

2. Using a cloth moistened with neutral detergent solution, clean the external surfaces of the accessory holder and the accessories listed above, rinse them in running water, and wipe them with a clean cloth. To prevent the spread of various germs, it is also recommended to wipe the accessories and accessory holder with a cloth moistened with 70% ethyl alcohol or isopropyl alcohol.
3. Dry the accessories thoroughly and store them in a clean place near the device.
4. Attach the accessory holder to the back side of the front door using the two retaining screws.
5. Store the frequently used tubes in the accessory holder. Note that the accessory holder cannot accommodate all of the tubes.

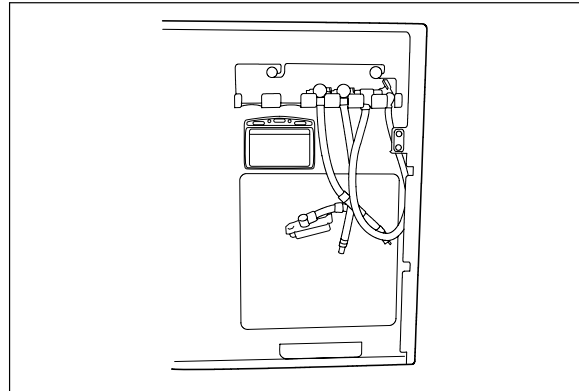


Figure 7.53

CAUTION

Do not hook tubes on the accessories holder in a disorderly fashion as this could make it impossible to open or close the front door and may also damage the accessories.

7.11 Cleaning the alcohol tank

CAUTION

Do not tilt the alcohol or detergent tank while fluid is still inside. Otherwise, the fluid may spill.

1. Pull out the detergent/alcohol drawer.
2. Disconnect the tube from the alcohol tank and take the tank out of the detergent/alcohol drawer.
3. Empty the tank.
4. Using a cloth moistened with neutral detergent solution, clean the external surface, rinse the inside and external surface of the tank in running water, and wipe it with a clean cloth. To prevent bacterial growth, wipe the outside of the tank with a cloth moistened with 70% ethyl alcohol or isopropyl alcohol.
5. Drain out the water inside the tank, dry it thoroughly, put it back on the detergent/alcohol drawer and attach the cap and tube to it.
6. Turn the connectors to correct the orientations of the tubes as shown below.

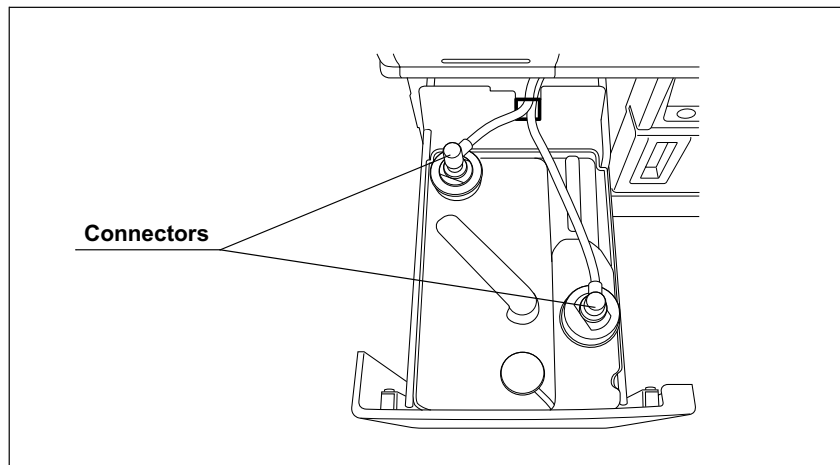


Figure 7.54

7. Close the detergent/alcohol drawer.

7.12 Replacing the disinfectant solution

When the disinfectant solution in the device is no longer effective, drain the disinfectant solution completely and add new disinfectant solution. Waste fluid should be treated as directed in the documents supplied with Aldahol III.

WARNING

- Before handling the disinfectant solution, read the precautions carefully and use it as instructed. Be sure that you fully understand what measures need to be taken if you get any disinfectant solution on your skin.
- When handling the disinfectant solution, wear appropriate personal protective equipment to prevent it from making direct contact with your skin and to prevent excessive inhalation of the vapor. The disinfectant solution and its vapor may adversely affect the human body. If you get disinfectant solution in your eyes, immediately rinse with a large quantity of water and then call the doctor. Personal protective equipment, such as eye wear, face mask, moisture-resistant clothing, and chemical-resistant gloves that fit properly and are long enough so that your skin is not exposed. All personal protective equipment should be inspected before use and replaced periodically before it is damaged.

CAUTION

The disinfectant solution's waste fluid should be treated in accordance with the instructions supplied with the Aldahol III. It is recommended to treat the waste fluid properly and to drain it according to local wastewater standards defined by law, or temporarily collect and store the waste fluid and have it treated by a waste disposal firm.

Draining the disinfectant solution

Drained disinfectant solution	
Drain quantity	Approximately 17.5 L (4.6 gallons)

Table 7.12

WARNING

Before draining the disinfectant solution, disconnect the connecting tube from the connector on the device. Otherwise, the disinfectant solution may spout out of the tube, causing a leak from the cleaning tub.

○ Draining through the disinfectant collection hose

Check	Required items
	Disinfectant collection hose
	Disinfectant removal tube
	Containers (Large) with 18 L (5 gallons) or larger capacity such as PVC tanks (×2)
	Container (Small) with 200 mL or larger capacity (wide-mouthed container such as a vat)
	Clean cloth

Table 7.13

WARNING

- Do not block the disinfectant removal port with a finger when the rubber cap is not attached. Otherwise, the disinfectant solution may flow out.
- To prevent the device and facilities near the equipment from being damaged by leaked disinfectant solution, do not remove the rubber cap from the disinfectant removal port except when the disinfectant removal tube is connected.
- If disinfectant solution leaks out of the disinfectant removal port when the rubber cap has been removed, immediately reattach the rubber cap and follow the procedure in Section 8.1, “Troubleshooting guide” on page 218. If it does not stop leaking, contact Olympus.

- When handling the disinfectant solution, wear appropriate personal protective equipment to prevent it from making direct contact with your skin and to prevent excessive inhalation of the vapor. The disinfectant solution and its vapor may adversely affect the human body. If you get disinfectant solution in your eyes, immediately rinse with a large quantity of water and then call the doctor. Personal protective equipment, such as eye wear, face mask, moisture-resistant clothing, and chemical-resistant gloves that fit properly and are long enough so that your skin is not exposed. All personal protective equipment should be inspected before use and replaced periodically before it is damaged.
- Be sure to disconnect the disinfectant collection hose after collecting the disinfectant solution. If the device is run with the disinfectant collection hose connected, the cleaning fluid and disinfectant solution may leak out of the device.
- Be sure to disconnect the drain connector except when collecting the disinfectant solution or checking its strength. Otherwise, disinfectant solution may leak and damage the equipment and facilities near the device.

NOTE

If "DRAIN LCG" is selected and the FUNC START button is pressed without connecting the disinfectant collection hose, the buzzer repeats short beeps, disinfectant solution is output in the cleaning tub and error code [E72] is displayed. In this case, treat it by following the procedure in Section 8.1, "Troubleshooting guide" on page 218.

1. Make sure that the power switch is ON.
2. Step the foot pedal to open the lid.

3. While pulling the sleeve on the connector of the disinfectant collection hose, connect the connector into the disinfectant solution nozzle inside the cleaning tub. After connection, pull the hose gently to make sure it is properly attached.

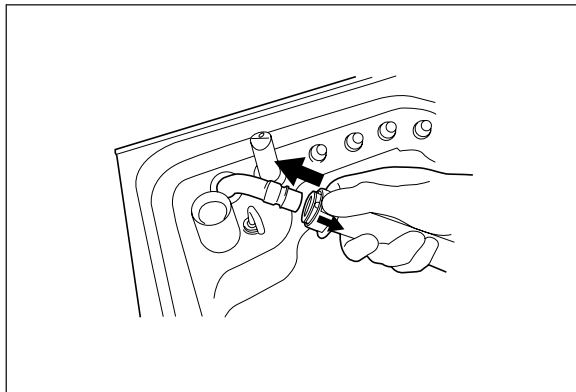


Figure 7.55

4. Put the other end, of the disinfectant collection hose (the end without a connector) in the large container.

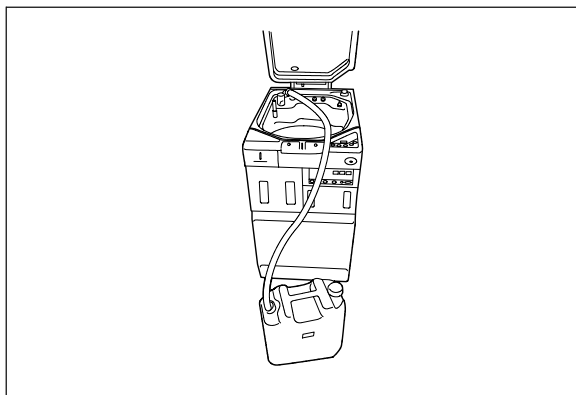


Figure 7.56

5. While supporting the disinfectant collection hose so that it does not move, press the FUNC SEL button on the subcontrol panel to select "DRAIN LCG".

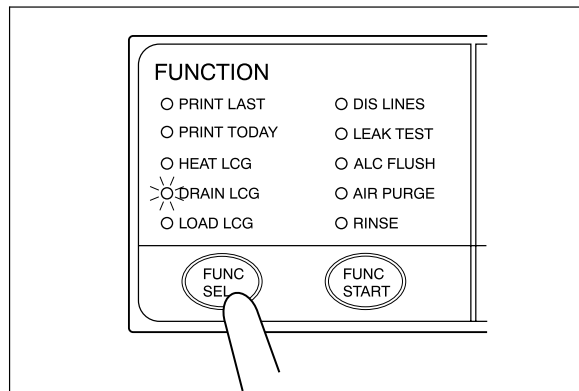


Figure 7.57

6. Press the FUNC START button on the subcontrol panel. The buzzer repeats short beeps to indicate that the disinfectant solution drain process is underway, the TIME/CODE display on the main control panel shows a spinning [] as shown below, and the disinfectant solution begins draining.
7. When the container (large) becomes nearly full, press the STOP/RESET button on the main control panel to interrupt the disinfectant solution collection.
8. Prepare a new container (large) and put the other end of the disinfectant collection hose in it.
9. While supporting the disinfectant collection hose so that it does not move, press the FUNC SEL button on the subcontrol panel to select "DRAIN LCG", and then press the FUNC START button to restart draining of the disinfectant solution.

10. When draining is stopped, the long buzzer beeps, and the TIME/CODE display on the main control panel shows [- -] indicating the end of process.

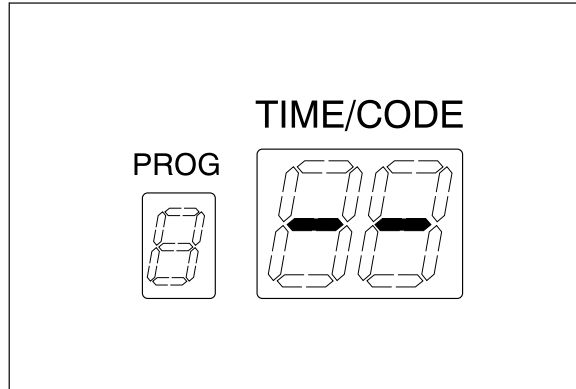


Figure 7.58

11. Pull the sleeve on the connector of the disinfectant collection hose to disconnect it from the disinfectant solution nozzle. Be sure to drain the disinfectant solution that remains in the disinfectant collection hose into the container (large).

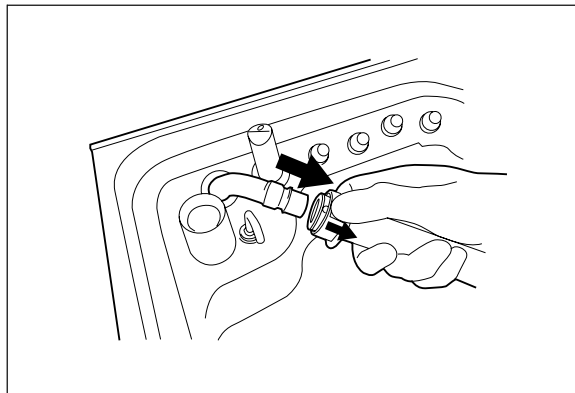


Figure 7.59

12. Rinse both the outside and inside of the disinfectant collection hose thoroughly in running water, dry it thoroughly, and store it in a clean place.

13. Open the front door and remove the rubber cap from the disinfectant removal port.

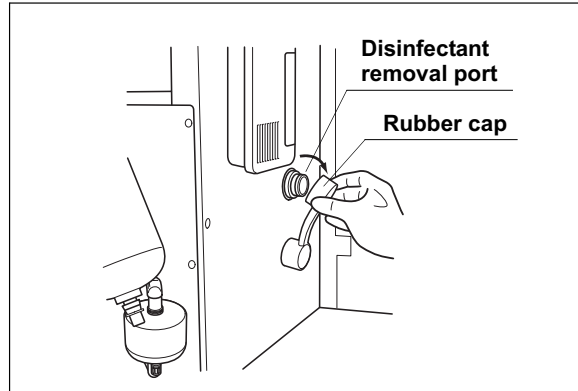


Figure 7.60

14. Put the tube-side end of the disinfectant removal tube in the container (small), and connect the disinfectant removal tube to the disinfectant removal port to drain the small amount of residual disinfectant solution from the disinfectant solution tank (see Figure 7.61).

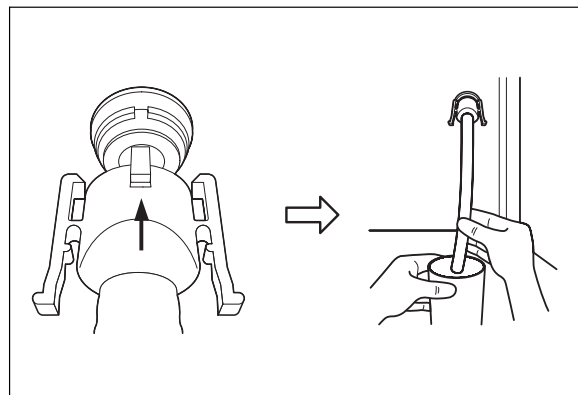


Figure 7.61

15. Hold the lock levers and slowly disconnect the tube (see Figure 7.62).

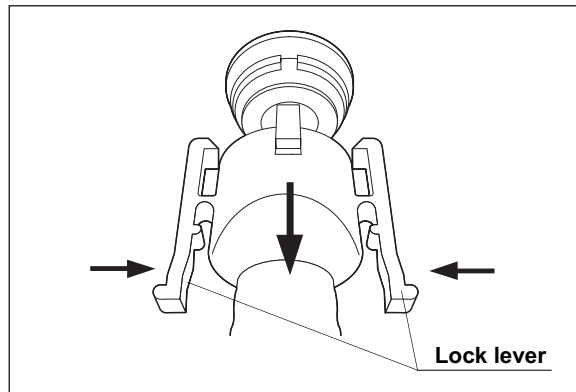


Figure 7.62

16. Rinse the disinfectant removal tube thoroughly under running water, dry it completely, and store it in a clean place.
17. Wipe the disinfectant removal port with the clean cloth and attach the rubber cap to it.
18. Close the front door.

NOTE

The front door cannot be closed unless the rubber cap is attached.

○ Draining through the drain hose

Check	Required items
	Disinfectant removal tube
	Glass container (Small) with a capacity of about 200 ml, such as a beaker
	Clean cloth

Table 7.14

WARNING

- Be sure to close the lid before proceeding. If the lid is not closed, the disinfectant solution may spatter out of the cleaning tub.
- Take out the scopes and valves from the cleaning tub before draining the disinfectant solution through the drain hose. Otherwise, the disinfectant solution cannot be drained properly and the scopes and valves may be unable to be rinsed sufficiently.
- Do not block the disinfectant removal port with a finger while the rubber cap is not attached. Otherwise, the disinfectant solution may flow out.
- To prevent the device and facilities near the equipment from being damaged by leaked disinfectant solution, do not remove the rubber cap from the disinfectant removal port except when the disinfectant removal tube is connected.
- If disinfectant solution leaks out of the disinfectant removal port while the rubber cap is removed, immediately reattach the rubber port and follow the procedure in Section 8.1, “Troubleshooting guide” on page 218. If it does not stop leaking, contact Olympus.

1. Slowly open the water supply faucet.
2. Make sure that the power switch is ON.
3. Close the lid by pushing it until it clicks.

4. Press the FUNC SEL button on the subcontrol panel to select “DRAIN LCG”.

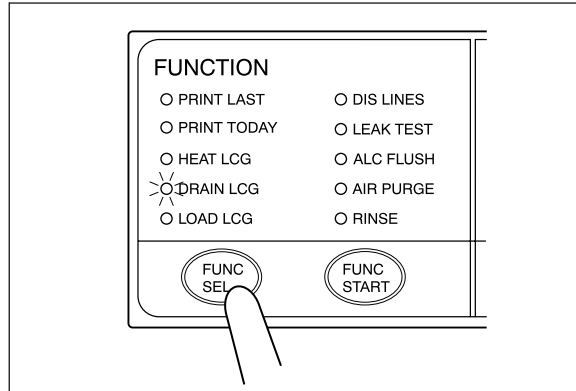


Figure 7.63

5. Press the FUNC START button on the subcontrol panel. The buzzer beeps, the disinfectant solution begins draining, and the cleaning tub is rinsed. The TIME/CODE display on the main control panel shows a [] mark spinning to indicate that the process is underway.

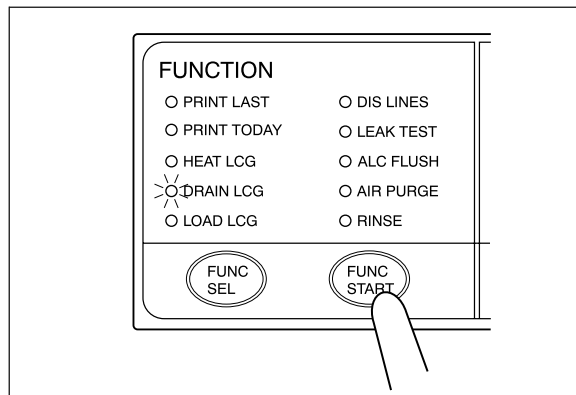


Figure 7.64

NOTE

If “DRAIN LCG” is selected and the FUNC START button is pressed while the lid is open, the buzzer makes several short beeps, the disinfectant is drained into the cleaning tank, and error code [E72] is displayed. If error code [E72] is displayed, take the countermeasure by following the procedure in Section 8.1, “Troubleshooting guide” on page 218.

6. When draining stops, the long buzzer sounds and the TIME/CODE display on the main control panel shows [- -] indicating the end of the process.

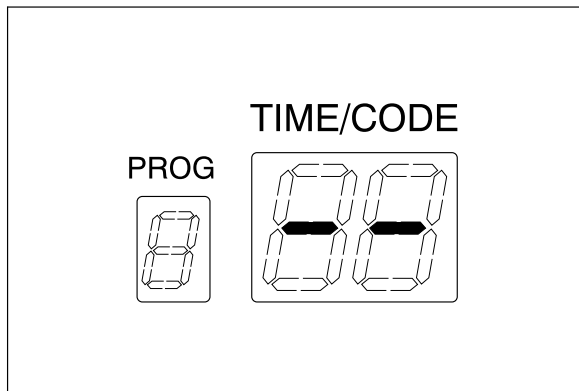


Figure 7.65

7. Open the front door and remove the rubber cap from the disinfectant removal port.

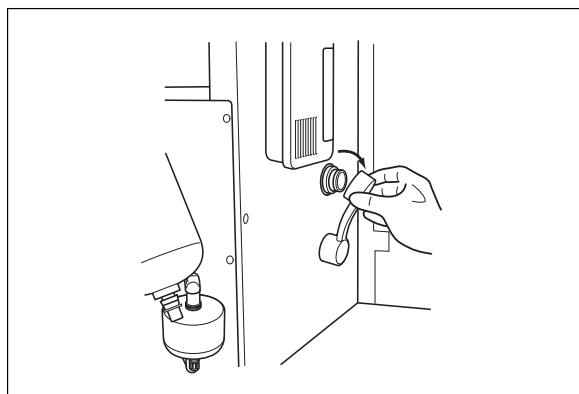


Figure 7.66

- Put the tube-side end of the disinfectant removal tube in the container (small), and connect the disinfectant removal tube to the disinfectant removal port to drain the small amount of residual disinfectant solution from the disinfectant solution tank (see Figure 7.67).

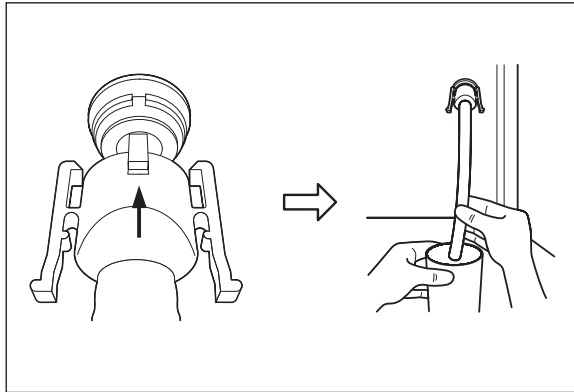


Figure 7.67

- Hold the lock levers and slowly disconnect the tube (see Figure 7.68).

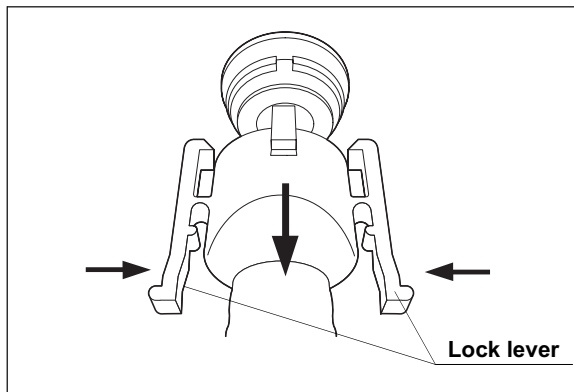


Figure 7.68

- Rinse the disinfectant removal tube thoroughly under running water, dry it completely, and store it in a clean place.
- Wipe the disinfectant removal port with the clean cloth and attach the rubber cap to it.
- Close the front door.

NOTE

The front door cannot be closed unless the rubber cap is attached.

Setting up the disinfectant solution

Check	Required items
	Aldahol III (Olympus-designated disinfectant solution) 1 gallon bottle × 5

Table 7.15

WARNING

- Before handling the disinfectant solution, read the precautions carefully and uses it as instructed. It is especially important to know what to do if the disinfectant solution comes in contact with your skin.
- When handling the disinfectant solution, wear appropriate personal protective equipment to prevent any disinfectant from getting on your skin or being inhaled. To avoid adverse physical effects, be careful not to touch the disinfectant solution directly or to inhale too much vapor. If any disinfectant solution gets in your eyes, immediately rinse with a large amount of fresh water and then consult a medical specialist. Personal protective equipment, such as eye wear, face mask, moisture-resistant clothing, and chemical-resistant gloves that fit properly and are long enough so that your skin is not exposed. All personal protective equipment should be inspected before use and replaced periodically before it is damaged.

- When using the disinfectant solution and alcohol, Olympus recommends the use of gas filters and running this equipment in well-ventilated areas.
 - Wear a facemask, gloves, and protective clothes to minimize aspiration and skin contact.
 - Wear goggles for eye protection.

Refer to the following association's guidelines related to ventilation:

SGNA	(Society of Gastroenterology Nurses and Associates)
ASGE	(American Society of Gastroenterological Endoscopy)
APIC	(Association for Professionals of Infection Control and Epidemiology)
AORN	(Association of Preoperative Registered Nurses)
ASTM	(American Society for Testing and Materials)
OSHA	(Occupational Safety and Health Administration)
ACGIH	(American Conference of Governmental Industrial Hygienists)
NIOSH	(National Institute for Occupational Safety and Health)
AIA	(American Institute of Architects)

Do not handle the equipment if the operator shows any allergic symptoms even while wearing protective gear.

- Effective reprocessing cannot be guaranteed when a nondesignated disinfectant solution is used. Equipment malfunction may also result.
- Before adding the disinfectant solution, mix the base compound and buffer agent thoroughly as directed by the documents supplied with Aldahol III. Effective cleaning and disinfecting cannot be guaranteed when two are added separately resulting in the improperly mixed disinfectant solution.
- When adding the disinfectant solution, continuously monitor the fluid level via the disinfectant solution indicator. When the Max line is exceeded, the disinfectant solution may spill from the equipment or be drained from the equipment.

- When adding the disinfectant solution, slowly dispense it into the drain port. Otherwise, the disinfectant solution may spill over from the equipment or be drained from the equipment.
- When adding the disinfectant solution, check the indicators on the main panel showing the disinfectant solution supplying process and listen to the buzzer sound. When attempted on other instances, the disinfectant solution may spill from the equipment or be drained from the equipment.

NOTE

- The required amount is approximately 17.5 L (4.6 gallons).
- If the power supply gets cut off during the process of adding the disinfectant solution and recovers afterward, the main control panel will display error code [E41]. In this case, the quantity of the disinfectant solution in the disinfectant solution tank is not sufficient. Press the STOP/RESET button to clear the error code [E41] and restart “Setting up the disinfectant solution” on page 188.

1. Make sure that the power switch is ON.
2. Press the FUNC SEL button on the subcontrol panel to select “LOAD LCG”.
3. Press the FUNC START button on the subcontrol panel.
4. Step the foot pedal to open the lid.
5. As multiple beeps sound, the time display on the main panel alternates between Figure 7.69 (a) and (b) indicating that it is ready to add the disinfectant solution.

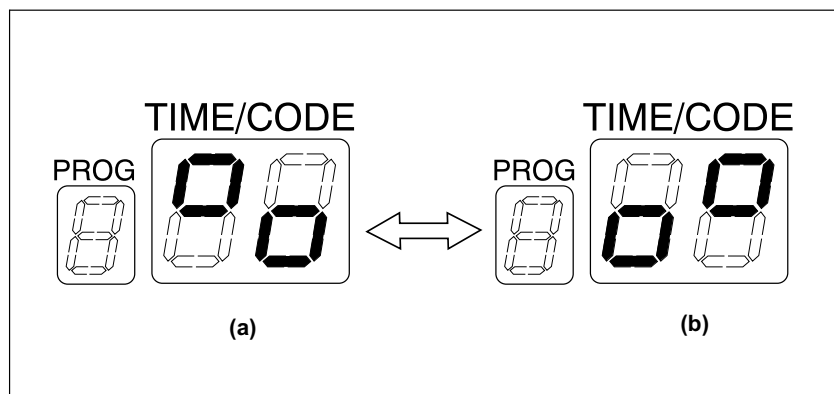


Figure 7.69

6. Slowly pour the disinfectant solution to the drain port into the cleaning tub (see Figure 7.70).

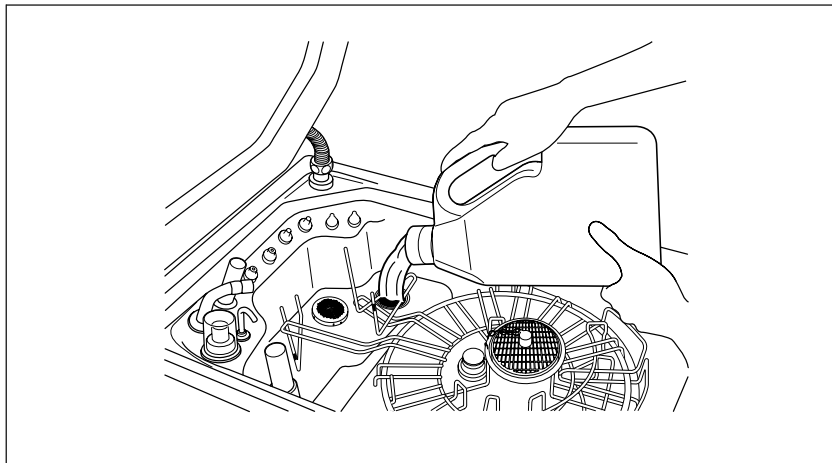


Figure 7.70

7. When the beeps increase in frequency, the level of disinfectant solution is near full. Stop pouring the disinfectant solution and check the disinfectant solution indicator located at the front of the equipment and slowly add more solution (see Figure 7.71).

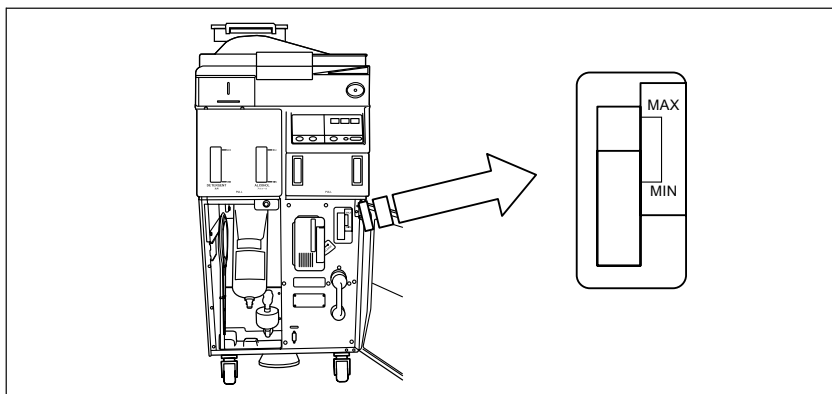


Figure 7.71

WARNING

If the buzzer beeps and the TIME/CODE display shows [- -], stop adding the disinfectant solution. Otherwise, the disinfectant solution may spill from the equipment or be drained from the equipment.

8. When the amount added is adequate, the buzzer beeps for three seconds. Stop adding the solution. At this time, the TIME/CODE display on the main panel will show [- -] indicating the end of the process (see Figure 7.72).

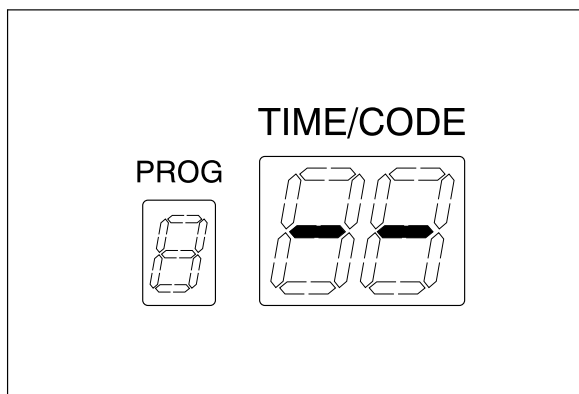


Figure 7.72

9. Make sure that the water supply faucet is open.
10. Perform the rinsing process following the procedure in Section 6.8, "Rinsing" on page 133. Any residual fluid in the cleaning tub is cleaned.

7.13 Cleaning the mesh filter in the water supply adapter connector

When the device stops with error code [E01], the water filter should be replaced first. However, if the device stops again with error code [E01], clean the mesh filter as described below.

CAUTION

To prevent leakage or damage, do not deform or disassemble the water supply adapter.

1. Close the water supply faucet. Press the FUNC SEL button on the subcontrol panel to select "LEAK TEST", and press the FUNC START button.
2. In about 10 seconds, press the STOP/RESET button to stop the leak test.
3. Turn the connection ring of the water supply adapter in the direction shown to disconnect the adapter from the equipment with the provided wrench. If residual water is spilled from the water supply adapter, wipe it away with a clean cloth.

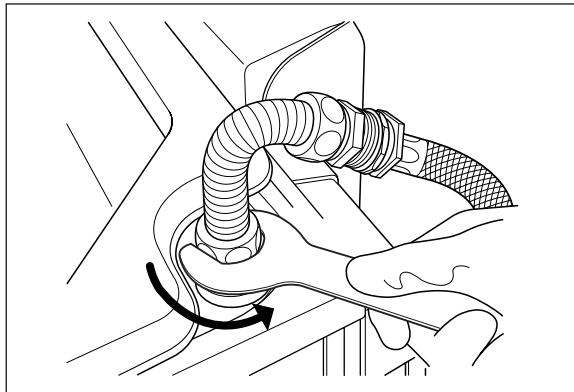


Figure 7.73

- Using clean tweezers, remove the mesh filter from the water supply adapter connector.

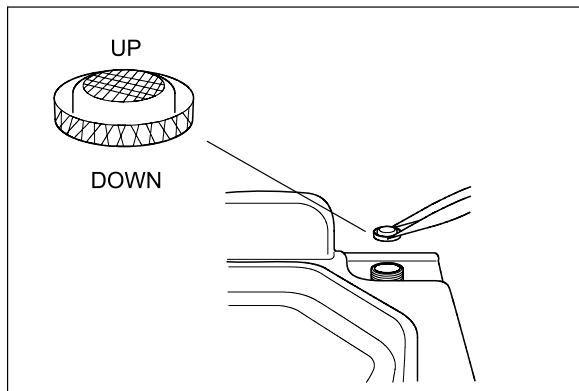


Figure 7.74

CAUTION

Do not pinch the mesh filter in the water supply adapter connector too hard. This could deform the mesh filter or injure your fingers.

- Clean the mesh filter in running water using a brush, cotton swab etc.

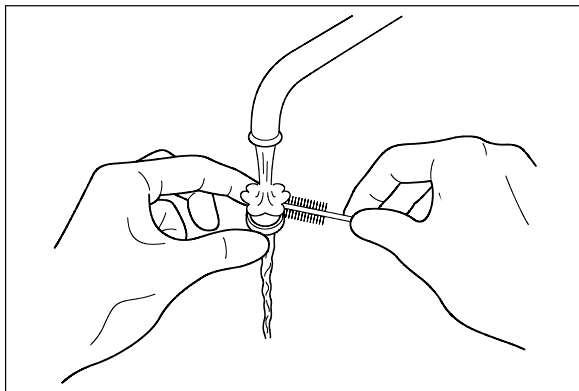


Figure 7.75

- Place the mesh filter in the original position in the water supply adapter connector. Pay attention to the up-down orientation.

CAUTION

Be sure to install the mesh filter in the water supply adapter connector. Otherwise, dirt and foreign matter in the water may enter the device and cause it to malfunction.

7. Attach the connection ring of the water supply adapter in the original position on the equipment. Turn manually the connection ring clockwise and tighten it until it stops.

CAUTION

To prevent leakage, firmly fix the water supply adapter to the equipment with the provided wrench. To prevent damage to the equipment, do not apply excessive force to the water supply adapter.

8. With the provided wrench, turn the connection ring 90 degrees or more to firmly fix the water supply adapter to the equipment.

7.14 Replacing the fuse

Replace the fuse as described in “If the lamp in the power switch does not turn ON” on page 58.

7.15 Disinfecting the detergent/alcohol pipe

WARNING

- When handling the disinfectant solution and detergent/alcohol, carefully read the precautions for its use in order to fully understand the given information and use as instructed. Particular understanding is required for measures to be taken in case the disinfectant solution comes into contact with your skin.
- When handling the disinfectant solution and detergent/alcohol, wear appropriate personal protective equipment to avoid direct contact with your skin or excessive inhalation of its vapor. The disinfectant solution and its vapor may affect the human body. Personal protective equipment, such as eye wear, face mask, moisture-resistant clothing, and chemical-resistant gloves that fit properly and are long enough so that your skin is not exposed. All personal protective equipment should be inspected before use and replaced periodically before it is damaged.

CAUTION

To prevent spills, make sure to not topple tanks with detergent or alcohol when working.

Draining and using the disinfectant solution from the equipment

Collects the disinfectant solution as described in Section 3.8, “Inspecting the disinfectant solution’s concentration level” on page 50. Always check the disinfectant solution concentration and use it to disinfect detergent/alcohol supply pipe only when it’s effective.

○ Disinfecting of the detergent supply pipe

Check	Required items
	Syringe and tube
	Two Cup-shape container with a capacity of about 200 ml, such as a beaker
	Disinfectant solution: approximately 30 ml
	Sterilized water: more than 50 ml

Table 7.16

1. Pull out the detergent/alcohol drawer.
2. Detach the detergent tank cap to which a tube is connected (Do not disconnect the connector.) (see Figure 7.76).

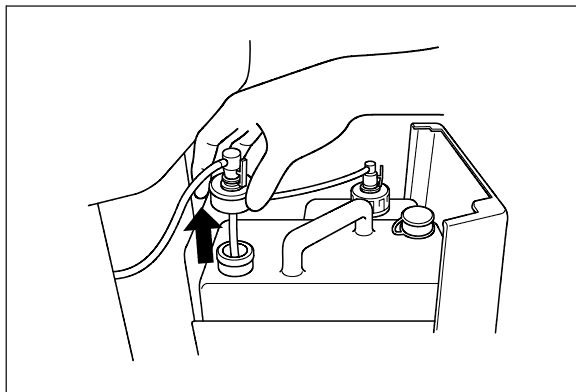


Figure 7.76

3. Step the foot pedal to open the lid.
4. Connect the provided syringe and tube.

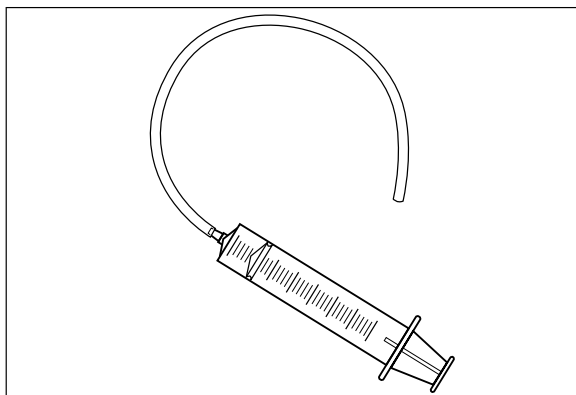


Figure 7.77

5. Connect the tube attached to the syringe to the detergent nozzle inside the cleaning tub.

6. To drain off the detergent inside of the pipe, connect the tube attached to the syringe to the detergent nozzle inside the cleaning tub and suction the detergent with the syringe (see Figure 7.78).

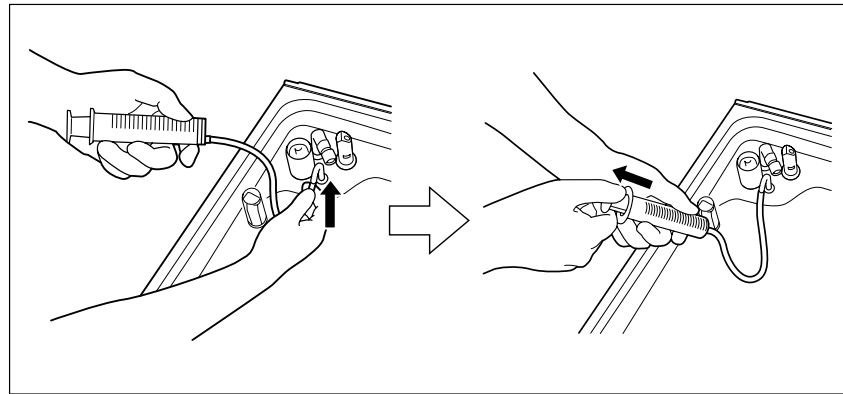


Figure 7.78

7. Prepare a beaker or similar container and pour about 30 ml of the disinfectant solution into it.
8. Put the detached cap in the container of the disinfectant solution (see Figure 7.79).

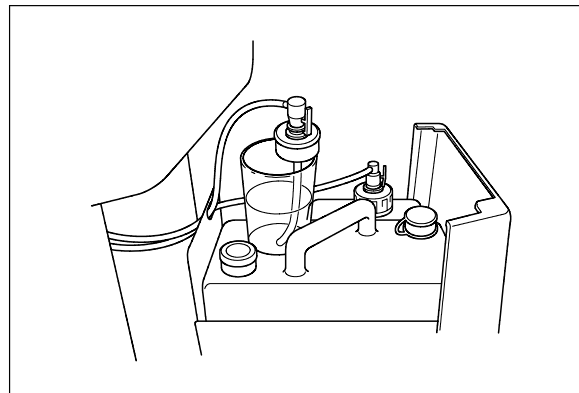


Figure 7.79

9. To fill the detergent supply pipe with the disinfectant solution, connect the tube attached to the syringe to the detergent nozzle and repeat the suction operation with the syringe until the disinfectant solution comes out of the tube. During this process, do not let the air come into the detergent supply pipe (see Figure 7.78).
10. Wait until the necessary time for disinfection passes. Refer to the documentation supplied with the disinfectant solution for specifics regarding disinfection.

11. When the disinfection time ends, take the cap out of the container filled with the disinfectant solution.
12. To drain off the disinfectant solution inside of the pipe, connect the tube attached to the syringe to the detergent nozzle and suction the disinfectant solution with the syringe until the disinfectant solution does not come out of the pipe (see Figure 7.79).
13. Prepare a beaker or similar container and pour more than 50 ml of the sterilized water into it (see Figure 7.78).
14. Put the cap in the container filled with the sterilized water (see Figure 7.80).
15. To rinse the pipe, connect the tube attached to the syringe to the detergent nozzle and suction more than 50 ml of sterilized water with the syringe (see Figure 7.78).
16. Attach the cap to the detergent tank and close the detergent/alcohol drawer (see Figure 7.80).

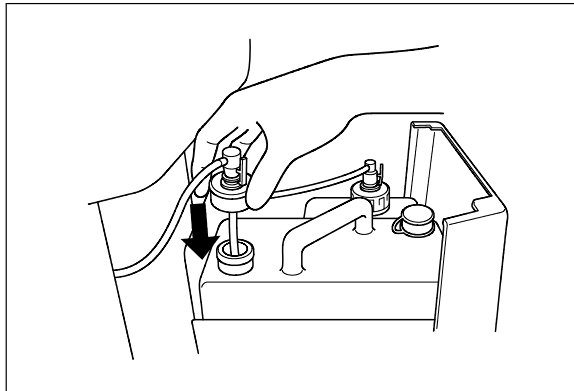


Figure 7.80

17. To drain the rinse water in the pipe and fill them with detergent, connect the tube attached to the syringe to the detergent nozzle and suction more than 50 ml of detergent with the syringe (see Figure 7.78).
18. Disconnect the tube from the detergent nozzle and close the lid.
19. Rinse the cleaning tub by performing the rinsing process on the subcontrol panel.

○ Disinfecting the alcohol supply pipes

WARNING

- Make sure to attach the connector jigs. Otherwise, the disinfection of the alcohol supply pipes may not be effective.
- After disinfecting the alcohol supply pipe, always rinse it thoroughly. Otherwise, disinfectant solution that remained in the pipe may adhere to the endoscope, as this could cause adverse physical effects.

Check	Required items
	Connector jigs
	Two Cup-shape container with a capacity of about 200 ml, such as a beaker
	Disinfectant solution: approximately 80 ml
	Sterilized water: more than 80 ml

Table 7.17

1. Make sure that the power switch of the device is ON.
2. Make sure that the water supply faucet is open.
3. Step the foot pedal to open the lid.
4. Attach the connector jigs to the connectors on the cleaning tub and close the lid.
5. Pull out the detergent/alcohol drawer.
6. Detach the alcohol tank cap to which the tube is connected (Do not disconnect the connector.) (see Figure 7.81).

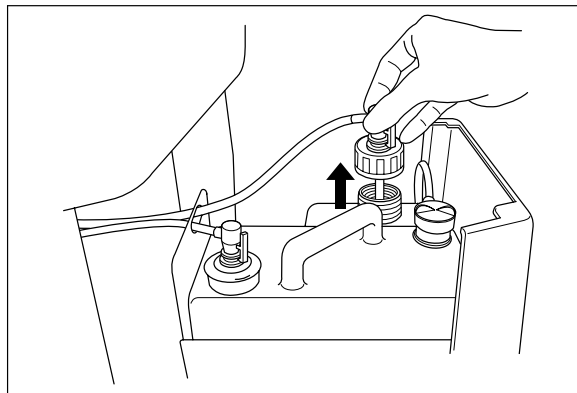


Figure 7.81

7. Drain the alcohol in the pipe by performing the alcohol flush process on the subcontrol panel. Check that the fluids are drained from the cap. Wait until the error code [E93] is displayed and the process ends (see Figure 7.82).

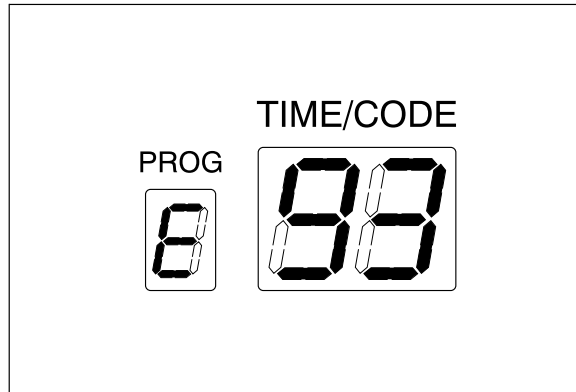


Figure 7.82

8. Prepare a beaker or similar container and pour about 80 ml of the disinfectant solution into it.
9. Put the detached cap in the container filled with the disinfectant solution (see Figure 7.83).

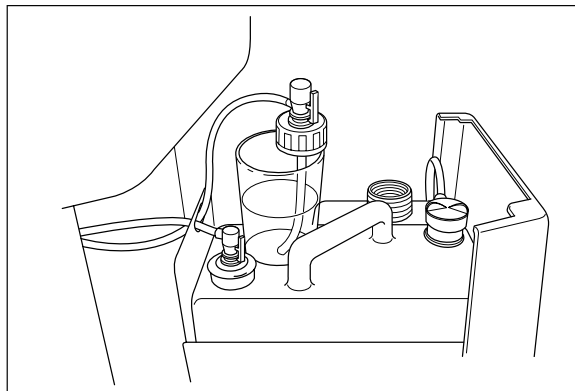


Figure 7.83

10. Fill the alcohol supply pipe with the disinfectant solution by performing the alcohol flush process on the subcontrol panel. Check that the air does not get inside of the alcohol supply pipe. Also check that the disinfectant solution in the container is decreasing as the process progresses. The process ends automatically in three minutes.

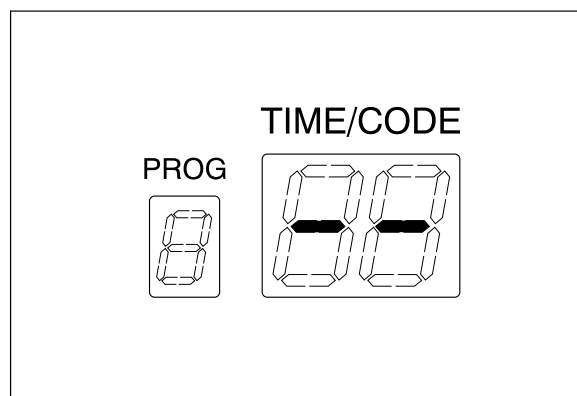


Figure 7.84

11. Wait until the necessary time for disinfection passes. Refer to the documentation supplied with the disinfectant solution for specifics regarding disinfection.
12. When the disinfection time ends, take the cap out of the container filled with the disinfectant solution.
13. Drain off the disinfectant solution in the pipe by performing the alcohol flush process on the subcontrol panel. The process ends automatically with the E93 displayed on the main control panel.
14. Prepare a beaker or similar container and fill it with at least 80 ml of sterilized water.
15. Put the cap in the container filled with the sterilized water (see Figure 7.85).
16. Rinse the alcohol supply pipe by performing the alcohol flushing process on the subcontrol panel. Check that the sterilized water in the container is decreasing as the process progresses. The process ends automatically in three minutes (see Figure 7.84).

17. Attach the cap to the alcohol tank and close the detergent/alcohol drawer (see Figure 7.85).

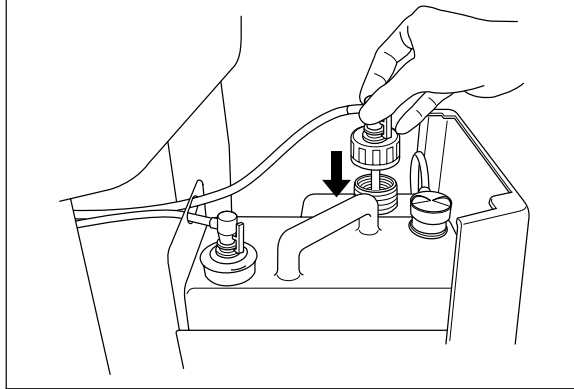


Figure 7.85

18. Drain the pipe of rinsing water and fill the pipe with alcohol by performing the alcohol flush process on the subcontrol panel. The process ends automatically in three minutes (see Figure 7.84).
19. Rinse the cleaning tub by performing the rinsing process on the subcontrol panel.
20. Open the lid and disconnect the connector jigs.

7.16 Preparing the reprocessor for long-term storage

WARNING

Before handling the alcohol, read the precautions carefully and use it as instructed.

CAUTION

Do not tilt the alcohol tank while there is still alcohol inside. Otherwise, the alcohol may spill.

Check	Required items
	Syringe and tube
	Connector jigs
	70% ethyl alcohol or isopropyl alcohol
	Small glass container with a capacity of about 200 ml, such as a beaker
	Provided wrench
	Clean cloth

Table 7.18

1. Discharge disinfectant solution from the device as described in “Draining through the disinfectant collection hose” on page 177. Also drain detergent from the detergent piping.
2. Pull out the detergent/alcohol drawer.
3. Prepare a beaker or similar container and pour about 50 mL of 70% ethyl alcohol or isopropyl alcohol into it.
4. Remove the detergent tank cap to which a tube is connected.

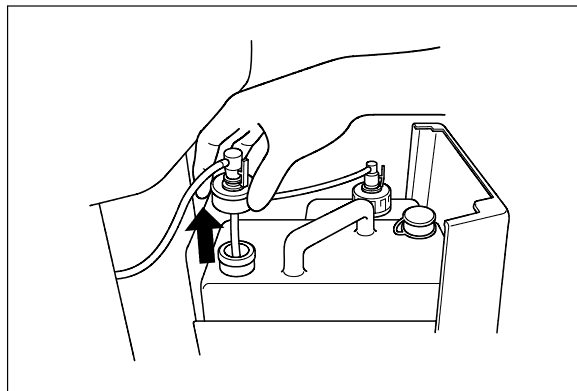


Figure 7.86

5. Put the removed cap in the container of 70% ethyl alcohol or isopropyl alcohol.

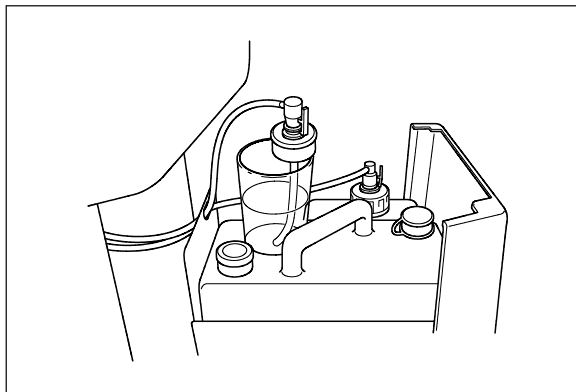


Figure 7.87

6. Step the foot pedal to open the lid.
7. Connect the provided syringe and tube.

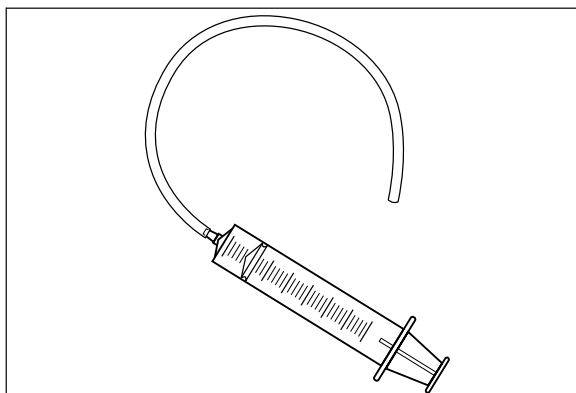


Figure 7.88

8. Connect the tube to the detergent nozzle inside the cleaning tub and suction it with the syringe until detergent comes out.

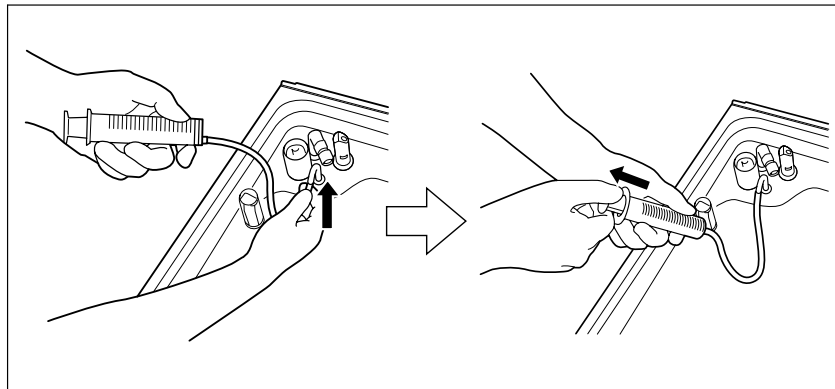


Figure 7.89

9. Remove the syringe from the tube, discharge the alcohol from inside the syringe, and repeat the suction operations until the container runs out of 70% ethyl alcohol or isopropyl alcohol.
10. Remove the tube from the detergent nozzle.

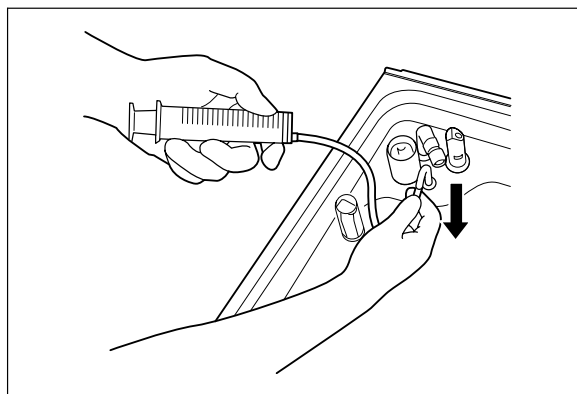


Figure 7.90

11. Remove the detergent tank and discharge detergent from the tank. Rinse the detergent tank thoroughly in running water, dry it thoroughly, and put it back on the detergent/alcohol drawer.

12. Attach the cap to the detergent tank.

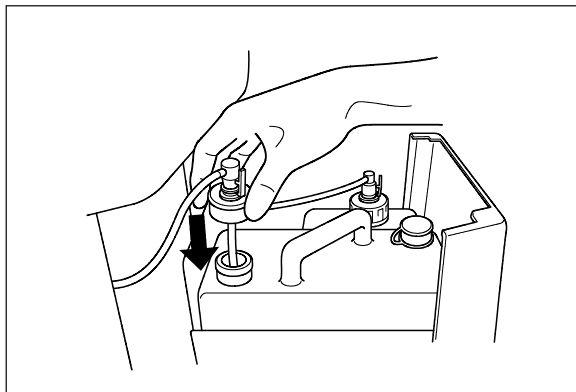


Figure 7.91

13. To disconnect the tube connected to the alcohol tank cap, push and hold the lock lever on the connector and pull the tube.

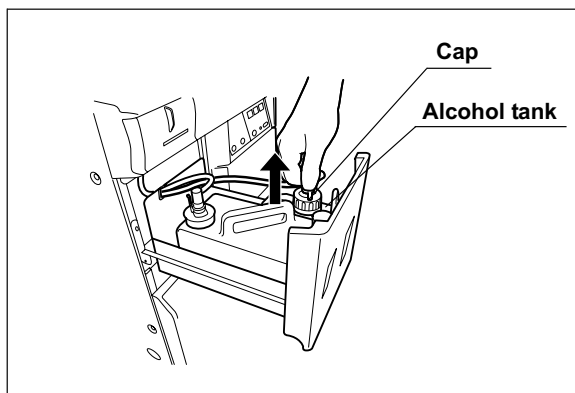


Figure 7.92

14. Take the alcohol tank out of the device.
15. Turn the alcohol tank cap to remove it, empty the alcohol from the tank and dry the inside.

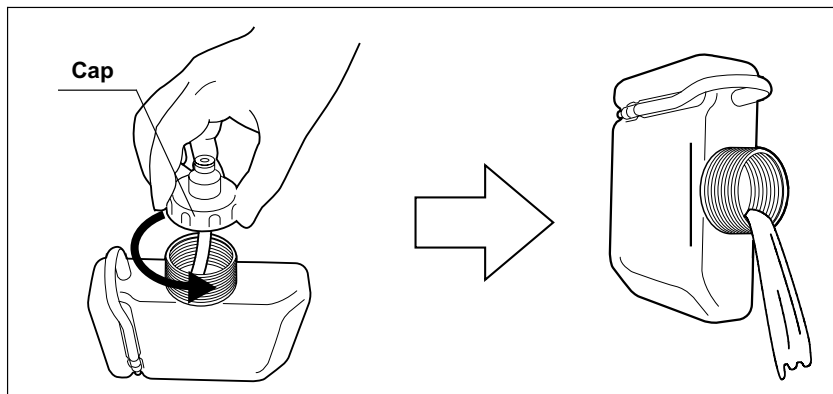


Figure 7.93

16. Put the cap back on the tank, place the tank on the detergent/alcohol drawer, and connect the tube to the cap again.

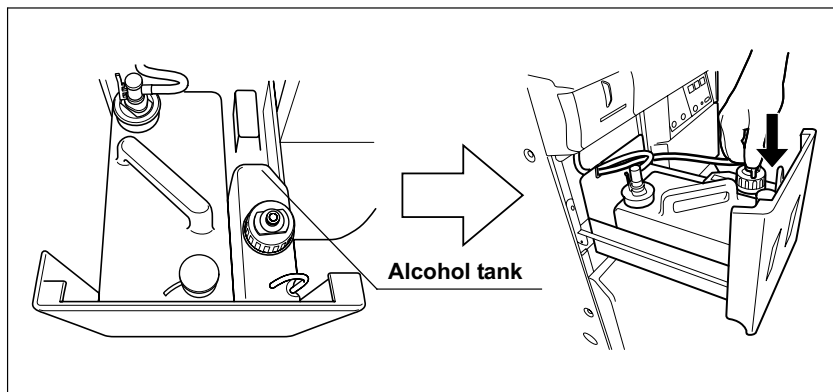


Figure 7.94

17. Close the detergent/alcohol drawer.

18. Attach the connector jigs to the connectors on the cleaning tub.

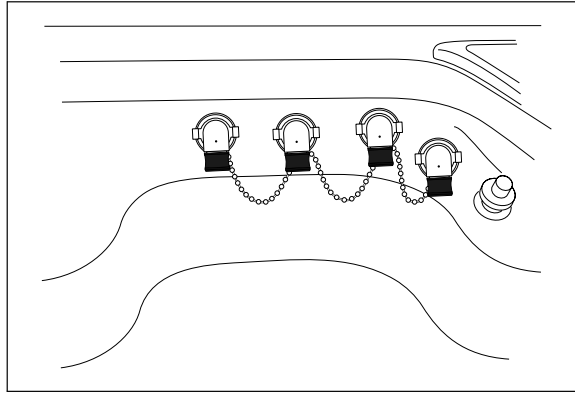


Figure 7.95

19. Close the lid.
20. Perform the operation described in Section 6.7, "Air purge".
21. Close the water supply faucet.
22. Press the FUNC SEL button on the subcontrol panel to select "LEAK TEST", and press the FUNC START button.

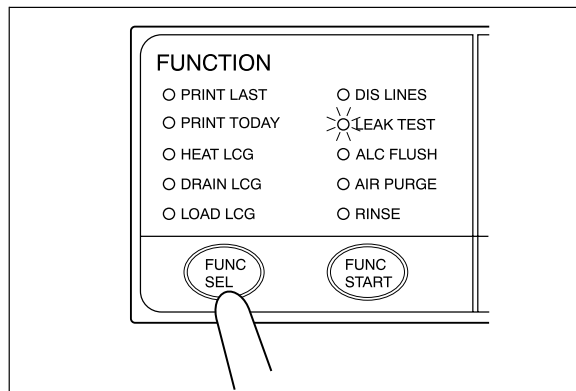


Figure 7.96

23. In about 10 seconds, press the STOP/RESET button to stop the leak test.
24. Drain water from the water filter housing as described in "Draining water from the water filter housing" on page 143.
25. Step the foot pedal to open the lid, disconnect the connecting tubes, dry them thoroughly and store them in a clean place.

26. Press the power switch to set it OFF.

CAUTION

To prevent leakage or damage, do not deform or disassemble the water supply adapter.

27. Turn the connection ring of the water supply adapter in the direction shown to disconnect the adapter from the equipment with the provided wrench. If residual water is spilled from the water supply adapter, wipe it away with a clean cloth.

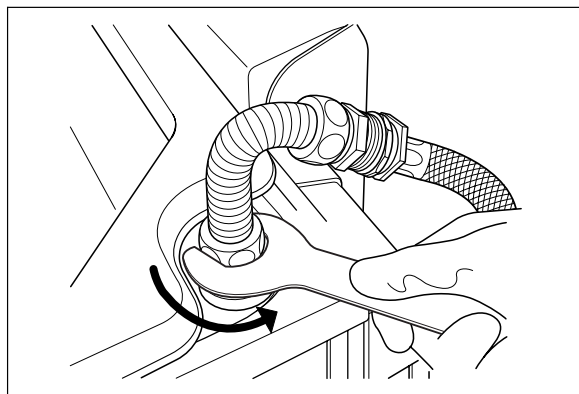


Figure 7.97

28. Put the water supply adapter in the wide-mouthed container to collect any residual water and disconnect the water supply hose from the faucet.
29. Disconnect the water supply adapter from the water supply hose.
30. Step the foot pedal to open the lid, dry the cleaning tub thoroughly so that no bacterial growth will occur inside it, and then close the lid.
31. Disconnect the power cord plug from the hospital-grade power outlet.

7.17 Installing the printer paper roll

WARNING

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

CAUTION

- Always use the Olympus-designated printer paper roll with this equipment. 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 cause malfunction.
- To avoid damage to or deterioration of the printout, do not allow the paper to make contact with the following:
 - Alcohol or EndoRapid 980 ml pack (Olympus-designated detergent)
 - Oil, fat, organic solvents, or chemicals (medical, industrial or cosmetic)
 - Stamp ink
 - 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 place
 - Place not exposed to NO_x, SO_x, or O₃ (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.

CAUTION

If the end of the paper is not straight, trim it so that it is perpendicular to the side edges. Otherwise, the printer paper roll may not load properly in the printer.

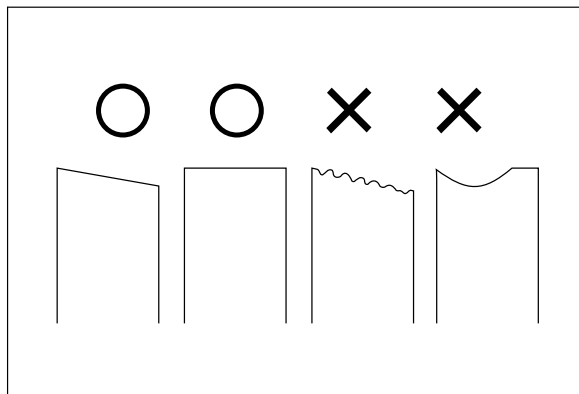


Figure 7.98

2. Make sure that the power switch is ON.
3. Hold the printer cover handle and pull it toward the front.

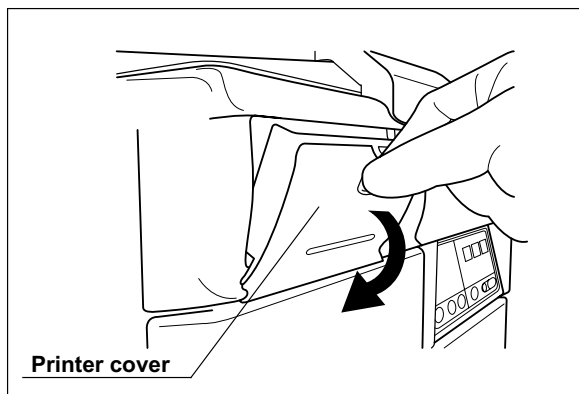


Figure 7.99

4. Take out the roll shaft from the printer roll axle.

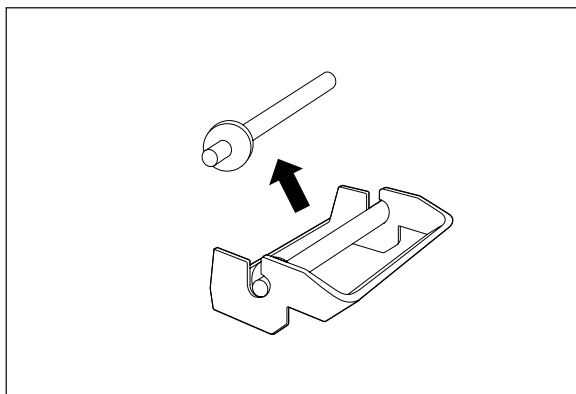


Figure 7.100

5. Insert the roll shaft through the printer paper roll as shown below.

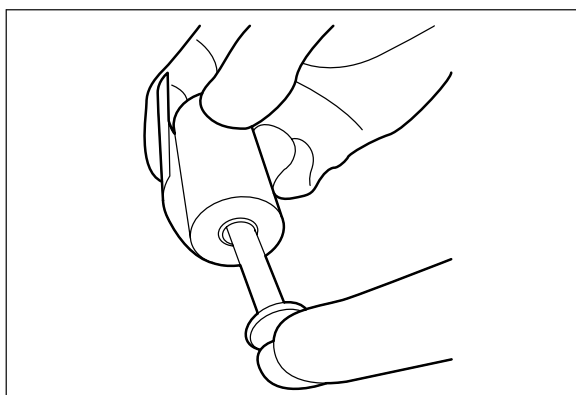


Figure 7.101

6. Place the roll shaft, inserted through the printer paper roll, on the printer roll axle. Make sure the printer paper roll feed direction is set as shown below, and pull the paper out about 10 cm (4 inches).

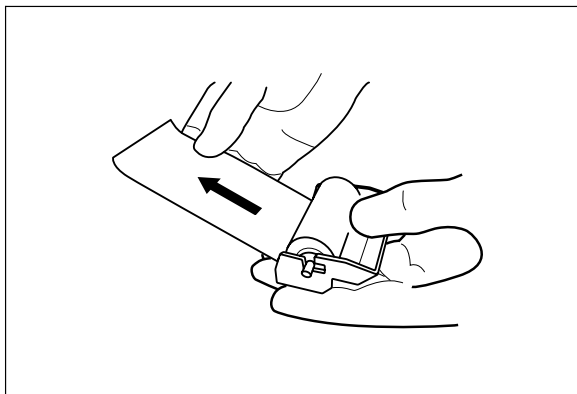


Figure 7.102

7. Attach the printer roll axle on the printer roll axle mount of the printer.

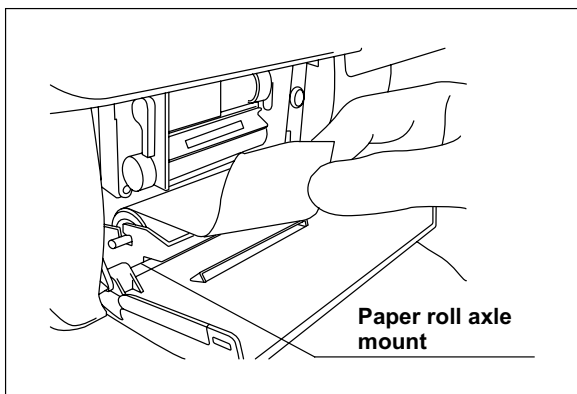


Figure 7.103

8. Hold the two edges of the printer paper roll as shown in Figure 7.104 below and insert the paper into the printer paper roll inlet of the printer. Insert so that the printer paper roll is between the projections as shown in Figure 7.105.

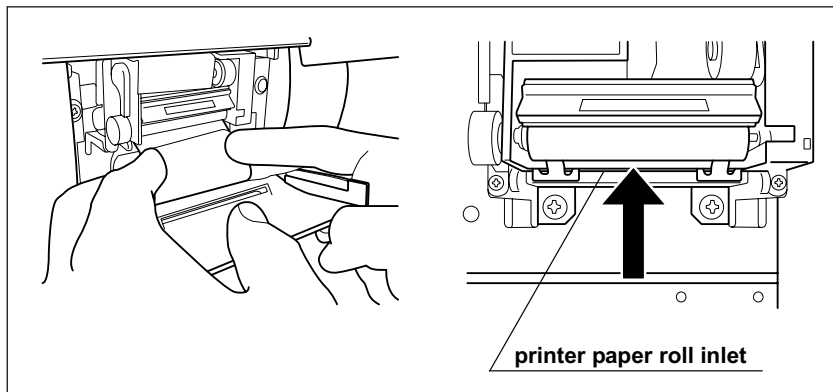


Figure 7.104

9. The printer paper roll is fed automatically.

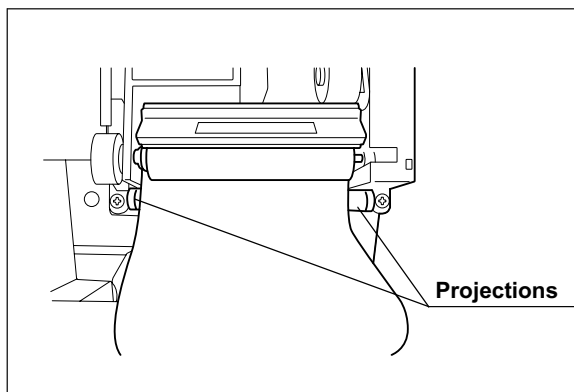


Figure 7.105

NOTE

- If the paper is not fed automatically, rotate the paper feed roller on the left of the printer while keeping the printer paper roll inserted into the printer paper roll inlet. This should cause the printer paper roll to be fed automatically.

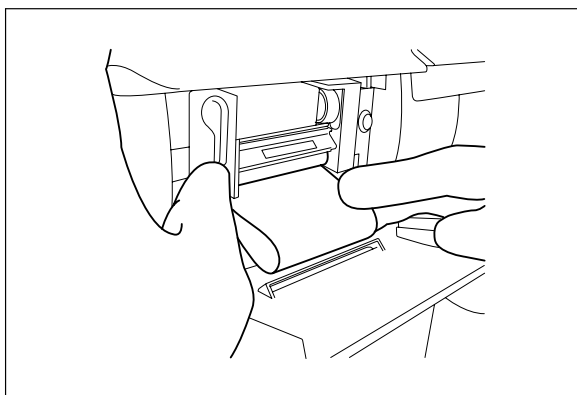


Figure 7.106

- If the printer paper roll cannot be inserted neatly, cut the paper, raise the release lever, rotate the paper feed roller to remove the printer paper roll from the printer, lower the release lever, and retry insertion.
- If the release lever on the left side of the printer is raised, the printer paper roll cannot be fed automatically. Make sure that the release lever is lowered.

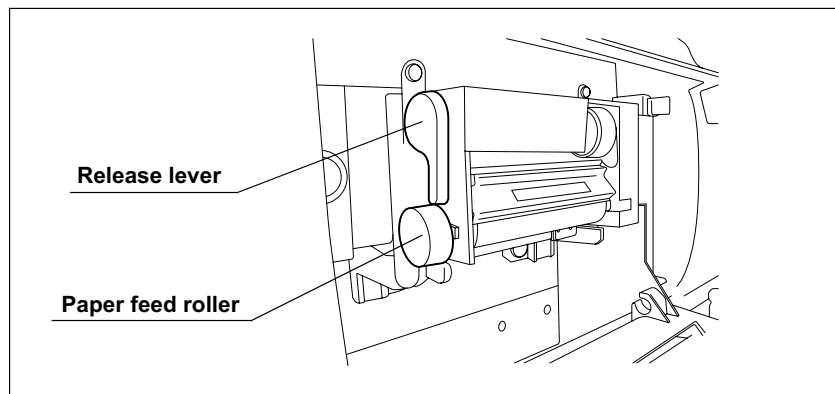


Figure 7.107

10. Rotate the paper feed roller on the left side of the printer clockwise to feed the paper by about 5 cm.

11. Insert the edge of the fed paper into the slit on the printer cover.

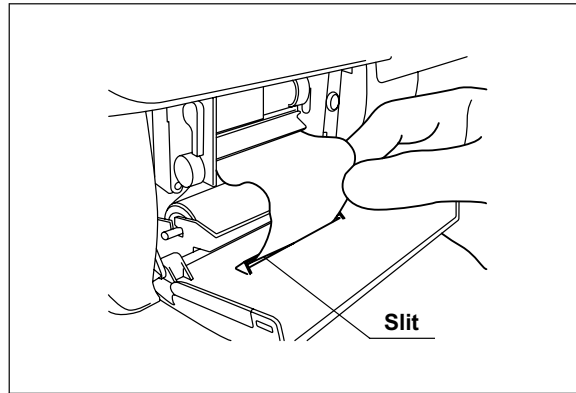


Figure 7.108

12. Close the printer cover and cut any excessive paper protruding from the slit.

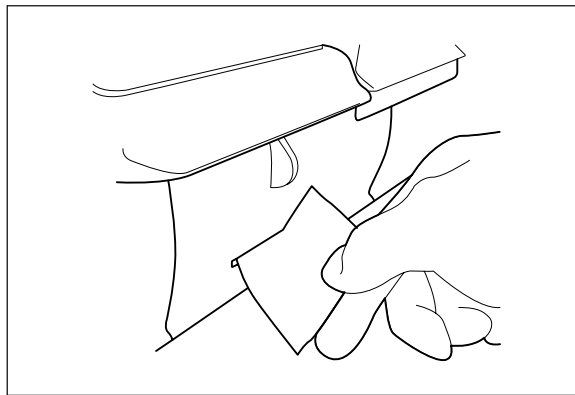


Figure 7.109

7.18 Care and maintenance after long-term storage

When using the equipment after it has been stored for a long period without being used, install the equipment again by referring to "Instructions-Installation Manual".

Chapter 8 Troubleshooting and Repair

WARNING

When the cleaning/disinfection process is interrupted, the scopes will not be properly cleaned and disinfected. In this case, reprocessing should be started again from the beginning.

If any irregularity is detected during an inspection or if the device 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" on page 218. If the problem cannot be resolved by the described remedial action, do not use the device and contact Olympus.

8.1 Troubleshooting guide

WARNING

- When the cleaning/disinfection process is interrupted, the scopes will not be properly cleaned and disinfected. In this case, reprocessing should be started again from the beginning.
- Before handling the disinfectant solution, read the precautions carefully and use it as instructed. It is especially important to know what to do if the disinfectant solution comes in contact with your skin.
- When handling the disinfectant solution, wear appropriate personal protective equipment to prevent any disinfectant from getting on your skin or being inhaled. To avoid adverse physical effects, be careful not to touch the disinfectant solution directly or to inhale too much vapor. If any disinfectant solution gets in your eyes, immediately rinse with a large amount of fresh water and then consult a medical specialist. Personal protective equipment, such as eye wear, face mask, moisture-resistant clothing, and chemical-resistant gloves that fit properly and are long enough so that your skin is not exposed. All personal protective equipment should be inspected before use and replaced periodically before it is damaged.

- Do not open the lid, in case the process stops and disinfectant solution remains in the cleaning tub due to the power failure or the internal irregularly. Otherwise, disinfectant vapor could cause adverse physical effects.
- When using the disinfectant solution and alcohol, Olympus recommends the use of gas filters and running this equipment in well-ventilated areas.
 - Wear a facemask, gloves, and protective clothes to minimize aspiration and skin contact.
 - Wear goggles for eye protection.

Refer to the following association's guidelines related to ventilation:

SGNA	(Society of Gastroenterology Nurses and Associates)
ASGE	(American Society of Gastroenterological Endoscopy)
APIC	(Association for Professionals of Infection Control and Epidemiology)
AORN	(Association of Preoperative Registered Nurses)
ASTM	(American Society for Testing and Materials)
OSHA	(Occupational Safety and Health Administration)
ACGIH	(American Conference of Governmental Industrial Hygienists)
NIOSH	(National Institute for Occupational Safety and Health)
AIA	(American Institute of Architects)

Do not handle the equipment if the operator shows any allergic symptoms even while wearing protective gear.

CAUTION

- If the rinsing process is started during error treatment while disinfectant solution remains in the cleaning tub, the disinfectant solution will be drained out of the device. To prevent this, the disinfectant solution should be collected first when an error code is displayed by referring to “Error codes and what to do about them”.
- Do not press the power switch OFF when an error code is displayed. Doing so may result in malfunction. The device automatically starts automatic error treatment (The error code will blink during automatic processing). After the error code starts blinking, follow the instructions in “Error codes and what to do about them” below.

○ Error codes and what to do about them

Error Code	Problem	Possible Causes	Remedial Actions
E00	Process is interrupted.	STOP/CODE CLEAR button is pressed during process.	Wait until automatic processing is finished. During the error processing, the error code may either blink or light steadily. If you want to interrupt automatic processing and discharge fluid inside the device, perform air purge. If you want to rinse the tub, perform rinsing.
E01	Filling the tub with water takes too long (water supply time is too long).	<ul style="list-style-type: none"> The faucet is not open enough. Water leakage or clogging in the water supply piping. 	<ul style="list-style-type: none"> Open the faucet all the way. Check if water is leaking from the connections on the water supply devices to the equipment: the faucet, the water supply hose, and the water supply adapter. Replace the water filter. Clean the mesh filter in the water supply adapter connector.
E02	Cleaning fluid is not discharged.	<ul style="list-style-type: none"> Irregularity in the drain tubing. Clogging of the mesh filter in the drain port of the cleaning tub. 	<ul style="list-style-type: none"> Check the drain hose for improper installation. Clean the mesh filter in the drain port of the tub. Close the lid and perform air purge to remove water.
E04	Cleaning fluid decreases during the cleaning process.	Internal problem with the device.	Contact Olympus.
E05	Cleaning fluid level is too high.	Irregularity in the fluid level sensor.	Contact Olympus (if water supply will not stop, close the faucet).
E06	Fluid level sensor malfunctions.	Erroneous detection due to dirt attached to the fluid level sensor (middle).	Clean the fluid level sensor.
E07	Fluid level sensor malfunctions.	Erroneous detection due to dirt attached to the fluid level sensor (lower).	Clean the fluid level sensor.
E11	There is too much disinfectant solution in the disinfectant solution tank.	<ul style="list-style-type: none"> Irregularity in the drain piping. Irregularity in the disinfectant solution collection piping. 	<ul style="list-style-type: none"> Close the lid if it is open. Automatic Processing will start after the lid is closed. Check that the drain hose is installed properly. Clean the mesh filter in the drain port of the tub. If you want to continue the use of the device, check the disinfectant solution concentration with the test strip and replace the disinfectant solution if it has lost the potency.

Error Code	Problem	Possible Causes	Remedial Actions
E12	There is an insufficient amount of disinfectant solution in the disinfectant solution tank.	Not enough disinfectant solution in the disinfection solution tank.	<ul style="list-style-type: none"> • Clean the mesh filters in the circulation port. • Drain the disinfectant solution from the disinfectant solution tank and add new disinfectant solution.
E13	It takes very little time for the cleaning tub to fill with disinfectant solution.	Due to improper discharge, fluid remains in the tub before the disinfection process.	<ul style="list-style-type: none"> • Check the drain hose for proper installation. • Clean the mesh filter in the drain port of the tub. • Discharge the disinfectant solution remaining in the device with the following procedure, prepare a new disinfectant solution and restart the process. <ol style="list-style-type: none"> 1. Discharging the residual disinfectant solution from the tub: Close the lid and perform the air purge operation to discharge residual disinfectant solution in the tub through the drain hose. If discharge through the drain hose is difficult, contact Olympus. 2. Discharging disinfectant solution from the disinfectant solution tank: Connect the drain connector to the disinfectant removal port and drain disinfectant solution from the tank. Alternatively, connect the disinfectant collection hose to the disinfectant solution nozzle and perform the "DISINFECTANT DRAIN" operation to drain disinfectant solution from the tank.
E14	Disinfectant solution cannot be recollected.	Clogging of the cleaning tub's drain port mesh filter.	<ul style="list-style-type: none"> • Wait until the disinfectant solution is collected. • Remove and clean the mesh filters in both the drain port and circulation port. • If the quantity of the disinfectant solution in the disinfectant solution tank is not sufficient, drain the disinfectant solution from the tank and add a new disinfectant solution.
E15	Fluid level sensor malfunctions.	<ul style="list-style-type: none"> • Erroneous detection due to dirt attached to the fluid level sensor (middle). • Internal problem with the device. 	Clean the fluid level sensor.
E16	It takes too long to fill the cleaning tub with disinfectant solution.	Internal problem with the device.	Contact Olympus.

Error Code	Problem	Possible Causes	Remedial Actions
E17	Disinfectant solution cannot be heated.	Internal problem with the device.	Contact Olympus.
E18	Temperature sensor malfunctions.	Internal problem with the device.	Contact Olympus.
E21	Air is not purged through scope channels (air purge pressure is low).	<ul style="list-style-type: none"> • Improper installation of air filter. • Clogging of air filter. 	<ul style="list-style-type: none"> • Check that the air filter is properly installed. • If the air filter is installed properly, replace it.
E22	Insufficient fluid pressure.	Clogging of the mesh filters in the circulation port.	Clean the mesh filters in the circulation port of the tub.
E23	Excessive fluid pressure.	Internal problem with the device.	Contact Olympus.
E31	lid is open.	At the beginning of the process: START button was pressed while the lid is open.	Close the lid firmly and restart the process.
		During the process: Internal problem with the device.	Contact Olympus.
E41	The power was lost and then restored during the process.	<ul style="list-style-type: none"> • 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 it is free from scratches or damage. If irregularities are found, replace the power cord.
E51	Water leakage inside the device.	Internal problem with the device.	Close the faucet and contact Olympus.
E61	Ultrasonic cleaning is not functioning.	Irregularity in the ultrasonic oscillator.	Contact Olympus.
E71	Abnormalities with the disinfectant solution cassette bottle tray sensor.	Internal problem with the device.	Contact Olympus.

Error Code	Problem	Possible Causes	Remedial Actions
E72	Disinfectant solution in the disinfectant solution tank cannot be discharged.	Internal problem with the device.	If disinfectant solution remains in the tub, perform the same remedial action as [E13]. In other cases, contact Olympus.
E76	Irregularity in the fluid level sensor in the disinfectant tank.	Internal problem with the device.	Contact Olympus.
E81	The process cannot be properly controlled.	Internal problem with the device.	Contact Olympus.
E82	Internal irregularity in the device.	Irregularity in the electrical circuitry inside the device.	Contact Olympus.
E83	The process cannot be properly controlled.	Irregularity in the electrical circuitry inside the device.	Contact Olympus.
E84	Malfunction of the ID reader.	Irregularity in the electrical circuitry inside the device.	Contact Olympus.
E91	ID read error.	<ul style="list-style-type: none"> • ID is not read. • Multiple IDs are read. 	Press the STOP/CODE CLEAR button, check that the ID Recognition indicators are not lit on the main control panel, and read the IDs again.
E92	Exceeded leak test time.	Exceeded test time (10 minutes).	Perform leak test again.
E93	No alcohol remains.	<ul style="list-style-type: none"> • The alcohol has run out. • Alcohol cannot be supplied to the device. • Irregularity in the alcohol sensor. • Clog in the pump or piping. 	<ul style="list-style-type: none"> • Check the amount of alcohol in the tank. • Correct the orientation of the alcohol connector (follow the procedure in Section 3.5, "Inspecting the remaining quantity of alcohol, and replenishment" on page 43). • Inspect them as described in "If error code [E93] is displayed while alcohol is still present in the alcohol tank:" on page 90.

Error Code	Problem	Possible Causes	Remedial Actions
E94	The equipment is not printing.	<ul style="list-style-type: none"> • Printer paper roll has run out. • The release lever is raised. 	<ul style="list-style-type: none"> • Install the printer paper roll properly. • Check that the release lever is set in the proper position.
E95	No detergent remaining.	<ul style="list-style-type: none"> • The detergent has run out. • The detergent cannot be supplied to the equipment. • Abnormality in the alcohol sensor. • Clog in the pump or piping. 	<ul style="list-style-type: none"> • Check the detergent tank for remaining detergent. • Correct the orientation of the detergent connector. Follow the procedure in Section 3.4, "Inspecting the remaining quantity of detergent, and replenishment" on page 37). • Inspect them as described in "When the error code [E95] is displayed even though there is enough detergent in the tank" on page 84.

○ Other errors and their treatment

Problem	Possible Causes	Remedial Actions
The odor of the disinfectant solution is stronger than before.	<ul style="list-style-type: none"> • The gas filter has expired. • Disinfectant solution is leaking. 	<ul style="list-style-type: none"> • Replace the gas filter as described in Section 7.1, "Replacing the gas filter (MAJ-822)" on page 138. If the problem persists after replacement, contact Olympus. • Check if the disinfectant solution is leaking. If it is, do not use the device and contact Olympus.
Water leaks from the device.	<p>Improper installation of water filter housing.</p> <hr/> <p>Internal problem with the device.</p>	<p>Stop the current process and reattach the water filter housing as described in Section 7.2, "Replacing the water filter (MAJ-824)" on page 142.</p> <p>However, the STOP/CODE CLEAR button may not work if stopping the water might cause a hazardous situation, for example during disinfectant solution replacement. In this case, close the faucet, tighten the water filter housing, then open the faucet again and continue the process. If an error code is displayed, take the appropriate remedial action for that error.</p> <hr/> <p>Close the faucet, set the power switch to OFF, disconnect the power cord plug from the wall mains outlet and contact Olympus.</p>

Problem	Possible Causes	Remedial Actions
Fluid leaks from the disinfectant removal port.	Something is clogging the disinfectant removal port.	Connect the drain connector as described in to Section 3.8, "Inspecting the disinfectant solution's concentration level" on page 50, push the head of the connector several times so that the material stuck in the port is removed. If leakage is still detected, attach the rubber cap to the disinfectant solution drain port and contact Olympus.
Flow of the water in the cleaning tub is weaker than before.	Incomplete opening of the faucet.	Open the faucet fully.
	Improper installation of water filter.	Reattach the water filter as described in Section 7.2, "Replacing the water filter (MAJ-824)" on page 142.
	Clogging of water filter.	Replace the water filter as described in Section 7.2, "Replacing the water filter (MAJ-824)" on page 142.
	Clogging of the mesh filter in the water supply adapter connector.	Clean the mesh filter as described in Section 7.13, "Cleaning the mesh filter in the water supply adapter connector" on page 193.
Connecting tube cannot be connected.	Not using the appropriate connecting tube.	Consult the List Of Compatible Endoscopes/Connecting Tubes <OER-Pro>.
Lid cannot be closed.	Lid is locked.	Step the foot pedal to unlock the lid.
	A part of the cleaning tub is applied against the lid.	Check that the lid is not pushed by the fluid level sensor, washing case or scope inside the tub. If it is pushed out of position, correct its positioning.
Ultrasonic endoscopes cannot be placed on the retaining rack.	Retaining rack for ultrasonic scopes is not used.	Use the retaining rack for ultrasonic scopes (optional MAJ-840) and place the ultrasonic scopes on it.
Disinfectant solution is left in the cleaning tub.	STOP/CODE CLEAR button was pressed during disinfection process to force it stop.	If an error code is displayed, take the corresponding remedial action. Collect or drain the disinfectant solution and then rinse the tub as described in Section 6.8, "Rinsing" on page 133. Since the scopes may not be properly disinfected, they should be put through the reprocessing process again from the beginning.
Cleaning fluid is remaining in the cleaning tub.	STOP/CODE CLEAR button was pressed during cleaning process to force it stop.	Rinse the tub as described in Section 6.8, "Rinsing" on page 133. Since the scopes may not be properly disinfected, they should be put through the reprocessing process again from the beginning.

Problem	Possible Causes	Remedial Actions
Panel display disappears completely during a process.	<ul style="list-style-type: none"> • Power cord is disconnected from the power outlet. • Circuit breaker is activated. • The power failure occurred. 	<p>Perform the checks described in Section 4.1, "Power activation and opening the faucet" on page 57. Error code [E41] will be displayed when the device is turned ON.</p> <p>After checking, press the STOP/CODE CLEAR button to release the error code. However, if the error code is blinking, the disinfectant solution in the tub is being collected in the tank and pressing the button will have no effect; in this case, wait until the blinking changes to a steady light.</p>
Panel display does not light in sequence when the device is turned on.	Power switch is set to ON in less than 5 seconds after it was set to OFF.	Set the power switch to OFF, wait for 5 seconds or more and set the power switch to ON again.
Reprocessing operator feels sick during work.	The operator may be allergic to the disinfectant, detergent or alcohol.	Stop doing any reprocessing and consult a medical specialist.
Disinfectant solution is judged to be ineffective with the test strip.	Expiration of the service life of the disinfectant solution.	Replace the solution as described in Section 7.12, "Replacing the disinfectant solution" on page 176.
Bacteria were detected as a result of culture test of a reprocessed scope.	<ul style="list-style-type: none"> • Expiration of service life of filters, degradation of disinfectant solution, etc. • Water supply piping is not disinfected. 	Inspect the equipment as described in Chapter 3, "Inspection Before Use", preclean the scope and put it through the reprocessing process again from the beginning. If bacteria are detected again in the next culture test, contact Olympus.
Bacteria were detected as a result of culture test of rinsing water collected from the device.	<ul style="list-style-type: none"> • Expiration of service life of filters, degradation of disinfectant solution, etc. • Water supply piping is not disinfected. 	Inspect the equipment as described in Chapter 3, "Inspection Before Use". If bacteria are detected again in the next culture test, contact Olympus.
Scopes were not precleaned before being reprocessed.	–	Inspect the equipment as described in Chapter 3, "Inspection Before Use" to confirm that the disinfectant solution has not lost its strength, the mesh filters are not clogged, etc. Next, preclean the scopes and reprocess them again from the beginning.
Printed paper is not output from the printer.	<ul style="list-style-type: none"> • Printer paper roll has run out. • Paper jam. 	Take the remedial action by referring to Section 3.9, "Inspecting the printer paper roll" on page 53.
Abnormal noise from the device.	Internal problem with the device.	Contact Olympus.

8.2 *Returning the endoscope reprocessor for repair*

Before returning the device for repair, contact Olympus. When you return the equipment, include a description of the malfunction or damage and how it occurred. Olympus will repair the equipment free of charge within the warranty period.

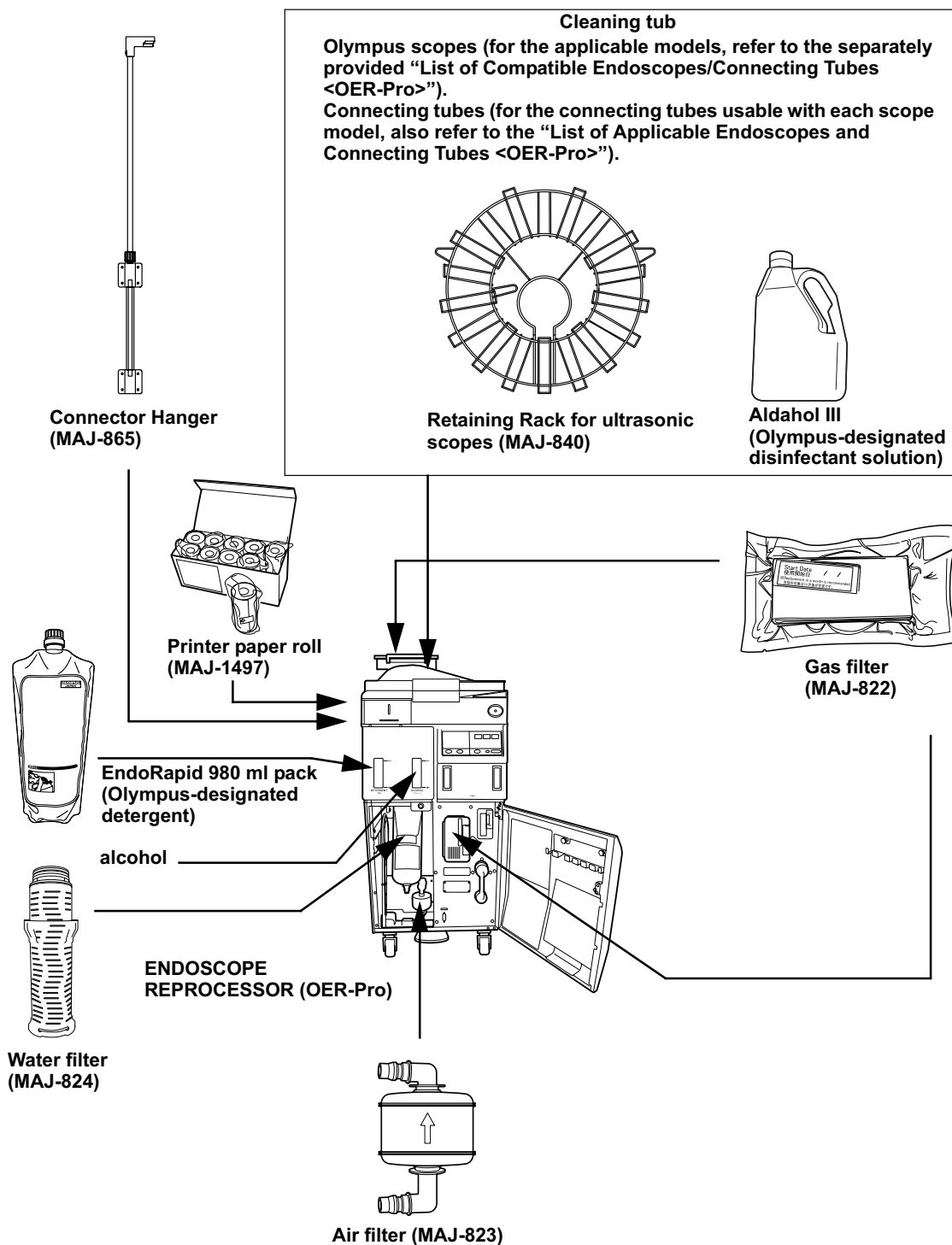
Appendix

System chart

The recommended combinations of equipment and accessories that can be used with this equipment are listed below. Some items may not be available in some areas. New products released after the introduction of this equipment may also be compatible with this equipment. For further details, contact Olympus.

WARNING

If combinations of equipment other than those shown below are used, Olympus cannot guarantee that the device will perform as expected or the safety of patients and operators. Nor can the durability of the device be guaranteed when nondesignated equipment is used. Any damage resulting from improper combinations will not be serviced or repaired free of charge.



Shipping environment

Shipping environment	Ambient temperatures	-40 to +60°C (-40 to +140°F)
	Relative humidity	10 – 90%
	Atmospheric pressure	700 – 1060 hPa

Operating environment

Operating environment	Ambient temperatures	10 – 40°C (50 – 140°F)
	Relative humidity	30 – 85%
	Atmospheric pressure	700 – 1060 hPa (0.7 – 1.1 kgf/cm ²) (10.2 – 15.4 psia)
	Elevation	3000 meters (maximum)
	Designed for use	Indoors
	Water supply flow	17 l/min. or more when the faucet is fully open
	Water supply pressure	Between 0.1 to 0.5 MPa
	Water supply temperature	Max. 25°C

Specifications

Applicable scopes	Olympus flexible endoscopes (Refer to the “List of compatible Endoscopes and Connecting Tubes <OER-Pro>” for details)	
	(Note 1)	There is no data supporting the sterilization effect of this equipment. Therefore, after cleaning/disinfecting a scope that requires sterilization, be always sure to sterilize the scope as instructed in its instruction manual.
Number of reprocessed scopes	Max. 2 (1 with certain models)	
Cleaning method	Exterior surfaces	Ultrasonic cleaning, running fluid cleaning
	Channel interiors	Fluid flushing cleaning
	Valves	Ultrasonic cleaning, fluid flushing cleaning

Disinfection method	Exterior surfaces	Disinfectant solution immersion
	Channel interiors	Disinfectant solution flushing and flooding
	Valves	Disinfectant solution immersion
Cleaning time setting		2 – 10 minutes (Setting variable in 1 min. increments)
Disinfection time setting		10 minutes
Disinfectant solution heating setting		20°C (68°F) (If the temperature of disinfectant solution is below 20°C, it is heated to 20°C (68°F).)
Disinfectant solution heating method		Built-in heater in the cleaning tub. 1. Heating immediately before disinfection process in a reprocessing program 2. Heating before the start of a reprocessing program
Water discharge method		Forced draining using a pump (Floor draining)
Disinfectant solution discharge method		1. Draining through disinfectant collection hose 2. Draining through drain hose
Cleaning tub capacity		Approximately 14 L
Disinfectant solution tank capacity		Approximately 17.5 L
Disinfectant solution		Aldahol III (Olympus-designated disinfectant solution)
Detergent		EndoRapid 980 ml pack (Olympus-designated detergent)
Visual leakage detection		Bubble detection during immersion
Alcohol flushing		Automatic flushing/draining using a pump and compressor
Dimensions		450 (W) × 765 (D) × 955 (H) mm
Weight		120 kg (dry condition)

Power supply	Voltage	120 V AC
	Frequency	60 Hz
	Input current	5.5 A
	Voltage fluctuation	±10%
Medical device classification	Protection against electric impact	Class I
Ultrasonic wave	Frequency	36 ±2 kHz
	Power	100 W ±20%
EMC	Applied standard; IEC 61326: 2002	This equipment complies with the standards listed in the left column. CISPR 11 of emission: Group1,Class B
Electrical safety	Applicable standard; UL 61010-1: 2004 CSA C22.2 No. 61010-1: 2004 CSA C22.2 No.61010-2-045: 2004 IEC 61010-1: 2001 IEC 61010-2-040: 2005	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
	Effective Radiated Power	300 mW±20%

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 equipment 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.
RF emissions CISPR 11	Class B	This equipment'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 equipment is less than 220VAC, and this equipment can be exempt from requirements of IEC 61000-3-2.
Voltage fluctuations/flicker emissions IEC 61000-3-3	Not applicable	Power supply specification of this equipment is less than 220 VAC, and this equipment is exempt from requirements of IEC 61000-3-3.

NOTE

Olympus confirmed that the level of this equipment's harmonic emissions is low.

○ Electromagnetic immunity compliance information and recommended electromagnetic environments

Immunity test	IEC 61326 test level	Compliance level	Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	Contact: $\pm 2, \pm 4$ kV Air: $\pm 2, \pm 4, \pm 8$ 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: ± 1 kV Common mode: ± 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, 1 cycle	Same as left	Mains power quality should be that of a typical commercial or hospital environment. If the user of this equipment required continued operation during power mains interruptions, it is recommended that this equipment be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	Same as left	It is recommended to use this equipment by maintaining enough distance from any equipment that operates with high current.

NOTE

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

○ **Cautions and recommended electromagnetic environment regarding portable and mobile RF communications equipment such as a cellular phones**

Immunity test	IEC 61326 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)	10 V/m (E ₁)	Formula for recommended separation distance (E ₁ =10 according to the compliance level) $d = \left[\frac{3.5}{E_1} \right] \sqrt{P}$ <p style="text-align: right;">80 MHz – 800 MHz</p> $d = \left[\frac{7}{E_1} \right] \sqrt{P}$ <p style="text-align: right;">800 MHz – 1 GHz</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 equipment complies with the requirements of IEC 61326: 2002. However, under electromagnetic environment that exceeds its noise level, electromagnetic interference may occur on this equipment.

○ **Recommended separation distance between portable and mobile RF communications 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	80 MHz – 800 MHz	800 MHz – 1 GHz
	$d = 1.2\sqrt{P}$	$d = 0.35\sqrt{P}$	$d = 0.7\sqrt{P}$
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 equipment, including cables than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.

FCC & IC information

This equipment complies with part15 of the FCC rules and the IC RSS210.

FCC ID: S8Q-GN4215

IC: 4763B-GN4215

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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OLYMPUS®

Manufactured by



OLYMPUS MEDICAL SYSTEMS CORP.

2951 Ishikawa-cho, Hachioji-shi, Tokyo 192-8507, Japan
Fax: (042)646-2429 Telephone: (042)642-2111

Distributed by

OLYMPUS AMERICA INC.

3500 Corporate Parkway, P.O. Box 610 Center Valley, PA
18034-0610, U.S.A.
Fax: (484)896-7128 Telephone: (484)896-5000

OLYMPUS SURGICAL & INDUSTRIAL AMERICA INC.

One Corporate Drive, Orangeburg, N.Y. 10962, U.S.A.
Fax: (845)398-9444 Telephone: (845)398-9400

OLYMPUS LATIN AMERICA, INC.

5301 Blue Lagoon Drive, Suite 290 Miami, FL 33126-2097, U.S.A.
Fax: (305)261-4421 Telephone: (305)266-2332



OLYMPUS MEDICAL SYSTEMS EUROPA GMBH

(Premises/Goods delivery) Wendenstrasse 14-18, 20097 Hamburg, Germany
(Letters) Postfach 10 49 08, 20034 Hamburg, Germany Telephone: (040)237730



KEYMED LTD.

KeyMed House, Stock Road, Southend-on-Sea, Essex SS2 5QH, United Kingdom
Fax: (01702)465677 Telephone: (01702)616333

OLYMPUS MOSCOW LIMITED LIABILITY COMPANY

117071, Moscow, Malaya Kaluzhskaya 19, bld. 1, fl.2, Russia
Fax: (095)958-2277 Telephone: (095)958-2245

OLYMPUS (BEIJING) SALES & SERVICE CO.,LTD.

Room 1202, NCI Tower, A21 Jianguomenwai Avenue Chaoyang
District Beijing 100022 PRC
Fax: (10)6569-3545 Telephone: (10)6569-3535

OLYMPUS KOREA CO.,LTD.

8F, Hyundai Marines Bldg., 646-1, Yeoksam-Dong, Kangnam-Gu, Seoul 135-080 Korea
Fax: (02)6255-3499 Telephone: (02)1544-3200

OLYMPUS SINGAPORE PTE LTD.

491B, River Valley Road #12-01/04, Valley Point Office Tower, Singapore 248373
Fax: 6834-2438 Telephone: 6834-0010

OLYMPUS AUSTRALIA PTY. LTD.

31 Gilby Road, Mount Waverley, VIC., 3149, Australia
Fax: (03)9543-1350 Telephone: (03)9265-5400

