NOTE

- If automated leaking test process stops with the error code [E115] displayed on the monitor, either a large leak in the endoscope or improper connection of the ALT-Y0003 leak test air tubes or water-resistant cap is suspected. Press the ENTER button and confirm that the ALT-Y0003 leak test air tubes and water-resistant cap are properly connected. Go back to the beginning of Section 5.5 and repeat the steps.
- If the error code [E115] occurs in succession, contact Olympus.

1 Check the LCD monitor to see if the Scope ID and User ID have been recognized.

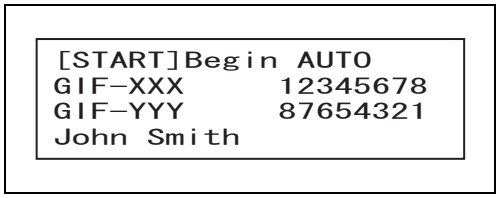


Figure 5.10

2 Make sure that the AUTO light is turned ON. When the MANUAL light is turned ON, press the SELECT button to turn ON the AUTO light.

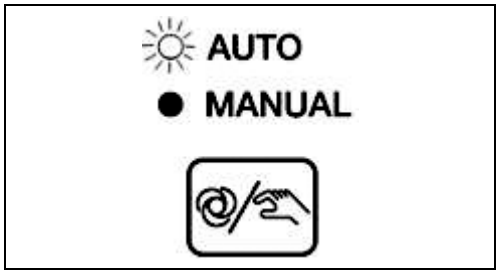


Figure 5.11

3 Press the START button. An automated leakage test will start. The number of mark "■" of the progress bar will increase as the process of automated leak testing goes on to show how much time is left before the test is completed.

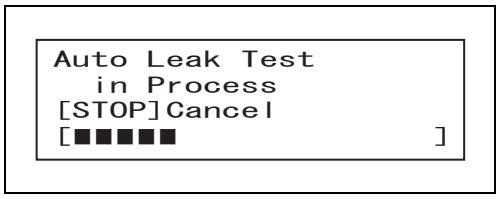


Figure 5.12

NOTE

An automated leakage test is completed in about 140 seconds (2 minutes and 20 seconds).

4 The automated leakage testing is automatically completed. When no leak is detected, a short beep sounds, and The LCD monitor alternately displays the two ALT Results indicators (A) and (B) as shown in Figure 5.13. When any leakage is detected in the testing, long beeps sound, and the ALT Results (see C in Figure 5.13) indicator is displayed.

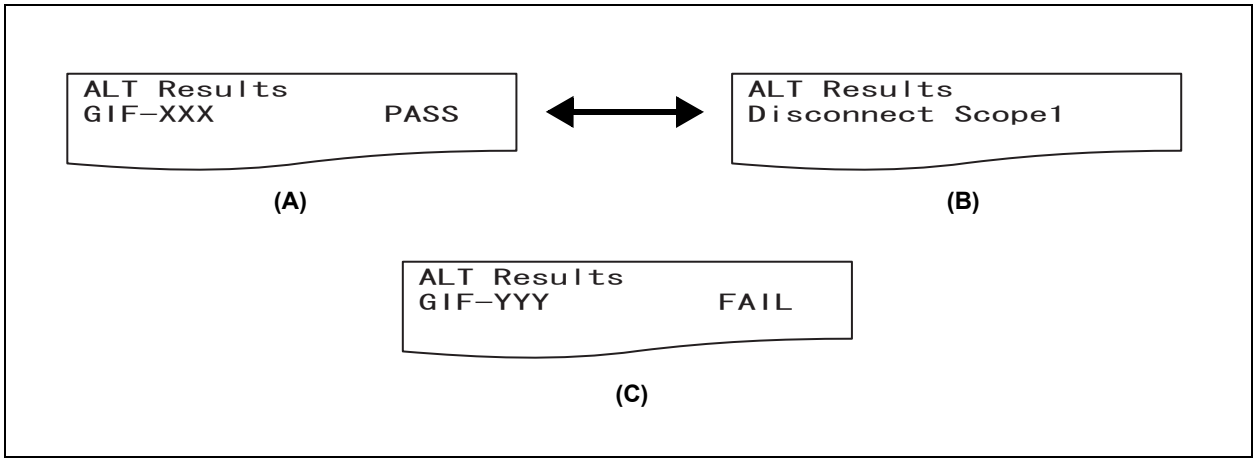


Figure 5.13

NOTE

When the both endoscopes pass the leakage test, the test data is automatically sent to the connected printer for printing. When at least one endoscope fails to pass the leakage test, the data is not printed at this time. If a manual leakage test follows the automated leakage test, the result of the automated leakage test will be printed when the manual leakage test is completed. If you finish the automated leakage test by pressing the ENTER button, the result of automated leakage test starts to be printed.

5 Perform the following steps depending on the results in the leakage testing.

■ *The results in the automated leakage testing are all PASS:*

1 Press the ENTER button if all the results are PASS. The screen will be returned to the Standby screen.

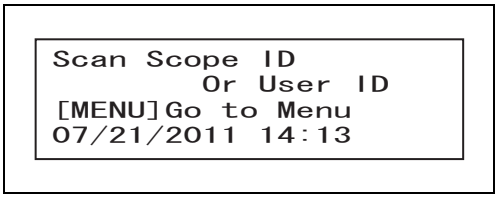


Figure 5.14

2 Rotate the endoscope connector of the ALT-Y0003 leak test air tube counterclockwise to disconnect it.

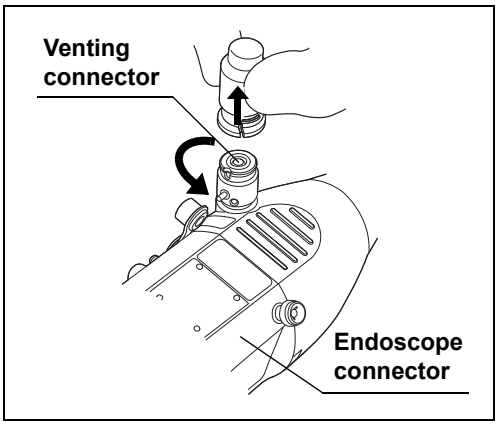


Figure 5.15

NOTE

When the endoscope that requires the connection of the water resistant cap, remove the venting connector of the water resistant cap and the endoscope connector of the ALT-Y0003 leak test air tube.

3 Take care of the ALT-Y0003 leak test air tubes according to Section 6.2, “Care of ALT-Y0003 leak test air tubes”.

■ *If the result of leakage testing for at least one endoscope is FAIL*

If at least one endoscope fails to pass the leakage testing, the endoscope(s) may have developed a leak. To locate the air leak, perform a manual leakage test. Perform the following steps below without entering the ENTER Button.

PRECAUTION

If a manual leakage test can not locate the leak, refer to and follow Section 8.1, “Troubleshooting guide”.

NOTE

If Standby screen is shown by pressing ENTER button, perform manual leakage testing referring to Section 5.9, “Manual leakage testing”.

1 Disconnect the endoscope that has passed the leakage test from the ALT-Y0003 leak test air tube. (If the result is FAIL, do not disconnect it from the ALT-Y0003 leak test air tube.)

2 Locate a leak, following the steps from Step 4 in Section 5.9, “Manual leakage testing”.

5.9 Manual leakage testing

The manual leakage testing features the following functions:

- This equipment allows visual inspection of the immersed endoscope for any small hole on the surface of the endoscope that causes an air leak.
- The history of manual leakage tests can be recorded.

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

- If continuous series of air bubbles come out of the endoscope during a manual leakage test, water may enter the endoscope from where such air bubbles come out. If continuous series of air bubbles come out, remove the endoscope from the water without pressing the STOP/BACK button. Remove the endoscope and refer to Olympus for how to reprocess and send the endoscopes with a leak for repair.
- Do not attach and detach the endoscope connector of the water-resistant cap or ALT-Y0003 leak test air tube in water. Doing so may cause water to enter the endoscope, resulting in a malfunction of the endoscope.
- Be sure to attach the endoscope connector of the ALT-Y0003 leak test air tube to the venting connector of the water-resistant cap. Otherwise, the inside of endoscope is not pressurized; the leakage testing cannot be conducted.
- When attaching the endoscope connector of the ALT-Y0003 leak test air tube to the water-resistant cap, thoroughly wipe water out of the inside of the endoscope side connector of the ALT-Y0003 leak test air tube and the outside of the venting connector of the water-resistant cap. Otherwise, water may penetrate the endoscope, resulting in a malfunction of the endoscope.
- To interrupt the manual leakage test, take out the endoscope from the basin before pressing the STOP/BACK button.

NOTE

- Unless the endoscope ID and the user ID are detected, the Manual Leakage Testing can not start. To read the endoscope ID and the user ID, refer to Section 5.5, “Recognition of scope ID” and Section 5.7, “Recognition of user ID”.
- Refer to Section 7.5, “Setting print mode” for how to set Auto Print and print out the log.
- The air fed into the endoscope may slightly expand the bending section rubber cover during leakage testing. This is not an abnormality.
- In a manual leakage test, a short beep keeps sounding in 9 minutes after the start of the manual leakage test to show that pressurization will end soon. The pressurization automatically ends in 10 minutes. When continuous series of air bubbles are found emerging from the endoscope, remove the endoscope from the water. Pressing the STOP/BACK button can terminate the test.
- When a manual leakage test ends, this equipment automatically records the test as history.
- The Manual Leakage Testing can be usually applied to two endoscopes simultaneously; however, it may be applied only to one endoscope depending on the compatibility of the endoscopes. If the endoscope ID master card is used, the Manual Leakage Testing can be applied only to one endoscope.

1 Fill the basin with clean water deep enough to immerse the endoscope completely.

2 Confirm that the endoscope ID and the user ID have been read with the numbers indicated on the LCD monitor of the control panel.

Example) The indicator of the LCD monitor when two endoscopes have been recognized:

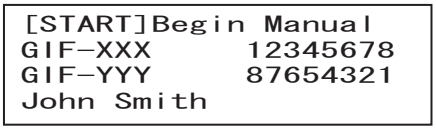


Figure 5.16

3 Confirm that the MANUAL light is turned ON. When the AUTO light is turned ON, press the SELECT button to turn ON the MANUAL light.

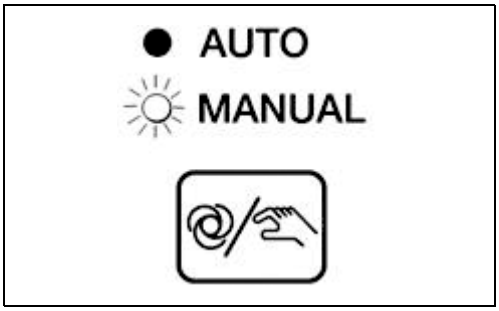


Figure 5.17

4 Press the START button, and the indicator shown in Figure 5.18 will be displayed. Do not immerse the endoscope in water while the indicator is being displayed because the endoscope has not been sufficiently pressurized.

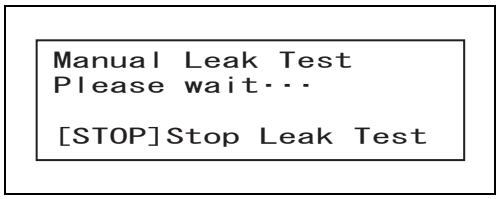


Figure 5.18

PRECAUTION

Do not immerse in water the endoscope not sufficiently pressurized. Otherwise, water may penetrate the endoscope, resulting in a malfunction of the endoscope.

5 Confirm that the indicator as shown in Figure 5.19 is displayed on the LCD monitor. Immerse the endoscope in a basin that contains clean water.

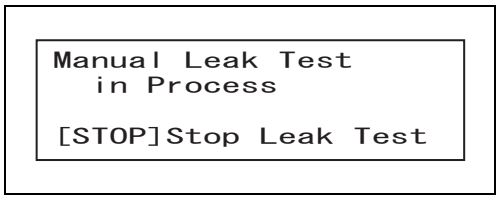


Figure 5.19

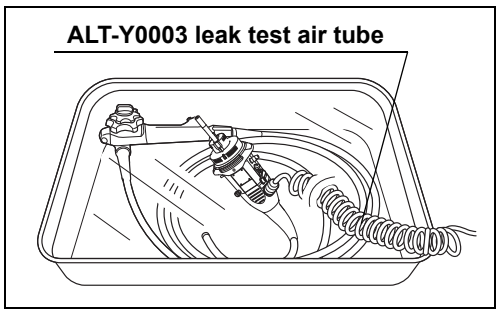


Figure 5.20

6 Observe the endoscope for about 30 seconds to inspect for a series of bubble, while bending the bending section by turning the UD and RL angle knobs of the endoscope. (When the endoscope has either the UD or RL angle knob, refer to the instruction manual of the endoscope and follow the instruction before testing.)

NOTE

Continuous air bubbles show the location from which water is leaking. If water is leaking from a pin hole in the forceps or suction channel, bubbles continuously emerge from the opening of the channel (e.g. the distal end, suction connector, suction cylinder, or forceps valve).

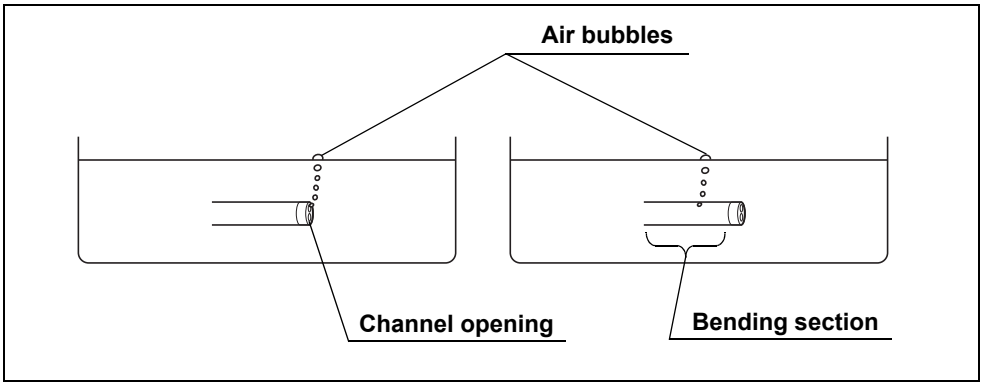


Figure 5.21

7 Remove the endoscope from the water.

PRECAUTION

If continuous series of air bubbles come out, do not press STOP/BACK button until all the endoscopes have been removed from the water. Otherwise, water may enter the inside of endoscope.

8 When the STOP/BACK button is pressed, a short beep sounds, and the indicator shown in Figure 5.22 is displayed on the LED monitor. The pressurized air is released from the endoscope.

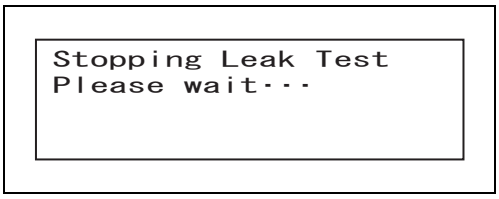


Figure 5.22

9 After the completion of air purge and the Manual Leakage Test, the LCD monitor alternately displays two indicators, one showing the type of the endoscope and the other showing the next step as shown in Figure 5.23.

Example) Indicators when two endoscopes have been recognized

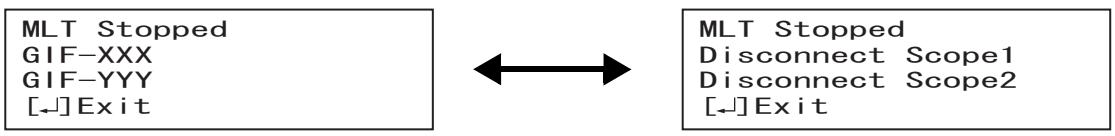


Figure 5.23

NOTE

When Auto Print is set, the history of Manual Leakage Testing is printed. Refer to Section 7.5, “Setting print mode” for how to set the print mode.

10 Press the ENTER button. The screen will go back to Standby screen.

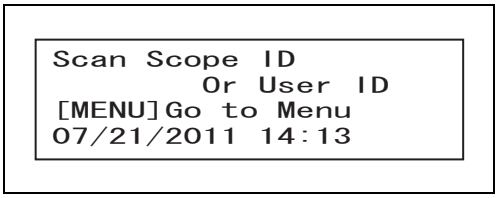


Figure 5.24

11 Rotate the endoscope connector of the ALT-Y0003 leak test air tube counterclockwise to disconnect it.

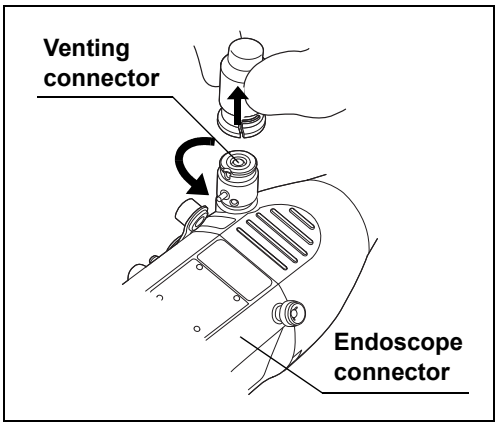


Figure 5.25

NOTE

When the endoscope requires the water-resistant cap, detach the venting connector of the water-resistant cap and the endoscope connector of the ALT-Y0003 leak test air tube.

12 Take care of the ALT-Y0003 leak test air tubes according to Section 6.2, “Care of ALT-Y0003 leak test air tubes”.

Chapter 6 Routine Maintenance

6.1 Summary

To ensure safety operation of this equipment, inspect and clean this equipment regularly.

❍ Inspection to be performed before each use

→See Section 6.2, “Care of ALT-Y0003 leak test air tubes”.

❍ Inspection to be performed daily after use

→See Section 6.3, “Turning power OFF and cleaning outer surface”.

❍ Work to be performed as required

→See Section 6.4, “Installing the printer paper roll”.

→See Section 6.5, “Replacing the fuse”.

→See Section 6.6, “Storage”.

WARNING

- Be sure to inspect and clean this equipment as described in this chapter. Otherwise, the functions and performance of this equipment may not be performed 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 more severe equipment damage may result.
- 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.

6.2 Care of ALT-Y0003 leak test air tubes

Check	Required items
	Clean gauze
	Clean Sponge
	70% ethyl alcohol or isopropyl alcohol
	Detergent solution
	Two clean basins (for cleaning and rinsing)

Table 6.1

WARNING

- Both 70% ethyl alcohol or isopropyl alcohol is combustible. Handle them with care.
- Excessive detergent foaming can prevent fluid from adequately contacting surfaces and compromise the cleaning performance.
- Do not reuse the detergent solution.

PRECAUTION

- Do not sterilize the ALT-Y0003 leak test air tubes by autoclaving or gas. Doing so may damage the ALT-Y0003 leak test air tubes.
- Do not clean the ALT-Y0003 leak test air tubes by ultrasonic wave. Doing so may damage the ALT-Y0003 leak test air tubes.
- Do not push the pin in the endoscope connector of the ALT-Y0003 leak test air tube in water. The water may enter the ALT-Y0003 leak test air tube. Performing a leak test using the ALT-Y0003 leak test air tube with water in it may cause malfunction of the endoscope.
- The water may enter the ALT-Y0003 leak test air tube. Performing a leak test using the ALT-Y0003 leak test air tube with water in it may cause malfunction of the endoscope. Check that the outer surface of the ALT-Y0003 leak test air tubes is free from scratches and flaws.

Use a low-foaming and neutral pH detergent which is labeled for use on medical device, that may or may not contain enzymes and follow the manufacturer’s dilution, temperature, and immersion time recommendations and the use-by-date of each detergent. Contact Olympus for the names of specific brands that have been tested for compatibility with the ALT-Y0003 leak test air tube.

1 Wipe the external surface of the ALT-Y0003 leak test air tubes with a piece of clean gauze.

2 Visually inspect for any debris remaining on the ALT-Y0003 leak test air tube. The next step differs depending on whether the debris remains on the external surface.

■ *When any debris remains on the surface*

1 Turn OFF this equipment.

2 While holding this equipment with one hand to stay it in place, hold the removing grip of the ALT-Y0003 leak test air tube and pull the tube straight toward you.

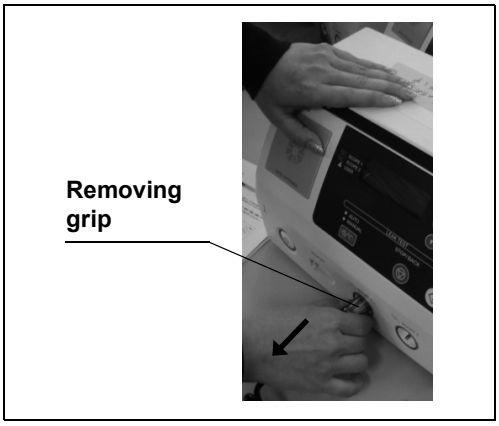


Figure 6.1

3 Fill a basin with a detergent solution at a concentration recommended by the manufacturer.

4 Immerse the ALT-Y0003 leak test air tube in the basin of the detergent solution.

5 Wipe all debris from the external surface of the ALT-Y0003 leak test air tube with a piece of clean gauze or sponge while ALT-Y0003 leak test air tube is immersed in the detergent solution.

6 Soak the ALT-Y0003 leak test air tube for the amount of time and at the temperature recommended by the detergent manufacturer.

7 Take out the ALT-Y0003 leak test air tube from the detergent solution.

8 Fill a basin with clean water and immerse the ALT-Y0003 leak test air tube in it.

9 Rinse the ALT-Y0003 leak test air tube thoroughly in the water by moving it slowly.

10 Take out the ALT-Y0003 leak test air tube from the water.

11 Visually inspect for any debris left on the ALT-Y0003 leak test air tube. Should debris remain, repeat cleaning process until all debris has been removed.

12 Wipe the external surface of the ALT-Y0003 leak test air tube with a piece of clean gauze.

13 Wipe the external surface of the ALT-Y0003 leak test air tube with a piece of gauze moistened with 70% ethyl alcohol or isopropyl alcohol and dry it thoroughly.

14 Connect the ALT-Y0003 leak test air tube to this equipment according to the instruction in Section 4.1, “Installing the ALT-Y0003 leak test air tubes and turning ON the power” and put the tube on the tube hanger.

■ *When no debris remains on the surface*

1 Wipe the external surface of the ALT-Y0003 leak test air tubes with a piece of gauze moistened with 70% ethyl alcohol or isopropyl alcohol and dry it thoroughly.

2 Connect the ALT-Y0003 leak test air tube to this equipment according to the instruction in Section 4.1, “Installing the ALT-Y0003 leak test air tubes and turning ON the power” and put the tube on the tube hanger.

6.3 Turning power OFF and cleaning outer surface

Check	Required items
	70% ethyl alcohol or isopropyl alcohol
	Neutral detergent
	Clean gauze

Table 6.2

WARNING

- After wiping with a piece of moistened clean gauze, dry this equipment thoroughly before using it again. Otherwise, an electric shock may result.
- Both 70% ethyl alcohol and isopropyl alcohol are combustible. Handle them with due care.
- Do not directly spray agent such as spray-type 70% ethyl alcohol or isopropyl alcohol over this equipment. The agent may enter this equipment through the vent hole, causing malfunction of this equipment.

PRECAUTION

- Do not clean the connectors including the inlet of the power cord. Cleaning them can deform or corrode the contact, which may cause malfunction of this equipment.
- Do not expose this equipment to water, a cleaning or disinfection solution, or autoclave gas for cleaning and sterilization. Doing so may damage this equipment.
- Do not wipe the external surface with a hard or abrasive wiping material. The surface may be scratched.

After using this equipment, immediately perform the following cleaning procedure.

1. Turn OFF this equipment and disconnect the power cord from the wall mains outlet.
2. Wipe the external surface of this equipment with a piece of clean gauze moistened with neutral detergent solution and dry it with a piece of clean gauze. Remove in particular dust, dirt, or stain on the surface by wiping it thoroughly.
3. Wipe the external surface of this equipment with a piece of gauze moistened with 70% ethyl alcohol or isopropyl alcohol and dry it thoroughly.

6.4 Installing the printer paper roll

WARNING

Do not touch the printer or the area around it during and immediately after printing. They will be very hot and may cause burns.

PRECAUTION

- Always use the Olympus-designated printer paper roll. Otherwise, incorrect printing or equipment failure may result.
- To prevent printer failure or printer paper roll discoloration, do not touch the printer or Printer paper roll with wet hands.
- Always keep the printer cover closed. Otherwise, the printer and/or Printer paper roll may get wet and malfunction.
- To avoid damage to or deterioration of the printout, do not allow the paper to make contact with the following.
  - Alcohol or detergent
  - Grease, organic solvents, chemicals (medical, industrial, or cosmetic use)
  - Stamp ink
- To prevent accelerated print deterioration, do not allow the paper to make contact with the following.
  - Water
  - Materials containing plasticizer (PVC film, desk mat, leather products, journal cover, etc.)
  - Certain stationery (plastic tape, mending tape, fluorescent-ink pen, oil-ink pen, adhesives other than starchy paste

PRECAUTION

- To prevent discoloration of unused paper, store the Printer paper roll without opening it in a place meeting the following conditions.
  - Dark, cool place
  - Environment not exposed to NO_x, So_x, or O_3 (Ozone)
- When red lines appear on both sides of the Printer paper roll during printing, replace the Printer paper roll.

1 Take out the printer paper roll from the package and peel off the tape holding the end of the paper.

2 Press the cover open button of the printer to open the paper cover.

PRECAUTION

Make sure the printing surface is correct. Otherwise, it does not print properly. Do not touch the paper cutter of the printer. It may injure your hand.

3 Remove the printer paper roll remaining in the printer.

4 Put the printer paper roll on the paper roll holder. Make sure the printer paper roll feed direction is set as shown in below.

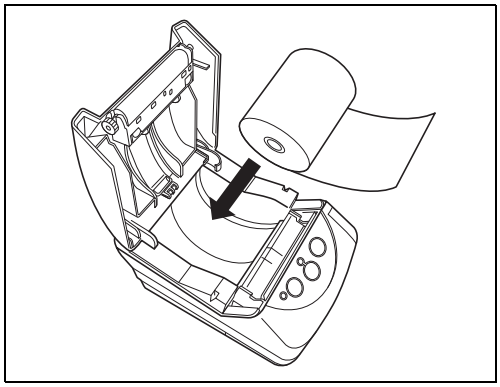


Figure 6.2

5 Pull the edge of the printer paper roll to feed the paper by about 5 cm.

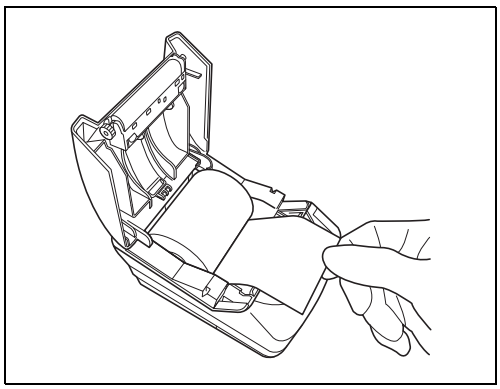


Figure 6.3

6 Close the paper cover by pushing the edges of it until it clicks.

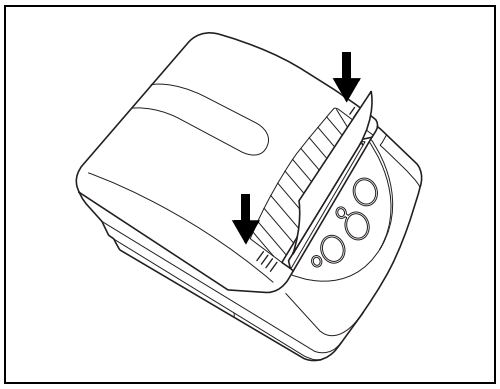


Figure 6.4

7 Turn on the printer by holding down the POWER button.

8 Press the FEED button on the operational panel of the printer and confirm that the printer paper roll is fed smoothly.

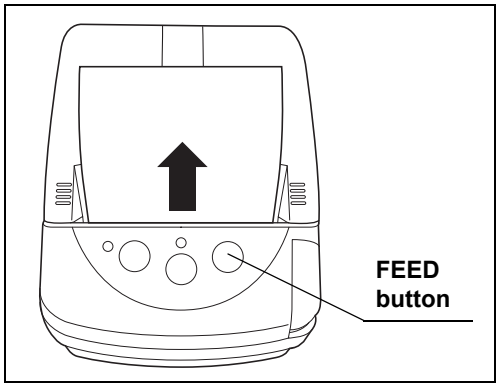


Figure 6.5

NOTE

If the printer paper cannot be fed neatly, press the cover open button of the printer to open the paper cover, take the printer paper roll out of the printer and retry insertion.

9 Cut the excess paper coming out of the slit.

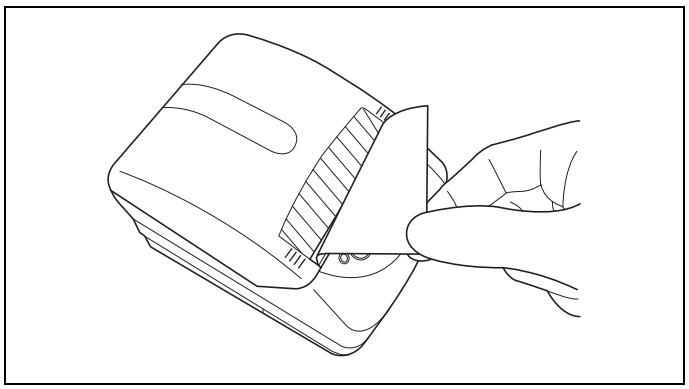


Figure 6.6

6.5 Replacing the fuse

WARNING

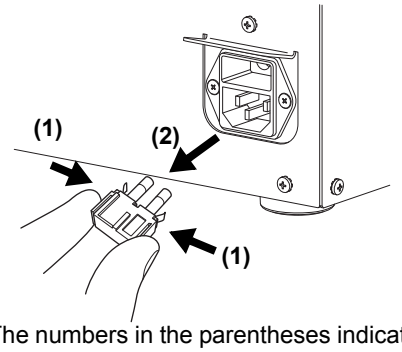
- Be sure to turn OFF this equipment and unplug the power cord from the wall mains outlet and the AC power inlet of this equipment before removing the fuse box from this equipment. Otherwise, a fire or an electric shock may occur.
- To prevent electric shock, do not touch this equipment and the power cord with wet hands.

1 Confirm that the power cord is securely connected to the AC power inlet of this equipment and the wall mains outlet.

2 Turn OFF this equipment and unplug the power plug from the wall mains outlet.

3 Unplug the power cord from the AC power inlet of this equipment.

4 Push the projections on the fuse box in the direction of the arrows (1) in Figure 6.7 and remove the fuse.



The numbers in the parentheses indicate the sequence of fuse box removal.

Figure 6.7

WARNING

Always use the fuse as designated below. Otherwise, malfunction or failure of this equipment may occur, resulting in a fire or electric shock.

- Fuse DB191000

5 Replace the two fuses in the fuse box with new ones.

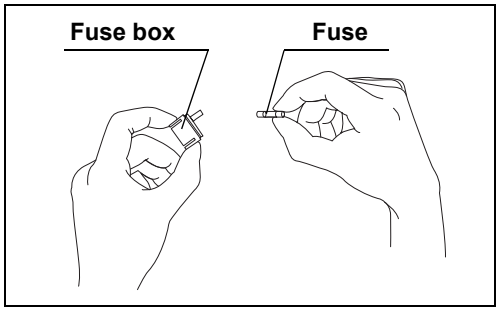


Figure 6.8 Replacing fuses

6 Insert the fuse box into this equipment until it clicks. Confirm that the fuse box is properly installed, referring to Figure 6.9.

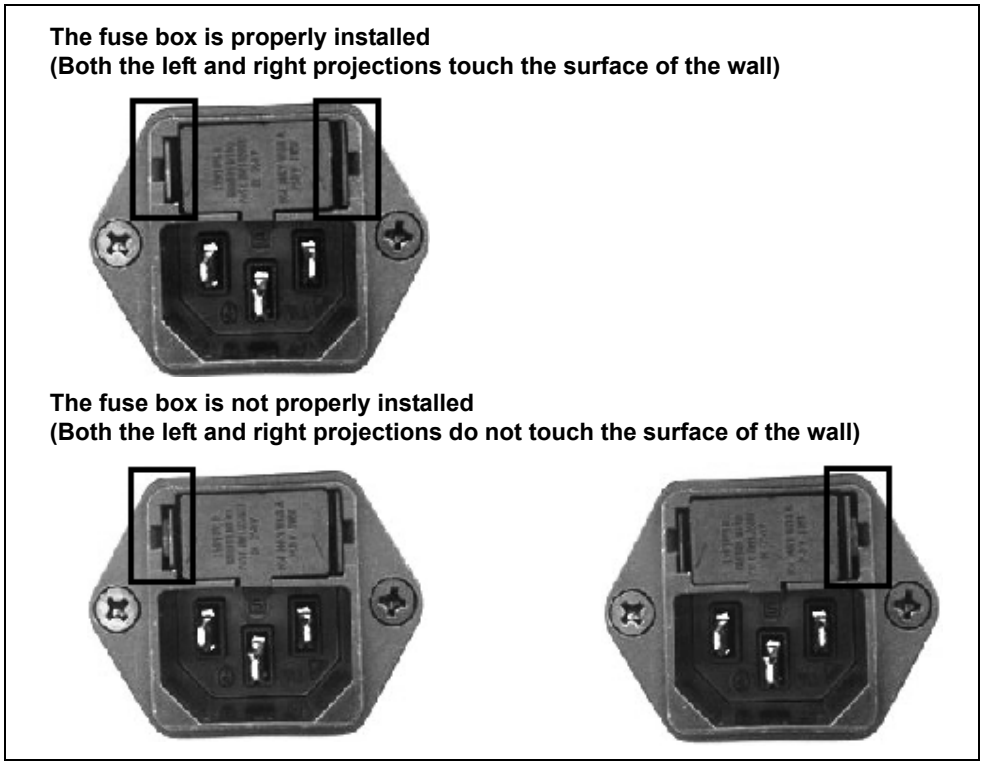


Figure 6.9

7 Plug the power cord and turn the power switch ON. Confirm the control panel and power indicator light up.

WARNING

If the operation panel and power indicators fail to light on after fuses are replaced with new ones, unplug the power cord immediately from the wall mains outlet. Otherwise, electric shock may result.

8 If the power fails to turn ON even after fuses are replaced with new ones, contact Olympus.

6.6 Storage

When this equipment is not used for a long time, follow the steps below.

PRECAUTION

Do not store this equipment in a location exposed to direct sunlight, X-rays, radio activity or strong electromagnetic radiation (e.g., near microwave medical treatment equipment, shortwave medical treatment equipment, MRI, radio or mobile phone). Otherwise, this equipment may be damaged.

1. Turn OFF this equipment and disconnect the power cord from the wall mains outlet.
2. Disconnect the ancillary equipment connected to this equipment.
3. Store this equipment on a flat, level floor surface in a clean, dry, and stable location.

Chapter 7 Other Functions

7.1 Setting date

To save the correct date of leakage testing, adjust the date in this equipment.

PRECAUTION

Set the date correctly. An incorrect date may result in improper data storage or unexpected performance of the functions to download the data to a portable memory or print the data.

NOTE

You can go back to the previous screen by pressing the STOP/BACK button.

1 Press the MENU button in the Standby status of this equipment to display “Menu (2/3)” on the LCD monitor by operating the ▲ and ▼ buttons.

2 Select “Configuration” and press the ENTER button.

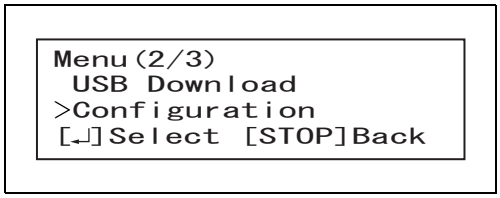


Figure 7.1

3 Select “Date” by operating the ▲ or ▼ buttons, and confirm the selection by pressing the ENTER button.

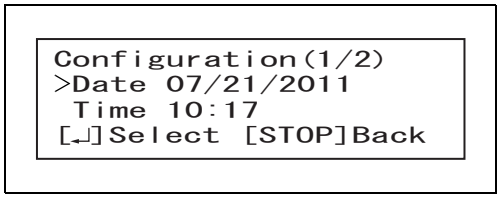


Figure 7.2

4 Select the date format (the order in which year, month, and day are displayed) by operating the ▲ and ▼ buttons and confirm the format by pressing the ENTER button.

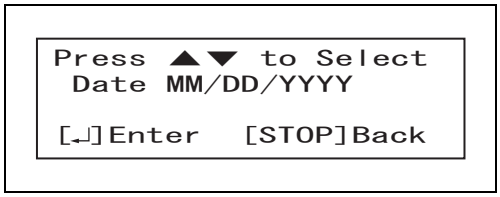


Figure 7.3

NOTE

The date format can be selected from “[MM/DD/YYYY], [DD/MM/YYYY], or [YYYY/MM/DD]”.

5 Set the date in the selected order by operating the ▲ and ▼ buttons while the digits are blinking and confirm the date by pressing the ENTER button.

6 When the date is confirmed, the standby screen is displayed.

7.2 Setting time

Set the time in this equipment to save the correct time of leakage testing.

1 Press the MENU button in the Standby status of this equipment to display “Menu (2/3)” on the LCD monitor by operating the ▲ and ▼ buttons.

2 Select “Configuration” and press the ENTER button.

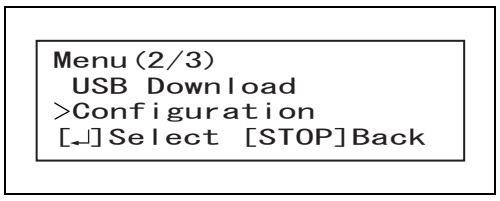


Figure 7.4

3 Select “Time” by operating the ▲ and ▼ buttons, and confirm the selection by pressing the ENTER button.

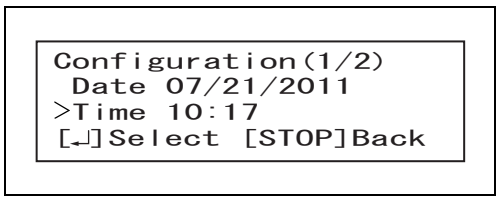


Figure 7.5

4 Set the hour by operating the ▲ and ▼ buttons while the digits are blinking and confirm it by pressing the ENTER button.

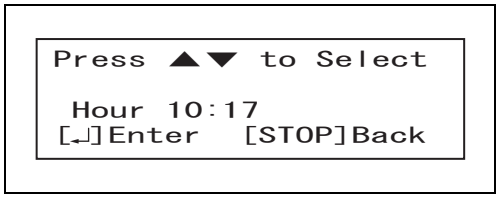


Figure 7.6

5 Set the minute by operating the ▲ and ▼ buttons while the digits are blinking. and confirm it by pressing the ENTER button. The standby display is displayed.

7.3 Performing only self-check

The same as the self-check described in Section 4.2, “Self-check” can be performed on the MENU screen.

PRECAUTION

- Do not forcibly bend nor put anything on the ALT-Y0003 leak test air tubes to be connected. Doing so may result in not only an inaccurate self-check result but also damage to the ALT-Y0003 leak test air tubes.
- If an error is displayed on the LCD monitor as a result of self-check, follow the instruction described in Section 8.1, “Troubleshooting guide”.

NOTE

When the self-check is completed, the result is automatically recorded in this equipment.

1 Press the MENU button in the Standby status of this equipment to display “Menu (1/3)” in the LCD monitor.

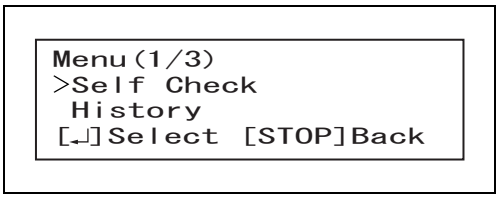


Figure 7.7

2 Select “Self check” by operating the ▲ and ▼ buttons and press the ENTER button.

3 The message as shown in Figure 7.8 below is displayed on the LCD monitor. If an endoscope is connected, disconnect it.

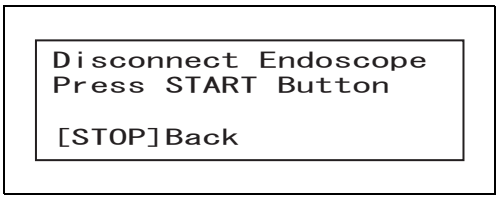


Figure 7.8

PRECAUTION

Do not perform a self-check when an endoscope or water-resistant cap is connected to this equipment. Doing so may result in incorrect self-check.

4 Press the START button. The LCD monitor displays “Self Check In Process”. The number of mark “■” of the progress bar increase to show the progress of the self-check until all the process is completed.

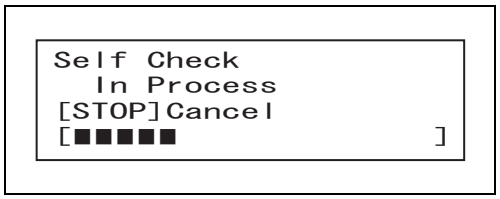


Figure 7.9

5 A short beep sounds when the self-check is completed properly, and the result is displayed in the LCD monitor.

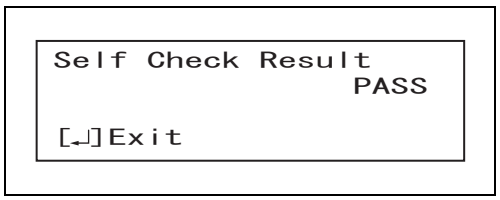


Figure 7.10

6 Press the ENTER button to display the Standby screen.

7.4 Setting automated leakage test mode

The automated leakage test mode has two options, “Standard Mode” and “Quick Mode.”

PRECAUTION

- Perform an automatic leakage test more than three minutes after withdrawing the endoscope from the body; The endoscopes upon removal from the body may be exposed to a sudden temperature change, resulting in an inaccurate test.
- If automated leakage testing is required within seven minutes after removal of the endoscope from the body, select the Quick Mode. Selecting the Standard Mode may result in inaccurate test because endoscopes upon removal from the body may have a temperature greatly different from ambient temperature and undergo a sudden temperature change.

NOTE

Once the automated leakage test mode has been set, it remains unless changed.

1 Press the MENU button in the Standby status of this equipment to display “Menu (1/3)” in the LCD monitor.

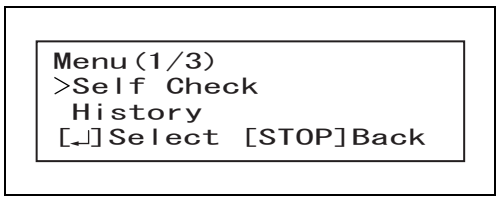


Figure 7.11

2 Select “Configuration” by operating the ▲ and ▼ buttons and press the ENTER button.

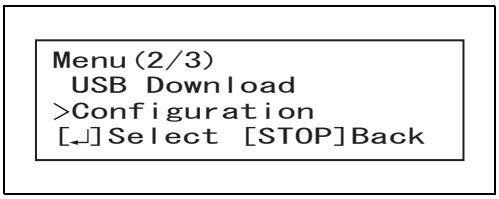


Figure 7.12

3 Select “ALT mode” by operating the ▲ and ▼ buttons and press the ENTER button.

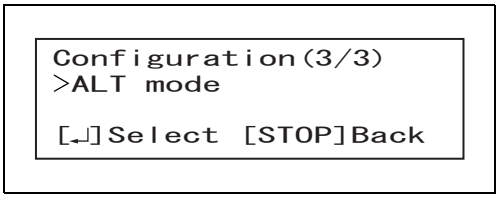


Figure 7.13

4 The LCD monitor displays the screen as shown in Figure 7.14. Select the Standard mode by operating the ▲ and ▼ buttons if more than seven minutes have passed after removal of the endoscope from the body, Select the Quick mode by operating the ▲ and ▼ buttons if seven minutes has not passed after removal of the endoscope from the body.

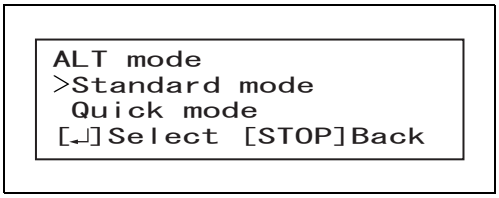


Figure 7.14

5 Press the ENTER button to display the Standby screen.

7.5 Setting print mode

When a printer is connected, the results of leakage testing or self-check and the record of errors can be printed. For the print options, “Manual Print” or “Auto Print” can be selected.

WARNING

Do not touch the printer or the area around it during and immediately after printing. They will be very hot and may cause burns.

PRECAUTION

- Printed data may be lost as the paper ages and deteriorates. To store the data for a long period of time, transfer them to a medium with long-term storage capability.
- To prevent printer failure or printer paper roll discoloration, do not touch the printer or Printer paper roll with wet hands.
- Always keep the printer cover closed. Otherwise, the printer and/or Printer paper roll may get wet and malfunction.
- Keep roll paper away from the following items. Otherwise, the print may become black or disappear.
  - Alcohol or detergent
  - Oil, fat, organic solvents, or chemicals (medical or cosmetic)
  - Stamp ink
- Keep roll paper away from the following items. Otherwise, the print may be deteriorated soon:
  - Water
  - Materials containing plasticizer (PVC film, desk mat, leather products, journal cover, etc.)
  - Certain stationery (plastic tape, mending tape, fluorescent-ink pen, oil-ink pen, adhesives other than starchy paste)
- To prevent discoloration of unused paper, store the printer paper roll without opening in a place meeting the following conditions.
  - Dark, cool space
  - Place not exposed to NO_x, SO_x, or O_3 (ozone)
- When red lines appear on both sides of the printer paper roll during printing, replace the printer paper roll.

NOTE

- If the printed data is not clear, try printing again by manual.
- When the print paper roll has run out during printing and is replaced by a new one, the printer restarts printing the result of the leakage test or self-check from the middle of the data.

■ *Manual printing*

Press the PRINT button in the Standby status of this equipment and confirm that the “Print Option Screen” is displayed on the LCD monitor. Either (“PRINT LAST”, “PRINT TODAY”, or “PRINT SELECT DATE”) can be selected by operating the ▲ and ▼ buttons.

Print option	Print type log	Description
Print Last	Leak Test Log	Prints the results of the last leakage test or self-check.
	Error Log	Prints the log of the last error.
Today	Leak Test Log	Prints the results of all of the leakage tests and self-checks performed that day.
	Error Log	Prints all the logs of the errors that occurred that day.
	Total Log	Prints all the results of the leakage tests and self-checks performed and all the logs of the errors that occurred on that day.
Select Date	Leak Test Log	Prints all the results of leakage tests or self-checks performed on a selected day.
	Error Log	Prints all the logs of the error that occurred on a selected day.
	Total Log	Prints all the results of leakage tests and self-checks performed and the records of the error that occurred on a selected day.

Table 7.1

1 Press the PRINT button in the Standby status to display the Print Option screen on the LCD monitor.

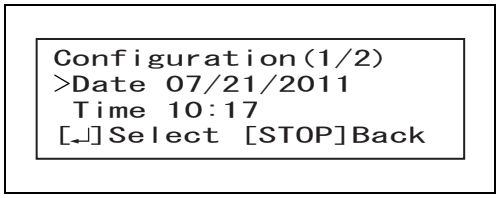


Figure 7.15

2 Select “Last”, “Today”, or “Select Date” by operating the ▲ and ▼ buttons. Press the ENTER button. If “Select Date” is selected, select the date operating the ▲ and ▼ buttons, and press the ENTER button.

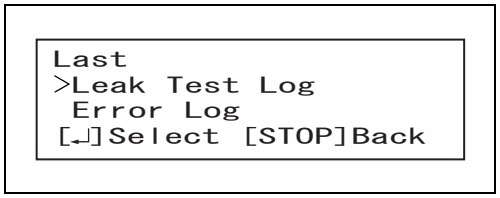


Figure 7.16

3 Select “Leak Test Log” “Error Log” or “Total Log” by operating the ▲ and ▼ buttons and press the ENTER button. The monitor displays the screen as shown in Figure 7.17.

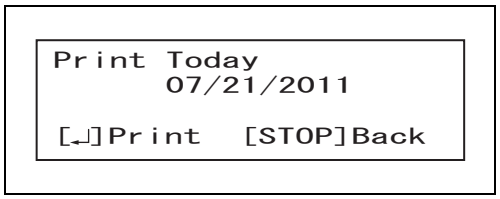


Figure 7.17

4 Pressing the ENTER button, while the monitor is displaying the screen as shown in Figure 7.17. Printing starts.

5 A buzzer beeps and the paper feed stops when printing completes. Cut the printed part of paper and ensure that information is printed correctly.

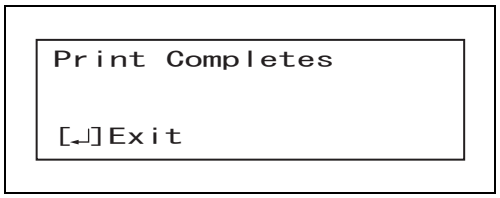


Figure 7.18

6 Press the ENTER button, and the standby monitor is displayed.

NOTE

For the printed information, see Figure 7.19 through 7.22.

❍ Printed Information on Automatic Leakage Testing

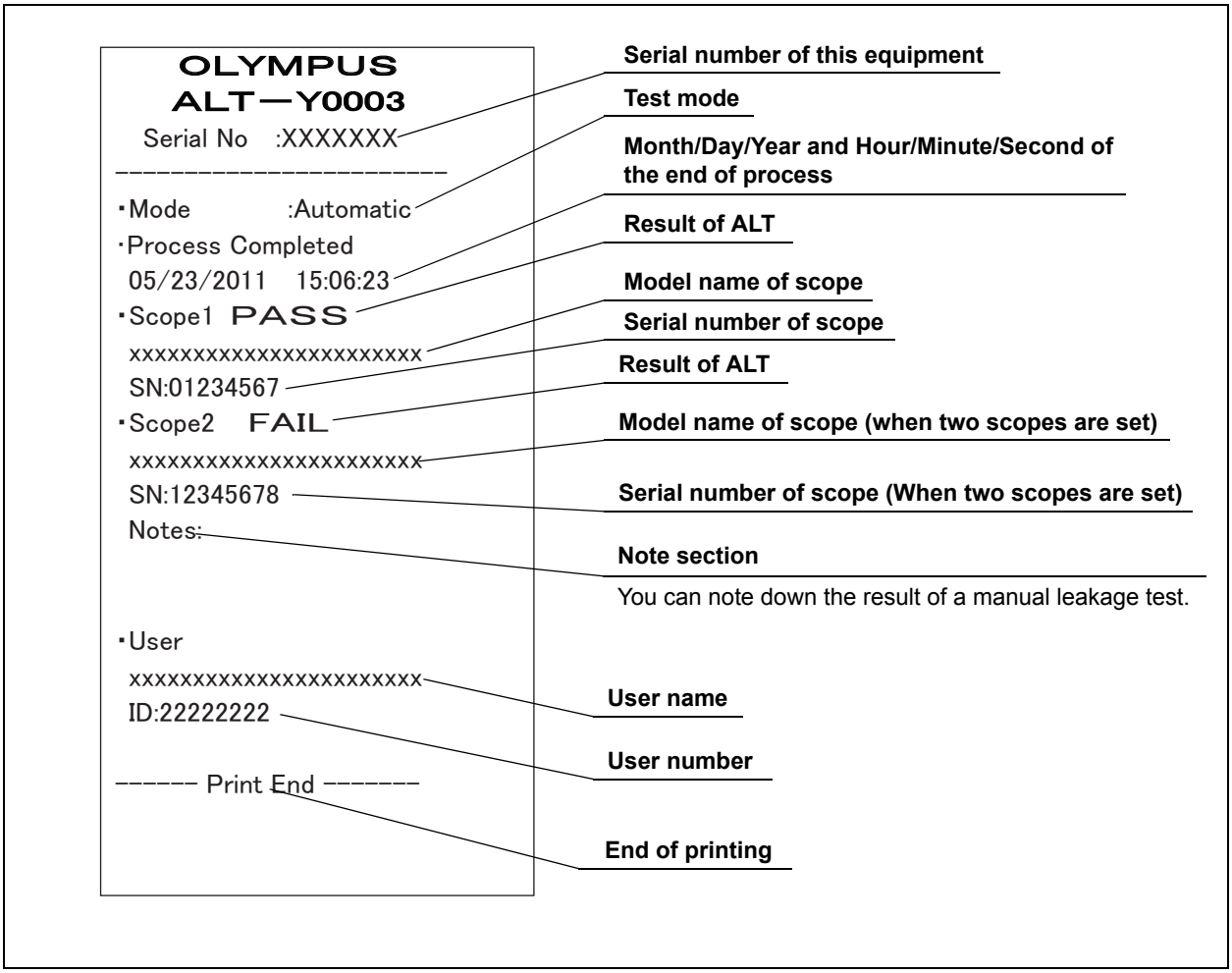


Figure 7.19

❍ Printed Information on Manual Leakage Testing

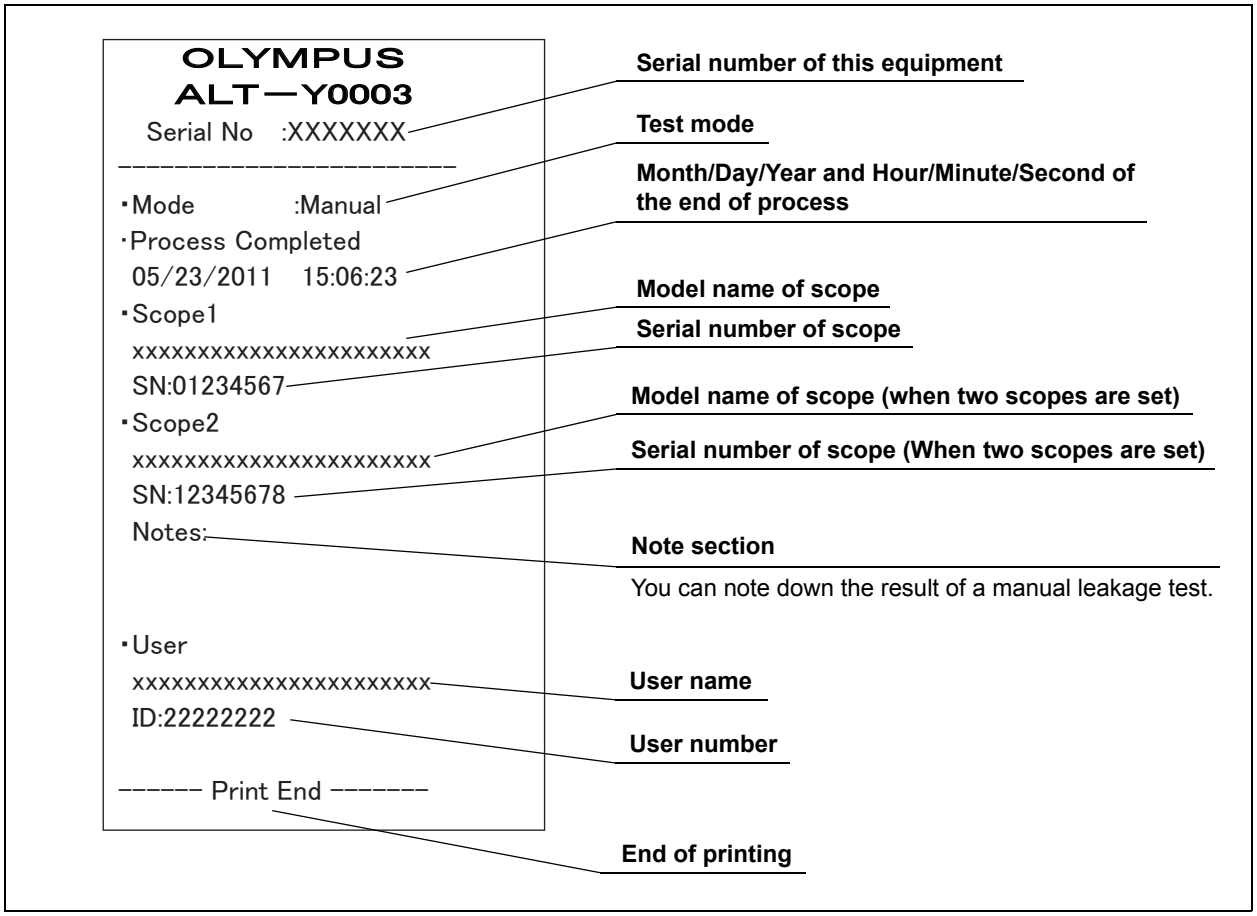


Figure 7.20

❍ Printed information on self-check

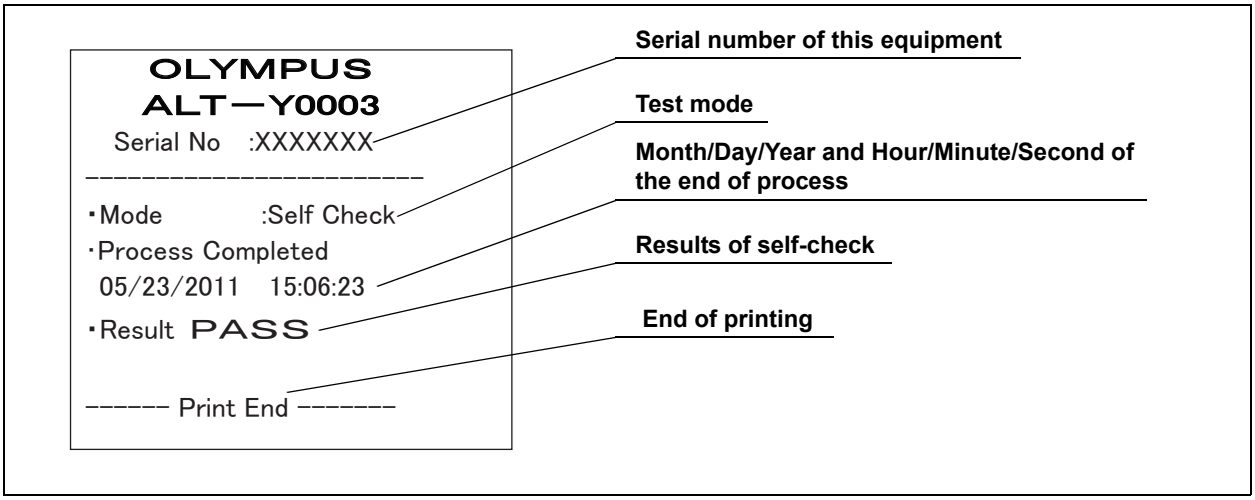


Figure 7.21

❍ Printed information on error code logs

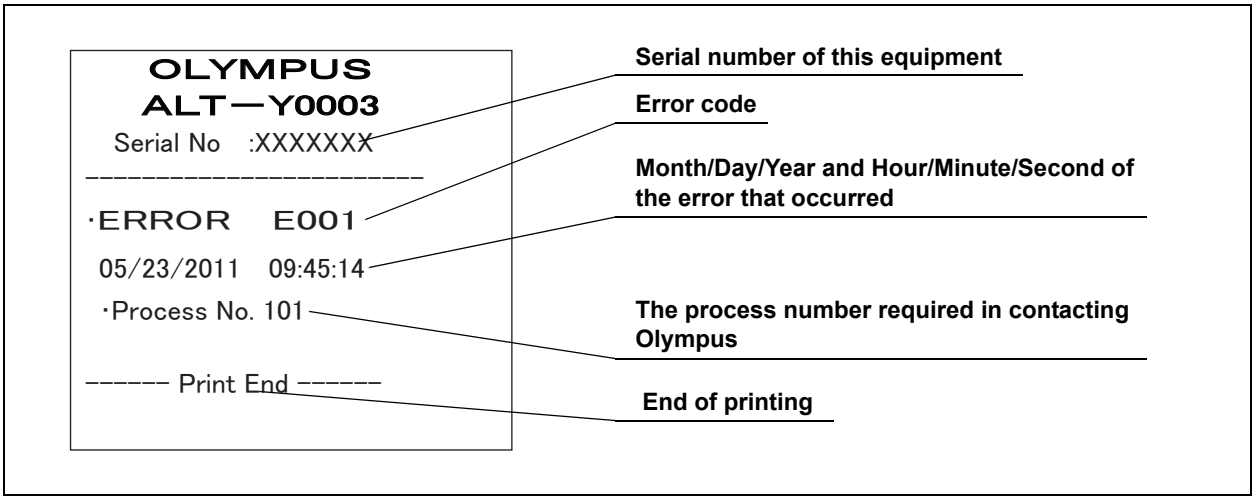


Figure 7.22

■ *Auto Print*

When Auto Print has been set, either one or two copies of the results of a water-leak test or self-check are printed upon the completion of the leakage test or self-check (depending on the Auto Print setting selected). When an error occurs, one copy of the error log will be printed regardless of the quantity selected for Auto Print.

NOTE

- If the printed data needs printing again or is unclear, perform manual printing.
- For the printed information, see Figure 7.19 through 7.22.
- The Auto Print setting takes effect until cancelled.
- To perform Auto Print, turn ON the printer before turning on this equipment.

1 Press the MENU button in the Standby status, and display “Menu (2/3)” on the LCD monitor by operating the ▲ and ▼ buttons.

2 Select “Configuration” by operating the ▲ and ▼ buttons, and press the ENTER button.

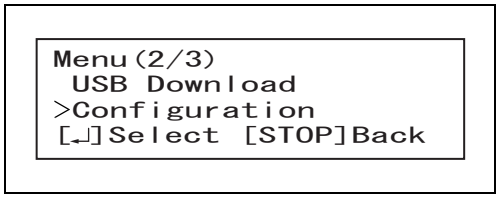


Figure 7.23

3 Select “Print AUTO” by operating the ▲ and ▼ buttons and press the ENTER button.

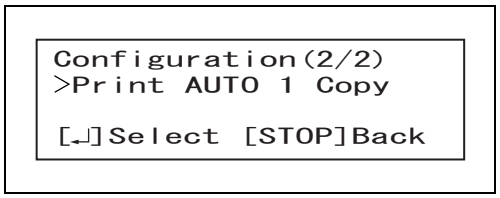


Figure 7.24

NOTE

If the printer is not connected, “Print NONE” is displayed and Auto Print cannot be set.

4 Select the number of copies to be printed by operating ▲ and ▼ buttons, and press the ENTER button. After pressing the ENTER button, the screen will go back to standby.

Indicator	Description
OFF	Auto Print is disabled.
1 Copy	Every time the leakage testing or self-check is completed, the result is printed out on one sheet. Also, when an error occurs, the error log is printed out on one sheet.
2 Copies	Every time the leakage testing or self-check is completed, the result is printed out on two sheets. Also, when an error occurs, the error log is printed out on two sheets.

Table 7.2

■ *When the error code [E094] is displayed during printing*

1 When roll paper runs short while printing, the error code “E094” is shown in the LCD monitor. Press STOP/BACK button on the control panel and cancel the error code.

2 Replace the printer paper roll according to Section 6.4, “Installing the printer paper roll”.

3 Press the MENU button when the printer roll paper has been replaced. The moment the MENU button is pressed, the printer prints unprinted data on the results of the leakage testing or self-check.

7.6 Data display

The results of leakage testing or self-check (Leak Test Log) can be displayed on the LCD monitor by pressing the MENU button to select “History,” The records of error (Error Log) can be displayed on the LCD monitor, too.

■ Leak Test Log Display

The results of leakage testing or self-check are displayed on the LCD monitor. Up to 700 newest logs can be displayed.

1 Press the MENU button in the Standby state. “Menu (1/3)” is displayed on the LCD monitor.

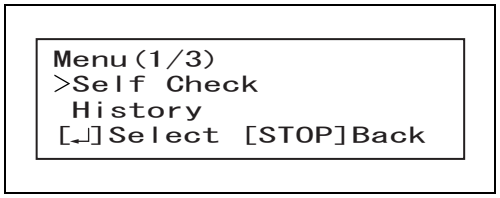


Figure 7.25

2 Select “History” by operating the ▲ and ▼ buttons, and press the ENTER button.

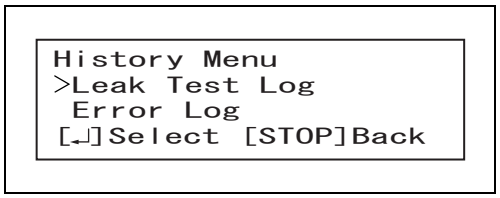


Figure 7.26

3 Select “Leak Test Log” by operating the ▲ and ▼ buttons and press the ENTER button. The LCD monitor display the leak test log. The model name or serial number of the endoscopes used in the leakage testing is displayed alternately as seen in Figure 7.27 (A) or Figure 7.27 (B). The result of self-check is also displayed as seen in Figure 7.27 (C)

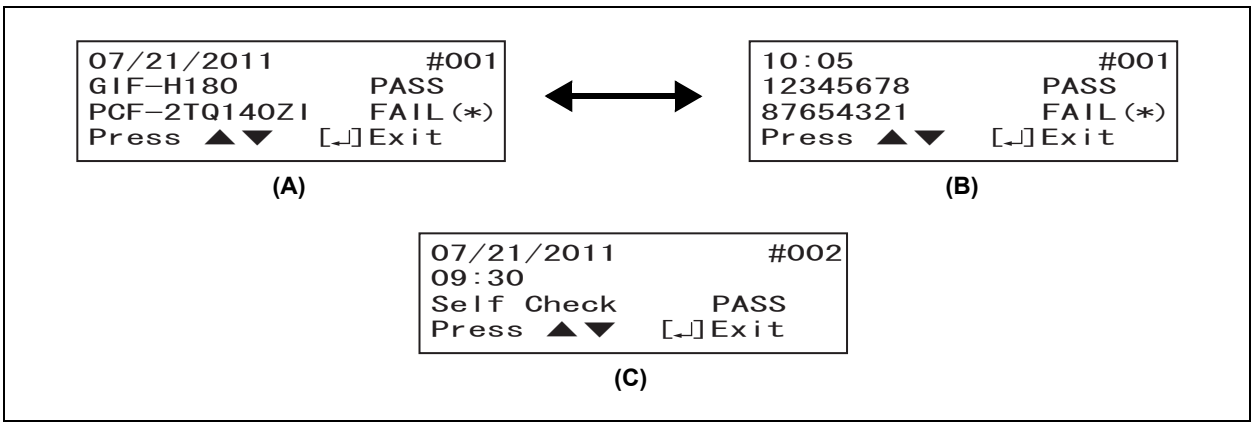


Figure 7.27

Indicator	Description
PASS	When the result of the Automated Leakage test or self-check was PASS.
FAIL	• When the result of the Automated Leakage test was FAIL, but a Manual Leakage Test was not performed immediately after the Automated Leakage test. • When the result of the self-check is FAIL.
FAIL (∗)	When the result of the Automated Leakage test was FAIL and a Manual Leakage Test was performed immediately after the Automated Leakage test.
MANUAL	When a Manual Leakage Test was performed.

Table 7.3

NOTE

If there is no data in the memory in this equipment, “No History” is displayed.

4 The data can be tracked back by operating the ▼ and ▲ buttons.

5 The Standby screen appears by pressing the ENTER button.

■ *Error Log Display*

The record of errors is displayed on the LCD monitor, if an error occurs. Up to 1000 newest logs can be displayed.

1 Press the MENU button in the Standby state to display “Menu (1/3)” on the LCD monitor.

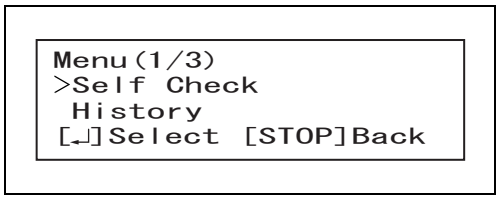


Figure 7.28

2 Select “History” by pressing the ▲ and ▼ buttons and press the ENTER button.

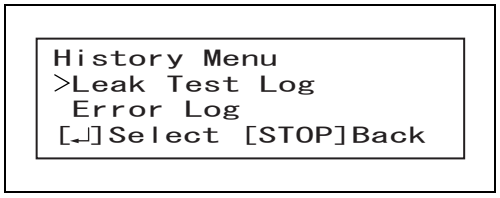


Figure 7.29

3 Select “Error Log” by pressing the ▲ and ▼ buttons and press the ENTER button; the LCD monitor displays the latest record of an error.

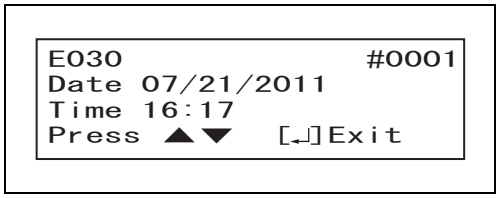


Figure 7.30

NOTE

If there is no data in the memory in the inside of this equipment, “No History” is displayed.

4 The data can be tracked back by operating the ▼ and ▲ buttons.

5 Press the ENTER button to go back to the Standby screen.

7.7 Download to a portable memory

When a portable memory is connected, the following data can be downloaded to the portable memory.

Download option	Type of download log	Description
Today	Leak Test Log	Copies the results of all leakage tests and self-checks performed that day.
	Error Log	Copies all the records of errors that occurred that day.
	Total Log	Copies the results of all leakage tests and self-checks performed and the records of errors that occurred on that day.
Select Date	Leak Test Log	Copies the results of all leak tests and self-checks performed on a selected day.
	Error Log	Copies the records of all errors that occurred on a selected day.
	Total Log	Copies the results of all leakage tests and self-checks performed and the records of errors that occurred on a selected day.
All Data	Leak Test Log	Copies the results of all leakage tests and self-checks stored in this equipment.
	Error Log	Copies the records of all errors stored in this equipment.
	Total Log	Copies the results of leakage tests and self-checks and records of errors stored in this equipment

Table 7.4

PRECAUTION

- Always use the portable memory (MAJ-1925) listed in System Chart of the Appendix. Using other kinds of portable memory may result in improper downloading.
- Be sure to format the portable memory before downloading. Refer to "■ Formatting the portable memory" on page 89.
- Be sure to format the portable memory by an Olympus-designated product. If it is formatted by other equipments, such as the personal computer, downloading cannot be performed.
- Avoid exposing the portable memory to high-powered static electricity, electromagnetic wave, magnetism, high temperature, high humidity, or corrosive circumstances. The portable memory or data may be damaged.
- The portable memory is designed to save data temporarily. To save the data for a long time, use a personal computer.

PRECAUTION

- To download data to the portable memory, do not disconnect the portable memory until downloading data is completed. Otherwise, the saved data may be deleted.
- Do not insert the portable memory when turning ON the power. It may not work properly.
- Do not touch the portable memory with wet hands. It may fail.
- Make sure that the surface of the portable memory is free from water. Otherwise, this equipment or portable memory may fail.
- Do not allow a foreign object to penetrate the inside of the portable memory port. Otherwise, this equipment may be damaged.
- The portable memory is inserted to the portable memory port slightly protruding from this equipment. Be careful not to exert an impact to the portable memory. The portable memory data may be damaged. When it is not used, remove the portable memory.
- Refer to the instruction manual on portable memory for the use.

NOTE

- The results of leakage tests or self-check and the records of errors are saved from the latest data.
- 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. Periodically download the records in a portable memory.
- If “today” is selected more than a day after your last downloading, all the undownloaded logs are downloaded per day.

■ *Downloading data*

1 Open the memory port cap in this equipment.

2 Insert the portable memory into the portable memory port until it stops.

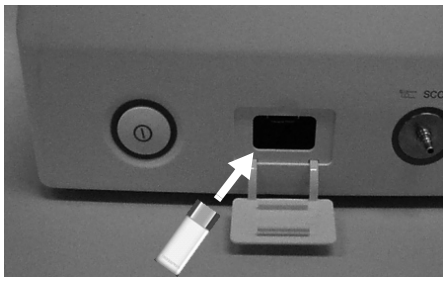


Figure 7.31

NOTE

The portable memory can not be connected through a USB HUB.

3 Press the MENU button and display “Menu (2/3)” on the LCD monitor by operating the ▲ and ▼ buttons.

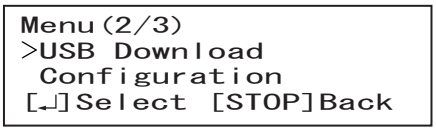


Figure 7.32

4 Select “USB Download” by operating the ▲ and ▼ buttons and press the ENTER button.

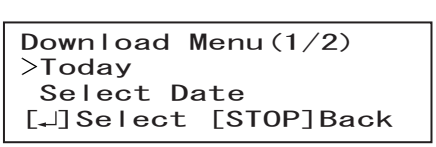


Figure 7.33

5 Select “Today” “Select Date” or “All Data” by operating the ▲ and ▼ buttons and press the ENTER button.If “Select Date” is selected, select the date by operating the ▲ and ▼ buttons. Press the ENTER button.

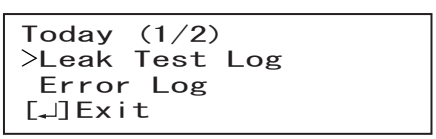


Figure 7.34

6 Select “Leak Test Log”, “Error Log”, or “Error Log” by operating the ▲ and ▼ buttons and press the ENTER button. The screen shown in Figure 7.35 (A) is displayed. If a portable memory is not connected, the screen shown in Figure 7.35 (B) is displayed be displayed. Insert the portable memory into the portable memory port until it stops. When the connection of portable memory has been confirmed, the message shown in Figure 7.35 (A) is displayed, and downloading start automatically.

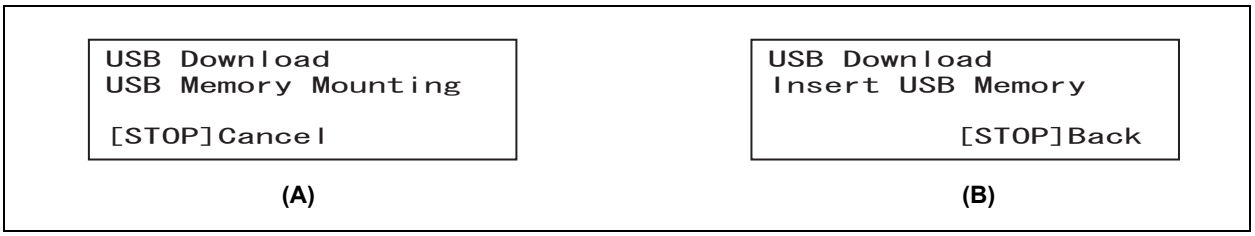


Figure 7.35

7 When the data download to the portable memory starts automatically, the LCD monitor displays the screen.

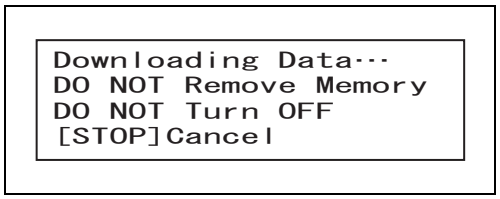


Figure 7.36

8 When the data download to the portable memory is complete, the LCD monitor displays “Data Download Completed”.

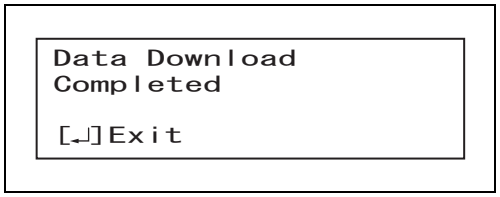


Figure 7.37

9 Pull the portable memory straight out.

PRECAUTION

Do not pull the portable memory from the portable memory port while the access lamp of portable memory is blinking. The data within the portable memory may get corrupted.

10 Press the ENTER button to return to the standby screen.

11 Close the memory cap on this equipment.

■ *Formatting the portable memory*

PRECAUTION

- Be sure to format the portable memory by Olympus product. If it is formatted by another equipment, such as a personal computer, downloading cannot be performed. The portable memory formatted by the personal computer needs to be formatted by the Olympus product again.
- Do not format the portable memory in which data has been saved. The data will be all deleted.

1 Open the memory port cap of this equipment.

2 Insert the portable memory into the portable memory port until it clicks.

3 Press the MENU button and display "Menu (2/3)" on the LCD monitor by operating the ▲ and ▼ buttons.

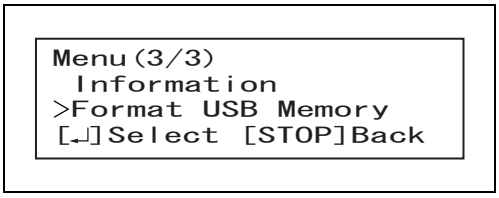


Figure 7.38

4 Select "Format USB Memory," and press the ENTER button.

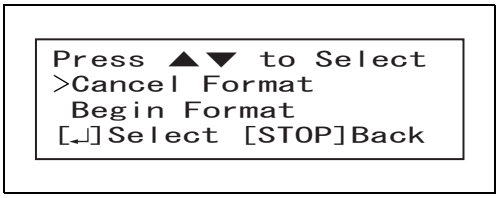


Figure 7.39

5 Select "Begin Format," by operating the ▲ and ▼ buttons and press the ENTER button.

6 Formatting the portable memory starts.

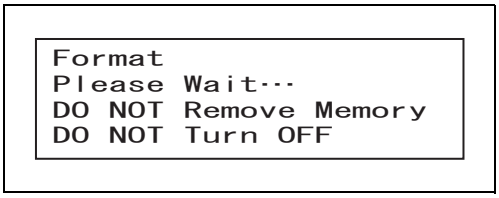


Figure 7.40

NOTE

If the portable memory is not connected, the error code [E136] is displayed. Insert the portable memory into the portable memory port until it clicks.

7 When formatting the portable memory is completed, the LCD monitor displays “Format Completed”.

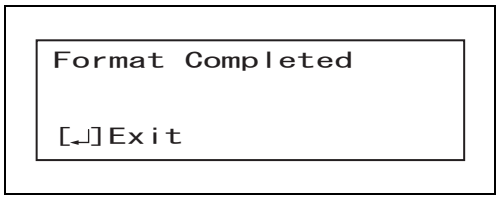


Figure 7.41

8 Pull the portable memory straight out.

PRECAUTION

Do not pull the portable memory from the portable memory port while the access lamp of the portable memory is blinking. The data within the portable memory may get corrupted.

9 Press the ENTER button to return to the standby screen.

7.8 Management of portable memory data in personal computer

The data in the portable memory can be managed in a commercial personal computer.

PRECAUTION

The data transferred to a personal computer is master data. Do not make a change in the master data. To manage the history of leakage testing in the facility, make copies of the master data.

NOTE

Refer to the instruction manual of the portable memory for the operationenvironment. When processing the reprocessing data in your facility, it isrecommended to use a spreadsheet program that is installed on a PC that iscapable of editing CSV format files.

1 Set the portable memory in a personal computer.

2 Open the drive in which the portable memory is connected and then cut and paste the data.

3 Disconnect the portable memory when downloading has been completed and store it.

■ *Folder structure*

The portable memory has the following folder structure:

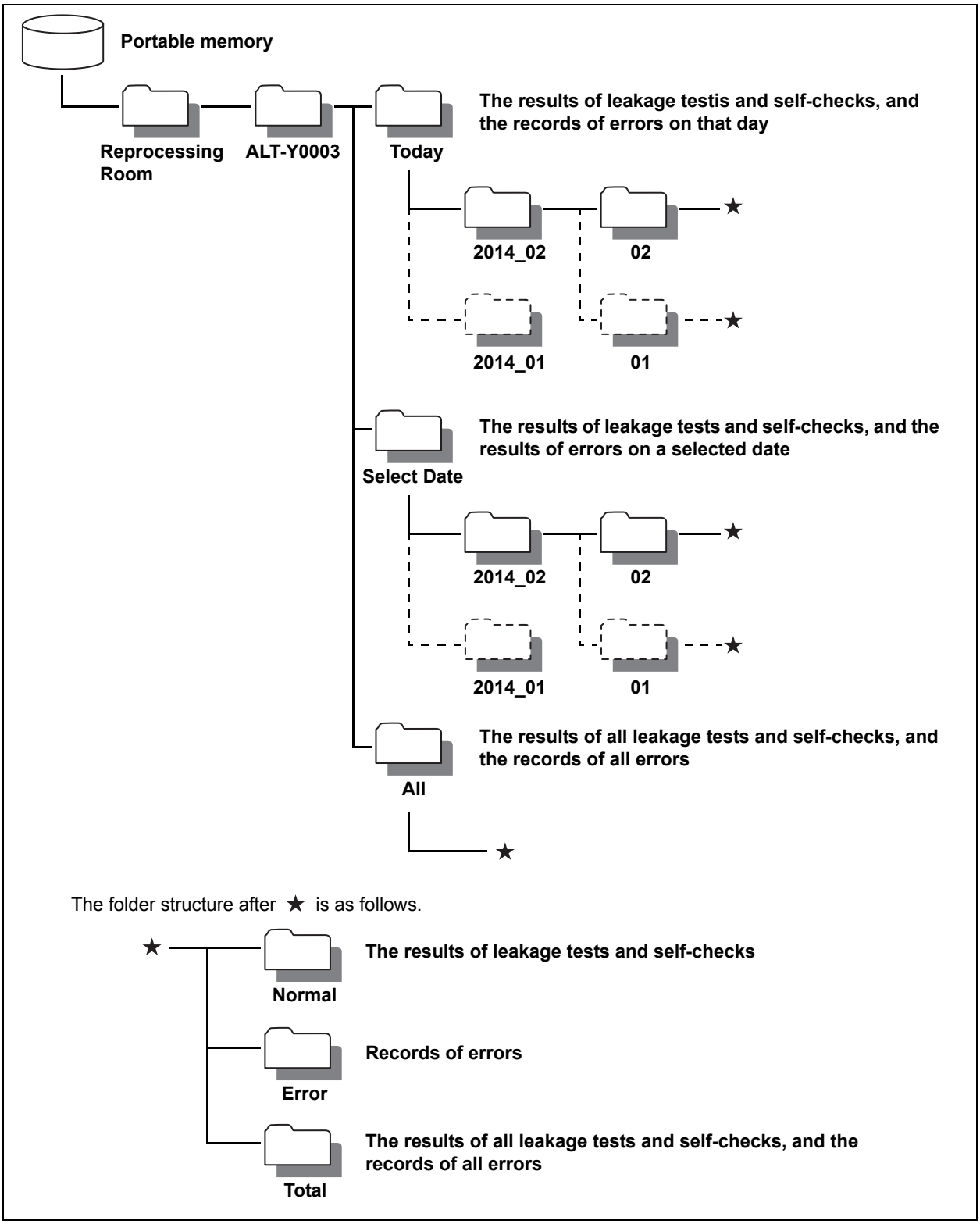


Figure 7.42

❍ File name

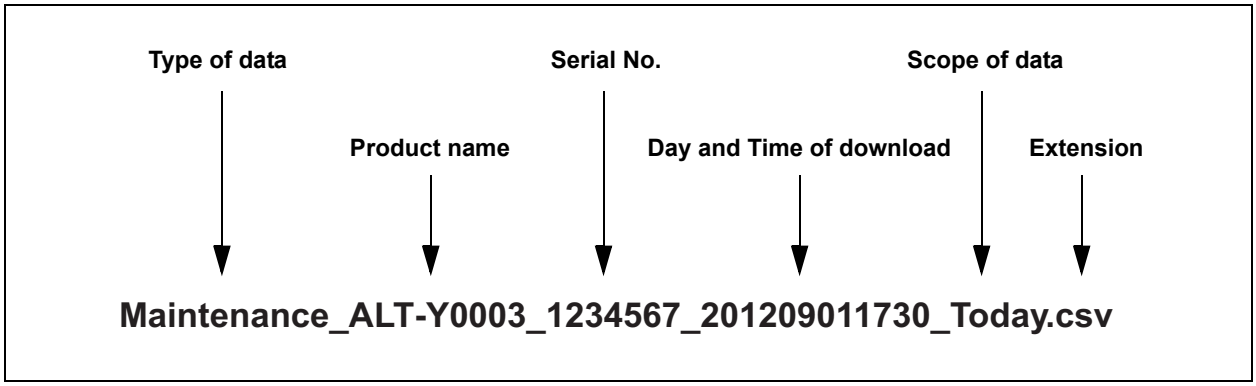


Figure 7.43

The Type of data and Scope of data in Figure 7.43 is indicated as shown in Table 7.5 below.

	Indicator	Description
Type of data	Maintenance	Results of leakage tests and self-checks
	Error	Records of errors
	Total	All the results of leakage tests and self-checks, and all the records of errors
Scope of data	Today	Records on that day.
	8 digits of date	Records in a selected day (The selected date can be input in the format of “YYYYMMDD”.)
	All	All records

Table 7.5

❍ Image view of the file

The file is CSV format. The image view using Microsoft® Excel® is shown below.

ALT-Y0003	XXXXXX														
01/01/2012	22:56:22														
Today															
Total Log															
No.	Leak Test	Start(date)	Start(time)	Complete(date)	Complete(time)	Mode	Scope1 Name	Scope1 ID	Scope1 Result	Scope2 Name	Scope2 ID	Scope2 Result	User Name	User ID	Process No.
1	Complete	01/01/2012	22:52:30	01/01/2012	22:54:54	Auto	GIF-Q160	1	PASS	GIF-Q160	2	FAIL	John Smith		
2	Complete	01/01/2012	22:47:37	01/01/2012	22:50:01	Auto	GIF-Q160	3	PASS	GIF-Q160	2	PASS	John Smith		
3	Complete	01/01/2012	22:45:15	01/01/2012	22:46:41	Manual	GIF-Q160	1		GIF-Q160	2		John Smith		
4	Complete	01/01/2012	22:43:13	01/01/2012	22:43:57	Self Check			PASS						
5	E115			01/01/2012	22:41:50		GIF-Q160	1		GIF-Q160	2		John Smith		201
6	Complete	01/01/2012	22:37:42	01/01/2012	22:38:25	Self Check			PASS						
End of data. Check code : CB4															

Figure 7.44

Chapter 8 Troubleshooting

WARNING

When the leakage testing process is interrupted due to malfunction of this equipment or other abnormalities, the endoscopes may not be properly tested. In this case leakage test should be started again from the beginning.

If any irregularity is detected during an inspection, or if this equipment is clearly malfunctioning, do not use it. Contact Olympus for repair.

Some problems that appear to be malfunctions may be correctable by referring to Section 8.1, “Troubleshooting guide” below. If the problem cannot be resolved by the described remedial action, do not use this equipment and contact Olympus.

8.1 Troubleshooting guide

WARNING

When the leakage testing process is interrupted due to malfunction of this equipment or other abnormalities, the endoscopes may not be properly tested. In this case leakage test should be started again from the beginning.

PRECAUTION

Do not turn OFF the power when an error code is displayed. Doing so may result in malfunction. This equipment will automatically start a process to address the error code. (The error code will blink during automatic processing.) After the error code stops blinking and lights steadily, follow the instructions in “Error codes and remedial actions” below.

❍ Error codes and remedial actions

Error code	Problem	Possible causes	Solution
E041	The power was lost and then restored during the process.	• Power supply was interrupted. • Power cord contact failure.	• Check the power cord for proper connection. • Disconnect the power cord from the power outlet and check that the power cord is free from scratches or damage. If any irregularity is detected, replace the power cord.
E083	This equipment does not work.	Irregularity inside this equipment	Contact Olympus
E084	Malfunction of the RFID reader.	Irregularity in the electrical circuitry inside this equipment	Turn OFF this equipment and turn it ON again. If the problem persists after turning this equipment ON again, contact Olympus.
E085	This equipment does not work.	Irregularity inside this equipment	Contact Olympus.
E089	A wrong date is displayed.	The battery in this equipment has run out.	Contact Olympus. Even if this error has occurred, manual leak testing and self-check can be performed. However please note that the date and time recorded in the log may not be correct.
E094	Data can not be printed.	• The interface cable is not securely connected. • Printer paper roll has run out. • The printer cover is open. • Irregularity in the printer. • The printer is turned OFF.	• Confirm that the interface cable is securely connected. • Check to see if the printer paper roll has been installed. • Check to see if the paper cover is closed. • If the problem still persists, contact Olympus.
E112	Self-check error.	• No ALT-Y0003 leak test air tubes are connected. • The water-resistant cap or endoscope is connected to the ALT-Y0003 leak test air tubes. • A leak has been detected. • Irregularity in the pump. • Only one ALT-Y0003 leak test air tube is connected.	• Check that the ALT-Y0003 leak test air tubes are connected. • Check that the water-resistant cap or endoscope is not connected to the ALT-Y0003 leak test air tubes. • If the problem still persists, contact Olympus.

Error code	Problem	Possible causes	Solution
E113	An endoscope is disconnected.	An endoscope is not connected to the ALT-Y0003 leak test air tube when the Automated Leakage Testing starts.	Detach the all the endoscopes from the scope side connector of the ALT-Y0003 leak test air tubes and press the OK button. Review Section 5.5, “Recognition of scope ID” and Section 5.7, “Recognition of user ID” and connect an endoscope to the ALT-Y0003 leak test air tube.
E115	Pressure can not be applied for leak testing.	• The ALT-Y0003 leak test air tubes have not been properly connected. • Irregularity in the pump. • Irregularity in the valve. • A big hole in the endoscope.	• Check to see if this equipment, ALT-Y0003 leak test air tubes and water-proof cap have been properly connected. • If the problem still persists, contact Olympus.
E116	This equipment does not work.	The pump has reached the end of its life.	Contact Olympus.
E117	Overpressure in channels.	• Irregularity in the pump. • Irregularity in the valve. • Irregularity in the endoscope.	• After the error occurs, wait 30 seconds or more to release air from the endoscope before removing the endoscope. Perform self-check following the instruction in Section 7.3, “Performing only self-check”. • If the problem still persists, contact Olympus.
E118	Failure to exhaust the air.	Irregularity in the valve.	After the error occurs, wait 30 seconds or more to release air from the endoscope and then remove the endoscope and Contact Olympus.
E119	Process control does not function properly.	Irregularity in the electrical circuit.	Turn OFF this equipment. Wait for a while before turning it ON again. If the problem persists after turning this equipment ON again, contact Olympus.
E122	Improper endoscope connection.	The scope was connected to a wrong scope connector.	Detach the all endoscopes from the scope side connector of the ALT-Y0003 leak test air tubes and press the OK button. Go back to Section 5.5, “Recognition of scope ID” and Section 5.7, “Recognition of user ID” to have this equipment recognize the Scope ID and User ID again, and connect the endoscope to the proper port.
E123	The connection of endoscope cannot be checked after the recognition of endoscope ID.	• No ALT-Y0003 Leak Test air Tube is connected. • The water-resistant cap or endoscope is connected to the ALT-Y0003 Leak Test air Tube.	• Check that the ALT-Y0003 leak test air tubes are connected. • Check that the water-resistant cap or endoscope is not connected to the ALT-Y0003 leak test air tubes.

Error code	Problem	Possible causes	Solution
E124	Process control does not function properly.	The more noise occurred than expected, causing the malfunction of process control.	Turn OFF this equipment. Wait for a while before turning it ON again. If the problem persists after turning this equipment ON again, contact Olympus.
E125	Processing at startup does not work.	Faulty piece within this equipment.	Contact Olympus.
E131	Data can not be downloaded to the portable memory.	The portable memory is removed while accessing to the data in this equipment.	Insert the portable memory.
E132	Data can not be downloaded to the portable memory.	Faulty portable memory.	Exchange the portable memory.
E133	Data can not be downloaded to the portable memory.	• Faulty format. • A portable memory not designated by Olympus is connected.	• Format the portable memory referring to "■ Formatting the portable memory" on page 89. • Connect the portable memory designated by Olympus.
E134	Data can not be downloaded to the portable memory.	Irregularity in the system associated with the portable memory.	Contact Olympus.
E136	Data can not be downloaded to the portable memory.	No portable memory is connected.	Insert the portable memory into the portable memory port properly.
E137	Data can not be downloaded to the portable memory.	The free space in the portable memory is full.	• Replace the portable memory. • Delete unnecessary data.

❍ Other errors and remedial action

Problem	Possible causes	Solution
This equipment is not activated.	The power cord is not connected.	Connect this equipment to the hospital-grade wall mains according to the instruction described in Section 3.2, "Installation of the ALT-Y0003 wall-mount holder on the wall".
	This equipment is not turned ON.	Turn this equipment ON.
	A fuse has been blown.	Contact Olympus to purchase compatible fuses. Replace the fuses referring to Section 6.5, "Replacing the fuse".

Problem	Possible causes	Solution
Nothing is displayed on the LCD monitor.	An excessive static electricity has been generated under extremely dry conditions, causing liquid crystal display to malfunction.	Turn OFF this equipment and turn it ON again. If the problem persists after turning this equipment ON again, contact Olympus.
The ALT-Y0003 leak test air tube can not be connected to this equipment.	The Tube Connector of this equipment is stained.	Clean the Tube Connector of this equipment. If the stain cannot be cleaned off, contact Olympus.
	A tube other than the provided ALT-Y0003 leak test air tube is connected.	Connect the ALT-Y0003 leak test air tubes provided with this equipment. Other water leak tester (MB-155) can not be connected.
Self-check can not be started.	Scope ID or user ID has been detected.	Press the STOP/BACK button to return to the standby screen.
The endoscope can not be connected to the ALT-Y0003 leak test air tube.	The endoscope is not compatible with this equipment.	Connect an endoscope described in the “List of Compatible Endoscopes <ALT-Y0003>”.
An ALT or MLT can not be started.	No scope ID or user ID has been detected.	Bring the scope ID tag or user ID seal to the RFID reader and scan the tag with the reader. Refer to Section 5.5, “Recognition of scope ID” and Section 5.7, “Recognition of user ID”.
A manual leakage test was performed because the result of an automatic leakage test was Fail, but the leak was not located.	• The automated leakage test did not start more than three minutes after withdrawal of the endoscope from the body. • The automatic leakage test in the “Standard mode” did not start more than seven minutes after withdrawal of the endoscope from the body.	Perform an automated leakage test once again. Contact Olympus if the result is still FAIL and a manual leakage test can not locate the leak.
“Time Out” is displayed.	An endoscope has not been connected to the ALT-Y0003 leak test air tube for a long time since the Scope ID was recognized.	Review Section 5.5, “Recognition of scope ID” and Section 5.7, “Recognition of user ID” and connect an endoscope to the ALT-Y0003 leak test air tube.
Incorrect date and time is displayed on the monitor or printed.	The date and time is not properly set.	Set the date and time according to Section 7.1, “Setting date” and Section 7.2, “Setting time”.
Air bubbles come from the ALT-Y0003 leak test air tube during the MLT process.	There is a pin hole in the ALT-Y0003 leak test air tube.	Perform a self-check. If E112 is detected, contact Olympus.

Problem	Possible causes	Solution
“Low Battery” is displayed.	The battery for internal clock has run out after long-term use.	Contact Olympus.
Data can not be downloaded to the portable memory.	The portable memory is not properly connected to the portable memory port.	Connect the portable memory properly.
	Available space of the portable memory is low.	Delete unnecessary data in the portable memory or use a new portable memory.
Self-check does not start at startup of this equipment, while “PRINTER ON” is displayed.	When a printer is connected for the first time, “PRINTER ON” is displayed.	Press the ENTER button.
Self-check does not start at startup of this equipment, while “PRINTER OFF” is displayed.	If a printer is connected to this equipment, it is not properly recognized.	Turn this equipment OFF and turn the printer ON before turning this equipment again. Turn OFF this equipment and turn ON the printer before turning ON this equipment again.
The data recorded in the portable memory can not be played back.	The data has been already edited with a personal computer or other equipment.	The data can not be played back.
“Contact Olympus for New Pump” is displayed.	It is time to replace the pump.	Contact Olympus.
No beep sound can be heard.	The speaker has failed.	Contact Olympus.
This equipment is not connected to any of the peripheral equipment.	The connector has deformed.	Contact Olympus.

8.2 Return of this equipment for repair

PRECAUTION

Olympus is not liable for any injury or damage which occurs as a result of repairs attempted by non-Olympus personnel.

When returning the automated endoscope leak tester for repair, contact Olympus. With the automated endoscope leak tester, include a description of the malfunction or damage and the name and telephone number of the individual at your location who is most familiar with the problem. Include a repair purchase order.

Appendix

Compatible equipments

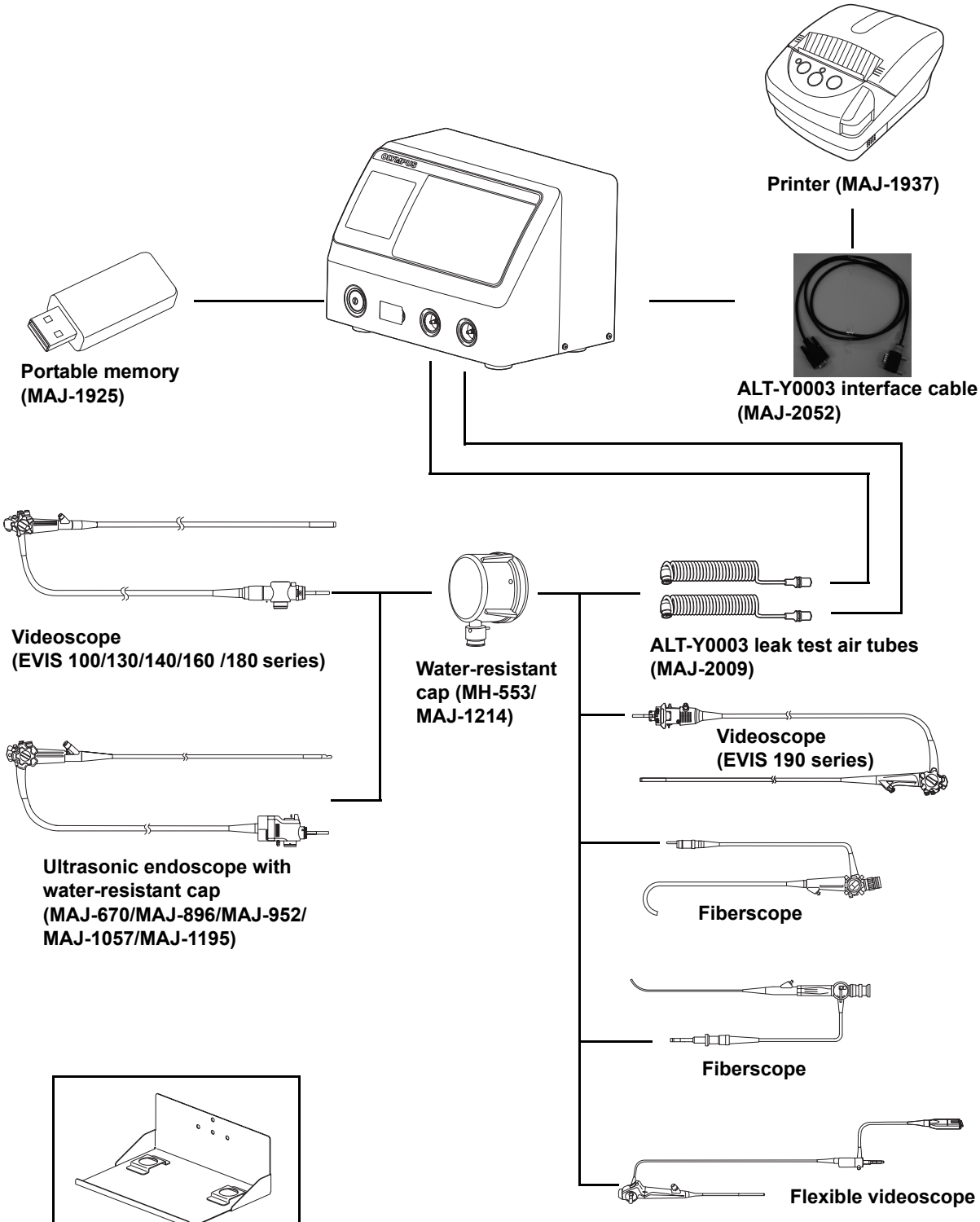
■ System chart

The system chart below lists recommended combinations of equipment and accessories that can be used with this equipment. If you have any questions, contact the persons in charge of this equipment indicated on the back cover of instructions.

WARNING

If combinations of equipment other than those shown below are used, the full responsibility is assumed by the medical treatment facility. Olympus cannot guarantee that this equipment will perform as expected. Nor can Olympus guarantee the safety of the patients and medical operators. Nor can the durability of this equipment be guaranteed when non-designated equipment is used. Any damage resulting from improper combinations will not be serviced or repaired free of charge.

System chart



* The endoscopes of previous versions of 180 series require a scope ID tag.

Specification

■ Environment

Operating environment	**Ambient temperature**	10 – 40°C (50 – 104°F)
	Relative humidity	30 – 85% (without condensation)
	Atmospheric pressure	700 – 1060 hPa (0.7 – 1.1 kgf/cm^2) (10.2 – 15.4 psia)
	Elevation	3000 meters (maximum)
Transportation and storage environment	**Ambient temperature**	–47 to +70°C (–52.6 to +158°F)
	Relative humidity	10 – 95%
	Atmospheric pressure	700 – 1060 hPa (0.7 – 1.1 kgf/cm^2) (10.2 – 15.4 psia)

■ Specifications

Compatible scope		Olympus flexible endoscopes: (See “List of Compatible Endoscopes <ALT-Y0003>” in Appendix.)
Number of scope tested		1 or 2
ALT time setting		Approximately 2 minutes and 20 seconds
Pump		Diaphragm type pump
Leakage testing functions/ performance	**Automatic leakage test**	Detects automatically for a pin hole by feeding air into the endoscope and computing a changed air pressure.
	Manual leakage test	Feeds air into the endoscope to visually inspect for any air bubbles emerging from the immersed endoscope.
	Self-check	Automatically checks if this equipment functions properly.
Control		Microprocessor control
Operation		Operating with switches on CONTROL PANEL
Indicators		The LCD panel displays the following: (1) Stand-by state, (2) ID data of endoscopes and operators (e.g. Model name, S/N, and Control number), (3) Processes, and (4) Results of automated leakage tests, (5) Error codes
ID data entry		The internal RFID reader of this equipment automatically enters the ID data of endoscopes (Model name and S/N) and operators (name and control number)

Data storage		Approximately 13,000 logs can be stored in this equipment and downloaded to Olympus-designated portable memories.
Print mode options		Either Manual Printing or Auto Printing can be selected. In the Manual Printing, the printed data can be selected from “PRINT PREVIOUS,” “PRINT ONE DAY,” and “PRINT FULL LOG.”
Scope connection		The specified tube (the Leak Test Tube) can be connected air tight by rotating it about 90 degrees with a single motion.
Size	**Dimensions**	280 (W) × 201 (H) × 184 (D) mm
	Dimensions (maximum)	280 (W) × 201 (H) × 202 (D) mm
	Weight	5.5 kg
Power supply	**Rated voltage**	100 – 120 V AC
	Voltage fluctuation	Within ±10%
	Rated frequency	50/60 Hz
	Frequency change	Within ±1 Hz
	Rated input	45 VA
	Fuse rating	2 A, 250 V
	Fuse size	ø 5 × 20 mm
EMC	**Applied standard: IEC 61326-1: 2005**	This equipment complies with the standards listed in the left column. CISPR 11 of emission: Group1,Class B
Electrical safety	**Applicable standard; IEC 61010-1: 2001**	This equipment complies with the standard listed in the left column. Installation category: II Pollution degree: 2
Radio transmitter	**Compliance**	ISO/IEC 18000-3 (Mode1)
	Center frequency	13.56 MHz
	Modulation	ASK (Amplitude shift keying)
	Effective radiated Power	100 mW ±20%
Memory backup	**Lithium battery life**	4 years

EMC information

This model is intended for use in the electromagnetic environments specified below. The user and the medical staff should ensure that it is used only in these environments.

❍ Magnetic emission compliance information and recommended electromagnetic environments

Emission standard	Compliance	Guidance
RF emissions CISPR 11	Group 1	This instrument uses RF (Radio Frequency) energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
Radiated emissions CISPR 11	Class B	This instrument's RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
Main terminal conducted emissions CISPR 11		
Harmonic emissions IEC 61000-3-2	Not applicable	Power supply specification of this instrument is less than 220 VAC, and this instrument is exempt from requirements of IEC 61000-3-2.
Voltage fluctuations/flicker emissions IEC 61000-3-3	Not applicable	Power supply specification of this instrument is less than 220 VAC, and this instrument is exempt from requirements of IEC 61000-3-3.

❍ Electromagnetic immunity compliance information and recommended electromagnetic environments

Immunity test	IEC 61326-1 test level	Compliance level	Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	Contact: ±2, ±4 kV Air: ±2, ±4, ±8 kV	Same as left	Floors should be made of wood, concrete, or ceramic tile that hardly produces static. If floors are covered with synthetic material that tends to produce static, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	Same as left	Mains power quality should be that of a typical commercial (original condition feeding the facilities) or hospital environment.
Surge IEC 61000-4-5	Differential mode: ±0.5, ±1 kV Common mode: ±0.5, ±1, ±2 kV	Same as left	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions, and voltage variations on power supply input lines IEC 61000-4-11	< 5% U_T (> 95% dip in U_T) for 0.5 cycle	Same as left	Mains power quality should be that of a typical commercial or hospital environment. If the user of this instrument requires continued operation during power mains interruptions, it is recommended that this instrument be powered from an uninterruptible power supply or a battery.
	40% U_T (60% dip in U_T) for 5 cycle		
	70% U_T (30% dip in U_T) for 25 cycle		
	< 5% U_T (> 95% dip in U_T) for 5 seconds		
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	Same as left	It is recommended to use this instrument by maintaining enough distance from any equipment that operates with high current.

NOTE

U_T is the AC mains power supply prior to application of the test level.

Cautions and recommended electromagnetic environment regarding portable and mobile RF communications equipment, such as cellular phones

Immunity test	IEC 61326-1 test level	Compliance level	Guidance
Conducted RF IEC 61000-4-6	3 Vrms (150 kHz – 80 MHz)	3 V (V_1)	Formula for recommended separation distance (V_1=3 according to the compliance level) $d = \left[\frac{3.5}{V_1}\right]\sqrt{P}$
Radiated RF IEC 61000-4-3	10 V/m (80 MHz – 1 GHz) 3 V/m (1.4 GHz – 2 GHz) 1 V/m (2 GHz – 2.7 GHz)	10 V/m (E_1) 3 V/m (E_2) 1 V/m (E_3)	Formula for recommended separation distance (E_1=10, E_2=3, E_3=1 according to the compliance level) $d = \left[\frac{3.5}{E_1}\right]\sqrt{P}$ 80 MHz – 800 MHz $d = \left[\frac{7}{E_1}\right]\sqrt{P}$ $d = \left[\frac{7}{E_2}\right]\sqrt{P}$ $d = \left[\frac{7}{E_3}\right]\sqrt{P}$

NOTE

- Where “P” is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer, and “d” is the recommended separation distance in meters (m).
- This instrument complies with the requirements of IEC 61326-1: 2005. However, if used in an electromagnetic environment that exceeds the required maximum noise level, electromagnetic interference may occur on this equipment.

❍ Recommended separation distance between portable and mobile RF communication equipment and this equipment

Rated maximum output power of transmitter P (W)	Separation distance according to frequency of transmitter (m) (calculated as V_1=3 and E_1=10)		
	150 kHz – 80 MHz $d = 1.2\sqrt{P}$	80 MHz – 800 MHz $d = 0.35\sqrt{P}$	800 MHz – 1 GHz $d = 0.7\sqrt{P}$
0.01	0.12	0.04	0.07
0.1	0.38	0.12	0.23
1	1.2	0.35	0.70
10	3.8	1.2	2.3
100	12	3.5	7

NOTE

The guidance may not apply in some situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people. Portable and mobile RF communications equipment such as cellular phones should be used no closer to any part of this instrument, including cables than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.

FCC and IC information	This equipment complies with part15 of the FCC rules and the IC RSS210.	**FCC ID: S8Q-RU8354** **IC: 4763B-RU8354**
FCC WARNING	Change or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.	

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