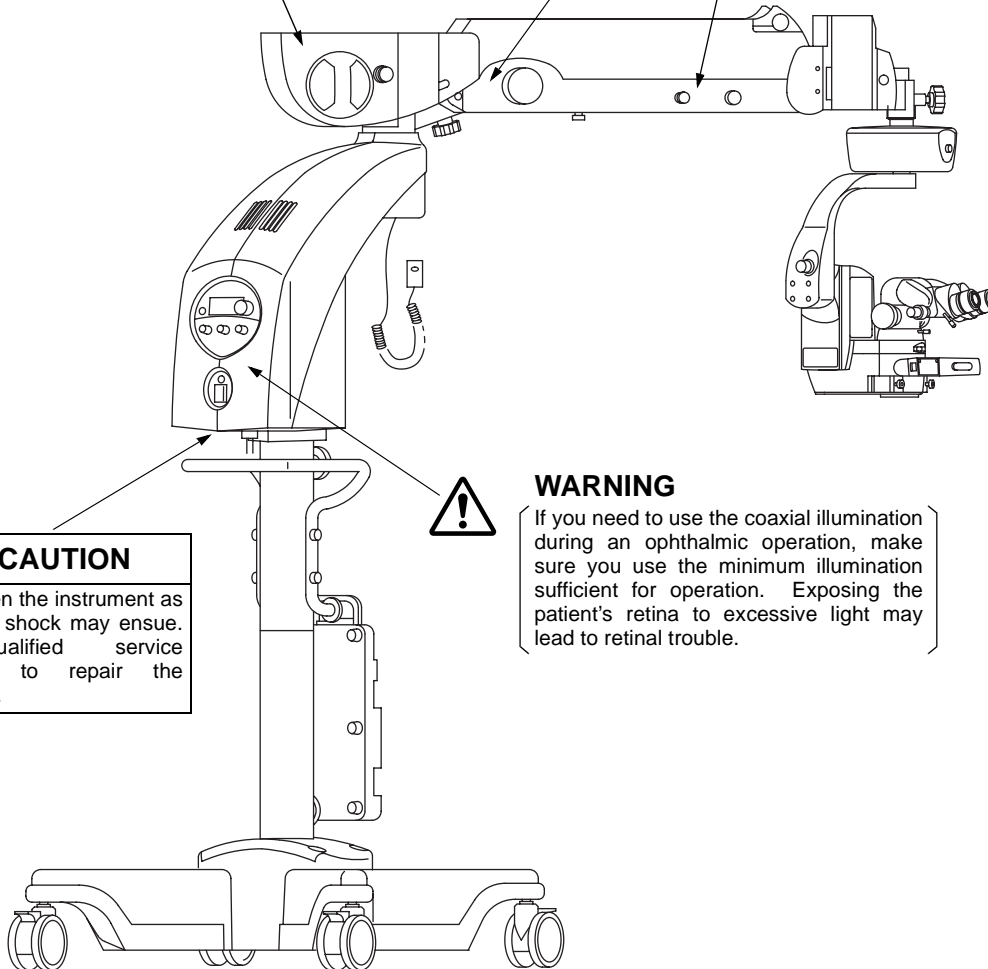
Release the 2nd arm lower limit lock  
while holding it at the end. The 2nd arm  
may move up and down suddenly,  
causing an injury.

**WARNING**

If you need to use the coaxial illumination  
during an ophthalmic operation, make  
sure you use the minimum illumination  
sufficient for operation. Exposing the  
patient's retina to excessive light may  
lead to retinal trouble.

**CAUTION**

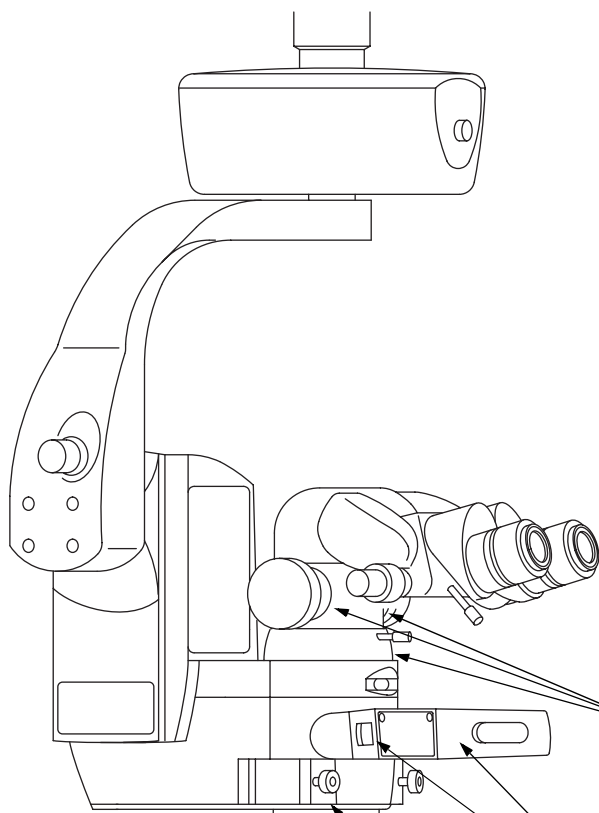
Do not open the instrument as  
an electric shock may ensue.  
Ask qualified service  
personnel to repair the  
instrument.



# WARNING INDICATIONS AND POSITIONS: Pro Lite

This instrument provides warnings to ensure safety.

Use this instrument correctly, following those warning instructions. If any of the following marking labels are missing, contact your distributor.



## WARNING

Before using this instrument, make sure that the handles, levers, knobs and rings with red marks are securely tightened. Any of these falling off could cause injury or even death.



## WARNING

Hold the microscope operation handle while pressing the electromagnetic lock release switch to unlock it. The arm may rotate or move up and down suddenly, causing an injury.



## WARNING

Before using this instrument, make sure that the handles, levers, knobs and rings with red marks are securely tightened. Any of these falling off could cause injury or even death.



**WARNING**

Use only the specified lamp.  
Otherwise, overheating may  
cause a fire.

**CAUTION**

Handle the lamp house with care  
during and immediately following  
operation. The lamp house heats  
up while in operation and can  
cause burns.

**WARNING**

Before using this instrument,  
adjust the balance of the 2nd arm.  
The 2nd arm may move up and  
down suddenly during operation,  
causing an injury.

**WARNING**

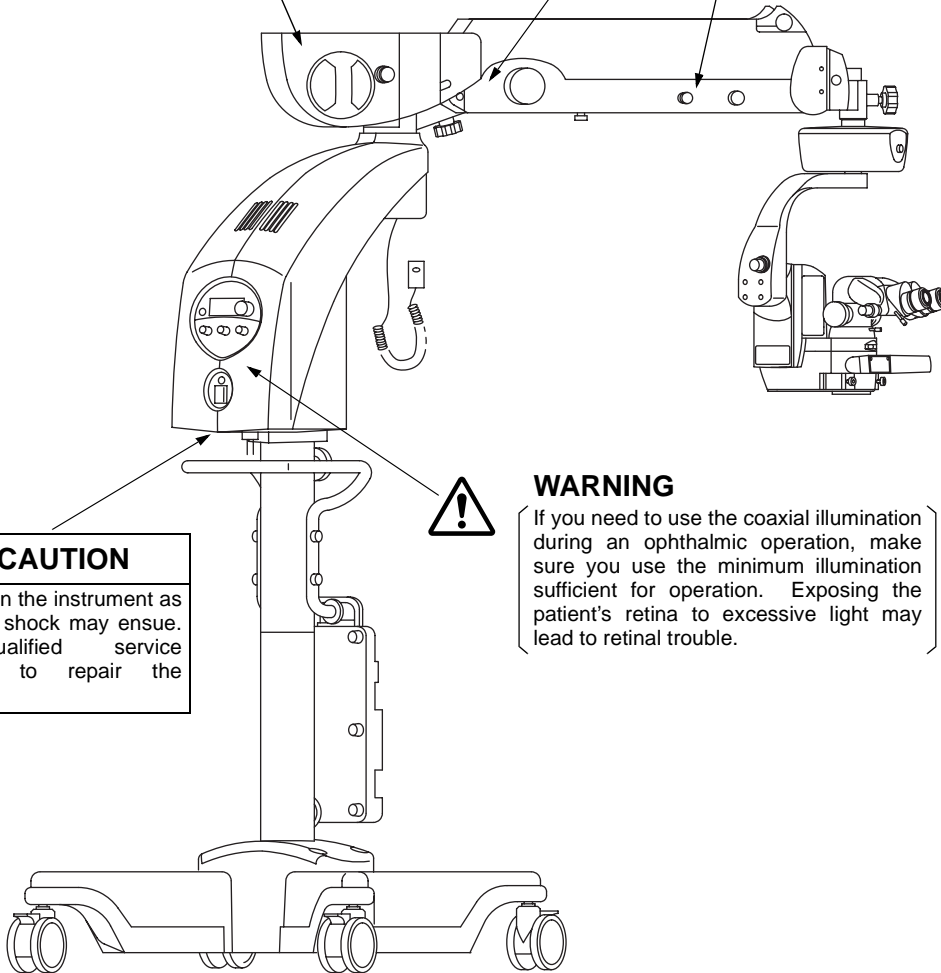
Release the 2nd arm lower limit lock  
while holding it at the end. The 2nd arm  
may move up and down suddenly,  
causing an injury.

**WARNING**

If you need to use the coaxial illumination  
during an ophthalmic operation, make  
sure you use the minimum illumination  
sufficient for operation. Exposing the  
patient's retina to excessive light may  
lead to retinal trouble.

**CAUTION**

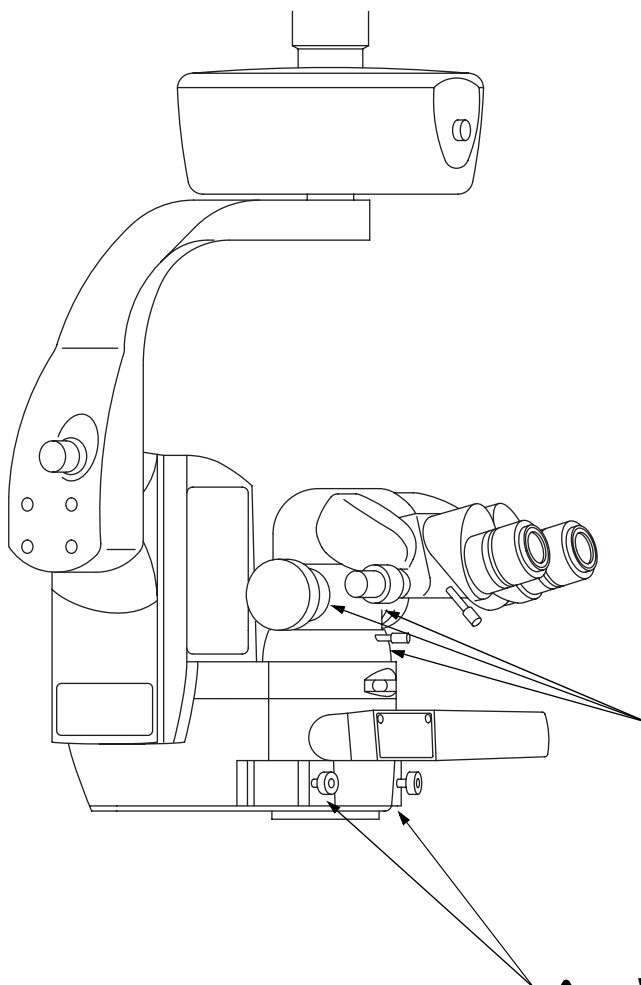
Do not open the instrument as  
an electric shock may ensue.  
Ask qualified service  
personnel to repair the  
instrument.



# WARNING INDICATIONS AND POSITIONS: Standard

This instrument provides warnings to ensure safety.

Use this instrument correctly, following those warning instructions. If any of the following marking labels are missing, contact your distributor.



## WARNING

Before using this instrument, make sure that the handles, levers, knobs and rings with red marks are securely tightened. Any of these falling off could cause injury or even death.



## WARNING

Before using this instrument, make sure that the handles, levers, knobs and rings with red marks are securely tightened. Any of these falling off could cause injury or even death.

**WARNING**

Use only the specified lamp.  
Otherwise, overheating may  
cause a fire.

**CAUTION**

Handle the lamp house with care  
during and immediately following  
operation. The lamp house heats  
up while in operation and can  
cause burns.

**WARNING**

Before using this instrument,  
adjust the balance of the 2nd arm.  
The 2nd arm may move up and  
down suddenly during operation,  
causing an injury.

**WARNING**

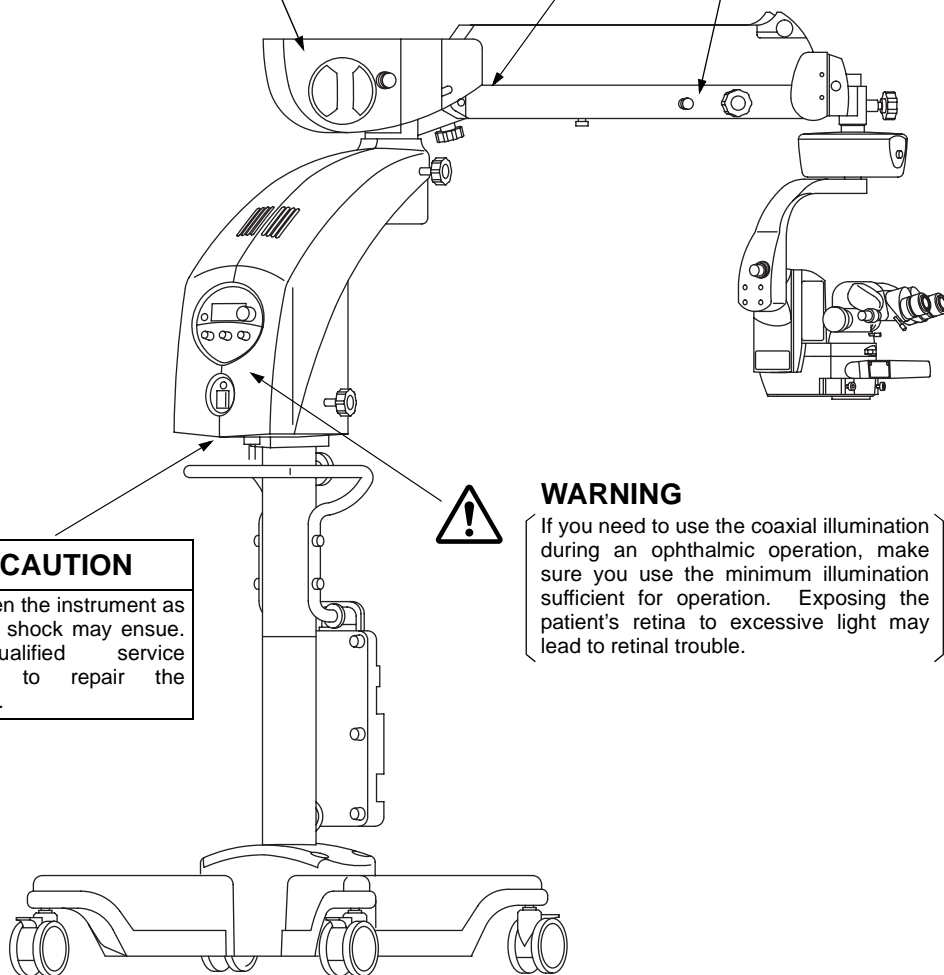
Release the 2nd arm lower limit lock  
while holding it at the end. The 2nd arm  
may move up and down suddenly,  
causing an injury.

**WARNING**

If you need to use the coaxial illumination  
during an ophthalmic operation, make  
sure you use the minimum illumination  
sufficient for operation. Exposing the  
patient's retina to excessive light may  
lead to retinal trouble.

**CAUTION**

Do not open the instrument as  
an electric shock may ensue.  
Ask qualified service  
personnel to repair the  
instrument.



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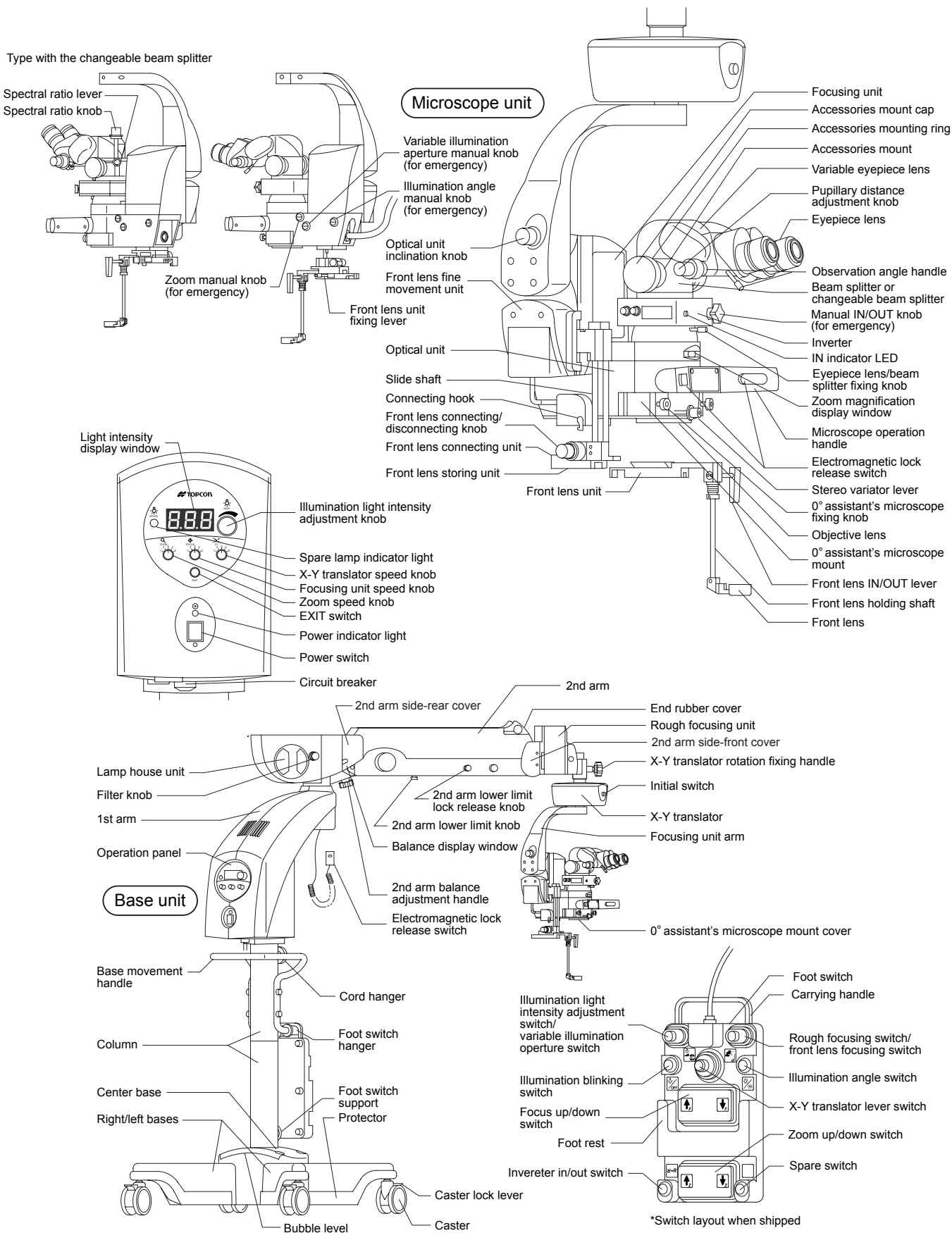
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## **MAINTENANCE AND INSPECTION: Common**

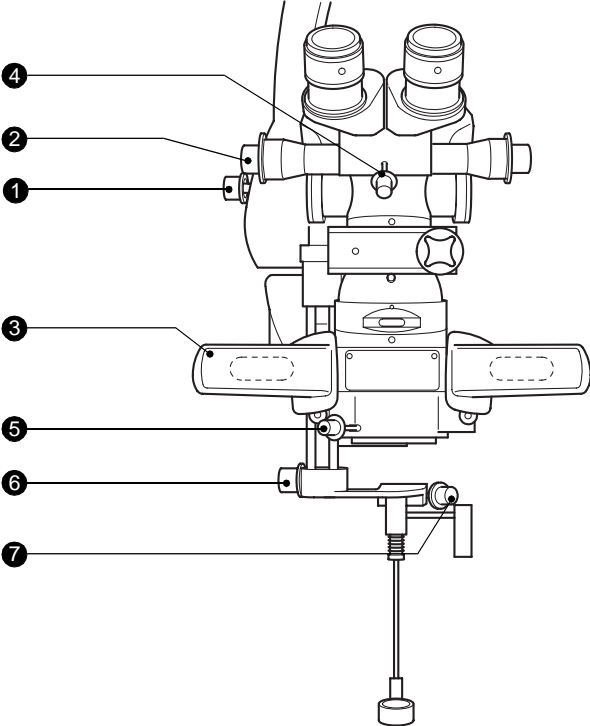
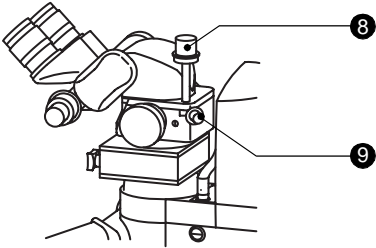
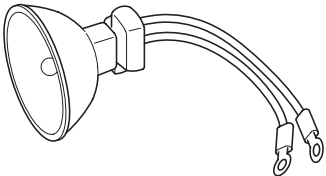
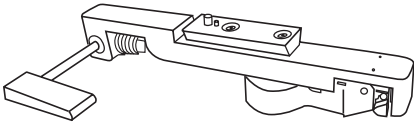
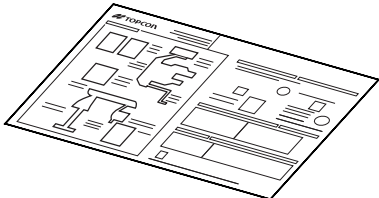
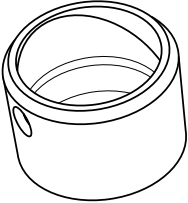

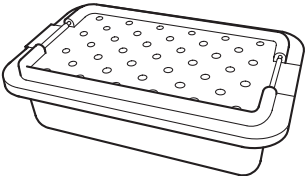
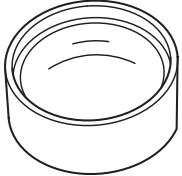
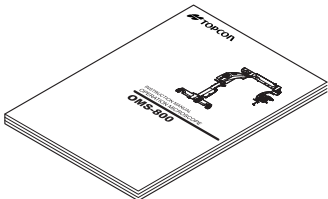
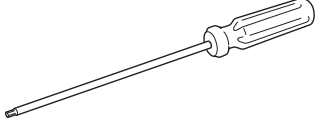
REPLACEMENT OF THE SPARE LAMP .....	97
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CHECKING THE POWER OUTLET .....	100
CHECKING INPUT VOLTAGE .....	100
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# NOMENCLATURE

## OFFISS



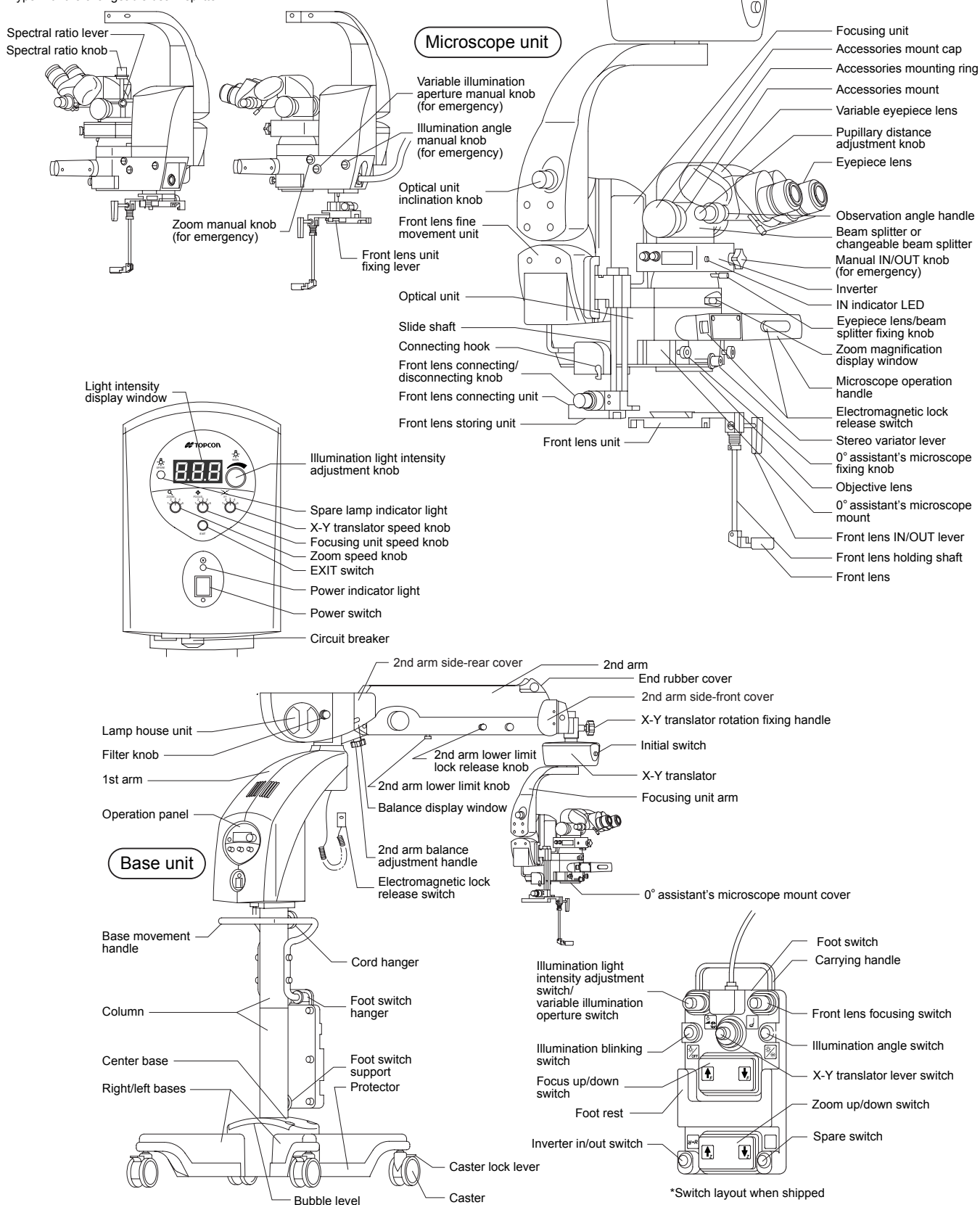
STANDARD ACCESSORIES: OFFISS

Sterilized cap Material : Silicon (Latex free)			
Type	Position	Quantity	
A	① Optical unit inclination knob	1	
	② Pupillary distance adjustment knob	2	
	⑥ Front lens connecting/disconnecting knob	1	
	⑧ Spectral ratio knob of changeable beam splitter	1	
B	③ Microscope operation handle	2	
C	④ Observation angle handle	1	
	⑤ Stereo variator lever	1	
	⑦ Front lens unit fixing lever	1	
	⑨ Spectral ratio lever of changeable beam splitter	1	
* ⑧ and ⑨ are attached to only the type equipped with the changeable beam splitter.			
Type with the changeable beam splitter			
			
Lamp (2): Already installed.	Front lens unit (1)	Quick reference (2)	
			
Peripheral observation prism (1)	Cover (1)	Sterilized tray (1)	
			
Anterior eye section observation lens (1)	Instruction manual (1): This manual	Hexagonal wrench (1)	
			

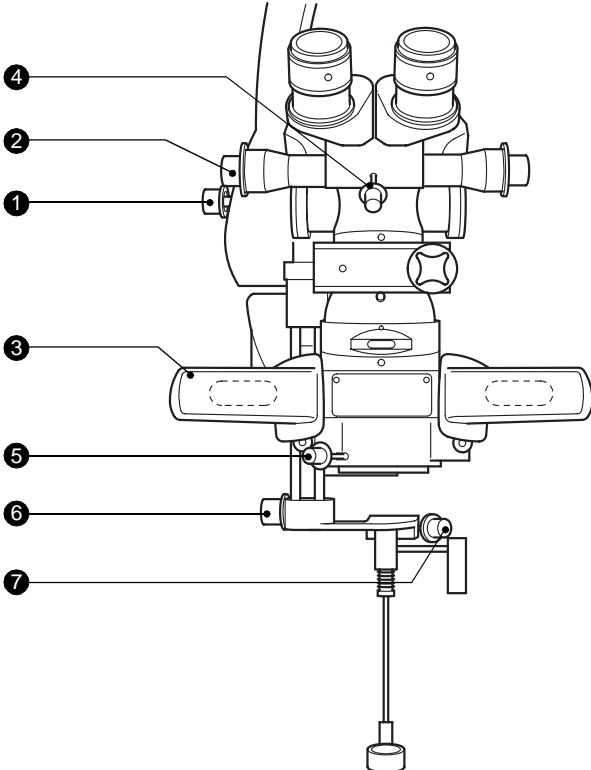
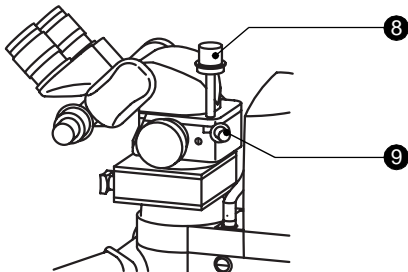
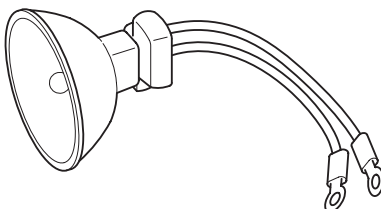
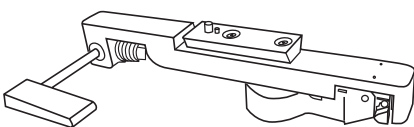
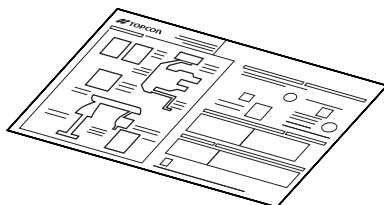


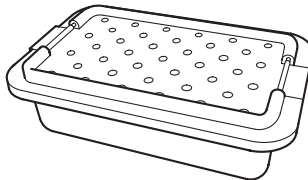
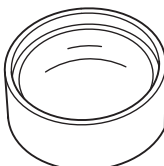
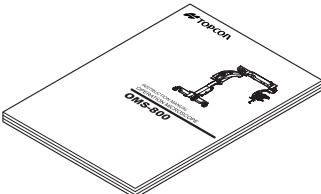
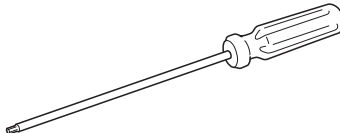


# OFFISS Lite

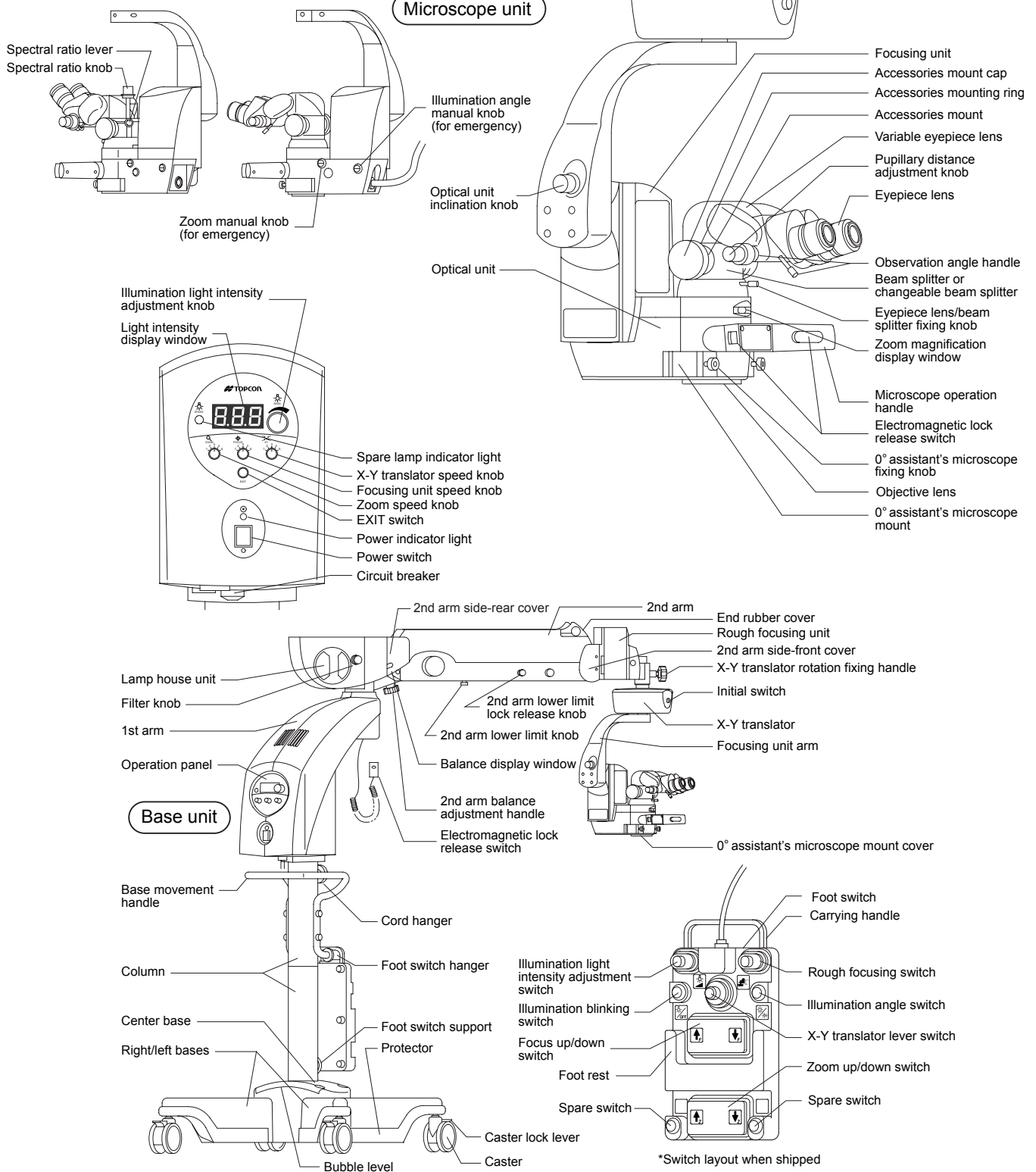
Type with the changeable beam splitter



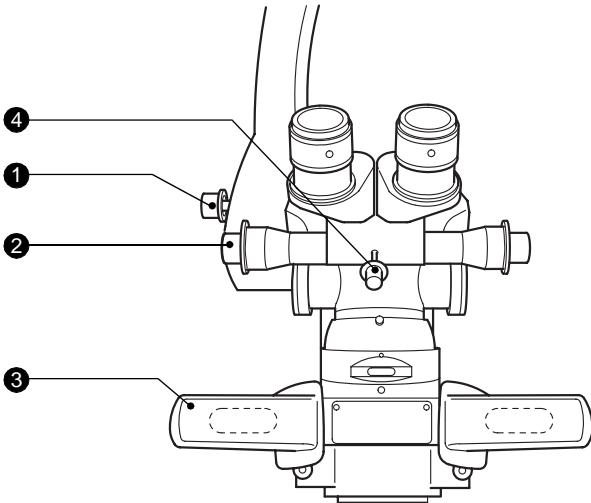
**STANDARD ACCESSORIES: OFFISS Lite**

Sterilized cap Material : Silicon (Latex free)					
Type	Position	Quantity			
A	① Optical unit inclination knob	1			
	② Pupillary distance adjustment knob	2			
	⑥ Front lens connecting/disconnecting knob	1			
	⑧ Spectral ratio knob of changeable beam splitter	1			
B	③ Microscope operation handle	2			
C	④ Observation angle handle	1			
	⑤ Stereo variator lever	1			
	⑦ Front lens unit fixing lever	1			
	⑨ Spectral ratio lever of changeable beam splitter	1			
* ⑧ and ⑨ are attached to only the type equipped with the changeable beam splitter.					
Type with the changeable beam splitter					
Lamp (2): Already installed.				Front lens unit (1)	Quick reference (2)
					
Peripheral observation prism (1)				Cover (1)	Sterilized tray (1)
					
Anterior eye section observation lens (1)				Instruction manual (1): This manual	Hexagonal wrench (1)
					

Type with the changeable beam splitter

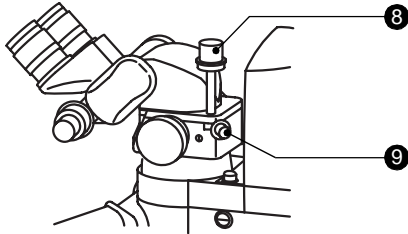


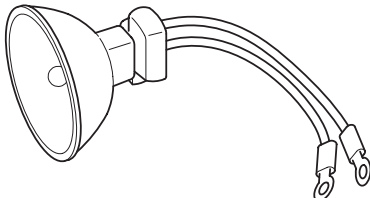

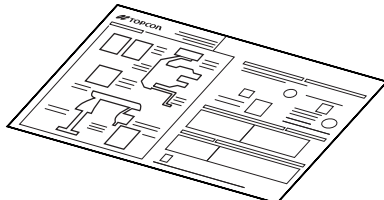
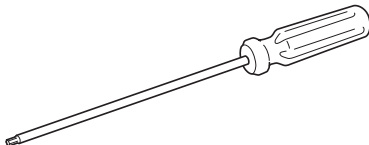
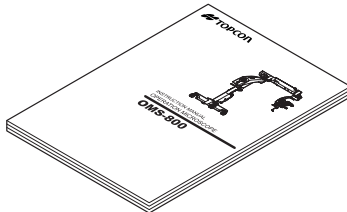
**STANDARD ACCESSORIES: Pro**

Sterilized cap Material : Silicon (Latex free)			
Type	Position	Quantity	
A	① Optical unit inclination knob	1	
	② Pupillary distance adjustment knob	2	
	⑧ Spectral ratio knob of changeable beam splitter	1	
B	③ Microscope operation handle	2	
C	④ Observation angle handle	1	
	⑨ Spectral ratio lever of changeable beam splitter	1	

\* ⑧ and ⑨ are attached to only the type equipped with the changeable beam splitter.

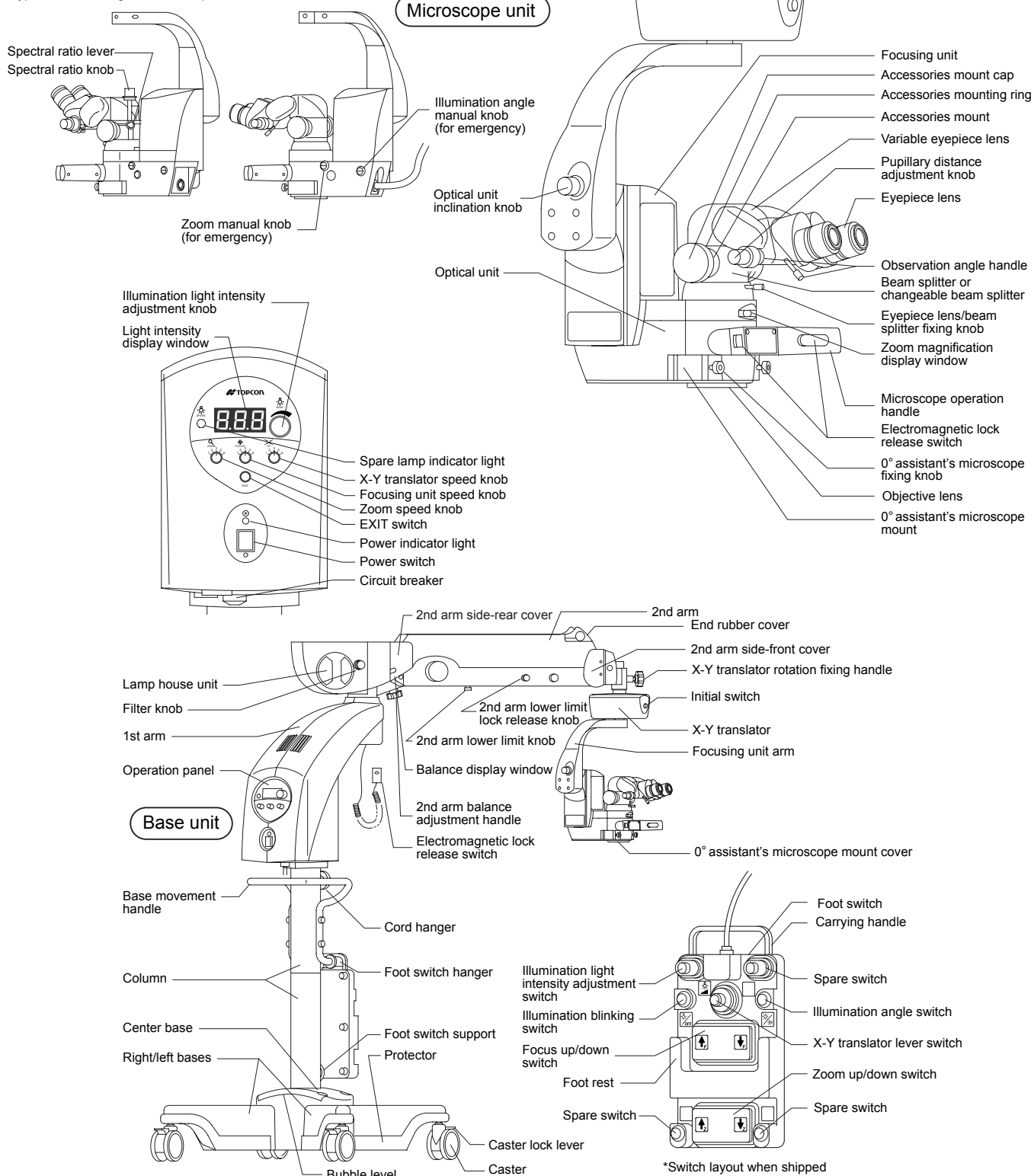
Type with the changeable beam splitter



Lamp (2): Already installed.	Cover (1)	Quick reference (2)
		
Hexagonal wrench (1)	Instruction manual (1): This manual	
		

# Pro Lite

Type with the changeable beam splitter



STANDARD ACCESSORIES: Pro Lite

Sterilized cap  
Material : Silicon (Latex free)

Type	Position	Quantity
A	① Optical unit inclination knob	1
	② Pupillary distance adjustment knob	2
	⑧ Spectral ratio knob of changeable beam splitter	1
B	③ Microscope operation handle	2
C	④ Observation angle handle	1
	⑨ Spectral ratio lever of changeable beam splitter	1

\* ⑧ and ⑨ are attached to only the type equipped with the changeable beam splitter.

A line drawing of the top of a microscope. Callout 1 points to a small knob on the left side. Callout 2 points to a larger knob below it. Callout 3 points to a handle on the side of the main body. Callout 4 points to the eyepieces at the top.

Type with the changeable beam splitter

A line drawing of the side of the microscope body. Callout 8 points to a knob on the upper part of the body. Callout 9 points to a lever on the lower part of the body.

Lamp (2): Already installed.

A line drawing of a lamp with a circular head and a flexible cable with two connectors at the end.

Cover (1)

A line drawing of a rectangular cover or bag with the TOPCON logo in the center.

Quick reference (2)

A line drawing of a quick reference card with various diagrams and text.

Hexagonal wrench (1)

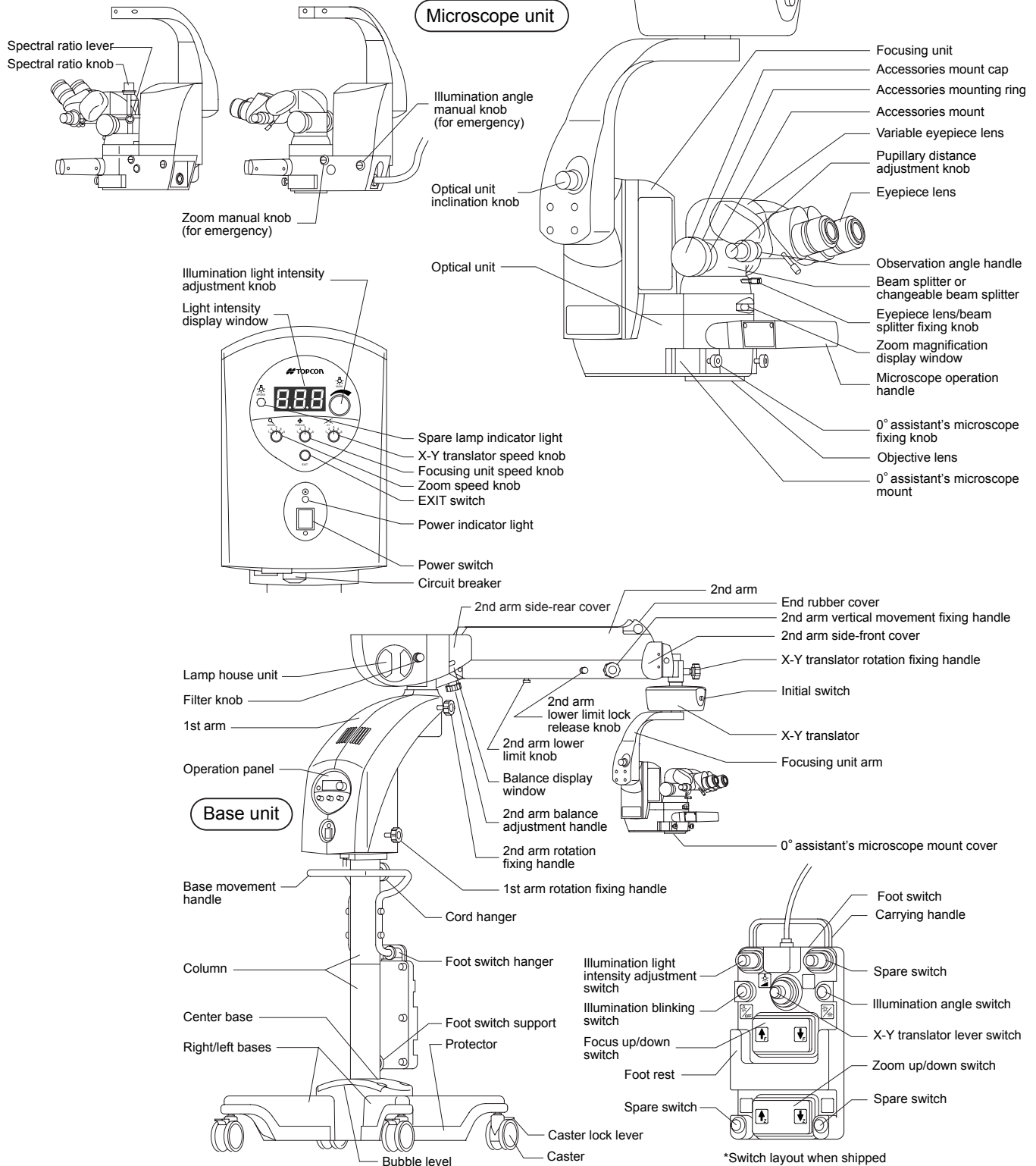
A line drawing of a hexagonal wrench with a long handle and a hexagonal head.

Instruction manual (1): This manual

A line drawing of the instruction manual, showing the TOPCON logo and a picture of the microscope.

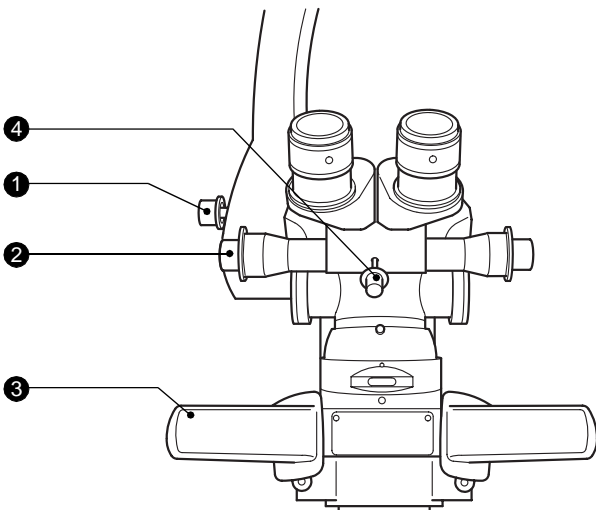
## Standard

Type with the changeable beam splitter



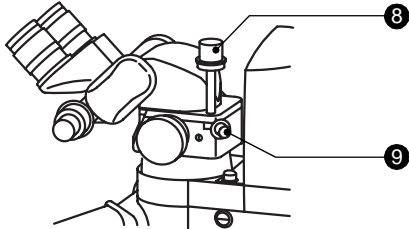


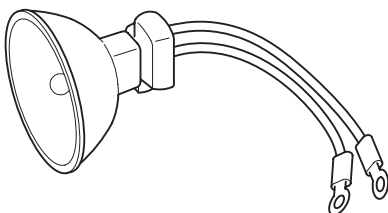

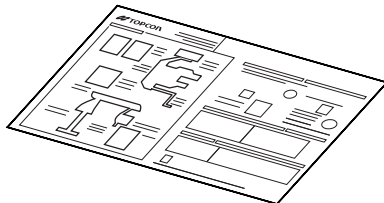
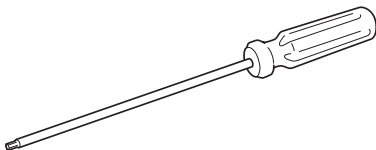
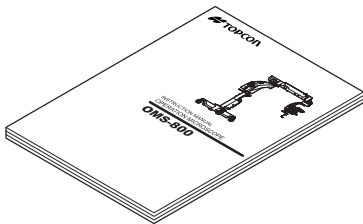
**STANDARD ACCESSORIES: Standard**

Sterilized cap Material : Silicon (Latex free)			
Type	Position	Quantity	
A	① Optical unit inclination knob	1	
	② Pupillary distance adjustment knob	2	
	⑧ Spectral ratio knob of changeable beam splitter	1	
B	③ Microscope operation handle	2	
C	④ Observation angle handle	1	
	⑨ Spectral ratio lever of changeable beam splitter	1	

\* ⑧ and ⑨ are attached to only the type equipped with the changeable beam splitter.

Type with the changeable beam splitter



Lamp (2): Already installed.	Cover (1)	Quick reference (2)
		
Hexagonal wrench (1)	Instruction manual (1): This manual	
		



# PREPARATIONS BEFORE USE



## WARNING

Make sure no-one is too close to the instrument before moving the arm. Anyone touching the instrument may be injured.

Before using this instrument, carry out the daily check. (Refer to "DAILY CHECK" on P.103.)

## **STERILIZED CAP: Common**

Sterilize caps as follows:

Method: High pressure steam sterilization

Condition: Leave cap in the saturated steam ( $134\pm 4^{\circ}\text{C}$ ) for 20 minutes.

## **PREPARATIONS FOR STERILIZING THE FRONT LENS UNIT: OFFISS, OFFISS Lite**

Place the front lens unit, peripheral prism and anterior eye section observation lens in the sterilized tray and sterilize them as follows:

Method: EOG (ethylene oxide gas) sterilization

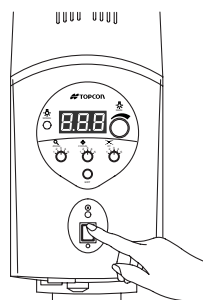
Condition: Make sure the devices used are properly sterilized.

## **TURNING ON THE POWER: Common**

### NOTE

Make sure the electricity is properly grounded.

- 1 Connect the power plug to a wall-outlet.
- 2 Switch the power switch " I " (ON).



On the light intensity display window, the version information of the software installed in this instrument is displayed for several seconds. (Display example: 1.03) If the software of Version 1.02 or previous is installed, the version information will not be displayed.

- 3 Make sure that the power indicator lights up green.
- 4 Make sure that no error code is displayed on the light intensity display window. (Refer to "ERROR CODES" on P.88.)

## **CHECKING THE SPARE LAMP: Common**



### **WARNING**

Use only the specified lamp. Otherwise, overheating may cause a fire.



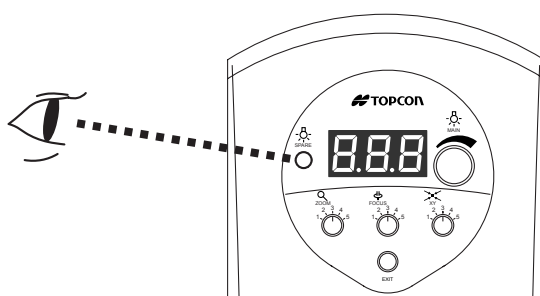
### **CAUTION**

Handle the lamp house with care during and immediately following operation.  
The lamp house heats up while in operation and can cause burns.

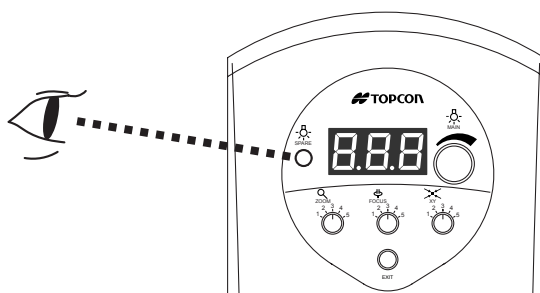
### **NOTE**

Check whether the spare lamp indicator is lit up before using this instrument.

- 1** Make sure that the spare lamp indicator light is OFF on the operation panel.









- 2** If the spare lamp indicator light is lit up, then the lamp has not been installed or has burned out. Install a lamp or replace the old lamp with a new one. (Refer to "REPLACEMENT OF THE SPARE LAMP" on P.97 and "CONSUMABLE PARTS" on P.89~P.90.)
- 3** Make sure that the spare lamp indicator light is OFF following installation or replacement.



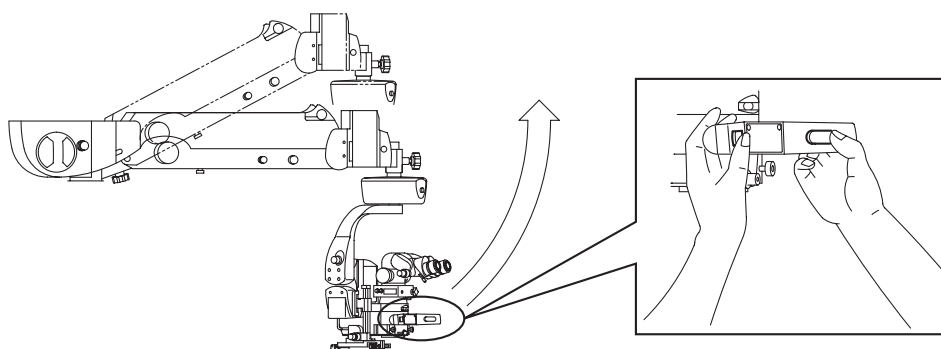
If the illumination lamp has burned out during operation, change the lamp selector unit from "LAMP A" to "LAMP B" and vice versa. A one-touch operation activates the spare lamp.

## **SETTING ACCESSORIES: OFFISS, OFFISS Lite, Pro, Pro Lite**

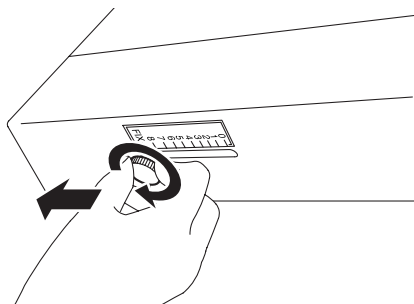
The illustrations display the OFFISS type.

 <b>WARNING</b>	Do not install/remove the accessories above the patient. An accessory falling off could cause injury or even death.
 <b>WARNING</b>	Before installing the accessories, make sure all the arms are securely locked. The 2nd arm may move suddenly, causing an injury.
 <b>WARNING</b>	After installing/removing the accessories, make sure that handles, levers, knobs and rings are securely tightened. Any of these falling off could cause injury or even death.
 <b>WARNING</b>	Before using this instrument, adjust the balance of the 2nd arm. The 2nd arm may move up and down suddenly during an operation, causing an injury.
 <b>WARNING</b>	Release the 2nd arm lower limit lock while holding it at the end. The 2nd arm may move up and down suddenly, causing an injury.
 <b>CAUTION</b>	Do not open the instrument, as this may lead to an electric shock.
<b>NOTE</b>	Ask your distributor or the Topcon offices stated on the back cover to repair the instrument.

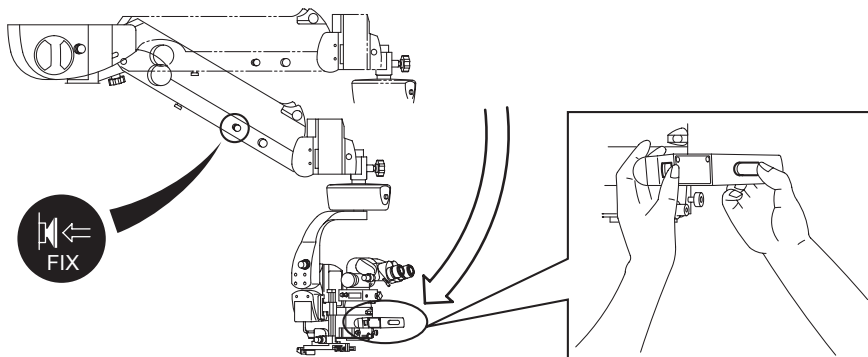
- 1 While pressing the electromagnetic lock release switch of the microscope operation handle, move the 2nd arm to the upper limit position.




- 2 Tighten and fix the 2nd arm lower limit knob by turning it clockwise at the lower limit lock position (FIX position).



- 3** While pressing the electromagnetic lock release switch of the microscope operation handle, move the 2nd arm to the lower limit position. The 2nd arm is locked.




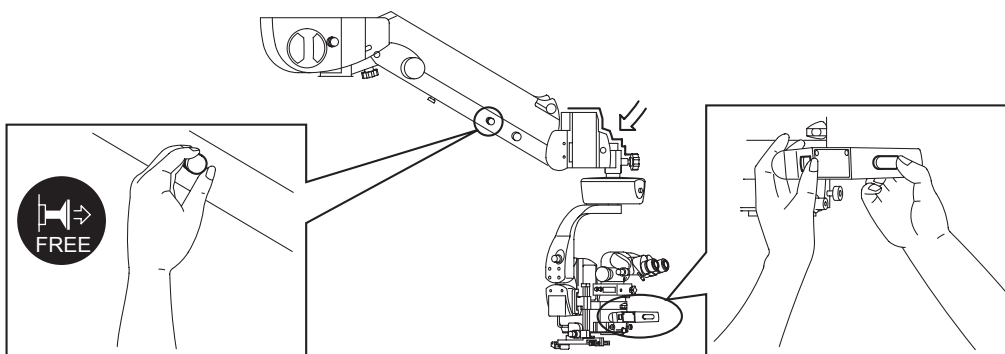
-  Apply the 2nd arm lower limit lock. (Refer to "LOCKING/UNLOCKING THE 2ND ARM LOWER LIMIT: OFFISS, OFFISS Lite, Pro, Pro Lite" on P.48.)

- 4** Set the assistant's microscope (optional accessory), inverter, TV camera, TV relay lens (optional accessory) assistant's coaxial binocular tube (optional accessory), FAG filter unit (optional accessory) and laser protection filter according to the operation details.

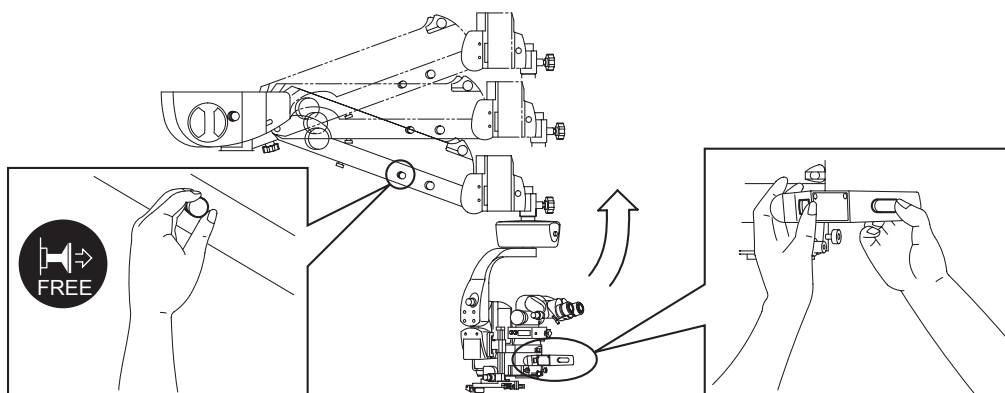
-  Set the inverter. (Refer to "INSTALLING THE INVERTER: OFFISS, OFFISS Lite" on P.38.)

- 5** Release the 2nd arm lower limit lock as follows: while pressing the electromagnetic lock release switch of the microscope operation handle, push down the 2nd arm and at the same time pull the 2nd arm lower limit lock release knob.

-  Release the lower limit lock. (Refer to "LOCKING/UNLOCKING THE 2ND ARM LOWER LIMIT: OFFISS, OFFISS Lite, Pro, Pro Lite" on P.48.)



- 6** While pulling the 2nd arm lower limit lock release knob, raise the 2nd arm somewhat. The lock is released.









## 7 Adjust the balance of the 2nd arm.

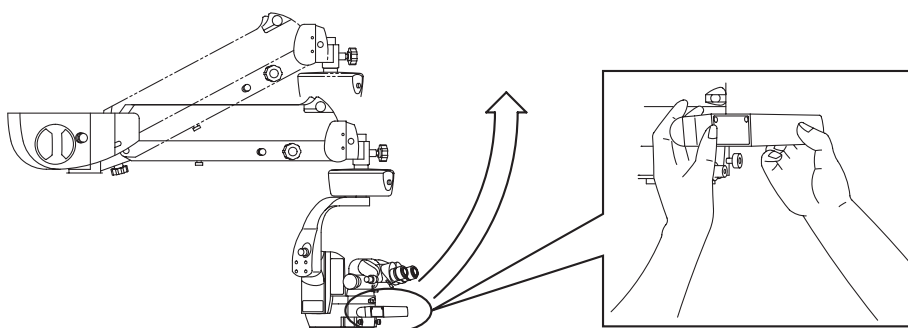


After installing or removing the accessories, the 2nd arm balance must be readjusted. Refer to "ADJUSTING THE 2ND ARM BALANCE: OFFISS, OFFISS Lite, Pro, Pro Lite" on P.41.

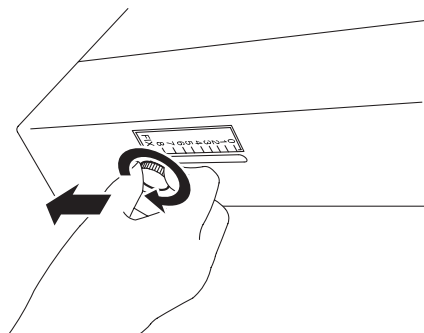
### **SETTING THE ACCESSORIES: Standard**

 <b>WARNING</b>	Do not install/remove the accessories above the patient. An accessory falling off could cause injury or even death.
 <b>WARNING</b>	Before installing the accessories, make sure all the arms are securely locked. The 2nd arm may move suddenly, causing an injury.
 <b>WARNING</b>	After installing/removing the accessories, make sure that handles, levers, knobs and rings are securely tightened. Any of these falling off could cause injury or even death.
 <b>WARNING</b>	Before using this instrument, adjust the balance of the 2nd arm. The 2nd arm may move up and down suddenly during an operation, causing an injury.
 <b>WARNING</b>	Release the 2nd arm lower limit lock while holding it at the end. The 2nd arm may move up and down suddenly, causing an injury.
 <b>CAUTION</b>	Do not open the instrument, as this may lead to an electric shock.
<b>NOTE</b>	Ask your distributor or the Topcon offices stated on the back cover to repair the instrument.

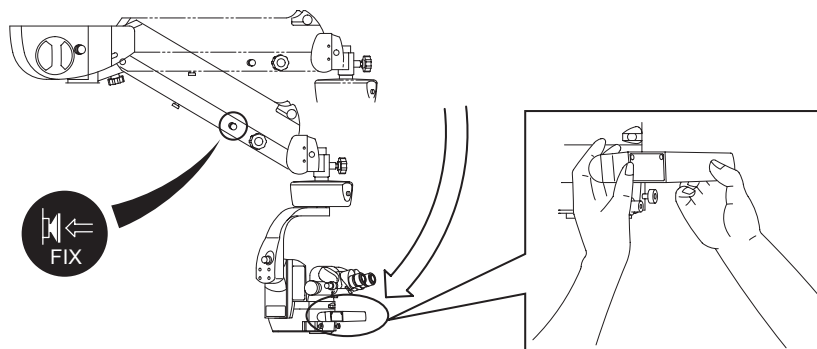
- 1 While loosening the 2nd arm vertical movement fixing handle, hold the microscope operation handle and move the 2nd arm to the upper limit position.




- 2** Tighten and fix the 2nd arm lower limit knob by turning it clockwise at the lower limit lock position (FIX position).




- 3** While loosening the 2nd arm vertical movement fixing handle, hold the microscope operation handle and move the 2nd arm to the lower limit position. The 2nd arm is locked.

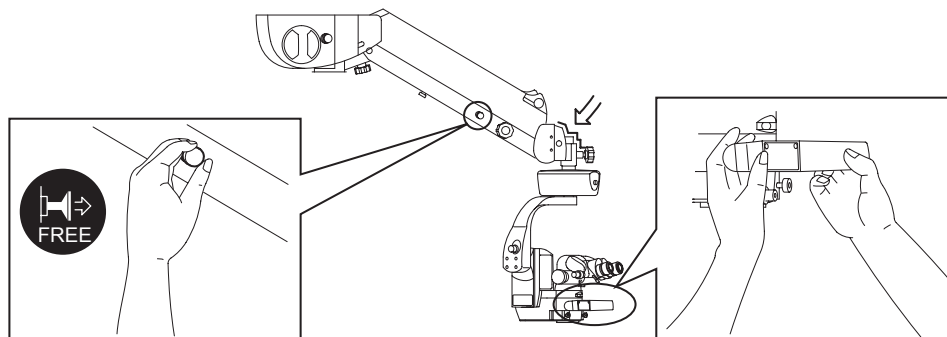


-  Apply the 2nd arm lower limit lock. (Refer to "LOCKING/UNLOCKING THE 2ND ARM LOWER LIMIT: Standard" on P.50.)

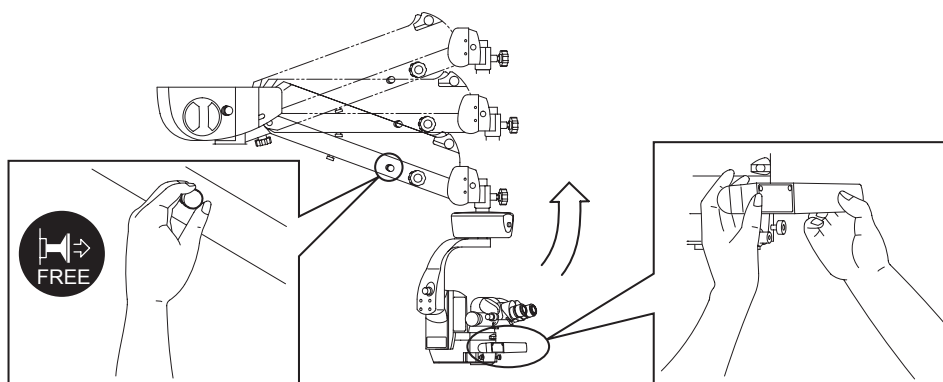
- 4** Set the assistant's microscope (optional accessory), inverter, TV camera, TV relay lens (optional accessory), assistant's coaxial binocular tube (optional accessory), FAG filter unit (optional accessory) and laser protection filter according to the operation details.

- 5** Release the 2nd arm lower limit lock as follows: while loosening the 2nd arm vertical movement fixing handle, hold the microscope operation handle, push down the 2nd arm and at the same time pull the 2nd arm lower limit lock release knob.

-  Release the lower limit lock. (Refer to "LOCKING/UNLOCKING THE 2ND ARM LOWER LIMIT: Standard" on P.50.)



- 6** While pulling the 2nd arm lower limit lock release knob, raise the 2nd arm somewhat. The lock is released.



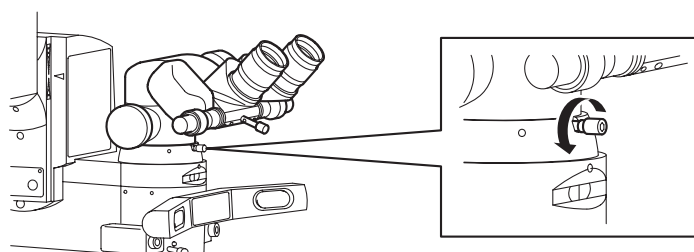
- 7** Adjust the balance of the 2nd arm.



After installing or removing the accessories, the 2nd arm balance must be readjusted. Refer to "ADJUSTING THE 2ND ARM BALANCE: Standard" on P.41.

## **INSTALLING THE INVERTER: OFFISS, OFFISS Lite**

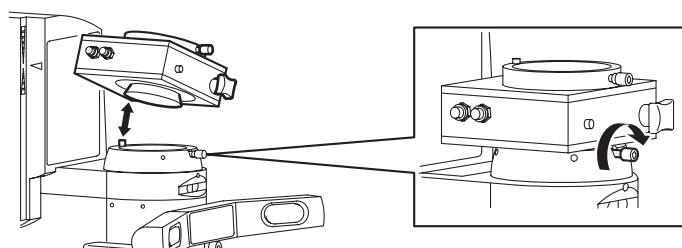
- 1** Loosen the eyepiece lens/beam splitter fixing knob on the microscope unit and then remove the eyepiece lens/beam splitter from the microscope.



- 2** Fit the groove of the inverter to the pin on the top side of the microscope and tighten the eyepiece lens/beam splitter fixing knob to fix the inverter.



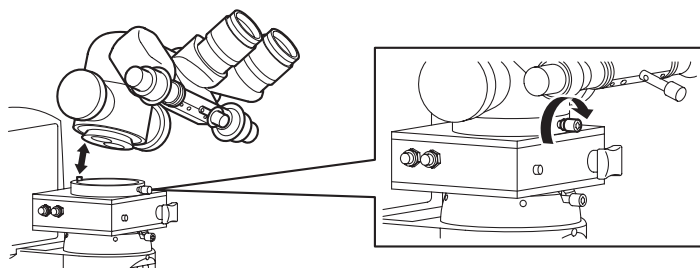
We recommend using a hexagonal screwdriver.



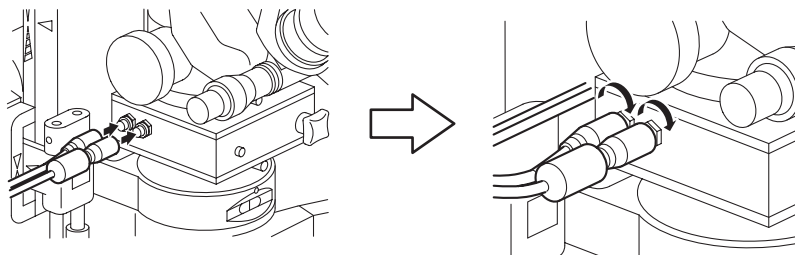
- 3** Fit the groove of the beam splitter to the pin on the top side of the inverter and tighten the eyepiece lens/beam splitter fixing knob to fix the eyepiece lens/beam splitter.



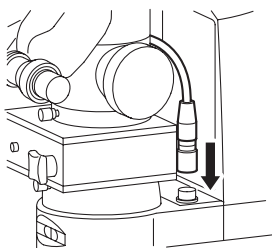
We recommend using a hexagonal screwdriver.



- 4** Mount the connectors of the connecting cable onto the two connection sections (5 pins/3 pins) of the inverter. Tighten the connector to its root securely and fix it with a ring.



- 5** Mount the connector on the opposite side of the connecting cable onto the connection section of the lens barrel. Push in the connector to its root until it clicks, and fix it.

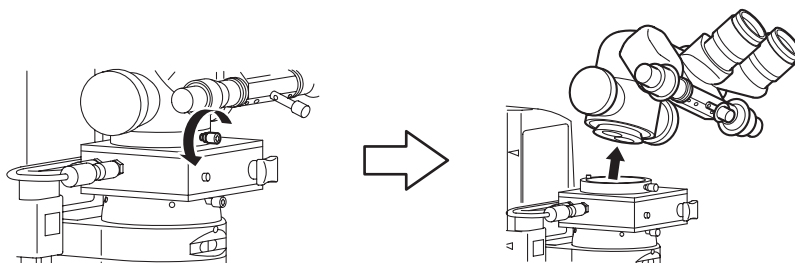


## **REMOVING THE INVERTER: OFFISS, OFFISS Lite**

- 1** Loosen the eyepiece lens/beam splitter fixing knob on the inverter and then remove the eyepiece lens/beam splitter from the inverter.

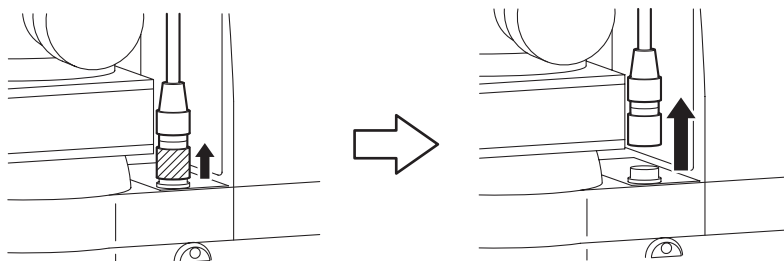


We recommend using a hexagonal screwdriver.





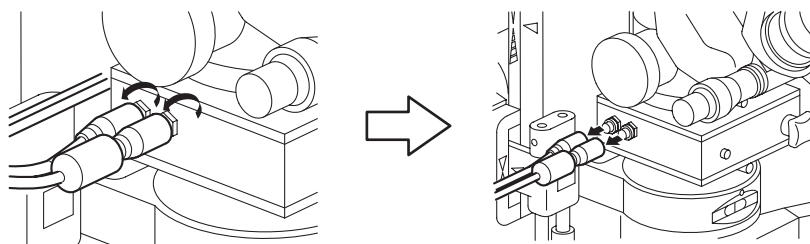
- 2** Remove the connector (on the lens barrel side) of the connecting cable. Pull up the connector as sliding its end section (shadowed section as shown below) upward.



- 3** Remove the connector (on the inverter side) of the connecting cable. Loosen the tightening ring at the connector's end section and then remove the connector.



We recommend storing the removed connecting cable in the inverter's carry case.



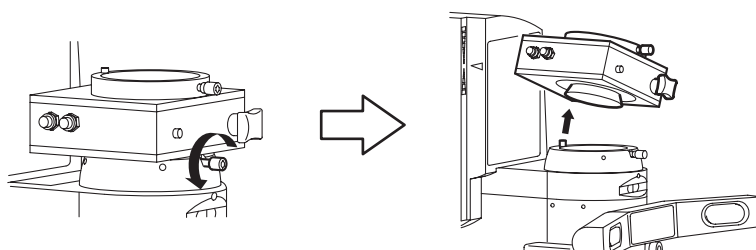
- 4** Loosen the eyepiece lens/beam splitter fixing knob on the operation microscope OMS-800 and then remove the inverter from the microscope.



We recommend using a hexagonal screwdriver.



We recommend storing the removed inverter in the inverter's carry case.



## **ADJUSTING THE 2ND ARM BALANCE: OFFISS, OFFISS Lite, Pro, Pro Lite**



### **WARNING**

Hold the microscope operation handle while pressing the electromagnetic lock release switch to unlock it. The arm may rotate or move up and down suddenly, causing an injury.



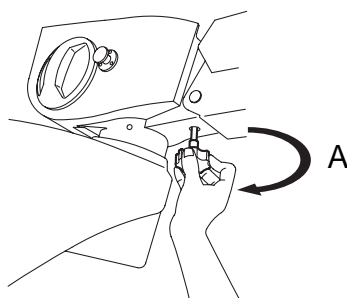
### **WARNING**

Before installing the accessories, make sure all the arms are securely locked. The 2nd arm may move suddenly, causing an injury.

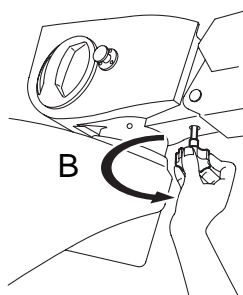
**1** While pressing the electromagnetic lock release switch, move the 2nd arm equally far up and down.

If the arm moves upward too lightly, turn the 2nd arm balance adjustment handle clockwise (A). The arm will move heavily.

A number will be displayed on the balance display window. The higher the number, the larger the balance mass.



If the arm moves down too heavily, turn the 2nd arm balance adjustment handle counter-clockwise (B). The arm will move lightly.



Installing or removing accessories will change the arm balance setting. Therefore, always reset the balance in the vertical direction, according to the instructions above.

## **ADJUSTING THE 2ND ARM BALANCE: Standard**



### **WARNING**

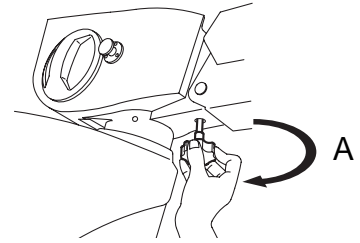
Hold the microscope operation handle while pressing the electromagnetic lock release switch to unlock it. The arm may rotate or move up and down suddenly, causing an injury.



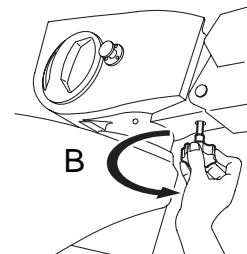
### **WARNING**


Before installing the accessories, make sure all the arms are securely locked. The 2nd arm may move suddenly, causing an injury.

- 1 Loosen the 2nd arm vertical movement fixing handle and hold the microscope operation handle. Then move the 2nd arm equally far up and down. If the arm moves upward too lightly, turn the 2nd arm balance adjustment handle clockwise(A). The arm will move heavily.



If the arm moves down too heavily, turn the 2nd arm balance adjustment handle counter-clockwise (B). The arm will move lightly.







 Installing or removing accessories will change the arm balance setting. Therefore, always reset the balance in the vertical direction, according to the instructions above.

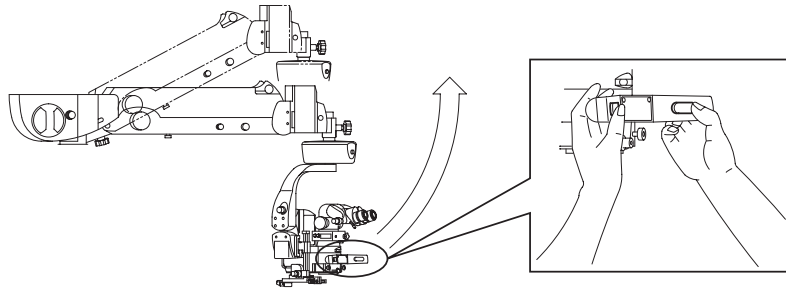
## **SETTING THE 2ND ARM LOWER LIMIT POSITION: OFFISS, OFFISS Lite, Pro, Pro Lite**

The illustrations display the OFFISS type.

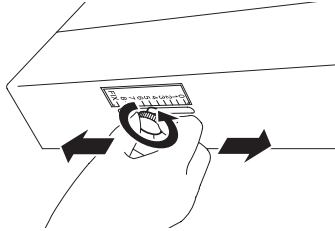
Limit unnecessary downward movement in order to prevent or reduce accidents caused by a downward movement of the 2nd arm.

 <b>WARNING</b>	Hold the microscope operation handle while pressing the electromagnetic lock release switch to unlock it. The arm may rotate or move up and down suddenly, causing an injury.
 <b>WARNING</b>	Before installing the accessories, make sure all the arms are securely locked. The 2nd arm may move suddenly, causing an injury.
 <b>WARNING</b>	The gas spring in the 2nd arm contains high-pressure gas. Do not disassemble the 2nd arm or expose it to fire. You may be injured.
 <b>WARNING</b>	Before using this instrument, adjust the balance of the 2nd arm. The 2nd arm may move up and down suddenly during an operation, causing an injury.

- 1** While pressing the electromagnetic lock release switch of the microscope operation handle, move the 2nd arm to the upper limit position.

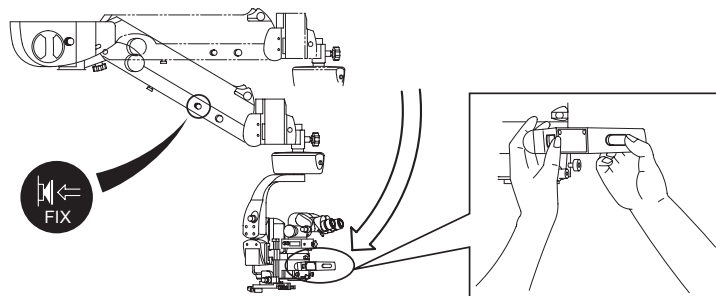


- 2** Loosen the 2nd arm lower limit knob by turning it counterclockwise and sliding it between 0~8. (0: Up ~ 8: Down)

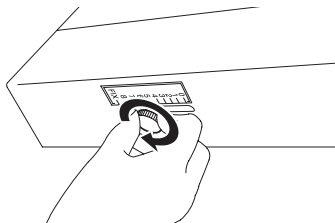


The position of the 2nd arm lower limit knob is a new lower limit position.

- 3** Move the 2nd arm downward to check the lower limit position.







- 4** After reaching the correct lower limit position, tighten and fix the 2nd arm lower limit knob by turning it clockwise.



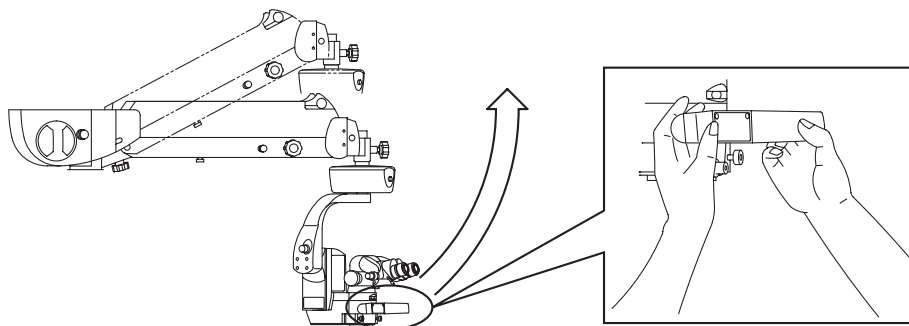
If the lower limit position is not correct, carry out the procedure above again, from "1".

## **SETTING THE 2ND ARM LOWER LIMIT POSITION: Standard**

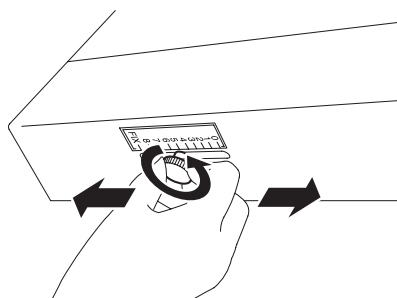
Limit unnecessary downward movement in order to prevent or reduce accidents caused by a downward movement of the 2nd arm.

 <b>WARNING</b>	Always hold the microscope operation handle when loosening either the 2nd arm vertical movement fixing handle, the 2nd arm rotation fixing handle or the 1st arm rotation fixing handle. The arm may rotate or move up and down suddenly, causing an injury.
 <b>WARNING</b>	Before installing the accessories, make sure all the arms are securely locked. The 2nd arm may move suddenly, causing an injury.
 <b>WARNING</b>	The gas spring in the 2nd arm contains high-pressure gas. Do not disassemble the 2nd arm or expose it to fire. You may be injured.
 <b>WARNING</b>	Before using this instrument, adjust the balance of the 2nd arm. The 2nd arm may move up and down suddenly during an operation, causing an injury.

- 1** While loosening the 2nd arm vertical movement fixing handle, hold the microscope operation handle and move the 2nd arm to the upper limit position.

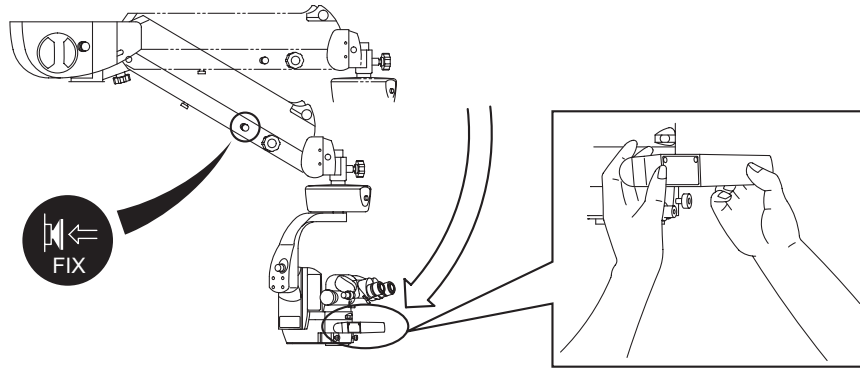


- 2** Loosen the 2nd arm lower limit knob by turning it counterclockwise and sliding it between 0~8. (0: Up ~ 8: Down)

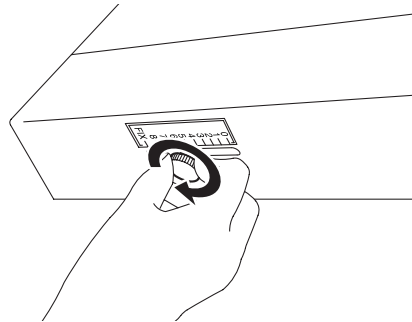


The position of the 2nd arm lower limit knob is a new lower limit position.

- 3** Move the 2nd arm downward to check the lower limit position.



- 4** After reaching the correct lower limit position, tighten and fix the 2nd arm lower limit knob by turning it clockwise.



If the lower limit position is not correct, carry out the procedure above again, from "1".

## INITIALIZATION: OFFISS, Pro

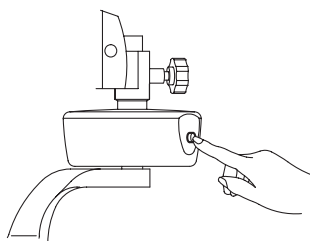
The illustrations display the OFFISS type.



### CAUTION

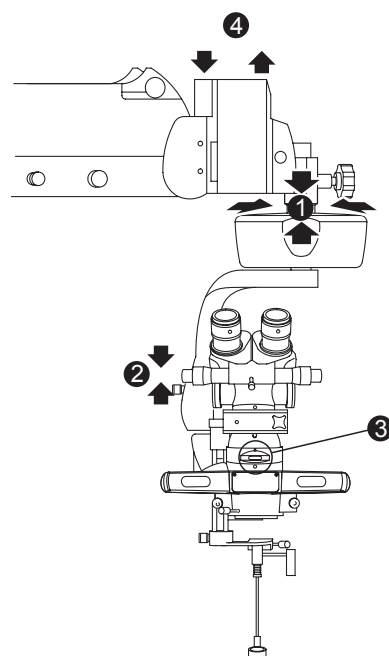
Before moving the instrument, make sure there is no-one and nothing within collision range. Injury may result from the instrument colliding with anyone/anything.

- 1 Press the initial switch on the front of the X-Y translator. The instrument is in the initial set condition.



Initial setting

	Unit	Setting
①	X-Y translator	Center position
②	Focusing unit	Approx. 35mm from the upper limit Approx. 25mm from the lower limit
③	ZOOM	Minimum magnification
④	Rough focusing unit	Approx. 40mm from the upper limit Approx. 20mm from the lower limit



Initialization cannot be carried out except the X-Y translator if the front lens is in use (or after it has been removed). (Refer to "OPERATION OF THE FRONT LENS: OFFISS, OFFISS Lite" on P.70.)



Initialization can also be carried out with the foot switch. If you wish to use this foot switch operation, you must change the setting. Please ask your distributor to carry out the change.

## **INITIALIZATION: OFFISS Lite, Pro Lite, Standard**

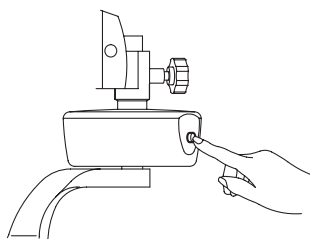
The illustrations display the Standard type.



### **CAUTION**

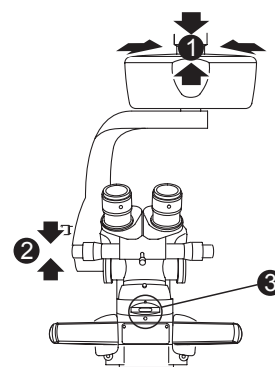
Before moving the instrument, make sure there is no-one and nothing within collision range. Injury may result from the instrument colliding with anyone/anything.

- 1** Press the initial switch on the front of the X-Y translator. The instrument is in the initial set condition.



Initial setting

	Unit	Setting
①	X-Y translator	Center position
②	Focusing unit	Approx. 35mm from the upper limit Approx. 25mm from the lower limit
③	ZOOM	Minimum magnification



Initialization cannot be carried out except the X-Y translator if the front lens is in use (or after it has been removed). (Refer to "OPERATION OF THE FRONT LENS: OFFISS, OFFISS Lite" on P.70.)








Initialization can also be carried out with the foot switch. If you wish to use this foot switch operation, you must change the setting. Please ask your distributor to carry out the change.



## **LOCKING/UNLOCKING THE 2ND ARM LOWER LIMIT: OFFISS, OFFISS Lite, Pro, Pro Lite**

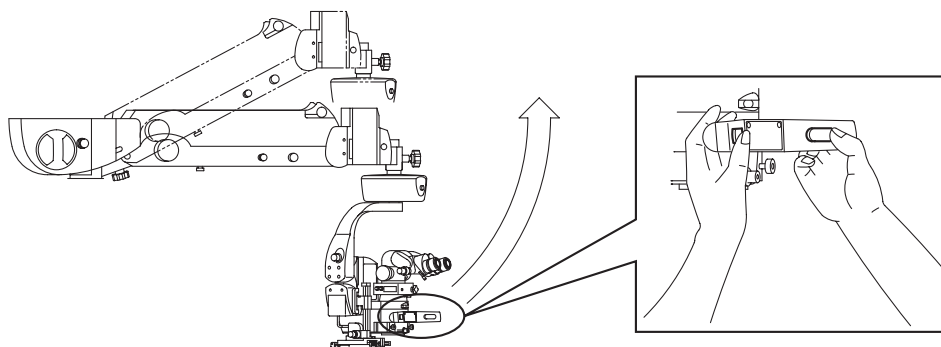
The illustrations display the OFFISS type.

Use this lock when moving/storing this instrument or when installing/removing the accessories.

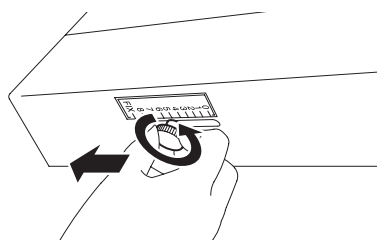
 <b>WARNING</b>	Release the 2nd arm lower limit lock while holding it at the end. The 2nd arm may move up and down suddenly, causing an injury.
 <b>WARNING</b>	Hold the microscope operation handle while pressing the electromagnetic lock release switch to unlock it. The arm may rotate or move up and down suddenly, causing an injury.
 <b>WARNING</b>	Before installing the accessories, make sure all the arms are securely locked. The 2nd arm may move suddenly, causing an injury.
 <b>WARNING</b>	The gas spring in the 2nd arm contains high-pressure gas. Do not disassemble the 2nd arm or expose it to fire. You may be injured.
 <b>WARNING</b>	Before using this instrument, adjust the balance of the 2nd arm. The 2nd arm may move up and down suddenly during an operation, causing an injury.

### **2nd arm lower limit lock**

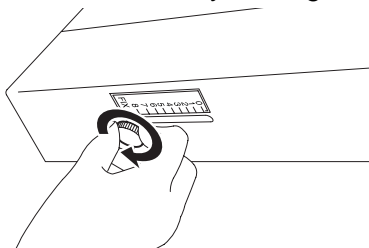
- 1** While pressing the electromagnetic lock release switch of the microscope operation handle, move the 2nd arm to the upper limit position.



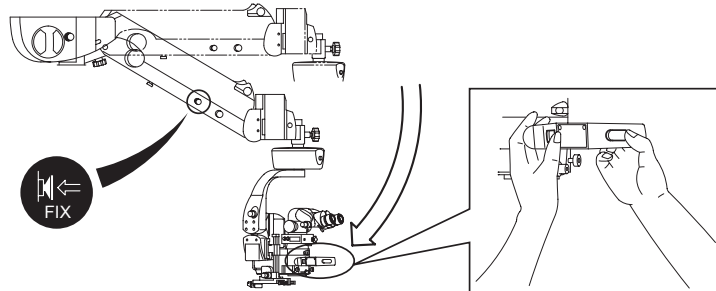
- 2** Loosen the 2nd arm lower limit knob by turning it counterclockwise and slide it to the FIX position.



- 3** Tighten and fix the 2nd arm lower limit knob by turning it clockwise.

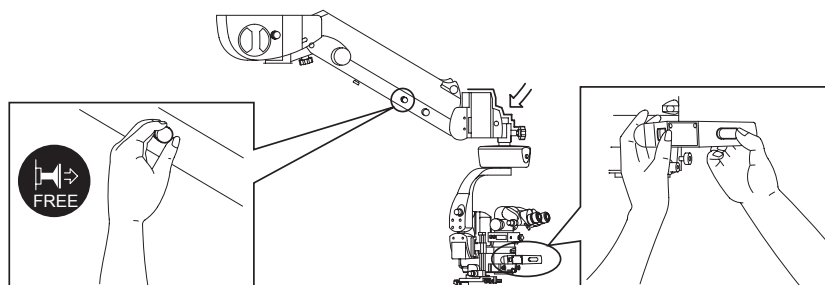


- 4** While pressing the electromagnetic lock release switch of the microscope operation handle, push the 2nd arm down to the lower limit position. The 2nd arm is locked.

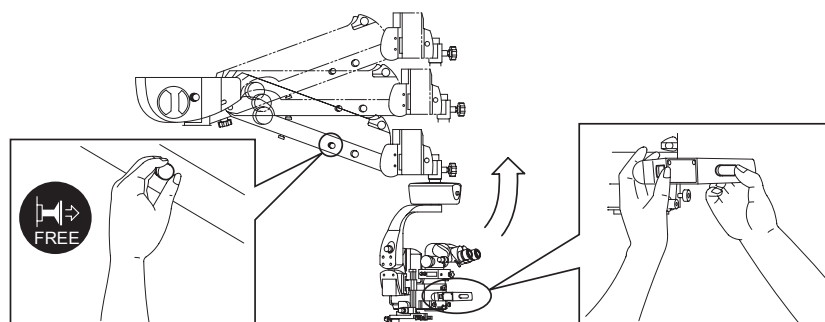


### Releasing the 2nd arm lower limit lock

- 1** While pressing the electromagnetic lock release switch of the microscope operation handle, push down the 2nd arm and at the same time pull the 2nd arm lower limit lock release knob.








- 2** While pulling the 2nd arm lower limit lock release knob, raise the 2nd arm somewhat. Lock is released.



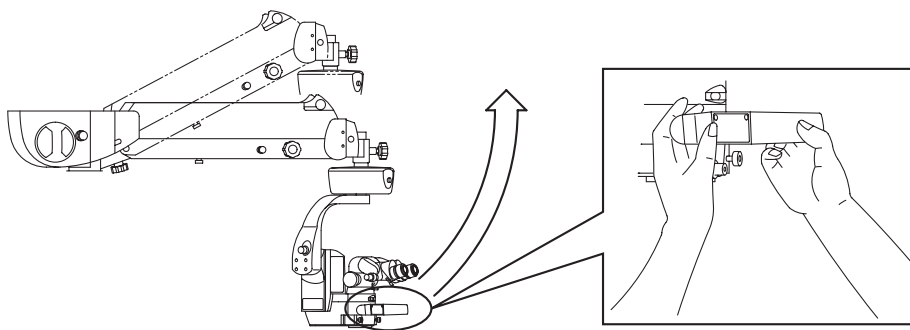
## **LOCKING/UNLOCKING THE 2ND ARM LOWER LIMIT: Standard**

Use this lock when moving/storing this instrument or when installing/removing the accessories.

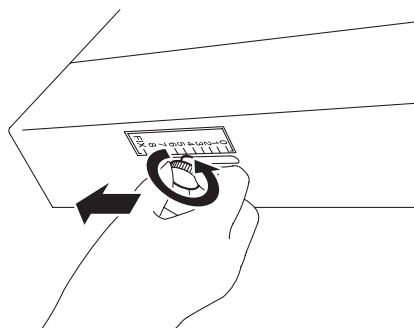
 <b>WARNING</b>	Release the 2nd arm lower limit lock while holding it at the end. The 2nd arm may move up and down suddenly, causing an injury.
 <b>WARNING</b>	Always hold the microscope operation handle when loosening either the 2nd arm vertical movement fixing handle, the 2nd arm rotation fixing handle or the 1st arm rotation fixing handle. The arm may rotate or move up and down suddenly, causing an injury.
 <b>WARNING</b>	Before installing the accessories, make sure all the arms are securely locked. The 2nd arm may move suddenly, causing an injury.
 <b>WARNING</b>	The gas spring in the 2nd arm contains high-pressure gas. Do not disassemble the 2nd arm or expose it to fire. You may be injured.
 <b>WARNING</b>	Before using this instrument, adjust the balance of the 2nd arm. The 2nd arm may move up and down suddenly during an operation, causing an injury.

### **2nd arm lower limit lock**

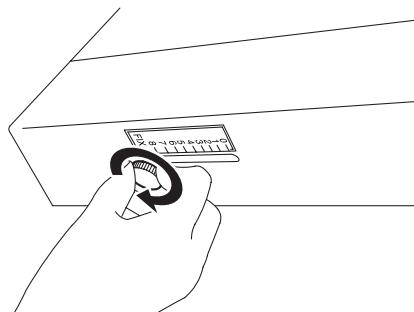
- 1** While loosening the 2nd arm vertical movement fixing handle, hold the microscope operation handle and move the 2nd arm to the upper limit position.



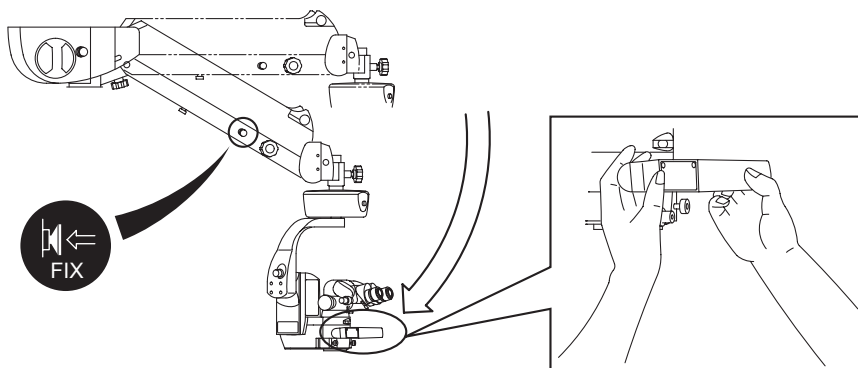
- 2** Loosen the 2nd arm lower limit knob by turning it counterclockwise and slide it to the FIX position.



- 3** Tighten and fix the 2nd arm lower limit knob by turning it clockwise.

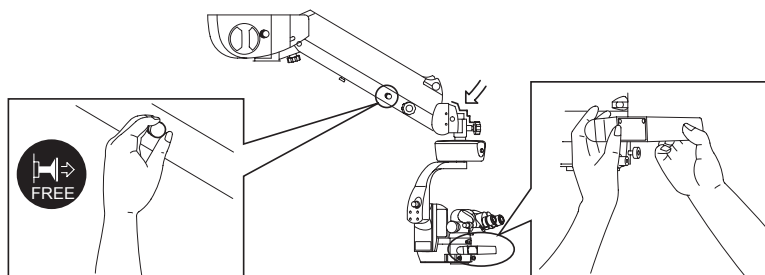


- 4** While loosening the 2nd arm vertical movement fixing handle, hold the microscope operation handle and move the 2nd arm to the lower limit position. The 2nd arm is locked.

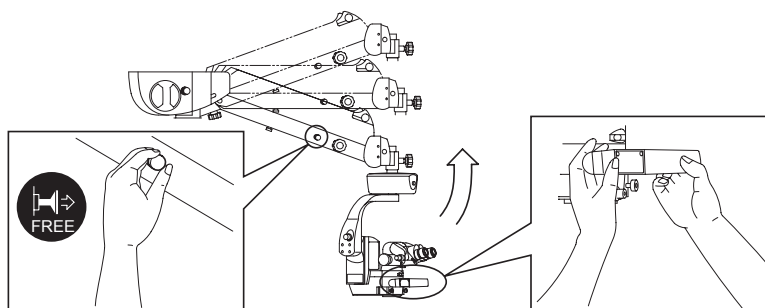


### Releasing the 2nd arm lower limit lock

- 1** While loosening the 2nd arm vertical movement fixing handle, hold the microscope operation handle, push down the 2nd arm and at the same time pull the 2nd arm lower limit lock release knob.

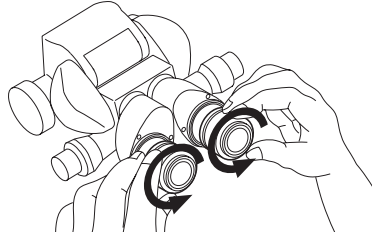


- 2** While pulling the 2nd arm lower limit lock release knob, raise the 2nd arm somewhat. Lock is released.

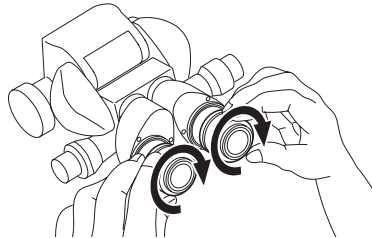


## **ADJUSTING THE DIOPTRIC POWER: Common**

- 1** Operate the zoom up/down switch of the foot switch to set the observation magnification at maximum value.
- 2** Turn the diopter adjustment ring counterclockwise to its maximum value and gently move the microscope unit up and down with the focus up/down switch until the object is in focus.



- 3** Operate the zoom up/down switch of the foot switch to set the observation magnification at minimum value.
- 4** While looking through the eyepiece lens for each eye, turn its diopter adjustment ring clockwise until the object is in focus and can be clearly seen. The dioptic power is now properly adjusted. The scale of the diopter adjustment ring displays the correct dioptic power.



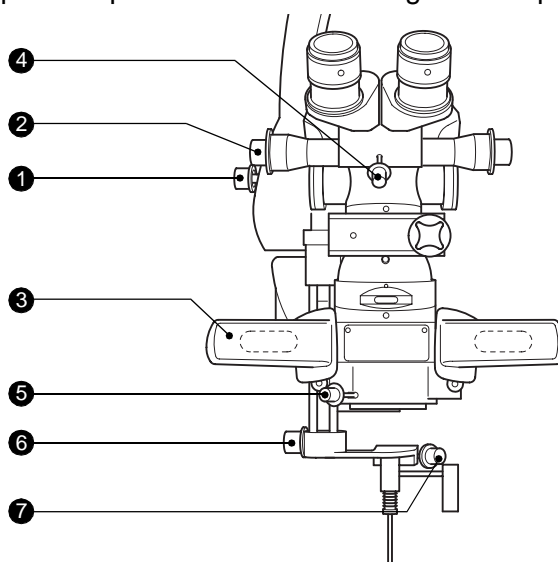
Record the correct dioptic power for each eye. Then adjust the dioptic power to the value.

## INSTALLING THE STERILIZED CAP: OFFISS, OFFISS Lite

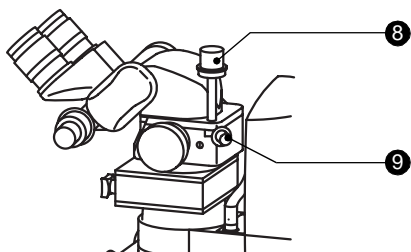
Sterilize the sterilized caps and then place them in the specified positions. The following table displays the setting positions of the sterilized caps.

Type	Position	Quantity
A	① Optical unit inclination knob	1
	② Pupillary distance adjustment knob	2
	⑥ Front lens connecting/disconnecting knob	1
	⑧ Spectral ratio knob of changeable beam splitter	1
B	③ Microscope operation handle	2
C	④ Observation angle handle	1
	⑤ Stereo variator lever	1
	⑦ Front lens unit fixing lever	1
	⑨ Spectral ratio lever of changeable beam splitter	1

\* ⑧ and ⑨ are attached to only the type equipped with the changeable beam splitter.



Type with the changeable beam splitter

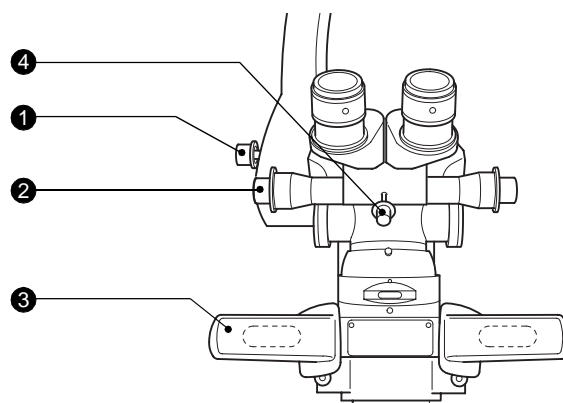


## INSTALLING THE STERILIZED CAP: Pro, Pro Lite

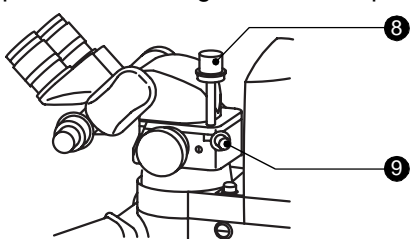
Sterilize the sterilized caps and then place them in the specified positions. The following table displays the setting positions of the sterilized caps.

Type	Position	Quantity
A	① Optical unit inclination knob	1
	② Pupillary distance adjustment knob	2
	⑧ Spectral ratio knob of changeable beam splitter	1
B	③ Microscope operation handle	2
C	④ Observation angle handle	1
	⑨ Spectral ratio lever of changeable beam splitter	1

\* ⑧ and ⑨ are attached to only the type equipped with the changeable beam splitter.



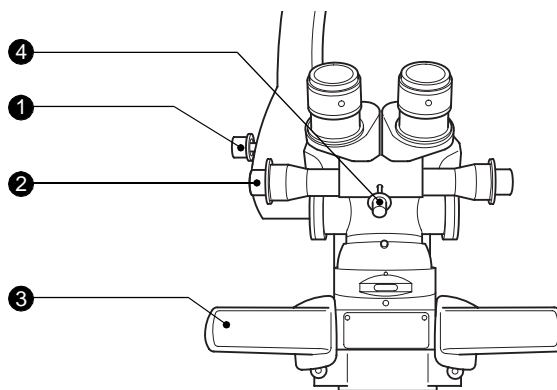
Type with the changeable beam splitter



## **INSTALLING THE STERILIZED CAP: Standard**

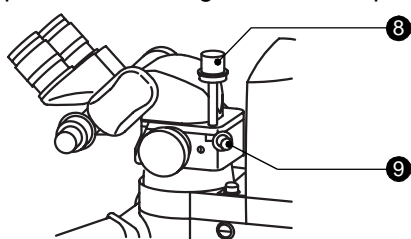
Sterilize the sterilized caps and then place them in the specified positions. The following table displays the setting positions of the sterilized caps.

Type	Position	Quantity
A	① Optical unit inclination knob	1
	② Pupillary distance adjustment knob	2
	⑧ Spectral ratio knob of changeable beam splitter	1
B	③ Microscope operation handle	2
C	④ Observation angle handle	1
	⑨ Spectral ratio lever of changeable beam splitter	1



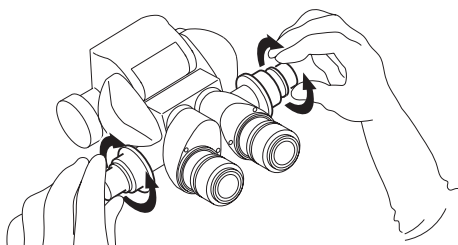
\* ⑧ and ⑨ are attached to only the type equipped with the changeable beam splitter.

Type with the changeable beam splitter



## **ADJUSTING THE PUPILLARY DISTANCE: Common**

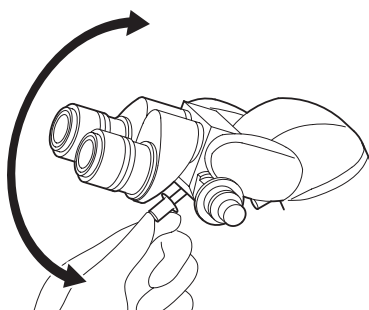
- 1 Adjust the pupillary distance by looking through the eyepiece lenses and turning the pupillary distance adjustment knob until both eyes are able to see correctly.



Record the read value. Then set the pupillary distance at the value.

## **ADJUSTING THE OBSERVATION ANGLE: Common**

- 1 Hold the observation angle handle and adjust it to the required observation angle.



## **ADJUSTING THE LIGHT INTENSITY: OFFISS, OFFISS Lite**

The light intensity can be adjusted by the 1st arm operation panel or the foot switch.



### **WARNING**

If you need to use the coaxial illumination during an ophthalmic operation, make sure you use the minimum illumination sufficient for the operation. Exposing the patient's retina to excessive light may lead to retinal trouble.



Illumination light intensity display:

The illumination light intensity display is based on ISO10936-2 to reduce or prevent retinal injury caused by the operation microscope's illuminator. (When the radiance (LB value) weighted in the wavelength 380~700nm is 500mW/(cm<sup>2</sup>•sr), it is displayed as 1.0.)



### **WARNING**

To reduce or prevent retinal trouble, use the front lens within 40 minutes (illumination light intensity display: 0.7)/within 70 minutes (illumination light intensity display: 0.4). Using the front lens for a long time may lead to retinal trouble.



The use time is determined on the assumption that the limit value of radiation against the retina in the aphakic eye is 10J/cm<sup>2</sup>.

Reference data:

International Commission on Non-Ionizing Radiation Protection, Guidelines on limits of exposure to broadband incoherent optical radiation (0, 38 to 3μm). Health Phys. 73 (3): 539-554; 1997.

## **ADJUSTING THE LIGHT INTENSITY: Pro, Pro Lite, Standard**

The light intensity can be adjusted by the 1st arm operation panel or the foot switch.



### **WARNING**

If you need to use the coaxial illumination during an ophthalmic operation, make sure you use the minimum illumination sufficient for the operation. Exposing the patient's retina to excessive light may lead to retinal trouble.




Illumination light intensity display:

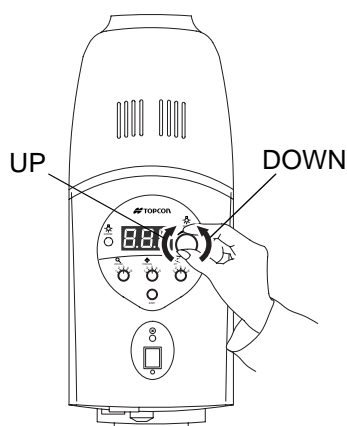
The illumination light intensity display is based on ISO10936-2 to reduce or prevent retinal injury caused by the operation microscope's illuminator. (When the radiance (LB value) weighted in the wavelength 380~700nm is 500mW/(cm<sup>2</sup>•sr), it is displayed as 1.0.)





## **OPERATION PANEL: Common**

- 1 Adjust the brightness as required with the illumination light intensity adjustment knob. Turn the knob counterclockwise to decrease the light intensity, and clockwise to increase it.

 The light intensity can be adjusted to 0~0.7

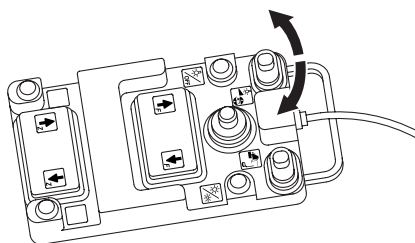



 The light intensity can also be adjusted by the foot switch. (Refer to "OPERATION OF FOOT SWITCH" on P.59~P.63.)


 In OFFISS, OFFISS Lite, if the front lens is used, the variable illumination aperture is in operation; therefore, the light intensity cannot be adjusted by the foot switch.

## **FOOT SWITCH: OFFISS, OFFISS Lite**

- 1 Move the illumination light intensity adjustment switch/variable illumination aperture switch of the foot switch to the left to increase the light intensity. Move the switch to the right to decrease the light intensity.

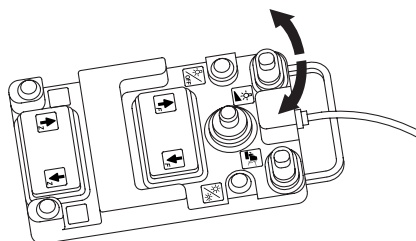


 The values of 0.1~0.7 are displayed for the light intensity.

 If the front lens is used, the variable illumination aperture is in operation; therefore, the light intensity cannot be adjusted by the foot switch. (Refer to "OPERATION OF THE FRONT LENS: OFFISS, OFFISS Lite" on P.70.)

## **FOOT SWITCH: Pro, Pro Lite**

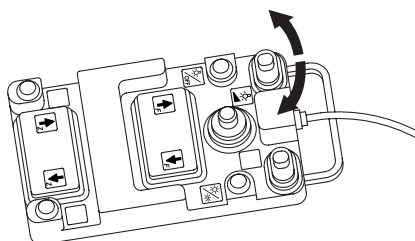
- 1 Move the illumination light intensity adjustment switch of the foot switch to the left to increase the light intensity. Move the switch to the right to decrease the light intensity.



The values of 0.1~0.7 are displayed for the light intensity.

## **FOOT SWITCH: Standard**

- 1 Move the illumination light intensity adjustment switch of the foot switch to the left to increase the light intensity. Move the switch to the right to decrease the light intensity.



The values of 0.1~0.7 are displayed for the light intensity.

## **INSTALLING THE FRONT LENS UNIT: OFFISS, OFFISS Lite**

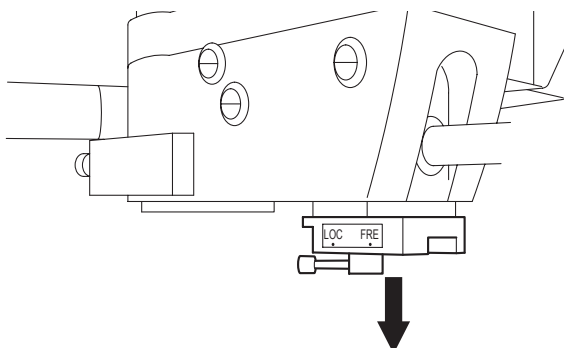
Sterilize the front lens in advance. Place it in the specified position right before operation.



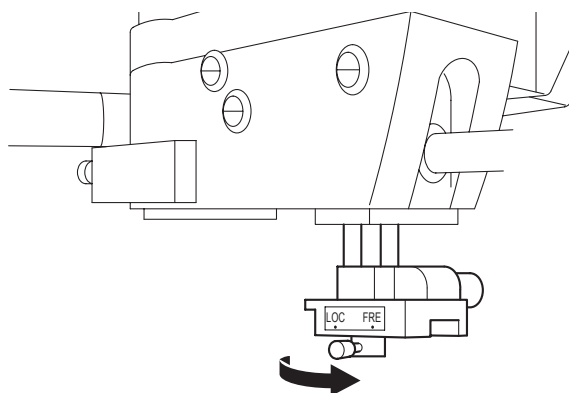
### **WARNING**

When installing the front lens unit, make sure that the front lens unit fixing lever is fixed securely at the LOC side. An injury may be caused by the front lens unit falling off.

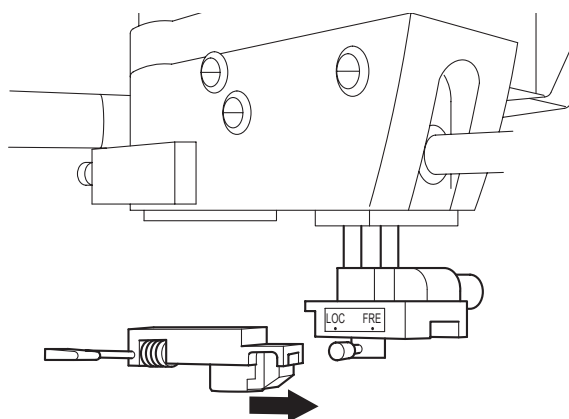
- 1 Move the front lens connecting unit down to prepare for connection.



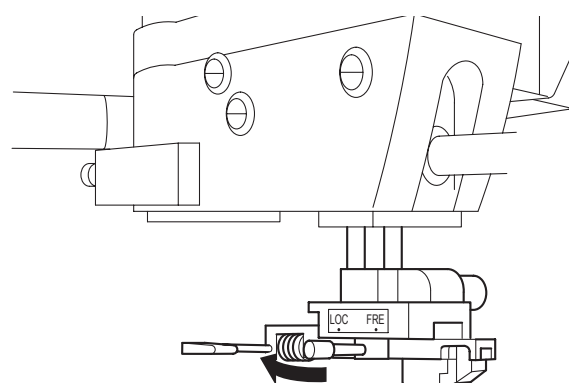
- 2** Place the front lens unit fixing lever at the FRE side in advance.



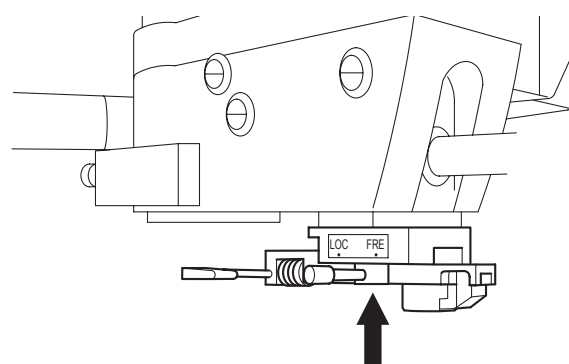
- 3** Insert the sterilized front lens unit in the slot. Push in the unit until it stops.



- 4** Place the front lens unit fixing lever at the LOC side and fix it there.



- 5** Move up the front lens unit and make sure that connection is carried out correctly.



# OPERATIONS IN USE







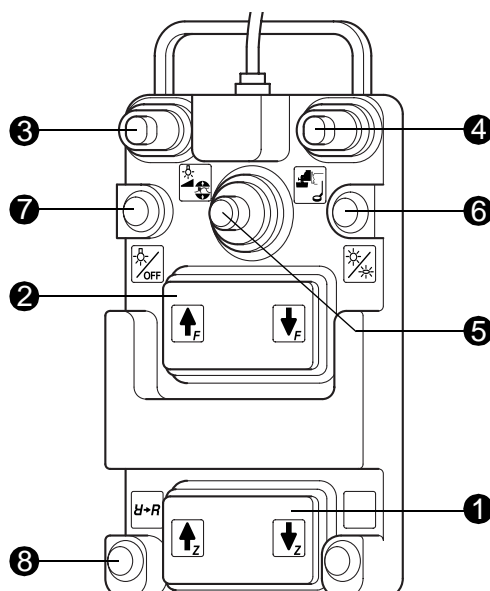
## WARNING

Make sure no-one is too close to the instrument before moving the arm. Anyone touching the instrument may be injured.

### OPERATION OF FOOT SWITCH: OFFISS

The following illustration displays the adjustment of the foot switch.





1	Zoom up/down switch		Adjusts the zoom magnification. Magnification can be changed continuously. Magnification is increased with  and is decreased with  .
2	Focus up/down switch		The focusing unit moves the microscope unit up and down in order to adjust the focus. The microscope can be moved up with  and down with  .
3	Illumination light intensity adjustment switch/ Variable illumination aperture switch	For normal use	Illumination light intensity adjustment : Move to the left to increase the light intensity. Move to the right to decrease the light intensity.
		For use with the front lens	Variable illumination aperture : Move to the left to set the illumination aperture at IN. Move it further to the left to move up the illumination aperture. Move to the right to move down the illumination aperture.
4	Rough focusing switch/ Front lens focusing switch	For normal use	Moves the microscope up and down. Move to the left to move up the microscope. Move to the right to move down the microscope.
		For use with the front lens	Moves the front lens up and down. Move to the left to move up the front lens. Move to the right to move down the front lens.
5	X-Y translator lever switch		Moves the microscope in the X and Y directions.
6	Illumination angle switch		The illumination is changed in the following order: +2° & -2° → +2° & +4° & -2° → Yellow filter → +2° & -2° ...
7	Illumination blinking switch		Turns on/off the illumination.
8	Inverter in/out switch		Set to in/out the inverter.

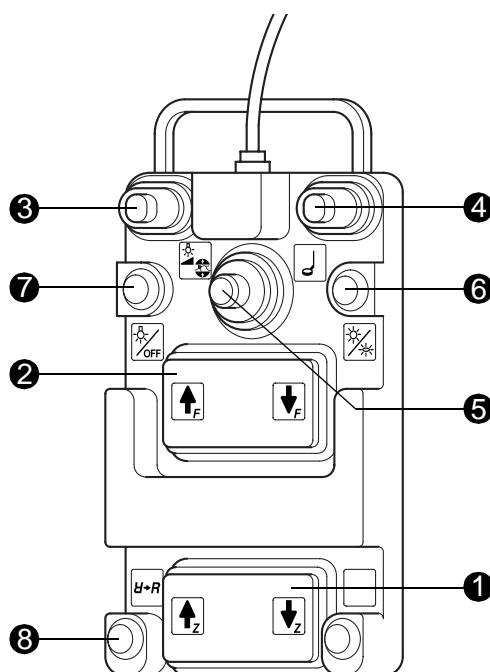


\* Adjustment for the shipping of the product.

## OPERATION OF FOOT SWITCH: OFFISS Lite

The following illustration displays the adjustment of the foot switch.





1	Zoom up/down switch		Adjusts the zoom magnification. Magnification can be changed continuously. Magnification is increased with  and is decreased with  .
2	Focus up/down switch		The focusing unit moves the microscope unit up and down in order to adjust the focus. The microscope can be moved up with  and down with  .
3	Illumination light intensity adjustment switch/ Variable illumination aperture switch	For normal use	Illumination light intensity adjustment : Move to the left to increase the light intensity. Move to the right to decrease the light intensity.
		For use with the front lens	Variable illumination aperture : Move to the left to set the illumination aperture at IN. Move it further to the left to move up the illumination aperture. Move to the right to move down the illumination aperture.
4	Front lens focusing switch	For normal use	Nothing is not moved.
		For use with the front lens	Moves the front lens up and down. Move to the left to move up the front lens. Move to the right to move down the front lens.
5	X-Y translator lever switch		Moves the microscope in the X and Y directions.
6	Illumination angle switch		The illumination is changed in the following order: +2° & -2° → +2° & +4° & -2° → Yellow filter → +2° & -2° ...
7	Illumination blinking switch		Turns on/off the illumination.
8	Inverter in/out switch		Set to in/out the inverter.

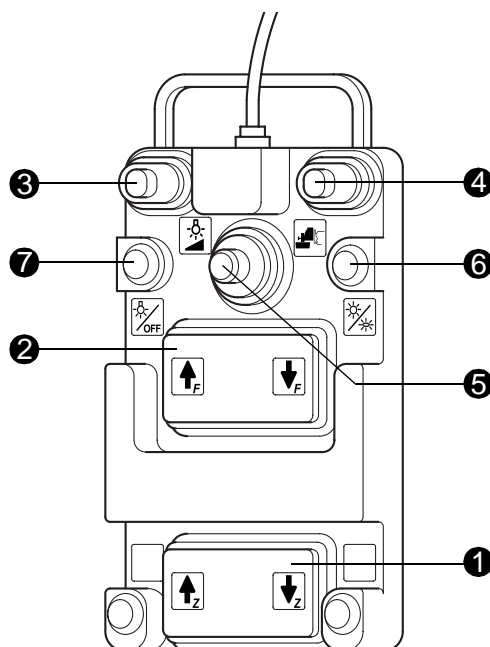


\* Adjustment for the shipping of the product.

## **OPERATION OF FOOT SWITCH: Pro**

The following illustration displays the adjustment of the foot switch.





1	Zoom up/down switch	Adjusts the zoom magnification. Magnification can be changed continuously. Magnification is increased with  and is decreased with  .
2	Focus up/down switch	The focusing unit moves the microscope unit up and down in order to adjust the focus. The microscope can be moved up with  and down with  .
3	Illumination light intensity adjustment switch	Move to the left to increase the light intensity. Move to the right to decrease the light intensity.
4	Rough focusing switch	Moves the microscope up and down. Move to the left to move up the microscope. Move to the right to move down the microscope.
5	X-Y translator lever switch	Moves the microscope in the X and Y directions.
6	Illumination angle switch	The illumination is changed in the following order: +2° & -2° → +2° & +4° & -2° → Yellow filter → +2° & -2° ...
7	Illumination blinking switch	Turns on/off the illumination.

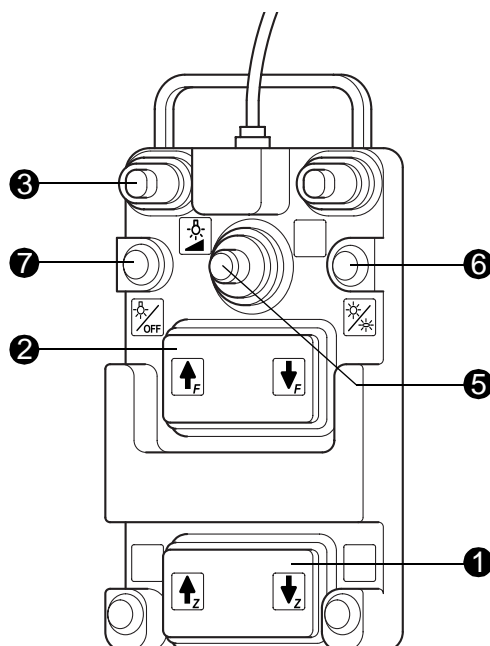


\* Adjustment for the shipping of the product.

## **OPERATION OF FOOT SWITCH: Pro Lite**

The following illustration displays the adjustment of the foot switch.





1	Zoom up/down switch	Adjusts the zoom magnification. Magnification can be changed continuously. Magnification is increased with  and is decreased with  .
2	Focus up/down switch	The focusing unit moves the microscope unit up and down in order to adjust the focus. The microscope can be moved up with  and down with  .
3	Illumination light intensity adjustment switch	Move to the left to increase the light intensity. Move to the right to decrease the light intensity.
5	X-Y translator lever switch	Moves the microscope in the X and Y directions.
6	Illumination angle switch	The illumination is changed in the following order: +2° & -2° → +2° & +4° & -2° → Yellow filter → +2° & -2° ...
7	Illumination blinking switch	Turns on/off the illumination.

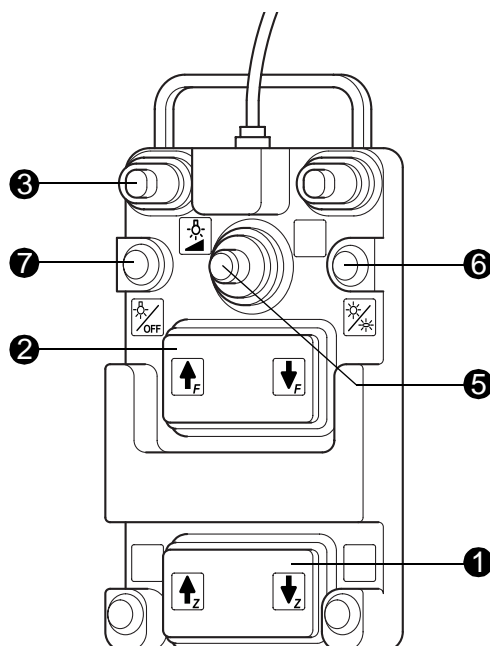


\* Adjustment for the shipping of the product.

## **OPERATION OF FOOT SWITCH: Standard**

The following illustration displays the adjustment of the foot switch.

1	Zoom up/down switch	Adjusts the zoom magnification. Magnification can be changed continuously. Magnification is increased with  and is decreased with  .
2	Focus up/down switch	The focusing unit moves the microscope unit up and down in order to adjust the focus. The microscope can be moved up with  and down with  .
3	Illumination light intensity adjustment switch	Move to the left to increase the light intensity. Move to the right to decrease the light intensity.
5	X-Y translator lever switch	Moves the microscope in the X and Y directions.
6	Illumination angle switch	The illumination is changed in the following order: +2° & -2° → +2° & +4° & -2° → Yellow filter → +2° & -2° ...
7	Illumination blinking switch	Turns on/off the illumination.

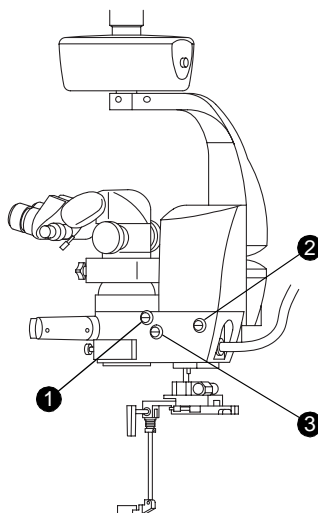


\* Adjustment for the shipping of the product.



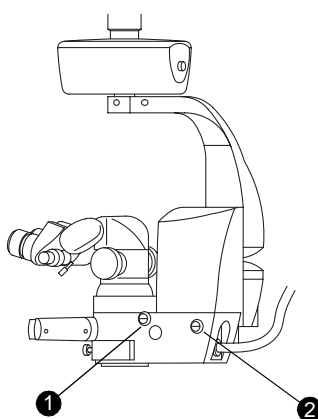
## **OPERATION OF MANUAL KNOBS: OFFISS, OFFISS Lite**

1	Zoom manual knob	If the zoom mechanism is not working, adjust the zoom manual knob (in an emergency) with a coin, etc.
2	Illumination angle manual knob	If the illumination angle change mechanism is not working, adjust the illumination angle manual knob (in an emergency) with a coin, etc.
3	Variable illumination aperture manual knob	If the variable illumination aperture is not working, adjust the variable illumination aperture manual knob (in an emergency) with a coin, etc.



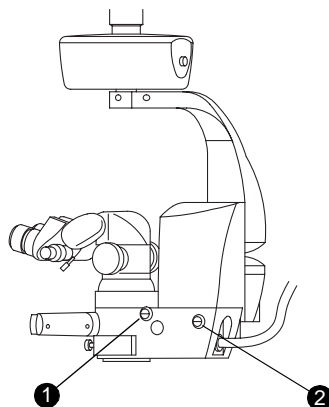
## **OPERATION OF MANUAL KNOBS: Pro, Pro Lite**

1	Zoom manual knob	If the zoom mechanism is not working, adjust the zoom manual knob (in an emergency) with a coin, etc.
2	Illumination angle manual knob	If the illumination angle change mechanism is not working, adjust the illumination angle manual knob (in an emergency) with a coin, etc.



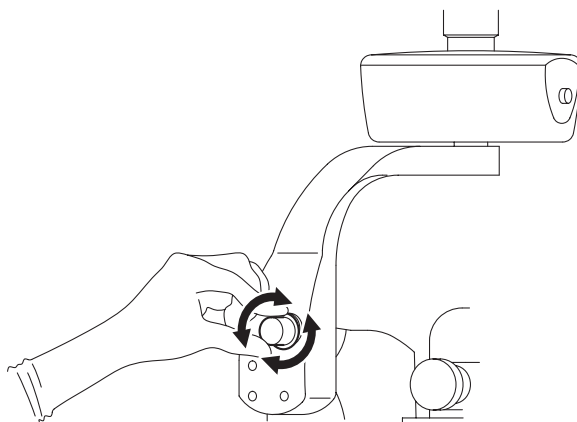
## **OPERATION OF MANUAL KNOBS: Standard**

1	Zoom manual knob	If the zoom mechanism is not working, adjust the zoom manual knob (in an emergency) with a coin, etc.
2	Illumination angle manual knob	If the illumination angle change mechanism is not working, adjust the illumination angle manual knob (in an emergency) with a coin, etc.

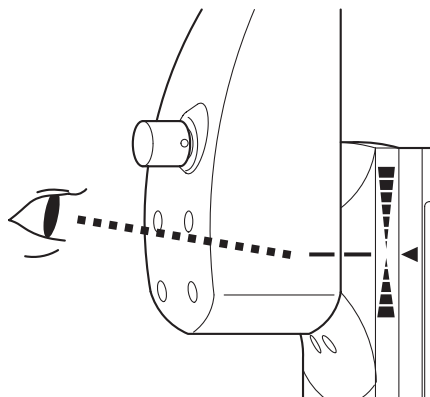


## **SETTING OF MICROSCOPE INCLINATION POSITION: Common**

- 1 Turn the optical unit inclination knob to adjust the forward/backward inclination angle.



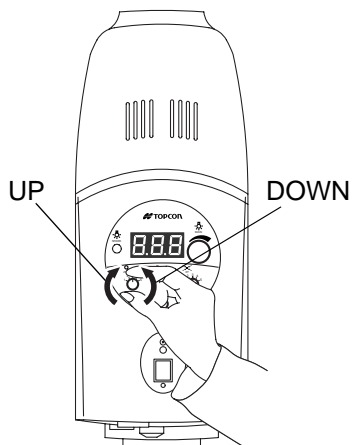
The microscope is in the vertical position when the lines on the side of the arm are aligned.



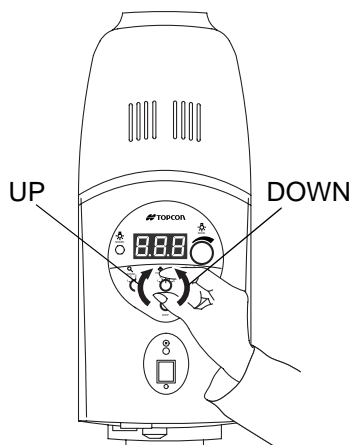
## **SPEED ADJUSTMENT OF ZOOM/FOCUS/X-Y TRANSLATOR: Common**

The zoom speed, focus speed and X-Y translator speed can be set individually.  
Each speed can be adjusted in five steps, 1~5.

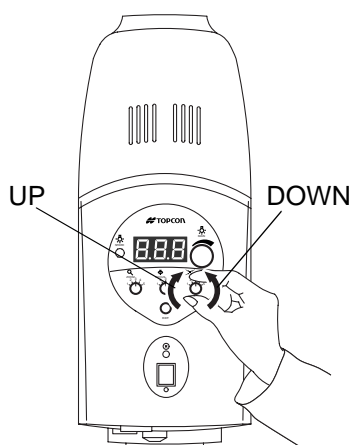
- 1** Adjust the zoom speed with the zoom speed knob.



- 2** Adjust the focus speed with the focusing unit speed knob.



- 3** Adjust the X-Y translator speed with the X-Y translator speed knob.



## **ADJUSTMENT OF FOCUS: OFFISS, OFFISS Lite, Pro, Pro Lite**

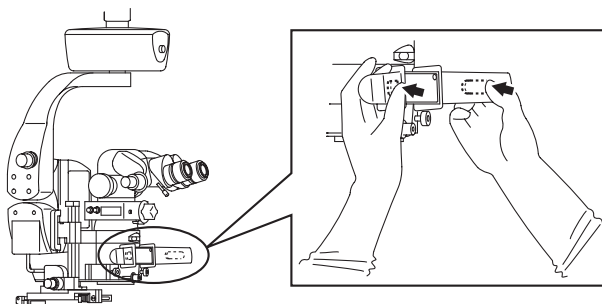
The illustration displays the OFFISS type.



### **WARNING**

Before using this instrument, adjust the balance of the 2nd arm. The 2nd arm may move up and down suddenly during an operation, causing an injury.

- 1** Hold the microscope operation handle and press the electromagnetic lock release switch. Then roughly adjust the focus.



- 2** Adjust the focus up and down gently with the focus up/down switch of the foot switch to obtain the correct focus.

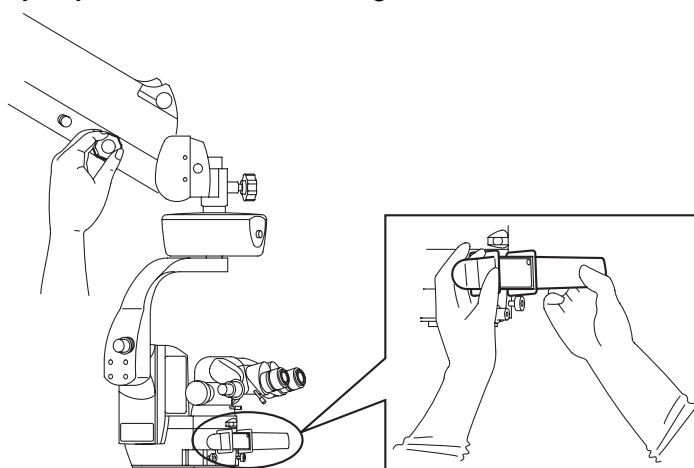
## **ADJUSTMENT OF FOCUS: Standard**



### **WARNING**

Before using this instrument, adjust the balance of the 2nd arm. The 2nd arm may move up and down suddenly during an operation, causing an injury.

- 1** When loosening the 2nd arm vertical movement fixing handle, hold the microscope operation handle and roughly adjust the focus. Then, tighten the 2nd arm vertical movement fixing handle.

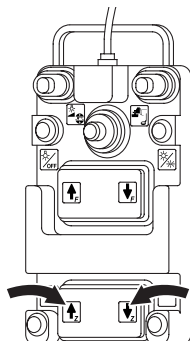


- 2** Adjust the focus up and down gently with the focus up/down switch of the foot switch to obtain the correct focus.

## **ADJUSTMENT OF ZOOM MAGNIFICATION: Common**

The illustration displays the OFFISS type.

- 1 Adjust the zoom magnification with the zoom up/down switch of the foot switch.



## **CHANGE OF ILLUMINATION ANGLE: OFFISS, OFFISS Lite**

The illustrations display the OFFISS type.

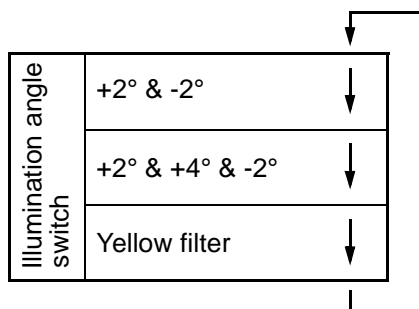
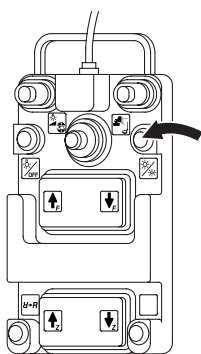


### **WARNING**

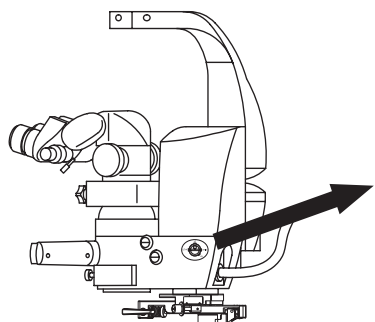
If you need to use the coaxial illumination during an ophthalmic operation, make sure you use the minimum illumination sufficient for the operation. Exposing the patient's retina to excessive light may lead to retinal trouble.

The illumination type can be changed by the illumination angle switch of the foot switch.

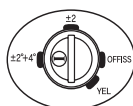
- 1 Press the illumination angle switch.
- 2 The illumination type is changed in the following order:  $+2^\circ$  &  $-2^\circ \rightarrow +2^\circ$  &  $+4^\circ$  &  $-2^\circ \rightarrow$  Yellow filter  $\rightarrow +2^\circ$  &  $-2^\circ \dots$



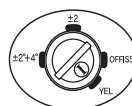
You can check the status of the illumination type against the position of the illumination angle manual knob on the side of the microscope.



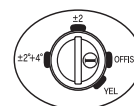
$+2^\circ$  &  $-2^\circ$



$+2^\circ$  &  $+4^\circ$  &  $-2^\circ$



Yellow filter



Use of front lens



Light intensity can be set for each illumination type ( $+2^\circ$  &  $-2^\circ$ / $+2^\circ$  &  $+4^\circ$  &  $-2^\circ$ /Yellow filter/Use of front lens). The following table shows the initial set values when the power is turned on.

Illumination type	Illumination light intensity value
$+2^\circ$ & $-2^\circ$	0.5
$+2^\circ$ & $+4^\circ$ & $-2^\circ$	0.3
Yellow filter	0.4
Use of front lens	0.4



The illumination angle cannot be changed by the foot switch if the front lens is being used (or after it has been removed). (Refer to "OPERATION OF THE FRONT LENS: OFFISS, OFFISS Lite" on P.70.)

## **CHANGE OF ILLUMINATION ANGLE: Pro, Pro Lite, Standard**

The illustrations display the Pro type.

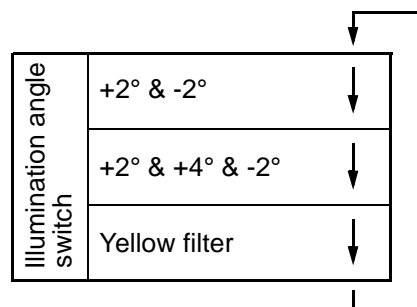
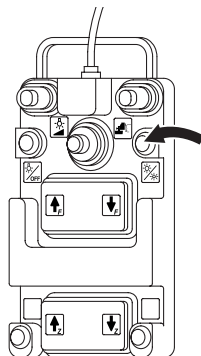


### **WARNING**

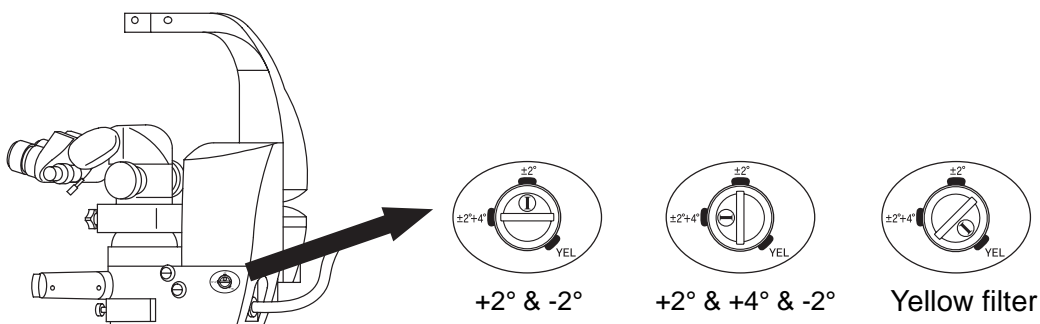
If you need to use the coaxial illumination during an ophthalmic operation, make sure you use the minimum illumination sufficient for the operation. Exposing the patient's retina to excessive light may lead to retinal trouble.

The illumination type can be changed by the illumination angle switch of the foot switch.

- 1** Press the illumination angle switch.
- 2** The illumination type is changed in the following order:  $+2^\circ$  &  $-2^\circ \rightarrow +2^\circ$  &  $+4^\circ$  &  $-2^\circ \rightarrow$  Yellow filter  $\rightarrow +2^\circ$  &  $-2^\circ \dots$



You can check the status of the illumination type against the position of the illumination angle manual knob on the side of the microscope.





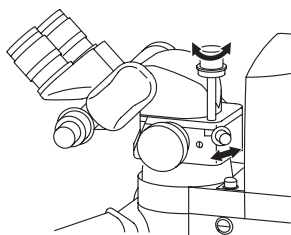
Light intensity can be set for each illumination type (+2° & -2°/+2° & +4° & -2°/Yellow filter). The following table shows the initial set values when the power is turned on.

Illumination type	Illumination light intensity value
+2° & -2°	0.5
+2° & +4° & -2°	0.3
Yellow filter	0.4

## **CHANGE OF SPECTRAL RATIO FOR BEAM SPLITTER: Common**







- Only in the type with changeable beam splitter

**1** Turn the spectral ratio knob or tilt the spectral ratio lever to the right or left, and the spectral ratio is changed.



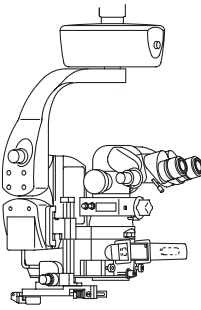
## **OPERATION OF THE FRONT LENS: OFFISS, OFFISS Lite**

The illustrations display the OFFISS type.

 <b>WARNING</b>	Hold the microscope operation handle while pressing the electromagnetic lock release switch to unlock it. The arm may rotate or move up and down suddenly, causing an injury.
 <b>WARNING</b>	Before setting the front lens, move the microscope at least 200mm upwards. Otherwise, the components may come into contact with each other and cause an injury.
 <b>WARNING</b>	Adjust the front lens and the treatment section, taking care not to hit the patient with the front lens. This could injure the patient.
 <b>WARNING</b>	Make sure that the front lens unit is securely attached to the optical unit after connecting the two. The front lens may move suddenly, causing an injury.
 <b>WARNING</b>	When setting/storing the front lens unit, make sure that the front lens unit fixing lever is fixed securely at the LOC side. An injury may be caused by the front lens unit falling off.
 <b>WARNING</b>	Before using this instrument, adjust the balance of the 2nd arm. The 2nd arm may move up and down suddenly during an operation, causing an injury.

## Setting the front lens

- 1 Hold the microscope operation handle and press the electromagnetic lock release switch. Then raise the microscope by approx. 200mm or more.



- 2 Turn the front lens IN/OUT lever clockwise to rotate the front lens toward the bottom of the objective lens. Then, take out the front lens.



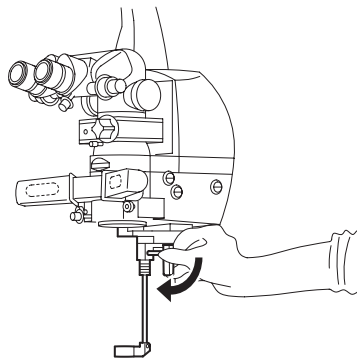
It is impossible to perform initialization (except X-Y translator) and to change the illumination angle. The variable illumination aperture is used instead of the illumination light intensity adjustment of the foot switch, and the front lens fine movement unit is used instead of the rough focusing unit. In OFFISS, the front lens fine movement unit is used instead of the rough focusing unit. In OFFISS Lite, it is possible to operate the front lens fine movement unit.



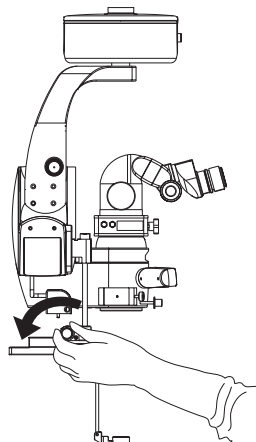
When observing the eye ground through the front lens, the illumination angle and light intensity are automatically changed to proper values.



The inverter is automatically set to IN and the IN indicator LED on its front surface lights up.



- 3 Turn the front lens connecting/disconnecting knob counterclockwise to move the front lens downward.





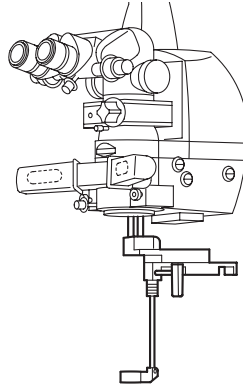
#### 4 Setting has been completed.



It is impossible to perform initialization (except X-Y translator), to change the illumination angle, to perform the rough focusing operation or to adjust the illumination light intensity with the foot switch.



It is possible to operate the variable illumination aperture and to perform the front lens focusing operation.

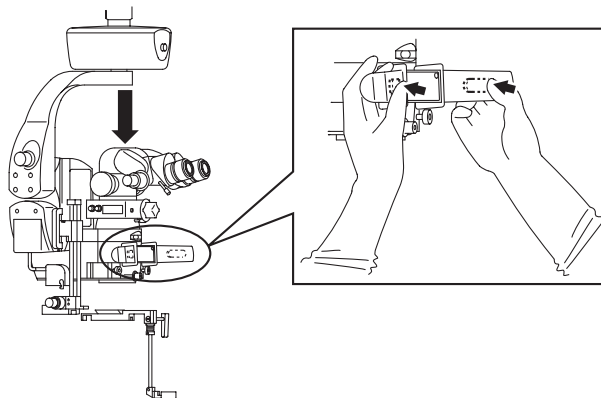


### Operating the front lens

- 1 Hold the microscope operation handle and press the electromagnetic lock release switch. Then adjust the microscope position to condense the illumination light on the surface of cornea.



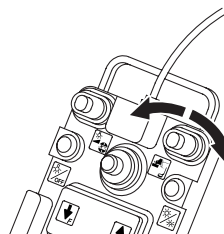
The distance between the cornea and the bottom of the front lens is approx. 20mm.



- 2 Let the illumination light enter through the center of cornea by using the X-Y translator lever switch.
- 3 If you see a flare (reflected light) in the observation visual field through the microscope, move the front lens up and down with the front lens focusing switch until the flare disappears. The flare may not disappear because of the difference between eyes or because of the IOL transplantation eye.



Operating the variable illumination aperture provides an observation image with better contrast and less flare. (Refer to "OPERATION OF THE VARIABLE ILLUMINATION APERTURE: OFFISS, OFFISS Lite" on P. 76.)



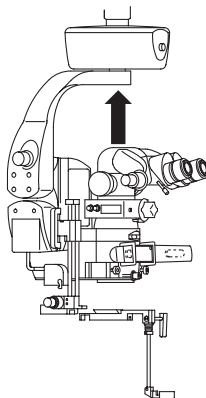
- 4** Bring the observation section into focus by operating the focus up/down switch.



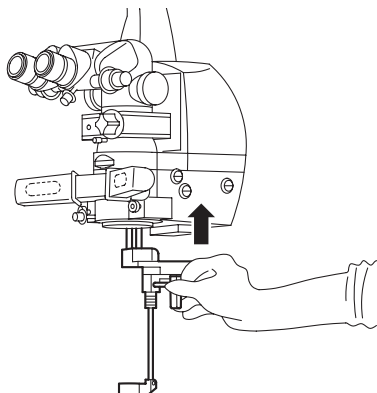
Adjusting the stereo variator to IN provides an acute stereo angle for binocular observation. This reduces the shading caused by the cornea, even for microcoria patients. (Refer to "OPERATION OF THE STEREO VARIATOR: OFFISS, OFFISS Lite" on P. 75.)

## Storing the front lens

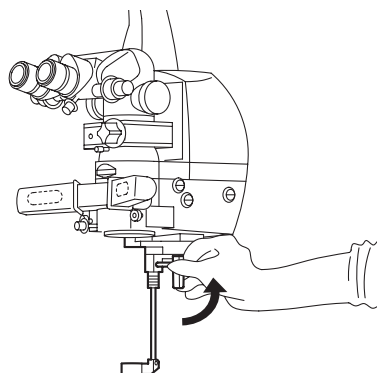
- 1** Hold the microscope operation handle and press the electromagnetic lock release switch. Then raise the microscope by 200mm or more.



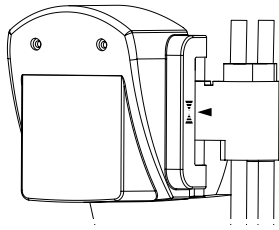
- 2** Move the front lens IN/OUT lever upward until it clicks and make sure that it is securely connected.



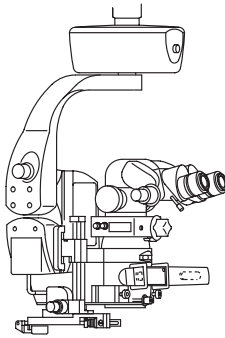
- 3** Turn the front lens counterclockwise to store it.



- 4** The front lens fine movement unit moves to the center automatically. The variable illumination aperture is automatically set to OUT. (Refer to "OPERATION OF THE VARIABLE ILLUMINATION APERTURE: OFFISS, OFFISS Lite" on P. 76.)



- 5** The front lens is in the stored condition.



- 6** The angle and light intensity of illumination are automatically reset to the last values before using the front lens.
- 7** The inverter is automatically set to OUT and the IN indicator LED on its front surface is turned off.
- 8** It is now possible to perform initialization, to change the illumination angle, to perform the rough focusing operation or to adjust the illumination light intensity with the foot switch.

## **OPERATION OF THE STEREO VARIATOR: OFFISS, OFFISS Lite**

Binocular observation of observing the eye ground through the front lens may be difficult, as the patient's cornea is small. In such a case, use the variator.

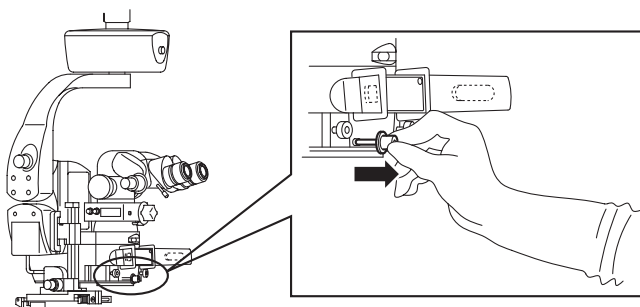
- 1** Move the stereo variator lever to the right to set the stereo variator to IN.



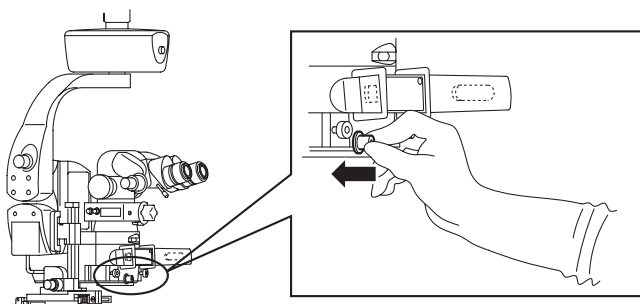
Adjusting the stereo variator to IN provides an acute stereo angle for binocular observation. This reduces the shading caused by the cornea, even for microcoria patients.



While the stereo variator is under the IN condition, the  $-2^\circ$  illumination cannot be used. When the front lens is not used, set the stereo variator to OUT.



- 2** Move the stereo variator lever to the left to set the stereo variator to OUT.



## **OPERATION OF THE VARIABLE ILLUMINATION APERTURE: OFFISS, OFFISS Lite**

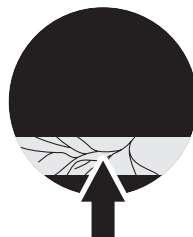
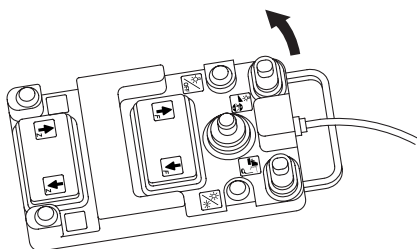


### **WARNING**

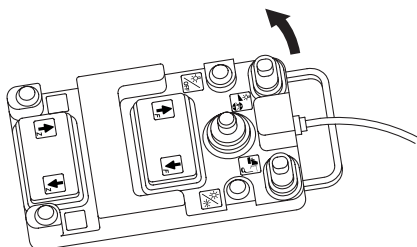
If you need to use the coaxial illumination during an ophthalmic operation, make sure you use the minimum illumination sufficient for the operation. Exposing the patient's retina to excessive light may lead to retinal trouble.

When observing the eye ground through the front lens, flare is reduced by using the variable illumination aperture.

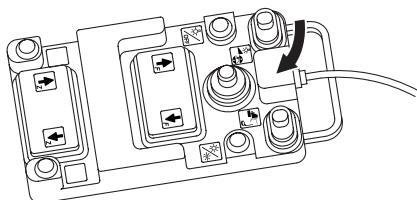
- 1** Move the variable illumination aperture switch to the left to set the illumination aperture to IN.



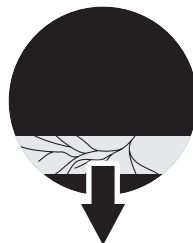
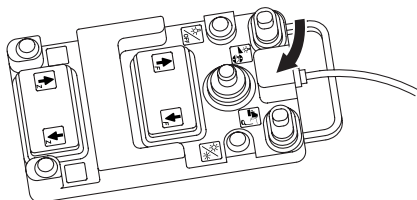
- 2** The illumination aperture moves up by moving the variable illumination aperture switch to the left.



- 3** The illumination aperture moves down by moving the variable illumination aperture switch to the right.



- 4** Moving the variable illumination aperture switch as far as possible to the right will set the illumination aperture to OUT at the lowest position. On the contrary, moving it as far as possible to the left will set the illumination aperture to OUT at the top position.



If the front lens is stored with the variable illumination aperture set to IN (with the illumination aperture appearing in the observation visual field), it will automatically go OUT (the aperture disappears from the observation visual field and the illumination light intensity can be adjusted). (Refer to "Storing the front lens" on P.73.)

## **HOW TO USE THE ANTERIOR EYE SECTION OBSERVATION LENS: OFFISS, OFFISS Lite**

Use this lens to observe the anterior eye section while the front lens is in use.

Sterilize the anterior eye section observation lens before operation.



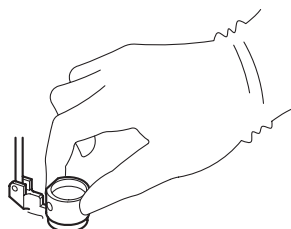
### **WARNING**

While the anterior eye section observation lens is in use, do not operate the front lens IN/OUT lever and the front lens connecting/disconnecting knob. The anterior eye section observation lens may fall off, causing an injury.

- 1** Set the D cut surface of the anterior eye section observation lens at the back and the engraved surface at the front. Then fit the anterior eye section observation lens onto the front lens.



Putting the anterior eye section observation lens on the front lens changes the observation focus position of the microscope from the eye ground to the anterior eye section.



## **HOW TO USE THE PERIPHERAL OBSERVATION PRISM: OFFISS, OFFISS Lite**

Use this prism to observe the periphery of the eye ground while the front lens is in use.

Sterilize the peripheral observation prism before operation.



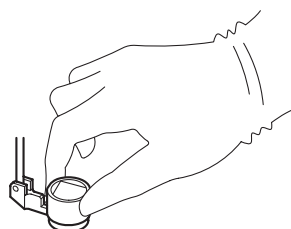
### **WARNING**

While the peripheral observation prism is in use, do not operate the front lens IN/OUT lever and the front lens connecting/disconnecting knob. The peripheral observation prism may fall off, causing an injury.


- 1** Fit the peripheral observation prism onto the front lens.

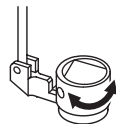


This greatly alters the condensing point of the illumination light just under the front lens.




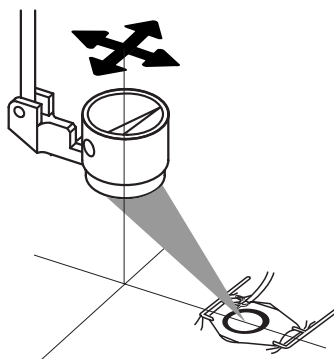
- 2** Turn the peripheral observation prism so that its slope surface direction is opposite to the direction of the periphery to be observed.

 Turning the peripheral observation prism greatly alters the condensing point of the illumination light emitted from the front lens.



- 3** Move the microscope horizontally with the X-Y translator so that the condensing point of the illumination light emitted from the front lens is aimed at the pupil of the patient's eye.

 For safety's sake, carry out the above adjustment watching the patient's eye directly, without using the microscope.

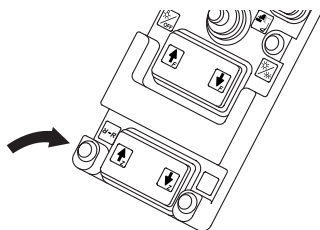


- 4** While watching the patient's eye through the microscope, remove flare (fine movement of the front lens) and perform focusing (focus up/down switch operation).
- 5** When you change the position of the periphery to be observed, also perform the above 2 ~ 4.

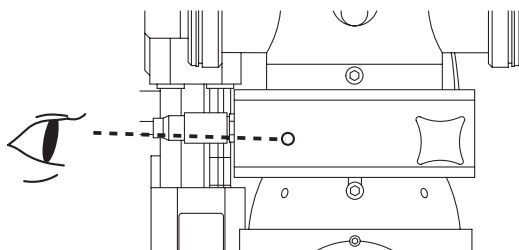
## **OPERATION OF INVERTER: OFFISS, OFFISS Lite**

You can set the inverter to IN/OUT with the inverter in/out switch of the foot switch regardless of the front lens status.




- 1** Press the inverter in/out switch of the foot switch.



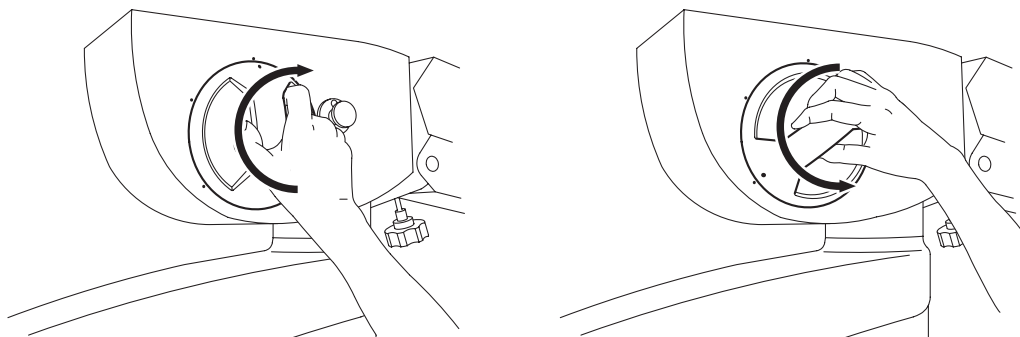
- 2** Each time the switch is pressed, the IN/OUT change is repeated. The IN indicator LED lights up for the inverter IN status and switches off for its OUT status.



## **REPLACING WITH THE SPARE LAMP: Common**

 <b>WARNING</b>	Use only the specified lamp. Otherwise, overheating may cause a fire.
 <b>CAUTION</b>	Handle the lamp house with care during and immediately following operation. The lamp house heats up while in operation and can cause burns.
 <b>CAUTION</b>	Do not open the instrument, as this may lead to an electric shock.
<b>NOTE</b>	Ask your distributor or the Topcon offices stated on the back cover to repair the instrument.

If the illumination lamp has burned out during operation, the spare lamp can be fitted easily by rotating the lamp house unit.

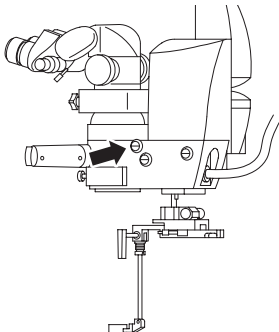
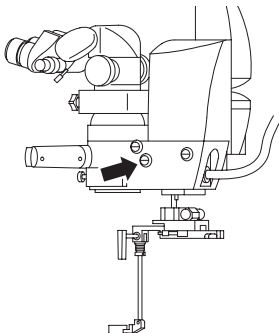

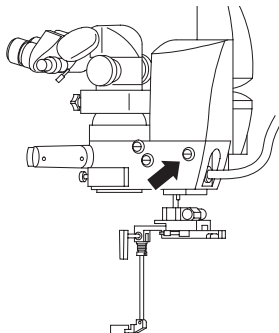


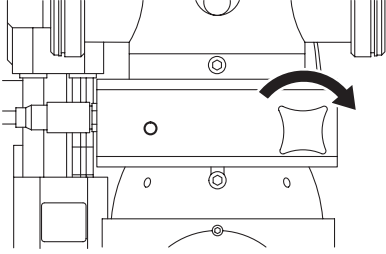
If either "LAMP A" or "LAMP B" has burned out, replace it with a new one. (Refer to "REPLACEMENT OF THE SPARE LAMP" on P.97 and "CONSUMABLE PARTS" on P.89~P.90.)



## **PROCEDURE IN EMERGENCY: OFFISS, OFFISS Lite**

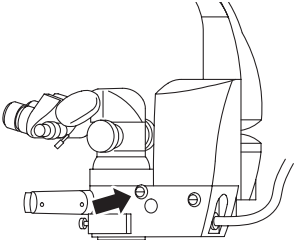

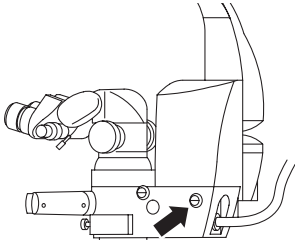
In an emergency, follow the check list below and contact your distributor. If you do not encounter your problem in the "Status" column, please contact your distributor.

<b>Status</b>	<b>Procedure</b>
Zoom mechanism does not work.	Adjust the zoom manual knob with a coin, etc.  A line drawing of the device's upper section. An arrow points to a small knob on the side of the main body, indicating where to adjust the zoom mechanism.
The variable illumination aperture switch does not work.	Adjust the variable illumination aperture manual knob with a coin, etc.  A line drawing of the device's upper section. An arrow points to a small knob on the side of the main body, indicating where to adjust the variable illumination aperture.
An error is displayed.	Press the EXIT switch on the 1st arm panel to reset.  A line drawing of the control panel. A hand is shown pressing a button labeled 'EXIT' located below a digital display and several indicator lights.
The focusing unit does not work.	Move the 2nd arm up and down for focusing.
Electromagnetic lock is not released.	Push each arm firmly to move it.
The illumination angle switch does not work.	Adjust the illumination angle manual knob with a coin, etc.  A line drawing of the device's upper section. An arrow points to a small knob on the side of the main body, indicating where to adjust the illumination angle.

Status	Procedure
The inverter does not work.	<p>The manual IN/OUT knob (with sterilized cap) is located on the front of the inverter. Turn this knob clockwise to the “click” position.</p> 

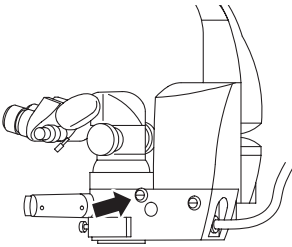

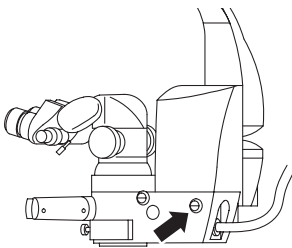
## **PROCEDURE IN EMERGENCY: Pro, Pro Lite**

In an emergency, follow the check list below and contact your distributor. If you do not encounter your problem in the "Status" column, please contact your distributor.

Status	Procedure
Zoom mechanism does not work.	<p>Adjust the zoom manual knob with a coin, etc.</p> 
An error is displayed.	<p>Press the EXIT switch on the 1st arm panel to reset.</p> 
The focusing unit does not work.	<p>Move the 2nd arm up and down for focusing.</p>
Electromagnetic lock is not released.	<p>Push each arm firmly to move it.</p>
The illumination angle switch does not work.	<p>Adjust the illumination angle manual knob with a coin, etc.</p> 

## **PROCEDURE IN EMERGENCY: Standard**

In an emergency, follow the check list below and contact your distributor. If you do not encounter your problem in the "Status" column, please contact your distributor.

Status	Procedure
Zoom mechanism does not work.	Adjust the zoom manual knob with a coin, etc.  
An error is displayed.	Press the EXIT switch on the 1st arm panel to reset.  
The focusing unit does not work.	Move the 2nd arm up and down for focusing.
The illumination angle switch does not work.	Adjust the illumination angle manual knob with a coin, etc.  

## AFTER USE



### WARNING

Make sure no-one is too close to the instrument before moving the arm. Anyone touching the instrument may be injured.

### AFTER USE: Common

**1** Turn off the power switch.

**2** Remove the power plug from the power outlet.

**3** Carry out cleaning.



Refer to "CLEANING THE OBJECTIVE LENS / THE EYEPIECE LENS" on P.101.



Refer to "CLEANING THE FRONT LENS STORING UNIT" on P.101.



Refer to "CLEANING OTHERS EXCEPT OPTICAL SYSTEM" on P.102.

## MOVING AND STORING: OFFISS, OFFISS Lite, Pro, Pro Lite



### WARNING

Before moving the instrument, make sure that no-one is near. Then, move it carefully. Injury could be caused by the instrument touching anything.



### WARNING

Hold the microscope operation handle while pressing the electromagnetic lock release switch to unlock it. The arm may rotate or move up and down suddenly, causing an injury.



### CAUTION

Take care when moving this instrument through a door or in a room with a low ceiling. If the top of this instrument collides with something, it could break.



### CAUTION

Watch out for devices, beds, walls, etc. in the room. If the instrument collides with anything, serious breakage could result.



### CAUTION

Watch out for stairs and uneven floors. This instrument may tip over.



### CAUTION

Watch out for slopes. Due to its increased speed, the instrument may get away from you on a slope.



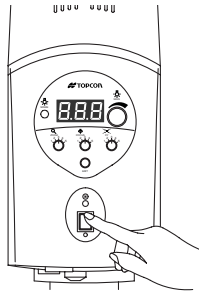
### CAUTION

Do not install this instrument on an incline. This may cause it to move unexpectedly.

Please carry out the following procedures for the moving and storing of this instrument.

**1** Connect the power plug to the power outlet.

**2** Turn on the power switch.

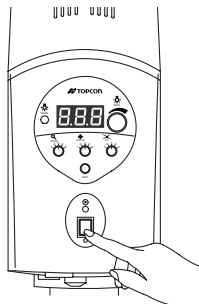


**3** Press the electromagnetic lock release switch and move the 1st and 2nd arms so as not to hinder storing.



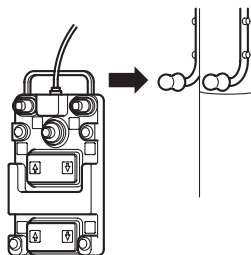
The 2nd arm can be fixed at the lower limit position by setting the 2nd arm lower limit lock. (Refer to "LOCKING/UNLOCKING THE 2ND ARM LOWER LIMIT: OFFISS, OFFISS Lite, Pro, Pro Lite" on P.48.)

**4** Turn off the power switch.



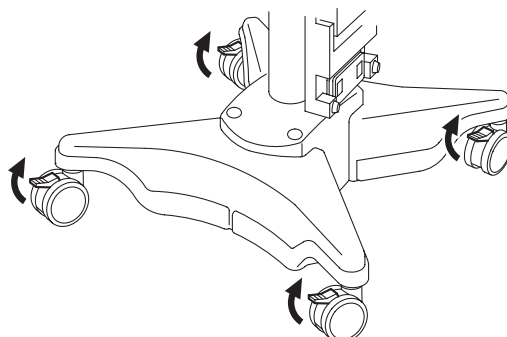
**5** Remove the power plug from the power outlet.

**6** Hang the foot switch on the foot switch hanger.

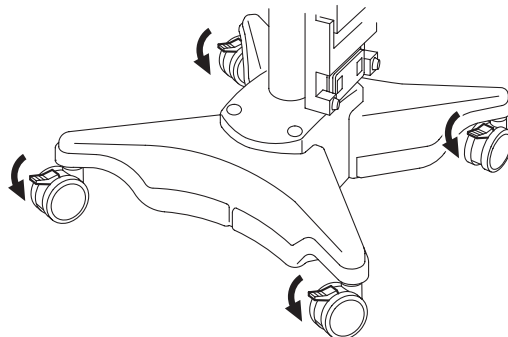


**7** Hang the foot switch cord and the power cord on the cord hanger.








**8** Raise the caster lock lever to unlock.



- 9** Hold the base movement handle and move the instrument gently.
- 10** Lower the caster lock lever to lock it when reaching the destination or storing place.



## MOVING AND STORING: Standard

 <b>WARNING</b>	Before moving the instrument, make sure that no-one is near. Then, move it carefully. Injury could be caused by the instrument touching anything.
 <b>WARNING</b>	Always hold the microscope operation handle when loosening either the 2nd arm vertical movement fixing handle, the 2nd arm rotation fixing handle or the 1st arm rotation fixing handle. The arm may rotate or move up and down suddenly, causing an injury.
 <b>CAUTION</b>	Take care when moving this instrument through a door or in a room with a low ceiling. If the top of this instrument collides with something, it could break.
 <b>CAUTION</b>	Watch out for devices, beds, walls, etc. in the room. If the instrument collides with anything, serious breakage could result.
 <b>CAUTION</b>	Watch out for stairs and uneven floors. This instrument may tip over.
 <b>CAUTION</b>	Watch out for slopes. Due to its increased speed, the instrument may get away from you on a slope.
 <b>CAUTION</b>	Do not install this instrument on an incline. This may cause it to move unexpectedly.

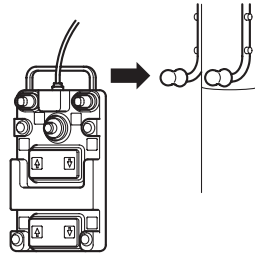
Please carry out the following procedures when moving and storing this instrument.

- 1** Loosen the 2nd arm vertical movement fixing handle, the 2nd arm rotation fixing handle and the 1st arm rotation fixing handle. Move the 1st and 2nd arms so as not to hinder storing and then tighten and fix them.



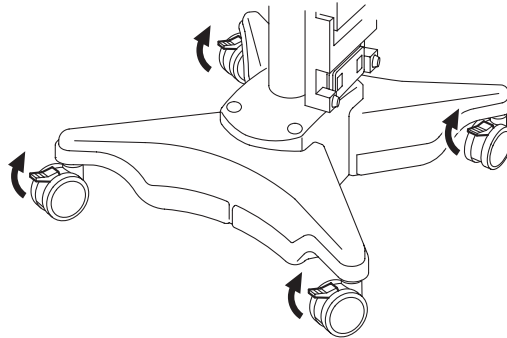
The 2nd arm can be fixed at the lower limit position by setting the 2nd arm lower limit lock. (Refer to "LOCKING/UNLOCKING THE 2ND ARM LOWER LIMIT: Standard" on P.50.)

- 2** Hang the foot switch on the foot switch hanger.



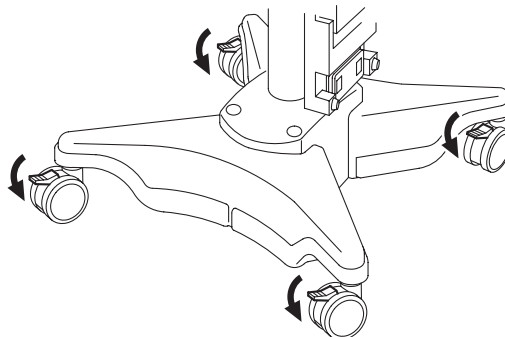
- 3** Hang the foot switch cord and the power cord on the cord hanger.

- 4** Raise the caster lock lever to unlock.



- 5** Hold the base movement handle and move the instrument gently.

- 6** Lower the caster lock lever to lock it when reaching the destination or storing place.



# TROUBLESHOOTING

## TROUBLESHOOTING GUIDE



### CAUTION

The lamp is still hot just after turning off the illumination. Therefore, use heat-resistant gloves, etc. to replace a lamp. Otherwise, you may be burned.

If there seems to be a malfunction, first check the cause, following the steps in the check-list below. If the problem cannot be resolved or the malfunction is not listed in the "Problem" section of the check-list, contact your distributor.

### Check-list

Problem	Possible causes	Remedy	Reference page
The spare lamp indicator light is blinking on the panel.	The spare lamp has burned out or has not been installed.	Replace the spare lamp or install a new one.	33, 97
The illumination lamp does not light up.	The light intensity is adjusted to "0".	Adjust the illumination light intensity as required.	55
	The input power plug is not connected to the power outlet.	Connect the power plug to the power outlet securely.	—
	The power switch is not ON (or at "I" position).	Put the power switch ON (or "I").	—
	The illumination lamp has burned out.	Replace the illumination lamp.	33, 97
	The terminal screw is not tightened securely.	Re-tighten the terminal screw.	97
	The circuit breaker is in operation.	Reset the end of the circuit breaker as before.	98
	The illumination blinking switch of the foot switch is switched to OFF.	Press the illumination blinking switch of the foot switch again.	59, 60, 61 62, 63
	LAMP A has not been completely changed over to LAMP B.	Turn the lamp house unit correctly to change it.	33, 79, 97
	The lamp house unit has not been fully pushed into the instrument.	Push in the lamp house unit until it fits snugly.	33, 97
The image remains out of focus, even after focusing.	The weight of the 2nd arm vertical movement is not balanced.	Adjust the balance with the 2nd arm balance adjustment handle.	41
The illumination field is uneven (shade) or dark.	The lamp has not been inserted correctly.	Insert it correctly.	97
	The specified lamp has not been used.	Replace the lamp with the specified lamp.	97
The initial switch does not work except for the X-Y translator.	The instrument is in the front lens use ready condition (disconnected or take-out condition).	Store the front lens.	46, 47, 70 72, 73
The light cannot be adjusted with the illumination light intensity adjustment switch of the foot switch.	The instrument is in the front lens use ready condition (disconnected or take-out condition).	Store the front lens. Adjust the light on the 1st arm panel.	55, 56, 57 72, 73
The illumination angle cannot be changed.	The instrument is in the front lens use ready condition (disconnected or take-out condition).	Store the front lens.	68, 69, 70



## **ERROR CODES**

<b>Code</b>	<b>Error</b>	<b>Cause</b>		<b>Remedy</b>
E1	Centering error	"NG" of centering is detected for one of ZOOM, FOCUS and vertical rough movement.	OFFISS Pro	Press the EXIT switch on the panel.
		"NG" of centering is detected for ZOOM or FOCUS.	Standard	
E2	Illumination angle changing error	Zero position detection error of illumination angle change	OFFISS Pro Standard	
E4	Front lens initializing error	"NG" of initializing is detected for front lens fine movement or variable illumination aperture.	OFFISS	Press the EXIT switch on the panel.
EP	EEPROM error	Data reading of EEPROM is not good.	OFFISS Pro Standard	
LP	Lamp house error	The lamp position detection switch is not functioning properly or the lamp house has not been set correctly.	OFFISS Pro Standard	
FE	Fan error	The fan has stopped. If the instrument continues to operate after the fan has stopped, the power supply may malfunction within about 1 hour.	OFFISS Pro Standard	

**1** Press the EXIT switch on the panel, and the error code is canceled.

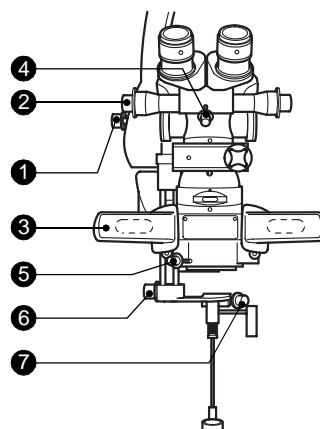


An error code is canceled by pressing the EXIT switch. Write the error details of the error code and contact your distributor.

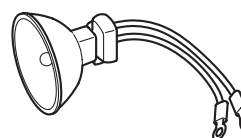
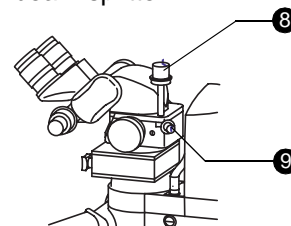
## CONSUMABLE PARTS: OFFISS, OFFISS Lite

The sterilized cap and the specified lamp are consumable parts. Order them from your distributor or the Topcon offices stated on the back cover.

Sterilized cap		Q'ty	Parts No.
Type A	① Optical unit inclination knob	1	455201059
	② Pupillary distance adjustment knob	2	
	⑥ Front lens connecting/disconnecting knob	1	
	⑧ Spectral ratio knob of changeable beam splitter	1	
Type B	③ Microscope operation handle	2	455464004
Type C	④ Observation angle handle	1	457951018
	⑤ Stereo variator lever	1	
	⑦ Front lens unit fixing lever	1	
	⑨ Spectral ratio lever of changeable beam splitter	1	
Lamp			Parts No.
Halogen lamp, 12V, 100W, Philips Type 6834			Lamp 456254021 Socket 4562671200



Type with changeable beam splitter

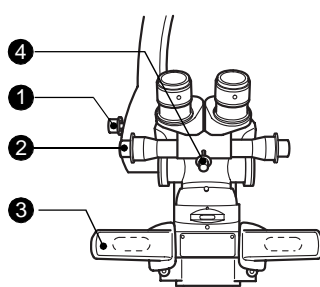


\* ⑧ and ⑨ are attached to only the type equipped with the changeable beam splitter.

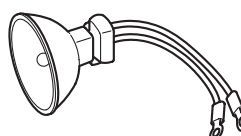
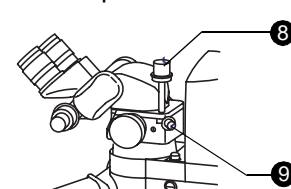
## CONSUMABLE PARTS: Pro, Pro Lite

The sterilized cap and the specified lamp are consumable parts. Order them from your distributor or the Topcon offices stated on the back cover.

Sterilized cap		Q'ty	Parts No.
Type A	① Optical unit inclination knob	1	455201059
	② Pupillary distance adjustment knob	2	
	⑧ Spectral ratio knob of changeable beam splitter	1	
Type B	③ Microscope operation handle	2	455464004
Type C	④ Observation angle handle	1	457951018
	⑨ Spectral ratio lever of changeable beam splitter	1	
Lamp			Parts No.
Halogen lamp, 12V, 100W, Philips Type 6834			Lamp 456254021 Socket 4562671200



Type with changeable beam splitter

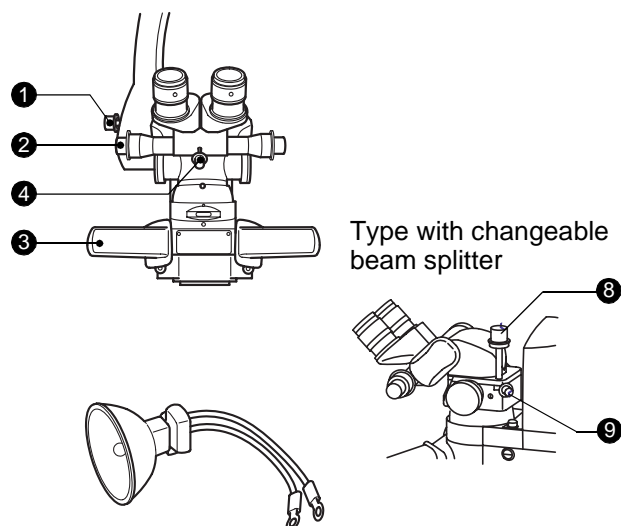


\* ⑧ and ⑨ are attached to only the type equipped with the changeable beam splitter.

## CONSUMABLE PARTS: Standard

The sterilized cap and the specified lamp are consumable parts. Order them from your distributor or the Topcon offices stated on the back cover.

Sterilized cap		Q'ty	Parts No.
Type A	① Optical unit inclination knob	1	455201059
	② Pupillary distance adjustment knob	2	
	⑧ Spectral ratio knob of changeable beam splitter	1	
Type B	③ Microscope operation handle	2	455464004
Type C	④ Observation angle handle	1	457951018
	⑨ Spectral ratio lever of changeable beam splitter	1	
Lamp			Parts No.
Halogen lamp, 12V, 100W, Philips Type 6834			Lamp 456254021 Socket 4562671200



\* ⑧ and ⑨ are attached to only the type equipped with the changeable beam splitter.

# SPECIFICATIONS

## **BASIC SPECIFICATIONS: Common**

Item	Description
Microscope type	Galileo type
Magnification change type	Electric zoom continuous change
Eyepiece (Eyepiece magnification)	12.5×
Objective lens	f = 200mm
Display magnification (×)	4.2/5/6/7/8/9/10/11/13/15/17/19/21
Total magnification (×)	4.2 ~ 21×
1st arm length (Distance between shafts)	375mm
1st arm rotation range	300°
2nd arm length (Distance between shafts)	990mm : OFFISS, Pro 875mm : OFFISS Lite, Pro Lite, Standard
2nd arm rotation range	300°
2nd arm vertical movement range	600mm
2nd arm mounting weight	6 ~18kg : OFFISS, Pro 9 ~21kg : OFFISS Lite, Pro Lite, Standard

\* Subject to change in specifications and appearance for future improvement without advance notice.

## **ELECTROMAGNETIC COMPATIBILITY**

This instrument complies with IEC60601-1-2: 2001.

- a) MEDICAL ELECTRICAL EQUIPMENT needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in the ACCOMPANYING DOCUMENTS.
- b) Portable and mobile RF communications equipment can affect MEDICAL ELECTRICAL EQUIPMENT.
- c) The use of ACCESSORIES, transducers and cables other than those specified, with the exception of transducers and cables sold by the manufacturer of the EQUIPMENT or SYSTEM as replacement parts for internal components, may result in increased EMISSIONS or decreased IMMUNITY of the EQUIPMENT or SYSTEM.
- d) The EQUIPMENT or SYSTEM should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, the EQUIPMENT or SYSTEM should be observed to verify normal operation in the configuration in which it will be used.
- e) The use of the ACCESSORY, transducer or cable with EQUIPMENT and SYSTEMS other than those specified may result in increased EMISSION or decreased IMMUNITY of the EQUIPMENT or SYSTEM.

Inverter	4582610000 MS-IN01-BU
Cable	4582615100 INV CABLE

### **Guidance and manufacturer's declaration - electromagnetic emissions**

The OMS-800 is intended for use in the electromagnetic environment specified below.  
The customer or the user of the OMS-800 should assure that it is used in such an environment.

<b>Emissions test</b>	<b>Compliance</b>	<b>Electromagnetic environment - guidance</b>
RF emissions CISPR 11	Group 1	The OMS-800 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.  The OMS-800 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.
RF emissions CISPR 11	Class A	
Harmonic emissions IEC61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC61000-3-3	Complies	

## Guidance and manufacturer's declaration - electromagnetic immunity


The OMS-800 is intended for use in the electromagnetic environment specified below.  
The customer or the user of the OMS-800 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	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 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%.
Electrical fast transient/burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines	± 2 kV for power supply lines ± 1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV differential mode ± 2 kV common mode	± 1 kV differential mode ± 2 kV common 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% $U_t$ (>95% dip in $U_t$ ) for 0, 5 cycle 40% $U_t$ (60% dip in $U_t$ ) for 5 cycles 70% $U_t$ (30% dip in $U_t$ ) for 25 cycles <5% $U_t$ (>95% dip in $U_t$ ) for 5 sec	<5% $U_t$ (>95% dip in $U_t$ ) for 0, 5 cycle 40% $U_t$ (60% dip in $U_t$ ) for 5 cycles 70% $U_t$ (30% dip in $U_t$ ) for 25 cycles <5% $U_t$ (>95% dip in $U_t$ ) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user or the OMS-800 requires continued operation during power mains interruptions, it is recommended that the OMS-800 be powered from an uninterruptible power supply or 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.

NOTE  $U_t$  is the a.c. mains voltage prior to application of the test level.

## Guidance and manufacturer's declaration - electromagnetic immunity

The OMS-800 is intended for use in the electromagnetic environment specified below.  
The customer or the user of the OMS-800 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	3 Vrms 150kHz to 80MHz	3 V	Portable and mobile RF communications equipment should be used no closer to any part of the OMS-800, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.  Recommended separation distance $d = 1.2 \sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80MHz to 2, 5GHz	3 V/m	$d = 1.2 \sqrt{P}$ 80MHz to 800MHz $d = 2.3 \sqrt{P}$ 800MHz to 2, 5GHz  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 meters (m).  Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, <sup>a</sup> should be less than the compliance level in each frequency range. <sup>b</sup>  Interference may occur in the vicinity of equipment marked with the following symbol:  

NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, 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 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 OMS-800 is used exceeds the applicable RF compliance level above, the OMS-800 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the OMS-800.

b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

## Recommended separation distance between portable and mobile RF communications equipment and the OMS-800

The OMS-800 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the OMS-800 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the OMS-800 as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150kHz to 80MHz $d = 1.2 \sqrt{P}$	80MHz to 800MHz $d = 1.2 \sqrt{P}$	800MHz to 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 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.

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

## **ELECTRIC RATING**

Power supply voltage : AC100V~120V, 220~240V, 50/60Hz

Power supply input : 280VA

## **CLASSIFICATION**

- The type of protection against electric shock: Class I equipment  
This instrument is classified as Class I. Class I equipment does not depend only on basic insulation against electric shock. It contains a mechanism that connects with the protective grounding system of the facilities, so that the metal parts with which you come into contact cannot electrify you if the basic insulation malfunctions.
- The degree of protection against water damage: IPX0 (Main body), IPX8 (Foot switch)
- The mode of operation: Continuous operation



## **DIMENSIONS AND WEIGHT**

Dimensions: Base (Base unit): 715 (W) × 715mm (D)

Base (Total height): 1,865mm

Weight: 250kg: OFFISS  
247kg: OFFISS Lite  
247kg: Pro  
244kg: Pro Lite  
244kg: Standard

## **PURPOSE OF USE**




Microscope to be used for operation, treatment or observation

## **OPERATION PRINCIPLE**



The illuminator lights the section to be observed. The binocular real-image microscope magnifies the section to enable observation.

# MAINTENANCE AND INSPECTION: Common

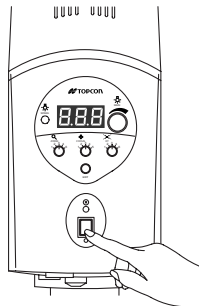
## REPLACEMENT OF THE SPARE LAMP


 <b>WARNING</b>	Use only the specified lamp. Otherwise, overheating may cause a fire.
 <b>CAUTION</b>	Handle the lamp house with care during and immediately following operation. The lamp house heats up while in operation and can cause burns.
 <b>CAUTION</b>	The lamp is still hot just after turning off the illumination. Therefore, use heat-resistant gloves, etc. to replace a lamp. Otherwise, you may be burned.
<b>NOTE</b>	Turn the lamp house unit until it stops with a "Click".

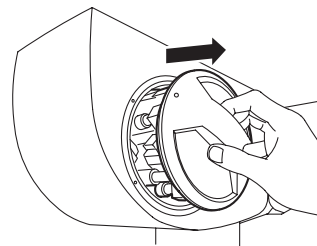
Use the spare lamp to replace a burned-out lamp after operation following the steps below.



If LAMP A  or LAMP B  has burned out, replace the burned-out lamp with a new one following the steps below.

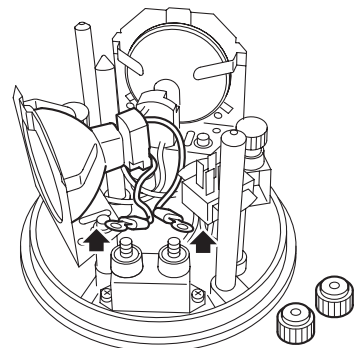
- 1** Turn off (○) the power switch.



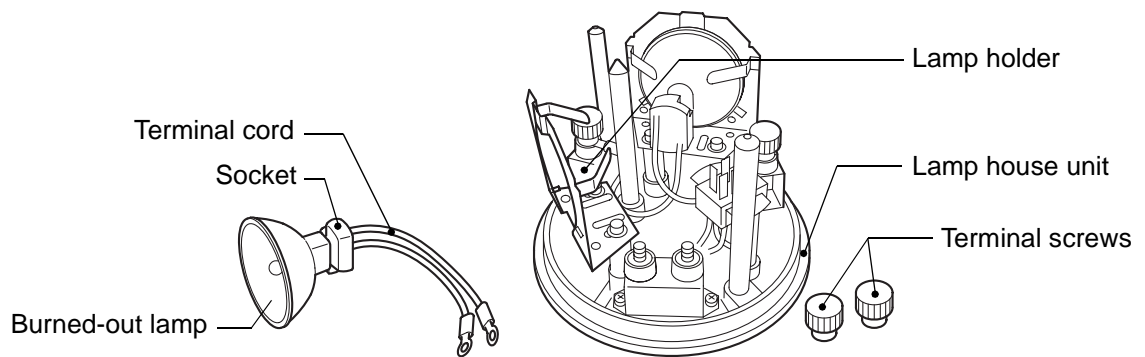
- 2** Turn the lamp house unit and set it at the  position. Then pull the lamp house unit forward.



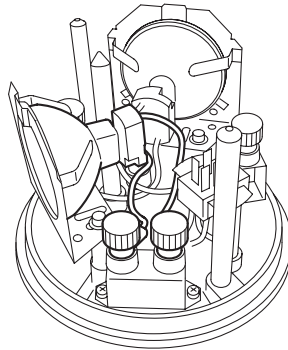
- 3** The lamp house unit has two lamps ( and ). Remove the terminal screws and terminal cord from socket of the burned-out lamp.



- 4** Remove the burned-out lamp (with socket and terminal cord) from the lamp holder.

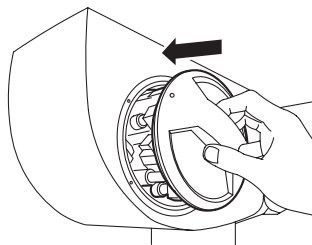


- 5** Replace with a new lamp and socket by reversing Step **4** → **3**.



- 6** Replace the lamp house unit in its original position.

Insert the three guide pins of the lamp house unit into the guide hole on the instrument, to fix the unit index in the  $\leftrightarrow$  position. Then return the lamp house unit to the A or B position.



Make sure that the new lamp lights up.



The new lamp can now be considered as the spare lamp.



The lamp is a consumable part. Contact your distributor or the Topcon offices stated on the back cover to order the lamp. (Refer to "CONSUMABLE PARTS" on P.89~P.90.)

## **OPERATING THE CIRCUIT BREAKER**



### **CAUTION**

Do not open the instrument, as this may lead to an electric shock.

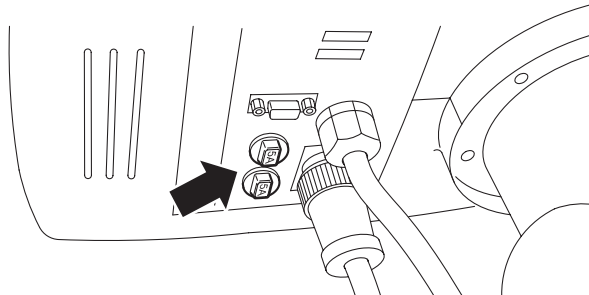
**NOTE**

If the circuit breaker does not operate after resetting, the instrument may have a problem. Contact your distributor or the Topcon offices stated on the back cover.

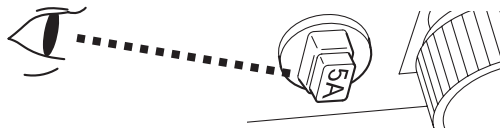
**NOTE**

Even if the instrument operates normally after resetting the circuit breaker, contact your distributor or the Topcon offices stated on the back cover.

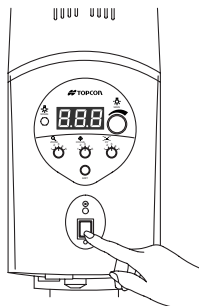
The capacity of the circuit breaker on the primary side is 5A. "5A" is indicated at the center.



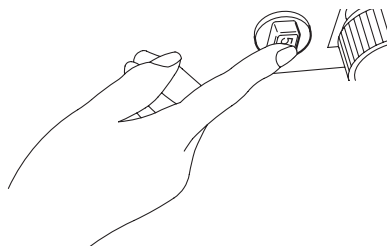
- 1** When the circuit breaker is operating, make sure that the breaker end pops out.



- 2** Turn off the power switch.



- 3** Push in the circuit breaker end.



- 4** Turn on the power switch again.



## **CHECKING THE POWER OUTLET**

Check the power outlet where this instrument is used.

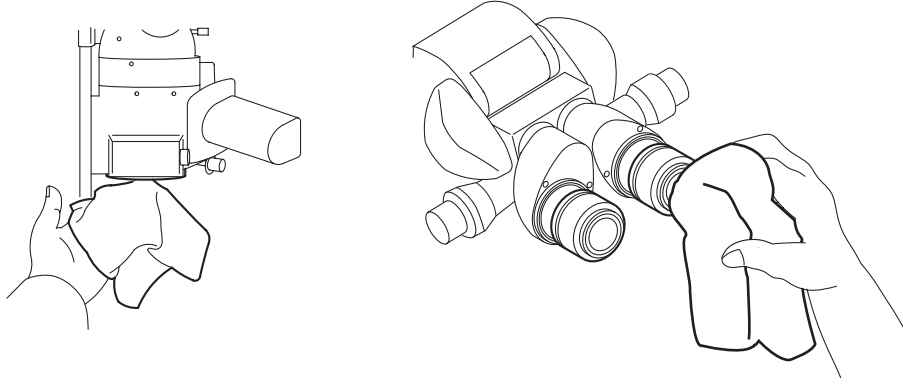
<b>NOTE</b>	Connect the plug to the protective grounding unit.
<b>NOTE</b>	A 2-pole earth plug is used in this instrument. Check that the power outlet is correct.
<b>NOTE</b>	If there is no 2-pole earth outlet, ask an electrician to ground it.

## **CHECKING INPUT VOLTAGE**

Make sure that the proper input voltage is available before plugging the power cable into the wall-outlet. The proper voltage is shown on the rating plate.

## **CLEANING THE OBJECTIVE LENS / THE EYEPiece LENS**

Clean the objective lens / the eyepiece lens as follows if they are dirty.



- 1** Dampen a soft cloth with sterilizing alcohol and wipe off the dust from the objective lens / the eyepiece lens.
- 2** Wipe the objective lens / the eyepiece lens with a dry soft cloth.



A special coating has been applied to the objective lens / the eyepiece lens to ensure simple cleaning, without special methods.

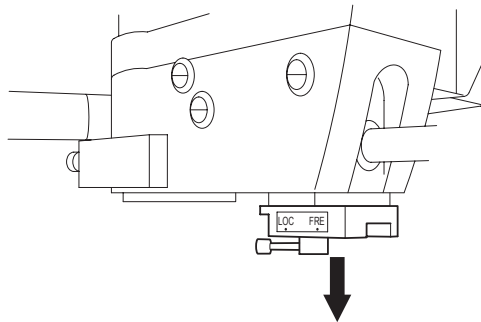
## **CLEANING THE FRONT LENS STORING UNIT: OFFISS, OFFISS Lite**

If the front lens storing unit is stained, clean it.

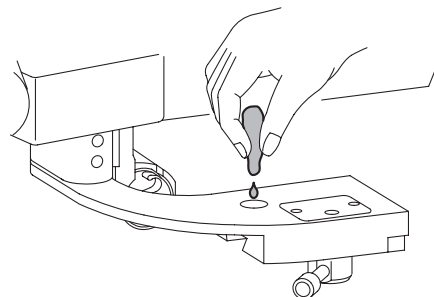


If you stain the front lens storing unit with the physiological saline solution, etc. as it is, the "used/unused" status of the front lens may not be detected normally.

- 1** Turn the front lens connecting/disconnecting knob counterclockwise to lower the front lens connecting unit downward.



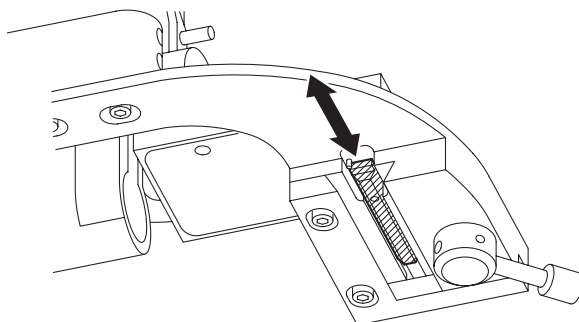
- 2** Fully dampen the gauze with sterilizing alcohol and wring out the cotton above the hole on the top surface of the front lens connecting unit to pour the sterilizing alcohol into the hole.



- 3** Push the front of the shutter section (shadowed section as shown below) on the bottom of the front lens storing unit with your finger and move the section forwards and backwards about five times to remove the stain. Then, wipe the front lens storing unit with a dry cloth.



If you clean the front lens storing unit by pouring sterilizing alcohol as mentioned above, the cleaning will have a greater effect.



## **CLEANING THE REST APART FROM THE OPTICAL SYSTEM**



### **CAUTION**

Do not use a strong cleaning agent, etc. This may damage the instrument.

### **NOTE**

Wipe the instrument with a damp cloth.

### **NOTE**

To remove the sticky substances from the instrument, use a diluted neutral cleanser.

### **NOTE**

Do not use a strong cleaning agent, etc.

## **ENSURING THE SAFETY WORK**






### **CAUTION**

Do not open the instrument, as this may lead to an electric shock.

### **NOTE**

Ask your distributor or the Topcon offices stated on the back cover to repair the instrument.

## DAILY CHECK



 <b>WARNING</b>	Before using this instrument, make sure that the handles, levers, knobs and rings with red marks are securely tightened. Any of these falling off could cause injury or even death.
 <b>WARNING</b>	Before using this instrument, adjust the balance of the 2nd arm. The 2nd arm may move up and down suddenly during an operation, causing an injury.
 <b>WARNING</b>	Make sure no error code is displayed in the light intensity display window. If errors are displayed, the instrument may not operate normally, causing problems during an operation.
<b>NOTE</b>	Make sure that the 2nd arm is balanced correctly.
<b>NOTE</b>	Make sure that the spare lamp lights up.
<b>NOTE</b>	Make sure that the foot switch connector is connected to the root of the 1st arm.
<b>NOTE</b>	Make sure that the circuit breaker is operating normally.
<b>NOTE</b>	Make sure that the caster is locked and the instrument is securely fixed.

**1** Check the instrument before using it.



If the instrument displays problems or abnormal actions, do not use it and check it against the "TROUBLESHOOTING" list on P.87.

## DISPOSITION

 <b>WARNING</b>	The gas spring in the 2nd arm contains high-pressure gas. Do not disassemble the 2nd arm or expose it to fire. You may be injured.
 <b>CAUTION</b>	Do not open the instrument, as this may lead to an electric shock.

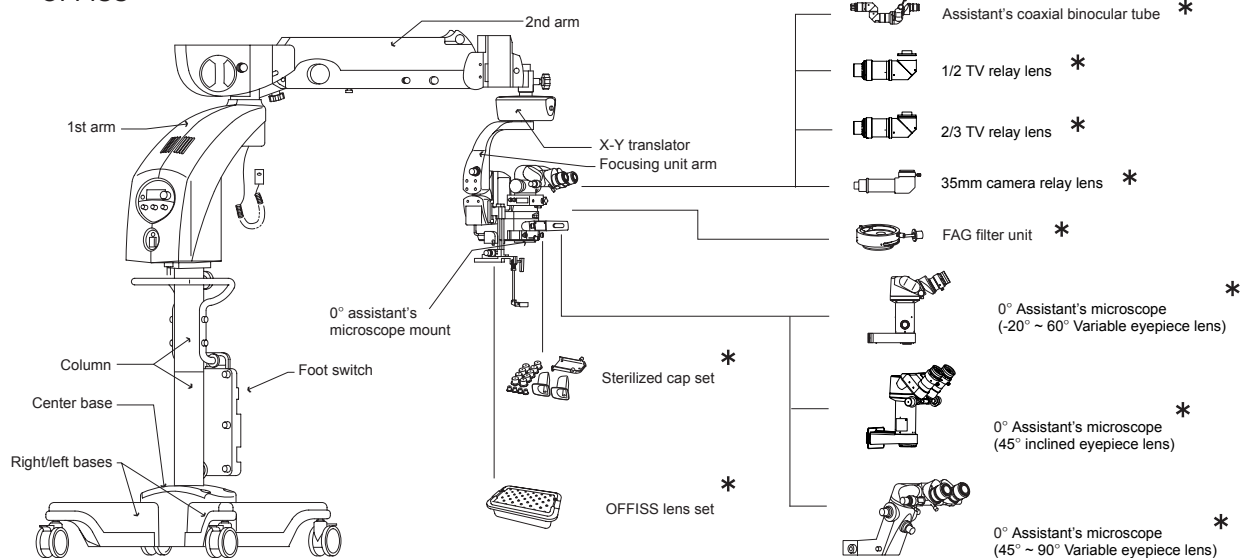


For the disposal of this instrument and consumable parts, contact a waste disposer or call your distributor or the Topcon offices stated on the back cover.

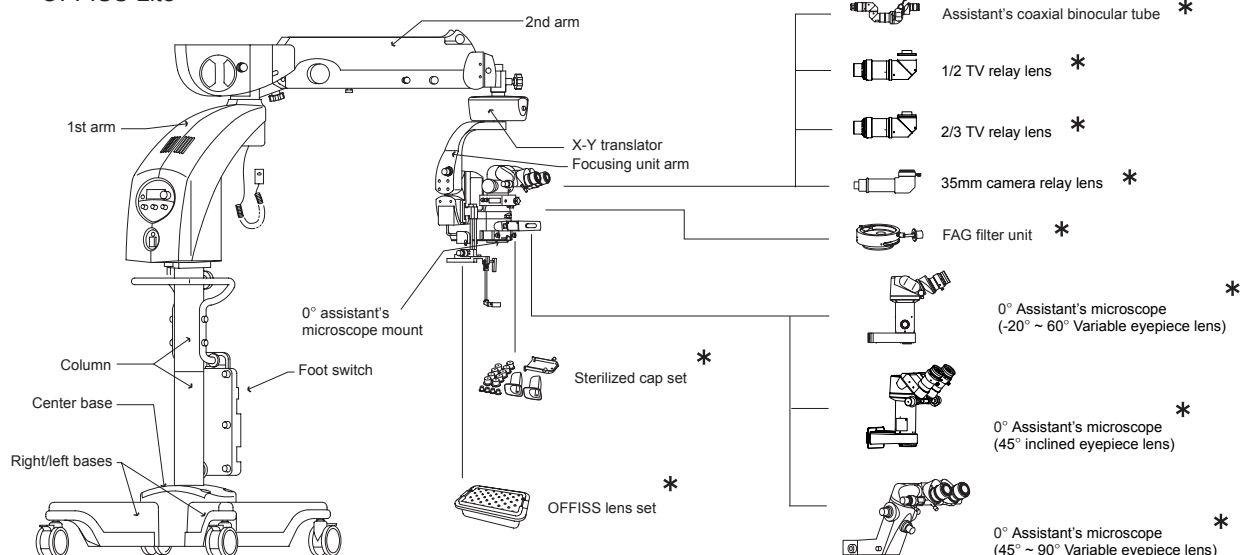


# SYSTEM OUTLINE

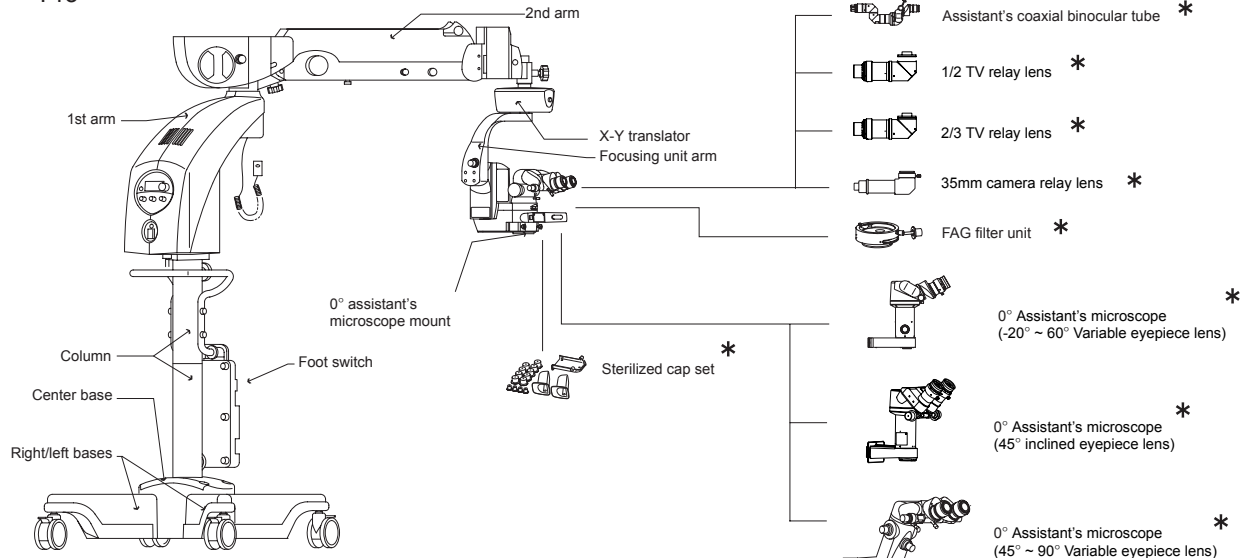
## OFFISS



## OFFISS Lite

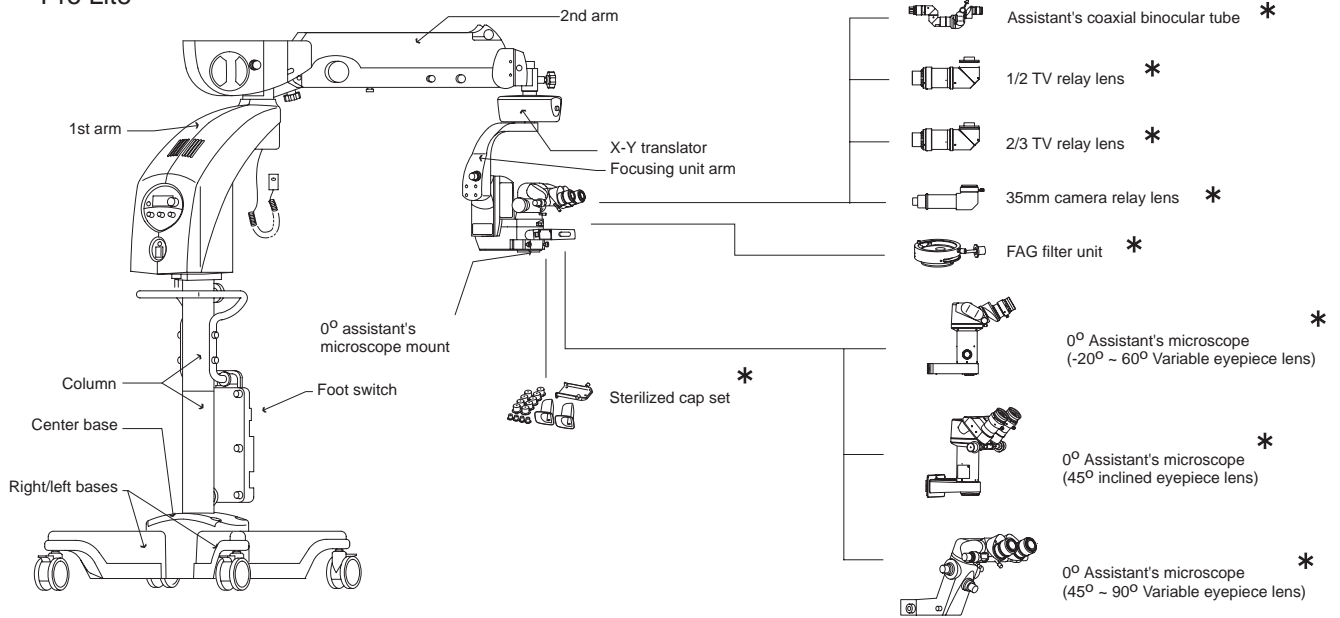


## Pro

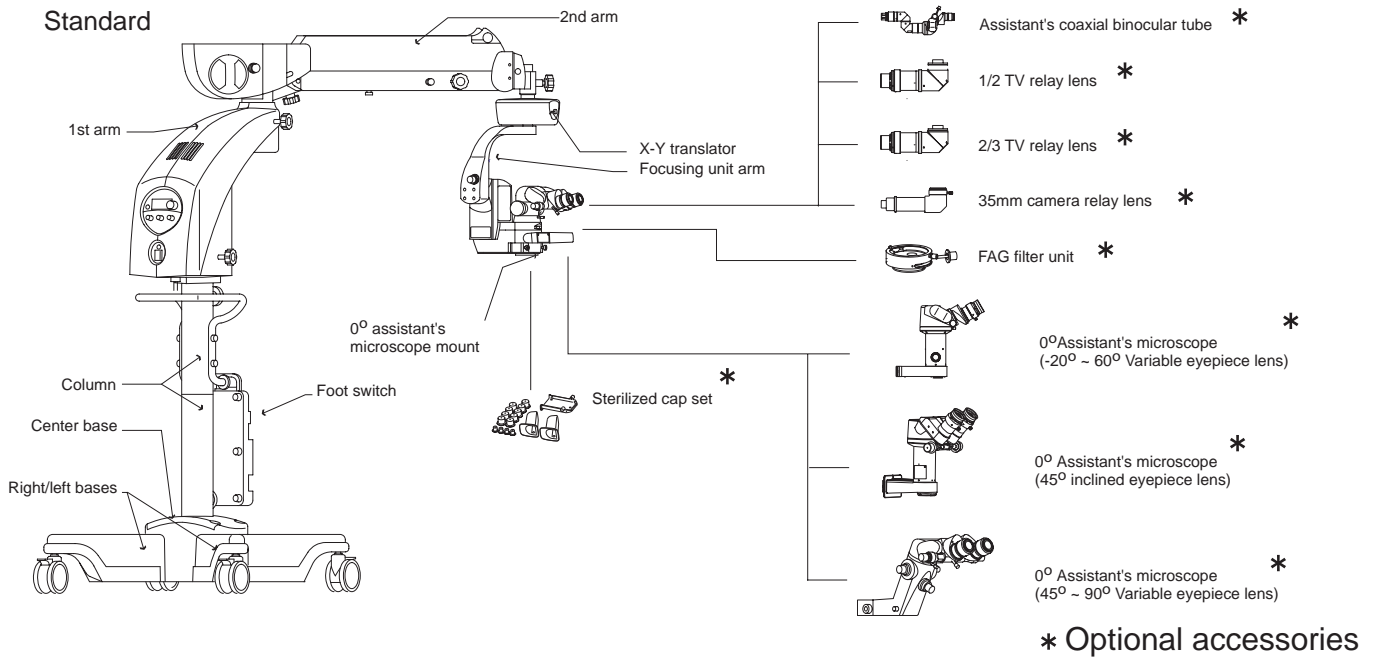


\* Optional accessories

## Pro Lite



## Standard



## **PERMITTED WEIGHT FOR ACCESSORIES TO BE INSTALLED**

<b>Type</b>	<b>Allowable weight</b>
OFFISS	4.8kg(4.4kg)
OFFISS Lite	7.9kg(7.5kg)
Pro	6.4kg(6.1kg)
Pro Lite	9.5kg(9.2kg)
Standard	9.9kg(9.6kg)

\*( ) shows the weight for the type with the changeable beam splitter.

## **WEIGHT OF OPTIONAL ACCESSORIES**

<b>Name</b>	<b>Weight</b>
0° Assistant's microscope (45°~90° Variable eyepiece lens)	2.32kg
0° Assistant's microscope (45° inclined eyepiece lens)	2.08kg
0° Assistant's microscope (-20°~60° Variable eyepiece lens)	1.83kg
2/3 TV relay lens	0.67kg
1/2 TV relay lens	0.67kg
35mm camera relay lens	0.32kg
Assistant's coaxial binocular tube	2.41kg
FAG filter unit	0.15kg

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Please specify the following when contacting us re questions about this operation microscope.

- Model name: OMS-800
  - Serial No.: Marked on the rating nameplate.
  - Period of use: Please inform us of the date of purchase.
  - Defective condition: Please provide us with as much detail as possible.
- 

OPERATION MICROSCOPE OMS-800

INSTRUCTION MANUAL

2004 version (2004.10-50TH②)

Date of issue: October 1, 2004

Published by TOPCON CORPORATION

75-1 Hasunuma-cho, Itabashi-ku, Tokyo, 174-8580 Japan.

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# OPERATION MICROSCOPE

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## OMS-800

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### TOPCON MEDICAL SYSTEMS, INC

37 West Century Road, Paramus, New Jersey 07652, U.S.A. Phone: 201-261-9450 Fax: 201-387-2710 www.topcon.com

### TOPCON CANADA INC.

110 Provencher Avenue, Boisbriand, QC J7G 1N1 CANADA Phone: 450-430-7771 Fax: 450-430-6457 www.topcon.ca

### TOPCON EUROPE B.V.

(European Representative)

Essebaan 11, 2908 LJ Capelle a/d IJssel, THE NETHERLANDS Phone: 010-4585077 Fax: 010-4585045 www.topconeurope.com

ITALY OFFICE: Via Montalcone 39, 20092 Cinisello B. mo (MI) ITALY Phone: 02-61-25-583 Fax: 02-61-25-927

### TOPCON DEUTSCHLAND G.m.b.H.

Giesslerallee 31-33 D-47877 Willich GERMANY Phone: 02154-8850 Fax: 02154-885111 www.topcon.de Med@topcon.de

### TOPCON ESPAÑA S.A.

HEAD OFFICE: Frederic Mompou 5, ED. Euro 3, 08960, Sant Just Desvern Barcelona, SPAIN Phone: 93-4734057 Fax: 93-4733932 www.topconesp.com

MADRID OFFICE: Avenida Burgos, 16E, 1° 28036, Madrid, SPAIN Phone: 91-302-4129 Fax: 91-383-3890

### TOPCON S.A.R.L.

89, rue de Paris 92585 Clichy, Cedex, FRANCE Phone: 01-4106-9494 Fax: 01-4739-0251

### TOPCON SCANDINAVIA A.B.

Neogatan 2 S-43151 Mölndal, SWEDEN Phone: 031-7109200 Fax: 031-7109249 info@topcon.se

### TOPCON (GREAT BRITAIN) LTD.

Topcon House, Kennet Side, Bone Lane, Newbury, Berkshire RG14 5PX United Kingdom Phone: 01635-551120 Fax: 01635-551170

### TOPCON SOUTH ASIA PTE.LTD.

Blk 192 Pandan Loop, #07-01 Pantech Industrial Complex, SINGAPORE 128381 Phone: 62780222 Fax: 62733540 www.topcon.com.sg

### TOPCON INSTRUMENTS (MALAYSIA) SDN.BHD.

Excella Business Park Block C, 1st Floor, Jalan Ampang Putra, Taman Ampang Hillir, 55100 Kuala Lumpur, MALAYSIA Phone: 03-42701192 Fax: 03-42704508

### TOPCON INSTRUMENTS (THAILAND) CO.,LTD.

77/162 Sinn Sathorn Tower, 37th Fl., Krungdhonburi Rd., Klongtongsai, Klongsarn, Bangkok 10600, THAILAND Phone: 440-1152-7 Fax: 440-1158

### TOPCON AUSTRALIA PTY.LTD.

Unit 18, 4 Avenue of Americas Newington NSW 2127 AUSTRALIA Phone: 02-8748-8777 Fax: 02-9647-2926 www.topcon.com.au

### TOPCON KOREA CORPORATION

2F Yooseoung Bldg., 1595-3, Seocho-Dong, Seocho-Gu, Seoul, 137-876 KOREA Phone: 02-2055-0321 Fax: 02-2055-0319 www.topcon.co.kr

### TOPCON OPTICAL (H.K.) LTD.

2/F., Meeco Industrial Bldg., No.53-55 Au Pui Wan Street, Fo Tan Road, Shatin, N.T., Hong Kong Phone: 2690-1328 Fax: 2690-2221 E-mail: sales@topcon.com.hk

### TOPCON CORPORATION BEIJING OFFICE

1070 Poly Plaza Building, 14 Dongzhimen Nandajie Dongcheng District, Beijing, 100027, CHINA Phone: 10-6501-4191 Fax: 10-6501-4190

### TOPCON CORPORATION BEIRUT OFFICE

P.O.Box 70-1002 Antelias, BEIRUT-LEBANON Phone: 961-4-523525/523526 Fax: 961-4-521119

### TOPCON CORPORATION DUBAI OFFICE

C/O Atlas Medical FZCO., P.O.Box 54304 C-25, Dubai Airport Free Zone, UAE Phone: 971-4-2995900 Fax: 971-4-2995901

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## TOPCON CORPORATION

75-1 Hasunuma-cho, Itabashi-ku, Tokyo, 174-8580 Japan.

Phone: 3-3558-2520 Fax: 3-3960-4214 www.topcon.co.jp

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