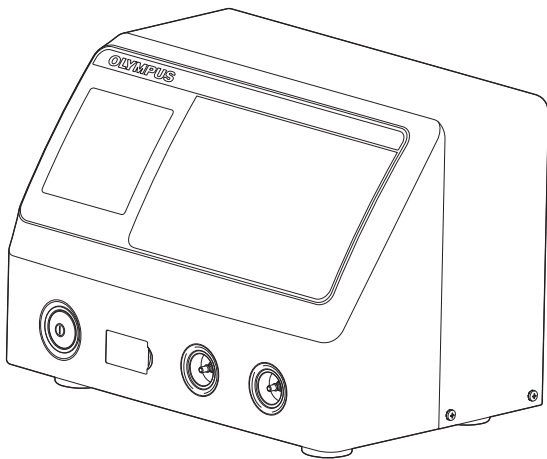


## INSTRUCTIONS

### AUTOMATED ENDOSCOPE LEAK TESTER

### ALT-Y0003



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


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## Labels and Symbols

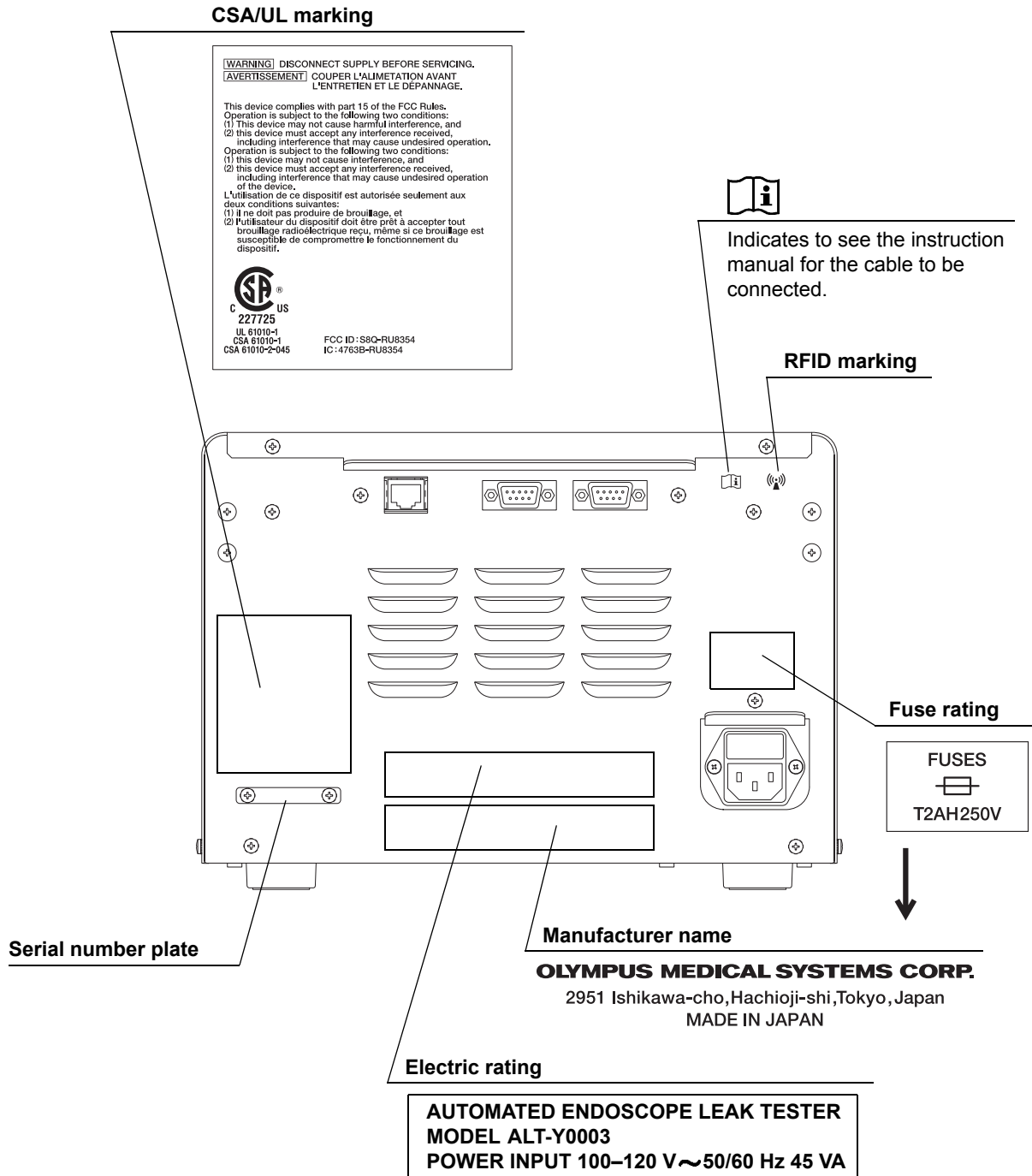
The meaning(s) of the symbol(s) shown on the component packaging, the back cover of this instruction manual and/or this equipment are as follows:

Symbol	Description
	Refer to instructions.
	Serial number
	Manufacturer
	Authorized representative in the European Community

## Labels and Symbols

Safety-related labels and symbols are attached to this equipment at the locations shown below. If labels or symbols are missing or illegible, contact Olympus.

### ○ Rear panel





## ***Important Information — Please Read Before Use***

### ■ ***Intended use***

---

This equipment is intended to be used to perform and record leakage testing on Olympus flexible endoscopes. Do not use this AUTOMATED ENDOSCOPE LEAK TESTER for any purpose other than its intended use.

### ■ ***Instruction manual***

---

This instruction manual contains essential information on using this AUTOMATED ENDOSCOPE LEAK TESTER (hereinafter referred to as “this equipment”) safely and effectively. Before use, thoroughly review this manual and the manuals of all equipment which will be used during the procedure, and use all equipment as instructed.

Keep this and all related instruction manuals in a safe, accessible location.

If you have any questions or comments about any information in this manual, please contact Olympus.

### ○ **Terms used in this manual**

#### Leakage Test

A leakage test can detect a pin hole in the external surface of the endoscope and/or internal working channel wall, and any other leak-related damage.

When the endoscope is immersed in a liquid for cleaning and disinfection, the liquid may go into the endoscope through a pin hole or other damaged area, resulting in malfunction of electrical components inside the endoscope. Detecting such a pin hole and damaged area before liquid immersion of the endoscope can prevent potential damage of the endoscope caused by the entry of the liquid into the endoscope.

#### Process

A general term for the leakage testing, self-check, and other operations this Equipment performs.

#### Portable Memory

Olympus-designated USB memory: This recording medium is used in combination with this equipment to save leakage test data stored in the internal memory of this equipment.

#### Master data

These are unedited leak test log data and error log data copied to personal computers.

#### CSV file format

This is one data format most frequently used by statistical processing software. Each item of data (record) is accommodated in a single line, in which each item is delimited by “,” (a comma). This data is useful when executing statistical processing using commercially available statistical processing software.

#### Wall mains outlet:

A three-pin outlet having an exclusive terminal for grounding.

#### Error Code

A code consisting of [E] and a three-digit number is displayed on the LCD monitor, if there is a problem with this equipment. When an error code is displayed, check the error code list to find out what corrective measures to take.

## ■ ***User qualifications***

---

The operator of this equipment must be sufficiently trained in reprocessing of endoscopes. The medical literature reports cases of infections due to inappropriate cleaning, disinfection, and /or sterilization. Thoroughly review and understand the following items before use:

- Cleaning, disinfection, and sterilization procedures described in the instruction manuals for the endoscope and ancillary equipment
- Professional health and safety standards
- Applicable guidelines on cleaning, disinfection, and sterilization of endoscopy equipment.
- Structure and handling of endoscopic equipment
- Personal protective equipment requirements to minimize exposure to chemicals and infectious materials.

This manual does not explain or discuss details of cleaning, disinfection, and sterilization.

## ■ ***Equipment compatibility***

---

Use this equipment in combination with ancillary equipment listed in System Chart in Appendix. Using incompatible equipment can result in patient or operator injury and equipment damage and/or malfunction. Refer to the “List of Compatible Endoscopes <ALT-Y0003>” for compatible types of endoscope.

Do not use this equipment in combination with non-Olympus endoscopes; Olympus has not tested the efficacy of detecting leakage with this equipment other than those combinations designated.

## ■ **Care and storage**

---

After use, reprocess and store this equipment referring to the instructions in Chapter 6, “Routine Maintenance” in this manual. Inappropriate care and storage could present an infection control risk and/or cause equipment damage or malfunction.

## ■ **Maintenance and inspection**

---

The ALT-Y0003 requires routine maintenance and inspection. In addition to checks before use, the person in charge of maintenance and administration of the medical equipment at the hospital should periodically check all of the items described in this manual. If any irregularity is observed, do not use this equipment and follow the procedure as described in Section 8.1, “Troubleshooting guide”. If the irregularity still presents, this equipment needs repairing. Contact Olympus.

## ■ **Repair and modification**

---

Do not disassemble, modify or attempt to repair this equipment and its accessories. Doing so could result in operator or patient injury and/or equipment damage or malfunction. Some problems that appear to be malfunctions may be corrected by referring to Section 8.1, “Troubleshooting guide”. If the problem persists, do not use this equipment and contact Olympus.

## ■ **Disposal of this equipment**

---

Follow all applicable national and local guidelines in disposing of this equipment.

## ■ **Signal words**

---

The following signal words are used throughout this manual:

<b>WARNING</b>	Describes serious adverse reactions and potential safety hazards, limitations in use imposed by them, and steps that should be taken if they occur.
<b>PRECAUTION</b>	Includes information regarding any special care to be exercised by the practitioner and/or patient for the safe and effective use of the device.
<b>NOTE</b>	Indicates additional helpful information.

## ■ **Warnings and precautions**

---

Follow the warnings and precautions given below when handling this equipment. This information is supplemented by the warnings given in each chapter.

### **WARNING**

- Strictly observe the following precautions. Failure to do so may place the patient and medical personnel in danger of an electric shock.
  - Keep fluids away from all electrical equipments. If fluids are spilled on or into this equipment, stop operation immediately and contact Olympus.
  - Do not prepare, inspect, or use this equipment with wet hand
- Do not install this equipment in any place where any of the following are present.
  - High oxygen concentration.
  - Oxidizing substance such as Nitrous Oxide (N<sub>2</sub>O).
  - Flammable anesthetic gas
  - Flammable liquid

This equipment is not explosion-proof and may explode or cause fire under these conditions.

- Do not insert an EndoTherapy accessory or other object through an opening including the air vents of this equipment. Also, do not allow any liquid including water or disinfectant solution to flow into the opening. Contact with an electrical part inside this equipment could cause an electric shock and/or malfunction of this equipment.
- This equipment may interfere with other medical electronic equipment used in combination with it. Before use, refer to the Appendix to confirm the compatibility of this equipment with all equipment to be used.
- Always use the Power cord provided with this equipment. Otherwise, equipment failure or Power cord burnout could result. Also, remember that the provided Power cord is for exclusive use with this equipment and should not be used with other equipment.
- Do not bend, pull or twist the power cord. Electric shock, equipment damage, or fire can result.
- This equipment can be set up to use the RFID (Radio Frequency Identification) function. Please be aware that the radio waves emitted from the RFID antenna of this equipment may cause medical equipments such as pacemakers to malfunction. If any interference with this equipment is observed, immediately move away from the RFID antenna or set the power switch to OFF. Call your doctor if you do not begin to feel better.

## PRECAUTION

- Certain endoscopes cannot be leak-tested automatically in this equipment. Refer to the “List of Compatible Endoscopes <ALT-Y0003>” provided with this equipment.
- Do not use this equipment in any place where it may be subject to strong electromagnetic radiation (for example, in the vicinity of a microwave therapeutic equipment, short wave medical treatment equipment, MRI, and cellular/portable phone, etc). Doing so may result in malfunction of this equipment.
- Do not press the buttons on the front panel of this equipment with a sharp or hard object. Doing so may damage the buttons.
- Avoid applying excessive force to the connectors, as this may damage this equipment.
- Do not use this equipment in a dusty environment. Otherwise, damage and/or malfunction can occur.
- Be sure that this equipment is not used adjacent to other equipments (other than the components of this equipment or system) to avoid electromagnetic interference.
- Be sure that this equipment is not used adjacent to or stacked with other equipment. An external force applied to this equipment may result in damage and deformation.
- This equipment emits RF (Radio Frequency) energy to perform intended functions. Therefore, it may cause electromagnetic interference in nearby electronic equipment, and is labeled with the following symbol. If electromagnetic interference occurs, mitigation measures may be necessary, such as moving the electronic equipment away, reorienting or relocating this instrument, or shielding the location.



## **Summary of Functions of this Equipment**

### **○ Automated Leakage Testing (ALT)**

This equipment feeds air into the endoscope and computes changed air pressure to check automatically for a pin hole of the endoscope. The Automated Leakage Testing is performed in air, not in water.

→See Section 5.8, "Automated leakage testing".

### **○ Manual Leakage Testing (MLT)**

This equipment feeds air into the endoscope to visually check for any bubble emerging from the endoscope in water.

→See Section 5.9, "Manual leakage testing".

### **○ Self-check**

This equipment has a self-check function to verify that it is working properly.

→See Section 4.2, "Self-check".

### **○ Printing**

The results of leakage tests and self-checks and the records of errors can be printed from a connected printer.

→See Section 7.5, "Setting print mode".

### **○ Data download**

The results of leakage tests and self-checks and the records of errors can be downloaded to a portable memory.

→See Section 7.7, "Download to a portable memory".

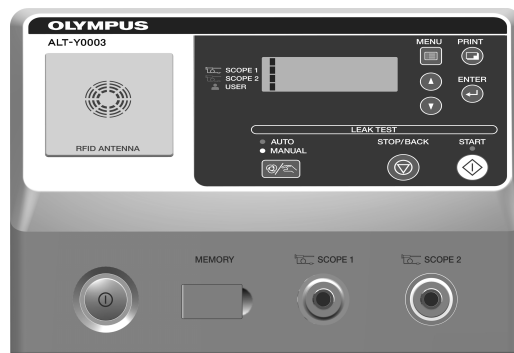
# Chapter 1 Checking the Package Contents

## 1.1 Package list

Match all items in the package with the components shown below. Inspect each item for damage. If this equipment is damaged, a component is missing, or you have any questions, do not use this equipment; immediately contact Olympus.

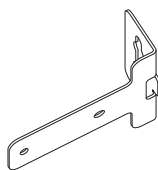
Ch.1

### ○ AUTOMATED ENDOSCOPE LEAK TESTER

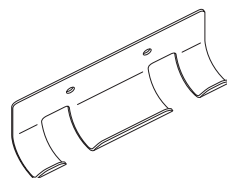


AUTOMATED ENDOSCOPE LEAK TESTER (ALT-Y0003)

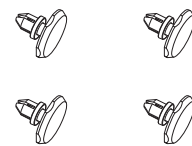
### ○ Tube hanger



Stay (×1)

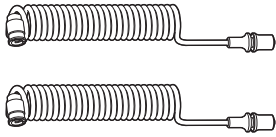


Hanger parts (×1)

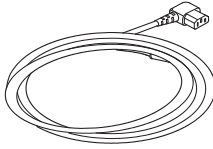


One-touch rivets (×4)

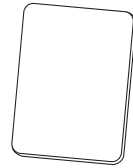
○ Accessories



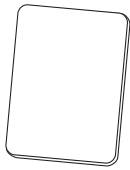
ALT-Y0003 leak test air tubes (×2)  
(MAJ-2009)



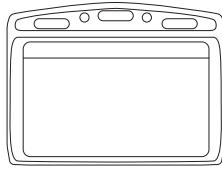
Power cord



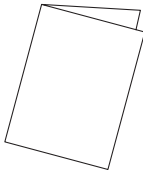
User ID master card



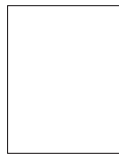
Scope ID master card



Card holders (×2)



Instruction manual

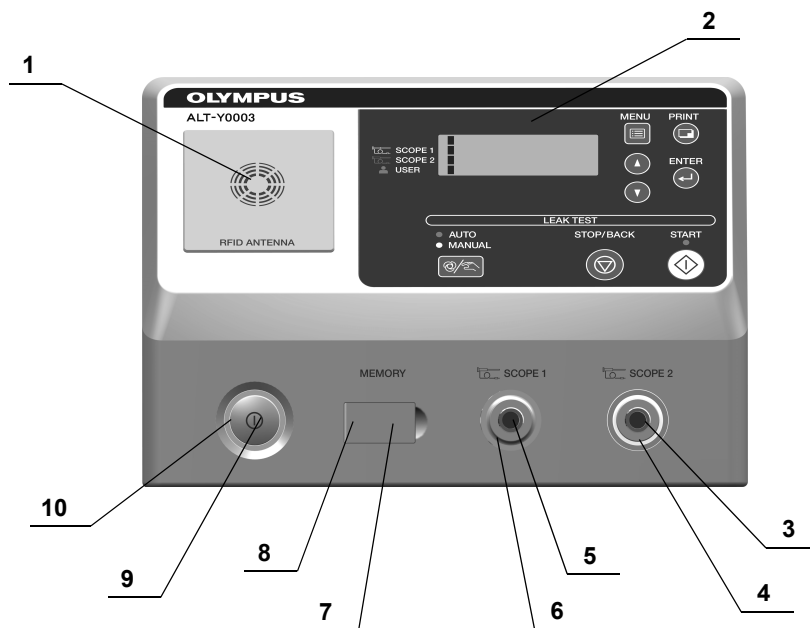


List of Compatible Endoscopes  
<for ALT-Y0003>



# Chapter 2 Nomenclature and Functions

## 2.1 Front panel

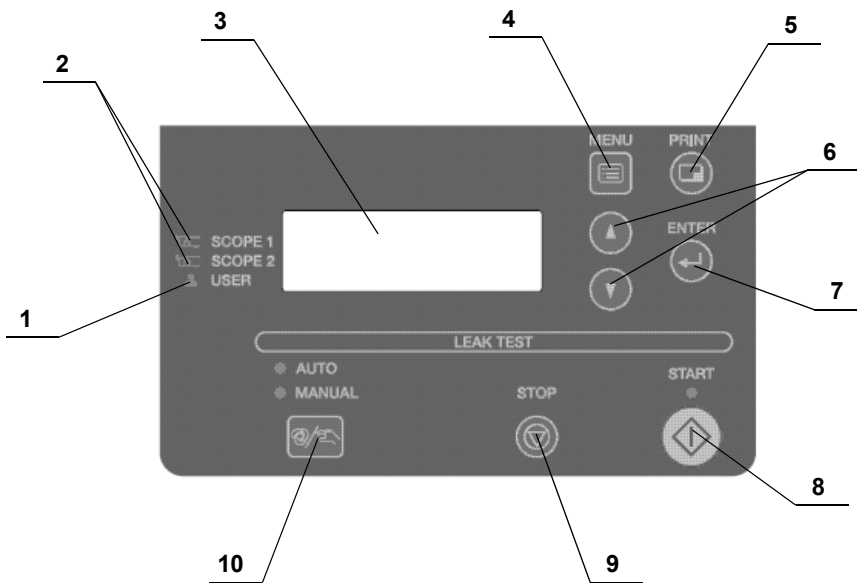


Ch.2

No.	Name	Description
1	RFID reader	Reads user IDs and scope IDs into this equipment
2	CONTROL PANEL	Used to control and set up this equipment.
3	Tube connector 2	Accepts the ALT-Y0003 leak test air tube
4	Tube connector 2 indicator	Blinks when the scope ID has been recognized and then lights when the scope has been connected to the ALT-Y0003 leak test air tube.
5	Tube connector 1	Accepts the ALT-Y0003 leak test air tube
6	Tube connector 1 indicator	Blinks when the scope ID has been recognized and then lights when the scope has been connected to the ALT-Y0003 leak test air tube.
7	Portable memory port	Accepts an (optional) portable memory.
8	Memory port cap	The cap to protect the portable memory port.
9	Power switch	Press to switch the power ON/OFF. The green light is lit when this equipment is turned ON.
10	Power indicator	Lights up when electric power is supplied.

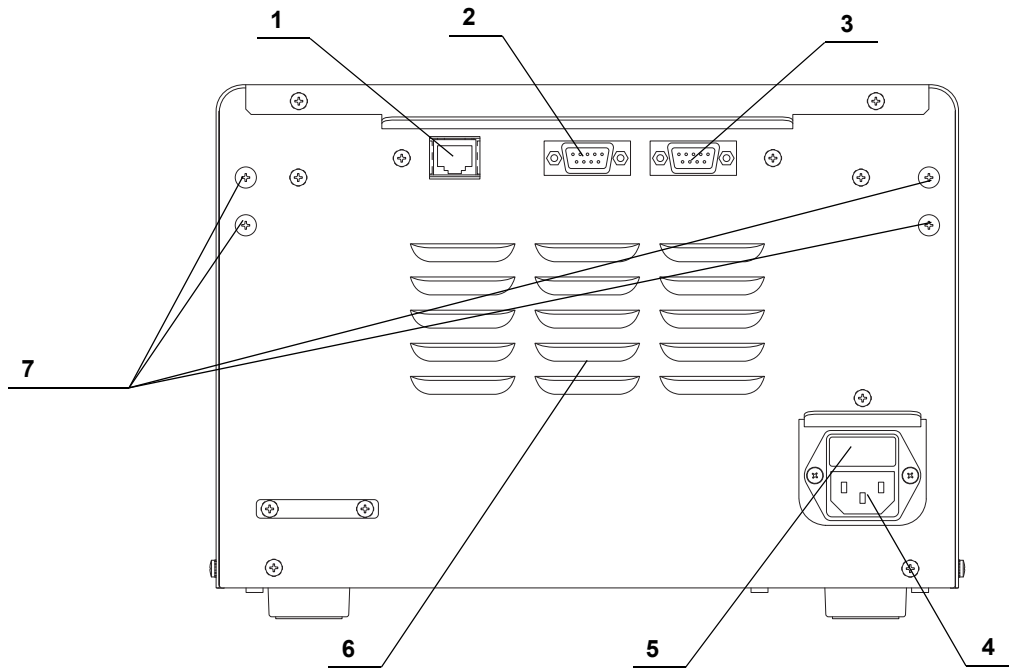
## 2.2 Control panel

Ch.2



No.	Name	Description
1	User ID indicator	Lights up when the user ID is recognized.
2	Endoscope ID indicator	Lights up when the scope ID is recognized.
3	LCD monitor	Displays the test process and results.
4	MENU button	In the standby state, the function menus can be displayed on the LCD monitor by pressing the button.
5	PRINT button	In the standby state, the printing menus can be displayed on the LCD monitor by pressing the button.
6	▼, ▲ button	Press these buttons to set the program, time and date.
7	ENTER button	Pressed to confirm the end of the process and settings.
8	START button	Pressed this button to start the selected program.
9	STOP/BACK button	Pressed this button to interrupt the test procedure or cancel settings.
10	SELECT button	Pressed this button to select ALT or MLT.

## 2.3 Rear panel



Ch.2

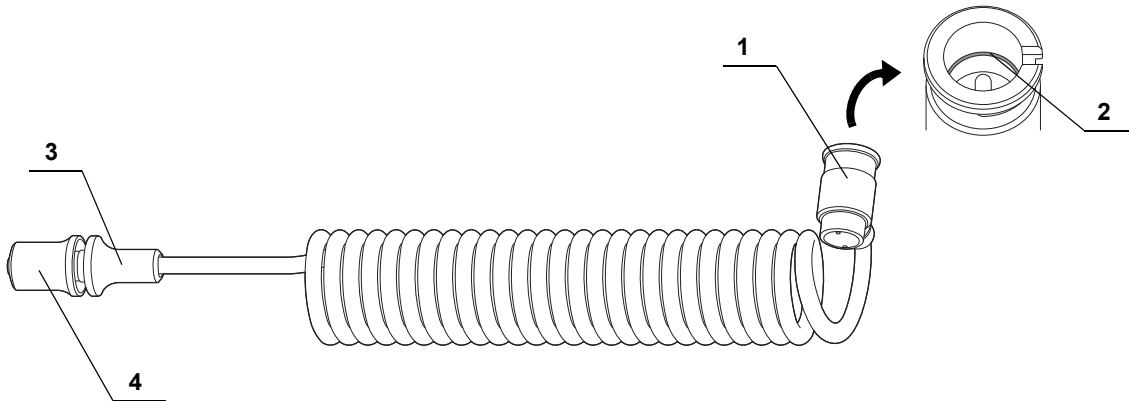
No.	Name	Description
1	LAN Connector	This terminal is provided for future function extension and cannot be used currently.
2	Option terminal	Not used. (A terminal only for service persons.)
3	Printer terminal	Use the ALT-Y0003 interface cable to connect the printer to this equipment.
4	AC Inlet	Accepts AC power supply
5	Fuse box	Contains a fuse for this equipment.
6	Air vent	Draws in fresh air from the room, not into the room, and prevents the temperature from rising in this equipment.
7	Projections	Fixture for mounting the tubing hanger.

### PRECAUTION

Never touch the pin inside the printer terminal and option terminal. Static electricity may cause a malfunction or damage of this equipment.

## 2.4 ALT-Y0003 leak test air tube MAJ-2009

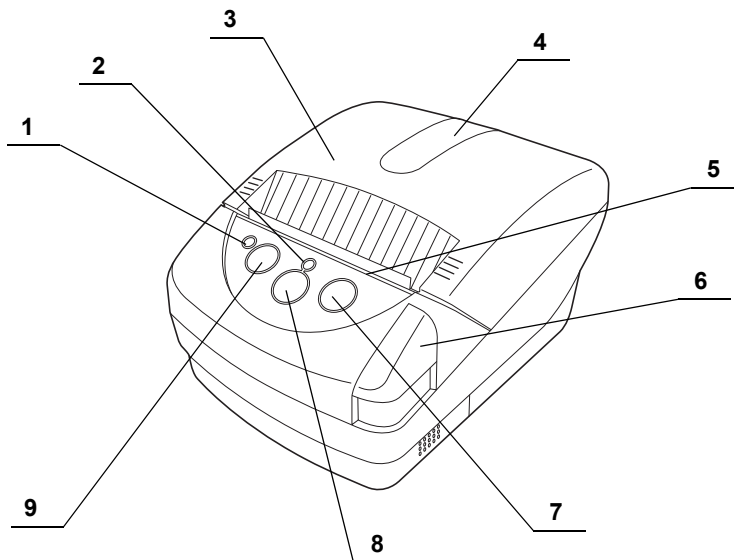
Ch.2



No.	Name	Description
1	Endoscope side connector	Connected to the venting connector of Olympus endoscope or water-resistant cap.
2	O-ring	(Black) Rubber to keep the ALT-Y0003 leak test air tube airtight.
3	Connecting grip	Held to connect the ALT-Y0003 leak test air tube to this equipment.
4	Removing grip	Held to remove the ALT-Y0003 leak test air tube from this equipment.

## 2.5 Printer MAJ-1937 (optional)

### ○ Front Panel

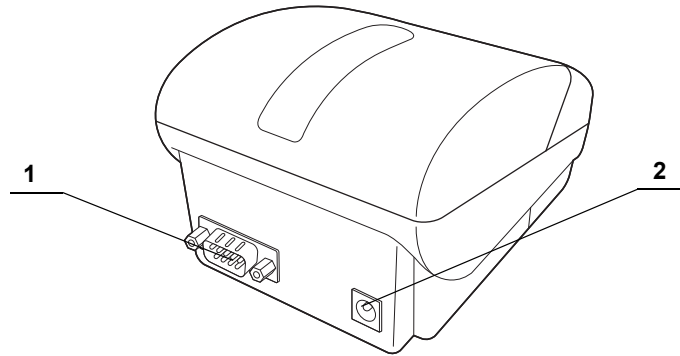


Ch.2

No.	Name	Description
1	ERROR LED	Indicates printer errors
2	POWER LED	Indicates Power On and Off
3	Paper cover	Stores paper under this cover
4	Transparent window to check the printer paper roll	Check through this transparent window whether the paper is set or how much it remains
5	Paper cutter	Pull the paper toward you to cut paper.
6	Cover open button	Pressed to open the paper cover when the paper roll is set.
7	FEED button	Pressed to feed the printer paper roll
8	POWER button	Pressed to turn this equipment ON and OFF
9	SELECT button	No used

2.5 Printer MAJ-1937 (optional)

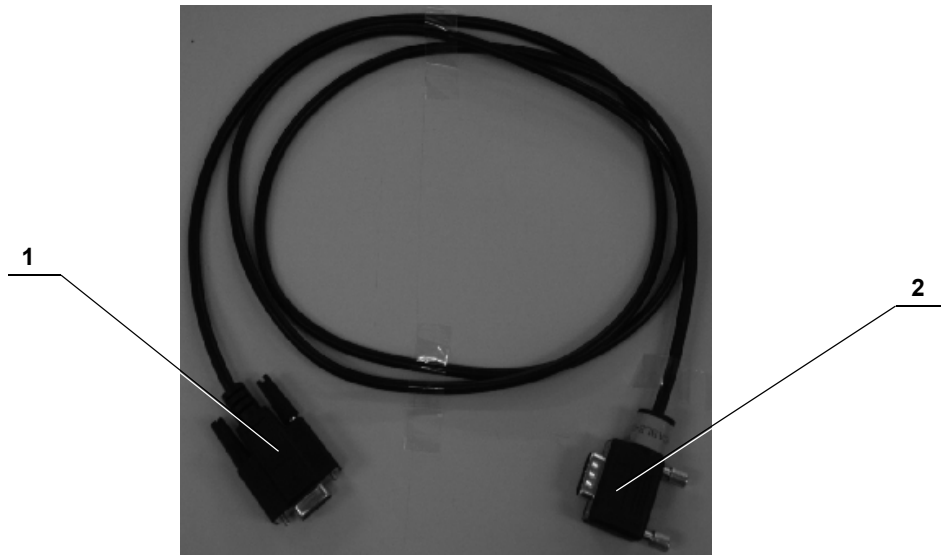
○ Rear panel



Ch.2

No.	Name	Description
1	IF Connector	Accepts the ALT-Y0003 interface cable
2	AC Power Inlet	Accepts the exclusive power cord.

## 2.6 ALT-Y0003 interface cable MAJ-2052 (Optional)

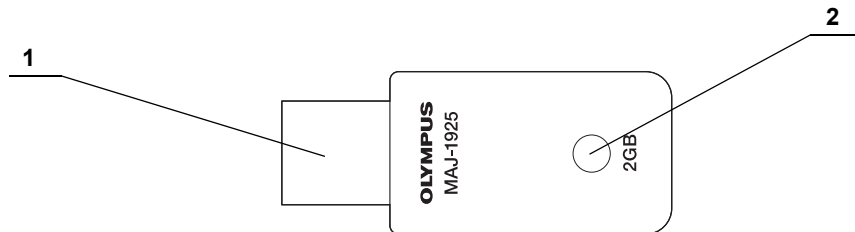


Ch.2

No.	Name	Description
1	Printer side connector	Accepts the IF connector of the printer.
2	Equipment side connector	Accepts the printer terminal of this equipment.

\* The ALT-Y0003 interface cable is 1.5 m long.

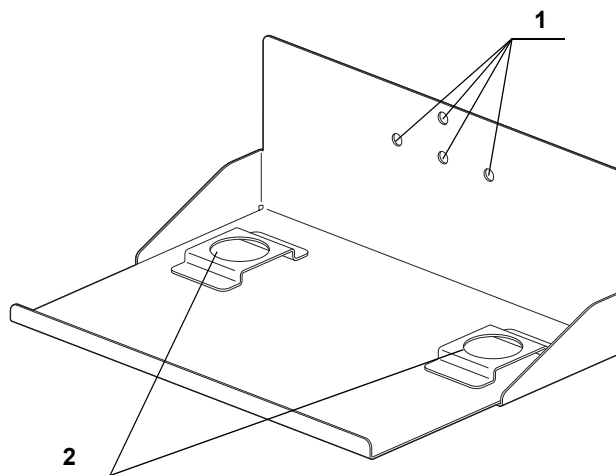
## 2.7 Portable memory MAJ-1925 (Optional)



### Ch.2

No.	Name	Description
1	Connector	Insert the connector into the Portable memory port.
2	LED	The LED is blinking while the endoscopic images, patient data, and setting information are saved or read.

## 2.8 ALT-Y0003 wall-mount holder (Optional)



No.	Name	Description
1	Mounting holes	Holes for screws to fix the ALT-Y0003 wall mount holder to a wall.
2	Foot base	Accepts the feet of ALT-Y0003.



# Chapter 3 Installation and Connection

## 3.1 Installation of this equipment

This equipment is not water-proof. Install this equipment referring to the following installation conditions. Use of the ALT-Y0003 wall-mount holder (MAJ-2020) (Optional) enables you to install this equipment on the wall. To mount this equipment on the wall, refer to Section 3.2, "Installation of the ALT-Y0003 wall-mount holder on the wall" in this instruction manual.

### WARNING

- Do not spray water on this equipment. Otherwise, a short occurs in the internal circuit, resulting in an electric shock or fire.
- Check the location of this equipment to see if it is within 2 m away from the location of the endoscope where an air leak test is performed (the sink or basin). Pulling the ALT-Y0003 leak test air tubes may topple this equipment to fall, resulting in injury.
- Do not use a humidifier near this instrument. Dew condensation may occur inside this equipment, causing a malfunction.

### PRECAUTION

- Do not place this equipment on its side or upside down.
- Keep the air vents of this equipment clear. The air vents are on the back panels. Blockage can cause overheating and equipment damage.
- In installing this equipment, taking care not to step on the power cord or cables. The power cord or cables may be damaged.

**Ch.3**

## 3.1 Installation of this equipment

### ○ Installation location conditions

To ensure safe use of this equipment, be sure to observe the following conditions which are requisite for installation of this equipment.

- Place this equipment on a flat location.
- The power cord (3 m/9.8 ft) should be able to reach the power outlet.
- This equipment should not be exposed to direct sunlight.
- The location should be clean and free of dirt or dust.
- The ambient temperature should not exceed 40°C (104°F).
- The relative humidity should be between 30% and 85%.
- The elevation above sea level should not exceed 3000 meters.
- This equipment should be used indoors.

## 3.2 *Installation of the ALT-Y0003 wall-mount holder on the wall*

For installation of the ALT-Y0003 wall-mount holder on the wall, ask a qualified installation specialist to carry out the installation. Olympus is not liable for any injury or damage which occurs as a result of improper installation or mishandling.

### **WARNING**

- Do not tighten the screws and/or bolts for installation into any locations on the wall where the screws and/or bolts may contact with the wires and/or ducts in the wall. The wires and/or ducts may be damaged, inflicting an electric shock or causing water leakage.
- Only a qualified installation specialist must install/remove the ALT-Y0003 wall-mount holder on/from the wall. Improper installation by any unqualified person may cause the ALT-Y0003 wall-mount holder to drop, which may result in an injury.
- Never install the ALT-Y0003 wall-mount holder on a location which cannot support the weight of the housing. Insufficient strength of the installation location of the ALT-Y0003 wall-mount holder may cause the housing to drop and, resulting in an injury.
- Make sure the wall of the installation location is strong enough, taking a long term use of this equipment into consideration. If the strength at the installation location becomes insufficient due to a long term use, the ALT-Y0003 wall-mount holder may drop and, resulting in an injury.
- Install the ALT-Y0003 wall-mount holder in a method suited to the wall structure or material.
- Install the ALT-Y0003 wall-mount holder only on a vertical wall. Installation to other types of wall may cause the ALT-Y0003 wall-mount holder to drop, resulting in an injury.
- Ensure safety around the installation location in installing the ALT-Y0003 wall-mount holder on the wall. Installation work in a small place may cause an injury.
- Do not place equipment other than the ALT-Y0003 leak test air tubes on the ALT-Y0003 wall mount holder. Equipment falling off the holder may cause an injury.
- Do not pull the Power cord and cables once this equipment has been installed on the ALT-Y0003 wall-mount holder. This equipment may fall, causing injury.

**Ch.3**

**PRECAUTION**

- Do not install the ALT-Y0003 wall-mount holder upside down. This equipment may fall off.
- After installing the ALT-Y0003 wall-mount holder on the wall, install this equipment, taking care not to step on the power cord or cables. The power cord or cables may be damaged.

**○ Installation location conditions**

To ensure safe use of the ALT-Y0003 wall-mount holder, be sure to observe the following conditions which are requisite for installation of the ALT-Y0003 wall-mount holder. and the conditions described in Section 3.1, "Installation of this equipment".

- The wall for installation should be vertical.
- The wall should be strong enough to hold the weights of the ALT-Y0003 wall-mount holder and this equipment. (See Figure 3.1, the dimensional drawing)

**Ch.3**

**○ Installing the ALT-Y0003 wall-mount holder**

Check	Required items
	ALT-Y0003 wall-mount holder

Table 3.1

- 1** Locate the best position on the wall to install the ALT-Y0003 wall-mount holder. Make sure that the position meets the conditions of the installation location as described below.

Make sure that this equipment is placed in a location where its power cord can reach the Wall Mains Outlet with a margin and within two meters from the installation location of the endoscope where leak air testing is performed.

**WARNING**

Referring to the drawings of Figure 3.1 showing the dimensions of the installation location of the ALT-Y0003 wall-mount holder, make sure the strength of the wall surface of the four installation positions. If the strength of the installation is insufficient, add some reinforcement. Otherwise, the ALT-Y0003 wall-mount holder may drop, breaking the wall or injuring the operator.

- Referring to the drawings of Figure 3.1 showing the dimensions and weight of the ALT-Y0003 wall-mount holder, make sure the strength of the wall surface of the four installation positions. If the strength is insufficient, add reinforcement.

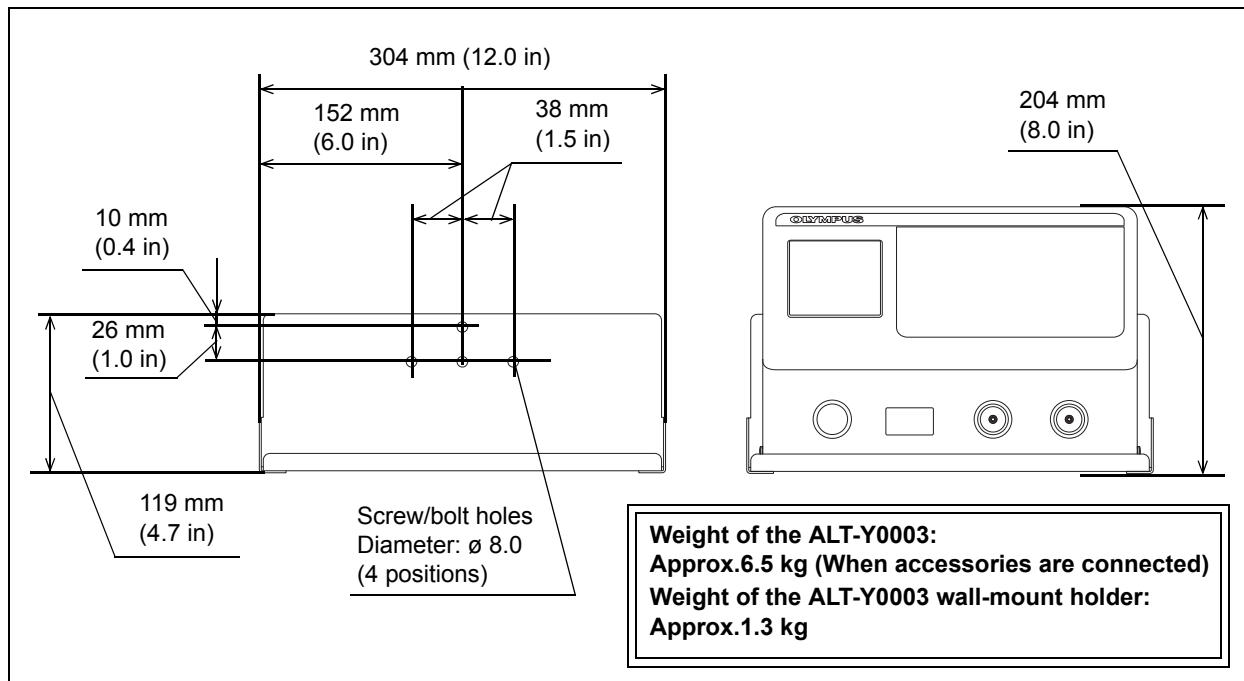


Figure 3.1

- If screws or nuts need screwing into a concrete wall, determine the hole positions based on the dimension drawing above and embed anchor bolts or nuts equivalent to “6 mm nominal diameter of bolt”. When embedding the bolts into the wall, protrusion of the bolt from the wall surface should be 10 mm to 15 mm.

**PRECAUTION**

Securely hold the ALT-Y0003 wall-mount holder and install it so that it will not fall off. If the ALT-Y0003 wall-mount holder falls off, it may be damaged.

- Hold the ALT-Y0003 wall-mount holder in the direction as shown in Figure 3.1, align the holder with the mounting holes, and secure it with screws or nuts. The screw or nuts to be used for installation should be commercially available and equivalent to “6 mm nominal diameter of nut or bolt,” which is suited to the material of the wall.
- Make sure that all nuts or bolts are securely tightened. If any of the nuts or bolts loosen, tighten them again.

## 3.3 Installation of the tube hanger

Installing the tube hanger on this equipment enables you to hook the endoscope side connector of the ALT-Y0003 leak test air tube when they are not in use.

### PRECAUTION

Avoid placing anything other than the endoscope side connector of the ALT-Y0003 leak test air tubes on the tube hanger. Otherwise the tube hanger may get damaged.

- 1 To install the tube hanger on the right side viewed from the front, align the holes of the stay and the hanger part as shown in Figure 3.2 (A).  
(To install the tube hanger on the left side viewed from the front, align the holes of the stay and the hanger part as shown in Figure 3.2 (B).)

Ch.3

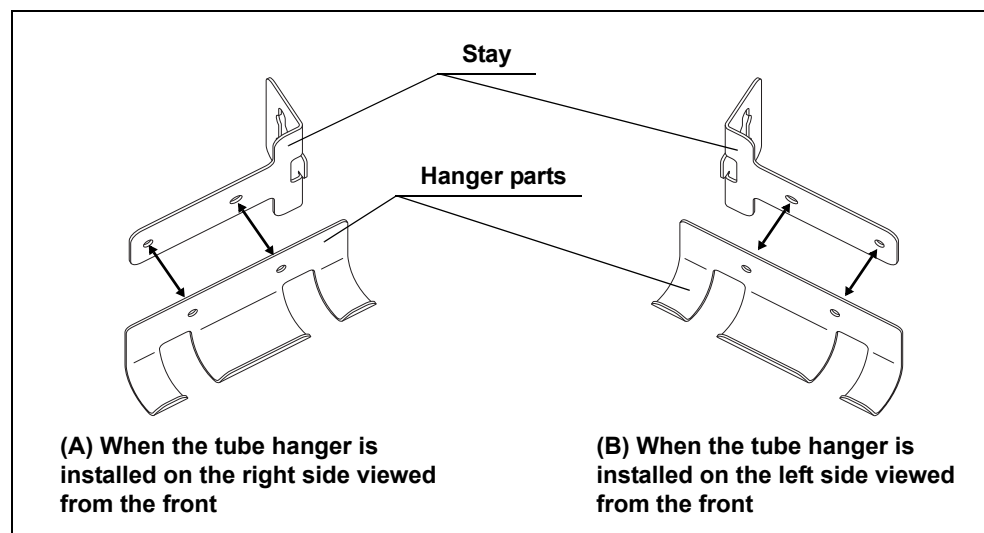


Figure 3.2

- 2 Align the holes of the stay and the hanger part and insert the one-touch rivets into the holes from the hanger part side (see Figure 3.3). Insert the new one-touch rivets until they hit the surface of hanger part, and secure the stay to the hanger part. (See Figure 3.4)

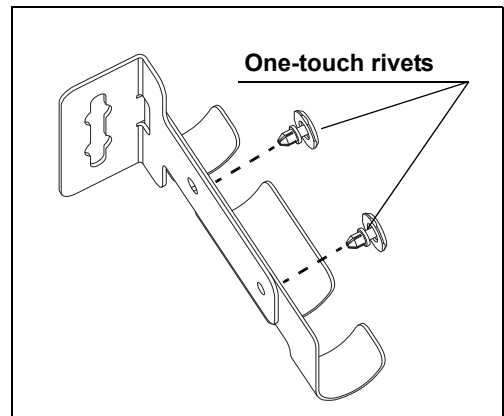


Figure 3.3

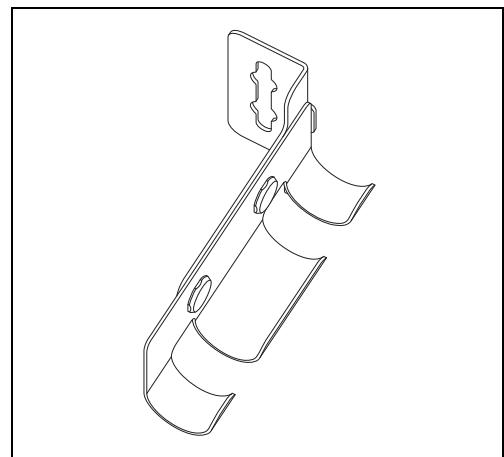


Figure 3.4

- 3 Align the pins on the rear panel of this equipment with the grooves of the stay. Push the stay onto this equipment and slide the stay downward into position. (To install the tube hanger in the left side viewed from the front, match the groove of the stay with the pins on the right.)

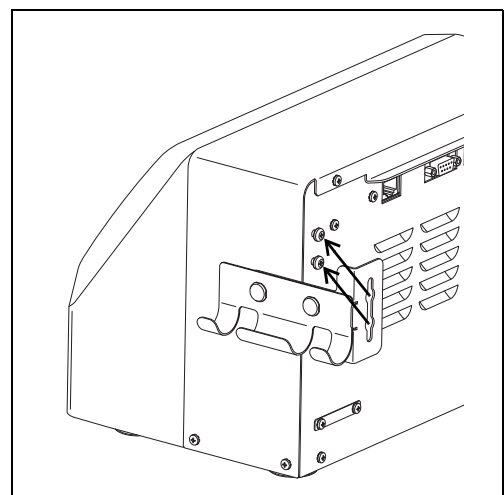


Figure 3.5

## 3.4 Connecting the Power Supply

### WARNING

- Be sure to connect the power plug of the power cord directly to a grounded, hospital grade, wall mains outlet. If this equipment is not grounded properly, it can cause an electric shock and/or fire.
- Do not connect the power plug to the 2-pole power circuit with a 3-pole to 2-pole adapter. It can prevent proper grounding and cause an electric shock.
- Do not allow the power plug to get wet. A wet power plug may cause electric shock.
- Confirm that the grounded wall mains outlet offer adequate electric capacity. In sufficient capacity may result in a fire or activation of the circuit breaker of the facility, which turn off the power to all this equipment connected to the same line.
- Do not bend, pull or twist the power cord. Visually inspect the entire length of the power cord for cracks or cuts. Equipment damage including separation of the power plug and disconnection of the cord wire as well as fire or electric shock can result.
- Be sure to connect the power plug securely to prevent its accidental disconnection during operation. Otherwise, this equipment may not function.
- Do not push the rear of this equipment against the wall after connecting the power cord. The power supply cord may break, resulting in a fire or electric shock.
- Always use the power cord provided with this equipment. Otherwise, equipment failure or power cord burnout may result. Also, remember that the provided power cord is for use only with this equipment and should not be used with any other equipments.

### Ch.3

- 1 Make sure that this equipment is turned OFF.
- 2 Insert the power cord all the way into the connector on the rear panel (bottom right).

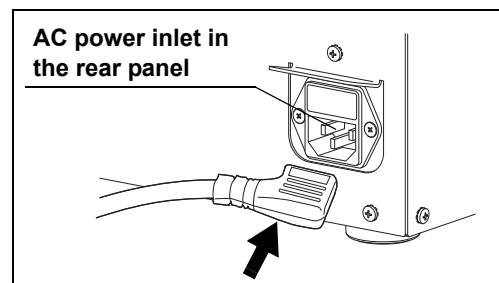


Figure 3.6

- 3 Connect the power cord plug into a hospital-grade, wall mains outlet that meets the input power conditions indicated on the rating plate.



## 3.5 Connecting the printer

Connecting a printer (Optional) to this equipment enables you to print the results of leakage testing of the endoscope.

### WARNING

- Use the ALT-Y0003 interface cable (optional) for this equipment. Using a different interface cable may result in malfunction of this equipment or damage to the interface cable.
- Do not wet the ALT-Y0003 interface cable. A wet ALT-Y0003 interface cable may cause an electric shock.
- Do not bend, pull, or twist the ALT-Y0003 interface cable. This may cause fall-off of the connector or disconnection of the ALT-Y0003 interface cable; a fire or electric shock may result.
- Be sure to connect the ALT-Y0003 interface cable to prevent its accidental disconnection during operation. Otherwise, this equipment may not function.
- Make sure that each connector or terminal is free from water on it before connecting the ALT-Y0003 interface cable. Any water may damage this equipment or printer.
- Do not push the rear of this equipment against the wall after connecting the interface cable. The interface cable may bend, resulting in a fire or electric shock.

### PRECAUTION

- Read through the instruction manual of the printer before using it.
- Install the printer in an area where it will not get sprayed.

- 1** Make sure that this equipment and printer are turned OFF.
- 2** Make sure that the power cord of the printer is connected to the printer.

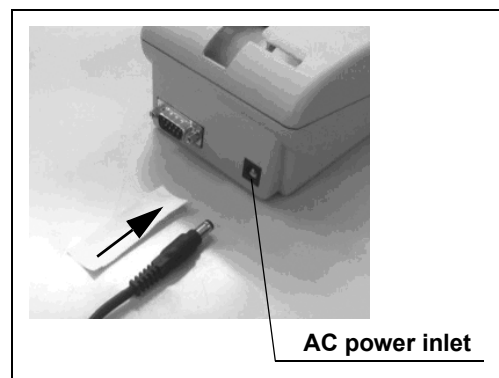


Figure 3.7

### 3.5 Connecting the printer

- 3 Connect the ALT-Y0003 interface cable to the IF connector of the printer.

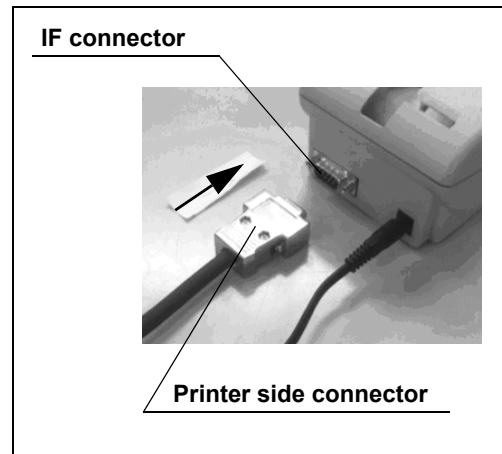


Figure 3.8

- 4 Connect the ALT-Y0003 interface cable to the printer terminal of this equipment, and rotate the screws to fix the cable.

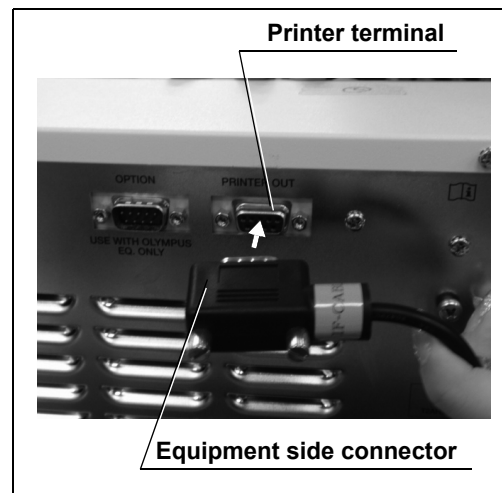


Figure 3.9

## Chapter 4 *Inspection Before Use*

### **WARNING**

Before each use, inspect this equipment as instructed below. Otherwise, this equipment may not work properly.  
Should the slightest irregularity be observed, do not use this equipment and contact Olympus.  
Damage or irregularity may compromise patient or user safety and may result in more-severe equipment damage.

### **4.1 *Installing the ALT-Y0003 leak test air tubes and turning ON the power***

### **PRECAUTION**

- Check that the outer surface of the ALT-Y0003 leak test air tubes is free from scratches and flaws. Any scratch or flaw may prevent proper leakage testing.
- When connecting this equipment side connector of the ALT-Y0003 leak test air tube to the tube connector, make sure that the inside of this equipment side connector and the outside of the tube connector are not wet. If they are wet, thoroughly wipe them with a clean cloth. Otherwise, a fluid may enter the endoscope and the endoscope may fail.
- When connecting this equipment side connector of the ALT-Y0003 leak test air tube to the tube connector, thoroughly wipe dust, dirt and stain out of the external surface of the tube connector with a clean cloth. Otherwise, the proper leakage testing cannot be performed.
- Be sure the ALT-Y0003 leak test air tubes are not tangled. Otherwise, an unintentional force may act on the tubes. As a result, the tubes may get damaged or flattened, preventing proper leakage testing.
- Always keep the air vents clear. Blockage can cause overheating and equipment damage.
- Securely insert the both ALT-Y0003 leak test air tubes into the tube connectors. Otherwise, a self-check error may occur after power activation. Also, the inside of endoscope may not be pressurized properly in leakage testing, resulting in a failure of leakage testing.
- Do not turn ON this equipment within 5 seconds after switching it OFF. This equipment may not perform properly or fail.

**Ch.4**

## 4.1 Installing the ALT-Y0003 leak test air tubes and turning ON the power

### NOTE

- To inform users of the time to replace the internal pump, “Caution Contact Olympus for New Pump” will be lit up on the LCD monitor upon power activation. When this indication is lit up, it is time to replace the pump. Turn OFF the power and contact Olympus.
- Disconnect the water-resistant cap from the ALT-Y0003 leak test air tube if connected. Otherwise, a self-check error may occur.

- 1** Check that the outer surface of the ALT-Y0003 leak test air tubes is free from scratches and flaws.
- 2** When connecting the equipment side connector of the ALT-Y0003 leak test air tube to the tube connector, thoroughly wipe dust, dirt and stain out of the external surface of the tube connector with a clean cloth.
- 3** Visually check that the inside of the removing grip of the ALT-Y0003 leak test air tubes and the outside of the tube connector are free from water. If any water is observed, wipe it with clean cloth.
- 4** Using one hand to hold the equipment in place, hold the connecting grips of the ALT-Y0003 leak test air tube with the other hand and insert them into the Tube connector 1 and Tube connector 2 of this equipment until they stop. Check that they do not come out by pulling them slightly.

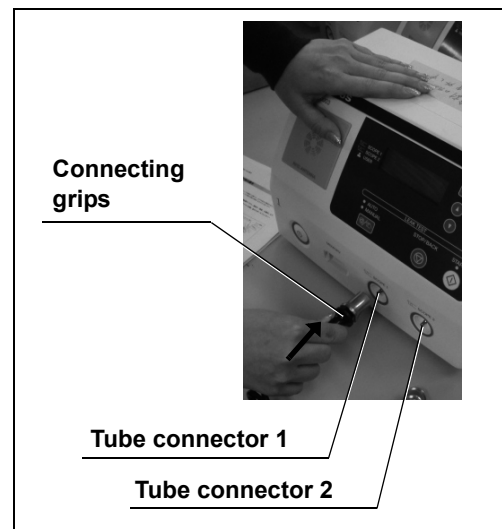


Figure 4.1

- 5** Set each ALT-Y0003 leak test air tube in the tube hanger.

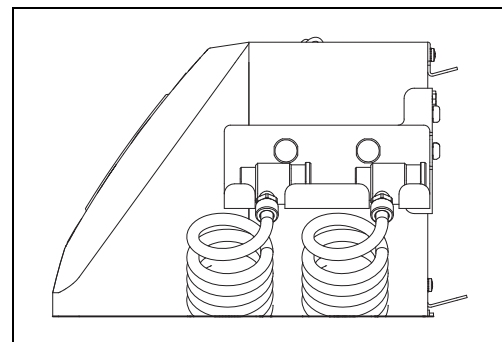


Figure 4.2

4.1 Installing the ALT-Y0003 leak test air tubes and turning ON the power

- 6 When using the printer, turn ON the power switch of the printer.
- 7 Turn ON the power switch of this equipment.
- 8 The power indicator will turn ON. The startup screen and the connection status of the printer will be displayed on the LCD monitor. (See Table 4.1)

Indicator	Description
<div style="border: 1px solid black; padding: 5px;">                     OLYMPUS ALT-Y0003                      Auto Print Disabled                 </div>	Displayed when Auto Print is not set.
<div style="border: 1px solid black; padding: 5px;">                     OLYMPUS ALT-Y0003                      Auto Print Activated                      Printer ON                 </div>	Displayed when Auto Print is set and the power of printer is turned ON.
<div style="border: 1px solid black; padding: 5px;">                     OLYMPUS ALT-Y0003                      Auto Print Activated                      Turn the Printer ON                      [↵]Begin Self Check                 </div>	Displayed when Auto Print is set and the power of printer is not turned ON <ul style="list-style-type: none"> <li>• When a printer is used, a self-check (Section 4.2) automatically starts by turning ON the printer.</li> <li>• When a printer is not used, a self-check (Section 4.2) automatically starts by pressing the OK button.</li> </ul>

**Ch.4**

Table 4.1

## 4.2 Self-check

The self-check is performed to inspect for leakage within the channel and examine whether the pump or valves works properly. This self-check is automatically performed when the power is turned ON, but it can be also manually performed when necessary. For the manual self-check, refer to Section 7.3, “Performing only self-check”.

### PRECAUTION

- Do not apply excessive force on the ALT-Y0003 leak test air tubes by forcibly bending them or placing anything on it. Doing so may prevent a proper self-check and damage the Leak Test Tubes.
- Do not touch the ALT-Y0003 leak test air tubes during self-check. Otherwise, the self-check cannot be conducted properly.
- If an error code is displayed on the LCD monitor as a result of the self-check, follow the instruction in Section 8.1, “Troubleshooting guide”.

### NOTE

When self-check is complete, the results of self-check are automatically recorded in this equipment.

Ch.4

- 1 Turn ON this equipment. A self-check will automatically start. The “Self Check In Process” indicator will be displayed on the LCD monitor. The number of mark “■” of the progress bar will increase to show the progress of the self-check until all the process is completed.

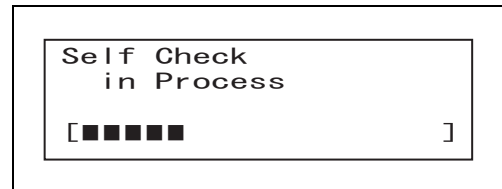


Figure 4.3

- 2 A short beep sounds when the self-check is completed properly. The “Scope ID indicator (SCOPE1)” and “User ID indicator (USER)” indicators blinks as shown in Figure 4.4, and the standby screen appears on the LCD monitor.

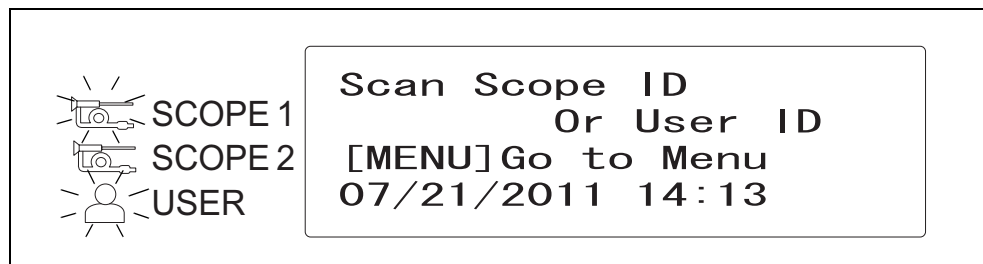


Figure 4.4

- 3 When using this equipment for the first time, set the date and time according to Section 7.1, "Setting date" and Section 7.2, "Setting time".
- 4 Turn OFF this equipment.

### ■ ***If the error code [E112] is displayed during self-check***

---

If the error code [E112] is displayed in the self-check, make sure the connection between this equipment and this equipment side connector of the ALT-Y0003 leak test air tube is proper. Press the Enter button to display the Standby screen and restart a self-check referring to Section 7.3. If the error code [E112] is still displayed, an irregularity may have occurred in this equipment. Turn OFF the power switch and contact Olympus.

## 4.3 Checking the printer paper roll

### PRECAUTION

Do not start printing if the printer paper roll is incorrectly installed. Otherwise, the printer paper roll may jam and/or printing may fail.

Make sure that the printer paper roll has been installed in this equipment. If not, replace the printer paper roll according to Section 6.4, "Installing the printer paper roll".

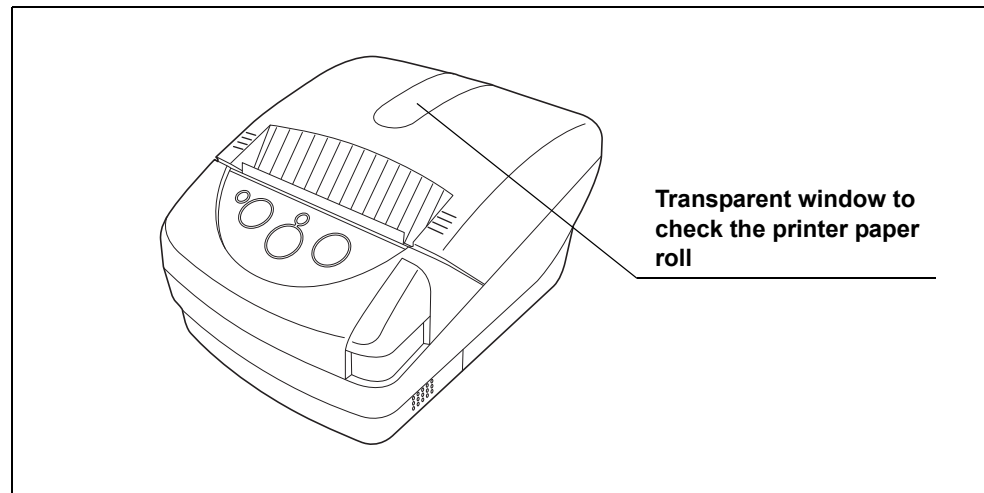


Figure 4.5



# Chapter 5 Operation

This chapter explains how to perform a leakage test of the endoscope with this equipment.

## 5.1 Precautions for operation

### WARNING

- Be sure to wear protective equipment such as protective eye wear, face mask, moisture-resistant gloves that fit properly and are long enough so that your skin is not exposed. Otherwise, dangerous chemicals and/or potentially infectious material such as blood and/or mucus of the patient may cause an infection.
- Wear gloves long enough to protect your skin and exchange them regularly so that they do not get torn.
- Should any irregularity be observed, do not use this equipment. Damage or irregularity may cause an electric shock, burns and/or fire.
- Do not allow the Power cord to become wet. A wet Power cord may cause an electric shock.
- After leakage testing with this equipment, reprocess the endoscope following all applicable national and local guideline. Endoscopy or endoscopic therapy with an endoscope not reprocessed may result in infections of a patient or operator.

### PRECAUTION

- More than three minutes after withdrawing the endoscope from the body, perform an automatic leakage test. The endoscope upon removal from the body may be exposed to a sudden temperature change, resulting in an inaccurate test.
- Select the Standard Mode in the automatic leakage test mode (ALT mode) if more than seven minutes have passed after removal of the endoscope from the body. If seven minutes have not passed after removal of the endoscope from the body, select the Quick Mode. The endoscope upon removal from the body may have a temperature greatly different from ambient temperature and undergo a sudden temperature change, resulting in an inaccurate test. (See Section 7.4, "Setting automated leakage test mode".)
- Install endoscopes to be automatically leak-tested in a location not exposed to direct sunlight and air conditioning. A rapid temperature change in the endoscopes may cause improper automated leak testing.

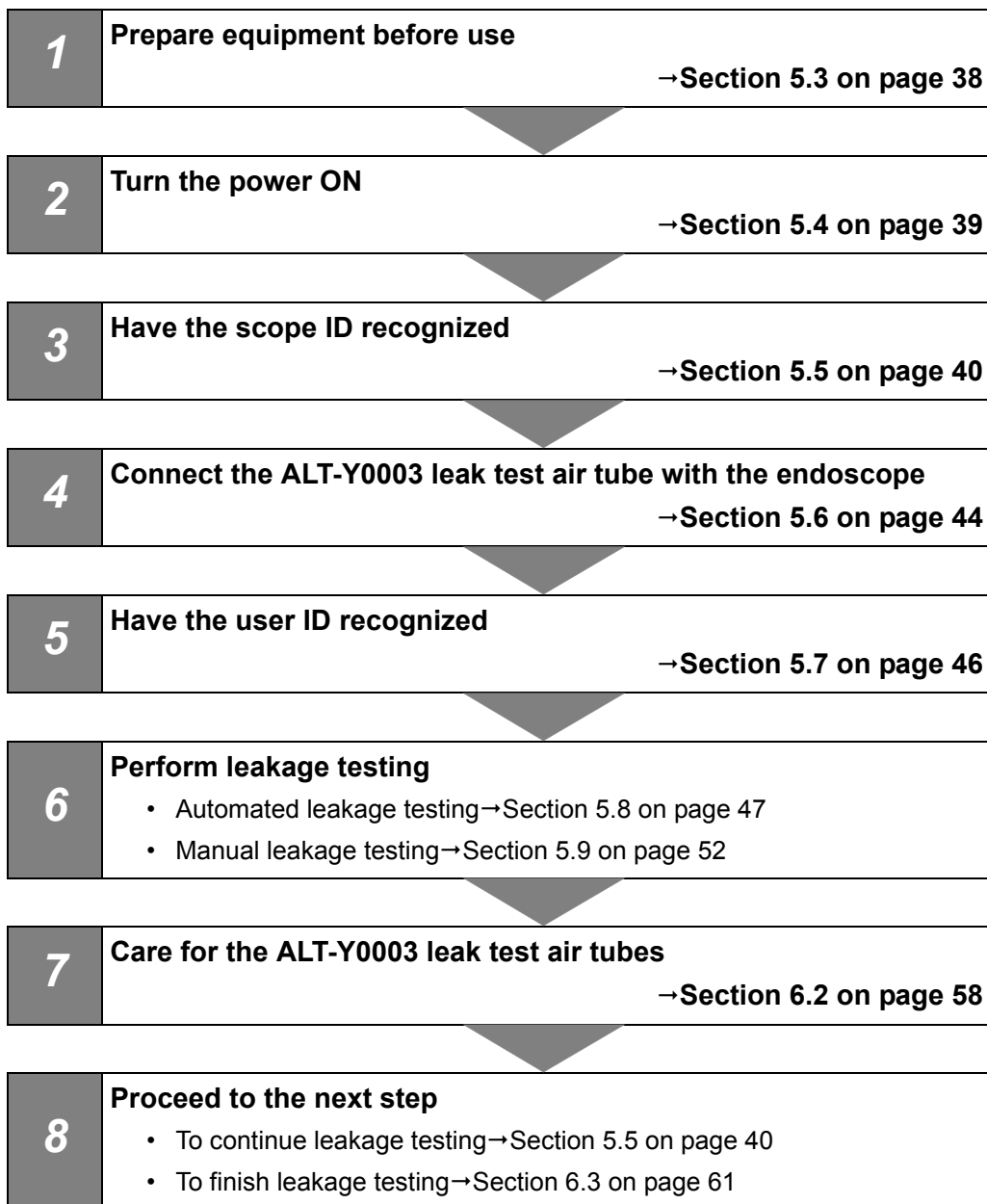
## 5.1 Precautions for operation

### NOTE

- To perform a leakage test in this equipment, an endoscope must be of a type with a built-in Scope ID or have a Scope ID tag. In addition, a USER ID card is required.
- This equipment can be stopped at any time during operation by pressing the STOP/BACK button. When a process is interrupted, be sure to execute it again from the beginning.

## 5.2 Operation workflow

The chart below shows the leakage test work flow. Review and understand each step before use to obtain an accurate leakage test result.



## 5.3 Preparation before use

### PRECAUTION

Use a basin deep enough to allow complete immersion of the endoscope and large enough for the insertion section of the endoscope and the universal cord to be coiled into a diameter of 17 cm or over. If the insertion section or universal cord is coiled into a smaller diameter, the leakage testing may not be conducted properly.

Prepare equipment as shown below.

Check	Required items
	This Automated Endoscope Leak Tester
	ALT-Y0003 leak test air tubes (MAJ-2009) (× 2)
	Personal protective equipment
	A clean and large basin (Prepare two basins if two endoscopes are tested.)
	Endoscope with a built-in Scope ID memory chip or a Scope ID tag
	Water-resistant cap (only for EVIS series endoscope)
	ID chip (MAJ-1546) (optional)
	Printer (MAJ-1937) (optional)
	ALT-Y0003 interface cable (MAJ-2052) (optional)

## 5.4 Power activation

### NOTE

- When the printer is used, turn ON the printer before turning ON this equipment.
- For indicators on the printer after power activation, refer to Table 4.1 in Section 4.1, “Installing the ALT-Y0003 leak test air tubes and turning ON the power”.

- 1 Confirm that ALT-Y0003 leak test air tubes are surely connected to Tube connector 1 and 2 of this equipment. Also confirm that an endoscope or no water resistance caps are connected to the endoscope connectors of ALT-Y0003 leak test air tubes.

### NOTE

An error code [E112] is displayed on turning power ON if the ALT-Y0003 leak test air tubes are not securely connected to this equipment, or if an endoscope or water resistance cap is connected to the ALT-Y0003 leak test air tubes.

- 2 Turn the power switch ON.
- 3 A self-check start automatically.
- 4 A short beep sounds when the self-check is completed properly. As seen in Figure 5.1, the Scope ID indicator (SCOPE1) and User ID indicator (USER) indicators blink. The Standby screen is displayed on the LCD monitor.

**Ch.5**

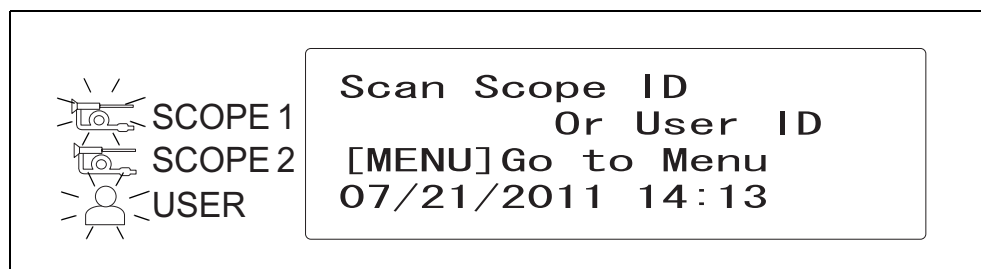


Figure 5.1

## 5.5 Recognition of scope ID

To keep an endoscopic leak test log, have this equipment recognize the individual scope ID that identifies the endoscope to be tested.

### PRECAUTION

- Have this equipment recognize the scope ID of the endoscopes to be leak-tested. Otherwise, the leakage testing can not be recorded properly.
- Do not bang the scope ID tag or scope connector onto the RFID reader during scope ID recognition. This may damage the scope ID tag, scope connector, and RFID reader.

### NOTE

- The START button on the main control panel does not function unless the User ID has been recognized.
- Two endoscopes may not be tested simultaneously depending on the compatibility of the endoscopes. Refer to the “List of Compatible Endoscopes <ALT-Y0003>” for the endoscope that cannot be tested simulataneously. If you attempt to have this equipment recognize the second ID, the panel will display the message as shown in Figure 5.2, and the endoscope ID can not be detected. Press the ENTER button to restart the scope ID detection procedure.

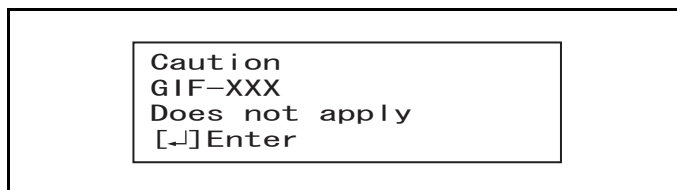


Figure 5.2

- For manual leakage testing, you can have the RFID reader detect the provided scope ID master card. (Automated leakage testing cannot be performed.) However, two endoscopes can not be tested simultaneously in a manual leakage test. Test the endoscope individually.
- If the scop ID master card is used, the history logs of the endoscope can not be managed.
- If any irregularity is found with the scope ID recognition of this equipment, or if any irregularity is suspected of the scope ID, contact Olympus.
- For addition or reissue of a scope ID, contact Olympus.

- 1 Confirm that ALT-Y0003 leak test air tubes are surely connected to Tube connector 1 and 2 of this equipment. Also confirm that an endoscope or no water resistance caps are connected to the endoscope connectors of ALT-Y0003 leak test air tubes.

**NOTE**

The error code [E123] is displayed on the monitor when you try to read the scope with the following conditions:

- The ALT-Y0003 leak test air tubes is disconnected, or
- An endoscope or water-resistant cap is connected to the ALT-Y0003 leak test air tubes

- 2 Bring the ID tag attached to the endoscope closer to the RFID reader of this equipment, and scan the tag with the reader until a short beep sounds.

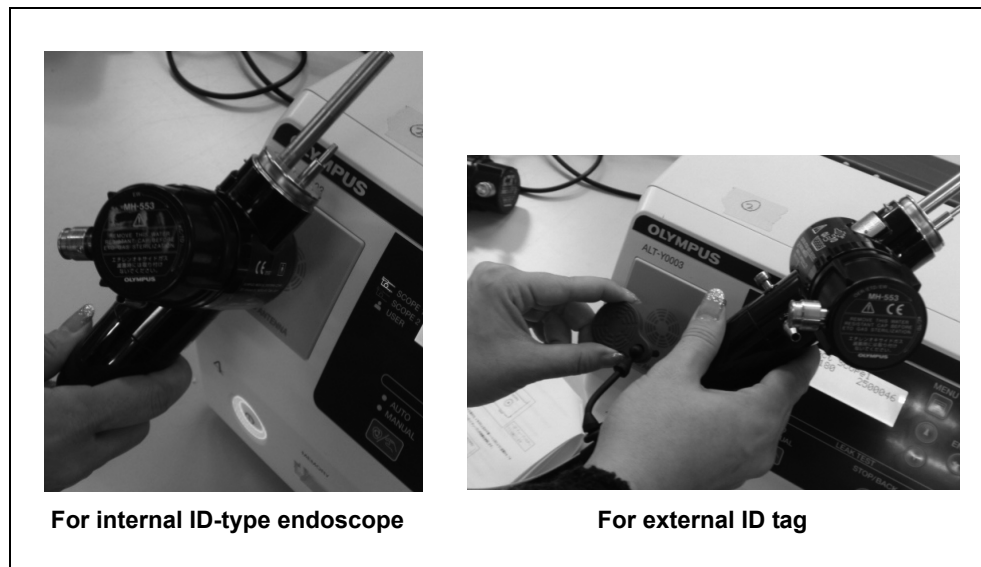


Figure 5.3

- 3 Make sure that the Endoscope ID indicator “SCOPE 1” lights up on the control panel.

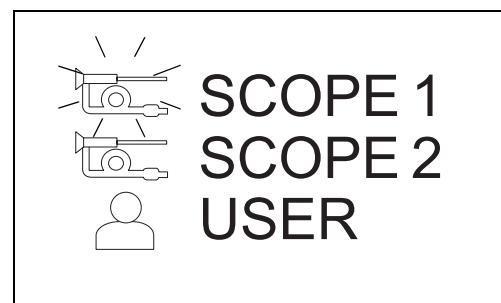


Figure 5.4

- 4 Check that the Tube connector 1 indicator is blinking. Connect an endoscope to the ALT-Y0003 leak test air tube connected to Tube connector 1 according to the instruction described in Section 5.6, "Connecting ALT-Y0003 leak test air tubes and endoscope".

**NOTE**

The error code [E122] is displayed when, in the step 4 above, an endoscope is connected to the ALT-Y0003 leak test air tube that has been connected to Tube connector 2. Press the Enter button and detach the endoscope from the ALT-Y0003 leak test air tube. Go back to beginning of Section 5.5 and repeat the steps.



Figure 5.5

- 5 To leak test a second scope, repeat steps 1 – 4 above, and connect the second endoscope to the ALT-Y0003 leak test air tube connected to "Tube connector 2".

**NOTE**

- When the first endoscope is detected, the Endoscope ID indicator "SCOPE 1" lights up.
- When the second endoscope is detected, the Endoscope ID indicator "SCOPE 2" lights up.
- To replace the endoscope to be tested, press the STOP/BACK button and disconnect the endoscope from the ALT-Y0003 leak test air tube. Go back to the beginning of Section 5.5 and repeat the steps.



The LCD monitor indicators change as shown in Figure 5.6 below when the ID is entered or when the endoscope is connected.

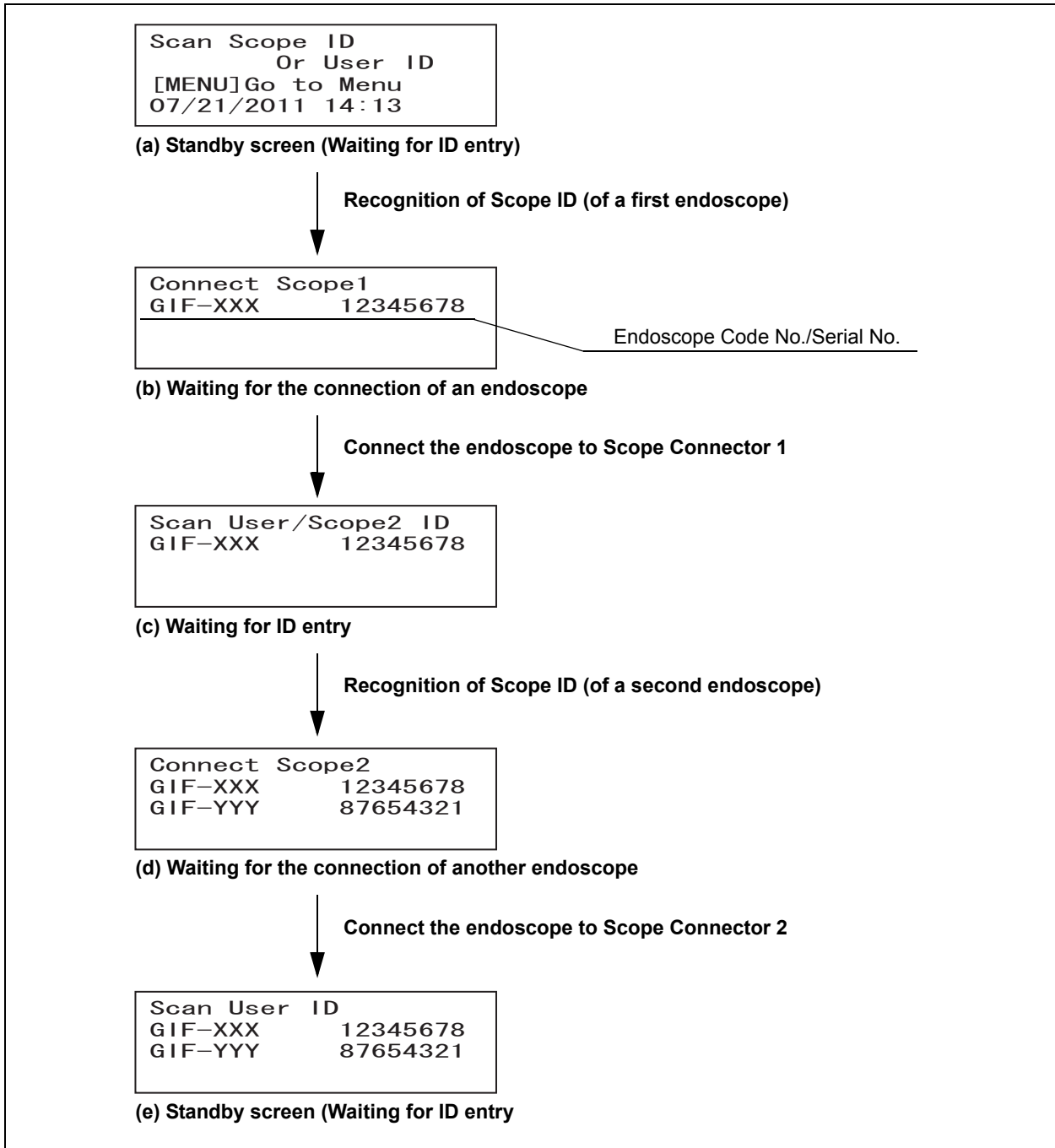


Figure 5.6

**NOTE**

When the STOP/BACK button is pressed in any screen from (b) to (e) in Figure 5.6 above, the screen returns to “(a) Standby screen (Waiting for the input of ID)”. In this case, all the scope IDs and user IDs need recognizing again.

## 5.6 Connecting ALT-Y0003 leak test air tubes and endoscope

Set the endoscope for automated leak testing and connect it to the ALT-Y0003 leak test air tube.

### PRECAUTION

- Be sure to confirm that the basin does not contain any water or a disinfectant solution before filling the basin with water. If there is any pin hole in the endoscope, the fluid may enter the endoscope, resulting in malfunction of the endoscope.
- For an endoscope that requires a water-resistant cap, be sure to inspect and attach the cap as described in the “Instruction Manual” of the endoscope. Otherwise, the inside of endoscope may not be pressurized, resulting in inaccurate leakage testing. Attaching the water-resistant cap that is wet inside may cause malfunction of the endoscope.
- When attaching the endoscope connector of the ALT-Y0003 leak test air tube to the venting connector of the endoscope or water-resistant cap, check if the O ring inside the endoscope connector is present and free from scratches or flaws. Otherwise, accurate leakage testing cannot be conducted.
- When attaching the endoscope connector of the ALT-Y0003 leak test air tube to the venting connector of the endoscope or water-resistant cap, wipe out any water drop inside the endoscope connector and outside the venting connector. Such a water drop may enter the endoscope, resulting in malfunction of the endoscope.
- When attaching the endoscope connector of the ALT-Y0003 leak test air tube to the venting connector of the endoscope or water-resistant cap, wipe out any dust, dirt, or stain inside the endoscope connector and outside the venting connector. Otherwise, accurate leakage testing cannot be conducted.
- Be sure to attach the endoscope side connector of ALT-Y0003 leak test air tube to the venting connector of the endoscope or water-resistant cap. Otherwise, the inside of endoscope is not pressurized; resulting in inaccurate leakage testing.
- Do not place two endoscopes in the basin with any part of them stacked with each other. Accurate leakage testing cannot be conducted.
- Place the endoscope in the basin with the bending section of the endoscope straight and the insertion section and universal cord coiled into a diameter of 17 cm or over in performing automated leak testing. Otherwise, accurate leakage testing cannot be conducted.

## 5.6 Connecting ALT-Y0003 leak test air tubes and endoscope

- 1** Confirm that the basin does not contain any water or disinfectant solution.
- 2** Place the endoscope in the basin. (When two endoscopes are tested simultaneously, place each endoscope into a different basin.)  
Make the bending section of the endoscope straight and the insertion section and universal cord coiled into a diameter of 17 cm or over.
- 3** Visually check that there is no water drop, dust, dirt, nor stain inside the endoscope connector of the ALT-Y0003 leak test air tube and outside the venting connector of either endoscope or water-resistant cap.
- 4** Turn the endoscope connector of the ALT-Y0003 leak test air tube clockwise until it stops, pushing it to the venting connector as shown in Figure 5.7.

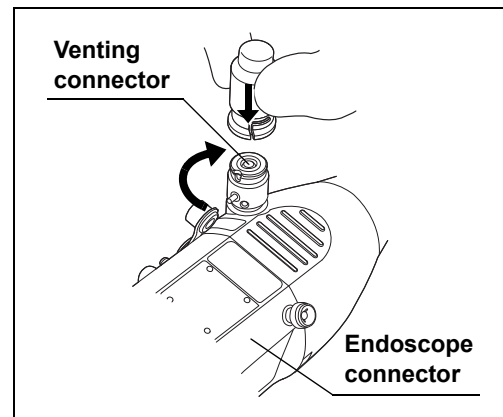


Figure 5.7

- 5** When the ALT-Y0003 leak test air tubes is connected to the scope, the Tube Connector Indicator stops blinking and starts to light.

## 5.7 Recognition of user ID

To keep an endoscope leak test log, have this equipment recognize the individual User ID that identifies the reprocessing operator.

### NOTE

- The START button on the main control panel does not function unless the User ID has been recognized.
- For addition or re-issue of the user ID card, contact Olympus.
- If this equipment fails to detect the user ID, apply the provided user ID master card to the RFID reader so that this equipment recognizes the user ID as the master ID. If a problem with the user ID is observed, contact Olympus.

- 1 Bring the user ID card of the leakage testing worker close to the RFID reader of this equipment until a short beep sounds.

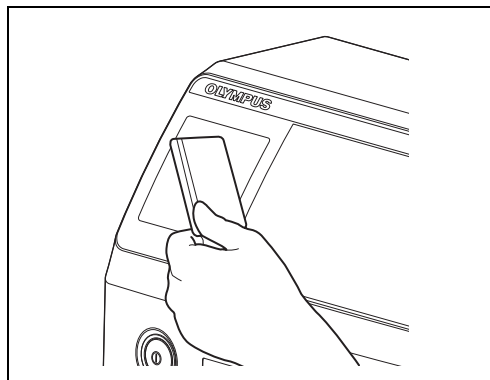


Figure 5.8

- 2 Confirm that the User ID detection indicator on the control panel is turned ON.

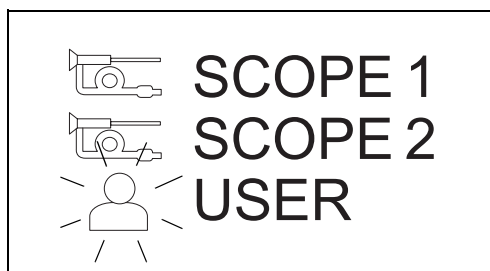


Figure 5.9

### NOTE

- When the User ID detection indicator does not illuminate on the control panel, the user ID card has not been recognized. Bring the user ID card again close to the RFID reader of equipment.
- To replace the endoscope to be tested, press the STOP/BACK button and disconnect the endoscope from the ALT-Y0003 leak test air tube. Go back to the beginning of Section 5.5 and repeat the steps.

## 5.8 Automated leakage testing

This equipment features the following functions for the automated leakage testing:

- This equipment can perform a leakage test in air in an ALT; you do not need to store water in the basin.
- This equipment performs automatic leakage testing of the endoscope.
- This equipment can store the records of leakage testing.

### WARNING

Be sure to wear protective gear such as moisture-resistant clothes, goggles, a face mask, chemical-resistant gloves that fit properly and are long enough so that your skin is not exposed. Otherwise, potentially infectious materials attached to the endoscope, such as blood and/or mucus of the patient, may cause an infection.

### PRECAUTION

Do not immerse the endoscope in water nor touch it during Automated Leakage Testing. Accurate leakage testing cannot be conducted.

### NOTE

- Automated leak testing can not start without recognition of both Scope ID and User ID. Read the both Scope ID and User ID, referring to Section 5.5, "Recognition of scope ID" and Section 5.7, "Recognition of user ID".
- For the setting of history printing, see Section 7.5, "Setting print mode".
- The air fed into the endoscope may slightly expand the rubber cover of the bending section. This is not an abnormality.
- When a leakage test ends, the result is automatically recorded in this equipment.
- Up to 13,000 records of leakage testing can be stored in this equipment. If more than 13,000 records are stored, the oldest record is overwritten.
- To stop the leakage test during operation, press the STOP/BACK button.
- A quite small pin hole may not be detected in automated leakage testing.
- Endoscopes not listed in the "List of Compatible Endoscopes <ALT-Y0003>" can not be automatically leak-tested. If an incompatible endoscope is connected, only the MANUAL light lights up when the SELECT button is pressed.