

Light Source

## OPERATION MANUAL

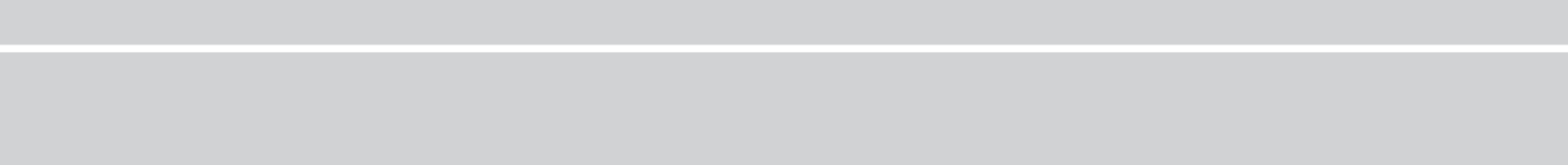
BL-7000

Thank you for purchasing our product. Read this manual carefully before use to avoid unexpected accidents and to take full advantage of the product's capabilities.

### Introduction

- 1 Precautions
- 2 Components and System Configuration of BL-7000
- 3 Name and Function of Each Part
- 4 Installation and Connection of the Equipment and Peripherals
- 5 Preparation and Inspection of the System
- 6 Method of Use
- 7 Storage and Maintenance
- 8 Troubleshooting
- 9 Main Specification





## Contents at a Glance

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### **Introduction**

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Read and understand this manual fully before using this product.

### **Chapter 1 Precautions**

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This chapter describes the warnings and cautions for safe operation of this product.

### **Chapter 2 Components and System Configuration of BL-7000**

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This chapter describes the composition of the endoscope set of accessories and system configuration.

### **Chapter 3 Name and Function of Each Part**

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This chapter describes the name and function of each part of this product.

### **Chapter 4 Installation and Connection of the Equipment and Peripherals**

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This chapter describes the installation and connection methods of the equipment and peripherals.

### **Chapter 5 Preparation and Inspection of the System**

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This chapter describes the inspection and preparation methods to be performed for using this product.

### **Chapter 6 Method of Use**

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This chapter describes a series of operations of this product.

### **Chapter 7 Storage and Maintenance**

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This chapter describes the methods of storage and maintenance of this product.

### **Chapter 8 Troubleshooting**

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This chapter describes actions should be taken if problems occur in this product.

### **Chapter 9 Main Specification**

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This chapter describes the main specification of this product.

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# Introduction

Read and understand this manual carefully before operating this product.

## About This Manual

This manual describes how to use and store the light source BL-7000.

BL-7000 is used with the processor VP-7000.

For details on how to use this system and combined equipment, refer to the VP-7000 operation manual.

### ◆ Operation Manuals

Manage and store the operation manuals related to this product together as a set.

#### Processor VP-7000 Operation Manual

This manual provides necessary information for using the processor such as the equipment overview, operation procedures and precautions to observe.

#### Light Source BL-7000 Operation Manual

This manual provides necessary information for using the light source such as the equipment overview, operation procedures and precautions to observe.

**Note** This product is used in combination with peripherals. Refer to the operation manual of each peripheral device described in the VP-7000 Operation Manual, “2.2 Equipment Using in Combination”.

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- FUJIFILM Corporation shall not be liable for malfunctions or damages resulting from use under environment conditions outside the range specified for this product, such as the power supply, installation environment, etc., as described in this manual.
- FUJIFILM Corporation shall not be liable for malfunctions or damages resulting from natural disasters, such as fires, earthquakes, floods, lightning, etc.

- This product has heavy metal parts. When disposing of this product, comply with local laws and regulations in your area. Determine whether or not the product is to be treated as a biohazard, then handle and dispose of accordingly.
- Before disposing of this product or an endoscopic accessory, perform cleaning and disinfection (or sterilization) according to the procedure described in the operation manual. There is a risk of being a source of infection.



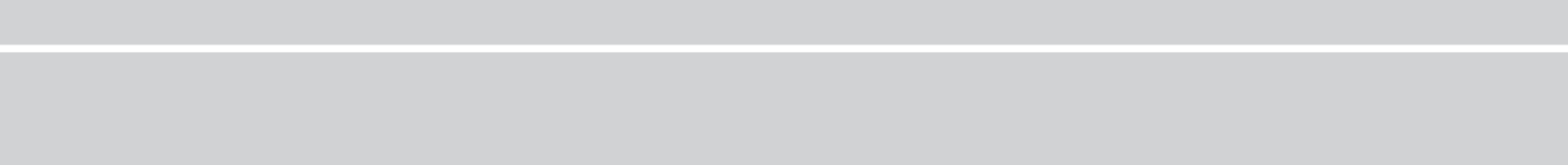
## How to Read This Manual

### ◆ Conventions Used in This Manual

This manual uses the following conventions for easier understanding.

#### General Conventions

Convention	Description
<b>WARNING</b>	Explains dangerous situations that may cause death or serious injury if not avoided.
<b>CAUTION</b>	Explains situations that may cause slight or moderate levels of injury if not avoided. Explains situations that may cause damage to equipment if not avoided.
(1), (2), (3), ...	Indicates consecutive numbers in operating procedures for the order in which successive steps in the procedure should be taken.
<b>Note</b>	Indicates a comment or supplementary information.
→	Indicates a reference.



# Chapter 1 Precautions

## 1.1 Safety

Before using this product, read this section carefully so that you can operate it correctly. Whenever you operate this product, be sure to observe those precautions. Failure to do so may cause you to subject to injuries or property damage to occur.

### WARNING

- The institution is responsible for the use and maintenance of this product. In addition, this product should not be used by persons other than doctors or suitably trained staff.
- Be sure to prepare a spare endoscope against unexpected accidents such as the failure of this product. Otherwise, you may not be able to continue the endoscopic procedure. If the spare endoscope is not available, prepare other alternative means such as abdominal surgery. This product is intended for use by medical professionals who have received proper training in endoscopic procedures. This manual does not provide information about clinical procedures or any aspects of endoscopic techniques.

### CAUTION

- Do not modify this product or its components, and do not disassemble, repair or in any other way reverse-engineer these products. Even if you find a defect, do not attempt to repair these products yourself. FUJIFILM Corporation shall not be liable for any defects or device failures caused by such modifications, disassembly, repairs or reverse-engineering. If this product is disassembled or modified, it creates a risk of human injury or equipment damage, and is unable to ensure its functionality.

### ◆ Category of Equipment

#### <Classification of Medical Electrical Equipment>

- |   |  |
|---|--|
| 1. Type of protection against electric shock:   | Class I equipment<br>(Power supply: Protective earth plug)   |
| 2. Degree of protection against electric shock: | Type BF applied part   |
| 3. Degree of explosion protection :             | Equipment not suitable for use in the presence of a flammable anaesthetic mixture with air or with oxygen or nitrous oxide |

**Note** Combination with VP-7000

### 1.1.1 Warnings

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This product utilizes a flashing light. Do not expose a flashing light to an epilepsy patient. Doing so may cause the patient to have seizures, difficulty in breathing and suffocation. Stop using this product immediately and take proper action if the patient develops such signs and symptoms.

### 1.1.2 Direct Harm to Human Body

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**WARNING**

- If any peripherals not described in the VP-7000 Operation Manual, “2.2 Equipment Using in Combination” are used, this product may not function properly and it may cause damage to the peripherals or injury to patients or physicians.
- This product conforms to the EMC standard (EN 60601-1-2: 2007). However, the radio waves radiated from this product may cause medical devices such as a pacemaker to malfunction. When this product is used for a patient with an active implantable medical device, consult a cardiovascular specialist and the manufacturer of the active implantable medical device.
- To avoid damage to eyes, do not look at the light directly while the light is turned on. Do not look directly at the light from the endoscope.

**CAUTION**

- While the light is turned on, do not look into the light emitted from the distal end of endoscope. Doing so may cause damage to the eyes.
- Do not touch the light guide prong until it has cooled down (approximately 5 minutes). Touching the light guide prong with hands immediately after use of the endoscope may cause a burn.
- When connecting the endoscope, insert it fully so as to produce no clearance. Do not look into the connecting part of the endoscope. The light emitted from the light source may cause damage to the eyes.

**CAUTION**

- If the brightness level is high, the surface temperature at and around the distal end of the endoscope may exceed 41°C. Do not allow the distal end to remain in contact with the same site for an extended period of time. It may cause burn injury.

## 1.2 Cautions/Warnings

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Observe the following cautions when handling this product. Also, there are same cautions in each chapter.

### 1.2.1 Intended Use

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**WARNING**

- This product is intended to be used in combination with a FUJIFILM medical endoscope, processor, monitor, recorder and various peripherals for observation, diagnosis, endoscopic treatment, and image recording in medical facilities under the management of physicians. Never use this product for any other purposes.
- Do not rely on the BLI observation mode alone. Perform comprehensive observation and diagnosis including normal observation for all target regions. Not doing so may result in improper observation and diagnosis. Information obtained from the BLI mode image should be regarded as reference information and it does not assure the validity of diagnosis.

### 1.2.2 Clinical Procedures

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**WARNING**

- This manual assumes that the product will be used by medical specialists who have received proper training in endoscopic procedures. This manual does not provide information about clinical procedures. Proper clinical judgment should be exercised for all clinical procedures.

### 1.2.3 Loss of Function

---

**WARNING**

- During an examination, if the endoscopic image disappears, a live image is not displayed after freeze mode has been cancelled, or the endoscopic image is discolored, reset the processor and light source.
- During treatment, if the endoscopic image disappears, a live image is not displayed after freeze mode has been cancelled, or the endoscopic image is discolored, stop treatment immediately, remove the endotherapy device from the endoscope, and then reset the processor and light source.
- If an appropriate image does not appear even after resetting the processor and light source, turn them off, straighten the bending section, and then withdraw the endoscope slowly from the patient.
- Should the endoscopic image disappear during an examination or treatment, and if the processor and light source are not turned off, it may cause overheating of the distal end of the endoscope, possibly resulting in mucosal burns or other injury.

- Note**
- Reset: Turn off the processor and the light source, and wait for at least 5 seconds. Turn on the processor and the light source again, and then turn on the light by pressing the Light button.
  - For details on how to operate the endoscope, refer to the operation manual of the endoscope.

### 1.2.4 Combination of Equipment

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**WARNING**

- This product is used in combination with peripherals. To avoid electric shock, do not use peripherals that are not specified in the VP-7000 Operation Manual, “2.2 Equipment Using in Combination”.

### 1.2.5 Electric Shock

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**WARNING**

- Use the rated voltage only. Not doing so may cause a fire or electric shock or malfunction.
- Connect the power plug directly to the protective earth receptacle. Use peripherals that are compliant with the medical safety standards. Not doing so may cause an electric shock.

### 1.2.6 Explosion

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**WARNING**

- Do not use the equipment in an oxygen-rich environment or in a flammable gas atmosphere. Doing so may cause explosion or fire.

## 1.2.7 Maintenance

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### CAUTION

- The equipment will wear out and deteriorate after repeated use over a long period. The equipment is required to be inspected by specialists once every six months. Also, if any abnormality is found during clinical use, carefully withdraw the endoscope from the patient as per instructions provided in the operation manual of the endoscope.
- Do not disassemble or modify the equipment. For details on the inspection, consult your local FUJIFILM dealer.

## 1.2.8 Preparation and inspection before use

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### CAUTION

- Prior to using this product, prepare a spare one to avoid unexpected accidents such as equipment failure. If a replacement is not available, you may not be able to continue endoscopic procedures.
- Make sure to check the equipment before use according to the procedures provided in this manual, to avoid unexpected accidents, and take full advantage of the equipment's capabilities.
- In particular, errors in images may cause false diagnosis. If the inspection result shows any abnormality, do not use the equipment.

## 1.2.9 Installation of Equipment

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### CAUTION

- Since there are ventilation holes on the bottom surface of the light source BL-7000, take care not to cover the bottom surface with foreign substances.
- Install equipment so that the power cord or connected endoscope cannot be caught by anything. If the power cord or connected endoscope is caught by something, it may cause overturning or falling of equipment, disappearance of the endoscopic image or damage to the patient and/or operator.

## 1.2.10 Handling

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### CAUTION

- Keep metals except for the endoscope away from the power supply section. Otherwise, metals may generate heat.
- Do not disassemble or modify this product. Otherwise, the radiant intensity may exceed Class I specifications.
- Clean the equipment in the proper way as specified. Otherwise, the equipment may be damaged.
- Do not wash the light source with running water or immerse it in disinfectant. The equipment may be damaged.
- Do not disinfect or sterilize the light source. The equipment may be damaged.
- Wear rubber gloves when handling an endoscope to prevent infection and electrostatic discharge.

### 1.2.11 Foreign Matter and Liquid

---

**CAUTION**

- Before connecting the endoscope, ensure that no foreign matter is caught in the scope connector section. If any foreign matter is caught in the power supply section, it may cause malfunction or failure of the devices and may also generate heat. If any foreign matter is caught, do not touch it directly with your hand but remove it after disconnecting the endoscope.
- Ensure that there is no foreign matter or dirt on the receiving window or on the communication window before connecting the endoscope. If there is any foreign matter or dirt on the receiving window or on the communication window, it may cause malfunction or failure of the devices.
- Make sure that the scope connector including the power-receiving section is thoroughly dry before connecting it to the light source. In addition, make sure that no moisture or foreign matter (such as metallic fragments, chemical residues, water deposits, grease, dust, and gauze fibers) adheres to the power-receiving section. If the connector mount is wet or soiled with foreign matter, it may cause malfunction or failure of the devices.
- Foreign matter, water and chemicals entering the equipment may cause a fire or electric shock. In such a case, stop using the equipment immediately, disconnect the power plug from the power outlet, and consult your local FUJIFILM dealer.

### 1.2.12 Disposal

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**CAUTION**

- Follow the legal procedures when discarding the product. For the details, consult your local FUJIFILM dealer.

### 1.2.13 Software Version

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- Software is used to control the BL-7000. Therefore, the control method differs depending on the version of the software being used. This instruction manual describes operation of Ver. 1.0 - 1.9. The version is shown under the heading "Software" displayed on the screen by pressing the [Shift] and [Note] keys at the same time.

### 1.2.14 Temperature at distal end

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- Turn off the light when this product is not used for a long time, such as while hanging it on a hanger before use. If the light is left on, the distal end may become hot, causing burn injury to the patient.



### 1.2.15 Electromagnetic interference

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- This equipment has been tested and found to comply with the limits for medical devices defined in EN 60601-1-2: 2007. These limits are designed to provide reasonable protection against harmful interference in a typical medical installation. However, it is possible that it may cause harmful interference to other devices in the vicinity, if it is installed and used in accordance with the instructions. Also, there is no guarantee that interference will not occur in a particular installation. Therefore, if this equipment does cause harmful interference to other devices, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
  - Change the orientation or position of any affected device.
  - Increase the spacing between devices.
  - Consult the manufacturer or dealer of the device.

Electromagnetic interference may occur on this product in the vicinity of equipment marked with the following symbol or other portable and mobile RF (radio frequency) communications equipment. If interference occurs, mitigation measures may be necessary, such as reorienting or relocating this instrument, or shielding the location.

Noise may appear on the monitor of this equipment due to the effect of electromagnetic waves. In this case, turn off the device emitting the electromagnetic waves or move the device away from this equipment. Use the cable specified in the Operation Manual of the processor for this product. Use of other cables may cause an increase in electromagnetic emission or decrease in electromagnetic immunity of this product.



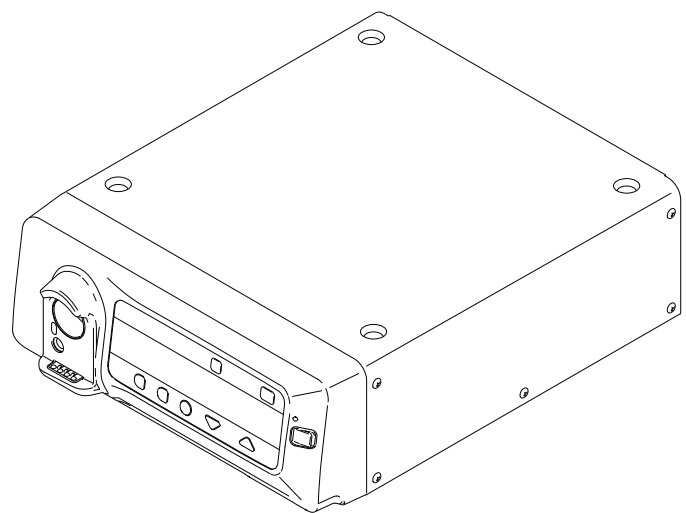


## 2.1 Components of BL-7000

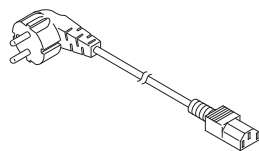
The BL-7000 consists of the following items.

### ◆ BL-7000 Components

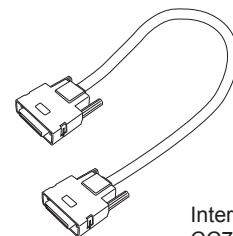
- Note**
- The operation manual (this document) is a component of BL-7000.
  - The figure in parentheses indicates the quantity.



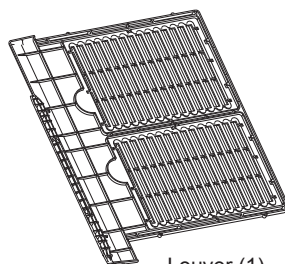
Light Source  
BL-7000 (1)



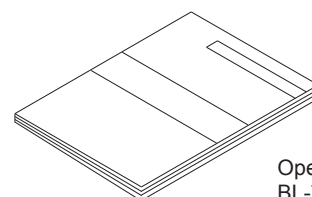
Power Cord (1)



Interface Cable  
CC7-101 (1)



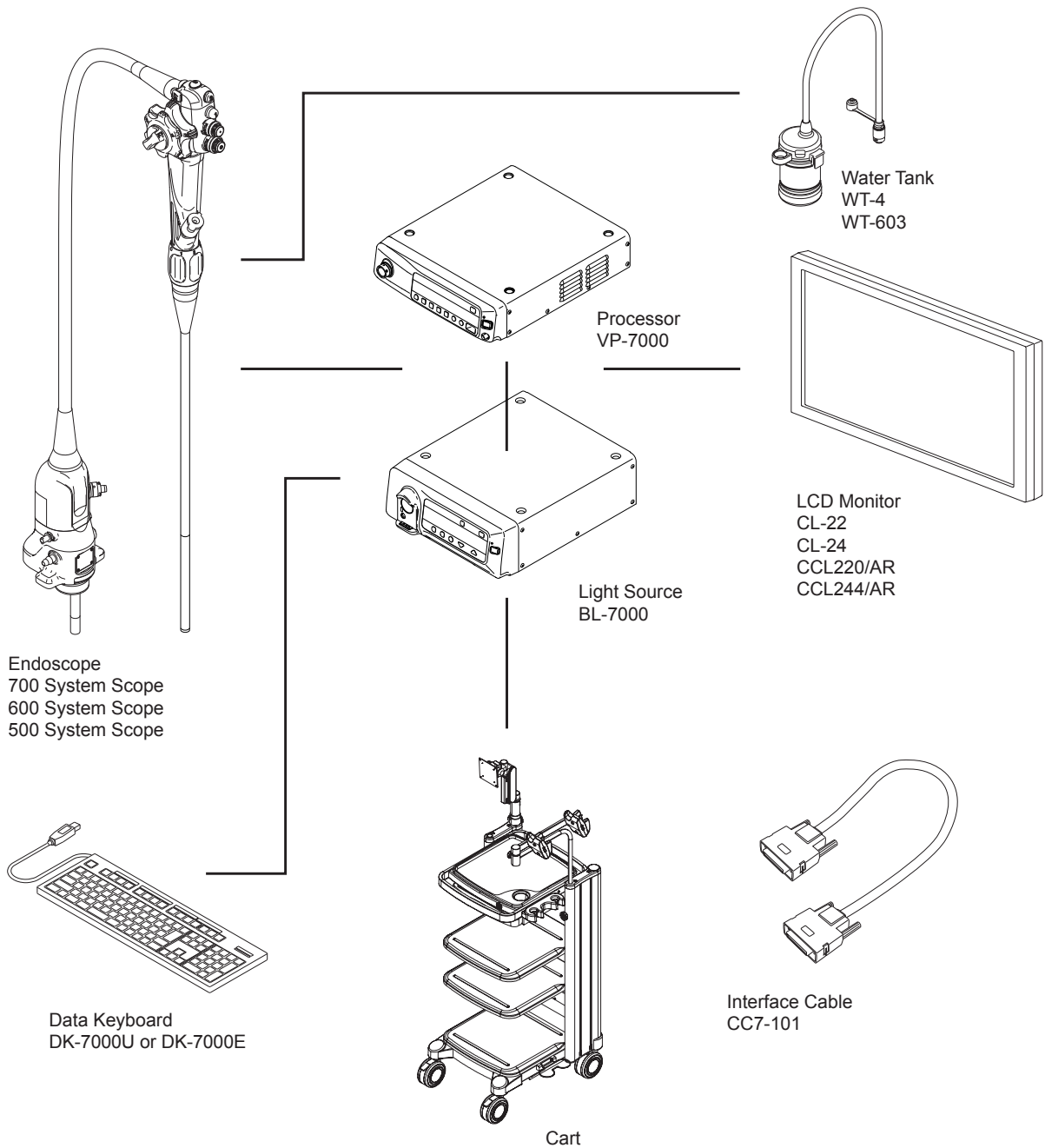
Louver (1)



Operation Manual  
BL-7000 (1)

## 2.2 Standard System Configuration

The standard system configuration is the minimum configuration required for general endoscopy. Observation (diagnosis) and biopsy can be performed on the monitor.

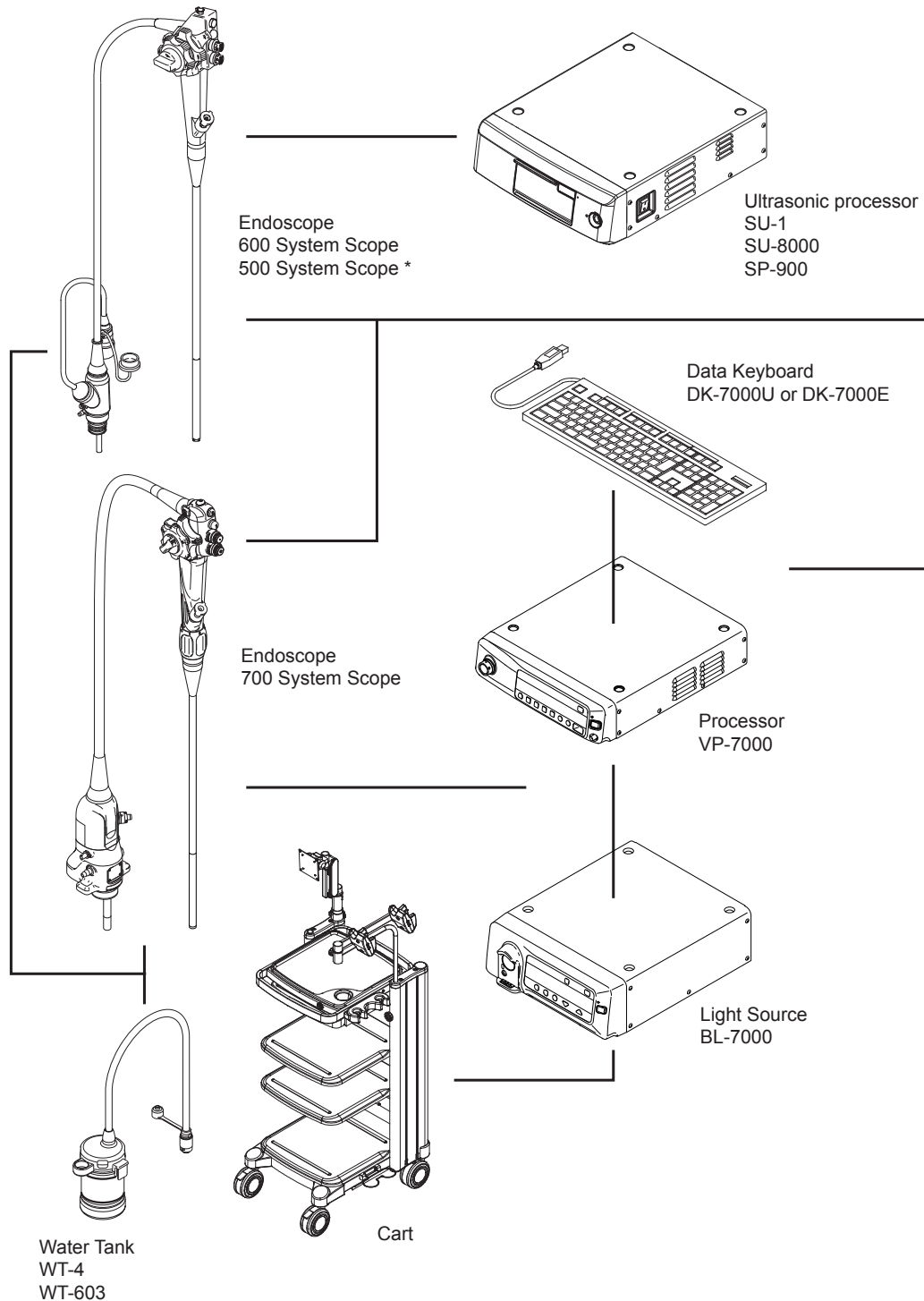




## 2.3 System Expansion

This system can be extended by connecting various peripherals to the standard system configuration. Extension makes the following possible.

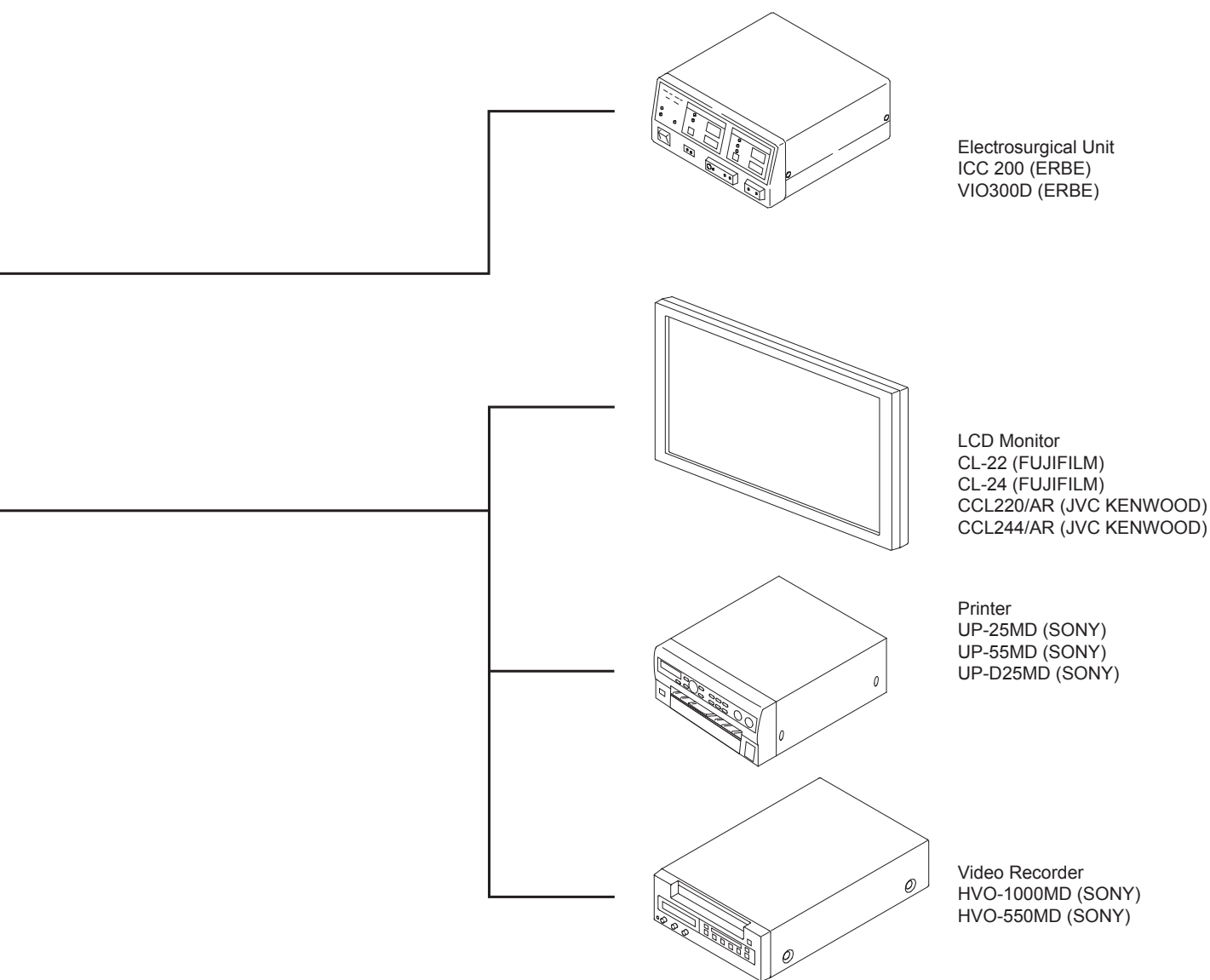
- Endoscopic treatment
- Ultrasonic examination
- Recording of video images
- Printing of still images



**Note** For details on the connections of peripherals other than listed here, consult your local FUJIFILM dealer.

\* When the 590 series scope is used, place the VP-7000 processor on the lower shelf and the BL-7000 light source on the upper shelf.

→ VP-7000 Operation Manual, "4.1.6 Installation for System Expansion"



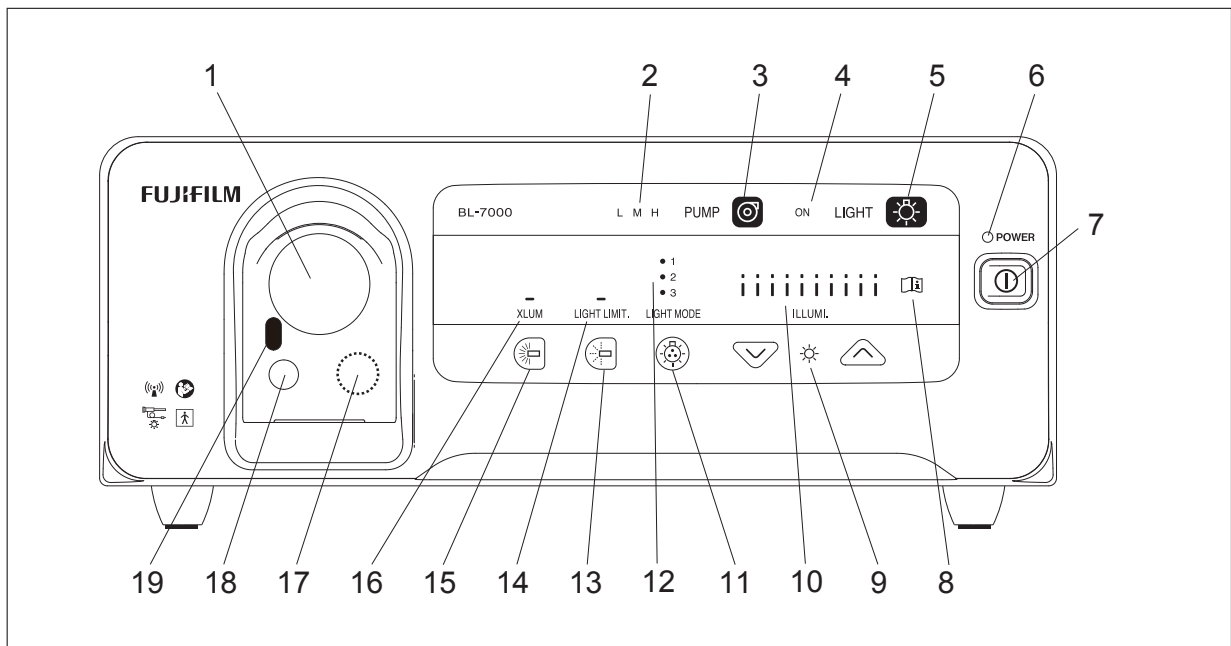




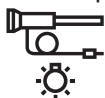
# Chapter 3

## Name and Function of Each Part

### 3.1 Front Panel



1. Scope Connector Socket



Accepts the scope connector or LG connector of the endoscope.

2. Air Supply Indicator



Displays the air supply pump's level of "HI", "MID" or "LOW".

3. Pump Button



Switches the air supply amount in the four levels of "HI", "MID", "LOW" or "OFF".

4. ON Indicator



This indicator lights up when the light is turned on.

5. Light Button



Turns on/off the light.


ON: Lights up in blue.

OFF: Lights up in orange.


6. Power Indicator Lamp

 **POWER** Lights up when the power is ON.

7. Power Button

 Used to turn the power supply ON/OFF.


8. Light Source Status Lamp

 If any abnormality occurs in the light source, this indicator flashes.


9. Brightness Adjustment Button

 Adjusts the level of the automatic light control.


10. Indicator

 Indicates the light intensity when the light is turned on.  
When the brightness adjustment button is pressed, this indicator displays the level of brightness to be used as a standard.


11. Light Mode Button

 Switches the Light mode to “1”, “2”, “3” or “OFF”.


12. Light Mode Indicator

 Displays the Light mode “1”, “2” or “3”.


13. Light Limit Button

 Controls the light intensity of the light.


14. Light Limit Indicator

 This indicator blinks when the light save function is turned on.

15. XLUM Button

 The light flashes with the maximum light intensity.

16. XLUM Indicator

 This indicator blinks when the transmitted illumination is turned on.

17. Power Supply Section

Supplies power to the endoscope.

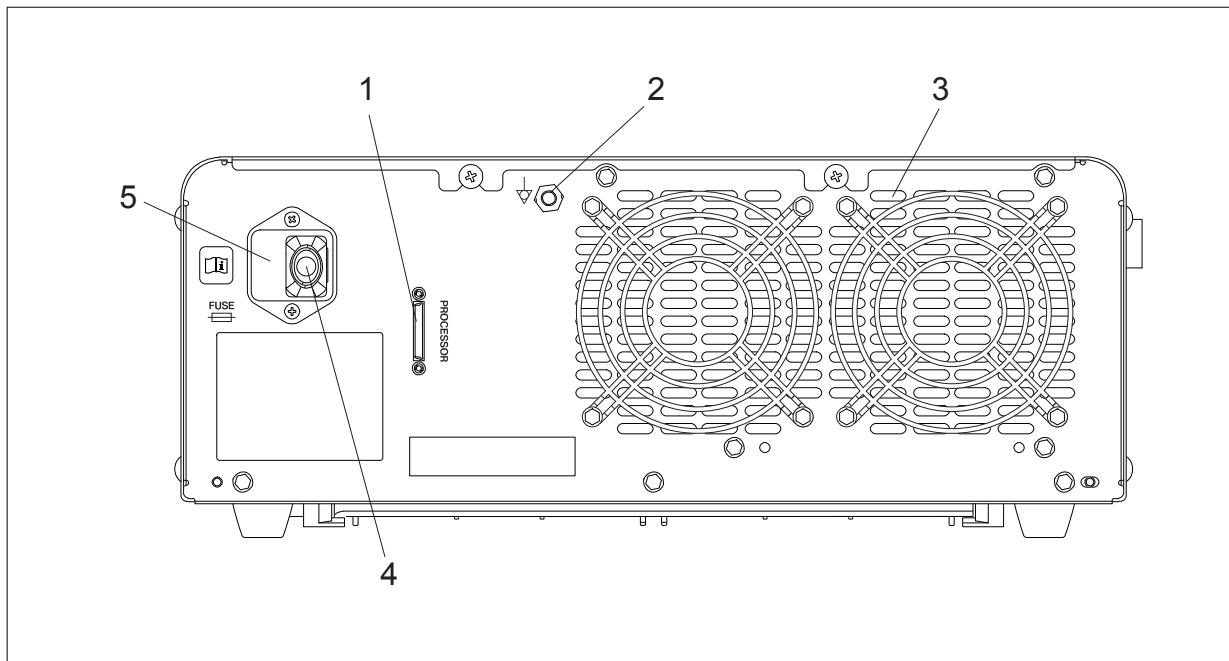
18. Receiving Window

Receives data from the endoscope.

19. Communication Window (LED)

Performs information communication with the endoscope.

## 3.2 Rear Panel



1. Interface Cable Connector (Processor)

Used to connect to the VP-7000 using the interface cable (CC7-101).

2. Potential Equalization Terminal



Connects to the equalization plug.

When necessary for safety, this product is connected to a peripheral using this terminal to equalize the potential between the devices.

3. Ventilation Holes

Provide ventilation to keep the inside of the equipment cool.

4. Power Supply Connector

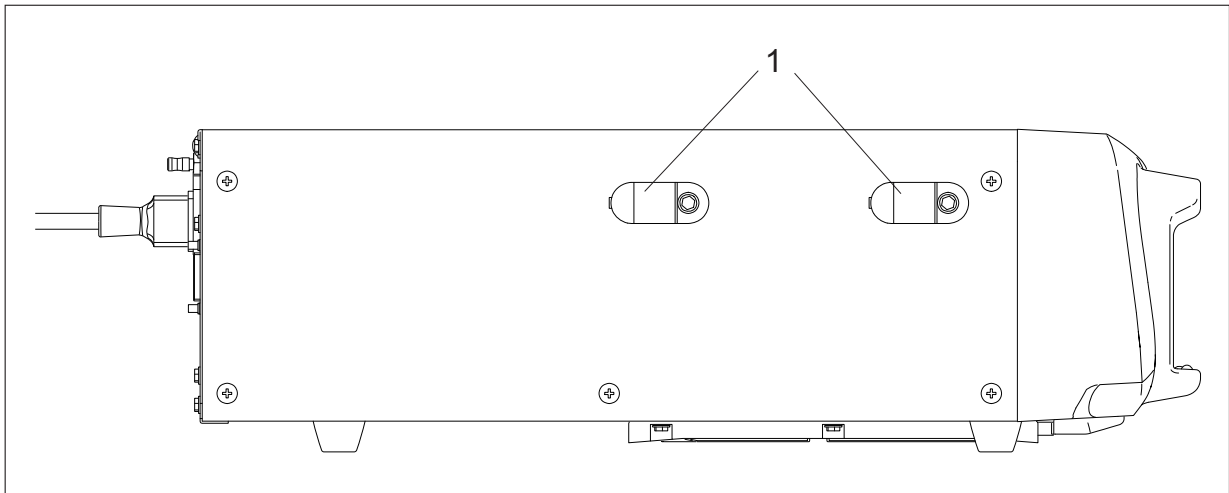
Used to connect the power cord.

5. Fuse Holder



Contains two T4AH 250V fuses.

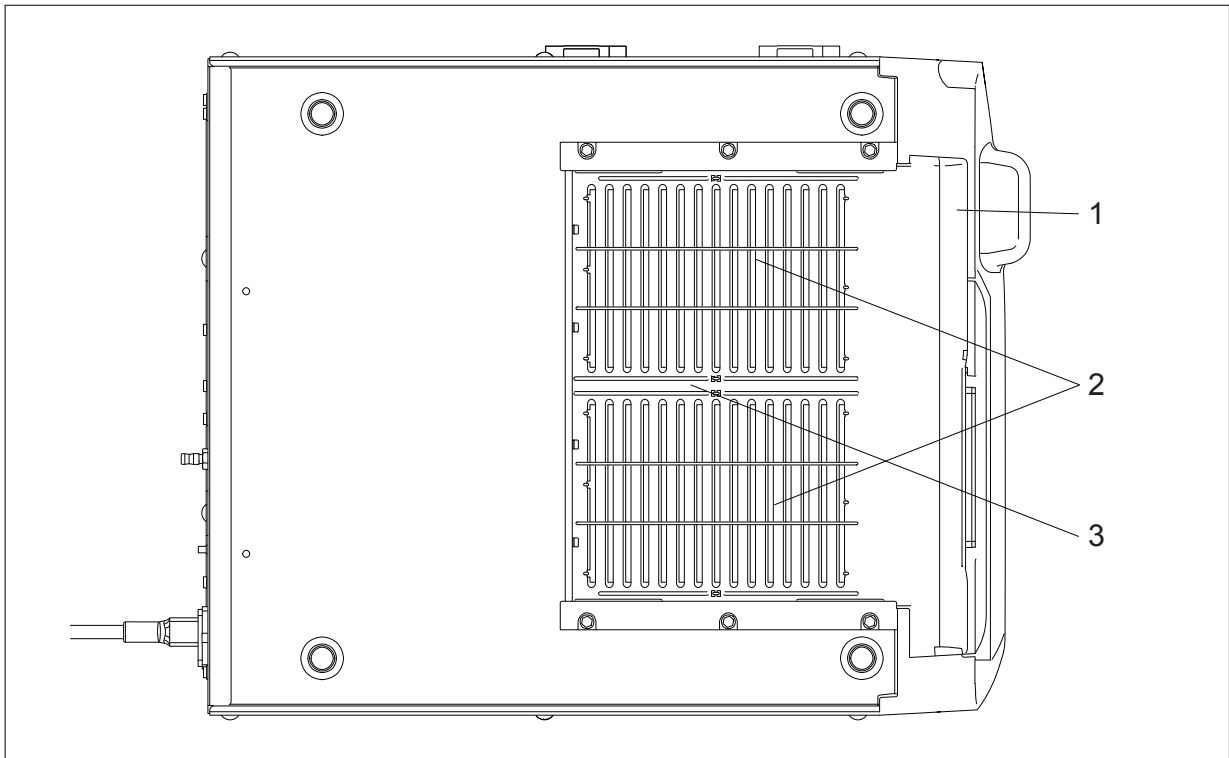
### 3.3 Left Side Panel



1. Water Tank Hook

Used to mount the water tank.

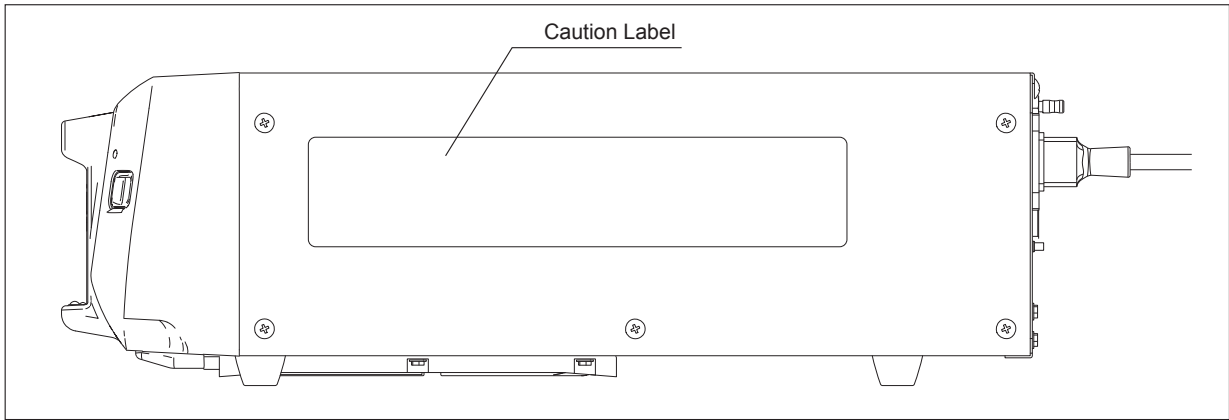
## 3.4 Bottom



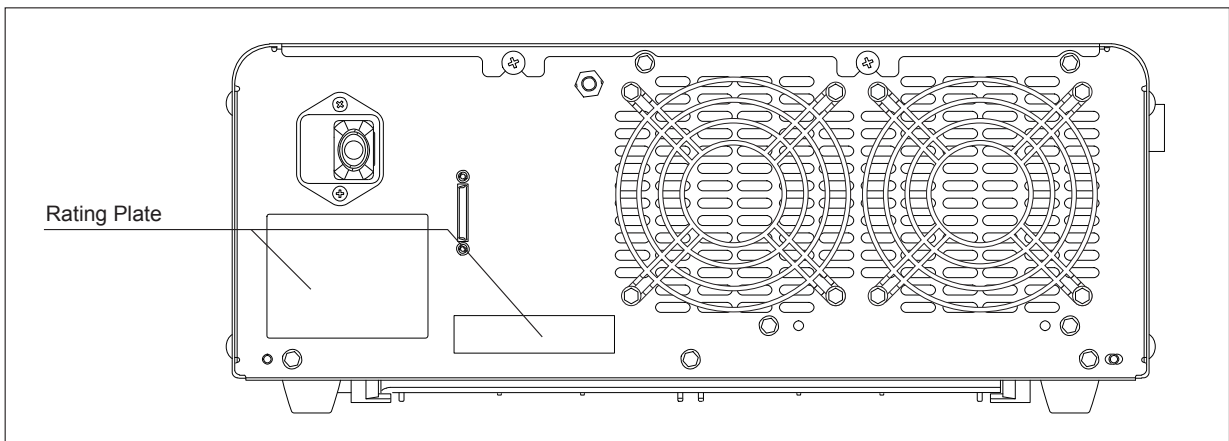
1. Louver  
The filters are set.
2. Filter  
Prevents intrusion of dust.
3. Ventilation Holes  
Provide ventilation to keep the inside of the equipment cool.

### 3.5 Warning Labels



















◆ Caution Label



### 3.6 Rating Plate



## 3.7 Symbols

Symbol	Description
	Serial number
	Year of manufacture
	Manufacturer
	Authorised representative in the European Community
	Front Panel : Light Source Status Lamp (Consult instructions for use) Rear Panel : Consult instructions for use
	Consult instructions for use
	Temperature limitation
	Keep dry
	CE marking
	Type BF applied part
	WEEE marking *
	Humidity limitation
	Atmospheric pressure limitation
	Alternating current
	Fuse
	Potential equalization terminal
	RF electromagnetic energy
	Scope Connector Socket

\* This product shall not be treated as household waste.





# Installation and Connection of the Equipment and Peripherals

**WARNING**

- Use the rated voltage only. Not doing so may cause a fire or electric shock.
- Connect the power plug directly to the protective earth receptacle. Use peripherals that are compliant with the medical safety standards. Not doing so may cause an electric shock.
- Do not use the equipment in an oxygen-rich environment or in a flammable gas atmosphere. Doing so may cause explosion or fire.

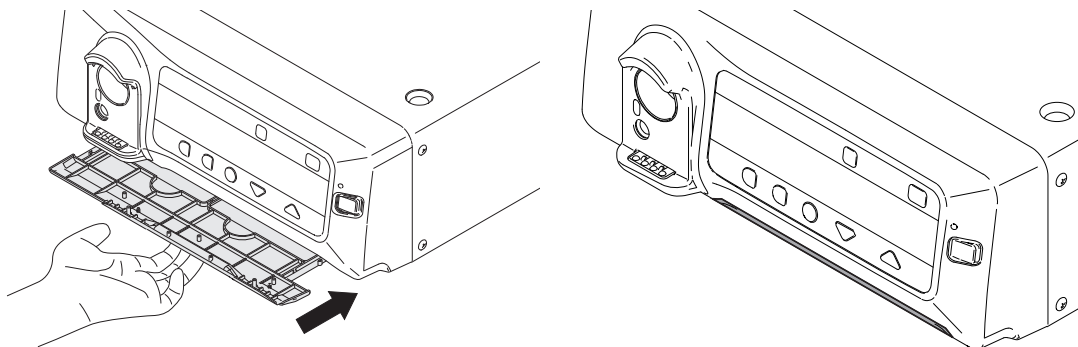
**CAUTION**

- Since there are ventilation holes on the bottom surface of the light source BL-7000, take care not to cover the bottom surface with foreign substances.
- Install equipment so that the power cord or connected endoscope cannot be caught by anything. If the power cord or connected endoscope is caught by something, it may cause overturning or falling of equipment, disappearance of the endoscopic image or damage to the patient and/or operator.

**Note** Install the system according to the VP-7000 Operation Manual, “Chapter 4 System Installation and Initial Settings”.

## 4.1 Attaching the Louver

Attach the louver, a component of the light source.  
Make sure that the louver is fully inserted into the light source.  
Not doing so may cause equipment damage.





# Preparation and Inspection of the System

## 5.1 Installing and Connecting the Equipment

Prepare and inspect the system according to the VP-7000 Operation Manual, “Chapter 6 Preparation and Inspection of the System”.

### WARNING

- If any peripherals not described in the VP-7000 Operation Manual, “2.2 Equipment Using in Combination” are used, this product may not function properly and it may cause damage to the peripherals or injury to patients or physicians.
- This product conforms to the EMC standard (EN 60601-1-2: 2007). However, the radio waves radiated from this product may cause medical devices such as a pacemaker to malfunction. When this product is used for a patient with an active implantable medical device, consult a cardiovascular specialist and the manufacturer of the active implantable medical device.

### Note

- If the battery in the processor discharges, it may impede the clock function displayed on the monitor (the clock may lose time). If the processor has been left unused for more than three months, turn ON the power to the processor to charge the battery for about three hours. (It is not necessary to connect the Endoscope or turn ON the lamp.)
- If the clock displayed on the monitor is not correct, set the date and time again.

### 5.1.1 Installing the Endoscope and Water Tank

### CAUTION

- Before connecting the endoscope, ensure that no foreign matter is caught in the scope connector section. If any foreign matter is caught in the power supply section, it may cause malfunction or failure of the devices and may also generate heat. If any foreign matter is caught, do not touch it directly with your hand but remove it after disconnecting the endoscope.
- Ensure that there is no foreign matter or dirt on the receiving window or on the communication window before connecting the endoscope. If there is any foreign matter or dirt on the receiving window or on the communication window, it may cause malfunction or failure of the devices.
- Make sure that the scope connector including the power-receiving section is thoroughly dry before connecting it to the light source. In addition, make sure that no moisture or foreign matter (such as metallic fragments, chemical residues, water deposits, grease, dust, and gauze fibers) adheres to the power-receiving section. If the connector mount is wet or soiled with foreign matter, it may cause malfunction or failure of the devices.
- Keep metals except for the endoscope away from the power supply section. Otherwise, metals may generate heat.
- When connecting the endoscope, insert it fully so as to produce no clearance. Do not look into the connecting part of the endoscope. The light emitted from the light source may cause damage to the eyes.

- Note**
- To avoid damage or malfunction, turn OFF the processor, and then connect or remove the endoscope. Wait for 5 seconds or more before turning the power back to ON. Do not touch the electrical contacts directly with your hand. Prevent the contacts from exposure to xylocaine spray, etc. Dry the moist contacts of the endoscope before connecting the endoscope to the processor.
  - To prevent damage or malfunction, press the EXAM. button, make sure that the STANDBY indicator lamp lights up in orange, and then connect or remove the endoscope.
  - Connecting the endoscope with moisture on the contacts will cause damage or malfunction, for example, image defects. If a scope connector socket is not connected to the endoscope, cover the socket with the included socket protection cap (CC-203) to protect the contacts.

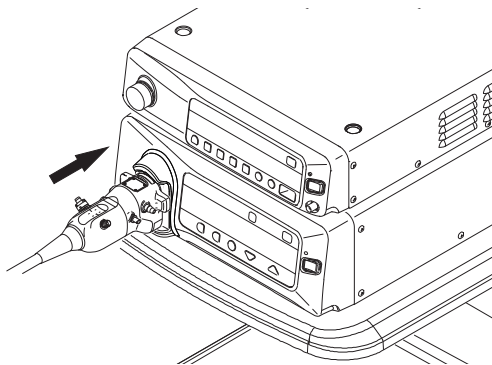
The connecting method varies depending on the endoscope to be connected.

Turn OFF the processor or press the EXAM. button to light up the STANDBY indicator lamp in orange, and then install the endoscope. First, connect the scope connector or LG connector of the light source.

#### ◆ 700 System Scope

- (1) Insert the scope connector into the scope socket of the light source until it stops.

**Note** Insert the scope connector straight into the scope socket.

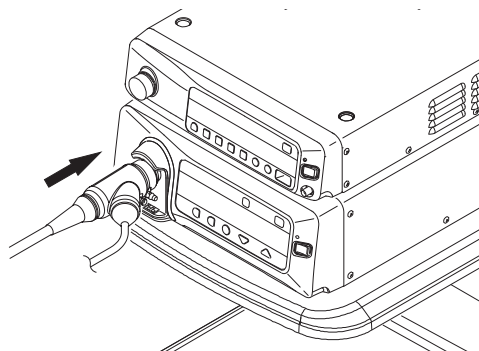


- (2) Hook the water tank filled with sterile water onto the light source.
- (3) Connect the water tank connector to the endoscope.

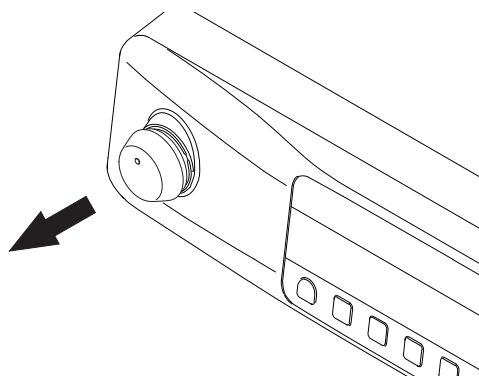
#### ◆ 600 System Scope and 500 System Scope

- (1) Insert the LG connector into the scope socket of the light source until it stops. Hold the LG connector with both hands, align the index on the LG connector and the index on the light source, and then insert the LG connector right into the light source until it stops.

**Note** Insert the LG connector straight into the scope socket.

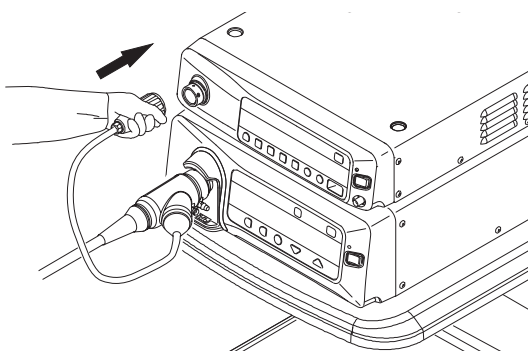


- (2) Remove the socket protection cap from the processor to be connected to the endoscope.



To connect the electrical connector, align it with the electrical connector index, and then rotate the connector clockwise while lightly pressing it.

- Note**
- Make sure to rotate the connector index 90 degrees clockwise.
  - Do not connect more than one endoscope.



- (3) Hook the water tank filled with sterile water onto the light source.
- (4) Connect the water tank connector to the endoscope.

### 5.1.2 Operation Check of Light Source

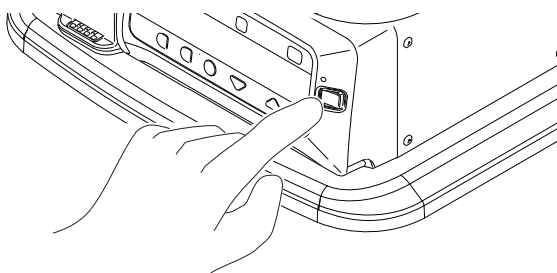
**CAUTION**

- To avoid damage to eyes, do not look at the light directly while the light is turned on. Do not look directly at the light from the endoscope.
- While the light is turned on, do not look into the beam emitted from the distal end of endoscope. Doing so may cause damage to the eyes.

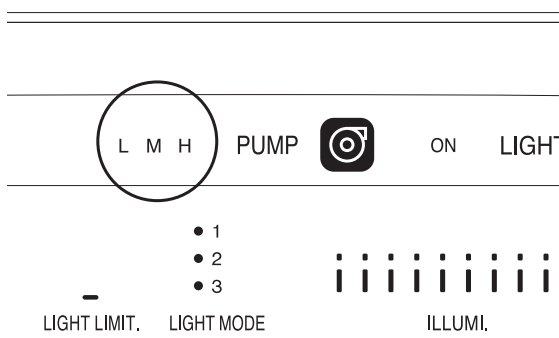
**Note**

With regard the light seen through the ventilation holes, there are no safety problems.

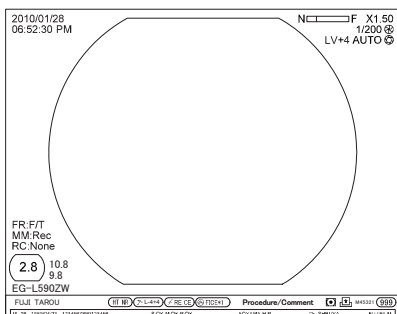
- (1) Turn on the power to the cart and the light source. The power indicator lamp lights up.



- (2) Press the Pump button to make sure that the air supply pump's operation switches in the order of "HI," "MID," "LOW," "OFF," and "HI."

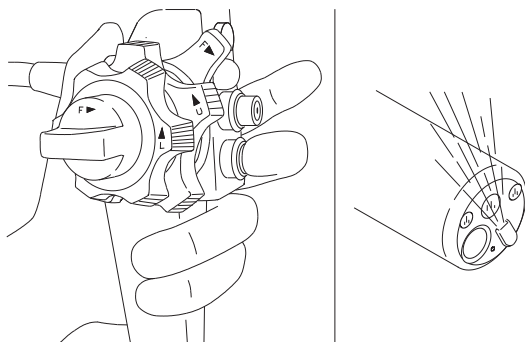


- (3) Turn ON the power to the processor.  
The power indicator lamp lights up. The EXAM. lamp of the EXAM. button lights up in blue. The observation screen is displayed on the monitor.

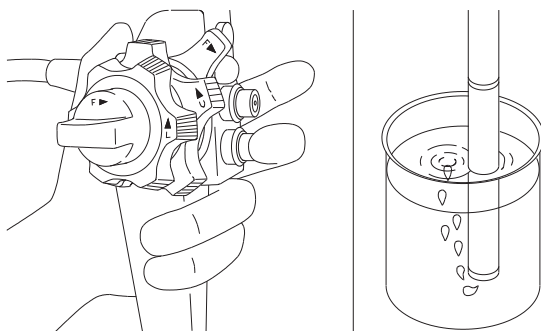


- (4) Press the Pump button to set the air supply pump's operation to "HI."  
Leave the distal end of the endoscope in the air, press the air/water valve, and make sure that water comes out of the air/water nozzle.

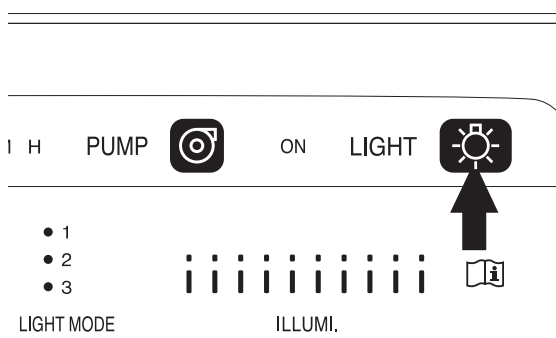
**Note** Be careful of the direction when water comes out.




- (5) Immerse the distal end of the endoscope in the water, cover the center hole on the air/water valve with a finger, and make sure that air comes out of the air/water nozzle. Then, take your finger off the hole and make sure that no air comes out of the air/water nozzle.



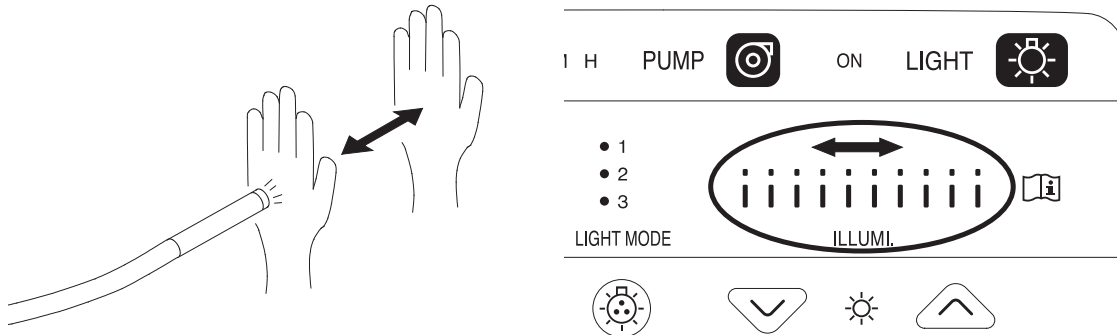
- (6) Press the Light button of the light source.  
The Light button lights up in blue, the ON lamp at the left-hand side of the Light button lights up, and then the light turns on. The pictogram for brightness level lights up in blue.



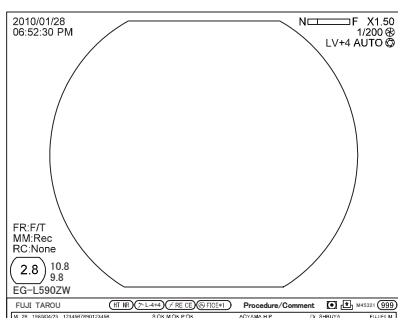
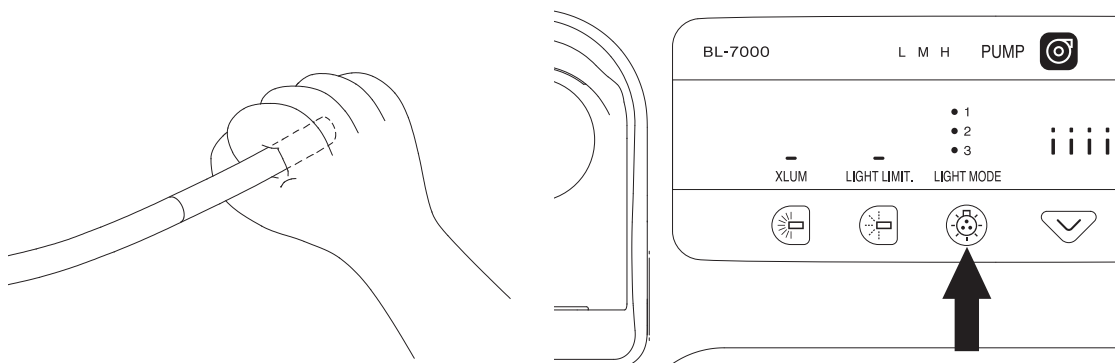
**Note** If the light source status lamp (  ) flashes, stop using the equipment.

→ "7.5 When the Light Source Status Lamp Flashes"

- (7) Apply your palm against the distal end of the endoscope, and make sure that the indicator level of the light source changes when you move your hand toward and away from the distal end.



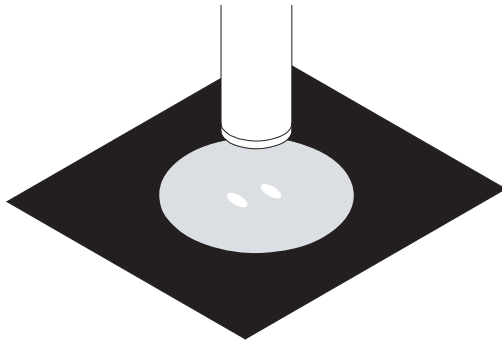
- (8) Apply the palm of the hand to the distal end of endoscope and make sure that the image of a part of the hand can be seen.  
Press the Light Mode Button to make sure that the Light Mode Indicator and monitor image are switched.



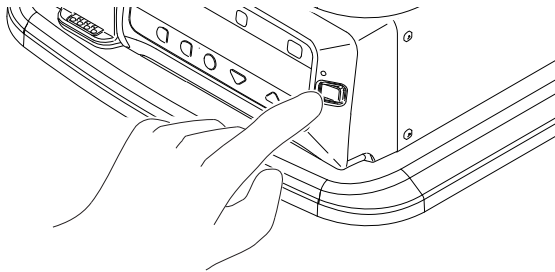


- (9) Press the Light button. With **ON** at the left-hand side of the Light button turned on, make sure that light is emitted from the distal end of endoscope. Put the distal end of endoscope close to a black sheet of paper and check the reflected light. When two points of light are seen, the system is operating normally. If only one point of light or no light is seen, stop using the equipment immediately, turn off the equipment and consult your local FUJIFILM dealer.

**Note** If the light emitted from the distal end of endoscope is viewed directly, it may cause damage to the eyes.



- (10) Press and hold the EXAM. Button on the front panel of the processor for 2 seconds or more. Make sure that the STANDBY indicator lamp lights up in orange, and then turn off the light source. The operation check is now completed.





## Introduction

The operation flow of this product is shown below. For details on each operation, refer to the relevant section.

- 1 Perform inspections before use. → "Chapter 5 Preparation and Inspection of the System"
  - ↓
  - 2 Connect the endoscope. → "5.1.1 Installing the Endoscope and Water Tank"  
→ "3.1 Front Panel"
  - ↓
  - 3 Turn on this product. → "6.1 Turning On the Light"
- Note** When starting an examination (second one or later), refer to the VP-7000 Operation Manual, "7.17.2 Starting the Second Examination or Later".
- Location of the power button → "6.1 Turning On the Light"
  - ↓
  - 4 Turn on the light. → "6.1 Turning On the Light"  
→ "3.1 Front Panel"
  - ↓
  - 5 Adjust the brightness of the light. \* → "6.2 Adjusting the Brightness"
  - ↓
  - 6 Perform an endoscopic examination
    - Change the air supply level. \* → "6.3 Operation of Air Supply Pump"  
→ "3.1 Front Panel"
    - Change the Light mode. \* → "6.6 Light mode"  
→ "3.1 Front Panel"

**Note** For details on how to set the Light mode, refer to the VP-7000 Operation Manual, "5.3.8 Special Light Observation Preset Setup".
  - ↓
  - 7 Finish the examination. → "6.7 Turning Off the Light" and "6.8 Turning Off the Power"
- Note** Refer to the VP-7000 Operation Manual, "7.17.1 Finishing the First Examination" and "7.17.3 Finishing All Examinations".
- Location of the power button → "3.1 Front Panel"
  - ↓

- 8** When necessary, perform maintenance → “7.1 Care after Use” on this product after all examinations are → “7.2 Cleaning the Filter” finished.

\* This step may be skipped depending on the examination method.

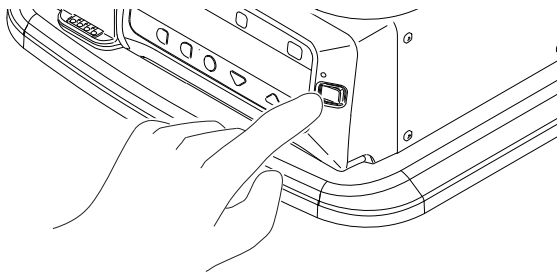
## 6.1 Turning On the Light

### CAUTION

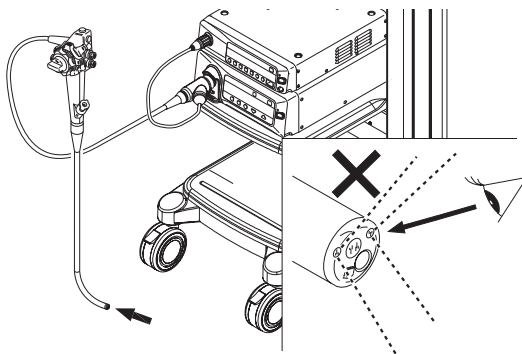
- While the light is turned on, do not look into the beam emitted from the distal end of endoscope. Doing so may cause damage to the eyes.

**Note** With regard the light seen through the ventilation holes, there are no safety problems.

- (1) Turn the power of the light source ON.  
The Power Indicator Lamp is lit.



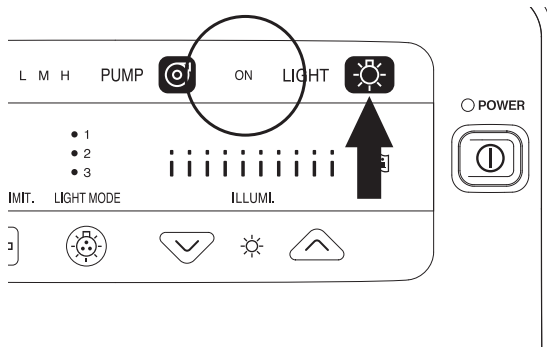
**Note** While the light is turned on, do not look into the beam emitted from the distal end of endoscope. It may cause damage to the eyes.



(2) Press the Light button.

The Light button lights up in blue, the ON lamp at the left-hand side of the Light button lights up, and the light turns on. The pictogram for brightness level lights up in blue.

- Note**
- The light does not turn on when the scope connector or LG connector of the endoscope is not connected to the scope socket.
  - If the light source status lamp blinks while the light turns on, refer to “7.5 When the Light Source Status Lamp Flashes”.







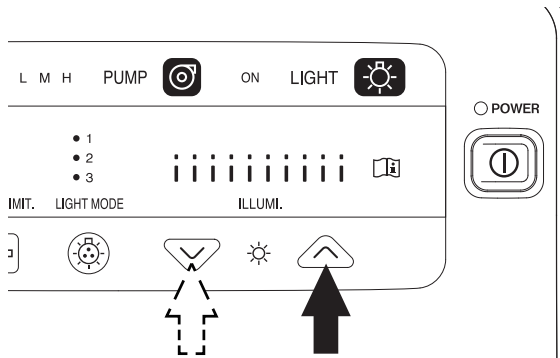
## 6.2 Adjusting the Brightness

### CAUTION


- If the brightness level is high, the surface temperature at and around the distal end of the endoscope may exceed 41°C. Do not allow the distal end to remain in contact with the same site for an extended period of time. It may cause burn injury.


To obtain the appropriate brightness for an object, adjust the brightness by pressing the Brightness Adjustment button on the light source.


- (1) When  or  is pressed, the brightness level to be used as a standard can be adjusted. Press  to make the image brighter, and press  to make the image darker.





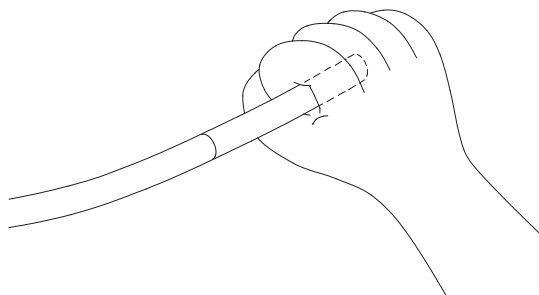
The brightness level can be adjusted from -4 to +5. The level is displayed in the indicator as follows.

Brightness level 0 (standard): 

Brightness level -4: 

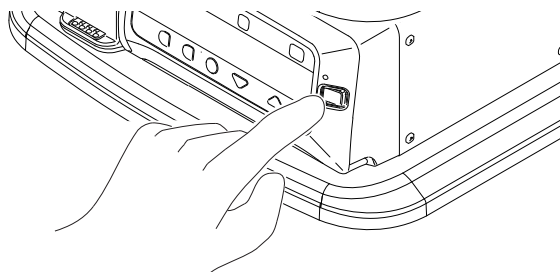
Brightness level +5: 

- (2) When  or  is released, the indicator shows the light intensity again.
- (3) Apply the palm of the hand to the distal end of endoscope and make sure that the image of a part of the hand can be seen.

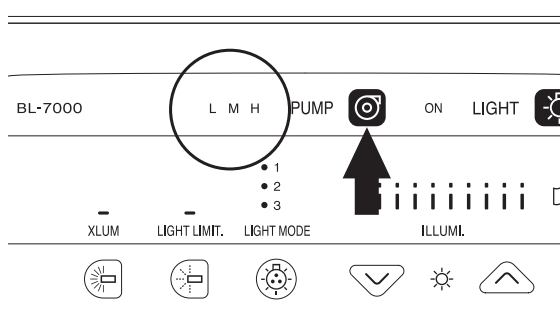


## 6.3 Operation of Air Supply Pump

- (1) Turn the power of the light source ON.

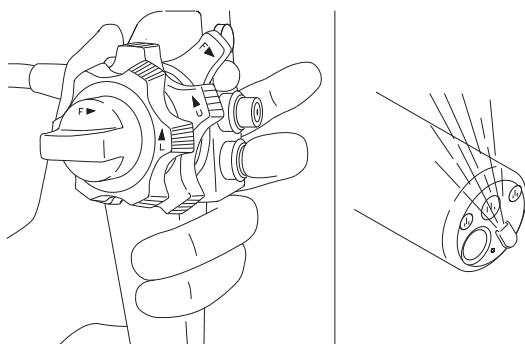


- (2) The air supply level changes in order of “HI”, “MID”, “LOW” and “OFF” by pressing the Pump button. Select “HI”, “MID” or “LOW.”



- (3) Press the air/water valve of the endoscope to discharge water from the nozzle.

**Note** Be careful of the direction when water comes out.



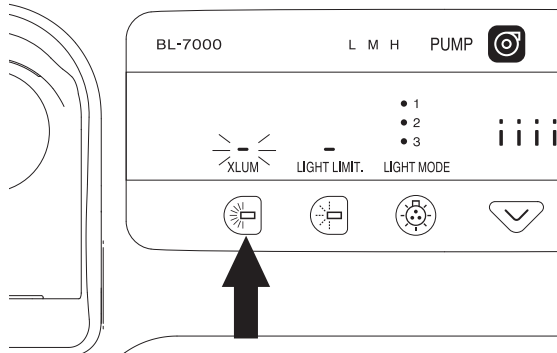
- (4) Close the center hole on the air/water valve of endoscope to discharge air from the nozzle.

**Note** Switch the air supply level in order of “HI”, “MID”, “LOW” to make sure that the air supply amount changes.

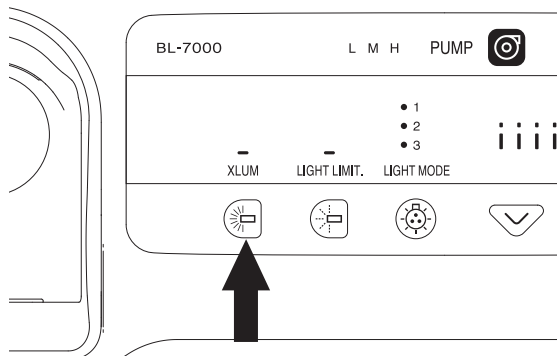
## 6.4 Transmitted Illumination

The transmitted illumination is used to check the position of the distal end from outside the body. The light flashes with the maximum light intensity.

- (1) Press the Transmitted Illumination button. The  $\overline{\text{XLUM}}$  lamp above the button flashes. The light flashes with the maximum amount of the light.



- (2) To reset the light intensity to the default, press the Transmitted Illumination button again. The  $\overline{\text{XLUM}}$  lamp above the button is turned off. The light intensity of the light returns to the default.





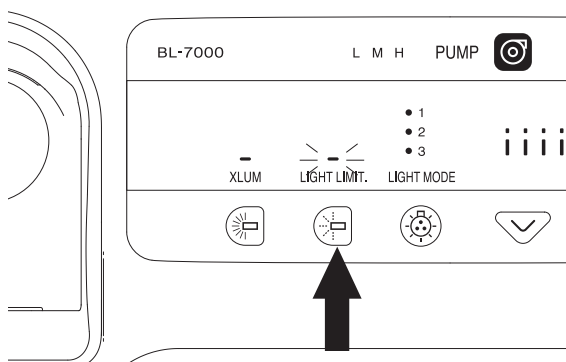
## 6.5 Light Save

To avoid the blood of a bleeding patient becoming clotted by the illuminating light, the light save function is used to limit the maximum light intensity of the light.

**Note** Blood may become clotted in some cases even if the light save function is used.

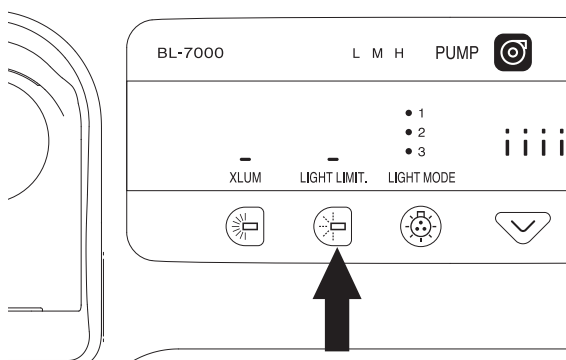
- (1) Press the Light Save button.

The maximum light intensity of the light is limited, and the **LIGHT LIMIT.** lamp above the Light Save button flashes.



- (2) To reset the light intensity to the default, press the Light Save button again.

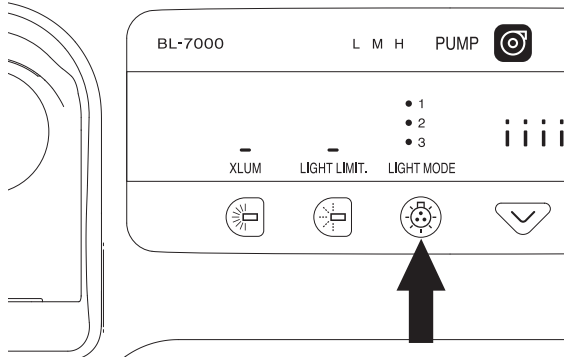
The light intensity of the light is reset to the default, and the **LIGHT LIMIT.** lamp above the Light Save button is turned off.



## 6.6 Light Mode

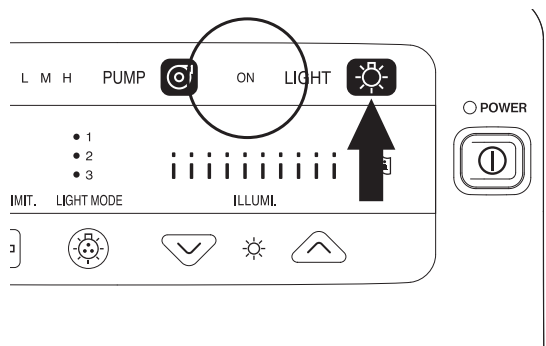
The Light Mode can be switched to "1", "2" or "OFF".

- Press the Light Mode button. The Light Mode changes in the order of "1" (● 1 ○ 2 ○ 3), "2" (○ 1 ● 2 ○ 3) and "OFF" (○ 1 ○ 2 ○ 3) each time the Light Mode button is pressed.



## 6.7 Turning Off the Light

- Press the Light button.  
ON at the left-hand side of the Light button turns off, and the light emission stops.



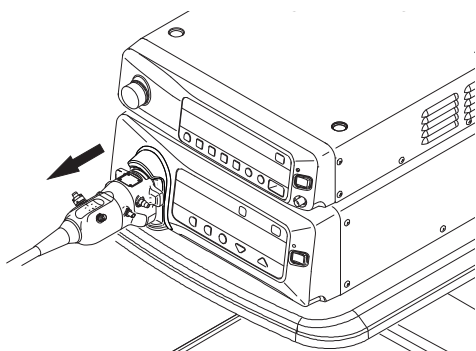
## 6.8 Turning Off the Power

### CAUTION

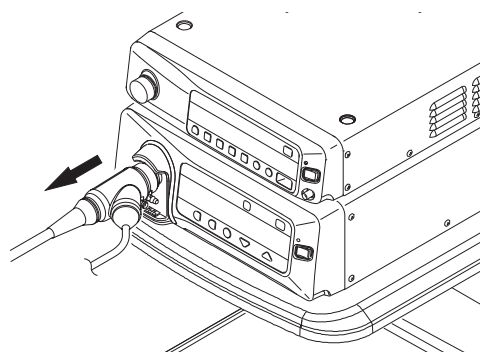
- Do not touch the light guide prong until it has cooled down (approximately 5 minutes). Touching the light guide prong with hands immediately after use of the endoscope may cause a burn.

- (1) Press and hold the EXAM. Button on the front panel of the processor for 2 seconds or more. Make sure that the STANDBY indicator lamp lights up in orange, and then remove the endoscope.

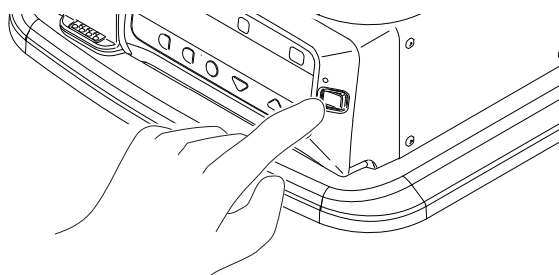
**Note** Pull the scope connector straight out.



**Note** Pull the LG connector straight out.



- (2) Press the Power button.  
The power to this product turns off and the Power lamp goes off.



**Note** When the light source is not to be used for a long period, disconnect the power plug from the power outlet.



## CAUTION

- Do not disassemble or modify this product. Otherwise, the radiant intensity may exceed Class I specifications.

## 7.1 Care after Use

## CAUTION

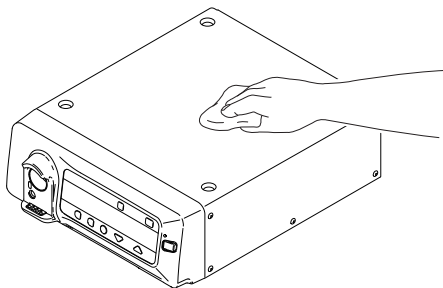
- Clean the equipment in the proper way as specified. Otherwise, the equipment may be damaged.
- Do not wash the light source with running water or immerse it in disinfectant. The equipment may be damaged.
- Do not disinfect or sterilize the light source. The equipment may be damaged.

When the equipment is dusty or dirty, wipe it gently with a soft cloth, such as gauze.

To remove heavy dirt, wipe the equipment gently with gauze moistened with a small quantity of neutral detergent solution diluted 10 times or more. After that, wipe the equipment with gauze soaked with ethanol for disinfection and dry it out.

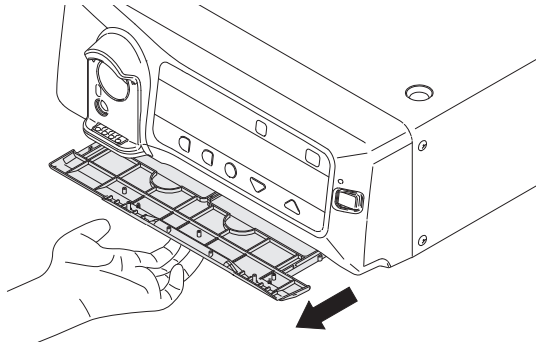
If liquid such as bodily fluid or blood is attached to the front panel, wipe it off with alcohol-soaked gauze.

Do not clean the inner side of the scope connector socket or the receiving window. If it becomes dusty or dirty, consult your local FUJIFILM dealer. For details on the cleaning, maintenance and disinfection of the endoscope, refer to the operation manual of the endoscope.

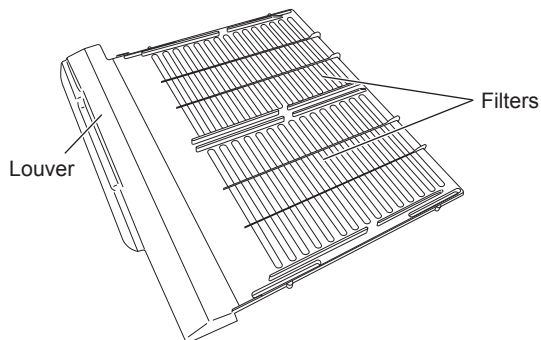


## 7.2 Cleaning the Filter

- (1) Remove the louver from the light source.

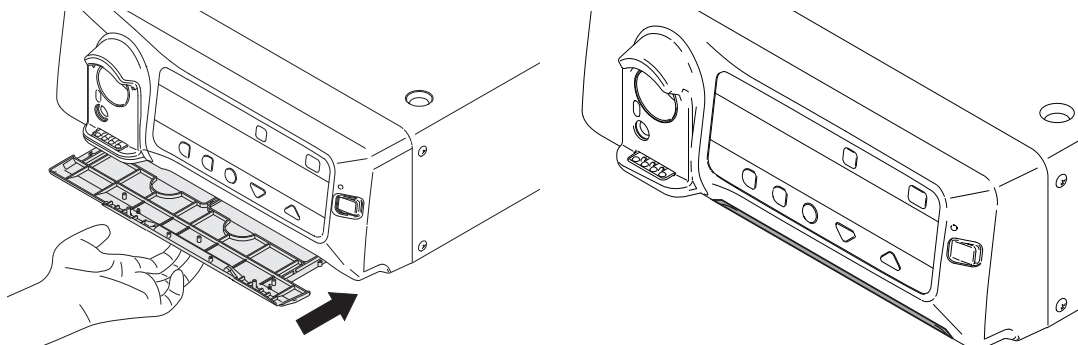


- (2) Remove dust from the filters of the louver.



- (3) Attach the louver to the light source.  
Make sure that the louver is fully inserted into the light source.  
Not doing so may cause equipment damage.

**Note** If the filters are wet, dry them before attachment.



## 7.3 Storage

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### 7.3.1 Storage of Light Source

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**Note** Do not store the equipment in a place which does not meet the storage conditions. Store the equipment in a state where no force is applied to the cables. The equipment may be damaged.

Store the BL-7000 system in a place that meets the following conditions.

**<Storage Environment>**

Temperature: -20 to +60°C  
Humidity: 10 to 90%RH  
(no dew condensation)  
Pressure: 70 to 106 kPa

**Note <Operating Environment>** Non-operating conditions

Temperature: -10 to +45°C  
Humidity: 30 to 95%RH  
(no dew condensation)  
Pressure: 70 to 106 kPa

When the equipment has been out of use for a long period, check the operation again as performed at the installation.

→ VP-7000 Operation Manual, “Chapter 6 Preparation and Inspection of the System”

### 7.3.2 Storage of Water Tank

---

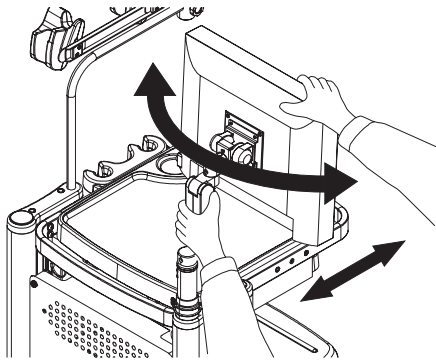
For details on how to store the water tank, refer to the operation manual of the water tank.

## 7.4 Relocation

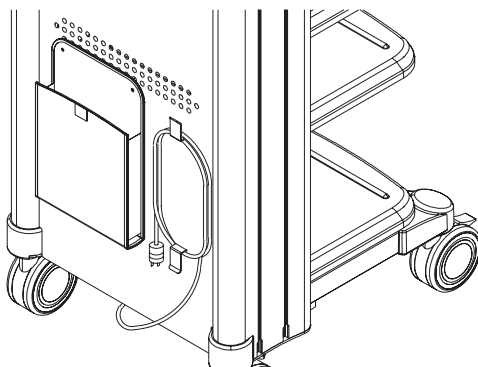
**Note** Do not apply strong impact on the scope connector or LG connector of the endoscope by hitting it against other objects, etc. Install the light source so that no strong impact is applied to the endoscope connected to the light source. When operating an electric bed, etc., avoid hitting it against the scope connector or LG connector of the endoscope connected to the light source. There is a risk of damaging the endoscope or light source.

When moving the light source installed on the cart, follow the procedure below.

- (1) Turn off the power to the light source, processor and cart in advance. Make sure that the monitor is fixed on the cart.



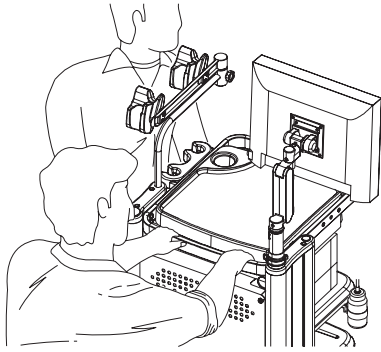
- (2) Unplug the power cord of the cart from the receptacle, and wind it around the handle on the rear side. Unlock the cart casters.



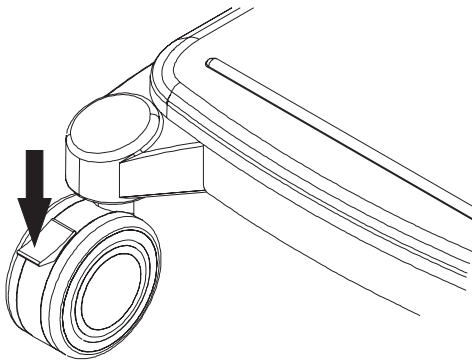


- (3) Move the cart carefully not to give any vibration or impacts to the equipment, paying close attention to bumps and slopes.

- Note**
- Use two persons to move the cart.
  - Pay close attention to prevent the monitor and the scope hanger from hitting anything.



- (4) Lock the casters of the cart at the place where it is relocated.



## 7.5 When the Light Source Status Lamp Flashes

### <When the Light Source Status Lamp flashes during the clinical procedure>

When the alarm flashes during the clinical procedure, operate the endoscope by following the instruction on the screen, and pull out the endoscope immediately.

After the clinical procedure, check the light source according to the following procedure in “<When the Light Source Status Lamp flashes when it is on>”.

If the light does not turn on, the lighting device is faulty. Straighten the bending section of the endoscope to unlock and release the angle knob. Move your hand away from the knob and pull out the endoscope slowly.

**Note** For details on how to operate the endoscope, refer to the operation manual of the endoscope.

### <When the Light Source Status Lamp flashes when it is on>

If the alarm flashes when you turn on the light, consider the following possible cause.

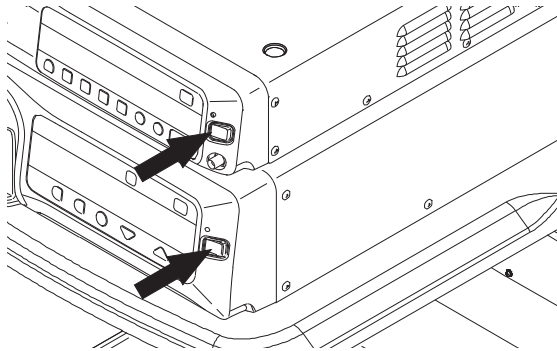
- Overheat of the light
- The lifetime of the light has expired.
- Failure of the lighting device
- Malfunction of the alarm because of noise or other cause.

Inspect the light source according to the procedure described in the following page.

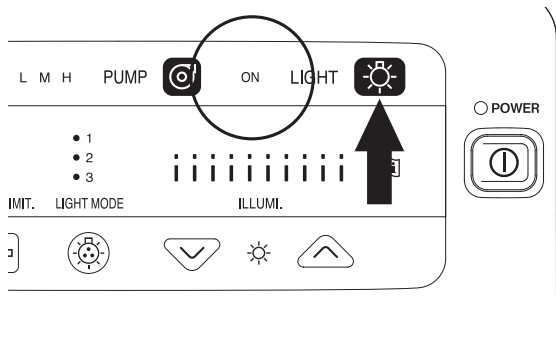
If the lighting device is faulty, the light does not turn on. Straighten the bending section of the endoscope to unlock and release the angle knob. Move your hand away from the knob and pull out the endoscope slowly.

**Note** For details on how to operate the endoscope, refer to the operation manual of the endoscope.

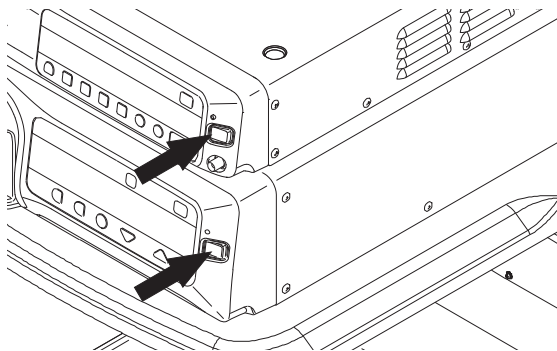
- (1) Turn off the power of the processor and light source. After 5 to 10 seconds, turn the power on.



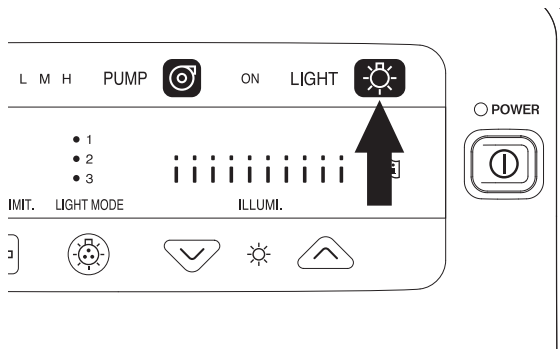
- (2) Press the Light button to turn on the light.  
If the light turns on, the equipment is ready to operate.  
If not, follow the procedure in (3).



- (3) Turn off the power of the light source and processor, and turn on the power again.  
Do not press the Light button at this time.  
The cooling fan for the light source starts cooling down the light.



- (4) Cool it down for 2 to 3 minutes, and press the Light button.  
If the light turns on, the equipment is ready to operate.



## 7.6 Cleaning and Disinfecting (or Sterilizing) the Water Tank

For details on how to clean and disinfect (or sterilize) the water tank, refer to the operation manual of the water tank.

# Chapter 8 Troubleshooting

## 8.1 Troubleshooting

If the equipment does not work, or if any abnormality is found during operation, perform inspections and take appropriate measures referring to the table below. If the phenomenon persists, or it is not listed in the table below, stop using the equipment immediately and consult your local FUJIFILM dealer.

Phenomenon	Possible cause	Countermeasure
Turning "ON" the power button does not actuate the equipment. (The Power Indicator Lamp does not light up.)	<ol style="list-style-type: none"> <li>1) The main switch on the cart is turned "OFF."</li> <li>2) The power cord is defective.</li> <li>3) The receptacle is defective.</li> <li>4) The fuse is blown.</li> </ol>	<ol style="list-style-type: none"> <li>1) Turn "ON" the main switch on the cart.</li> <li>2) Check the power cord.</li> <li>3) Check that the rated voltage is applied.</li> <li>4) Consult your local FUJIFILM dealer.</li> </ol>
The light does not turn on even if the Light button is pressed.	<ol style="list-style-type: none"> <li>1) The endoscope is not connected.</li> <li>2) The LG detection sensor is faulty.</li> <li>3) The LED is faulty.</li> </ol>	<ol style="list-style-type: none"> <li>1) Securely lock the endoscope.</li> <li>2) Consult your local FUJIFILM dealer.</li> <li>3) Consult your local FUJIFILM dealer.</li> </ol>
An image disappears during examination.	<ol style="list-style-type: none"> <li>1) The endoscope is not connected completely.</li> <li>2) The system is malfunctioning due to phenomena such as electrostatic discharge.</li> <li>3) The internal part of the light source is faulty.</li> <li>4) The system malfunctions due to abnormal power supply conditions (such as voltage drop).</li> </ol>	<ol style="list-style-type: none"> <li>1) Withdraw the endoscope, ensure that there is no foreign matter or dirt on the power supply section, receiving window or communication window, and connect the endoscope again.</li> <li>2) 3) 4) Reset the processor and the light source. If the image is not recovered, turn the processor and the light source off, straighten the bending section and then pull out the endoscope slowly. Stop using the equipment, and consult your local FUJIFILM dealer.</li> </ol>

- Note**
- Reset: Turn off the processor and the light source, and wait for at least 5 seconds. Turn on the processor and the light source again, and then, turn on the light by pressing the Light button.
  - For details on how to operate the endoscope, refer to the operation manual of the endoscope.

Phenomenon	Possible cause	Countermeasure
A live image is not displayed after freeze mode is canceled during examination.	The system is malfunctioning due to phenomena such as static charges.	Reset the processor and the light source. If the image is not recovered, turn the processor and the light source off, straighten the bending section and then pull out the endoscope slowly.
An image is suddenly discolored during examination.	1) The system is malfunctioning due to phenomena such as electrostatic discharge. 2) The video signal cable is broken or shorting. 3) The endoscope is connected incompletely.	1) 2) Reset the processor and the light source. If the image is not recovered and it is impossible to continue the examination, turn the processor and the light source off, straighten the bending section and then pull out the endoscope slowly. 3) Withdraw the endoscope, ensure that there is no foreign matter or dirt on the receiving window or on the communication window, and connect the endoscope again.
The light turns off during the examination.	1) The LG detection sensor is faulty. 2) The LED is faulty.	1) 2) If an image disappears during examination, reset the processor and the light source. If the image is not recovered, turn the processor and the light source off, straighten the bending section and then pull out the endoscope slowly. Stop using the equipment, and consult your local FUJIFILM dealer.

- Note**
- Reset: Turn off the processor and the light source, and wait for at least 5 seconds. Turn on the processor and the light source again, and then, turn on the light by pressing the Light button.
  - For details on how to operate the endoscope, refer to the operation manual of the endoscope.

Phenomenon	Possible cause	Countermeasure
Images displayed are dark.	1) The Endoscope is not connected completely. 2) The brightness level is approximately - 4. 3) The iris mode is "Peak". 4) The system is malfunctioning due to phenomena such as electrostatic discharge. 5) The internal part of the light source is faulty.	1) Connect the endoscope correctly. → VP-7000 Operation Manual, "7.2 Connecting the Endoscope and Equipment" 2) Set the brightness level to approximately 0. → "6.2 Adjusting the Brightness" 3) Set the iris mode to "Ave." → VP-7000 Operation Manual, "7.13 Switching the Iris Mode" 4) 5) Reset the processor and the light source. If the image is not recovered, turn the processor and the light source off, straighten the bending section and then pull out the endoscope slowly. Stop using the equipment, and consult your local FUJIFILM dealer.
Distorted image	1) High-frequency interference. 2) The endoscope is connected incompletely.	1) Stop power supply to the high-frequency endotherapy device to restore image output. The endoscope is working properly. 2) Withdraw the endoscope, ensure that there is no foreign matter or dirt on the receiving window or on the communication window, and connect the endoscope again.
Highlight areas in images are too bright.	1) The iris mode is "Ave." 2) The brightness level is approximately +5. 3) The system is malfunctioning due to such as electrostatic discharge. 4) The internal part of the light source is faulty.	1) Set the iris mode to "Peak". → VP-7000 Operation Manual, "7.13 Switching the Iris Mode" 2) Set the brightness level to approximately 0. → "6.2 Adjusting the Brightness" 3) 4) Reset the processor and the light source. If the image is not recovered, turn the processor and the light source off, straighten the bending section and then pull out the endoscope slowly. Stop using the equipment, and consult your local FUJIFILM dealer.

- Note**
- Reset: Turn off the processor and the light source, and wait for at least 5 seconds. Turn on the processor and the light source again, and then, turn on the light by pressing the Light button.
  - For details on how to operate the endoscope, refer to the operation manual of the endoscope.

Phenomenon	Possible cause	Countermeasure
The lens cleaning is insufficient.	<ol style="list-style-type: none"> <li>1) The tube of the endoscope is clogged.</li> <li>2) The air supply pump is faulty.</li> </ol>	<ol style="list-style-type: none"> <li>1) 2) Straighten the bending section and then pull out the endoscope slowly.</li> </ol> <p>After removing the endoscope from the system, according to the VP-7000 Operation Manual, "Chapter 6 Preparation and Inspection of the System", make sure the water and air are discharged from the nozzle of the distal end. If air and water are not discharged smoothly, stop using the equipment and consult your local FUJIFILM dealer.</p>
Air and water cannot be supplied.	<ol style="list-style-type: none"> <li>1) The air supply pump is "OFF".</li> <li>2) The water tank cover is not closed completely.</li> <li>3) Too much water in the water tank.</li> <li>4) The water tank is empty.</li> <li>5) It is not connected to the endoscope firmly.</li> </ol>	<ol style="list-style-type: none"> <li>1) Press the Pump button to set the air pressure to "HI", "MID" or "LOW."</li> <li>2) Close the cover firmly.</li> <li>3) Pour in the water up to 80% of the water tank's capacity.</li> <li>4) Pour water into the water tank.</li> <li>5) Connect the connector firmly.</li> </ol>
Suction cannot be performed.	<ol style="list-style-type: none"> <li>1) The suction unit is not operating.</li> <li>2) The suction tube is bent.</li> <li>3) The suction tube is disconnected.</li> </ol>	<ol style="list-style-type: none"> <li>1) Turn "ON" the suction unit.</li> <li>2) Check if the suction tube is not bent. If it is bent, straighten the bent part.</li> <li>3) Connect the suction tube.</li> </ol>

**Note** For details on how to operate the endoscope, refer to the operation manual of the endoscope.



## 8.2 Error Messages

If an error occurs, an error message appears on the monitor.

Error message	Possible cause	Countermeasure
Check cable connection between light source and processor and turn off and on light source and processor. Cause: Light source is connected improperly or turned off.	1) The light source is OFF. 2) The processor is not connected to the light source properly.	1) Turn on the BL-7000. 2) Securely connect the interface cable.
Unplug and plug back endoscope, reset the processor and the light source. If the problem persists, contact your local FUJIFILM dealer. Cause: The light source is in abnormal state.	1) The BL-7000 system is faulty. 2) The built-in light source of the BL-7000 is faulty.	Consult your local FUJIFILM dealer.

- Note**
- For details on how to operate the endoscope, refer to the operation manual of the endoscope.
  - For inquiry to our service representatives, the error message and the error code displayed with the error message are required.



# Chapter 9 Main Specification

## 9.1 Specification

### ◆ Classification of Medical Electrical Equipment

- |   |  |
|---|--|
| 1. Type of protection against electric shock:     | Class I equipment<br>(Power supply: Protective earth plug)                           |
| 2. Degree of protection against electric shock:   | Type BF applied part   |
| 3. Degree of explosion protection:                | Use is prohibited in an oxygen-rich environment<br>or in a flammable gas atmosphere. |
| 4. Degree of protection against ingress of water: | IPX0   |
| 5. Mode of operation:                             | Continuous operation   |

**Note** Combination with VP-7000

### ◆ Applied Part

Insertion portion of applicable endoscope

### ◆ Specification

Power	100 - 240V ~ 50/60Hz
Current consumption (rated)	1.2 - 0.7A
Fuse	T4AH 250V×2 (Rating: 4A/250V)
Light control	Automatic light control by the control signal from the processor
Light cooling method	Forced air cooling
Air supply pump	HI/MID/LOW/OFF
Applicable Endoscope	700 system scopes, 600 system scopes, 500 system scopes
Dimensions (W × H × D)	390 × 155 × 485 mm (including projection)
Mass	12kg
Maximum air supply pressure	65 kPa
Maximum water supply pressure	65 kPa
illumination source	LED
Maximum light output (light source)	1400 lm
Optical radiation safety (LED for infrared communication)	Class 1 LED product * (IEC 60825-1: 1993+A1: 1997+A2: 2001: 2007)
Power transmission frequency	110 to 205 kHz
Effective radiated power	15 W or less

\* "Chapter 3, 3.1 Front Panel, (19) Communication Window (LED)" falls into this class.

### ◆ Operating Environment

#### Operating conditions

Temperature	+10 to +40°C
Humidity	30 to 85%RH (no dew condensation)
Pressure	70 to 106 kPa

#### Non-operating conditions

Temperature	-10 to +45°C
Humidity	30 to 95%RH (no dew condensation)
Pressure	70 to 106 kPa

### ◆ Transport and Storage Environment

Temperature	-20 to +60°C
Humidity	10 to 90%RH (no dew condensation)
Pressure	70 to 106 kPa

### ◆ Term of Validity/Period for Use (Durability)

The term of validity (durability) is 6 years from the first use of this product, providing that this product undergoes periodic servicing. “Based on our company’s criteria”

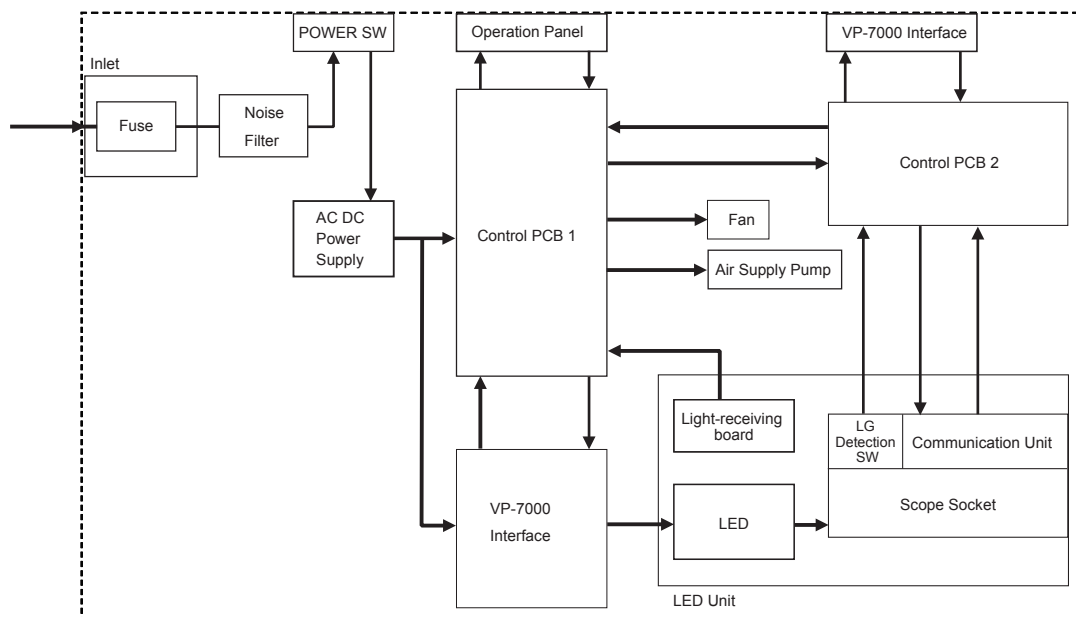
### ◆ Input/Output Connector

Control connector

I/F connector 1 channel

### ◆ Block Diagram

The main unit is provided with the power supply section, control section, operation switches (on the front panel), interface section, LED drive section, endoscope (scope) connector section, and the endoscope connector section is electrically isolated (floating). The main unit provides the light whose intensity is adjusted in the LED drive section and supplies the air from the air supply pump to the connected endoscope. The main unit is also equipped with a function that communicates with the endoscope to send information from the interface section to the processor.



◆ **Medical Device Directive**

This product complies with the requirements of  
European Directive 93/42/EEC.  
Classification : Class II a



## 9.2 Electromagnetic Compatibility (EMC) Information

This product complies with Class B of EN 55011 concerning radio-frequency emissions in the combination of the 700 system scope.

In addition, in the combination of other endoscopes, this product complies with Class A. If this product is used in domestic establishments with the Class A combination, electromagnetic interference may occur in any devices. In such a case, the user is encouraged to try to correct the interference according to “Chapter 1 Precautions.”

This product is intended for use in the electromagnetic environments specified below.

The customer or the user of this product should assure that it is used in such an environment.

**Note** Combination with VP-7000

### <Electromagnetic Emission Compliance Information and Guidance>


Emission standard	Compliance	Guidance
RF emissions EN 55011	Group 1	This product uses RF (Radio Frequency) energy for its internal function. Its RF emissions are very low and are not likely to cause any interference in nearby electric equipment.
RF emissions EN 55011	Class B (Combination with 700 system scope and VP-7000 Processor)	[RF emissions] With the Class B combination, this product is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
	Class A (Combinations other than above)	With the Class A combination, this product is intended for use in medical facilities and commercial facilities.
Harmonic emissions EN 61000-3-2	Class A	Therefore, if this product is used in domestic establishments, electromagnetic interference may occur in any devices. In this case, it is recommended to use this product according to “Chapter 1 Precautions.”
Voltage fluctuation/ flicker emissions EN 61000-3-3	Applicable	

<Electromagnetic Immunity Compliance Information and Guidance>

Immunity test	EN 60601-1-2 Test level	Compliance level	Guidance
Electrostatic discharge (ESD) EN 61000-4-2	Contact: $\pm 2, \pm 4, \pm 6\text{kV}$ Air: $\pm 2, \pm 4, \pm 8\text{kV}$	Same as left	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 EN 61000-4-4	For power supply lines: $\pm 2\text{kV}$ For input/output lines: $\pm 1\text{kV}$	Same as left	Main power quality should be that of a typical commercial or hospital environment.
Surge EN 61000-4-5	Line to line: $\pm 0.5, \pm 1\text{kV}$ Line to ground: $\pm 0.5, \pm 1, \pm 2\text{kV}$	Same as left	Main power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines EN 61000-4-11	$< 5\% U_T$ ( $> 95\%$ dip in $U_T$ ) for 0.5 cycle	Same as left	Main power quality should be that of a typical commercial or hospital environment. If the user of this product requires continued operation during power mains interruptions, it is recommended that this product is powered from an uninterruptible power supply or battery
	$40\% U_T$ ( $60\%$ 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 seconds		
Power frequency (50/60 Hz) magnetic field EN 61000-4-8	3 A/m	Same as left	The power frequency magnetic field should be that of a typical commercial or hospital environment. It is recommended to use this product by maintaining enough distance from any equipment that operates with high current.

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

<Portable and Mobile RF Communications Equipment Compliance Information and Guidance>

Immunity test	EN 60601-1-2 Test level	Compliance level	Guidance
<p>Conducted RF EN 61000-4-6</p>	<p>3Vrms 150kHz to 80MHz</p>	<p>3V[V<sub>1</sub>]</p>	<p>Portable and mobile RF communications equipment should be used no closer to any part of this product, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance</p> $d = \left[ \frac{3.5}{V_1} \right] \sqrt{P}$ $d = \left[ \frac{3.5}{E_1} \right] \sqrt{P} \quad 80 \text{ to } 800\text{MHz}$ $d = \left[ \frac{7}{E_1} \right] \sqrt{P} \quad 800\text{MHz to } 2.5\text{GHz}$ <p>Where “P” is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and “d” is the recommended separation distance in meters (m).</p>
<p>Radiated RF EN 61000-4-3</p>	<p>3V/m 80MHz to 2.5GHz</p>	<p>3V/m[E<sub>1</sub>]</p>	<p>This product complies with the requirements of EN 60601-1-2: 2007. However electromagnetic interference may occur in this product under an electromagnetic environment that exceeds its noise level.</p> <p>Electromagnetic interference may occur in the vicinity of equipment marked with the following symbol.</p> 



**<Recommended Separation Distance Between Portable and Mobile RF Communications Equipment and this Product>**

The customer or the user of this product can prevent electromagnetic interference by maintaining the minimum distance between this product and cell phone or RF communication equipment (table below). Referring to the table below, keep cell phone or RF communication equipment away from this product.

Rated maximum output power of transmitter P (W)	Separation distance related to frequency of the transmitter (m)		
	150kHz to 80MHz $d=1.2\sqrt{P}$	80 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

## 9.3 After-Sales Service

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1) If the equipment does not work properly, check it first by reading this manual again and follow all instructions.

2) If the equipment is still not working well, contact your local FUJIFILM dealer.

3) Repairs during the warranty period

We will repair your equipment free of charge according to the provisions of the warranty.

The warranty period is one year after date of purchase.

Note that the warranty is void in the following cases:

- a. Damage caused by fire or natural disaster such as storms or floods.
- b. Trouble caused by careless handling or misuse of the product on the part of the user.
- c. Trouble caused by repair or modification by an unauthorized person.

4) Repairs after the warranty period

We will make a paid repair at your request if the equipment is found possible to restore the normal function by repair.

When contacting your local FUJIFILM dealer, provide the following information.

Model name: BL-7000

Serial number:

Description of failure: as detailed as possible

Date of purchase:

\* The serial number is indicated on the rear side of the product.

### <Product Malfunction>

In case of product malfunction, consult your local FUJIFILM dealer.

The product will be repaired at the factory or replaced with a comparable product.

## 9.4 Disposal of Electric and Electronic Equipment



### Disposal of Used Electrical and Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems)

This symbol on the product, or in the manual and/or on this packaging, indicates that this product shall not be treated as household waste.

Instead it should be taken to an applicable collection point for the recycling of electrical and electronic equipment.

By ensuring this product is disposed of correctly, you will help prevent potential negative consequences to the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.

The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, contact your local FUJIFILM dealer.

**In Countries outside the EU:** If you wish to discard this product, contact your local authorities and ask for the correct way of disposal.

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## Service Centers

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Contact our regional representative below or the distributor from which you purchased the product.

### <Europe>

FUJIFILM Europe GmbH

<http://www.fujifilm.eu/eu/>

See our website to locate our representative in your country.

### <USA>

Fujifilm Medical Systems U.S.A., Inc

<http://www.fujifilmendoscopy.com/>

(800) 385-4666

### <Australia>

FUJIFILM Australia Pty Ltd.

<http://www.fujifilm.com.au/>

1800 060 209

### <Asia>

FUJIFILM (Singapore) Pte. Ltd.

<http://www.fujifilm.com.sg/>

6380-5540

If you are not a resident of the regions above, contact the distributor from which you purchased the product.



**FUJIFILM Corporation**

26-30, Nishiazabu 2-chome, Minato-ku, Tokyo 106-8620, Japan



**FUJIFILM Europe GmbH**

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EU Importer:

**FUJIFILM Europe B.V.**

Oudenstaart 1, 5047 TK Tilburg, The Netherlands