

**UX4/UX410/UX420/UX430/UX450/UX460/
UX470**

**UX5/UX510/UX520/UX530/UX550/UX560/
UX570/UX5-SIM/UX5-NOR/UX5-TEC**

UX7/UX7-TEC/UX7-NOR/ UX7-SIM

Endoscope Camera System

Operator's Manual



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- Release time: 2024-11
- Revision: 1.0



- (9) External control extension connector: connects an external video recorder, and supports starting/stopping recording and taking screenshots.
- (10) USB connector 3: connects a USB drive for system software upgrade, supporting USB 2.0 protocol.
- (11) MSB (Mindray Serial Bus) connector: connects to a light source, controlling the brightness of the light source.
- (12) Network connector 1: supports software upgrade.
- (13) Network connector 2: reserved.
- (14) CAN (Controller Area Network) connector 1: connects external devices other than light source.
- (15) CAN connector 2: connects external devices other than light source.
- (16) 3G/12G SDI (Serial Digital Interface) out: connects a high definition/4K video device for high definition/4K video output, such as monitor.

2.9.3 Endoscope Camera Head

This system is compatible with the following models of camera head:

Model	Standard Cable Length	Function
CH5-SW100	4.5m	Supports white light imaging.
CH5-SW110	3m	Supports white light imaging.
CH5-SR100	4.5m	Supports white light and fluorescence imaging.
CH5-SR110	3m	Supports white light and fluorescence imaging.

2.9.3.1 Working Principle of Endoscope Camera Head

The camera head is used together with the CCU to receive 400 nm to 880 nm visible and near-infrared light, supporting visible and near-infrared light imaging.

It provides dual progressive scan CMOS (including a 1/1.8-inch native 4K BSI CMOS) for white light and fluorescence imaging, supporting 4K output display. By using the camera head, you can observe fluorescent images outside the body cavity of patients.

is installed in a chassis, sufficient space shall be left in front and behind of the chassis to facilitate operation or maintenance. To maintain good ventilation, sufficient space, i.e. at least 2 inches (5 cm), shall be left for each side of the equipment.

When the equipment is moved from one place to another, condensation may occur as a result of temperature or humidity difference. In this case, wait until the condensation disappears before using the equipment.

3.5 Installation of the Main Unit

The system can be installed as follows:

- On a flat surface
- On a medical supply unit
- On a trolley

NOTE

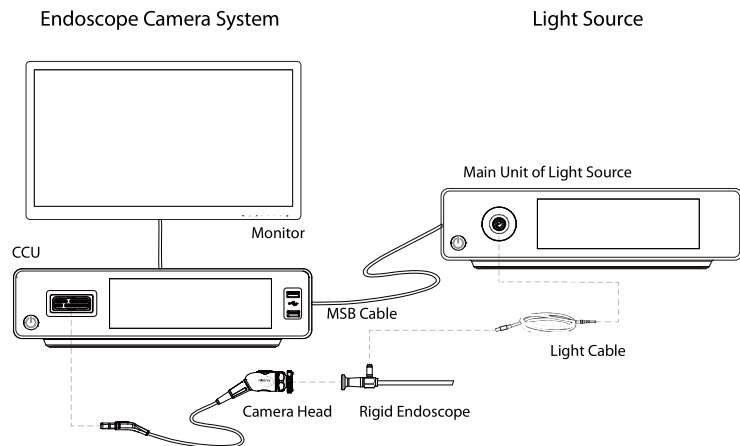
- **You are advised to install the main unit on a stable trolley rather than on the floor.**
 - **If the equipment is to be used with a trolley, there will be risks of falling or collision during movement. For more safety instructions, refer to the instructions for use accompanied with the trolley.**
 - **If the equipment is installed on a trolley, make sure the capacity of the trolley is higher than the total power consumption of all the equipment connected to the mains outlet of the trolley. If the power supply voltage is reduced due to insufficient capacity, tripping may occur, turning off the main unit and all other equipment connected to the trolley.**
-

3.6 Device Connection

Read this operator's manual carefully before using the system. Familiarize yourself with its function and operation, and observe the warnings and cautions included in the manual.

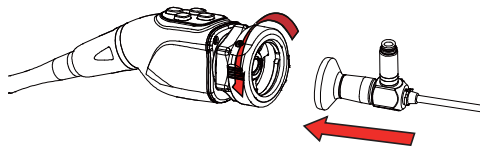
3.6.1 System Connection

The equipment can be connected with endoscopes, light sources and monitors to provide high definition images through denoise in multiple dimensions combining spatial and time domains. The connection of the modular-designed system is shown as below:



To connect devices in the diagram, follow the procedure below:

1. Connect a monitor to a correct video output connector on the back of the CCU with a video cable. Select a video cable that matches the video output connector. More than one monitors can be connected simultaneously to the CCU.
2. Connect a light source to the MSB connector on the back of the CCU with a MSB cable (System Ctrl Cable-Light Source).
3. Plug the connector of the camera head to the camera head connector on the front panel of the CCU.
4. To connect the camera head and endoscope, follow the procedure below:
 - a Rotate the endoscope coupler as indicated by the arrow on it.
 - b Align the eye piece of the endoscope with the endoscope coupler on the camera head.



- c Push the endoscope to the camera head and release the endoscope coupler.
- d Pull the endoscope slightly to check if the endoscope is secured.

To remove the endoscope, follow the procedure below:

1. Hold the camera head with one hand, and the endoscope with the other.

4.5 Check Before Operation

It is required to check and ensure that the equipment works properly. After turning on the equipment, check the following items:

- The system does not emit abnormal noise, smell, or excessive heat.
- Put a hand near the ventilation outlet and check that there is air flowing out.
- The touchscreen displays and functions correctly.
- Aim the tip of the endoscope to an object and check that the image quality displayed on the monitor is normal.

CAUTION

- **Do not put the system in use before the system is checked and works normally.**
 - **In case of any failure, stop and remove equipment from use. Otherwise, injury to the patient or operator or damage to the equipment might result.**
-

4.6 Setting Interconnected Light Source

After the CCU is correctly connected to the Mindray light source, if the light source is in auto mode, the CCU can automatically adjust the light brightness based on the current surgical field of view to ensure a clear surgical field of view and balanced light brightness.

You can turn on or off the light source by pressing the camera head button. For details about how to set the functions of camera head buttons, refer to **5.5 Setting Camera Head Functions**.

4.7 Selecting User Configuration

Through the user configuration function, you can save some customized parameters in the setup menu. For details about the list of customized parameters, refer to **C Default Settings**.

Select the drop-down list in the user configuration area on the main screen to select a saved user configuration.

To update the current user configuration, or delete a saved user configuration, refer to **5.2 Setting User Configuration**.


4.8 Performing White Balance

The white balance function is used to calibrate the color of the image displayed on the monitor.

It has to be performed:

- before starting the surgery;

5.4 Setting Image Mode

Select the Setup button  on the main screen to access the setup menu. Select the **Image** tab. On this tab, you can perform image optimization, adjust image color, set fluorescent image, and set specialist image.

5.4.1 Performing Image Optimization

To perform image optimization, follow the procedure below:

1. In the setup menu, select **Image** → **Image Opt.**.
2. Switch on or switch off **Detail Enhancement, Color Enhancement, Homogenous Brightness** and **Anti-fog**.
3. When connecting a camera head, switch on or switch off **HDR**.

NOTE

- **After Anti-fog is switched on, the equipment applies algorithms to implement image defogging.**
-

5.4.2 Adjusting Image Color

To adjust the image color, follow the procedure below:

1. In the setup menu, select **Image** → **Color Setup**.
2. Set **Color Style**. For detailed introduction of the options, refer to **2.7 Differences Among Models**.
3. Select the + or - icon to set **Saturation, Red Gain, or Blue Gain**. Or select **Reset** to restore the factory defaults.

5.4.3 Setting Fluorescent Image

When connecting a fluorescence camera head or G series 3D video endoscope, you can set fluorescent image. Follow the procedure below:

1. In the setup menu, select **Image** → **Fluorescence**.
2. Set **Fluorescence Sensitivity**.
 - ◆ Select **Level 1, Level 2** or **Level 3 (Autofluorescence)**.
 - ◆ Select **Level 0**, high-sensitivity processing is not performed.


5.4.4 Setting Image Parameters for Special Departments

To set image parameters for special clinical departments, follow the procedure below:

1. In the setup menu, select **Image** → **Specialty**.
2. When connecting a camera head, switch on or switch off **De-grid Optimization** and **Anti-laser Optimization** under **Special Function**.

3. Switch on or switch off **Tone Enhancement**. After switching on it:
 - ◆ Set **Tone Enhancement Mode** to **Mode R** or **Mode G** as needed. After setting, the system enhances the image color contrast by color inversion.
 - ◆ Set **Display Mode** to **Full Screen** or **Dual Split** as needed.

5.5 Setting Camera Head Functions

Select the Setup button  on the main screen to access the setup menu. Select the **Camera Head** tab. On this tab, you can set functions of the P, W, and M buttons to performing white balance, taking photos, recording, or controlling the brightness of light.

5.5.1 Introduction to Short-press/Long-press Functions

The following table lists the short-press functions that you can set for the buttons:

Short-Press Function	Description
Capture	Short press the button to capture the image displayed on the monitor.
Mode Cycle	Short press the camera head button to cycle through display modes.
Image Zoom	Short press the button to zoom in or out of the image displayed on the monitor.
WL Brightness	Short press the button to increase or decrease the image brightness.
Fluor Intensity	Short press the button to increase or decrease the fluorescence intensity.
3D/2D Switching (with 3D video endoscope)	Short press the button to cycle through 3D view modes.
External Source	Short press the button to display the external input source on the monitor.
Interconnection	Short press the button to display parameters of interconnected devices on the monitor.
Tone Enhancement	Short press the button to cycle through the tone enhancement modes.
Counter	Short press the button to start/stop timing or reset the timer. The recorded time is displayed on the monitor.
Smoke Evacuation	Short press the button to turn on or off the smoke exhaust function of the interconnected insufflator.
Anti-fog	Short press the button to turn on or off the image defogging function.

Short-Press Function	Description
Image Flip	Short press the button to switch the image flip mode.
No Function	Short-press of the button will not activate any function.

The following table lists the long-press functions that you can set for the buttons:

Long-Press Function	Description
Capture	Long press the button to capture the image displayed on the monitor.
REC	Long press the button to start/stop recording video displayed on the monitor.
White Balance	Long press the button to start white balance.
3D/2D Switching (with 3D video endoscope)	Long press the button to cycle through 3D view modes.
External Source	Long press the button to display the external input source on the monitor.
Interconnection	Long press the button to display parameters of interconnected devices on the monitor.
Tone Enhancement	Long press the button to cycle through the tone enhancement modes.
Counter	Long press the button to start, stop timing or reset the timer. The recorded time is displayed on the monitor.
Insufflator Switch	Long press the button to turn on or off the inflation function of the interconnected insufflator. Prompts of insufflation status and insufflator parameters will be displayed on the monitor.
Smoke Evacuation	Long press the button to turn on or off the smoke exhaust function of the interconnected insufflator.
Light Switch	Long press the button to stop the interconnected light source from emitting light or turn on the brightness automatic adjustment.
Anti-fog	Long press the button to turn on or off the image defogging function.
Image Flip	Long press the button to switch the image flip mode.
No Function	Long-press of the button will not activate any function.

7.3.2 Disinfecting the CCU

Disinfect the equipment as required in the local or your hospital's servicing schedule. Clean the equipment before disinfection. Dilute and use the disinfectants in accordance with the instructions of use provided by their manufacturers. Use only the disinfectants recommended in this chapter for disinfection.

The following table lists the recommended disinfectants for the main unit:

Product Name	Manufacturer
Alpet® D2 Surface Sanitizing Wipes	BEST SANITIZERS INC™
CIDEX® OPA	Gilag GmbH International Advanced Sterilization products
Isopropanol, 70%	/
Metrex CaviWipes™	METERX® RESEARCH
PDI Sani-Cloth® Plus Germicidal Disposable Cloth	PDI Inc.
PDI Super Sani-Cloth® Germicidal Disposable Wipe	PDI Inc.
Sodium hypochlorite bleach, 0.5%	/
HEALTH ESSENCE Disinfecting Effervescent Tablets	Beijing ChangJiangMai Medical Science Technology Co. Ltd.
HEALTH ESSENCE Surface Disinfectant	Beijing ChangJiangMai Medical Science Technology Co. Ltd.
Health Essence Bis-QACs Disinfectant	Beijing ChangJiangMai Medical Science Technology Co. Ltd.
Dian'erkang Surface Wipes	Shanghai Likang Disinfectant Hi-Tech Co., Ltd
Dian'erkang Surface Disinfectant	Shanghai Likang Disinfectant Hi-Tech Co., Ltd
Dian'erkang Spray Disinfectant	Shanghai Likang Disinfectant Hi-Tech Co., Ltd
Ethanol, 75%	/
Clorox Dispatch® Hospital Cleaner Disinfectant Towels with Bleach	Clorox

3. Under the running water, rotate the focusing ring and endoscope coupler of the camera head 3 times by referring to the figures in **7.4.3.1 Washing**.
4. Flush the equipment parts with complex structures, such as screw threads and gaps, with a syringe with a volume of at least 10 ml. Repeat this step 3 times.

NOTE

- **For rinsing, use purified water.**
 - **Do not use water for rinsing repeatedly.**
-

7.4.3.3 Drying

Dry the outer surfaces of the camera head with a disinfected lint-free cloth, and dry the equipment parts with complex structures by using an air gun.

7.4.4 Disinfecting the Camera Head

Disinfect the camera head as required in the local or your hospital's servicing schedule. Use the disinfectants in accordance with the instructions of use provided by their manufacturers. Use only the disinfectants recommended in this chapter for disinfection.

The following table lists the recommended disinfectants for the camera head:

Product Name	Disinfection Method
Ethanol, 75%	Wiping
Glutaraldehyde, 2% - 2.5%	Immersing

NOTE

- **In case the high-level disinfection required by your hospital or local regulations needs to be achieved, select the glutaraldehyde immersion disinfection method.**
 - **Do not disinfect the camera head with ultraviolet light, long time exposure to which may cause damage to the imaging element of the camera head.**
-

7.4.4.1 Rinsing After Disinfection

After immersing the camera head in glutaraldehyde for disinfection, follow the procedure below to rinse the camera head:

1. After disinfection, immerse the camera head in a sterile container filled with rinsing water.
2. In the container, wipe the outer surfaces of the camera head with a sterile lint-free cloth.
3. Under the running water, rotate the focusing ring and endoscope coupler of the camera head 3 times by referring to the figures in **7.4.3.1 Washing**.

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UX5 Series 4K&NIR/4K&3D Endoscope Camera System

Vision beyond Imagination



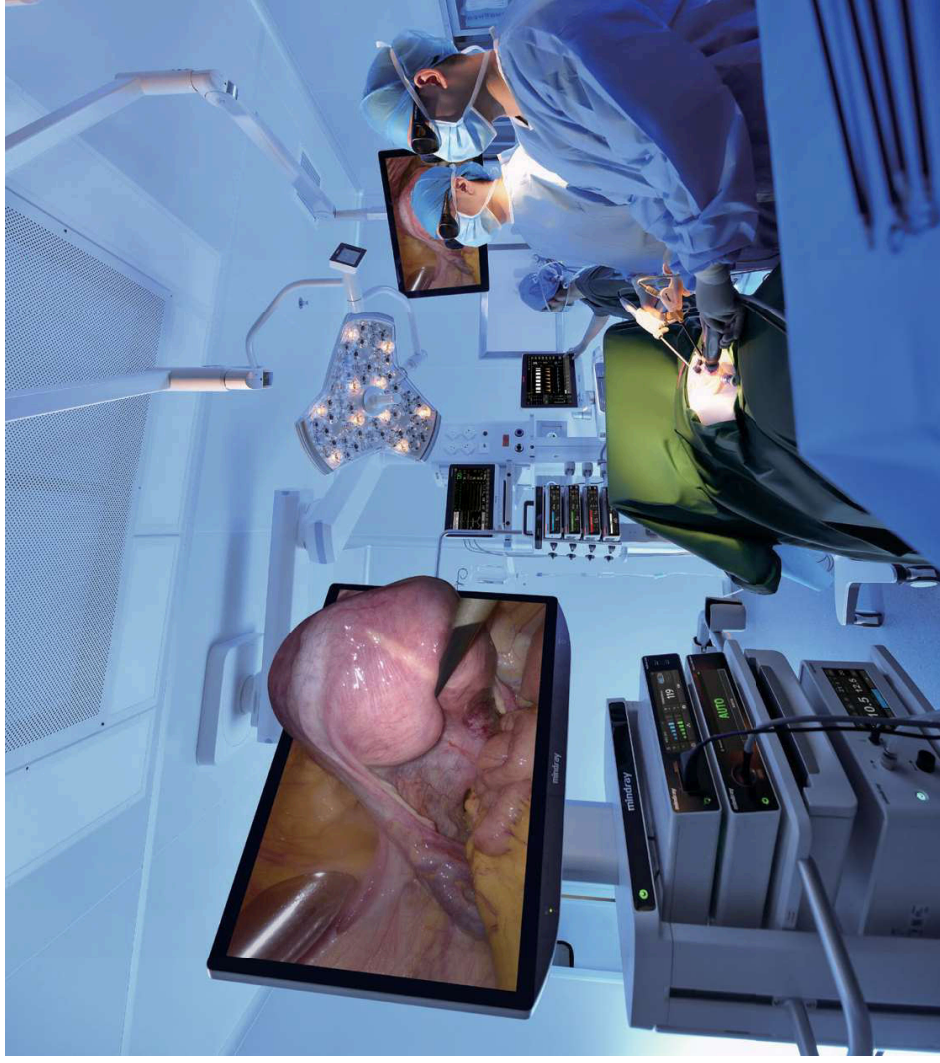
This brochure can be applicable to the following models:

Monitor:
LMD-MH3207/LMD-MH5307/5318BP
Trolley:
TV-500TV-300
Endoscope Camera System:
UX5/UX5-TEC
Endoscope Light Source:
HB500R/HB500

4K 3D Video Endoscope:
M 31000A/M 31000A/G 31030A/G 31000A
Camera Head:
CH5-SR100/CH5-SR110/CH5-SW100/CH5-SW110
Rigid Endoscope:
G 01030A/G 01000A/G 00530A/G 00500A/G 10530A/
G 10500A/M 01030A/M 01000A

www.mindray.com

P/N: ENG-UX5 Series 4K&NIR/4K&3D Endoscope Camera System-210285X 02P-20241205
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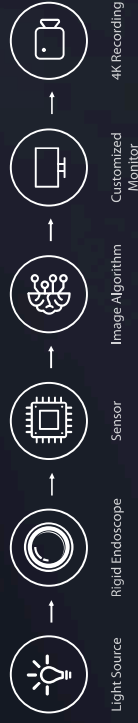
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healthcare within reach

Full-chain Independent R&D

The advancement of minimally invasive technology has significantly generated the demand for precision surgeries. This has led to increased requirements for the resolution, real-time navigation, and accurate restoration of 3D structures within the cavity.

Based on full-chain independent R&D, Mindray's new generation UX Series Endoscope Camera System has been innovatively integrated with 4K fluorescence and 3D technologies. It provides a comprehensive enhancement in imaging performance and operational experience, enabling clinical breakthroughs in complex surgical procedures.

With various configuration options suitable for multiple departments, it is a truly "all in one imaging platform" for the operating room.



4K Monitor

Options of 32 inch and 55 inch
Options of 2D and 3D

- Recommended: LMD-XH3207/LMD-XH550T

Master Control Trolley

One-touch to start the entire set
of equipment on the trolley

- Recommended: TV-500

Endoscope Camera System

Integrated with 4K Fluorescence
and 3D Technologies

- Recommended: UX5

Endoscope Light Source

White Light/Fluorescence

- Recommended: HB500R

4K 3D Video Endoscope

Selectable viewing angles of 0° and 30°

- Recommended: M 31030A

Camera Head

Multiple focal lengths available

White light camera head weight: 190 g

Fluorescence camera head weight: 240 g

- Recommended: CU5-SR100/CU5-SR110

Rigid Endoscope

Selectable diameters of 10 mm, 5 mm
and 3 mm

- Recommended: G 01030A

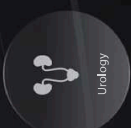
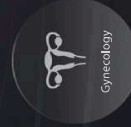
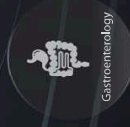
Medical Digital Video Recorder

Access to hospital PACS system

Available to record dual-channel

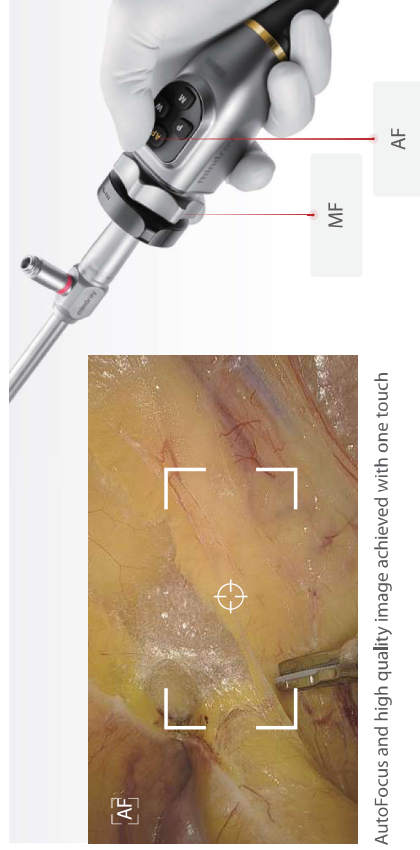
simultaneously

- Recommended: UR-NLX14K1C



Smart View Exceptional Image Quality

Integrated auto and manual focus

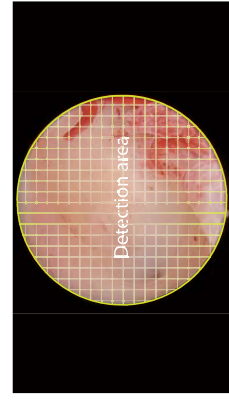


AutoFocus and high quality image achieved with one touch

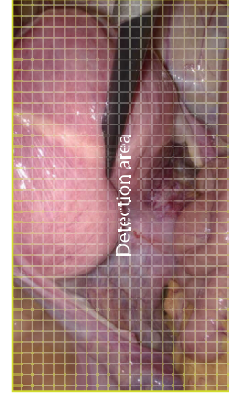
Automatic scene recognition

Smart exposure: Determine different detection areas according to different scenes, and accurately match the exposure parameters without the need to manually switch department modes.

Automatic dimming: The camera system can automatically adjust the intensity of the light source in real time based on the current exposure requirements, ensuring optimal brightness at all times.



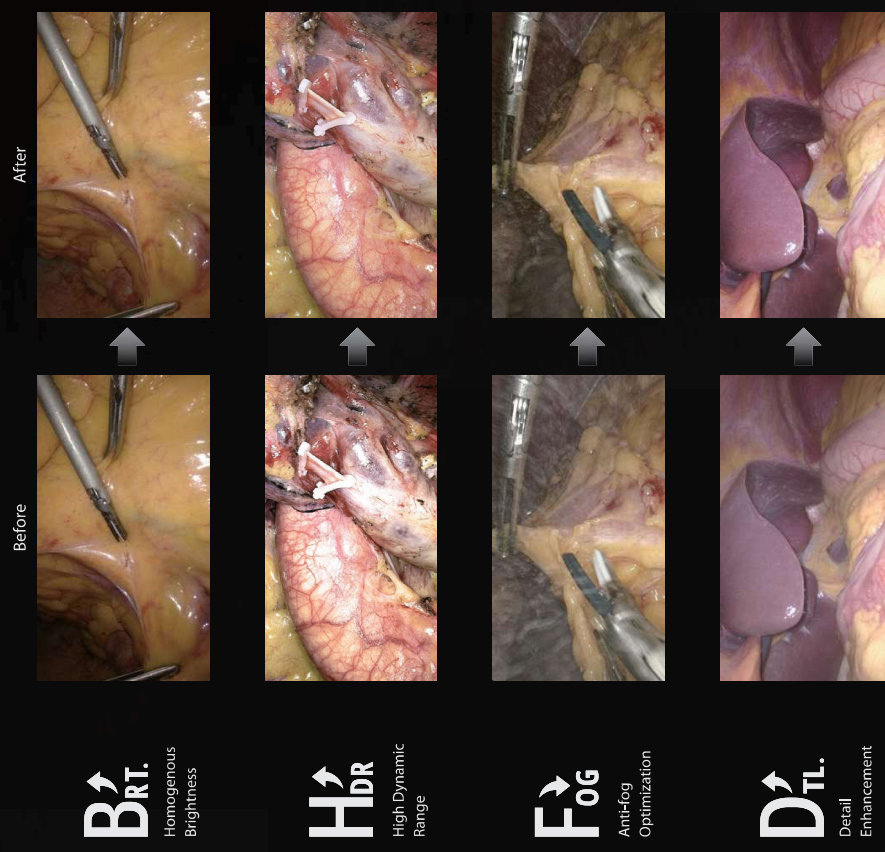
Small diameter scope scene (e.g. hysteroscope)



Laparoscope scenario

eImage Intelligent Image Algorithm, Even in Extreme Circumstances

A variety of post-processing image algorithms make up for any uneven lighting, local overexposure, thick fog and other inherent physical defects in specific situations, to deliver clear, structured, and layered images, even in extreme circumstances.



HB500R/HB500R-TEC/HB500/HB500-TEC

Endoscope Light Source

Operator's Manual

CE 0123

CE

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- Release time: 2023-10
- Revision: 2.0

2 Product Introduction

2.1 Intended Purpose

The Endoscope Light Source is intended to provide real-time endoscopic visible and near infrared fluorescence illumination (HB500R/HB500R-TEC only). The Endoscope Light Source, in combination with Mindray specified endoscope camera system, and endoscope, enables surgeons to perform routine visible light endoscopic procedures as well as further visually assess vessels, blood flow and related tissue perfusion with near infrared imaging (HB500R/HB500R-TEC only) during minimally invasive surgery.

NOTE

- **According to the conclusion of clinical evaluation and residual risk evaluation, for the intended patients, there is no known side effects that can occur during or after the use of the medical device. And there is no need for the operator to make extra preparations. Thus, no residual risk associated with using the medical device should be disclosed due to the risk management report.**
-

2.2 Intended Users

Generally, the user of the product shall be the medical workers who have taken training of endoscopic technique and thoroughly mastered the endoscopic operation technology.

2.3 Intended Patient Population

This product is not limited to a certain type (sex, age, weight etc.), it can be applicable for adults, pregnant women, pediatric patients and neonates, etc. The attending physician must decide whether the foreseen application is admissible based on the general condition of the patient.

2.4 Intended Medical Conditions

This product should be used in medical rooms which are equipped with electrical facilities in accordance with national regulations.

2.5 Contraindications

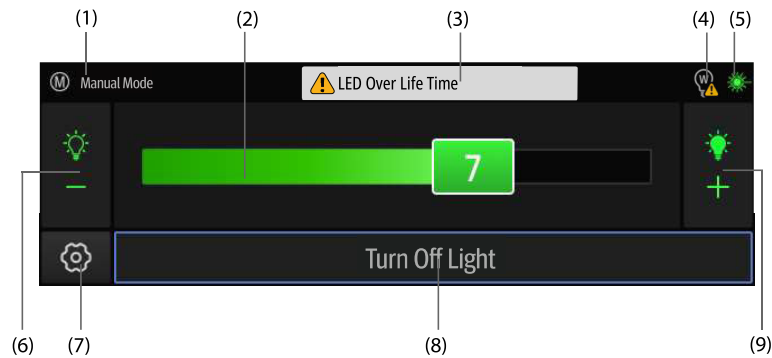
ICG contains sodium iodide and should be used with caution in patients who have a history of allergy to iodides or iodinated imaging agents.

NOTE

- **Dry the equipment immediately in case of rain or water spray.**

3.7.1 Operation Screen Introduction


The following figure shows the operating screen of the equipment:



- (1) Mode area: indicates the current mode. Select this area to switch between the manual mode and auto mode.
- (2) Brightness indication area: indicates the current brightness of light. Move the slider to adjust the brightness of light. If the equipment is in the auto mode, "AUTO" is displayed in this area.
- (3) Error message area: displays error messages.
- (4) Bulb status symbol: indicates the service life status of the bulb. For detailed introduction of the symbols, refer to **3.7.2 On-screen Symbols**.
- (5) Laser diode (LD) status symbol: indicates the status of LD output. This symbol is dimmed when the LD is off. For detailed introduction of the symbols, refer to **3.7.2 On-screen Symbols**.


(6)



Brightness decrease button  : select to decrease the brightness of light (the illumination intensity of the light source).

(7)



Setup button  : select to display the setup menu.

(8)

Light control button: select to turn on/off the light output.

CAUTION

- **Use the equipment only in environment that meets the specific requirements. Otherwise, the equipment may not meet the performance specifications or unexpected consequences, e.g. damage to the equipment, could result. If the performance of the equipment is degraded due to aging or environmental conditions, contact the service personnel.**
-

A.3 Power Supply Specifications

Working power supply	100-240VAC ($\pm 10\%$), 50/60 Hz (± 3 Hz)
Input power	260VA

A.4 Physical Specifications

Dimension	Depth: 380 ± 5 mm Width: 350 ± 5 mm Height: 80 ± 5 mm (excluding the rubber feet)
Weight	≤ 10 kg

A.5 Hardware Specifications

Display type (CCU)	Touchscreen
Display size (CCU)	7.8 inches
Device interfaces	Power socket: 1, connecting the AC Mains MSB connector: 1, supporting serial communication protocol USB connector: 1, supporting USB 2.0 protocol. Fixed time synchronization pulse specified by the USB protocol Network connector: 1, RJ45 interface, supporting 100BASE-TX protocol. Calibration protocol of TCP/IP Light cable connector: 1, connecting the light cable
Bulb type	HB500R/HB500R-TEC: LED, which outputs white light, and semiconductor lasers (class 3R), which output near-infrared light HB500/HB500-TEC: LED, which outputs white light

Service life of bulb	LED: over 60000 hours Semiconductor lasers: over 15000 hours
Bulb specification	LED: 3.5 V, 27 A Semiconductor lasers: 4 V, 8.5 A
Diameter of light outlet	$\Phi 7.2 \pm 0.5$ mm

A.6 Performance Specifications

Maximum central illumination	≥ 3000000 Lux
Color temperature	3000K - 7000K
Color rendering index	≥ 90 , in the white light mode
Maximum noise	≤ 55 dBA
Defibrillation recovery time	1s

A.7 Laser Performance (for HB500R/HB500R-TEC)

Laser wavelength	780nm \pm 10nm ; Full width at half maximum (FWHM): 5 nm \pm 5nm
Beam divergence angle	$70^\circ \pm 10^\circ$
Classification	3R
Test value of laser output safety sign	≤ 50 mW

A.8 Operating Environment

Hardware configuration	CPU: 500 MHz RAM: 2 Gb Flash: 4 GB
Software environment	LINUX

NOTE: The above is the minimum requirements of operating environment.

LC0005S/LC0003S Light Cable

Instructions for Use

Statement

SHENZHEN MINDRAY BIO-MEDICAL ELECTRONICS CO., LTD. (hereinafter called Mindray) owns the intellectual property rights to this product and this manual. Disclosure of the information in this manual in any manner whatsoever without the written permission of Mindray is strictly forbidden.

This manual provides the instructions necessary to operate the product in accordance with its function and intended use. Observance of this manual is a prerequisite for proper performance and correct operation, and ensures patient and operator safety.

Mindray is responsible for the effects on safety, reliability and performance of this product, only if:

- (1) this product is used in accordance with the instructions for use.
- (2) this product is not damaged by human factors. Human factors refer to unintentional falling, intentional damaging, etc.

In the event that it becomes necessary to return a unit to Mindray, please contact the Mindray Service Department and obtain a Mindray Customer Service Authorization Number. The Mindray Customer Service Authorization Number must appear on the outside of the shipping container. Return shipments will not be accepted if the Mindray Customer Service Authorization Number is not clearly visible. Please provide the model number, serial number, and a brief description of the reason for return. The customer is responsible for freight charges when this product is shipped to Mindray for service (including any relevant customs fees or other freight related charges).

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The issue date of this manual is 2021-5.

Notification of Adverse Events

As a health care provider, you may report the occurrence of certain events to SHENZHEN MINDRAY BIO-MEDICAL ELECTRONICS CO., LTD., and possibly to the competent authority of the Member state in which the user and/or patient is established.

These events, include device-related death and serious injury or illness. In addition, as part of our Quality Assurance Program, SHENZHEN MINDRAY BIO-MEDICAL ELECTRONICS CO., LTD. requests to be notified of device failures or malfunctions. This information is required to ensure that SHENZHEN MINDRAY BIO-MEDICAL ELECTRONICS CO., LTD. provides only the highest quality products.

Important Information

1. It is the customer's responsibility to maintain and manage the product after delivery.
2. The warranty does not cover the following items, even during the warranty period:
 - (1) Damage or loss due to misuse or abuse.
 - (2) Damage or loss caused by force majeure such as fires, earthquakes, floods, and lightning.
 - (3) Damage or loss involving the product purchased from a channel other than Mindray or its authorized agency.
3. This product shall not be modified without permission.
4. In no event shall Mindray be liable for the damage caused by alteration, modification, or repair performed by personnel other than those designated by Mindray.
5. At the end of the service life of the product, please contact Mindray or its agency. Mindray shall not be liable for the result if you do not consult Mindray or its agency about disposal of the product.
6. This manual contains warnings regarding foreseeable potential dangers, but you shall always be alert to dangers other than those indicated as well.
7. Mindray shall not be liable for damage or loss that results from negligence or from ignoring the precautions and operating instructions described in this manual.
8. This manual shall always be kept properly so that it can be obtained conveniently as needed.

I. Intended Use

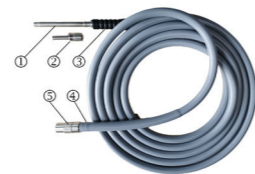
The light cable is used to transmit light during the endoscopic diagnosis and treatment. In the medical field, it is used with the cold light source of endoscopes.

NOTE
<ul style="list-style-type: none"> According to the conclusion of clinical evaluation and residual risk evaluation, for the intended patients, there is no known side effects that can occur during or after the use of the medical device. And there is no need for the operator to make extra preparations. Thus, no residual risk associated with using the medical device should be disclosed due to the risk management report.

II. Specifications

Model	LC0005S	LC0003S
Length of light cable	3000 mm ± 10%	
Diameter of exit optical fiber	Φ4.8 mm ± 0.1mm	Φ3.5 mm ± 0.1mm
Minimum bending radius	50mm	

III. Introduction



1. Connector (to light source)
2. Light source adapter
3. Connector sleeve
4. Anti-bending device
5. Connector (to endoscope)

IV. Safety Precautions

<p>⚠ WARNING</p> <p>Risk of patient injury</p> <ul style="list-style-type: none"> Ensure that all endoscopic equipment is properly connected and functioning before inserting the endoscope into a patient. Use this product only along with the endoscopic device specified by Mindray.
<p>⚠ CAUTION</p> <p>Risk of patient injury</p> <p>Light source produces a lot of heat, causing a high temperature at the connector and front end of the endoscope. It may result in the following risk:</p> <ul style="list-style-type: none"> Scalding the patient (for example, when the small cavity of the lumen is exposed to excessive lighting, or the front end of the endoscope is close to the tissue). Burn of the patient or user's skin. Combustion or burning-out of surgical instruments (such as surgical drapes, and plastic materials). <ul style="list-style-type: none"> It is forbidden to place the endoscopic equipment on the patient's skin, flammable materials, or temperature-sensitive materials. Adjust the output power of the light source to make the minimum brightness required to illuminate the target area. Avoid excessive exposure to strong light.
<p>⚠ CAUTION</p> <p>Risk of user injury</p> <p>When the light source is on, do not look straight at the endoscopic connector of the light cable because that may cause eye injury.</p>

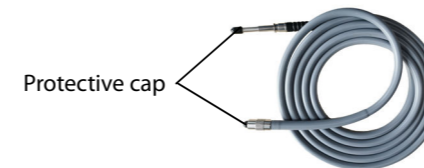
V. Removal After Use

<p>⚠ CAUTION</p> <p>Risk of user injury</p> <p>Touching the light cable connector when its temperature is high may cause scalding.</p> <ul style="list-style-type: none"> Cool the light cable after use.

INSTRUCTION
<p>Risk of product damage</p> <p>Sudden change in temperature may cause damage to the product.</p> <ul style="list-style-type: none"> Cool the light cable after use. It is forbidden to use liquid to cool the light cable.
INSTRUCTION
<p>Risk of product damage</p> <p>Pulling the cable may damage the product.</p> <ul style="list-style-type: none"> To unplug the light cable from the light source, grasp the plastic shell of the connector.

VI. Cleaning, Disinfection, and Sterilization

Clean, disinfect and sterilize this product regularly based on the local or hospital's regulations related to cleaning, disinfection, and sterilization. A protective cap is provided together with the product before delivery, as shown in the following figure. Remove the protector before cleaning, disinfection, and sterilization.



1. Cleaning and Disinfection

- (1) Disconnect the light cable from the devices, including light source and endoscope.
- (2) Use a soft cloth dipped in an appropriate amount of water to remove leftover on the surface of the light cable.
- (3) Use a clean soft cloth dipped in an appropriate amount of ethanol (75%) to wipe the surface of the light cable.
- (4) Use a dry soft cloth to wipe off detergent on the surface of the light cable, and place the light cable in a ventilated and cool environment to air dry it.

2. Sterilization

The recommended sterilization method is pressure steam sterilization. For loading method of pressure steam sterilization, please refer to the corresponding sterilizer operation instructions.

The procedure is as follows:

- (1) Remove the light source adapter from the light cable.
- (2) Put the product in a sterilization box, and wrap two layers of sterile sheets to prevent contamination during storage and transportation after sterilization.
- (3) Perform pressure steam sterilization as instructed in the manual for using the sterilizer.

The pressure steam sterilization parameters are as follows:

Sterilization process	Temperature	Minimum required time
Pulsation vacuum	132°C - 134°C	4min

<p>⚠ WARNING</p> <p>Risk of patient/medical staff injury</p> <p>Improper or inadequate cleaning, disinfection, and sterilization may result in infection of the patient or medical staff or product damage.</p> <ul style="list-style-type: none"> Clean, disinfect, and sterilize the product for the first use and before each use. Clean, disinfect and sterilize the product properly according to this manual.
--

VII. Warranty

If a user or unauthorized person repairs or modifies the product privately, the warranty of the Mindray becomes invalid. The product damage caused by improper use is not covered by the warranty.

VIII. Operating Environment

1. Temperature: 0°C - +35°C
2. Humidity: 30% - 85% RH, non-condensing
3. Atmospheric pressure: 70 kPa - 106 kPa

IX. Storage and Transportation Environment

1. Temperature: -20°C - +60°C
2. Humidity: 30% - 95% RH, non-condensing
3. Atmospheric pressure: 70 kPa - 106 kPa

Put clean and disinfected products in packages capable of isolating the products from bacteria, and store them in a dark, cool, and well-ventilated room.

X. Equipment Symbols

Symbol	Description
	Medical Device
	Manufacturer
	Date of manufacture
	TYPE CF APPLIED PART
	Batch code
	Temperature limit
	Humidity limitation
	Atmospheric pressure limitation
	The product bears CE mark indicating its conformity with the provisions of the Council Directive 93/42/EEC concerning medical devices and fulfils the essential requirements of Annex I of this directive. Note: The product complies with the Council Directive 2011/65/EU.
	Refer to instruction manual/booklet
	Authorized representative in the European community
	Comply with the requirements of Directive 2012/19/EU Waste Electrical & Electronic Equipment

Company Contact

Manufacturer:	Shenzhen Mindray Bio-Medical Electronics Co., Ltd.
Address:	Mindray Building, Keji 12th Road South, High-tech Industrial Park, Nanshan, Shenzhen 518057, P.R.China
Website:	www.mindray.com
E-mail Address:	service@mindray.com
Tel:	+86 755 81888998
Fax:	+86 755 26582680
EC-Representative:	Shanghai International Holding Corp. GmbH (Europe)
Address:	Eiffestraße 80, 20537 Hamburg, Germany
Tel:	0049-40-2513175
Fax:	0049-40-255726

8. 请妥善保管本说明书，以确保管理和操作人员可以随时查阅。

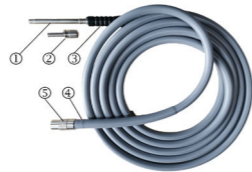
一、预期用途

导光束用于在内窥镜诊断和治疗中传输光线。医学领域中，它与医用内窥镜冷光源配套使用。

二、主要技术参数

型号	LC0005S	LC0003S
导光束长度	3000 mm ± 10%	
出射端光纤直径	Φ4.8 mm，允差 ±0.1mm	Φ3.5 mm，允差 ±0.1mm
最小可弯曲半径	50mm	

三、导光束结构



1. 导光束接头（光源侧）
2. 导光束光源适配器
3. 接头套管
4. 防折弯装置
5. 导光束接头（内窥镜侧）

四、安全注意事项

警告
患者受伤的风险 <ul style="list-style-type: none"> • 将内窥镜插入患者体内之前，应始终正确连接内窥镜设备。 • 本产品仅可与迈瑞指定的内窥镜设备配合使用。
小心
患者受伤的风险 光源会产生大量热量，导致内窥镜接头与先端部温度升高。可能会存在以下风险： <ul style="list-style-type: none"> ➢ 患者组织烫伤（例如，管腔较小的腔隙暴露在过强的照明下，或内镜先端部与组织距离过近）。 ➢ 患者或用户皮肤烧伤。 ➢ 手术器械燃烧或烧毁（例如，手术铺巾，塑料材料等）。 <ul style="list-style-type: none"> • 禁止将内窥镜设备放置在患者皮肤、可燃性材料或对温度敏感的材料上。 • 调节光源的输出功率，达到照亮目标区域所需的最低亮度。避免强光的过度暴露。
小心
用户受伤的风险 在光源打开的情况下，直视导光束的内镜接头可能导致眼睛损伤。因此，光源打开的情况下，禁止直视导光束的内镜接口。

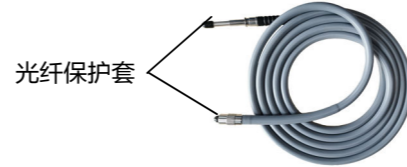
五、使用后拆卸

小心
用户受伤的风险 导光束上的接头温度过高时，触摸接头可能会导致烫伤。 <ul style="list-style-type: none"> • 使用后应使导光束冷却。
说明
产品损坏的风险 高温导光束的温度急剧变化会损伤产品。 <ul style="list-style-type: none"> • 使用后应使导光束冷却。 • 禁止使用液体冷却导光束。
说明
产品损坏的风险 拉拽缆线会损坏产品。 <ul style="list-style-type: none"> • 从光源上拔下导光束时，应拉动接头的塑料外壳。

六、清洗、消毒和灭菌

请根据当地或医院关于医疗设备清洁消毒的规定定期对本产品进行清洁、消毒和灭菌。

本产品出厂时配送光纤保护套，如下图所示，清洁消毒及灭菌前请先取下保护套。



1. 清洁和消毒

- (1) 断开导光束与光源、内窥镜等设备的连接。
- (2) 使用一块软布蘸取适量的水除去导光束表面的残留物。
- (3) 使用干净的软布蘸取适量乙醇（75%）擦拭导光束表面。
- (4) 用干的软布擦去导光束表面的清洁剂，并将导光束置于通风阴凉的环境下风干。

2. 灭菌

推荐使用经验证过的灭菌方法：压力蒸汽灭菌。

压力蒸汽灭菌的装载方法，请参照相应灭菌器的操作说明。

步骤如下：

- (1) 卸下导光束光源适配器。
- (2) 将产品放置在灭菌盒中，并包裹两层无菌单，以防止灭菌后在存放、运输过程中染菌。
- (3) 参照灭菌器的使用说明执行压力蒸汽灭菌。

压力蒸汽灭菌器灭菌参数如下：

设备类别	温度	所需最短时间
预真空式	132°C ~ 134°C	4min

警告
患者 / 医务人员受伤的风险 清洗、消毒和灭菌不当或不充分可能导致患者或医务人员感染和产品损坏。 <ul style="list-style-type: none"> • 首次及此后每次使用产品之前，应该进行清洗、消毒和灭菌。 • 按照本说明书，正确进行产品清洗、消毒和灭菌。

七、保修

如果用户或未经授权的人员私自维修或改造产品，则迈瑞公司的保修将失效。因使用不当导致的产品损坏不在保修范围之内。

八、工作环境

1. 温度：0°C ~ +35°C
2. 湿度：30% ~ 85% RH（无凝露）
3. 大气压：70 kPa ~ 106 kPa

九、存储和运输环境

1. 温度：-20°C ~ +60°C
2. 湿度：30% ~ 95% RH（无凝露）
3. 大气压：70 kPa ~ 106 kPa

将清洗和消毒处理后的产品置于能隔离细菌的包装中，存放在避光、阴冷、通风良好的室内。

十、符号

符号	说明
	注意！查阅随机文件
	生产日期
	CF 型应用部分
	批次代码
	温度极限

符号	说明
	湿度极限
	大气压力极限
	电子产品环保使用年限（20 年）

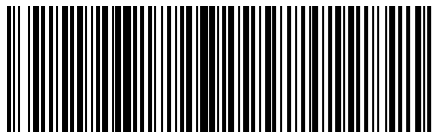
售后服务单位

单位名称：深圳迈瑞生物医疗电子股份有限公司
 单位地址：深圳市南山区高新技术产业园区科技南十二路迈瑞大厦
 邮政编码：518057
 网址：www.mindray.com
 24 小时服务热线：4007005652
 电话：+86 755 81888998
 传真：+86 755 26582680

LC0005S/LC0003S

导光束 使用说明书

Light Cable Instructions for Use



046-020513-00(3.0)

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- (1) 按照《使用说明书》使用本产品。
- (2) 非人为因素造成的产品损坏。人为因素是指不小心摔落、蓄意破坏等。

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说明书编制日期：2021 年 5 月

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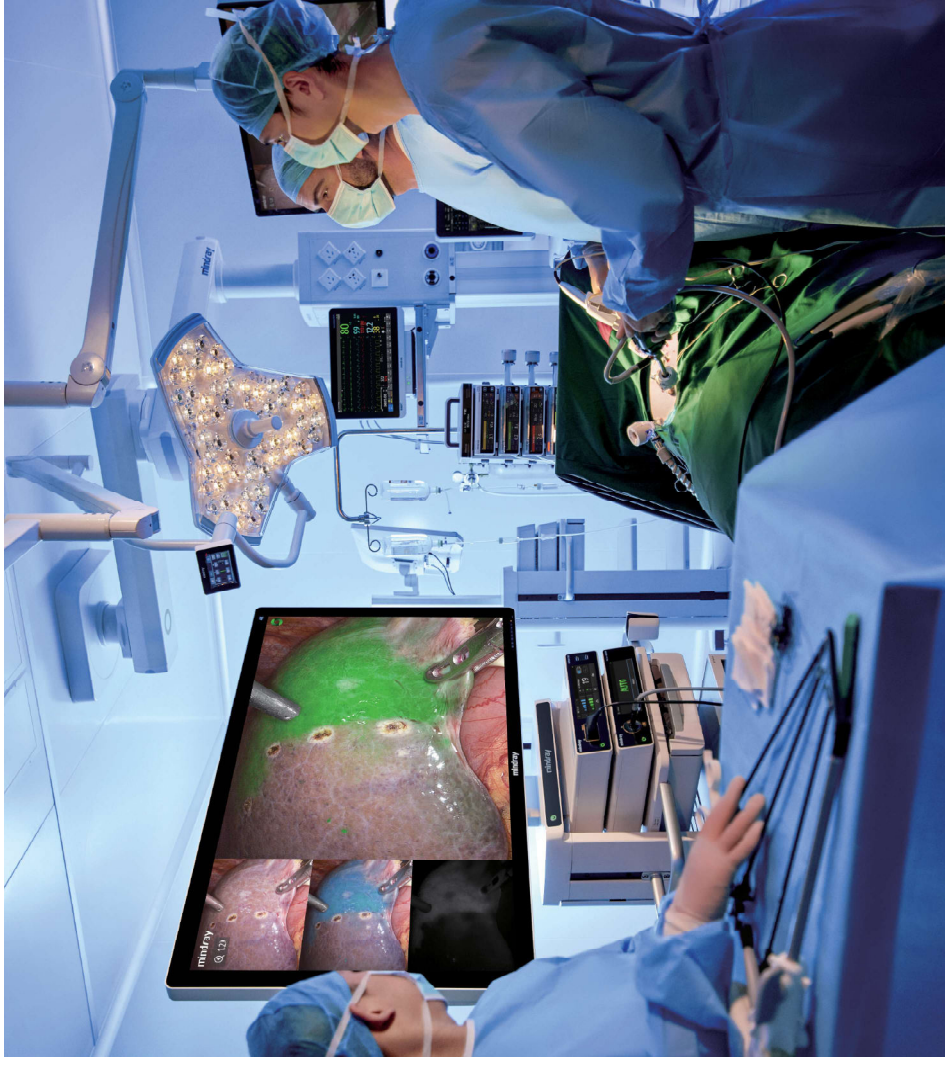
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 - (1) 由于操作不当或故意损坏造成的损坏。
 - (2) 由于不可抗力如火灾、地震、洪水、闪电等造成的损坏。
 - (3) 不是从迈瑞公司或指定的分销商手中购买的迈瑞产品，如果发生损坏，将不予保修。
3. 禁止擅自对本产品做任何改动。
4. 非迈瑞公司指定人员对设备进行的重新改装、改动或维修造成的损坏，迈瑞将不负任何责任。
5. 产品报废处理前请联系迈瑞公司或其代理机构。未向迈瑞公司或其代理机构咨询而对产品进行处理，迈瑞公司不对其所产生的后果负责。
6. 本说明书对可以预见的危险做出了警告。但请在任何时间保持警惕以防出现其他危险。
7. 由于疏忽没有按照说明书中的指引而产生的问题，迈瑞公司将不对此负责。

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Rigid Endoscope
Small Diameter, Big Vision

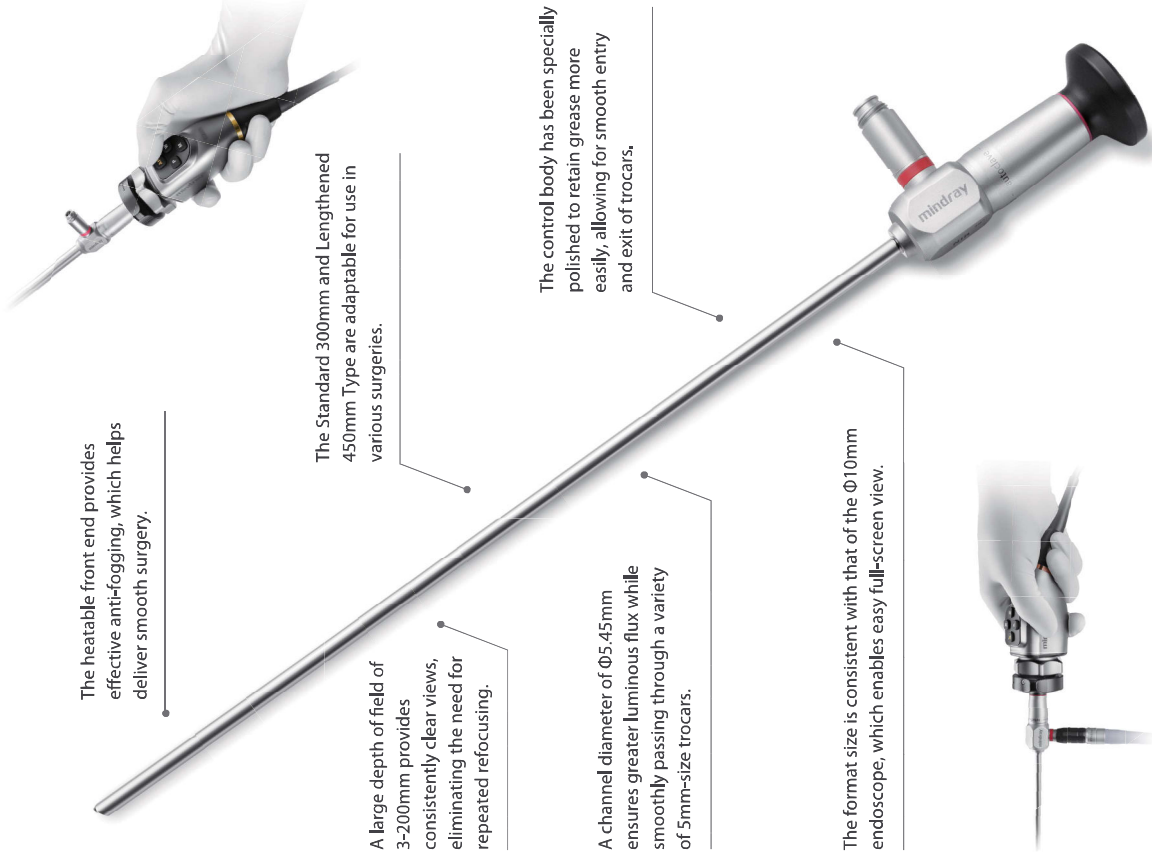


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Small Diameter, Big Vision



The heatable front end provides effective anti-fogging, which helps deliver smooth surgery.

The Standard 300mm and Lengthened 450mm Type are adaptable for use in various surgeries.

A large depth of field of 3-200mm provides consistently clear views, eliminating the need for repeated refocusing.

The control body has been specially polished to retain grease more easily, allowing for smooth entry and exit of trocars.

A channel diameter of $\Phi 5.45\text{mm}$ ensures greater luminous flux while smoothly passing through a variety of 5mm-size trocars.

The format size is consistent with that of the $\Phi 10\text{mm}$ endoscope, which enables easy full-screen view.

Rigid Endoscope



G Series- Compatible with fluorescent & white light

Standard 5mm Type

Recommended Surgery: Single-port gynecologic surgery, thoracic surgery

Product	Diameter	Working Length	Field of View	Code
	5.45mm	300mm	85°	G 00500A
	5.45mm	300mm	85°	G 00530A

Lengthened 5mm Type

Recommended Surgery: Single-port bariatric surgery, single-port bariatric surgery, breast and thyroid surgery

Product	Diameter	Working Length	Field of View	Code
	5.45mm	450mm	85°	G 10500A
	5.45mm	450mm	85°	G 10530A

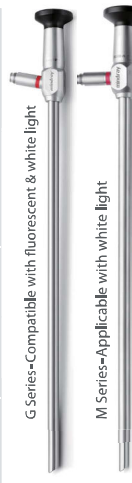


G Series- Compatible with fluorescent & white light

Standard 10mm Type

Recommended Surgery: General Surgery

Product	Diameter	Working Length	Field of View	Code
	10mm	321mm	80°	M 01000A / G 01000A
	10mm	321mm	80°	M 01030A / G 01030A



G Series- Compatible with fluorescent & white light

M Series- Applicable with white light



Rigid Endoscope Tray

Product Name	Placed Items	Dimensions (mm)	Code
Small Rigid Endoscope Tray	Standard 5 or 10mm Rigid Endoscope	496×90×44	X TR500944
Long Rigid Endoscope Tray	Lengthened 5mm or 3D Electronic Endoscope	643×158×75	X TR641675

Rigid Endoscope

Operator's Manual

(M 01030A/M 01000A/M 01030PA/M 01000PA/G 01030A/
G 01000A/G 01030PA/G 01000PA/M 00530A/G 00530A/
M 00500A/G 00500A/M 10530A/G 10530A/M 10500A/
G 10500A/M 00530PA/G 00530PA/M 00500PA/G 00500PA/
M 10530PA/G 10530PA/M 10500PA/G 10500PA)



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- Release time: 2023-5
- Revision: 1.0

NOTE

- "PA" in the model indicates that endoscope of this model is not configured with light cable adapter, Storz.
 - In addition to the difference of basic parameters above, there are differences in some optical parameters between the 10 mm series and 5 mm series.
-

2.11 Product Components

Taking M 00500A as an example, this product consists of the following parts:



- (1) Eyepiece
- (2) Main body
- (3) Light cable connector (available for ACMI/Olympus Pro light cables)
- (4) Light cable adapter (available for Mindray/Richard Wolf light cables)
- (5) Light cable adapter (available for STORZ light cables)
- (6) Objective lens



Reusable Laparoscopic Instruments User Friendly & Future Proof



www.mindray.com

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mindray
healthcare within reach

Trocars



Product	Description	Dimension	Code
	Pyramidal Trocar	φ 5X95	221-51155 
		φ 10X95	221-01155 
		φ 12X95	221-81155
		φ 5X150	221-53155 
		φ 10X150	221-03155 
		φ 12X150	221-83155 
	Auto Shield Trocar	φ 5X95	221-51255
		φ 10X95	221-01255
		φ 12X95	221-81255
		φ 5X150	221-53255
		φ 10X150	221-03255
		φ 12X150	221-83255
	Pyramidal Trocar with Screw	φ 5X95	221-51165
		φ 10X95	221-01165
		φ 12X95	221-81165
	Auto Shield Trocar with Screw	φ 5X95	221-51265
		φ 10X95	221-01265
		φ 12X95	221-81265

Trocars

- To avoid blood contamination when inserting the telescope and to reduce times of cleaning the tip of the telescope by controlling the sealing flap opening and closing.



Product	Description	Dimension	Code
	Veress Needle	φ 2X120	221-21127
		φ 2.7X150	221-27157 
	Reducer Sleeve	φ 10 - φ 5	221-01785
		φ 12 - φ 5	221-81785
		φ 5	221-50925 
	Sealing Cap	φ 10	221-00925 
		φ 12	221-80925 
		φ 10 - φ 5	221-00725 
	Reducer	φ 12 - φ 5	221-80725 
		φ 10 - φ 5	221-00715

The "Relia" Reusable Electrode Surgical Instruments



Safe

Insulated sleeve exposes a shorter metal base to avoid the accidental damage caused by electrical leakage.



Durable

Strictly selected materials plus special production processes greatly extend the product's life.



Ergonomic

One-click to disassemble into three parts for more thorough cleaning and sterilization.



Dissecting and Grasping Forceps

- **Diamond serration clamp teeth**
Stronger grasping force with less tissue damage
- **No obvious bulge at the opening joint**
Reduce blood and tissue residues, easy to clean and reduce cross infection
- **Shorter metal base**
Less unintentional electrical injury

Grasping Forceps



No Ratchet



With Ratchet

Product	Description	Dimension	Code
	KELLY Dissecting and Grasping forceps, Maryland	φ 5X360	222-5S3013 
	KELLY Dissecting and Grasping forceps, long, Maryland	φ 5X360, With Ratchet	222-5T3013
	KELLY Dissecting and Grasping forceps, long, Maryland	φ 5X430	222-5S4013
	KELLY Dissecting and Grasping forceps, long, Maryland	φ 5X430, With Ratchet	222-5T4013
	KELLY Dissecting and Grasping forceps, long, Maryland	φ 5X360	222-5S3023 
	KELLY Dissecting and Grasping forceps, long, Maryland	φ 5X360, With Ratchet	222-5T3023
	KELLY Dissecting and Grasping forceps, long, Maryland	φ 5X430, With Ratchet	222-5T4023
	Dissecting and Grasping forceps, right-angled	φ 5X360	222-5S3123 
	Dissecting and Grasping forceps, right-angled	φ 5X360, With Ratchet	222-5T3123
	Dissecting and Grasping forceps, right-angled	φ 5X430, With Ratchet	222-5T4123
	Straight Dissecting and Grasping forceps, atraumatic	φ 5X360	222-5S3043
	Straight Dissecting and Grasping forceps, atraumatic	φ 5X360, With Ratchet	222-5T3043
	Dissecting and Grasping forceps, atraumatic	φ 10X360	222-0S3103
	Dissecting and Grasping forceps, atraumatic	φ 10X360, With Ratchet	222-0T3103
	Dissecting and Grasping forceps, right-angled	φ 10X360	222-0S3133 
	Dissecting and Grasping forceps, right-angled	φ 10X360, With Ratchet	222-0T3133

Product	Description	Dimension	Code
	Bowel Grasper, fenestrated, short	φ 5X360	222-5S3213 
	Bowel Grasper, fenestrated, short	φ 5X360, With Ratchet	222-5T3213
	Atraumatic Grasping forceps	φ 5X360	222-5S3633 
	Atraumatic Grasping forceps	φ 5X360, With Ratchet	222-5T3633
	Atraumatic Grasping forceps	φ 5X430, With Ratchet	222-5T4633
	CROCE-OLMI Grasping forceps, atraumatic, curved	φ 5X360	222-5S3453 
	CROCE-OLMI Grasping forceps, atraumatic, curved	φ 5X360, With Ratchet	222-5T3453
	CROCE-OLMI Grasping forceps, atraumatic, curved	φ 5X430, With Ratchet	222-5T4453
	Grasping forceps, w specially fine atraumatic serration	φ 5X360	222-5S3473
	Grasping forceps, w specially fine atraumatic serration	φ 5X360, With Ratchet	222-5T3473
	Grasping forceps, w specially fine atraumatic serration	φ 5X430	222-5S4473
	Grasping forceps, w specially fine atraumatic serration	φ 5X430, With Ratchet	222-5T4473
	Bowel Grasper, fenestrated	φ 5X360	222-5S3303 
	Bowel Grasper, fenestrated	φ 5X360, With Ratchet	222-5T3303
	BABCOCK Grasping forceps	φ 5X360	222-5S3553
	BABCOCK Grasping forceps	φ 5X360, With Ratchet	222-5T3553 
	Grasping forceps, 2X4 teeth	φ 5X360	222-5S3393
	Grasping forceps, 2X4 teeth	φ 5X360, With Ratchet	222-5T3393

Grasping Forceps



No Ratchet



With Ratchet

Product	Description	Dimension	Code
	Grasping forceps, atraumatic	φ 5X360	222-5S3333
		φ 5X360, With Ratchet	222-5T3333
	VANAILLIE Adhesion Forceps, one jaw fenestrated	φ 5X360	222-5S3493
		φ 5X360, With Ratchet	222-5T3493
	MANHES biopsy forceps	φ 5X360	222-5S3903
		φ 5X360, With Ratchet	222-5T3903
	MANHES Grasping forceps, "tiger-jaws", 2X4 teeth	φ 5X360	222-5S3363
		φ 5X360, With Ratchet	222-5T3363
	Claw forceps, 2X3 teeth, short	φ 10X360	222-0S3403
		φ 10X360, With Ratchet	222-0T3403
	SAWALHE Tissue Grasping forceps	φ 10X360	222-0S3423
		φ 10X360, With Ratchet	222-0T3423
	BABCOCK Grasping forceps	φ 10X360	222-0S3573
		φ 10X360, With Ratchet	222-0T3573





Grasping Forceps



No Ratchet



With Ratchet

Product	Description	Dimension	Code
	Claw forceps, 2X3 teeth	φ 10X360	222-0S3413
		φ 10X360, With Ratchet	222-0T3413
	Spoon forceps	φ 10X360	222-0S4883
		φ 10X360, With Ratchet	222-0T4883
	VANAILLIE Oviduct Forceps	φ 5X360	222-5S3583
		φ 5X360, With Ratchet	222-5T3583
	Dissecting and Grasping forceps, "alligator jaws"	φ 5X360	222-5S3773
		φ 5X360, With Ratchet	222-5T3773
	DeBAKEY Grasping forceps, curved and slender jaws	φ 5X360	222-5S3813
		φ 5X360, With Ratchet	222-5T3813
	Grasping forceps, atraumatic, spoon-shaped	φ 5X360	222-5S3223
		φ 5X360, With Ratchet	222-5T3223
	MANHES Dissecting and Grasping forceps, "duckbill"	φ 5X360	222-5S3283
		φ 5X360, With Ratchet	222-5T3283

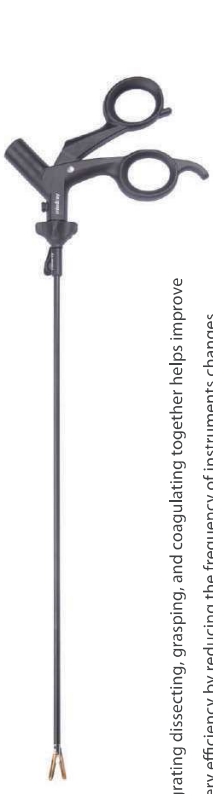
Monopolar Scissors



- Sharp**
 The sharpest blade enables fast cutting.
- Smooth**
 Involute design of blade line ensures more smooth cutting.
- Durable**
 The vacuum heat treatment process makes sure that the metal hardness control accuracy reaches HRC1 (Rockwell hardness), increasing the metal life by 3-4 times compared with the traditional method.

Product	Description	Dimension	Code
	METZENBAUM Scissors, curved	φ 5X360	222-5S3022 
	Scissors, spoon-shaped blades, serrated, curved	φ 5X430	222-5S4022 
	Scissors, straight	φ 5X360	222-5S3012
		φ 5X430	222-5S4012
		φ 5X360	222-5S3092
		φ 5X430	222-5S4092

Bipolar Dissecting Forceps



Integrating dissecting, grasping, and coagulating together helps improve surgery efficiency by reducing the frequency of instruments changes.










- Innovative anti-sticking:**
 Sticking prevention with coated jaw.
- Strong grasping:**
 Enhanced force with wider opening angle to achieve better grasping.
- Guaranteed Safety:**
 Advanced insulation design guarantees the safety and reliability of bipolar coagulation.

Product	Description	Dimension	Code
	Bipolar Straight Dissecting Forceps	φ 5X360	222-5S3011 
	Bipolar Curved Maryland Dissecting Forceps	φ 5X430	222-5S4011 
		φ 5X360	222-5S3021 
		φ 5X430	222-5S4021


Monopolar Electrodes



Product	Description	Dimension	Code
	Hook Tip Coagulation Electrode	φ 5X330	222-51110 
	Ball Tip Coagulation Electrode	φ 5X330	222-51220
	Spatula Tip Coagulation Electrode	φ 5X330	222-51440 
	Rod Tip Coagulation Electrode	φ 5X330	222-51610 



Cables

All cables are autoclavable.

Product	Description	Dimension	Code
	Monopolar cable	3200mm	999-030 
	Bipolar Cable	3200mm	999-031 

Instrument Trays









Product	Description	Dimension	Code
	Double-decker Instrument Tray	540X250X100	X TR5425A0
	Long Double-decker Instrument Tray	600X250X100	X TR6025A0 
	Long Three-decker Instrument Tray	600X250X140	X TR6025E4

Clip Appliers















Reliable ligation of blood vessels to avoid intraoperative and postoperative bleeding.






Product	Description	Dimension	Code
	Endo Applier for Medium Large polymer locking Clip	φ 5X330	221-55636 
	Endo Applier for Large polymer locking Clip	φ 10X330	221-05646 
	Endo Applier for Extra Large polymer locking Clip	φ 10X330	221-05656 




Clip Appliers

Product	Description	Dimension	Code
	Endo Applier for Small Titanium Clip, Single action	φ 5X330	221-55116 
	Endo Applier for Medium Titanium Clip, Single action	φ 10X330	221-05126
	Endo Applier for Medium Large Titanium Clip, Single action	φ 10X330	221-05136 
	Endo Applier for Large Titanium Clip, Single action	φ 10X330	221-05146
	Open Surgery Applier for Small Titanium Clip	28 cm	221-00516
	Open Surgery Applier for Small Titanium Clip	18 cm	221-01516
	Open Surgery Applier for Medium Titanium Clip	28 cm	221-00526
	Open Surgery Applier for Medium Titanium Clip	23 cm	221-01526
	Open Surgery Applier for Medium Large Titanium Clip	28 cm	221-00536
	Open Surgery Applier for Large Titanium Clip	28 cm	221-00546



ENDO-Retractors

Product	Description	Dimension	Code
	ENDO-Retractor	φ 5X360	221-53013
	ENDO-Retractor	φ 5X360	221-53023 




Fans Dissecting Forceps

Product	Description	Dimension	Code
	3 Finger Retractor	φ 5X330	221-55923
	5 Finger Retractor	φ 10X330	221-05923 

Myoma Drills


Product	Description	Dimension	Code
	Myoma Drill	φ 5X330	221-53109 
		φ 5X420	221-54109
		φ 10X330	221-03109
		φ 10X420	221-04109

Suction & Irrigation Apparatus

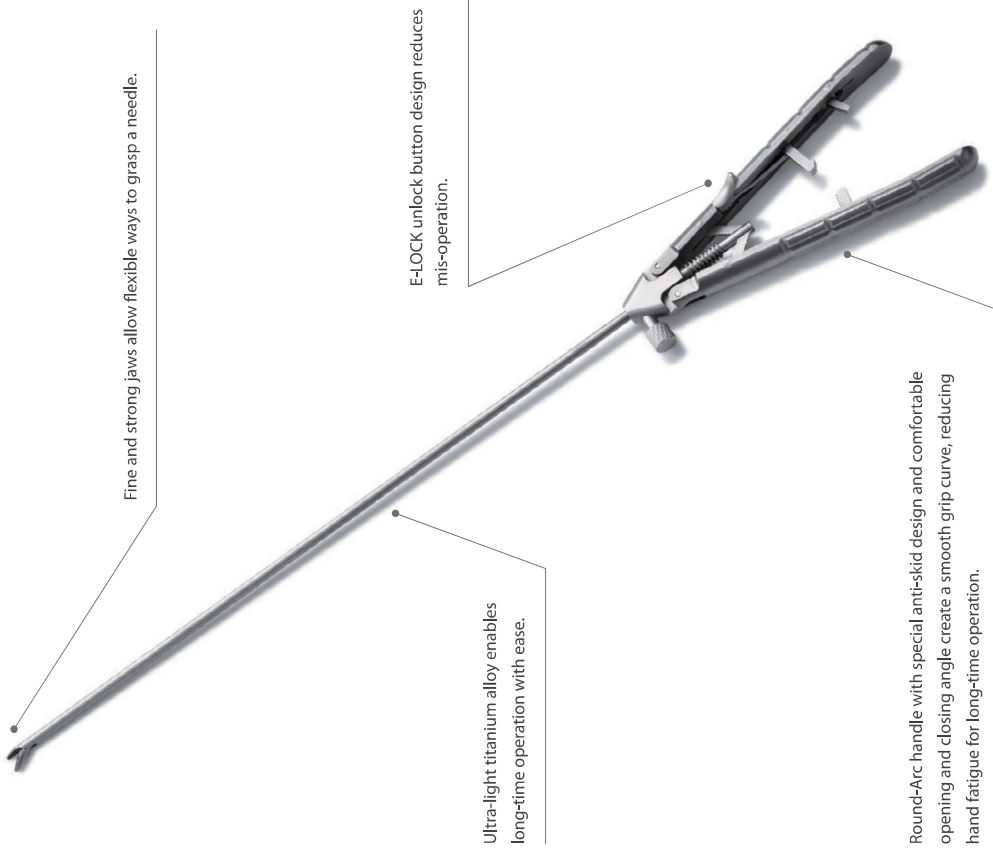
Product	Description	Dimension	Code
	Suction and irrigation	φ 5X330	221-53114
	Suction and irrigation	φ 5X330	221-53224 
		φ 10X330	221-03224

Puncture Injection Needles















Description	Pinhead	Dimension	Code
Puncture Injection Needle (7#)	0.7mm	φ 5X330	221-53015
Puncture Injection Needle (9#)	0.9mm	φ 5X330	221-53025
Puncture Injection Needle (13#)	1.3mm	φ 5X330	221-53035 
Puncture Injection Needle (16#)	1.6mm	φ 5X330	221-53055
Puncture Injection Needle (18#)	1.8mm	φ 5X330	221-53065

Needle Holders






Needle Holders

Product	Description	Dimension	Code
	V Handle Straight Needle Holder	φ 5X330	221-56416
	V Handle Left Curved Needle Holder	φ 5X330	221-56426 
	Pistol Handle Straight Needle Holder	φ 5X330	221-56516
	Pistol Handle Left Curved Needle Holder	φ 5X330	221-56526
	Pistol Handle Right Curved Needle Holder	φ 5X330	221-56536
	Pistol Handle Needle Holder with Reposition Function	φ 5X330	221-56546
	O Handle Straight Needle Holder	φ 5X330 221-56816 φ 5X450 221-56876	
	O Handle Left Curved Needle Holder	φ 5X330 221-56826 φ 5X450 221-56886 	
	O Handle Right Curved Needle Holder	φ 5X330	221-56836
	O Handle Needle Holder with Reposition Function	φ 5X330	221-56846

Suture Fascia Fix Forceps

Product	Description	Dimension	Code
	Suture Fascia Fix Forceps	φ 3X200	221-32013 

Knot Pushers

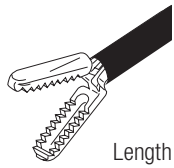
Product	Description	Note	Dimension	Code
	Knot Pusher	Half Ring	φ 4X330	221-43019 
		Full Ring	φ 4X330	221-43029

HICURA

5 mm Grasping Forceps



- Atraumatic forceps:
Multipurpose grasping forceps for diverse laparoscopic applications
- Claw type forceps:
For example, for recovery of gall bladder, myoma, etc.
- Flat forceps:
Multipurpose fenestrated grasping forceps for diverse laparoscopic applications
- Forceps with big lumen:
Atraumatic grasping forceps for delicate tissue (e.g. bowel, tubes)

Atraumatic Forceps

 S
250mm

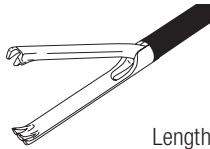
 M
330mm

 L
430mm

Length of jaws: 16 mm

Components

WA69336M	Jaws insert "HICURA", 5 x 330, atraumatic, monopolar
WA69336S	Jaws insert "HICURA", 5 x 250, atraumatic, monopolar
WA69336L	Jaws insert "HICURA", 5 x 430, atraumatic, monopolar

Claw Type Forceps

 S
250mm

 M
330mm

 L
430mm

Length of jaws: 28 mm

Components

WA69344M	Jaws insert "HICURA", 5 x 330, claw type, monopolar
WA69344S	Jaws insert "HICURA", 5 x 250, claw type, monopolar
WA69344L	Jaws insert "HICURA", 5 x 430, claw type, monopolar

Flat Forceps

 S
250mm

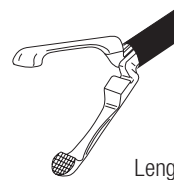
 M
330mm

 L
430mm

Length of jaws: 19 mm

Components

WA69338M	Jaws insert "HICURA", 5 x 330, flat, monopolar
WA69338S	Jaws insert "HICURA", 5 x 250, flat, monopolar
WA69338L	Jaws insert "HICURA", 5 x 430, flat, monopolar

Forceps with Big Lumen

 S
250mm

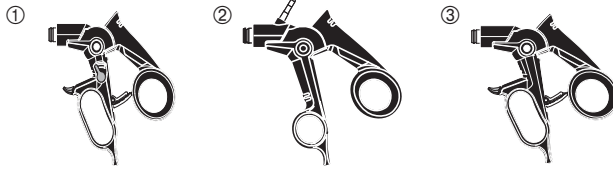
 M
330mm

 L
430mm

Length of jaws: 21 mm

Components

WA69340M	Jaws insert "HICURA", 5 x 330, with big lumen, monopolar
WA69340S	Jaws insert "HICURA", 5 x 250, with big lumen, monopolar
WA69340L	Jaws insert "HICURA", 5 x 430, with big lumen, monopolar

HICURA Handles


① **WA69000M** Handle "HICURA",
deactivatable ratchet,
size M

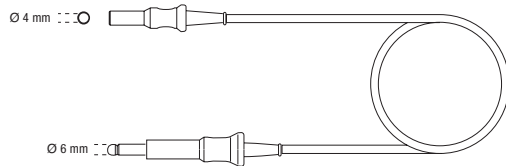
WA69000L Handle "HICURA",
deactivatable ratchet,
size L

② **WA69001M** Handle "HICURA",
monopolar,
size M

WA69001L Handle "HICURA",
monopolar,
size L

③ **WA69003M** Handle "HICURA",
ratchet,
size M

WA69003L Handle "HICURA",
ratchet,
size L

HF Cables


A0358 HF cable, monopolar
Compatible HF units:

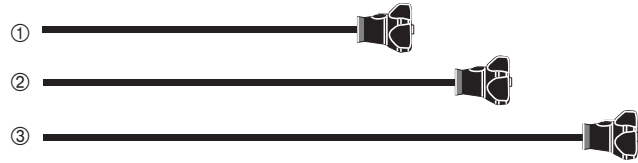
- ESG-400
- ESG-410
- Valleylab (new)

A0355 HF cable, monopolar
Compatible HF units:

- Valleylab (old)

A0357 HF cable, monopolar
Compatible HF units:

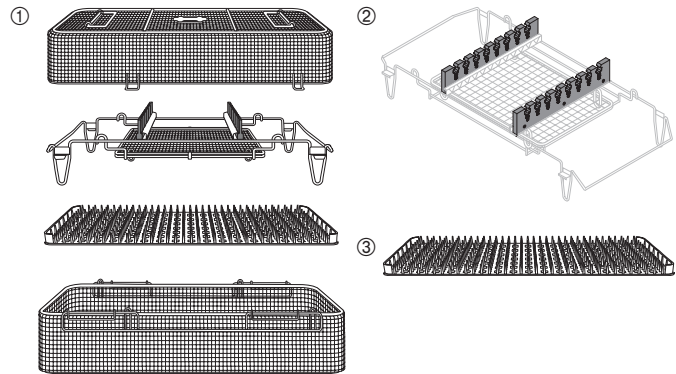
- ESG-400
- ESG-410
- Erbe T series
- Berchtold

HICURA Shafts


① **WA69300S** Shaft "HICURA",
5 x 250,
monopolar

② **WA69300M** Shaft "HICURA",
5 x 330,
monopolar

③ **WA69300L** Shaft "HICURA",
5 x 430,
monopolar

Instrument Basket System


① **WA05956A** Instrument basket system,
for HiQ+, HICURA

② **WA05957A** Spare retainer,
silicone, set, 2 pcs.,
for WA05956A

③ **WA05958A** Spare mat,
nubby, silicone,
for WA05956A

Foto Trocar



Foto perforatii la Canulă irigare/aspirație



Foto Suport Butelie CO2 de capacitate mare



Foto Heating Insufflator Tube



加热气腹管
Heating Insufflator Tube
used with Mindray Insufflator
Model: F32D-01
Qty.: 1
P/N: 040-003541-01
W#: 9120009796
SN: GE6S62005818
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EC REP Shanghai International Holding Corp. GmbH(Europe)
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